



# 2016



Maryland Department of Agriculture | 2016 Annual Report



Governor Larry Hogan



Lt. Governor Boyd K. Rutherford



Secretary Joseph Bartenfelder



Deputy Secretary James P. Eichhorst

## MISSION STATEMENT

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

## VISION STATEMENT

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



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Front cover—Tomatoes from *The Greener Garden* in Baltimore City.  
Back cover—MDA cover crops and soil conservation in Harford County.  
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CHANGING  
Maryland  
for the Better

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**GREETINGS,**

On behalf of Governor Larry Hogan and Lt. Governor Boyd K. Rutherford, I am pleased to present the Department of Agriculture's Annual Report for FY2016. When Governor Hogan took office two years ago, he promised that the war on Maryland agriculture was finally over. I am happy to say that he has made good on this promise.

With the full support of the Hogan Administration, we have continued to make progress in a number of areas. For the first time in 10 years, the health of the Chesapeake Bay is improving, due in part to our farmers' commitment to resource conservation.

As I travel around the United States and abroad, I have been humbled to find that Maryland is often held up as a national model for sustainable agriculture. It is important to remember that we are working without a blueprint here, and it is very rewarding to see our hard work begin to pay off.

Along with our achievements in resource conservation, our department remains committed to promoting local agriculture and opening new markets and opportunities for our farmers. In FY2016, our Maryland's Best program expanded to include new promotions, and strengthen successful programs like the Ice Cream Trail and Buy Local Challenge.

I want to thank all Maryland farmers for their continued hard work and cooperation. We have made great progress this year, and I look forward to continuing that trend in FY2017.

Sincerely,

**Joe Bartenfelder**



## 2016 Annual Report | Office of the Secretary

### MARYLAND AGRICULTURAL LAND PRESERVATION FOUNDATION (MALPF)

MALPF has again combined appropriations from two fiscal years, FY 2015 and FY 2016, in order to maximize the number of acres purchased. MALPF has nearly \$38 million available for this cycle. Of this, about \$8.5 million is county funding used to match state funds at a ratio of 40 percent county to 60 percent state dollars. At the end of FY 2016, MALPF had purchased easements on a cumulative total of 2,207 properties, permanently preserving 299,234 acres. This is less than 1,000 acres from a milestone of 300,000 acres protected.

MALPF and its other state agency and local government partners are working to meet a legislative goal (SJ 10, 2002) of preserving 1,030,000 acres of agricultural land by 2022. As of June 30, 2016, Maryland has preserved 616,606 acres of agricultural land under MALPF, Rural Legacy, GreenPrint, and through local land preservation and transfer of development rights programs. This represents almost 60 percent of the goal and is an increase of more than 8,000 acres from last year.

### OFFICE OF THE ATTORNEY GENERAL

The Department of Agriculture's statutory mission to protect and to promote agribusiness while protecting the environment creates challenges for the four attorneys assigned to the agency from the Office of the Attorney General (OAG). In addition to representing the department, the attorneys advise 22 boards and commissions as well as the state's 24 independent soil conservation districts and the Tri-County Council for Southern Maryland (tobacco buyout program). Their goal is to provide prompt, correct legal advice. Highlights from the year are listed below.

The OAG's office continues to support the Maryland Agricultural Land Preservation Foundation's efforts to enforce and defend preservation easements (2,207 easements, covering 299,234 acres).

The Foundation is currently engaged in a suit to enforce an illegal subdivision of agriculturally preserved land in St. Mary's County. Discovery is ongoing and trial is set for June 2017.

The Foundation recently settled a lawsuit it filed in Montgomery County to enforce another subdivision violation affecting an easement property.

The Foundation is defending a Title 7 petition for judicial review filed by a landowner abutting Foundation eased land. The neighboring landowner objects to uses on the Foundation eased property, which uses the Foundation finds compatible with its program.

The OAG's office continued to support MDA's effort to implement the State's Nutrient Management Law and other laws that MDA administers which are designed to protect the waters of the State. It reviewed for legal sufficiency regulations that MDA adopted establishing the Phosphorus Management Tool, the Maryland Certainty Program, and the Nutrient Trading Program.

The OAG Office successfully represented the State Soil

Conservation Committee in a personnel matter. The OAG Office also successfully defended a Soil Conservation District that was charged with discriminating against a former employee based on her sex.

The OAG's office also assisted the State Board of Veterinary Medical Examiners in its enforcement of Veterinary Practice Act. The OAG assists the SBVME to efficiently process new complaints through informal resolutions and advised the Board on all legal matters, including a recent decision in the U.S. Supreme Court that affects the Board's authority to regulate the practice of veterinary medicine.

The OAG provided training to Maryland Department of Agriculture personnel on federal and State statutes prohibiting discrimination including Title VII of the Civil Rights Act of 1964, the Americans with Disabilities Act, the Equal Pay Act, the Age Discrimination Enforcement Act, and the Genetic Information Nondiscrimination Act.

The OAG also provided training to the Supervisors and staff of the Soil Conservation Districts on tort liability and immunities under the District Tort Claims Act, and the State Treasurer's procedures applicable to claims against a district.

## GOVERNMENT RELATIONS

A point of focus for the government relations team in FY 2016 was education and outreach to elected officials. The team coordinated several regional farm tours for state and local leaders in western, central, and northeast Maryland, as well as the middle Eastern Shore. These tours covered a variety of agricultural production from livestock and grain to the growing value-added industries. Increased attendance and participation is a constant focus point for improvement.

Before the start of the 2016 Legislative Session, the government relations team and other MDA Staff held an open house at the Maryland Department of Agriculture's headquarters in Annapolis for state legislators. The event was a way for each section of MDA to highlight the important work they perform and will continue in FY 2017.

For the second year in a row, government relations staff held a breakfast meet and greet with Secretary Bartenfelder on the morning of Agriculture Day at the Maryland State Fair. Baltimore County, state, and local elected officials attended. This breakfast provided an opportunity to meet and talk with the Secretary in an informal environment. Lt. Governor Boyd Rutherford was the keynote speaker at a luncheon later in the day.

The 2016 General Assembly adjourned April 12 at midnight. During this year's 90-day session, the Department's government relations staff attended numerous bill hearings, sub-committee workgroups, and full committee voting sessions. Secretary Bartenfelder presented five agricultural briefings to different committees on the status of Maryland's agricultural community and the department's function as a state agency. The department played an important role in

educating legislators on a number of bills, which would have had a direct negative impact on the agriculture industry and on the operational and fiscal functions of the department.

**The Maryland Department of Agriculture put forward three departmental bills during the 2016 legislative session that were adopted by the General Assembly.**

**SB 110 – Agriculture – Young Farmers Advisory Board – Membership.** SB 110 will add a Maryland State FFA (Future Farmers of America) officer and an urban farmer to the Maryland Young Farmers Advisory Board. The bill will also increase the number of "general public" members by six.

**SB 112 – Pest Control Compact – Repeal.** SB 112 repeals the Maryland Pest Control Compact in its entirety. The Interstate Pest Control Compact governing board voted to dissolve the compact in 2012 and it ceased operations in 2013. With the dissolution of the compact, the Maryland Pest Control Compact Law became obsolete.

**SB 113 – Department of Agriculture – Bees, Bee Colonies, and Used Bee Equipment.** Transportation and Shipment. SB 113 will simplify the process required for importing honey bees and associated equipment into Maryland by eliminating a second step of importation, an entry permit from Maryland, while maintaining assurances that only healthy bees and disease-free equipment are imported into the state.

**The 2016 General Assembly also adopted the following legislation that will impact the department:**

**SB 198 – Agriculture – Neonicotinoid Pesticides – Restrictions on Sales and Use (Pollinator Protection Act of**

**2016).** This bill establishes and prohibits a person from selling certain neonicotinoid products at retail outlets in the State after January 1, 2018. This bill also restricts the amount of users allowed to apply outdoor neonicotinoid products after January 1, 2018.

The Maryland Department of Agriculture is also required to make recommendations to the General Assembly and the Governor on completion of the U.S. Environmental Protection Agency's pollinator risk assessment of four neonicotinoid pesticides and must incorporate pollinator habitat expansion into the state's managed pollinator protection plan.

#### **SB 526 – Agriculture – Donation of Commercial Feed.**

SB 526 allows the Maryland Department of Agriculture to exempt certain agricultural operations, products, or materials from the Maryland Commercial Feed Law through regulation.

Secretary Bartenfelder along with Deputy Secretary Jim Eichhorst and the Department's government relations team, traveled to Capitol Hill to meet with Congressional Leadership and members of Maryland's House Congressional Delegation. Promoting Maryland's agriculture for leading the way for Bay clean up, local specialty crops, and improving pollinator health, the department advocated the importance for Maryland's federal elected officials to continue their support for Maryland's number one industry.

Meeting with Chairman Michael Conaway, who chairs the House Committee on Agriculture, Secretary Bartenfelder stressed the importance of the current Farm Bill, which provides a number of conservation programs to Maryland farmers. These programs have been invaluable in offsetting the capital costs of installing conservation practices necessary for Chesapeake Bay restoration. Just as Maryland's Specialty Block Grant is made possible by the Farm Bill. This grant has been made available since 2003 to Maryland farmers to help address food safety issues, manage plant diseases and pests, with the focus to help increase sales of produce, nursery and other specialty products.

Secretary Bartenfelder and the Department updated House Members including, Rep. Andy Harris, Rep. Steny Hoyer, Rep. Dutch Ruppersberger, Rep. John Delaney and Congressional staff on the Department's commitment to pollinator health and Maryland's beekeeping industry. The Department is a national leading state agency that is implementing a Managed Pollinator Protection Plan (MP3). This plan will focus on educational awareness on pesticide usage, incorporating pollinator habitat and expanding enhanced practices to address things like bee hive management, quick access to report bee kills, and best management practices for pesticide applications.

## COMMUNICATIONS & PUBLIC INFORMATION

The Communications and Public Information Office serves as the department's liaison to the media, government agencies, elected officials, the agriculture industry, agency employees and the general public. Its goal is to ensure all stakeholders understand the state of Maryland's agriculture industry, department activities and the department's policy initiatives.

**Media Monitoring.** The Communications Office regularly distributes news releases to traditional media outlets about agency programs, activities and announcements. The office uses a media monitoring system to track and research media contacts, distribute news releases, maintain media lists for targeted stories, and distribute news clippings of interest to the agency and its constituencies. During FY 2016, staff distributed 265 news releases to nearly 400 news outlets and interested parties, which generated 800 logged inquiries from the media, which doubled from the previous year. Each business day, news stories are identified, linked to the agency's website and distributed to all staff and other interested parties.

**News Stories.** Some of the biggest news stories handled by the office during FY 2016 were related to administrative changes, including announcing a new Agriculture Secretary, a new State Veterinarian, and new Phosphorous Management Tool regulations. Other important stories handled by the office included:

- Unscheduled mosquito sprayings are conducted in areas not typically sprayed after a human or a mosquito pool tests positive for West Nile Virus or Zika virus. During FY 2016, there was a significant increase in the number of unscheduled sprayings conducted. During the year, the Communications Office posted information and maps on the agency website and social media platforms as well as through news releases.
- Launching the start of the Pesticide Use Survey which is being paid for by the department but being conducted by the USDA National Agricultural Statistics Service. The survey was conducted as a result of legislation passed

last year, requiring it.

- Communications surrounding various Buy Local promotions, including the Buy Local Challenge, the Governor's Buy Local Cookout, the Maryland's Best Ice Cream Trail, and farmers market activities and offerings as well as Homegrown School Lunch Week and the Farm to School program.
- The office also assisted with various seasonal promotions and continued to work closely with the Maryland Horse Industry Board to promote its monthly Touch of Class Award program, which recognizes excellence in Maryland's equine industry.

**Digital Engagement.** During FY 2016, the Communications Office continued to strategically integrate its online presence (i.e., website and social media platforms) under the overarching practice of "digital engagement." Rather than each platform having its own goals and metrics, the department now uses them together to create more comprehensive, coordinated and far-reaching messaging. The goal of the agency's digital engagement is to ensure that the public sees this agency as the authoritative, honest, credible source for information about the agricultural activities, services, regulations and issues under the agency's purview. The website is home base, the place where all other digital platforms lead.

**Website.** In FY 2016, the Communications Office has continued to build out the agency's website which received a re-design during FY 2015. This new design makes it easier to share content across platforms and is more accessible to mobile users, which make up an increasing share of the site's traffic.

There were 381,800 visits to the site during FY 2016 – up 37,678 (11 percent) over the year before. Of this year's visitors, 144,053 (38 percent) came to the site more than once. About 33 percent came to the site through mobile devices – up 5 percent over last year.

Last year, 12,200 website visitors came by way of Facebook. This year, 18,642 came via Facebook – an increase of 53 percent. Last year, 1,896 website visitors came by way of Twitter. This year, 2,253 came that way – an increase of 19 percent.

These figures do not include referrals from tinyURL, which are likely Facebook and Twitter related. Those links increased from 595 last year to 4,561 this year – or 667 percent!

Note: The Maryland's Best website is a marketing website,

designed to connect consumers with producers rather than to promote agency information. It is hosted by a private vendor and populated by the marketing office.

**Social Media.** More and more organizations, agencies, nonprofits and regular people are communicating via social media. Traditional media as well are moving to online, digital platforms. By its nature, social media is fast moving and immediate. Rumors and misunderstandings can "go viral" very quickly. By being online and engaged with a following, the department can not only become part of relevant discussions, it can also stop bad information from taking off. The department's social media activities allow the agency:

- To maintain a constant and consistent presence in online communities and discussions;
- To provide credible information directly to the public, without relying solely on the media;
- To monitor trends and issues in public discourse, to correct rumors and provide alternative viewpoints on emerging controversies;
- To improve the image and increase citizen understanding of agriculture;
- To regularly and routinely – both seriously and informally – engage citizens in a variety of issues;
- To continually promote the agency's website as the authoritative source of information.

The department continued to expand its social media presence during FY 2016 with growing followings on Twitter and Facebook and a less prominent presence on Instagram, Flickr, YouTube, and Soundcloud. These social media platforms provide the agency direct access to a new, younger, more tech savvy audience.

- MDA's official Facebook page ended FY 2016 with 9,295 followers (55 percent increase). MDA's official Twitter feed ended the year with 10,652 followers.

**Agency Social Media Accounts.** The department continues to maintain several program-specific accounts in addition to its official Facebook and Twitter. In FY 2016, the department created a new Twitter account used for updates and information on the mosquito control program and the state's Zika virus response.

#### Twitter

- @MdAgDept – Main Maryland Department of Agriculture account
- @MdsBest – The department's marketing office account

- @MdEquines – The Maryland Horse Industry Board account
- @MdFarm2School – The Farm to School Program account
- @MdAgMosquito – The Mosquito Control program account.
- @MdGypsyMoth – A small feed that live tweets when planes are spraying trees and forests for gypsy moth.

#### Facebook

- Maryland Department of Agriculture
- Maryland Horse Industry Board
- Maryland Farm to School
- Maryland's Best

\*The department also maintains Flickr, Instagram, YouTube, and Soundcloud accounts.

**News Digest.** The Communications Office also distributes an electronic news digest, which is distributed every 4 to 6 weeks, as events warrant. The digest highlights selected news releases, website additions and updates, as well as social media campaigns. It is distributed to more than 1,000 subscribers.

**Emergency Management.** Planning for emergency communications in the event of plant and animal disease outbreaks, as well as natural disasters, is an important component of the program. The office is actively involved in several multi-agency efforts to refine response and communications plans in the event of an animal disease outbreak or natural disaster. The communications office also assists in statewide emergency management efforts. Staff is responsible for assisting the Maryland Emergency Management Agency (MEMA) Joint Information Center. When/if necessary, staff handles information requests from traditional and social media and the public during times of emergency and monitors emergency events and helps manage rumor control.

**Special Projects for FY 2016.** The introduction of **High Path Avian Influenza** that entered the United States in December 2014 and moved swiftly across the country put the department on special alert, and remains an animal health priority. The Communications Office worked closely with Animal Health staff to develop and print various materials, encouraging both commercial and backyard poultry growers to use enhanced biosecurity practices. During FY 2016, the Communications Office partnered with its colleagues at USDA

to produce videos on good biosecurity and obtain stock footage to keep on file in case of an outbreak. The department also used the website and social media to post frequent reminders and updates about biosecurity practices.

The communications office worked closely with its counterparts at the Department of Health and Mental Hygiene (DHMH) and local departments of health as part of the state's response to **Zika virus**. A major part of this effort focused on outreach and education. This effort started with a proclamation from Governor Larry Hogan declaring April 24-30 "Zika Virus Awareness Week" in Maryland.

MDA focused on the mosquito control component of the response. This included a new webpage ([mda.maryland.gov/zika](http://mda.maryland.gov/zika)) designed to provide residents, homeowners and organizations with simple ways to eliminate mosquito breeding sites and avoid mosquito bites. Part of this effort involved collaborating with staff from Maryland Institute for Emergency Medical Services Systems (MIEMSS) to produce a series of 30-second video Public Service Announcements (PSAs).

Throughout mosquito season, the communications office was responsible for issuing public notice any time the department determined a need for unscheduled spraying in response to a concern over mosquito-borne disease. This was done via press release and posts on the department's website. The communications office also created a Twitter handle (@MdAgMosquito) to share information and post public notices as necessary.

The department serves as the co-producer with Maryland Public Television (MPT) in the 13-part television series called **"Maryland Farm and Harvest,"** which debuted in November 2013. The Communications Office is the lead contact working with MPT. The series enjoyed continued success during its third season, which began November 2015. It is MPT's highest rated locally produced show with nearly 4 million viewers. Season four premiered in November 2016, and production is already underway for Season 5.

The office also represents MDA with exhibits at the Maryland State Fair and conferences sponsored by the Maryland Municipal League, the Maryland Association of Counties, and the Maryland Farm Bureau.

During the year, staff also represented the agency on the Maryland Agricultural Education Council. Additionally, staff is actively involved in the leadership of the Communications Officers of State Departments of Agriculture.

## 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 about 500 permanent and seasonal employees, and the Human Resources Office facilitates the recruitment, training, 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 employee leave bank, teleworking, wellness, blood drives, and training as well as employee recognition. In FY 2016, the agency successfully implemented the new Workday payroll system, which automated several payroll and HR functions.

Central Services manages facilities, records, inventory, telecommunications, warehousing, the agency motor fleet, and the distribution of supplies and mail. The office also oversees departmental procurement and is responsible for the maintenance of facilities. The motor pool provides quality

maintenance and repairs of the department's 251 vehicles in addition to semi-annual inspections on all vehicles. The departmental fleet traveled more than 2.4 million miles last year.

Fiscal Services handles all centralized accounting transactions for the department. This encompasses all phases of the budget, grants management, accounts receivable, and accounts payable.

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

MDA's IT function is being absorbed and transitioned into DOIT. The transition started in FY 2016 and should be complete by FY 2018.

## MARYLAND AGRICULTURAL COMMISSION

The Maryland Agricultural Commission is an advisory group to the Maryland Secretary of Agriculture. Its 30 members represent the state's major agriculture commodity groups as well as representatives from the University of Maryland, consumer interests, food processing and other agricultural business segments.

The commission meets monthly and discusses current agriculture issues. This year the commission had notable speakers and subsequent in-depth discussions on the subjects of: the Status of Water Quality Trading Efforts in Maryland, Grow & Fortify, Maryland Agriculture Strategic Plan, Chesapeake Bay & Local Watershed Restoration Efforts, TMDL and MS4, Maryland Young Farmers Advisory Board projects,

Maryland's Best and the Maryland Farmers Market Program, Stopping the Flood Beneath Baltimore's Streets, Agricultural Certainty Program, and Maryland Agricultural & Resource-Based Industry Development Corporation.

In addition, the commission conducted bi-annual farm tours in Prince George's and Charles counties in the fall, and Carroll and Baltimore counties in the spring.

These matters and activities, along with reports from each of the represented commodity and business groups, keep the commission current with agricultural issues and ensure the fulfillment of the commission's statutory mission.

## MARYLAND YOUNG FARMERS ADVISORY BOARD

The Maryland Young Farmers Advisory Board is an advisory group to the Maryland Secretary of Agriculture and the Maryland Agricultural Commission. Its 12 members represent young farmers from across Maryland. The board also includes representatives from the Maryland Farm Bureau, Maryland Department of Natural Resources Forestry Program, Maryland Department of Business & Economic Development (now called the Maryland Department of Commerce) and Maryland Department of Agriculture.

The advisory board meets quarterly and discusses current agriculture issues relating to Maryland Young Farmers. This year the board heard presentations and conducted

subsequent in-depth discussions about: the Maryland Agriculture Land Preservation Foundation, Maryland Agricultural & Resource-Based Industry Development Corporation, and toured Carroll and Baltimore counties in the spring with the Maryland Agricultural Commission. In addition, the board expanded their membership with eight additional seats designated for young farmers

These matters, along with reports from each of the young farmers and agency representatives, keep the board current with young farmer challenges and opportunities and ensure the fulfillment of the board's statutory mission.

## GOVERNOR'S INTERGOVERNMENTAL COMMISSION FOR AGRICULTURE (GICA)

The Governor's Intergovernmental Commission for Agriculture was established on June 29, 2006 to "promote the economic profitability of agriculture in the State by ensuring that all appropriate State agencies work in a cooperative, coordinated manner with local government and industry groups in planning, implementing, overseeing and evaluating intergovernmental initiatives related to agricultural affairs of the State."

The commission met once during FY 2016, on Dec. 14, 2015. The commission focused on the new FDA Food Safety Modernization Act (FSMA), Good Agriculture Practices, aquaculture, agritourism, and value-added agriculture. The meeting agenda included:

- Food Safety Modernization Act (FSMA) presentation by the department's Food Quality Assurance Program.

- An update on food safety programs from the Maryland Department of Health and Mental Hygiene.
- "Maryland's Story in Oyster Aquaculture, A Good Start and a Promising Future" by Delegate Tony O'Donnell
- A presentation on agritourism and value-added agriculture from Grow & Fortify founder, Kevin Atticks

The commission has also discussed its plan for FY 2017, which includes revisiting the definition of agritourism as a state-wide definition. There was also discussion to invite the Maryland Fire Marshall to discuss their guidelines for wedding barns and other water sprinkler requirements for value-added events and venues. Lastly, the commission also discussed forestry and the importance of the industry throughout the state.

## USDA/NATIONAL AGRICULTURAL STATISTIC SERVICE (NASS)

The Maryland Field office of the U.S. Department of Agriculture's National Agricultural Statistics Service (NASS) – which has offices in the Maryland Department of Agriculture building in Annapolis – 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 the state's farmers, and to direct program research and development. NASS has a rich history of collecting and distributing agricultural statistics, dating back more than 150 years. Each year the employees of NASS conduct hundreds of surveys and prepare reports that impact every facet of Maryland's agricultural community.

Its 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 who take valuable time to respond to NASS surveys.

Agriculture generated more than \$2.2 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, milk and dairy products. The Maryland Field office of NASS estimated there were 12,200 farms in 2015 with an average size of 166 acres. Total land in farms in Maryland was 2.02 million acres, one third of the state's entire land area.



## 2016 Annual Report | Office of Marketing, Animal Industries, and Consumer Services

### MARKETING AND DEVELOPMENT

The goal of the Maryland Department of Agriculture's Marketing and Development Section is to develop markets for Maryland agriculture and to connect producers to markets. Through this economic development and promotion activity, the department helps develop a profitable future for Maryland agriculture.

#### MARYLAND'S BEST

From in-store promotions of Maryland-grown apples and watermelons, to advertising, media events and press releases, the department's marketing projects continued to build demand and connect farmers with markets for their products during FY 2016. A 2015 analysis of MDA's Marketing program, Maryland's Best, showed the effort increasing farm sales by \$7.6 million over 5 years. For every \$1 spent in advertising and promotions in Maryland's Best, \$15 is returned to the Maryland farmer and state economy.

Primarily funded by the U.S. Department of Agriculture Specialty Crop Block Grant Program, the department's Maryland's Best program 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 agritourism sectors. Advertising and media placements targeted food buyers and promoted Maryland consumers' preference for local and the local supply of Maryland produce. More than three million consumers received promotional messages from the department during the year through radio, print and online advertising. Press releases promoting Maryland agriculture products were distributed to more than 400 media outlets.

For consumers, the Maryland's Best website ([www.marylandsbest.net](http://www.marylandsbest.net)) is the primary source of information

about local farm stands, farmers markets and Maryland farms. The website includes contact farm information, websites, directions, and video interviews with about 1,000 farmers, wineries and small food processors. During FY 2016, there were 92,960 visits to the site by 78,168 users.

Governor Larry Hogan supported the department's Buy Local program and Maryland's Best by kicking off the 2016 Buy Local Challenge Week with the seventh annual Buy Local Cookout at Government House in July. The Governor encouraged Marylanders to seek out Maryland-grown food during the event, which included farmers, food writers, chefs, grocery store representatives and the media.

Marketing staff conducted meetings with produce buyers and marketing professionals from many of the major grocery store chains to increase Maryland grown produce sales and develop in-store promotional materials using the Maryland's Best logo. Staff took buyers from major grocery store chains on tours of Maryland farms, developing business relationships between farmers and retailers. The department's annual Buyer-Grower meeting, connecting farmers and small food processors directly with buyers, had more than 60 farms and 300 buyers registered in FY 2016.

Also in FY 2016, the Maryland's Best Ice Cream Trail promoted the dairy sector in the state and encourage buyers to visit eight dairy farms selling ice cream directly to consumers. This project was featured in articles by The Washington Post and Baltimore Sun, to name a few. Over 200 participants completed the Ice Cream Trail in FY 2016 and submitted their passports for a chance to be named the 2016 Maryland's Best Ice Cream Trailblazer.

The inaugural Maryland's Best Restaurant Promotion was launched in FY 2016 and aimed to increase sales of Maryland grown fruits and vegetables, while identifying and promoting

restaurants committed to sourcing from Maryland farmers. Over 20 restaurants from eight Maryland counties and Baltimore City participated in the promotion and featured the Maryland's Best - Fresh, Local logo on their menus and entrance windows to show their support for Maryland farmers.

### **MARYLAND FARM TO SCHOOL PROGRAM**

Governor Larry Hogan officially designated September 14-18, 2015 as Maryland Homegrown School Lunch Week, a time when schools across the state help students understand that their food comes from farms.

"It is essential that students learn and understand where our food comes from, and how vital our agriculture industry is to Maryland's economy and our quality of life," said Governor Hogan. "We are extremely encouraged that nearly all 24 of our public school systems and some private schools are participating in this essential educational program."

To kick off the week, educators, farmers, and federal, state and local officials met today with about 400 students from Preston Elementary School in Caroline County, which has creatively observed Maryland Homegrown School Lunch Week since it began in 2008.

During an all-school assembly, students heard agriculture and education officials talk about the connection between farms and food. Speakers included Agriculture Secretary Joe Bartenfelder; Caroline County School Superintendent John D. Ewald; and Preston Elementary School Principal Dr. Lois McCoy.

Officials then joined students for a lunch featuring local agricultural products. The menu included bison burgers (SB Farms, Hurlock); chicken taco salad (Perdue Farms, Salisbury); watermelon slices (Harris Farms, Preston); corn on the cob with cilantro butter (Taylor's Produce, Preston); and peach cobbler (Blades Orchard, Preston). Students also got to visit tasting stations that featured: watermelon gazpacho (Harris Farms, Preston and Clayton Farms, Denton); Maryland crab soup (Blough's Seafood, Denton and Clayton Farms, Denton); and cantaloupe soup (Clayton Farms, Denton).

Officials then toured two Caroline County farms (Outstanding Dreams Alpaca Farm and Faulkner Branch) while students visited the Maryland Agricultural Education Foundation Ag Showcase. Miss Caroline County Farm Bureau Julie Cesarini, Mar-Del Watermelon Queen Courtney Hastings and Apple Annie also visited with students during the day.

Officials ended the festivities with a tour of the Chesapeake Culinary Center in Denton (Caroline County) and its grand opening of a new restaurant kitchen at the center.

This year, other county schools are creatively incorporating local protein and developing infrastructure for local farmers into the 2015 Homegrown School Lunch Week. Eight school systems indicated they "buy local when feasible" throughout the school year – up from zero when the program started in 2008.

### **SCHOOL COLLATERAL MATERIALS**

The Farm to School program distributed more than 700 posters, 23,000 window clings, 156,000 stickers, and 170,250 Farmer trading cards among the 24 schools systems. The program also distributed 200 signs that said, "This Farm Feeds Schools" to producers who provided products to the schools during Maryland Homegrown School Lunch Week. A Maryland Farm to School brochure was also created with new seasonality charts for Maryland specialty crops for schools, parents and the public. The Farmer-Specialty Crop was piloted last year and it was distributed statewide this year. The card featured a specialty crop product on one-side and the farmer on the other side. The producer on the card sold Maryland-grown product to the particular school system.

### **MID-ATLANTIC FARM-BASED EDUCATORS NETWORK**

A partnership among the Maryland Agricultural Education Foundation, the Maryland Department of Agriculture, and the Mid-Atlantic Farm-Based Educators was awarded a Chesapeake Bay Trust Grant for FY 2014-16 for a collaborative curriculum project that combines the talents of classroom teachers and farm-based educators to create farm-based learning experiences for students grades 3-8. The partnership will develop a series of 12 units/lessons for use on Maryland farms and agricultural education sites that host students grades 3-8. Using Next Generation Science Standards as the framework to develop integrated, interdisciplinary on-farm educational curricula, the partnership hopes to provide Maryland farm-based educators, classroom teachers, and non-formal educators in environmental and social studies areas, a high quality curriculum product.

### **FARMERS MARKET PROGRAMS**

The goal of the Farmers Market programs within the department's Marketing and Agribusiness Section is to help farmers and farmers market managers connect to the general public and consumers who want to purchase Maryland products. Through this economic development and promotion activity, the department helps develop a

sustainable future for Maryland's diversified agricultural products.

### **FARMERS MARKET NUTRITION PROGRAM (FNMP)**

The Farmers Market Nutrition Program is a USDA Funded Nutrition Grant Program that is administered by the Maryland Department of Agriculture, in conjunction with the Maryland Department of Health and Mental Hygiene and the Maryland Department of Aging. The USDA gives grants to state agencies to provide checks to low-income participants. The two federal programs funded are the Women, Infants and Children and Seniors Farmers Market Nutrition Program. Checks can be used to buy fresh fruits, vegetables, and cut herbs (and honey for seniors only) at Maryland Farmers Markets. The program runs every year from June 1 through Nov 30. In Maryland, about 400 farmers participate annually.

The Farmers Market Nutrition Program helps expand access for low-income Marylanders to be able to purchase fresh local produce at their local farmers markets. In addition to their economic importance, farmers markets are popular community meeting places where residents catch up with each other and purchase fresh, nutritious, locally produced fruits, vegetables, baked goods, and other food products. In Maryland, all of the 140 recognized markets have authorized farmers present who participate in the Farmers Market Nutrition Program. In 2015, authorized farmers received more than \$440,000 from the two programs. Final numbers for the 2016 program will be available at the end of December 2016.

### **FARMERS MARKET NUTRITION PROGRAM – FARMERS MARKET FINDER MOBILE SITE**

Participants in the Women, Infants and Children Farmers Market Nutrition Program, Senior Farmers Market Nutrition Program and Fruit & Vegetable Check Program are able to find farmers markets near them on the new Farmers Market Finder mobile site. Debuted in 2015, and continuing into its second season in 2016, the purpose of the mobile site is to encourage low income residents to use their checks at farmers markets and increase overall check redemption. Maryland was the first state to pilot this program.

Studies show that growing numbers of low-income Americans who may not be able to afford computers and in-home internet access are relying on smart phones as their primary means of reaching the internet. While the Farmers Market Nutrition Program programs provide the opportunity for low income participants to spend their federal assistance dollars buying produce at farmers markets, participants need to know how to find the farmers markets that accept their

checks. The department sees this as a low cost effective way to provide them with information and to encourage them to use their checks at farmers markets. These checks provide the participants with access to fresh produce and provide local farmers with additional income at the farmers markets, so we encourage their use in any way we can.

The Farmers Market Finder site also reminds users how to use their checks at farmers market, reminds them what foods are eligible for purchase, and provides links to videos and photos of farmers who participate in the program. The site also has recipes for fresh produce dishes and provides farmers market shopping tips. Participants can also opt to receive mobile text messages every month from the site to remind them to use their checks before they expire. Thousands of participants use the site every year.

### **FARMERS MARKET DIRECTORY**

Over 60,000 printed Maryland Farmers Market Directories are distributed to the general public every year through tourism offices, libraries, farmers markets, senior clinics, welcome centers and other facilities. This directory includes all the farmers markets recognized by the department in all 23 counties and Baltimore city. The online version is also available on the department's website and the Maryland's Best website.

### **FARMERS MARKETS PRICE REPORTING PROGRAM**

The Maryland Department of Agriculture, in partnership with the U.S. Department of Agriculture Agricultural Marketing Service, started a pilot project in 2015 that reports prices of products sold at five farmers markets in the state. Continuing into its second year of use in 2016, the farmers markets price reporting program gives a snapshot of retail prices of local produce and other food products for sale at various farmers markets around the region. The information gleaned through this program may be used by the USDA Risk Management Agency as it improves crop insurance products for produce farmers, as currently there is little reliable data on sale prices for produce sold through retail farmers markets. Currently, farmers markets managers at markets in Baltimore City, Anne Arundel County, Prince George's County and Caroline County gather information for weekly reports. Other markets throughout the state will be added as the pilot program progresses. Farmers whose prices are included are not identified and their information is confidential. Each market provides their product prices, and these are averaged together to reflect the average price of products around the state. The price reports are available weekly on the Maryland's Best website, and are often also reported in the weekly

regional agricultural newspapers, Lancaster Farming and The Delmarva Farmer.

## **FMNP & FARMERS MARKET PROGRAMS – MARKETING AND PROMOTION INITIATIVES**

**Maryland Farmers Market Survey** - The survey was completed by 29 percent of the 141 farmers markets in the state at the end of the 2015 season. From those returns, an analysis of the average was developed and used to create the total estimate. This confidential survey is the first completed in Maryland. Results show that there were \$51 million in farmers markets sales in Maryland, with more than 2.3 million consumers visiting the markets last year.

**New FMNP Logo.** MDA used our featured MD's Best Fresh Local agricultural brand logo to now include a version promoting MD's Best Fresh Local FMNP

**Farmers Market Cookbook.** WIC DHMH collaborates with MDA and prints a MD WIC Farmers Market Cookbook to hand out to participants.

**Billboards.** Since Baltimore City/County has a heavy distribution of the FMNP checks, the 3 billboard ads were placed strategically around that area to correspond with nearby farmers markets who have farmers that accept the checks. They ran for 4 weeks total (Aug 1st - 28th), and also dovetailed nicely with Farmers Market Week which was the first week in August. Clear Channel Billboards reported that they received over 232,000 "in market" views weekly.

**Bus Ads.** Since Prince Georges and Montgomery Counties have a heavy distribution of the checks, the public transportation bus ads were put on 200 buses running in that area. They ran for 4 weeks total (Aug 1st - 28th), and also dovetailed nicely with Farmers Market Week which was the first week in August. The Company reported that they received 2,231,100 circs. (People views) per 4-weeks and 557,775 circs. (People views) per 1-week.

**Promotional Giveaways.** 'Squeeze Carrot' stress relievers were created with the MDA MD's Best Fresh Local FMNP logo, to be given away as reminders to participants to use their checks. These are very popular with children and seniors alike!

**"Wash Your Produce" Campaign.** A joint effort between MDA and UMD Extension to educate farmers markets customers on the importance of washing the produce they buy. Colorful signs were placed around the markets participating in the program, and customers were given the peeler/scrub brush with the FMNP Farmers Market Finder

Mobile Site URL printed on it, to remind them to access the site for all the resources provided for FMNP participants, to use their checks, and to wash their fruits & veggies.

**Social Media.** various social media posts promoting FMNP, Farmers Markets, and Farmers Market Week.

## **INTERNATIONAL MARKETING**

MDA's international marketing program represents Maryland's farmers, breeders, processed food companies and nurseries in Southern United States Trade Association activities. The department is a member of the trade association through its membership in the Southern Association of State Departments of Agriculture.

The trade association's activities for Maryland in FY 2016 included food trade shows in the United Arab Emirates, South Korea as well as a trade mission to China. The department is also a member of the United States Livestock and Genetics Export Association. With funding from this organization, the department promoted the Maryland horse industry in Sweden. Like Maryland, Sweden has a long tradition of competitive racing as well as leisure activities and sports involving horses.

Secretary Bartenfelder led a Maryland trade delegation to the Havana International Trade Fair in Cuba November 2015. Secretary Bartenfelder met with Cuban agriculture officials and supported Salisbury-based Perdue Farms' Grain and Oilseeds Division in its efforts to sell soybeans and crushed soybeans to Cuba. The department also participated in USDA-led trade mission to Chile and Peru to explore new markets for Maryland products. This has led to one inbound trade mission and a video conference between potential importers and exporters in Peru. These activities resulted in sales of approximately \$25.7 million from Maryland.

## **ACRES AND CROP INSURANCE PROMOTION**

The department administers two federally funded programs: Crop insurance promotion and the Maryland Agricultural Conflict Resolution Service (ACRES), an agricultural mediation program.

Crop insurance promotion is funded with \$371,000 from the USDA Risk Management Agency. Through press releases, newsletters, presentations and advertisements in agricultural media, the department has increased participation of Maryland farmers in federal crop insurance programs to 6,984 farmers in FY 2015, up from 5,240 in FY 2007. Farmer investment in crop insurance helps stabilize the Maryland

agriculture economy as weather and market volatility make farming a challenging sector. In FY 2015, more than \$364 million of agricultural production is insured on more than 930,000 acres.

The ACRoS program, funded by USDA, helps keep farmers out of court by providing voluntary mediation services. As more urbanites move to rural areas, conflicts are expected to grow. The number of requests for mediation grew from eight requests in 2005 to an average of 24 per year. Eighty percent of mediations conducted result in a solution that both parties agree with. Additionally, farmers and others who do not use mediation and have agricultural-related disputes are provided assistance in developing solutions that effectively eliminate or manage conflict.

The Maryland Right to Farm statutes help ensure that farmers have the opportunity to respond to complaints from neighbors and others. Many counties have ordinances that support the Right to Farm statute. These ordinances contain clauses that provide for real estate notices and disclosures to alert people moving next to farms of the potential impacts that the farm may have such as noise, odors and dust, etc.

### **SPAY AND NEUTER GRANTS PROGRAM**

At the beginning of the fiscal year, 30 applications, submitted for the FY16 cycle were under review by the Advisory Board. In October 2016, 19 were recommended to the Secretary and approved by the Secretary for funding, 14 of which focus

on pets (two of which also included equipment for clinic establishment or expansion) and five focus on feral cats. These projects (which are 12 or 18 months in duration) occur in 14 counties with a combined goal of altering 8,280 animals. The combined budgets for the FY16 projects are \$590,627.93.

In January 2016 a Request for Proposals (RFP) was released soliciting application for the FY17 cycle. Of the 36 submissions received and reviewed, 27 were recommended to the Secretary. By the close of the fiscal year, 26 of the 27 proposed projects were approved and initiated. These consisted of 15 pet-focused projects, 10 feral cats –focused projects and one capital expense project to help establish a new low cost clinic in Cecil Co. These projects cover 17 counties throughout the state, with a combined goal of altering 13,000 animals with a combined budget of \$812,809.07. As of the close of the fiscal year, a total of 9,728 animals were altered under the Program.

During the fiscal year the Program also held eight public meetings, developed new and improved tools (such as an online Program project map and an unaltered pet estimation tool), applications (including a new application just for capital expense requests) and guidance (including application-specific guidance for each application category, examples of business plans, marketing plans, and information pertinent to mobile clinic proposals). The Program continued to collect quarterly shelter data and posted quarterly reports on the Program webpage.

## ANIMAL HEALTH & DIAGNOSTIC LABS

### ANIMAL HEALTH PROGRAM

The MDA Animal Health Program prevents and controls infectious and contagious diseases in Maryland livestock and poultry with particular emphasis on those diseases that threaten the public health, endanger food supplies or threaten the economic security of the animal industries. Staff members work closely with partners in the animal industries, local, state and federal governments and the public to ensure an efficient team effort for disease prevention, detection and control. The Animal Health Program consists of three subprograms, including the Animal Health Headquarters and Administration with eight full time staff, the Field Operations with seven full time and two part time staff and the Diagnostic Laboratory System with 14 full time staff.

In addition to routine or scheduled work, the Animal Health Program also responds to all animal emergencies under the State Emergency Operations Plan, Emergency Support Functions 6 and 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 assisting with feed provisions or managing pet sheltering operations in a natural disaster. The program works closely with the Maryland Emergency Management Agency (MEMA) and the majority of Animal Health personnel are emergency essential employees due to the critical nature of animal emergency response.

MDA has a small but important regulatory role in protecting and promoting animal welfare that is limited to livestock at auction markets and certain aspects of animal transport and exhibition. MDA frequently assists local animal control agencies and other agencies to protect animal welfare through field consultation, training, investigative support, and diagnostic evaluations of affected animals.

### PROGRAM OPERATIONS

Regulatory and outreach activities are designed to help support compliance with animal health regulations and other efforts to promote animal health, public health and agricultural productivity.

**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 disease testing, and be accompanied by a Certificate of Veterinary Inspection.

Animal Health staff processed certificates of movement for 59,385 livestock animals, including horses, in FY 2016, a notable increase of 10% percent from movement in FY 2015 (53,788).

### **Animal Exhibitions and Non-commercial Herds and Flocks.**

Animal Health staff performed 35 inspections of exhibitions (fairs and shows) and processed 10,565 exhibition health certificates in FY 2016, up 15% from FY 2015 (9,113). The field inspection staff, augmented by other MDA program staff, federal partners, 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 and education efforts, particularly for zoonotic diseases affecting humans and animals, continued throughout the year.

During FY 2016, Animal Health staff continued outreach, inspection and training in the noncommercial poultry sector, as this sector continues to increase in size and disease risk due to the popularity of “Backyard” chicken flocks and local food sourcing, stimulating growth in small commercial meat and egg production. Internet sales of poultry continue to grow, and the Animal Health program began in earnest identifying, inspecting and regulating small flocks selling over the internet to improve sanitation and disease traceability, and to bring flocks into compliance with existing State regulations and interstate movement requirements to other states. Maryland continues to have a large import and export market of poultry. Export out of the state in 2015 was 3,031,163 live poultry or hatching eggs, and import into Maryland totaled 264,761,927. The majority of poultry coming into the state stocks the large broiler (meat) industry located on the Eastern Shore of Maryland, with egg-type chickens being the most prevalent backyard/small flock poultry imported.

Animal Health certifies individuals in poultry sampling techniques for Salmonella pullorum and avian influenza as part of the Poultry Testing Agent program, allowing them to provide low-cost services to owners and producers who wish to exhibit or sell birds in Maryland or other states. Animal Health held six trainings in FY 2016, for a total of 83 MD Authorized Poultry Testing Agents.

**Livestock and Poultry Auctions and Dealers.** During FY 2016, Animal Health staff inspected 220 commercial livestock auctions held at the five USDA/MDA “Approved Livestock

Auctions” in Maryland. During the inspections, animals are observed for signs of infectious or contagious disease, including foreign animal diseases, and for compliance with welfare, identification and other market regulations. Disease surveillance is conducted for diseases of concern such as avian or swine influenza. No major violations of market regulations and no avian or swine influenza or other diseases of significance were detected in livestock or poultry at auction markets in FY 2016. Twenty three persons with Livestock Dealer Licenses in FY15 opted to not renew their licenses in FY16. The remaining 20 licensed livestock dealers were inspected with an emphasis on record-keeping compliance checks and education regarding the new Animal Disease Traceability regulations.

**Biologics.** The Animal Health Program evaluated 53 commercial animal biological products, mostly vaccines, and issued authorization letters to pharmaceutical companies, distributors, veterinarians or researchers allowing them to import, manufacture, market, distribute or use the biologic agent in Maryland.

**Contagious Equine Metritis (CEM) Import Quarantine Station.** MDA operates one USDA CEM quarantine stations in partnership with a private business. 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. CEM is a disease that is common around the world but has been eradicated in the United States. MDA issued 169 import permits through the CEM program in FY 2016, an increase of 2% from FY 2015 activity (165), consistent with a gradual increase in equine imports over the past 5 years since the low in 2010 of 109 annual import permits.

**Animal Disease Traceability (ADT) Program.** All five markets throughout the State continued to function as approved “Livestock Tagging Stations” under USDA and MDA authority, allowing them to provide tagging and recordkeeping services to livestock producers at the market, facilitating interstate movement and official identification of Maryland animals. Official identification is usually an ear tag, and tag distributors are required to maintain records of tag issuance. Outreach to producers, markets, veterinarians and Extension continued thru FY16 to increase compliance with ADT requirements for animals moving interstate to have “official identification”. The eventual goal of ADT 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. Twenty (20) trace back tests for cattle, swine and poultry in FY 2016 indicated that Maryland can meet the 24-48 hour proposed federal standard for

tracing individual animals. MDA uses the federal Surveillance Collaboration Services (SCS) CORE ONE database, installed at MDA headquarters in FY 2012, to maintain identification data. This enables tracing of many animals rapidly when necessary in a disease outbreak investigation. The Core One system is compatible with systems in use by other states and will better enable rapid sharing of data between states during a disease event. While identifying animals of concern is a priority, an equally important priority is identifying those animals, farms and facilities which are not involved in a disease investigation so they can maintain normal commerce with little or no delay, minimizing economic losses and business disruptions.

Premise registration is one means to improve the ability to trace animals. To date, property owners and operators with livestock have registered 7,243 premises in Maryland. Livestock premise registration is increasing with increasing enforcement activities by USDA. Under Maryland law, most poultry premises must be registered with MDA. In the event of disease outbreaks, the database allows staff to quickly identify nearby premises, test birds and provide appropriate information to producers. MDA staff aggressively registers poultry premises as they are encountered. Some local jurisdictions require MDA registration as part of the local approval process for backyard flocks. To date, 7,340 poultry premises are registered under the state program, with 3,225 new premises registered in FY 2016, a 66 percent increase from FY 2015 (4,849). This increase is a likely result of more awareness of the requirement due to the threat of Highly Pathogenic Avian Influenza and subsequent outreach efforts.

A second major means to improve traceability of animals is requiring animals to be tagged with traceable identification tags, or “official identification tags.” Most cattle are now, as of February 2013, required to have official tags to move interstate as part of the federal ADT rule. To implement this requirement, Animal Health conducted outreach and education to producers, market operators and veterinarians throughout the state. Animal Health has distributed 32,300 tags in FY16, for a total of 85,700 official identification tags to producers and veterinarians free of charge, funded by the federal ADT Cooperative Agreement.

## EMERGENCY RESPONSE READINESS

The Animal Health program maintains a robust capacity for emergency response. During FY 2016, Animal Health staff continued to work closely with the poultry industry and State and Federal agencies to prevent and prepare for a Highly Pathogenic Avian Influenza (HPAI) outbreak, threatened due to the presence of the virus in 233 poultry flocks in the

United States beginning December 2014. Through continued training, MDA personnel are assigned and trained to respond to all agricultural emergencies, including animal emergencies. Staff is trained in and routinely uses the Incident Command System and the Web EOC system in emergency events under the departmental Emergency Operations and Incident Command System/Unified Command Plan. In addition, Animal Health personnel collaborate with the Maryland 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 about 230 veterinarians and technicians willing to support emergency operations when activated.

Activities in FY16 for emergency disease response readiness included a joint Maryland-Delaware-USDA, Delmarva Poultry Industry and University of Maryland Extension Initial Incident Command Response for HPAI; emergency poultry depopulation practice; to hone skills with specialized poultry depopulation equipment; decontamination exercises with local emergency responders; and recruitment and training of additional contract personnel for surge capacity to respond to HPAI. The Animal Health 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 State Emergency Poultry Disease Management Committee and Delmarva Avian Influenza Task Force. MDA also prepared and distributed education and outreach materials in collaboration with University of Maryland Extension for poultry flock owners and conducted joint information and outreach sessions with other State agencies and poultry growers regarding HPAI emergency preparedness and prevention.

FY 2016 was the fifth year of MDA participation in the Mid Atlantic Secure Milk Supply (SMS) initiative, a multistate continuity of business planning effort for the dairy industry in the event of a foot and mouth disease (FMD) outbreak. The voluntary initiative is partially funded by USDA with significant contributions by the industry and participating states. This coalition includes twelve Eastern states (DE, GA, NC, NJ, NY, MD, OH, PA, SC, TN, VA and WV) as full members. The greater the cooperation among states to promote biosecurity procedures on dairy farms, the greater the ability of the dairy industry to ship milk across state borders with minimal delay or disruption during an FMD outbreak which results in less market disruptions and less financial hardship

to producers, processors and haulers. The primary FY 2016 Secure Milk Supply activities were as follows:

- Pre-certification written plans, including SOPs, training and consultation for: Teabow Farm (MD), Fair Hill Farm (MD) and the Laurel Processing Plant (MD);
- Editing and revisions of the Mid-Atlantic Secure Milk Supply (SMS) Plan to incorporate Line of Separation concept, Transfer Hose valve procedures, hauler and plant sections and National SMS Biosecurity Best practices.
- Production of training materials for Maryland farms and Processing Plants, for use regionally for consistent training across states.

## DISEASE SURVEILLANCE AND RESPONSE

The Animal Health Program oversees or conducts ongoing routine, active or enhanced surveillance for several livestock and poultry diseases, including foreign animal diseases. The Program has one federal-state Cooperative Agreement for disease control programs for multiple livestock and poultry species which fund much of the enhanced surveillance and outreach and education. 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.

**Avian Influenza.** The Program conducts enhanced surveillance for avian influenza and other high consequence diseases of poultry in commercial and non-commercial flocks with federal funding, and maintains readiness to respond to avian influenza outbreaks in the state or Delmarva region. With the continued increased threat of a Highly Pathogenic strain of Avian Influenza in the United States in FY 2016, MDA continued enhanced surveillance at auction markets, continued requirements for Avian Influenza testing of poultry entering exhibitions within 10 days of entry, and continued required testing of poultry entering into Maryland within 10 days of entry. MDA performed 7,168 tests in FY 2016; no live virus was detected in this testing.

**Foreign Animal Disease.** No foreign animal disease (FAD) was detected in Maryland during FY 2016, and five (5) foreign animal disease investigations were conducted. Four FAD trainings for Maryland Accredited private practice veterinarians were conducted as part of the CORE training for new Maryland Accredited veterinarians. MDA has three qualified Foreign Animal Disease Diagnosticians or Practitioners on staff.

**Tuberculosis.** Maryland remains free of bovine tuberculosis (BTB); nevertheless, the ongoing reemergence of BTB in cattle and white tailed deer elsewhere in the United States during the past several years is of concern. Animal Health staff continued refresher training for BTB testing for Accredited Veterinarians in response to an identified testing concern. Five (5) BTB responders were identified and retested in FY 2016 with all five being determined healthy.

**Equine Herpes Virus.** The neurologic strain of Equine Herpes Virus (EHV) is a contagious and potentially fatal disease of horses that can result in racetrack quarantines and disruption of the horse industry overall; therefore the Program has developed the ability to rapidly test for this disease of high concern to prevent spread of the disease. Thirty-four EHV tests were run at MDA Animal Health labs in FY 2016 on horses with neurologic symptoms suspect of EHV. Two of the horses tested positive, both rescue horses on the same farm. Neither animal recovered; both horses were humanely euthanized.

Other livestock and poultry diseases and issues that continue to be part of MDA’s surveillance programs include: Brucellosis in cattle, goats and swine; pseudorabies and Swine Enteric Corona DiseaseVirus (SECDv) in swine; bovine spongiform encephalopathy (aka BSE or mad cow disease) in cattle; Rabies in all livestock species; illegal garbage feeding to swine and stray swine that can become feral; Salmonella pullorum and exotic Newcastle disease in poultry; and scrapie in sheep and goats.

**Quarantines.** As a result of disease surveillance and response efforts in FY 2016, twenty-five (25) quarantines (“hold orders”) were placed and fifteen (15) quarantines were released on farms for: suspect (negative) tuberculosis in cattle and goat; suspect (negative) equine herpes virus and neurologic syndrome in horses; rabies or rabies suspect in cattle and horses; suspect (negative) brucellosis in swine; suspect (negative) Contagious Equine Metritis in a horse;

## ANIMAL HEALTH PROGRAM FY 2016 – SELECTED PARAMETERS: 2016

Parameter	Total Number
Animals Certified to Move In, Out or Within Maryland	59,385
Avian/Poultry Export	3,031,163
Avian/Poultry Import	264,761,927
Biological Authorizations	53
CEM Permits (Quarantines)	169
Dealer Inspections	65
Equine Health Certificate – Export	6,830
Equine Health Certificate – Import	4,961
Exhibition Inspections	35
Export Certificates (Non Equine)	15,895
Foreign Animal Disease Investigations	5
Import Certificates (Non Equine)	31,699
Inspections and Investigations – Total Combined	382
Intrastate Certificates Total (Show)	10,565
Livestock Dealer Licenses	20
Market Inspections	220
Quarantines Issued for Disease Investigations	25
Swine Permits Issued (Quarantines)	318

low path avian influenza suspect (negative), infectious laryngotracheitis, infectious bronchitis virus, Mycoplasma gallisepticum and Mycoplasma synoviae in poultry; Swine Enteric Corona Disease Virus (SECDV) in swine; suspect (negative) vesicular stomatitis in horses; and scrapie in sheep. 318 routine 30-day quarantines for swine entering the state were placed through the Swine Permit process. In addition, there were 169 quarantine actions associated with horses moving through the CEM Quarantine Import Stations in Maryland.

A majority of the quarantines and actions were in response to sick birds identified on small commercial or backyard flocks (13 cases). The Animal Health Program works diligently to control the spread of poultry diseases from farm to farm by placing quarantines, determining the cause of disease, enforcing control measures that include sanitation and biosecurity, providing education and outreach regarding contagious diseases, assisting with depopulation where indicated, and referring owners/producers to Extension or private veterinarians for follow-up treatment to control and prevent disease within the flock.

**Other Animal Health Program Activities.** Other MDA Animal Health program activities include: the licensing of livestock markets and dealers, accreditation of federal-state veterinarians, and active participation in the National Poultry Improvement Plan which provides standard monitoring and certification programs for commercial poultry for significant diseases including avian influenza and salmonella, and for hatchery sanitation.

## LABORATORY SYSTEM MISSIONS AND STAFF

The Animal Health Laboratory System supports the animal and public health regulatory and emergency response missions of MDA, other state agencies, and local and federal governments. It assists veterinarians, livestock and poultry producers, and the equine industry in maintaining healthy herds and flocks. The regulatory activities of other state, federal and local governmental entities involved in animal health depend on the surveillance and compliance testing carried out in these laboratories. Examples include the diagnosis of certain high consequence pathogens to support 1) national disease control programs of the USDA, e.g. avian influenza in poultry, tuberculosis in cattle, and brucellosis in swine; 2) the FDA Center for Veterinary Medicine initiative to promote animal and human health by investigating potential biologic contaminants in animal feeds, animal products, or produce; 3) the Department of Health and Mental Hygiene in diagnosing animal rabies and other animal diseases of

public health significance; and 4) the Department of Natural Resources disease surveillance programs of wildlife diseases of concern such as chronic wasting disease in deer and brucellosis in marine mammals. Additionally, the system provides post mortem and related diagnostic support to animal control agencies for certain matters involving cruelty and neglect.

To accomplish these missions, 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. To ensure full continuity of services on a day to day basis as well as providing surge capacity in the event of a disease outbreak, the laboratory scientists in the system are cross trained so that a minimum of three are able to perform each critical diagnostic test.

Both Animal Health diagnostic laboratories are accredited by the American Association of Laboratory Accreditation (A2LA), a rigorous process that promotes and ensures quality and reliability of test results by requiring strict maintenance to standard operating procedures, internal audits, and best practices. Both laboratories are members of the National Animal Health Laboratory Network (NAHLN), a network led by the National Veterinary Services Laboratory (NVSL) in Ames, Iowa. NAHLN laboratories must maintain strict adherence to best practices and standard procedures, and scientists must pass proficiency testing set forth by the NVSL. The Salisbury Laboratory is a National Poultry Improvement Plan (NPIP) laboratory, therefore meeting requirements of this national program for specific poultry disease testing. In addition, both laboratories serve as Sentinel Laboratories for the State of Maryland, providing zoonotic disease testing services in collaboration with the state Health department.

The Laboratory System also provides educational and training opportunities to a diverse group of students, including students of the Virginia-Maryland Regional College of Veterinary Medicine and other U.S. veterinary schools, the University of Maryland, Salisbury University, other U.S. college and universities, veterinary pathology residents from Johns Hopkins University and the Armed Forces Institute of Pathology, poultry industry veterinarians and high school interns. Students in the laboratory system are mentored by the directors and members of the staff.

Within the broad system missions, each laboratory has specific geographic and technical missions. The primary mission of the Frederick Laboratory focuses on food animal livestock and horses. Secondary missions include diagnostics for high

consequence diseases of poultry, to include regional service and back-up for the poultry laboratory at Salisbury during an emergency. The Frederick laboratory primarily serves constituents on the western shore of the state. Four laboratory scientists with the aid of two administrative staff perform diagnostic activities in molecular biology, bacteriology, serology, parasitology, virology and mycology as well as important duties of supervision, quality assurance, safety assurance and operational support.

The Frederick Laboratory director is a veterinary pathologist with responsibility for all activities of the laboratory. The director also serves as the lead diagnostician, conducting post mortem examination of animals and interpreting results generated by the science staff. The laboratory capability includes rabies, brucellosis, contagious equine metritis, equine herpes virus, equine infectious anemia, Lyme disease, Johne’s disease, avian influenza and exotic Newcastle disease. Equine Herpes Virus testing capability was developed to be able to rapidly detect and control the spread of this disease which is of significant concern to the horse racing industry. Avian influenza testing of poultry was added to the Frederick mission in FY 2011 to provide the agency with additional equipment and trained staff to support that activity in the event of a poultry health emergency requiring a substantial surge in testing capability at the Salisbury Laboratory.

The primary mission of the Salisbury Laboratory focuses on infectious diseases of poultry. Secondary missions include full service post mortem diagnostic support for certain diseases in other domestic animals of public health significance, support of disease and welfare investigations involving mammals, equine infectious anemia testing for horses and swine influenza testing. The Salisbury Laboratory primarily serves the commercial poultry industry of Delmarva and the Eastern Shore region of Maryland. The laboratory is served by four scientists, one technician and an administrative specialist performing diagnostic activities in molecular biology, bacteriology, serology, parasitological, virology and mycology as well as important duties of supervision, quality assurance, safety assurance and operational support.

The Salisbury Laboratory director is a board certified veterinary poultry pathologist with responsibility for all activities of the laboratory. The director also serves as the lead diagnostician, conducting post mortem examination of animals and interpreting results generated by technical staff. The facility has a large molecular diagnostic capability to assist the high volume of testing needed for the poultry industry, primarily used for the detection of avian influenza, Newcastle disease, infectious bronchitis virus, infectious

laryngotracheitis, Salmonella and mycoplasmal diseases. The facility has a close working relationship with the University of Delaware Poultry Diagnostic Laboratory. Together they operate a poultry health diagnostic network that seamlessly serves poultry producers of the Delmarva peninsula.

A summary of testing carried out in FY 2016 at MDA Animal Health diagnostic laboratories for regulatory or otherwise select significant diseases is provided below:

<b>Diagnostic Activity</b>	<b>Number</b>
Total Accessions	14,427
Total Tests	62,531
Mammalian Necropsy	242
Poultry Necropsies (flocks)	582
Avian Influenza	9,200
Brucellosis	1,594
Contagious Equine Metritis	2,178
Equine Herpes Virus (EHV-1)	34
Equine Infectious Anemia	11,271
Johne’s Disease in Cattle	2,405
Rabies	75
Salmonella Pullorum	2,171

## MARYLAND STATE BOARD OF VETERINARY MEDICAL EXAMINERS

The State Board of Veterinary Medical Examiners – often referred to as the vet board – sets the standards that veterinarians, registered veterinary technicians, and veterinary hospital owners must comply with. These standards are set by statutes adopted by the General Assembly or regulations adopted or amended by the board. The board 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 vet board 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 board. A Veterinary Technician Committee, which falls under the board’s jurisdiction, recommends changes to the laws and regulations governing registered veterinary technicians in the state.

The board is comprised of seven members appointed by the Governor to serve five-year terms. Five members are veterinarians, at least two of whom must be primarily large animal practitioners. The remaining two members are consumer advocates. With the appointment of board member Victoria Wright-Conner, the board is fully appointed.

The vet board staff consists of an executive director, a deputy director, an administrative specialist, office secretary, investigator, and two inspectors. At the beginning of 2015, the administrative staff was reduced by 33 percent. The board is in the process of recruiting an individual to fill this vacancy. The inspectors divide their time between the Board and the Maryland Horse Industry Board. The board also funds the work of a part-time Assistant Attorney General who works exclusively for the board and serves as its prosecutor.

The vet board is an active, voting member of the American Association of Veterinary State Boards, a non-profit organization that provides programs and services to veterinary boards to assist them in carrying out their statutory responsibilities for the public’s protection. In addition to sending a delegate annually to represent the state, the executive director participated on the association’s finance committee.

Fiscally, the board continues to reduce financial on Maryland and with the reduction in the registration fee for all

### SBVME SELECTED STATISTICS: 2016

Category	Quantity
New Vets	177
Current Registered Vets	2,806
New Complaints	70
New Hospital Licenses Issued	139
New Vet Techs	102
Number of Complaints Closed	60

veterinarians who registered during fiscal year 2017. The fee has been reduced from \$215 to \$110.

In an additional cost savings measure, the board will make the booklet containing all laws and regulations adopted by the board available on-line on its webpage. A physical copy of the booklet will be mailed to all new licensees.

Laws. Throughout the year, the board has worked closely with the MDA legislative staff to monitor any legislation that would have significant on the duties and responsibilities of the Board.

Continuing Education. The board continues to collaborate with the Maryland Veterinary Medical Association to offer continuing education at the association’s most widely attended event of the year. The continuing education focused on veterinary law and ethics and record-keeper, and was provided by a nationally recognized veterinarian and attorney.

## MARYLAND HORSE INDUSTRY BOARD

The Maryland Horse Industry Board (MHIB) consists of the Secretary of Agriculture or his designee and 11 members from a cross-section of the horse industry appointed by the governor to four-year terms. During FY 2016, the horse board operated with a full slate of board members, conducted 10 monthly board meetings, moved aggressively to institute improvements at major equine competition venues and completed its 18th year of operation.

Maryland law defines six statutory duties of the horse board. These duties are to:

- Promote the use and development of horses in Maryland;
- Support research related to equine health and related issues;
- Create public awareness of the value of equine activities as they relate to green space preservation;
- Develop and disseminate information concerning the equine industry;
- Advise the department regarding matters affecting the state's horse industry; and
- License and inspect commercial stables that solicit business from the public, either by giving lessons, boarding horses, renting them for activities such as trail and carriage rides, or offering them a rescue or sanctuary.

As the commodity board for the state's horse industry, the horse board develops projects to help spur the economic development of the entire equine industry and particularly to initiate marketing efforts to help grow the recreational riding sector. Key accomplishments of the horse board in FY 2016 are listed below.

**Licensing.** The Maryland Horse Industry Board licensed 778 stables in FY 2016. The number of licensed stables—an increase of 8 stables from the previous year—represents the largest number in horse board history. The increase is the result of an aggressive campaign to identify and bring into compliance stables that have not been complying with the law as well as provide licensing information to a number of new stables being established throughout Maryland. The horse board's Feed Assessment Fund maintained pace with previous years, showing a slight decrease due to late payments received after July 1, 2016.

**Improving Competition Venues.** The horse board moved forward with plans for improvements at equine competition venues in the Maryland horse park system. A study conducted by the Maryland Stadium Authority was published in September 2015 and identified two venues in need of major upgrades to comprise a world class system: the Fair Hill Natural Resources Management Area in Elkton as the major field event venue and the Prince George's Equestrian Center as the major show/expo complex. A third site to be studied as the cultural and education center has not yet been identified.

The horse board established a Fair Hill Task Force, chaired by board member Jay Griswold, to bring together the major equestrian entities at Fair Hill and to formulate short-term and long range goals.

A first major achievement was passage of a bill that allows Arabian horse racing at Fair Hill, which opens the door to increased sponsorship opportunities. The horse board then, in conjunction with Fair Hill International and the Maryland Stadium Authority, responded to a bid to bring a 4-Star three-day event competition, one of only seven in the world, to Fair Hill. This event would be a game changer for the industry and bring another equestrian event on par with the Preakness to Maryland.

Four other equestrian venues, two in Virginia and one each in North Carolina and Florida, are vying for the 4-Star. The winning bid is expected to be announced in Spring 2017. Even if Fair Hill is not successful in winning the bid, efforts are being made to improve the racecourse and grandstand as part of a plan to develop a national racing and training steeplechase center for the National Steeplechase Association, which is headquartered there.

Efforts are also under way to explore options to make improvements to the Prince George's Equestrian Center.

**Marketing.** The horse board continued implementation of its Strategic Marketing Plan. Key components include:

- Successful launch of **Horse Land at the Maryland State Fair.** In conjunction with a group of horse industry partners, an 11-day exhibit, designed to introduce new folks to horses, was introduced at the Maryland State Fair. Folks could pet horses, learn how to work around them, make stick horses and jump a miniature course, dress in jockey silks and ride a simulated racehorse

and take part in a myriad of interactive activities and demonstrations provided by 11 of our horse discovery centers. In addition, folks were introduced to farms and stables in their neighborhoods where they could learn to ride and learn more about horses. The exhibit drew 14,000 visitors and won an award as one of the year's top new educational exhibits in the International Association of Fairs and Expositions. There was also a 2-day horse festival in the infield of the racetrack featuring trick riding, musical dressage and polo.

- **Developing "Horses for Courses," a Horse School Curriculum.** The horse board continued its partnership with the Maryland Agricultural Education Foundation to develop a horse curriculum for grades 4-8 in the Maryland school system with support from the Maryland State Department of Education. The foundation's Peggy Eppig worked with a team of 10 stable operators throughout the year to write the curriculum. Completion of the first draft is due in the fall of 2016.
- **Second Maryland Horse History Trail established; Racing the Times premiers at EQUUS Film Festival in New York, Christmas Ranch movie made in Maryland; First Maryland EQUUS Film Festival.** The horse board's second horse history trail, "Hoofbeats Through History: The Southern Maryland Historic Horse Trail" debuted with a well-developed website and brochure highlighting 17 equine heritage sites in St. Mary's, Charles, Calvert and Prince George's counties including jousting, the birthplace of fox hunting at De La Brooke Manor, several racetracks such as Laurel Park and the defunct Bowie and Marlboro tracks and the Belair Stable Museum. In November 2015, the 90-minute documentary film, "Racing the Times," which chronicles the history of Maryland horse racing, debuted at the EQUUS Film Festival in New York City and was a runner up for an Eclipse Award. The film was an outgrowth of the horse board's Horse History Committee and was largely funded by the state's horse racing organizations. A new feature length movie, "Christmas Ranch", was shot at a Baltimore County horse farm (Green Mount Farm in Glyndon) and included extras from the state's horse community. The horse board provided seed money for a video series all about Maryland horses to be made by local television news anchor Denise Koch. In addition, under the guidance of board member Karin DeFrancis, the horse board sponsored along with the Maryland Jockey Club and almost 20 other sponsors, the first Maryland/Preakness EQUUS Film Festival, featuring the documentary "Harry and Snowman" and six other equine

films. The event sold out all 733 seats at The Senator Theatre in Baltimore in May 2016.

- **The horse board continued the Touch of Class Award, Horse Pals, Social Media and Speaker Series programs.** During 2016, the horse board honored Maryland horses and riders who won national and international recognition with the monthly Touch of Class Award in these disciplines: interscholastic polo, Standard bred racing, veterinary medicine, 3-day eventing, Paso Fino horse performance, dressage, endurance riding and steeple chasing. The horse board now has more than 1,300 Horse Pals and more than 2,000 Facebook and Twitter followers. In March 2016, the board helped sponsor a lecture conducted by the Maryland Pony Breeders Association about riding safety, new and improved helmets and concussions.
- The horse board produced a new publication in FY 2016 and advertised recreational horse riding throughout Maryland and the horse racing industry internationally. **The horse board published a new 16-page brochure "A Guide to Maryland Horse Trails,"** listing 106 public access riding trails, along with a statewide map, trail riding tips and a list of places to rent horses for guided trail rides. The board hired Toth Distributors of Bowie to distribute 15,000 guides statewide in tourism welcome centers, public recreation facilities, parks and other public outlets. The publication can be downloaded on the horse board website. The horse board participated in a 2-page horse industry spread in Destination Maryland, the state's official tourism magazine; and advertised trail riding opportunities and equine spectator events in the Howard County, Baltimore County and Southern Maryland tourism guides as well as in Recreation News. The horse board continued advertising Maryland racing and the Fair Hill Training Center in particular in Gallop, an international horse racing magazine, and also advertised Horse Land locally in The Equiery.
- **The horse board conducted national and international outreach.** In October 2015, a delegation of six Swedish horsemen representing flat and harness racing, 3-day eventing, show jumping and dressage, visited Maryland during Maryland Million week on a grant from U.S. Livestock Genetics Export. Activities included foxhunting with the Green Spring Valley Hounds, taking in the races at Maryland Million and the Rosecroft harness track, a reception at the House of Sweden in Washington DC and a visit to the American Horse Council and tours of a variety of Maryland horse farms. Then in June 2016 on a similar U.S. Livestock

Genetics Export grant, a group of six Marylanders—three horsemen including Garrett Bell from Winbak Farm, a major Maryland exporter to Sweden, and three agricultural officials, visited Sweden, attending the opening of the new Bro Park racetrack in Stockholm, visiting parliament and talking with agricultural leaders and also visiting a number of Standard bred and Swedish Warm blood breeding farms. In addition, the horse board’s executive director served on panels at two national events—The Retired Racehorse Makeover in Lexington, Ky. and the EQUUS Film Festival, in New York City. He was also invited to attend an international horse racing symposium in Abu Dhabi in November, 2015. The executive director also made site visits to horse parks in Wellington, Fla. in March 2016 and Tryon International Horse Park in June 2016.

- **New Network of Military Horsemanship Programs**—The horse board worked initially with USA Cares and then developed its own network involving as many as 10 Maryland therapeutic riding centers that offer programs for military veterans and their families. The group organized an informal network called “Horses Healing Maryland’s Military.” Laura Unsworth of the BraveHeart program in Hagerstown is the “point person”

for the network, which offered a “Meet and Greet” with the Budweiser Clydesdales on December 26, 2016 at the Prince George’s Equestrian Center. Approximately 400 military personnel and their family members as well as other folks from the agricultural and equine community attended. The famous Bud Hitch was in town for the Military Bowl in Annapolis. The Maryland military horsemanship network also presented a panel discussion about their programs at the regional meeting of the Professional Association of Therapeutic Horsemanship programs at the University of Maryland in March 2016.

- **Promotions and participation at 56 Maryland horse events.** During the year, the horse board provided a \$2,500 sponsorship for the Kid’s Korral at the Maryland Million horse race and had booths and/or made presentations at 38 venues: Horse Land for 11 days at the Maryland State Fair, the Reisterstown Festival (pony rides and carriage parade), the Maryland Travel & Tourism Summit, PEB reception at Harford Community College, The Thoroughbred Alliance Show Series awards banquet, Cecil County Sports Tourism Council, Horse World Expo (abbreviated because of snowstorm), American Equestrian Trade Association winter trade

## MHIB SELECTED STATISTICS: 2016

Category	
Number of Stable Licenses Issued	778
Number of Inspections Performed Annually	621
Percentage of Facilities Inspected and Brought into Compliance	100%
Revenue Collected from Licensing Horse Stables in Maryland	\$97,300
Revenue Collected from Assessment Based on Tons of Horse Feed Sold in Maryland	\$194, 095
Outcomes	
Total Amount of Money Distributed as Grants for Promotional, Educational or Research Projects for Maryland Horse Industry	\$29,592
Percentage of Total Revenue Distributed as Grants for Maryland Horse Industry	15.8%
Staffed Booths or Presented Talks at Trade Shows, Conferences, Fairs and Exhibitions Promoting Maryland Equine	38

show, Maryland Association of Environmental and Outdoors Educators Conference, Horse Industry Day, Southern Maryland Agriculture Summit, Maryland Horse Council quarterly and annual meetings, World Trade Center annual dinner, TROT annual dinner/meeting, the Md. Association of Jousting annual meeting, the opening of Jericho Falls Park in Baltimore/Harford counties, the Maryland Junior Hunt Cup, Preakness presentations and podcasts on the Dan Rodricks Show, WUSA-TV and Armstrong Williams Show; the U.S. State Department foreign agriculture specialists tour (to Harris Paints), Retired Racehorse Training National Symposium, Maryland Tourism Day, Veterans Memorial Day Tribute on Capitol Hill (military riding) and Fair Hill Races. The horse board also attended and participated in another 18 equine industry meetings and events.

- **The horse board awarded \$29,592 in grants to 27 Maryland horse organizations and individuals.** The board distributed \$29,592 in grants funding, the third

highest amount in the board's 18-year history.

- **Cross Disciplinary Cooperation.** The horse board continued coordinating meetings with the Maryland Horse Industry Marketing/Leadership Circle, comprised of 15 industry partner organizations. About 30 people, representing a cross section of racing and non-racing organizations, who are largely CEOs, executive directors and marketing staff, meet to discuss prospective initiatives and provide industry updates. For the second year, the group hosted "Horse Industry Day" in Annapolis which included legislative training sessions, visits to legislative offices and a reception for public officials at the Governor Calvert House. About 150 industry folks attended with outreach to nearly 70 legislators and their aides. The group has also funded the "Racing the Times" documentary film, the writers for the School Horse Curriculum project, the "Horse Land" exhibit at the Maryland State Fair as well as other marketing and advertising programs.

## FOOD QUALITY ASSURANCE

### QUALITY, GRADE AND WEIGHT CERTIFICATION

The Food Quality Assurance Program offers producers and processors a voluntary certification program for agricultural commodities including meat, poultry, eggs, fruit, vegetables and grain. MDA graders sample commodities and compare them with standards developed by the U.S. Department of Agriculture and/or MDA for microbial, chemical and/or physical contamination, quality, size, labeling and packaging. Commodities that meet the state and/or federal standards are certified by MDA graders. Official certification provides a uniform quality basis for agricultural commodities that enhances their marketability. 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. Demand for services varies from year to year and season to season depending on commodities being harvested and the types of commodities being exported. 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:

- 247 million pounds of poultry,
- 22.7 million dozens of shell eggs,
- 18.8 million pounds of meat, and
- 41.4 million metric tons of grain.

### COMPLIANCE AUDITS

Many buyers require compliance audits of production practices as well as product certification. The Food Quality Assurance program conducts compliance audits to ensure agricultural production facilities comply with standards related to animal welfare, good agricultural practices, food security, food safety and quality assurance. As buyers and consumers continue to demand verification of compliance with these standards, MDA anticipates increased demand for compliance audits and is training additional staff members to meet that demand.

The Food Quality Assurance Program has adapted to continual changes in the agricultural commodity industry by offering the services necessary for the industry to market its products. The MDA Good Agricultural Practices (GAP) food safety program for fruit and vegetable producers has experienced a significant increase in participation. The number of producers

MDA GAP certified remained at the FY 2015 level with 35 growers inspected and certified. Although there were several growers new to the program, the number remained the same as previously MDA certified growers instead obtained USDA Harmonized GAP certification through MDA. The MDA program has been funded to date through USDA Specialty Crop grants and has also provided food safety training to over 1,000 fruit and vegetable producers. An additional 20 fruit and vegetable producers were audited by FQAP compliance auditors and received USDA GAP certification. The MDA GAP program requirements are in the process of being revised to fully meet the requirements of the Food Safety Modernization Act (FSMA) Produce Rule to assist Maryland growers in achieving compliance. MDA also entered into a five year cooperative fully funded agreement with the Food and Drug Administration to assist growers with compliance by developing a Produce Safety Program to implement the FSMA Produce Rule. MDA, University of Maryland Plant Sciences Department and University of Maryland Extension will cooperatively provide education, outreach, technical assistance, inspection and enforcement to implement the Produce Safety Program.

## **EGG INSPECTION**

The Egg Inspection program enforces the Maryland Egg Law. Inspections are performed at the producer, wholesale, food service and retail levels to ensure eggs sold in Maryland meet the standards for quality, size, refrigeration, microbial and physical contamination, labeling and record keeping. The section also registers egg wholesalers and packers. Portions of the labeling, record keeping and registration requirements provide traceability in case of a Salmonella enteritidis outbreak. Other sections of the law were established to reduce the risk to consumers of 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 parties. Inspection activities are funded through the collection of \$.0026 per dozen of eggs sold in Maryland.

The percentage of sampled eggs found to be in compliance with the Maryland Egg Law decreased to 83.03 percent this year from 84.44 percent last year. The number of lots being inspected increased because a contractual position was filled to conduct inspections program. Vacancies, turnover and other activities conducted by program employees continue to be an issue preventing the program from conducting adequate inspections to enforce the Maryland Egg Law. The egg inspection chart shows comparison data for the eggs inspected and violations.

MDA continues to conduct Country of Origin labeling reviews for USDA in conjunction with egg inspections. Federal reimbursement for Country of Origin reviews has helped reduce the costs of conducting egg inspections.

## **ORGANIC CERTIFICATION**

The USDA-accredited Maryland Organic Certification Program certified 110 farms and handlers of organic products during FY 2016. The program also registered an additional 16 farms as organic that are exempt from the certification requirements as they have organic sales of less than \$5,000 per year.

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 fees growers paid for certification.

## **GRAIN LAWS**

All persons in the business of buying, receiving, exchanging or storing grain from a grain producer are regulated by MDA. 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. MDA licensed 61 businesses with 84 locations in FY 2016.

## **POULTRY AND RABBIT SLAUGHTER**

The poultry and rabbit slaughter program helps small poultry and rabbit producers to slaughter their animals on farm and sell them to restaurants, at farmer's markets and other locations in Maryland. The program consists of food safety training, basic food safety requirements during slaughter, and inspections to verify that good food safety practices are followed. Producers who follow the requirements are certified by MDA. The program began in May 2010 and already more than 600 producers have been trained, and 42 producers are currently certified.

## WEIGHTS AND MEASURES

The regulation of weights and measures is one of the oldest continual 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 resident 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 throughout the United States. The NCWM provides a professional forum for the discussion and development of uniform policy and protocols that guide the regulation of weights and measures.

There are a total of 60,777 weighing and measuring devices in commercial use in Maryland at 9,099 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 FY 2016, the field staff conducted 24,634 device inspections. Inspectors also tested 7,518 individual lots of prepackaged commodities. Price verification inspections were conducted at 52 stores.

In FY 2016, the field staff investigated 423 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.

The registration of approximately 6,800 businesses has created a database that has become an effective management tool. The purchase of electronic inspection software for inspections has replaced the need for paper reports. These programs will maximize efficiency, government transparency and assist in cost reductions. Administrative staff is able to target the most critical areas and all field inspectors now possess a tool to plan 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 is being reorganized due to the retirement of the lab manager and a metrologist. The program is striving to re-open the laboratory facility by sending several personnel to the National Institute of Standards and Technology (NIST) Office of Weights and Measures Metrology Classes. Our goal is to have the laboratory operational and anticipate hiring for the vacant laboratory positions.

The Weights and Measures Program also participates in the National Type Evaluation Program (NTEP) which tests and inspects the accuracy of new measuring and weighing devices and 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 lab and field equipment necessary to carry out the program's responsibilities and improve the efficiency of the program. The field program and laboratory are special funded. With the help and support of industry and the General Assembly, adequate funds were approved to accomplish these goals. The program is also in the process of replacing the HVAC system in the metrology laboratories, which require very specific performance specifications as not to affect the operation of highly specialized laboratory balances and equipment. The metrology program plans to review and upgrade current laboratory software with the goal of electronic data recording and analysis of precision balance readings in an effort to reduce paper reports and manual data entry. The Weights and Measures program is as much needed today as in the past and continues to provide a vital service.

## 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 MDA was established, the office was moved to Annapolis and renamed the Maryland Agricultural Fair Board.

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 individual board members manage. The Board meets three times a year and communicates throughout the year by phone and e-mail. Most meetings are held at MDA.

Funding comes through the Maryland Racing Commission through a special grant and is made up of unclaimed pari-mutuel tickets and various fees. The current annual budget is \$1.46 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 only. Currently the board funds approximately 165 events. These range from the Maryland State Fair, to county fairs, to local community shows, to youth activities in 4-H and FFA.

The board publishes an annual guide listing fairs and shows that it funds. These brochures are distributed to all welcome centers on state highways, all Extension offices, all fairs and shows, all chambers of commerce, all libraries, all county farm bureau's and the Maryland Farm Bureau. It is also posted on the MDA website.

Racing revenue continues to be in a state of change and this affects the grants given out by the board. The board holds regional budget meetings throughout the state to meet with each group to review their request, financial reports, and fair activities.

### FY 2016 FINAL BUDGET FIGURES

0100 – Personnel Costs .....	\$3,663
0300 – Communication Costs .....	\$530
0400 – Travel .....	\$6,349
0700 – Motor Vehicle Operations .....	\$134
0800 – Contractual Services .....	\$6,326
0900 – Supplies and Materials .....	\$321
1036 – Replacement Equipment .....	\$0
1207 – Grants to non government entities .....	\$688,467
1299 – Grants, Subsidies & Contributions .....	\$709,302
1300 – Fixed Charges .....	\$4,574

**TOTAL APPROPRIATION - \$1,459,667**



## 2016 Annual Report | Office of Plant Industries and Pest Management

### PLANT PROTECTION AND WEED MANAGEMENT

#### APIARY INSPECTION

MDA's Apiary Inspection Program works with beekeepers, helping to control honey bee diseases, parasitic mites and other pests, to maintain healthy colonies for the pollination of Maryland crops. Honey bees pollinate crops valued at more than \$40 million. Maryland fruit and vegetable growers rent 5,000 colonies a year to improve pollination. Beekeepers' colonies are essential to Maryland because two parasitic mites have nearly eliminated feral bee colonies.

**American Foulbrood** is the most serious brood disease of honey bees and can destroy a colony in one year. The 9 colonies that inspectors found to have American foulbrood, as diagnosed by the USDA Bee Laboratory in Beltsville, MD, were destroyed to control the spread of this bacterial disease into healthy colonies. The incidence of disease remains relatively low – 0.4% of the colonies inspected.

**Canine Training and Certification.** In 2015, the apiary program trained and certified a dog and handler to detect American foulbrood disease in honey bee colonies. Mack is a yellow Labrador retriever that has been trained to detect and alert to his handler the presence of American foulbrood disease. Now that he's on the job, Mack will work to reduce the incidence of American foulbrood in Maryland bee colonies during fall and winter when the bees are dormant. A trained dog can inspect 100 honeybee colonies in 45 minutes; an average human inspector can inspect 45 colonies in one day. Early detection of the disease will save Maryland beekeepers substantial monetary loss from eradication of diseased bees and destruction of infected equipment.

**Varroa mite (*Varroa destructor*)** populations were very high in Maryland in 2015, and brood problems were attributed to this. The varroa mite has been found to be resistant to

Apistan®, the primary product used to control this parasite. There are six products available to control varroa mite. One of the serious problems caused by varroa is the transmission of viruses to honey bees, which can cause deadly diseases. Nearly twenty honey bee viruses have been discovered and the majority has an association with varroa mites. Therefore controlling varroa populations in a hive will often control the associated viruses and symptoms of the viral diseases.

**Tracheal mite (*Acarapis woodi*)** populations, as documented by the USDA honey bee laboratory, continue to be so low that tracheal mite is no longer considered a threat to honey bees if colonies are monitored on a regular basis.

**Africanized honey bees (AHB).** 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 AHB movement, other than through natural spread.

**The small hive beetle (*Aethina tumida*)** was detected in packaged bees and reported or detected in all 23 counties in 2015. Colonies are treated and monitored to ensure successful control of the beetles. There have been reports of larval damage to established colonies. The small hive beetle is a main pest in stored equipment and in honey houses, rendering stored honey in the hive unmarketable.

**Apiary Inspection Permits.** Twenty-one entry permits were issued for 4,332 honey bee colonies to move into Maryland, primarily for overwintering. Eighteen exit permits were issued for 1,191 colonies to move out of Maryland, primarily for pollination services. For the eighth year, Maryland beekeepers sent colonies to California for almond pollination, 1,834 were transported in the winter of 2015-2016.

Surveys: The apiary inspection program assisted with two surveys in 2015. The survey information can be found listed in the Pest Survey section of this report.

## NURSERY INSPECTION AND PLANT QUARANTINE

The Maryland Nursery Inspection Program serves the state's nursery and greenhouse industry which continues to be a leading part of Maryland's number one industry, agriculture. The green industry in Maryland currently ranks second among commodities, with a total of approximately \$960 million in farm income. Other horticultural products and services 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 Maryland Department of Agriculture Plant Protection & Weed Management staff. Maryland law and reciprocal agreements with other states require annual production facility and sales location licensing for all producers and suppliers of nursery stock in the state. Production nurseries are inspected, at minimum annually, to ensure that plant material is free of dangerously injurious plant pests. Additionally, plant dealers are inspected regularly to insure plant materials are received and maintained in a healthy and pest-free condition for wholesale and retail sale.

In 2016, the Maryland Nursery Inspection Program licensed 315 nurseries, as well as 1,315 plant dealers and plant brokers. In FY 2016, 9,494 acres of nursery stock and nearly 10,000,000 square feet of greenhouse production were certified. Plant Protection & Weed Management staff performed routine inspections at 569 Maryland locations. The general health of Maryland-produced nursery stock was found to be excellent. In addition certification activities for FY 2016, shipment specific inspections were performed and 169 state phytosanitary certificates were issued to 14 states and U.S. territories to assure Maryland agriculture and green industry compliance with established U.S and state domestic quarantines and phytosanitary requirements for Maryland produced plant material and grains. In FY 2016, 76 shipment specific inspections were performed and federal phytosanitary certificates were issued to export Maryland grown and produced plant material and grain to 7 different foreign countries, assuring Maryland produced agricultural commodities meet international quarantine regulations.

Specific events of note. FY 2016 presented many challenges for the Nursery Inspection Program staff. The effort to prevent introduction and slow the spread of boxwood blight

(*Calonectria pseudonaviculata*) occupied hundreds of hours of staff time throughout the season. Staff was involved not only in the process of inspecting for evidence of the disease at the majority of establishments visited, but was also engaged in issuing condemnation/seizure and treatment orders when infected plant material was found, and tasked with overseeing the destruction of boxwoods infected with this highly destructive, infective and easily spread disease. Other plant pests were detected that required similar actions, if on a smaller scale. Most notable were an early season ambrosia beetle (family *Scolytidae*) outbreak in container nursery stock at regional general dealers (chain stores) and a recurrence of chrysanthemum white rust, *Puccinea horiana*, a serious disease of garden and show chrysanthemums. Serious plant pests and diseases are, on occasion, introduced into Maryland on plant material that is not directly regulated by our Plant Pest/Disease Control laws. In addition to chrysanthemum white rust, past examples of serious plant pathogens and pests introduced into Maryland on unregulated nursery stock such as tropical plants and annual or herbaceous plant material include: bacterial wilt, *Ralstonia solanacearum* race 3, biovar 2, daylily rust, *Puccinea hemerocallidis*, daylily leafminer, *Ophiomyia kwansonis*, imported fire ant, *Solenopsis invicta*, and spotted wing drosophila, *Drosophila suzukii*. Staff was also involved in the eradication of imported fire ant, *Solenopsis invicta*. This activity is now an almost annual event due to the fact that this pest, a serious threat to human, animal and environmental health, is regularly re-introduced into Maryland in the soil or root masses of infested tropical plant material (especially palm trees) arriving for seasonal outdoor decorative purposes. Additionally, field and clerical staff work year-round to ensure that licensing and compliance statutes are met by industry.

## PEST SURVEY

**The Cooperative Agricultural Pest Survey (CAPS) and Farm Bill** surveys are joint projects between MDA and USDA's Animal and Plant Health Inspection Service (APHIS) and USDA Plant Protection and Quarantine (PPQ). The USDA recommends specific pests of quarantine export significance as survey priorities and provides funding for these surveys. These cooperative survey programs provide necessary data used to certify Maryland products for export to many countries. These surveys also allow for continued outreach and education.

CAPS and Farm Bill 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. Early detection of exotic pests

before they become established aids in eradication or control efforts, and protects Maryland agriculture, nursery stock and the environment from potential devastating losses. Federally funded CAPS surveys include: exotic wood borers, soybean commodity, imported fire ant (*Solenopsis invicta*) and emerald ash borer (*Agrilus planipennis*); the farm bill surveys include: *Phytophthora ramorum* (nursery), Asian giant hornet (*Vespa mandarinia*), national honey bee, and grape commodity.

In FY 2016, MDA deployed and monitored 491 insect traps and, from these various traps, collected 2,906 samples. Survey and trapping techniques vary, depending on the pest being surveyed for. Some trapping devices include purple prism traps, bucket traps, delta traps and Lindgren funnel traps. All traps include an attractant; lure, food bait and host volatiles are some examples. There were eight extensive surveys targeting 52 exotic pests that impact trees, apiaries, fields, vineyards and nursery stock.

## CAPS SURVEYS

**Red Imported Fire Ant** - The red imported fire ant (IFA), *Solenopsis invicta*, a stinging insect native to South America, is occasionally shipped out of its regulated area in the southern United States. Despite its quarantine, which requires a wide variety of commodities to be treated or certified free of fire ants before being transported, some nursery stock has made its way into Maryland infested with fire ants. The yearly fire ant survey focuses on tropical plants arriving from the southern United States. In 2015, ninety-eight sites were surveyed and five were found positive for IFA. Four of the positive sites were retail establishments and one was part of a conservation project. All sites were issued eradication treatment orders under an MDA Treatment Order; all have completed the treatments, have been resurveyed and were found free of IFA.

**Emerald Ash Borer.** The emerald ash borer (EAB), *Agrilus planipennis*, has been in Maryland since 2003. Presently, EAB has been found in seventeen of Maryland's twenty-three counties, including three on the Eastern Shore. In 2015, Baltimore, Dorchester, Harford, Queen Anne's, and Talbot counties were added to that list. The 2015 survey consisted of 135 trap sites with 110 of the sites having purple prism trap sites and the other 25 having green Lindgren funnel traps. This survey ran from early May into late August, and found 20 sites positive for EAB. Presently, only 6 counties on Maryland's Eastern Shore are negative for EAB. Due to the presence of EAB in three Eastern Shore counties (Dorchester, Queen Anne's and Talbot), the federal quarantine was expanded to include the entirety of Maryland in August 2015.

MDA, along with USDA APHIS PPQ, participated in parasitoid releases. Presently, there are three parasitoids approved for release and MDA has released all three since 2009. In 2015, 79,864 parasitoids were released at seven biocontrol sites in five counties. All three introduced parasitoids have been recovered in Maryland.

**Soybean Commodity.** Soybean is the second most valuable crop grown in Maryland, behind corn. For this reason, ensuring that our state is free of known exotic pests of this commodity is of great importance. This survey was conducted from mid-June through early October in five counties known to have high production rates of soybean, based on harvested acreage in previous years. Four sites with planted soybeans were located within each county, and four yellow bucket traps were placed at each of these sites, for a total of 80 traps. Each of the bucket traps was baited with a pheromone lure known to be an attractant of a potentially destructive exotic moth pest. None of the targeted pests were found to be present in any of the traps throughout the sampling period. Additionally, a visual survey was conducted for *Megacopta cribraria*, the bean plataspid, a true bug of particular concern within Maryland, and a known pest of soybean. A visual survey was conducted at each site on a bi-weekly basis, and resulted in the finding of a single bean plataspid, in a county where it had been previously discovered.

**Exotic Wood Boring Beetles.** USDA regulations require all imported wood packing material to be treated, so that any insect living in the wood should be killed. However, some packing material is not properly treated, which can cause exotic wood borers to be shipped to the US, and thus be introduced into our environment. Bark beetles can be extremely destructive and in parts of the world have been known to destroy large acreages of forest. In 2015, ten sites that receive goods packed with wood dunnage were surveyed for exotic wood boring bark beetles. During the bi-weekly trap checks, a visual survey for spotted lanternfly (*Lycorma delicatula*), a newly introduced invasive insect from Asia, was also completed. This survey ran from mid-March until late October. Each site had four black Lindgren funnel traps, and each of these traps had a specific lure used as an attractant to one or more of the exotic beetles being surveyed for. All samples were negative for the species being targeted. However, there was a finding of *Cnestus mutilatus*, the camphor shot borer, is native to Southeast Asia, had not been previously found in Maryland. It was found at one survey site in Wicomico county. Additionally, one of the sites surveyed for EWBB pests also housed a black light trap. The black light trap is used for long-horned beetle detection, and this trap

did not detect any of the high priority pests for which it was surveying.

**Asian Giant Hornet.** The Asian Giant Hornet (*Vespa mandarinia*) (AGH) is the largest hornet known in the world. In their native region, these hornets can have devastating effects on honeybees, as they will seek out hives and systematically kill every bee, from larva to adult, to feed their own colonies. Additionally, AGH will prey on many other native insect populations, including other pollinators, which can have major impacts on agriculture. Although AGH has not been found outside of Asia, it is important to have a plan in place to survey for this pest, and to deal with it should it appear, to prevent it from becoming established. Seven sites were selected Maryland. Particular emphasis was put on sites near transportation routes or other high-risk pathways, which are known as possible areas of introduction for foreign species. From late July until mid-October, modified bottle traps were placed at each site and examined bi-weekly for the presence of any pests, particularly *Vespa* species. No target hornet species were found, although a few *Drosophila suzukii*, an invasive fruit fly, were captured. This survey was conducted by the apiary inspection staff.

**National Honey Bee Survey.** Since 2009, USDA-APHIS, in conjunction with Bee Informed Partnership, have sponsored the National Honey Bee Survey (NHBS), a comprehensive examination of colony health among apiaries across the country. Maryland has been a participant in the NHBS since 2011. At each apiary surveyed, samples of bees are collected from eight different hives; half of these bees are kept alive and half are preserved in ethanol, then both live and preserved samples are sent off for further testing. In addition, comb debris is collected from all eight hives, preserved in ethanol, and submitted for further testing. The samples were submitted to the USDA Beltsville and the University of Maryland bee labs. Results from these samples have not yet been received. While samples are being collected, any visible signs of disease or distress are also noted. These visual observations have noted symptoms of chalk brood, parasitic mite syndrome, deformed wing virus, small hive beetle infestation, and malnutrition. An additional objective of this survey is a colony pesticide analysis to assess both the variety and quantity of pesticides present in honey bee hives. The apiary inspection staff completed 3 surveys in the fall of 2015 and plans to survey 8 more sites in the spring of 2016.

**Grape Commodity Survey.** Vineyards and wineries are growing industries in the state of Maryland. However, as vineyard acreage increases, it also increases the opportunities for invasive pests to be introduced and become established.

This survey was conducted from mid-June until mid-October in 15 vineyards, covering eleven Maryland counties, in order to confirm the absence of invasive moth pests. At each vineyard, two standard bucket traps and two delta sticky traps were placed, and each trap was baited with a lure attractive to a different moth of concern. These traps were checked on a bi-weekly basis throughout the sampling period, and no target species were discovered. During the bi-weekly trap checks, a visual survey for spotted lanternfly (*Lycorma delicatula*), a newly introduced invasive insect from Asia, was also done, although none were found to be present. An additional part of this survey involved a visual survey of grape vines, looking for a grape phytoplasma and a fungal disease, brown rot. Both were surveyed for by PP&WM's plant disease specialist. There were no symptomatic vines observed during this survey.

**Phytophthora ramorum Nursery Survey.** The *P. ramorum* survey covered nurseries, garden centers, and landscape sites. Staff visited 11 nurseries and garden centers receiving plant material from Oregon, California, and Canada and inspected 342,406 azalea, camellia, kalmia, pieris, rhododendron, and viburnum plants. Less than 1% of plants examined exhibited symptoms similar to those caused by *P. ramorum*. Two hundred sixty-six symptomatic samples of different plant species were collected and tested for *Phytophthora* spp. by ELISA kit and 14% of samples were found positive. Of these samples, rhododendron had the highest percentage (41%) of *Phytophthora* infection and azalea and camellia were free from the pathogen. All *Phytophthora* spp. positive samples were submitted to the Cornell University Diagnostic Clinic for *P. ramorum* confirmation. All samples tested negative for *P. ramorum*. Staff visited five suspect homeowner properties, inspected 78 plants, and collected 20 suspect/symptomatic samples to test for *P. ramorum*. They were tested for *Phytophthora* spp. by ELISA kit, and none were positive for the fungus. The PP&WM plant disease specialist supervised and conducted this survey.

## DIAGNOSTIC LABORATORIES

The Plant Protection and Weed Management Section laboratories provide testing, analyses and identifications to support MDA programs as well as providing answers to inquiries from outside the department.

**Entomology Laboratory.** Among the usual nursery, other agency, and homeowner samples which were received in FY 2016, there were several interesting submittals. Horsehair worms, Nematomorpha, harmless 4" internal parasites of grasshoppers, cockroaches and other insects, startled a homeowner when they emerged from a cricket. There were a

few sightings of giant psocid barklice, *Cerastipsocus venosus*, on rocks and trees, and two large land planarians, *Bipalium adventitium*, which feed on earthworms, were submitted from a backyard garden. Some recently-dead meloid beetles, *Tegrodera erosa erosa*, the iron cross blister beetle, turned up in a bag of salad greens. They are native to California and Arizona.

This year, almost 200 tick samples were submitted for identification. Most were lone star ticks, *Amblyomma americanum*, with deer ticks, *Ixodes scapularis* replacing them in fall samples. Also, a pepper seed removed from someone's ear was submitted as a tick. Mite samples included Lewis spidermites, *Eotetranychus lewisii*, found in a poinsettia production greenhouse, and an as yet, unnamed species of tiny eriophyid mite, designated the "coneflower rosette mite", which causes leaf reversion in echinacea flowers. A single disk flower in a flower head may contain hundreds of these microscopic acarines.

Other novelties including a mole cricket, Gryllotalpidae, which has digging front legs like a mole, and a colorful caterpillar with stinging hairs, the crowned slug, *Isa textula*, were among this year's samples.

**Plant Pathology Laboratory.** The plant pathology diagnostic laboratory provides testing, analysis, and recommendation services for problems caused by biotic pathogens such as fungi, bacteria, viruses, and nematodes, as well as abiotic, such as soil and environmental related problems, to support MDA programs. It also provides answers to inquiries from outside the department. MDA's plant disease specialist continued relocation, refitting, and updating of equipment in the laboratory as well as obtaining, collecting, maintaining, and calibrating equipment plus updating and improving the lab's molecular capabilities.

The pathology laboratory received more than 120 samples for diagnosis and management solutions during the 2015 growing season. A majority of the samples came from nursery inspectors, some from pesticide inspectors, landscapers, and homeowners. About 10% of samples received were abiotic-related, such as watering issues, soil management, cold damage, etc., while the other problems were caused by biotic pathogens, such as fungi, bacteria, viruses and nematodes. The majority of samples received involved fungal pathogens. Management strategies based on an integrated pest management approach were recommended for these problems.

The exotic disease, boxwood blight, *Cylindrocladium buxicola* (syn. *Calonectria pseudonaviculata*) remained a high priority. Several samples were received to confirm absence of *C. buxicola* fungi from a boxwood nursery and plantation. The plant disease specialist also visited nurseries to investigate the disease in the field and took extensive samples. Complete destruction of boxwood plants was recommended to a nursery because of continued presence of the pathogen and a potential danger of spreading it by human activities.

In 2015, the plant diagnostic laboratory obtained government funds for: (1) survey of *Phytophthora ramorum* in nursery stocks and (2) surveys of grape vineyards for grape phytoplasma and brown rot, a fungal disease, based on symptoms. All survey information is found in the Pest Survey section of this report.

The laboratory is expanding its diagnostic services to include nematode identification for Maryland growers.

**Greenhouse Laboratory.** Mile-a-minute (MAM) weed plants (*Persicaria perfoliata*) were produced for the integrated pest management and biological control program for insect colonies that require food and plant material for research. 1,700 MAM stem cuttings were taken and 1,432 plants were transplanted and grown in the greenhouse to be used as food for colonies of the stem boring weevil, *Rhinoncomimus latipes*.

Four hundred twenty five tropical ash, *Fraxinus uhdei*, continued to be grown and maintained in the greenhouse in support of the EAB biological control program. Leaves were used on a weekly basis at the MDA headquarters rearing facility. These trees were also used to support the USDA APHIS EAB rearing facility in Brighton, Michigan. Two hundred leaves were shipped weekly to Michigan to feed adult EAB, assisting in the rearing of parasitoids used in the biological control effort against EAB. To support the continued healthy growth of these trees in our greenhouse, biological controls were released on a regular basis to control outbreaks of various greenhouse pests. The thrips predator, *Neoseiulus cucumeris*, and the spider mite predators, *Mesoseiulus longipes* and *N. californicus*, were used throughout the year.

Virus testing was conducted on five varieties of strawberry plants. Indicator strawberry plants are maintained throughout the year to support this testing.

A variety of support programs takes place at the greenhouse on a yearly basis. These include plants produced to support MDA displays at the Maryland Flower and Garden Show as well as the Maryland State Fair. Plants are also grown and maintained in support of the Certified Professional Horticulturist (CPH) exam which is given at MDA headquarters

twice a year and proctored by PP&WM staff in cooperation with the MD. Nursery, Landscape, and Greenhouse Association.

## PLANT CERTIFICATION

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 this 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. High quality native ginseng root continues to be in great demand on the international market, and prices for wild American ginseng continue to increase. Again in 2014, prices at times surpassed the \$1,000 per pound mark of dry ginseng. During the 2014-2015 season, the program licensed 15 ginseng dealers and 257 ginseng collectors in the state. For the 2015-2016 season those numbers are 19 and 247 respectively. Licensing for ginseng dealers and collectors starts after July 1st of each year as the season doesn't begin until September 1st. The harvest season ends December 15th and the sales season ends March 31st of the following year. The harvest numbers reported below are for the program season beginning September 1st, 2014 and ending March 31st, 2015.

Over the 2014—2015 harvest and sales season, the certification program inspected, collected size and age data from, weighed, and certified 196.12 pounds of dry wild ginseng root, 5.65 pounds of green (fresh) wild ginseng root, 69.5 pounds of wild simulated dry ginseng root, and 288 pounds of wild simulated green ginseng root. (For the purpose of this report, both artificially propagated and wild simulated ginseng harvests are being recorded as artificially propagated. Both artificially propagated and wild simulated ginseng, distinctions recognized by the U.S. Fish and Wildlife Service and CITES, are being grown as alternative agricultural crops in Maryland).

The 2014-2015 wild harvest and certification numbers are about 37% greater than the numbers for dry wild ginseng and 44% greater than those for artificially propagated dry ginseng as compared to numbers recorded for 2013-2014. The amount of green ginseng root certified in the 2014-2015 season represents a nearly 62% decline compared to 2013-2014. As reported in 2014, changes in the market for green (fresh) ginseng likely parallel demand for the domestic use of fresh ginseng in the U.S. market and the rise of a relatively novel type of ginseng buyer that has more recently started obtaining a state ginseng dealer's license. When root is sold in a green (fresh) condition, it generally weighs about 3 times the weight of the same root when dried. As is generally the case, fluctuations in the amount of Maryland ginseng certified and sold likely reflect the demand and pricing on the international market, (and more recently a specialty sector in the domestic market) and do not necessarily directly reflect the status or abundance of wild American ginseng in Maryland. As is done each year, harvest and sales data were gathered and reported in accordance with U.S. Fish and Wildlife Service (USF&WS) and CITES requirements. The USF&WS, Office of Management Authority continues to find Maryland's wild ginseng harvest as sustainable and "non-detrimental" to wild American ginseng populations in Maryland.

## WEED INTEGRATED PEST MANAGEMENT (IPM)

Maryland Department of Agriculture (MDA) 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 aimed at providing biological control for certain targeted weed species on SHA right of ways. Weed IPM research and demonstration activities were continued on SHA right of ways, using funding from SHA and the U.S. Department of Agriculture, Animal and Plant Health Inspection Service (USDA APHIS). MDA weed management and biological control research and demonstration projects have been conducted over each of the past 17 years under current management, and have involved cooperation with the Maryland State Highway Administration, the Howard County Department of Recreation and Parks, the Maryland National Capitol Park and Planning Commission, the Maryland Department of Natural Resources, the U.S. Department of Agriculture (both the Agricultural Research Service (ARS) and APHIS), the U.S. Forest Service, The U.S Fish and Wildlife Service, the U.S. Geological Survey and, in certain cases, private Maryland businesses and landowners.

Integrated pest management investigations now target the suppression of mile-a-minute weed, *Persicaria perfoliata*, through use of biological control. MDA personnel rear, release and monitor biological control agents for this problematic weed species. Purple loosestrife, *Lythrum salicaria*, a target of earlier biological control work by MDA, continues to be monitored by MDA Plant Protection and Weed Management program staff.

Currently MDA is focused on biological control of mile-a-minute weed, using very specific insect biological control agents. MDA is in the second year of a two year agreement with the Landscape Operations Division of the Maryland State Highway Administration to administer a program to continue biological control driven suppression of mile-a-minute weed on state highway right of ways. This program includes lab and greenhouse rearing and field release and monitoring of the weevil, *Rhinoncomimus latipes*. Funding for rearing and release of the weevil is provided in part by SHA. An additional source of funds for this project comes from a cooperative agreement with USDA APHIS that has been renewed on an annual basis.

In 2015, MDA staff continued the program of rearing the mile-a-minute weevil, *Rhinoncomimus latipes*. This program involves greenhouse growing of the host plant, mile-a-minute weed, as well as laboratory rearing of the weevil. The host plants are grown in the MDA greenhouse in Annapolis, MD. In 2015, nearly 1,500 *P. perfoliata* plants were grown. At the MDA Plant Protection and Weed Management Section Insect Rearing Lab, MDA staff reared 8,215 weevils in 2015. Release numbers were supplemented by 4,000 additional weevils acquired from the NJ Dept of Agriculture, Phillip Alampi Beneficial Insects Laboratory. In 2015, 9,880 adult weevils were released at a total of 21 sites statewide, 7 of which were new site locations.

*Rhinoncomimus latipes* has now been released by MDA staff and is established in at least portions of the following Maryland counties: Allegany, Anne Arundel, Baltimore, Carroll, Cecil, Charles, Frederick, Garrett, Howard, Montgomery, Prince George's, Queen Anne's, Somerset, Washington, and Wicomico.

## 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.

A weed control advisory committee has been established in each of 17 participating counties, with representatives from farming organizations, governmental agencies, local farmers and other property owners. Each committee provides advice on 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 herbicide treatments 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 complaints.

In 2015, noxious weed advisory notices were mailed to 361 managers of property infested with noxious weeds. Generally these notices were effective in obtaining compliance. When necessary, MDA sent follow-up correspondence, mostly 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, callery pears, and bamboo.

Giant hogweed (*Heracleum mantegazzianum*) is a federal noxious weed that was first detected in 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. There are currently 10 sites in Garrett County that have undergone several years of treatments. In FY 2016, six sites needed treatment; four in Baltimore County, one in Garrett County, and one in Harford County were treated. Frederick County's weed control program treated the hogweed plants in Baltimore County and the Montgomery County weed control program provided the spray crew and materials to treat the hogweed in Garrett County. Harford County's Weed Control Program accomplished the Harford County applications. Eradication is a multi-year effort and the Weed Control Program is looking to curtail future hogweed treatments.

The weed control staff partnered with the Maryland Department of Natural Resources (DNR) for the 15th 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.

DNR provided 100 percent of the herbicide (Rodeo®) applied in the nine Eastern Shore counties for spraying phragmites. Total spray revenue for phragmites control was more than \$100,000 for treating approximately 103 acres at 160 locations in 19 counties. The spray programs pay for the regulatory and non-regulatory work of the weed control program in the 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.

**OTHER ACTIVITIES**

During FY 2016, MDA continued to administer basic and specialist examinations for the Maryland Certified Professional

Horticulturist program. This program was developed by the Maryland Nursery, Landscape and Greenhouse Association (MNLGA) to raise and improve the professional standards of Maryland’s nursery, landscape, and garden center industry by giving special recognition to individuals who have shown a high level of competence in the principles and practices of this industry. Certification also allows this high level of attainment to be recognized by the gardening public.

PP&WM also worked with MNLGA on a large landscaping project here on the grounds of MDA. MNLGA along with PP&WM staff worked for two days to remove aging trees, weeding and trimming and replanting. The hard work resulted in a beautifully landscaped headquarters building.

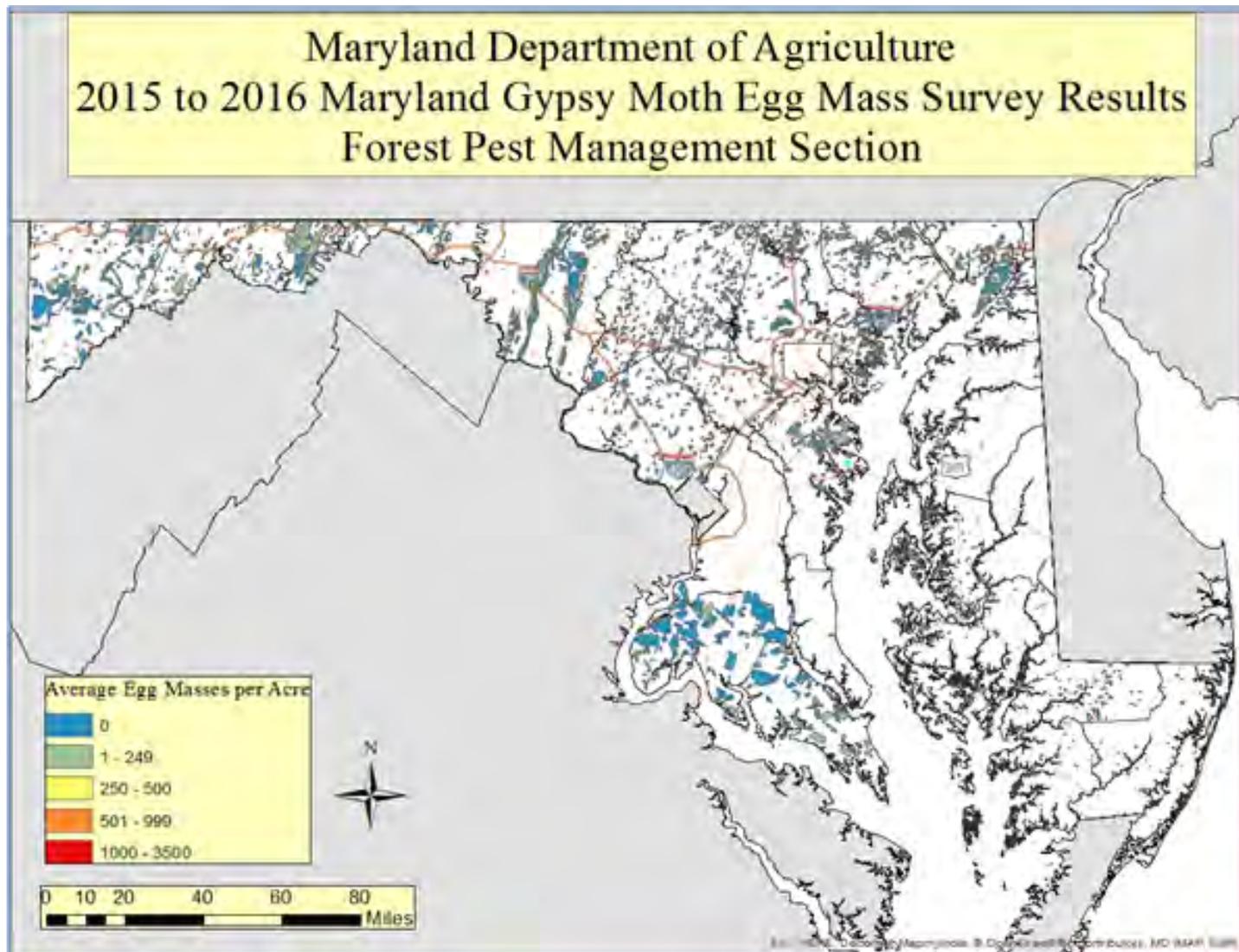
MDA PP&WM staff also continues to take a leadership role in the Maryland Invasive Species Council (MISC), a forum for information exchange and consensus building among diverse interests in public and private agencies or organizations concerned with invasive species. Several MDA staff members were directly involved with MISC. Participation in MISC allows for cooperation through many state agencies, private industry and the public. Through MISC, MDA has been able to disseminate information on many of the serious pests cited in this report.

**PLANT PROTECTION AND WEED MANAGEMENT SUMMARY OF ACTIVITIES: CY 2013 - 2015**

	CY 2013	CY 2014	CY 2015
Beekeepers Registered	1,821	1,838	1,895
Honeybee Colonies Registered	14,711	14,412	14,594
Honeybee Colonies Inspected	2,993	4,515	2,224
Ginseng Dealers Registered	19	15	19
Ginseng Collectors Licensed	186	257	24
Nurseries Certified	326	309	315
Plant Dealers and Brokers Licensed	1334	1349	1315
Phytosanitary Certificates Issued	693	466	247
Plant Pest Surveys # Target Pests	71	41	52
Plant Pest Surveys # Samples Processed	4,874	2,656	2,906
Target Pests Detected	26	2	9
Number of Noxious Weed Advisory Notices Issued	222	303	361

*\* Because of the seasonal nature of this program and calendar year federal reporting requirements, data are reported on a calendar year basis.*

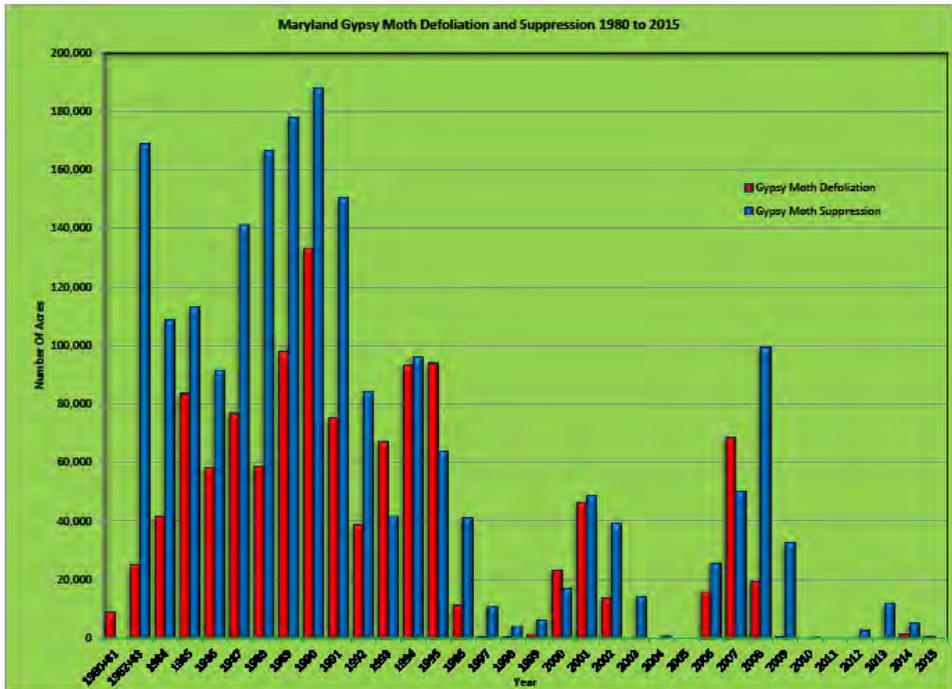
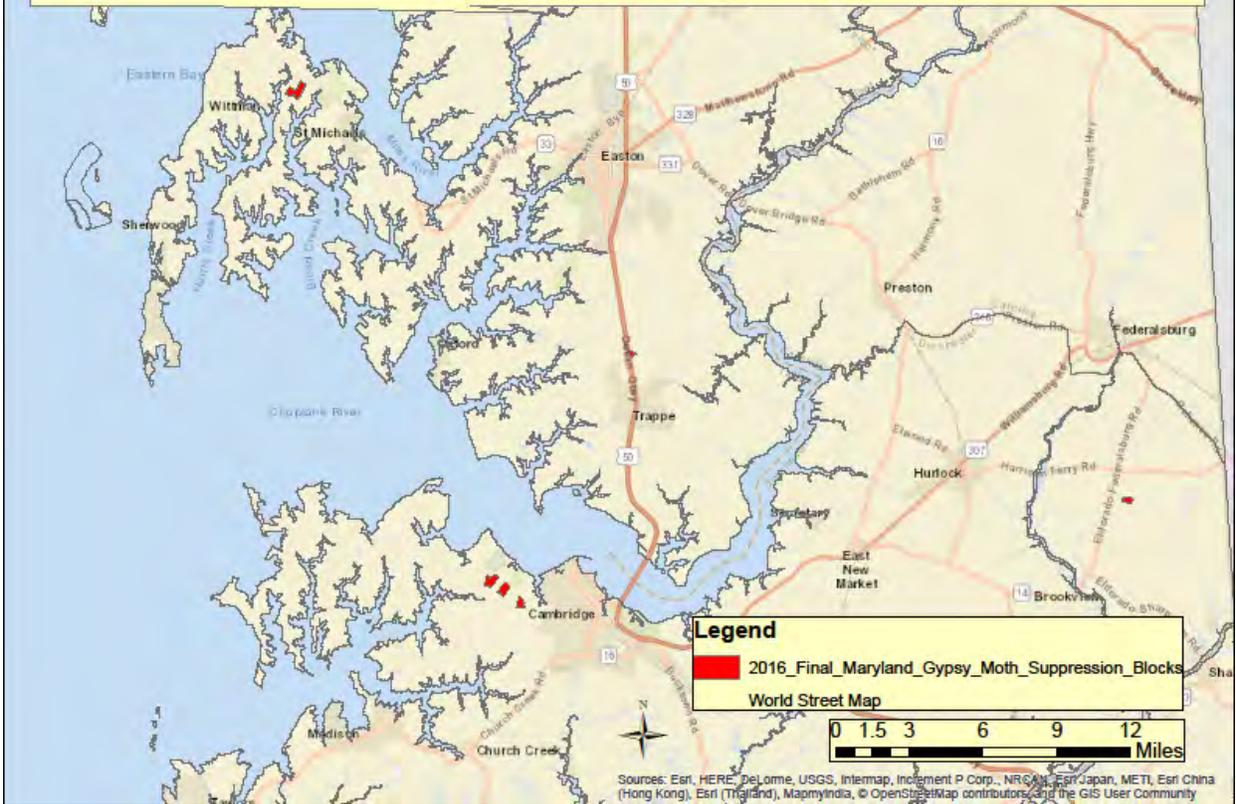
## FOREST PEST MANAGEMENT



**Gypsy Moth** is the most serious threat to oak forests in the United States. The first eggs were detected in Maryland in 1971, and the first extensive defoliation occurred in 1981. Each fall and winter, MDA conducts an extensive survey for gypsy moth egg masses to determine potential areas of defoliation. From August 2015 to March 2016 MDA conducted gypsy moth egg mass surveys on 514,079 acres of “high value” forested lands. “High value” forested sites include areas with development, recreational use, managed forest and wildlife resources and other site conditions that render dieback and

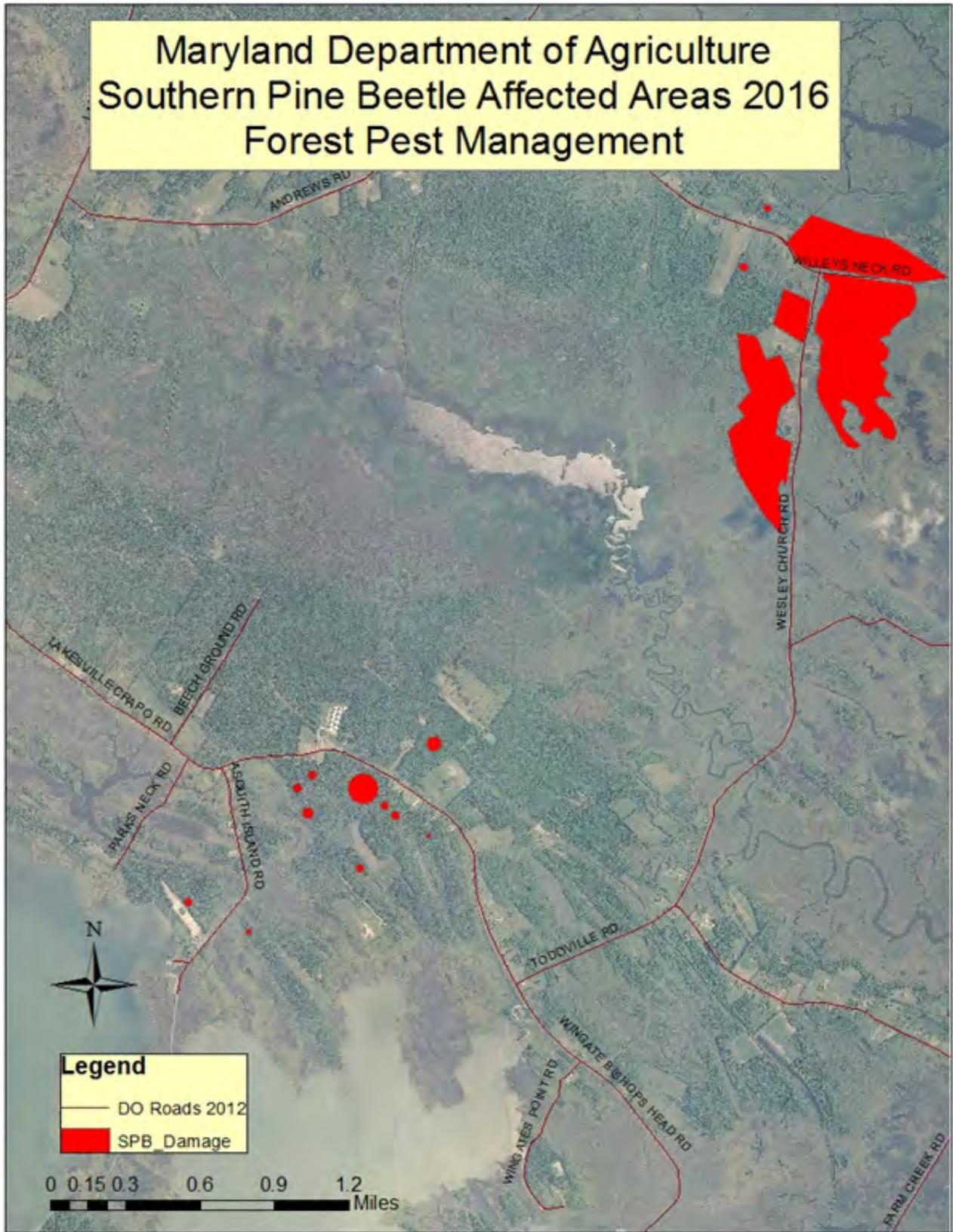
mortality to be economically and socially important. The survey results indicated that there were several areas where populations were sufficient to cause moderate to heavy defoliation of high value rural and urban forest in 2016. MDA sprayed 1,002 acres on the Eastern Shore for gypsy moth in 2016. St. Mary’s, Anne Arundel, Washington, Baltimore, and Howard counties recorded several blocks with high populations of gypsy moth. Gypsy moth defoliation was less than 100 acres this year, and was seen in Southern Maryland and on the Eastern Shore.

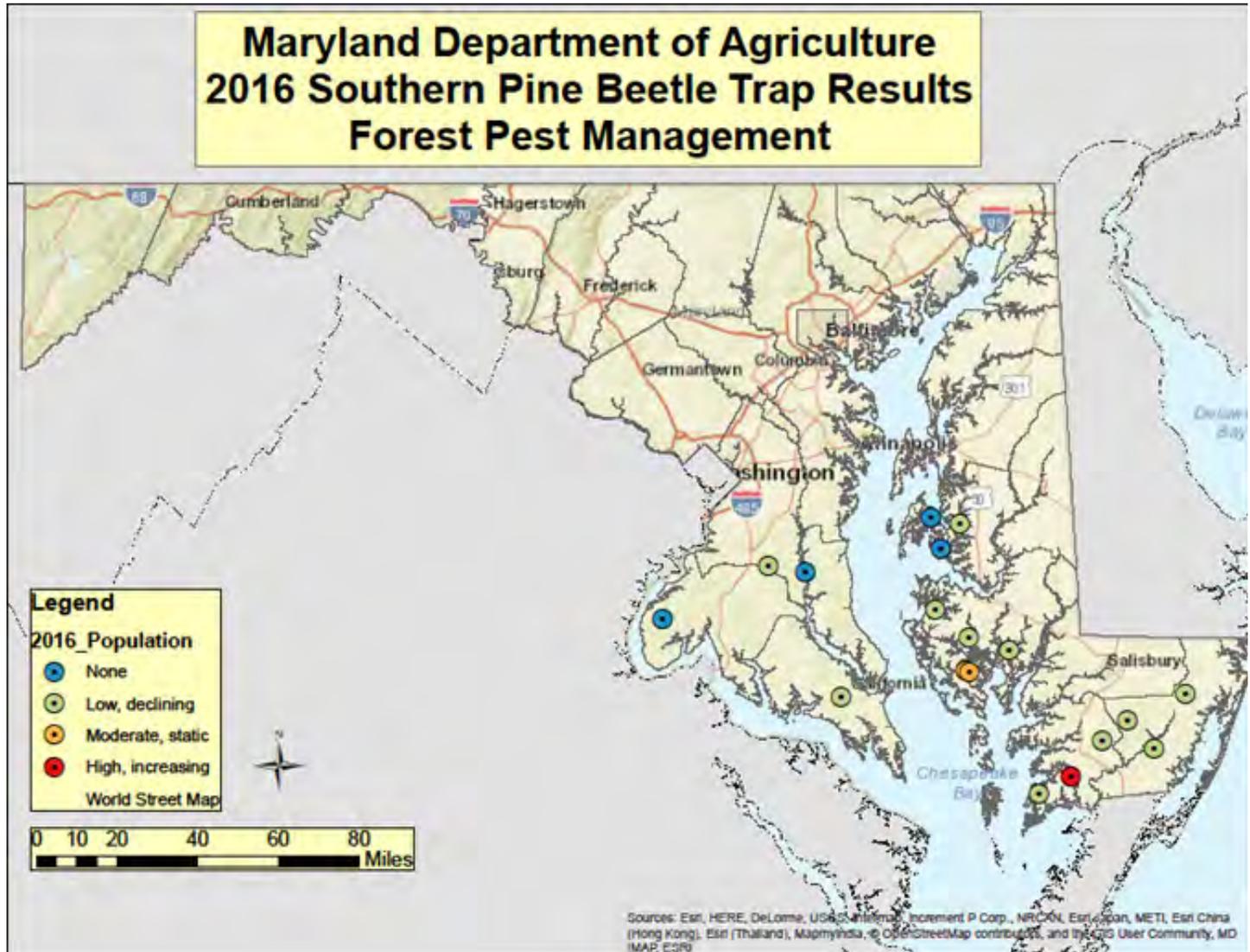
## Maryland Department of Agriculture 2016 Gypsy Moth Suppression Blocks, Upper Eastern Shore Forest Pest Management



## 2015 - 2016 GYPSY MOTH EGG MASS SURVEY SUMMARY

Region/County	No. of Acres Surveyed	No. of Blocks Surveyed	No. of Points Surveyed
<b>EASTERN SHORE</b>			
Caroline	4,232	6	40
Dorchester	2,876	33	121
Queen Anne's	402	7	18
Somerset	887	15	47
Talbot	5,290	57	166
Wicomico	5,679	77	181
Worcester	2,663	37	120
<b>TOTALS</b>	<b>22,029</b>	<b>232</b>	<b>693</b>
<b>SOUTHERN</b>			
Charles	82,385	61	187
St Marys	39,922	49	195
Anne Arundel	26,476	78	358
Prince Georges	0	1	2
Calvert	0	0	0
<b>TOTALS</b>	<b>148,783</b>	<b>189</b>	<b>742</b>
<b>NORTHEAST</b>			
Baltimore	32,316	223	863
Cecil	25,945	104	433
Harford	24,594	141	502
Kent	734	3	10
Baltimore City	0	0	0
<b>TOTALS</b>	<b>83,589</b>	<b>471</b>	<b>1,808</b>
<b>WESTERN</b>			
Allegany	47,738	146	762
Garrett	64,813	183	903
Washington West	11,147	56	245
<b>TOTALS</b>	<b>123,698</b>	<b>385</b>	<b>1,910</b>
<b>CENTRAL</b>			
Carroll	22,125	286	668
Frederick	59,365	327	1,084
Howard	11,001	104	336
Montgomery	19,366	185	626
Washington East	24,123	76	388
<b>TOTALS</b>	<b>135,980</b>	<b>978</b>	<b>3,102</b>
<b>TOTALS</b>	<b>514,079</b>	<b>2,255</b>	<b>8,255</b>

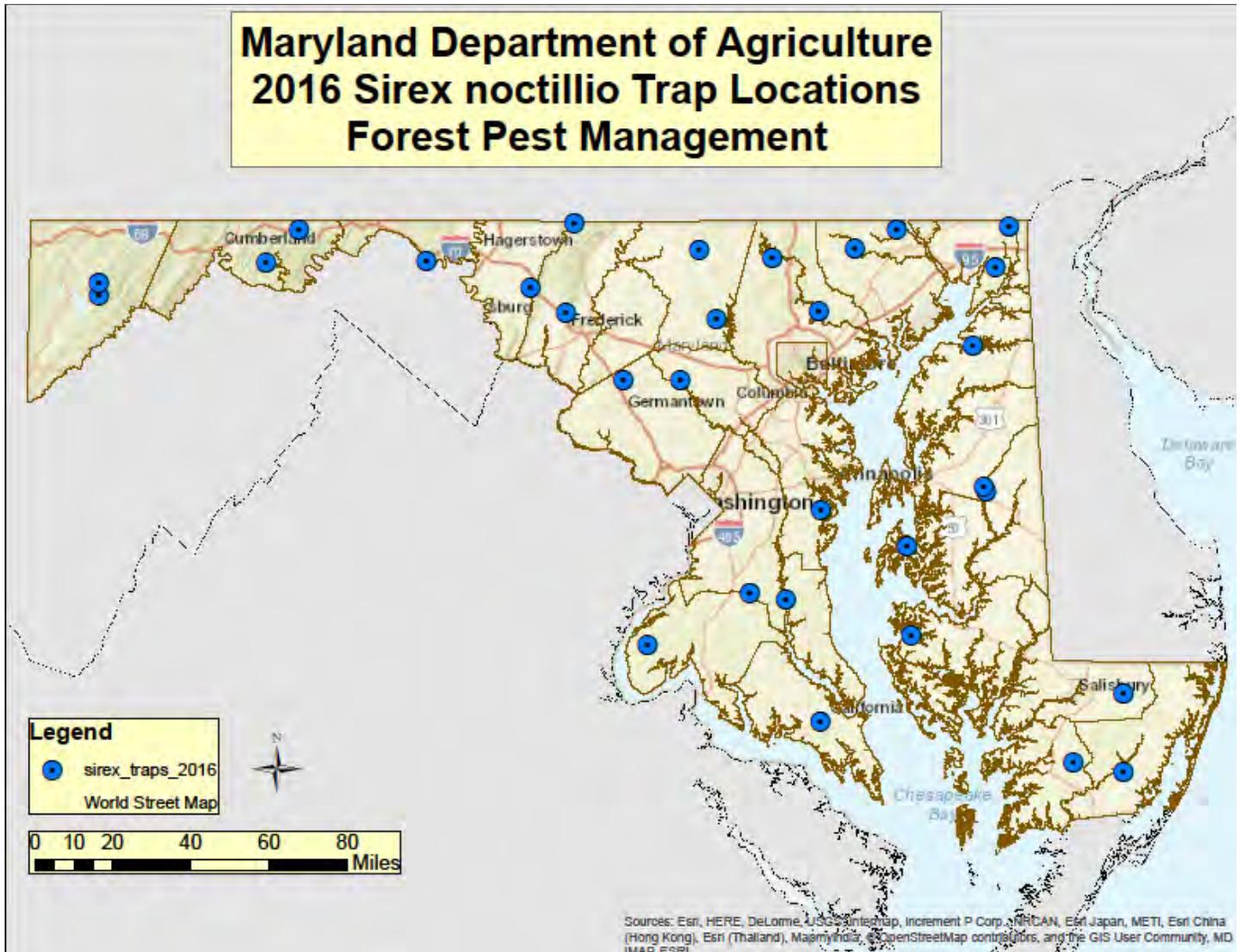




## FOREST PEST MONITORING AND SURVEYING

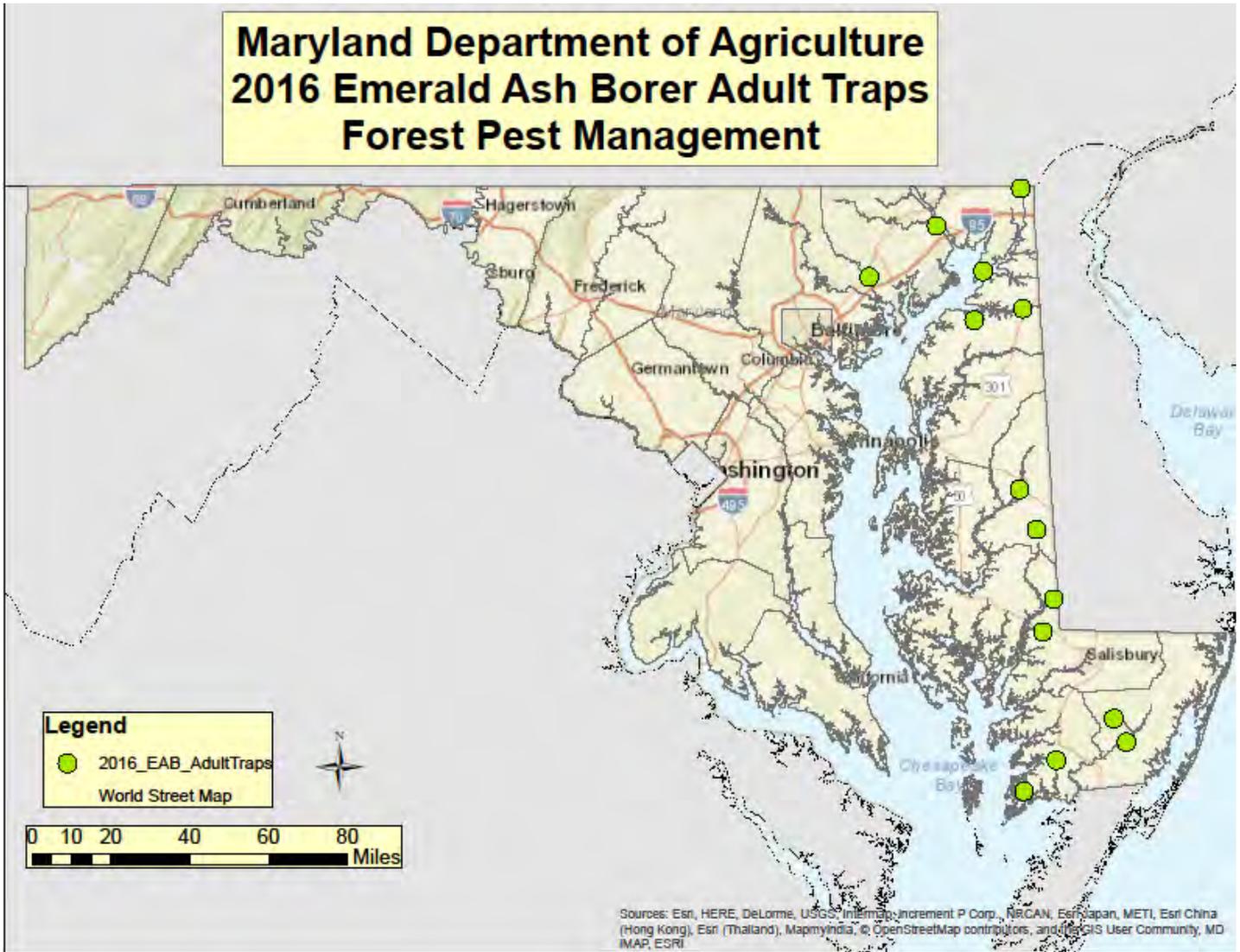
**Southern Pine Beetle (SPB)** is one of the most destructive insect pests of pines. Maryland is at the northern edge of its range, and the SPB is commonly found on the lower Eastern Shore and Southern Maryland. Since 1989, Maryland has participated in a SPB survey throughout the southern United States using pheromone-baited traps. Trap data indicated that SPB numbers are rising in two counties in 2016. Populations had been below outbreak level since 1994. However, in 2015

an outbreak of southern pine beetle killed over 100+ acres in Dorchester County. This outbreak has continued to grow, and in July an additional site of SPB in lower Dorchester County was identified. This brings the affected acreage close to 200 acres. Landowners in these areas were notified and were advised to contact the County Forester to develop Forest Management Plans. A trap in Somerset County indicated that the SPB population there is increasing as well; however, no trees have been identified as killed by SPB.



***Sirex noctilio* (Wood Wasp)** has been the most common species of exotic wood wasp detected at United States ports-of-entry associated with solid wood packing materials. Recent detections of the wood wasp outside of port areas in the United States have raised concerns because this insect has the potential to cause significant mortality of pines, especially southern pines such as loblolly pine. The *sirex*

wood wasp has not been detected in Maryland but is known to be in Pennsylvania. To detect this insect, MDA places two traps per county on the northern tier counties and one trap for all other counties, for a total of 31 traps in pine woods. All traps were negative during FY 2016.



**Emerald Ash Borer (EAB).** MDA’s Forest Pest Management Section put up 12 green funnel traps, 2 traps in each county that has not previously been found to be positive for EAB. All traps were negative for EAB in 2016.

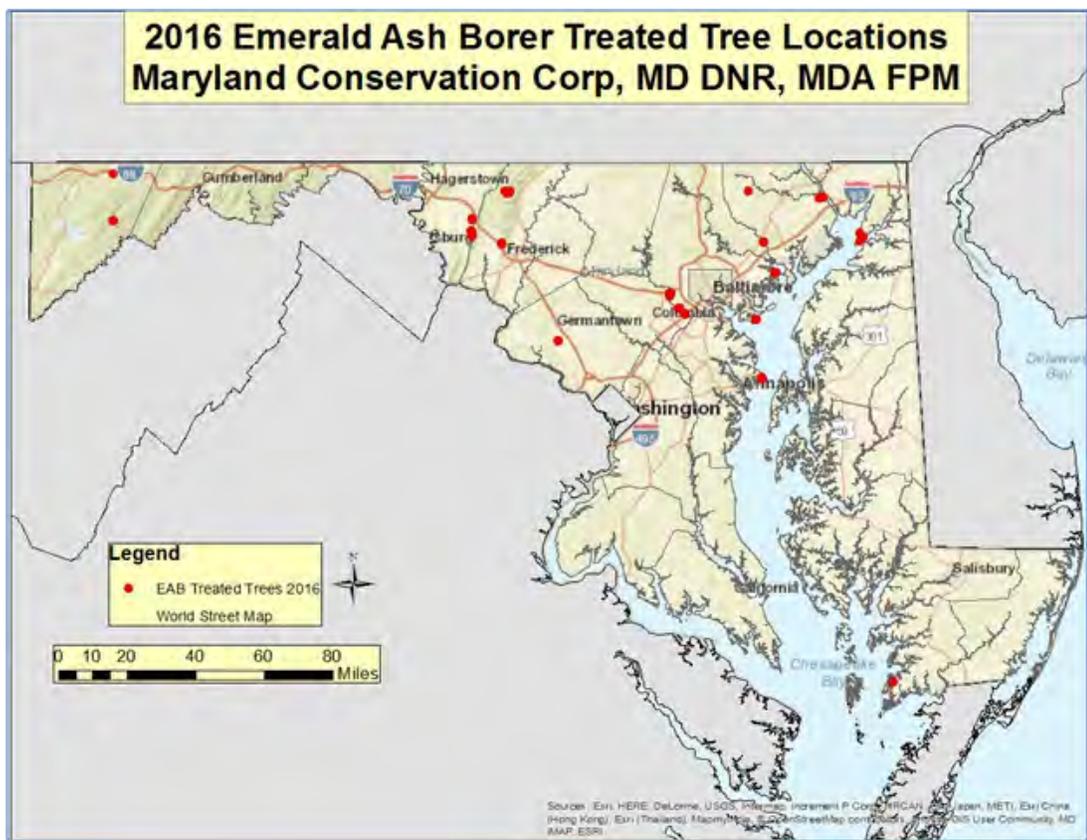
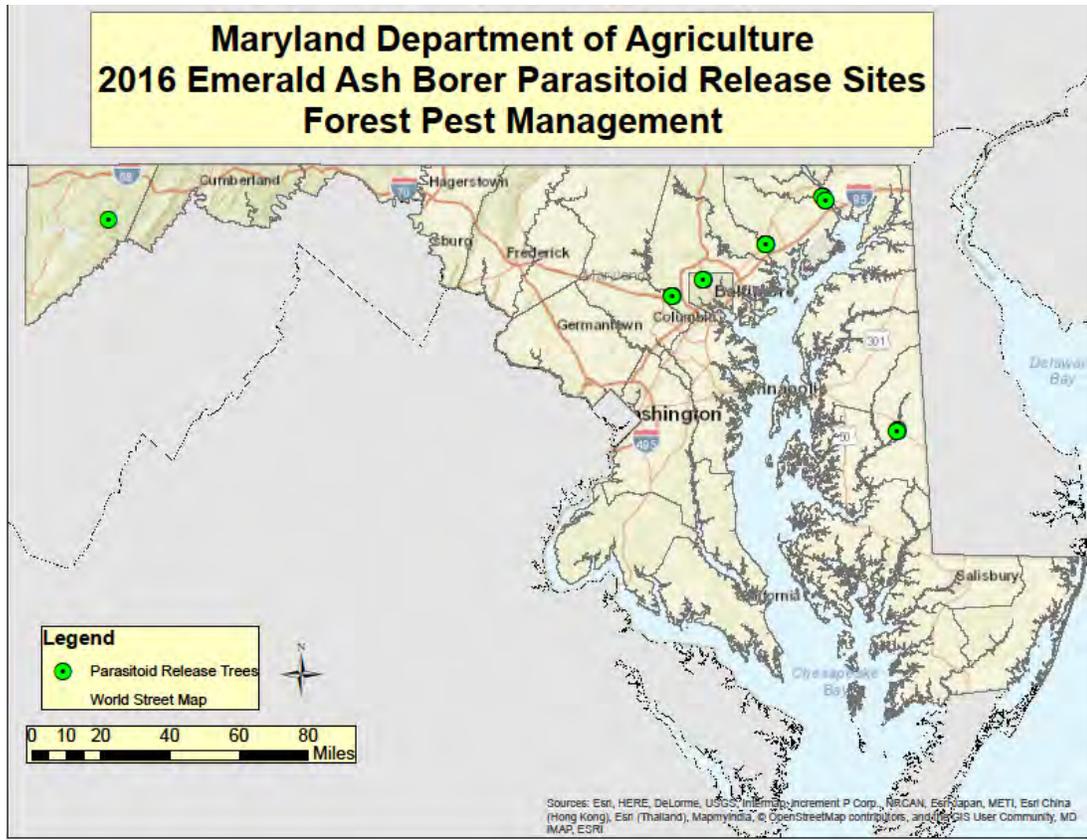
Emerald ash borer parasitoids were released in five state parks and one Arboretum. Locations were chosen based on the presence of ash and low populations of Emerald Ash Borer. The locations were Big Run State Park in Western Maryland, Martinak State Park on the Eastern Shore of Maryland, and Cylburn Arboretum, Susquehanna State Park, Gunpowder

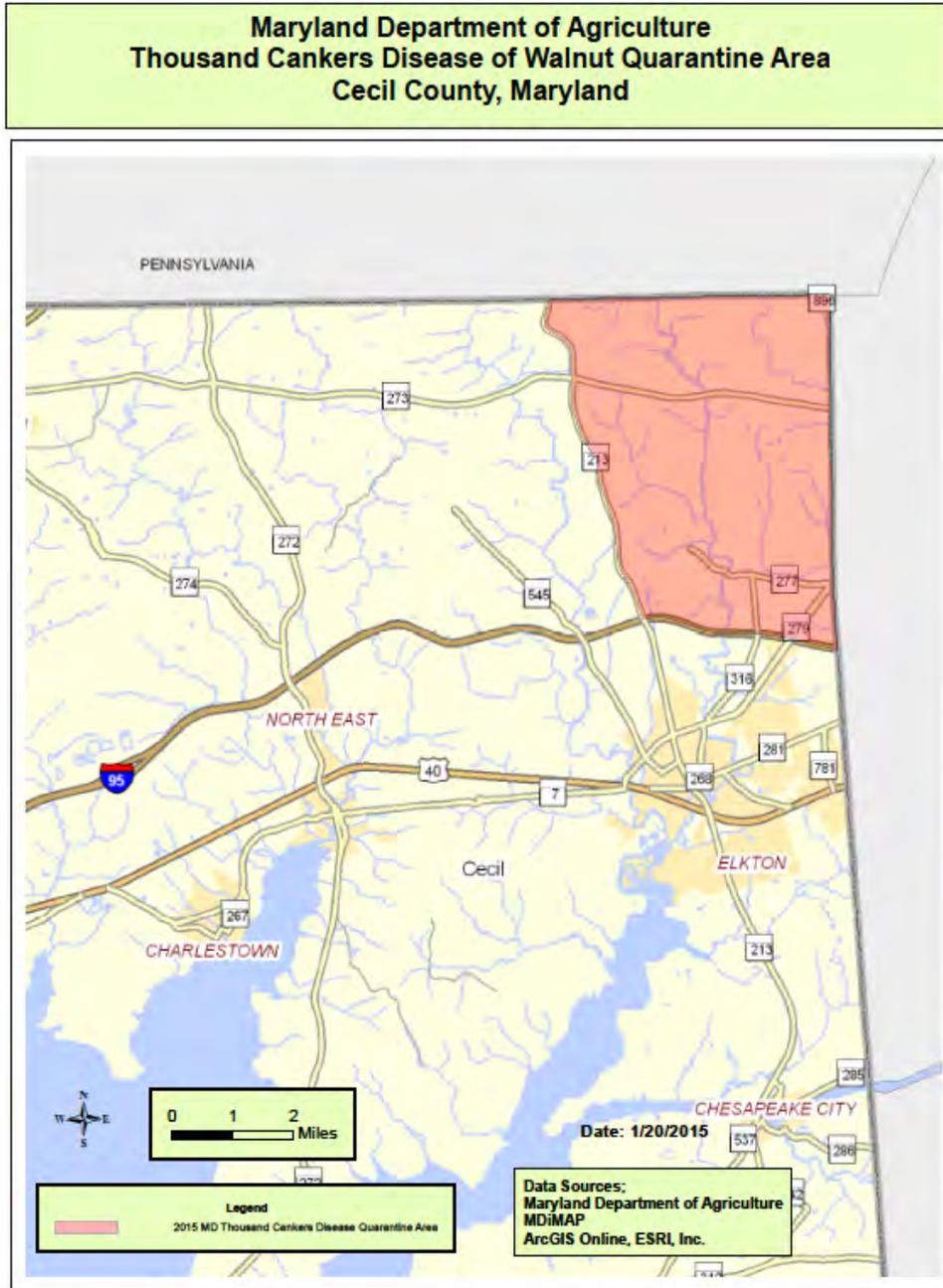
State Park, and Patapsco Valley State Park in Central Maryland. In 2016, 39,500 *Oobius agrili*, 30,038 *Tetrastichus planipennisi*, and 1,867 *Spathius agrili* were released across these six sites.

In addition, Forest Pest Management personnel supervised treatments of ash trees across Maryland. This work was done in Parks in cooperation with the Maryland Department of Natural Resources and the Maryland Conservation Corp. In total 299 ash trees, 4,980” DBH were treated using 31,495 ml of Tree-age (*Emamectin benzoate*).

## MARYLAND DEPARTMENT OF AGRICULTURE FOREST PEST MANAGEMENT 2016 EMERALD ASH BORER PARASITOID RELEASE SUMMARY

Site Name	Latitude	Longitude	Oobius agrili		Tetrastichus planipennisi		Tetrastichus planipennisi Adults			Spathius agrili	
			# vials	Total	# bolts	Total	# female	# male	Total	# cups	Total
Susquehanna State Park	39.61383	-76.15099	60	6,000	59	3,213	800	279	1079	0	0
Patapsco Valley State Park	39.29593	-76.78358	52	5,200	68	3,236	609	201	910	22	774
Gunpowder Falls State Park	39.46263	-76.39238	61	6,100	61	3,014	796	230	1,026	0	0
Cylburn Arboretum	39.3513	-76.65368	48	4,800	67	3,269	1,000	299	1,299	16	584
Martinak State Park	38.86002	-75.84153	106	10,800	149	6,430	1543	371	1,914	8	299
Big Run State Park	39.5449	-79.13853	66	6,600	83	4,021	483	144	627	8	210
<b>TOTALS</b>			393	39,500	487	23,183	5,231	1,524	6,855	54	1,867





**Thousand Canker Disease of Black Walnut (TCD) and Walnut Twig Beetle (WTB).** Eastern black walnut planted in the western United States has been experiencing dieback and mortality. The WTB spreads the TCD. An infested tree usually dies within three years of visible symptoms. This beetle and disease was not reported in the natural range of the eastern black walnut until 2010 when it was discovered in Tennessee. Since then, it has been found in several states. Maryland, with other mid-Atlantic states, started surveying for this disease in 2011. In 2013 WTB was detected in Maryland. October 2014

thousand cankers disease was confirmed. The northeastern corner of Cecil County has been quarantined.

Forty traps baited with a pheromone for the WTB were set statewide to detect new infestations. Traps were checked every two weeks, field samples collected, sorted and labeled in office, and sent to PDA for identification. Four traps were positive for WTB. These traps, CE01, CE03, CE15, and CE16 were all within 1500 feet of the original positive find (CE01). Sixteen beetles were collected across the four traps. These beetles were collected in May, August, and October.



## FALL 2015 – SPRING 2016 IMIDACLOPRID TREATMENTS FOR HEMLOCK WOOLLY ADELGID CONTROL IN MARYLAND

Hemlock Stand	County	Trunk Injection		Soil Injection		Total	
		#Trees	Inches DBH*	# Trees	Inches DBH	#Trees	Inches DBH*
Prettyboy Reservoir	Baltimore	0	0	527	4,179	527	4,179
Frederick Watershed	Frederick	79	11,49.5	0	0	79	1,149.5
Hunting Creek CFSP	Frederick	0	0	81	799	81	799
Patapsco Valley S P	Howard/ Baltimore	162	1,452	278	2,587	440	4,039
Gunpowder Falls S P	Baltimore	30	294.2	82	622.7	112	916.9
Frostburg Watershed	Garrett	0	0	1,242	12,169	1,242	12,169
Green Ridge S F	Allegany	129	1,817.1	357	3,690	486	5,507.1
Big Run SRSF	Garrett	896	8,784.6	378	3,520	1,274	12,304.6
Wolf Swamp SRSF **	Garrett	383	4331	5,739	68,560	6,122	72,891
Laurel Run SRSF	Garrett	240	2,441.5	0	0	240	2,441.5
Patuxent River	Howard	47	401.3	192	1,536.5	239	1,937.8
Wye Island	Queen Annes	50	358.3	0	0	50	358.3
South Mountain State Park	Washington	29	214.2	0	0	29	214.2
Susquehanna State Park	Harford	0	0	27	348	27	348
<b>TOTAL</b>		2,045	21,243.7	8,903	98,011.2	10,948	119254.9

\*DBH = the diameter of the tree trunk at 4.5 feet above the ground; \*\* Owned By The Nature Conservancy

\*\* \*Treatments done by Forest Pest Management and Maryland Conservation Corps (Department of Natural Resources)

**Hemlock Woolly Adelgid Suppression.** The Hemlock Woolly Adelgid (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 Cecil to Garrett counties. In 2003-04, a joint task force of Maryland Department of Agriculture Forest Pest Management Section (MDA-FPM) and Maryland Department of Natural Resources (DNR) experts addressed the multi-disciplinary needs of the HWA infestation. The task force prioritized more than 50 hemlock stands and selected them as the sites for joint suppression efforts (chemical and/or biocontrol). Only publicly owned or public use sites would be part of this

suppression project. Currently, the chemical option involves treating the hemlock trees with the insecticide imidacloprid by one of two methods, trunk injection or soil injection. The biocontrol option involves releasing HWA predators into the hemlock stands in an effort to reduce HWA populations.

From 2004 to the present, over 68,000 hemlock trees have been treated. A total of 10,948 hemlock trees and 119,255" DBH were treated in MD in between July 1, 2015 and June 30, 2016. Of this total, 2,045 trees or 21,244" DBH were trunk (stem) injected, and 8,903 trees or 98,011" DBH were soil (includes CoreTect) injected.

Biocontrol efforts to combat the HWA began in 1999, and over 47,000 HWA predators representing 5 different species, have been released throughout the state since that time. In recent years our efforts have focused on *Laricobius nigrinus*, *Laricobius osakensis*, and *Scymnus coniferarum*.

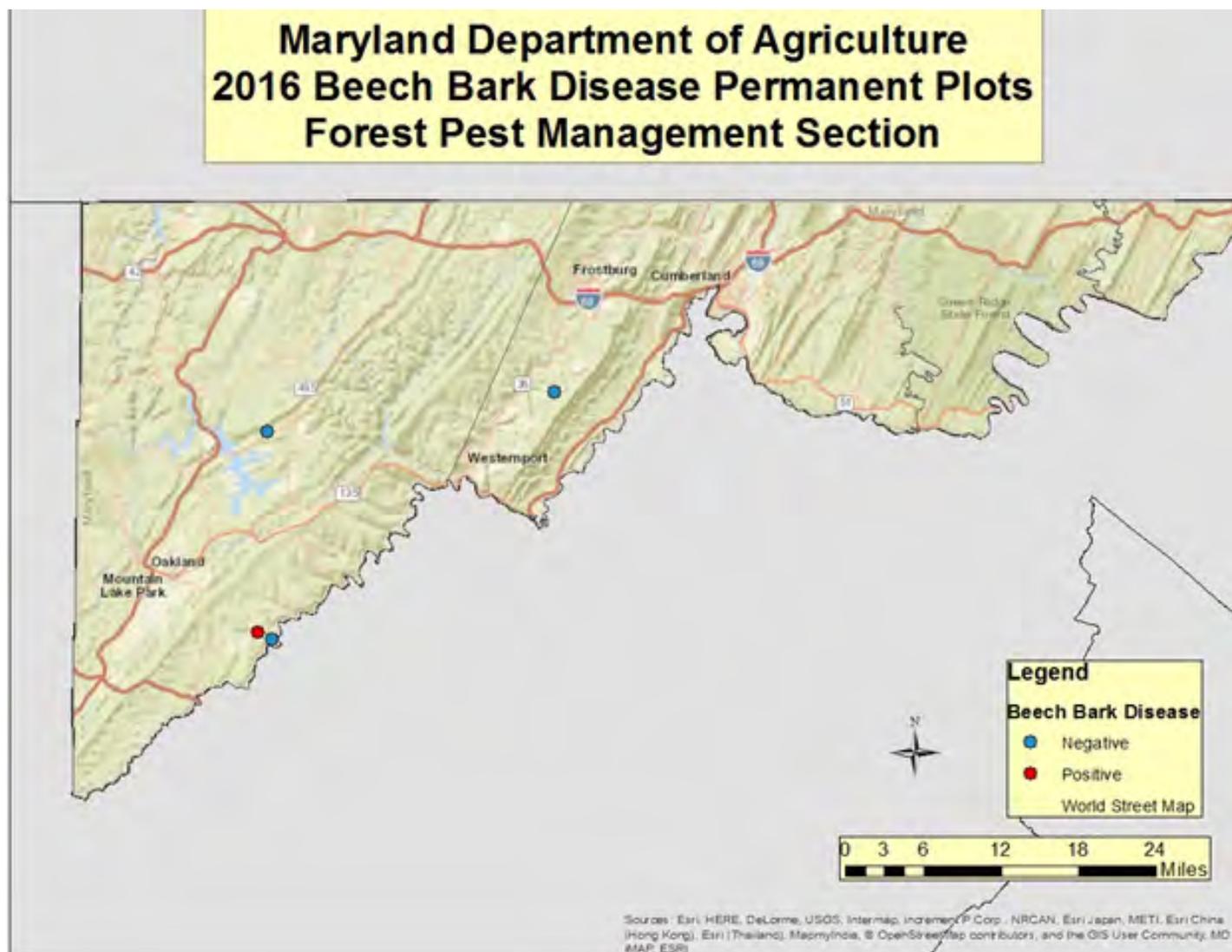
In the fall of 2015, 2,474 predatory beetles were released at 5 sites, two in Garrett County, and one in each Allegany, Frederick, and Harford Counties. FPM has established a *Laricobius nigrinus* “nursery” at Rocky Gap State Park, and many beetles have been caught there and released in other

hemlock stands throughout Maryland in recent years. In 2015, 359 *L. nigrinus* were moved from Rocky Gap to the Frederick County site.

**HWAS Efficacy.** Treatment efficacy surveys have been conducted annually since 2006. Treated trees averaged a 79% reduction in HWA populations when measured 1 year post treatment and non-treated trees averaged a 24% increase in HWA populations when measured over the same time period. In 2015-16 efficacy surveys were done at treatment sites in Garrett, Montgomery, and Baltimore counties.

### MARYLAND HEMLOCK WOOLLY ADELGID PREDATOR RELEASES 2003 - 2016

Hemlock Stand	County	<i>Laricobius nigrinus</i>	<i>Laricobius osakensis</i>	<i>Scymnus coniferarum</i>	<i>Symnus sinuanodulus</i>	<i>Sasajiscymnus tsgae</i>
Rocky Gap State Park	Allegany	3,476	0	105	0	5,000
Prettyboy Reservoir	Baltimore	2,672	0	0	0	0
Cunningham Falls State Park	Frederick	810	0	0	0	0
Frederick City Watershed	Frederick	2,381	0	0	945	0
Broad Creek Scout Camp	Harford	2,302	0	0	0	15,410
Rocks State Park	Harford	1,424	0	0	0	0
Hagerstown Watershed	Washington	853	0	0	0	0
Big Run (Savage River State Forest)	Garrett	1,685	0	0	0	0
Big Run State Park	Garrett	50	0	0	0	0
Dry Run (Savage River State Forest)	Garrett	150	0	0	0	0
Frostburg Watershed	Garrett	300	0	0	0	0
Laurel Run (Potomac State Forest)	Garrett	1,000	0	0	0	0
Lostland Run (Potomac State Forest)	Garrett	1,500	500	0	0	0
Poplar Lick (Savage River State Forest)	Garrett	2,289	1,510	0	0	0
Elk Lick (Savage River State Forest)	Garrett	1,491	500	0	0	0
Gunpowder Falls State Park	Baltimore	0	1,010	0	0	0
<b>TOTAL</b>		<b>22,383</b>	<b>3,520</b>	<b>105</b>	<b>945</b>	<b>20,410</b>



**Beech Bark Disease.** There are four permanent beech bark disease monitoring sites in Maryland. Three sites are in Garrett County and one site in Allegany County. These sites are for monitoring the damage and expansion of this insect/disease complex. Two sites in Garrett County are positive for Beech scale, and one of those sites, Laurel Run A is positive for Beech Bark Disease.

**PESTS OF CONCERN**

Bacterial Leaf Scorch has affected trees state-wide. The affected trees are in both Urban and Forest settings.

Mature Chestnut and Red Oaks are dying in Maryland’s most northern tier counties and one county on the Eastern shore. Trees have been tested by a USFS pathologist and the results were found to be inconclusive. Secondary pests are present, but likely not the cause of mortality.

## MOSQUITO CONTROL

The Mosquito Control Section provides an important public health and quality of life service to Maryland residents in 2,204 communities in 16 counties through mosquito abatement work, arbovirus surveillance, public education and enforcement.

The program is staffed by 12 classified employees, four long-term contractual employees, and 60 seasonal contractual employees. Program administration, a laboratory and the Anne Arundel County program staff are located in MDA's Annapolis Headquarters. Regional offices and laboratories are located in College Park, Hollywood and Salisbury.

Mosquito Control work is conducted under the authority of the Maryland Mosquito Control Law, Agricultural Article, Title 5, Subtitle 4. Participation in the mosquito control program is voluntary and requires cooperative agreements with local governments and local communities to pay for services.

### MOSQUITO-BORNE DISEASE SURVEILLANCE

**West Nile virus (WNV)** continues to be the mosquito-borne disease of greatest public health importance in Maryland. In 2015, 46 human cases were reported by the Maryland Department of Health and Mental Hygiene (DHMH) with 5 fatalities. In addition to these human cases, 33 pools of mosquitoes tested positive for WNV.

**Eastern Equine Encephalitis (EEE)**, one of the most severe mosquito-borne diseases in the United States, was not detected in 2015, although cases have been reported in several other years. EEE has an average mortality rate of 33 percent, and most survivors experience significant brain damage.

**Chikungunya** continues to be a virus of concern. During the winter of 2013 an outbreak of Chikungunya virus occurred in the Caribbean region and spread to South and Central America and Florida. Chikungunya symptoms progress rapidly with sudden onset of high fever, headache and intense joint pain. Symptoms usually subside in 7 - 14 days, but can be severe and disabling. Chikungunya is rarely fatal. While there was travel associated human cases of Chikungunya reported in Maryland in 2015, the disease has not become endemic. Chikungunya is not a zoonotic disease and does not have an animal reservoir. It is likely that diseases that do not have an animal reservoir will not become endemic in Maryland. This disease can be transmitted by the Asian tiger mosquito which

is the predominant urban and suburban pest mosquito in Maryland.

### PERMANENT WORK PROJECTS

The Kubota Excavator, which went into service in 2012, is still MDA's primary unit used for ditching and water management projects. The total acreage managed by source reduction projects in 2015 was 884 acres. In cooperation with the Commissioners of Somerset County, three projects were completed in Dorchester County and were located in the communities of in Jan's Island State Park and smaller projects on privately owned land. These ditch maintenance projects involved the removal of silt, debris, and vegetation from the outlets of these systems to allow floodwater to flow thus eliminating mosquito breeding habitat.

MDA continues its annual inspections of the Crisfield City Dike system mapping areas in need of future repairs. In addition to the excavator, MDA also used an all-terrain Argo ATV for personnel and equipment transport to remote areas of this system.

Follow up inspections indicate that the repairs are successful and the tide gates are operating effectively. MDA will continue to monitor this tidal dike system to ensure the repairs are still functional in reducing residential flooding as well as reducing mosquito breeding habitat in the Crisfield community

### BIOLOGICAL CONTROL

In the effort to control mosquitoes, MDA uses several approaches as part of its integrated pest management (IPM) program. One component of this program is the use of the native mosquitofish, *Gambusia affinis holbrooki*, to control mosquito larvae. Incorporating this biological control agent reduces the use of aquatic insecticides and provides control of mosquito populations in an efficient, cost-effective and environmentally responsible manner.

The mosquitofish used in the mosquito control program are reared in a facility at the Salisbury Regional Office. From there, they are transported and stocked into suitable habitats such as stormwater management facilities, closed ditches and artificial containment sites. These areas are inspected by MDA personnel to determine if the introduction of *Gambusia* would be the preferred control option based on habitat type/site design, water quality factors, the presence of threatened

or endangered species, and the relative abundance of mosquito larvae.

During the 2015 mosquito season, 3,650 fish were stocked in closed pond and woodland habitats. MDA will continue to monitor and inspect suitable sites to determine where future mosquitofish stocking is necessary.

## PUBLIC EDUCATION

The predominant type of public education this season was media interviews, since there was intense media interest in mosquito populations after the above-average rainfall in June west of the Chesapeake Bay, and the corresponding increase in West Nile virus cases later in the season. There were 22 interviews done this season with mosquito control or public relations employees, with both print and TV media outlets throughout the State.

Outreach was done at 14 different school functions in 2015: 13 in Prince George’s County, and 1 in Wicomico County (Wor-Wic Community College). These included a science fair, a college class and Prince George’s County’s science quiz show, The Science Bowl.

MDA set up Asian tiger mosquito exhibits in 2 Prince George’s County libraries, both in July: Greenbelt for 2 weeks, Surratts/Clinton for the month.

MDA offered training twice in 2015, for a Master Gardener training session in Montgomery County and for Prince George’s County health department staff. An employee spoke at the MidAtlantic Mosquito Control Association conference in Savannah, Ga. in January.

Mosquito control employees spoke at two community meetings in Prince George’s and Anne Arundel counties, and did one mass-yard-inspection for Asian tiger mosquito breeding sites in Prince George’s. The College Park office hosted a meeting about Asian tiger mosquitoes for the University of Maryland Ladies’ Club. Mosquito control employees worked several shifts at the MD State Fair in August/September.

A county breakdown of public education outreach is: Prince George’s, 23; Baltimore County, 9; Anne Arundel, 5; Eastern Shore, 1; Statewide, 3; and 4 others.

Many of these public education efforts are impossible to quantify, particularly the media interviews and library exhibits. However, over 450 people were in attendance at the events with known participant levels.

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

## AIR SPRAY

The air spray program continues to provide a high level of service to the state. MDA owns and operates a Beechcraft King Air which has been modified specifically to be operated in a modern mosquito control program. The pilot is also the administrator for the air spray program.

The air spray season began in April with applications of biorational larvicide to 4,654 acres of seasonally flooded woodlands. This work is done near population centers to reduce the number of mosquitoes that fly into these areas. The early woodland mosquito species are also involved in the amplification of arboviruses in bird populations. Controlling them helps to reduce the risk of transmission of arboviruses to horses and humans later in the season.

In 2015, 119,206 acres were treated by aircraft, the majority for control of adult mosquitoes.

Precision navigation and flow control equipment are critical for the safe and efficient aerial application of insecticides. The mosquito control section uses Ag-Nav Guia, a state of the art GPS based navigation system, for all aerial applications of insecticide. This system, functioning with insecticide metering equipment, assures target accuracy and disperses insecticides accurately within a tenth of an ounce per acre. With spatial and temporal parameters and calibrated application rates, mosquito mortality rates of 90 percent or more are achieved within a defined target area at a cost that is lower than spraying with truck-mounted spray equipment.

Region	Human Cases
Baltimore Metropolitan Area	32
National Capital Region	13
Western MD	1

**MOSQUITO CONTROL ACTIVITY SUMMARY: CY 2013 - 2015**

	CY 2013	CY 2014	CY 2015
Communities Participating in Mosquito Control Program	2,568	2,153	2,204
Number of Light Trap Nights	3,758	3,338	2,511
Percent of Light Trap Nights Below Threshold	69%	78%	63.4%
Number of Landing Rate Counts Performed	35,461	24,338	29,247
Percent of Landing Rate Counts Below Action Threshold	28.6%	30.7%	25.2%
Number of Public Service Requests	4,449	2,677	4,952
Number of Inspections by Request	3,578	1,853	1,173
Number of Adverse Effects Inspections	770	600	377
Number of Mosquitofish Stocked	6,282	850	3,650
Acres Managed by Open Marsh Water Management	455.5	1,432	884
Acres Treated with Insecticide	1,551,128.5	1,065,874	1,396,520.96
Acres Treated for Mosquito Larvae	6,447.45	5,270	5,991.39
Acres Treated for Adult Mosquitoes	1,544,681.1	1,060,604	1,390,529.57
Acres Treated by Aircraft	134,026	120,071	119,206
Acres Treated by Ground Equipment	1,417,102.5	945,803	1,277,323.96
Number of Mosquitoes Tested for Arboviruses	21,960	16,334	19,243
Number of Human Cases of West Nile Virus Statewide	16	6	46
Number of Cases of Arbovirus in Domestic Animals	3	1	2
Number of Mosquito Pools Positive for Arbovirus	12	*35	**33

*\*Of the 35 mosquito pools that tested positive for Arbovirus in 2014, the breakdown was as follows: Anne Arundel Co: 6, Dorchester Co: 1, Harford Co: 4, Montgomery Co: 5, Prince George's Co: 16, Talbot Co: 1, Worcester Co: 2. The breakdown of virus types is as follows: Eastern Equine Encephalitis, one case; West Nile Virus, thirty-three cases; Cache Valley Virus, two cases.*

*\*\*Of the 35 mosquito pools that tested positive for Arbovirus in 2015, the breakdown was as follows: Anne Arundel Co: 3, Baltimore Co: 3, Montgomery Co: 7, Prince George's Co: 18, Talbot Co: 1, Wicomico Co: 1. The breakdown of virus types is as follows: Eastern Equine Encephalitis, zero cases; West Nile Virus, thirty-three cases.*

## PESTICIDE REGULATION

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. Pesticide Regulation includes 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 Pesticide Regulation -- 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.

Some 158 new private applicators were certified in FY 2016 for a three-year period after passing a closed book examination administered by section personnel; 1,754 private applicators renewed their certificates by attending recertification training meetings. Currently, there are 3,426 certified private applicators. Section staff approved and monitored 126 private applicator recertification training sessions conducted by the University of Maryland Extension, the Maryland Department of Agriculture, or the pesticide industry.

A total of 591 new commercial pest control applicators and consultants were certified in FY 2016 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 1,063 public agency applicators in 2016, bringing the total number of certified commercial, public agency applicators and consultants to 4,167 in 2016. A total of 18 exam sessions were held during which 1,965 exams were administered to 768 applicants. Once certified, commercial applicators are required to participate in at least one update training session approved by the department each year in order to renew their certificates. Some 493 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, 3,994 applicators were recertified in 2016.

#### During FY 2016:

- 1,602 commercial businesses and 161 not-for-hire businesses were licensed to apply pesticides and to perform pest control services
- 322 public agency permits were issued to governmental agencies that apply pesticides
- 38 pest control consultant licenses were issued
- 7,916 registered employee identification cards were issued during 2016. These employees of pesticide businesses and public agencies are registered to apply pesticides under the supervision of certified applicators
- 159 dealer permits were issued to businesses that sell restricted use pesticides

### PESTICIDE USE INSPECTION AND ENFORCEMENT

In addition to enforcing state pesticide laws, the department enforces federal pesticide laws under a Cooperative Enforcement Agreement with the U.S. Environmental Protection Agency. Routine inspection activities are conducted throughout the year and include use observations and inspections of pest control businesses, public agencies, pesticide dealers, market places and producer establishments. Consumer Complaint and pesticide misuse investigations are also conducted by the staff.

In FY 2016, 560 inspections were performed during which 190 businesses were cited for violations of the Pesticide Applicators Law and Regulations. Eighty-four pesticide dealer inspections were conducted to ensure that restricted use pesticides were sold only to certified applicators. One hundred thirty five use observations were conducted, during which pest inspection and pesticide applications performed by commercial, public agency and private applicators, were observed by department personnel. A total of 40 consumer complaints were investigated. Under the federal cooperative agreement, 28 pesticide producer establishments and 26 market place inspection were conducted. Enforcement actions taken in 2016 included the assessment of thirteen civil penalties totaling \$6,380. In FY 2016, the Section

continued conducting inspections at commercial agricultural pesticide application firms, custom blending operations and agricultural pesticide refilling establishments. Inspectors conduct inspections of bulk pesticide storage containers, as well as, 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**

Pesticide Regulation continues to maintain an online mapping application, called the “Sensitive Crop Locator,” on the department website. This application was initiated in 2013 and shows the locations of crops/commodities that are sensitive to pesticide damage so pesticide applicators can take extra precautions to prevent pesticide drift, especially from herbicides, when spraying on nearby properties. Crops sensitive to pesticide damage include grapes, tomatoes, organic farms, tobacco, livestock, nurseries, and vegetables, among others. Information in the statewide map is voluntarily provided by the grower of the sensitive crop(s). The map includes the name and address of the grower; the type of crop/commodity produced; contact information; and the specific location where each crop is grown. The website gives applicators the ability to pull up maps and satellite images to search for, locate and identify any sensitive/specialty crops in areas where they will be making pesticide applications. The mapping system also has the capability to measure distances and areas. The database is designed for individuals involved in commercial production. It does not include homeowners who may be growing a sensitive/specialty crop on their own property for their own use. Although designed for applicators, it is available to anyone online. Commercial growers who want their crop and/or commodity listed can submit an application to the department for each field to be listed on the website.

A list of pesticide-sensitive individuals was first compiled in 1989. During 2016, the department registered 192 individuals, who receive advance notification of pesticide applications made to adjacent properties by commercial ornamental plant and turf pest control businesses and public agencies.

Searchable databases of registered pesticide products, licensed pesticide businesses, commercial and private applicators and restricted use pesticide dealers continue to be posted on the department’s web site. These databases provide

information to applicators and the public about pesticides that may be legally sold, distributed and 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 U.S. Environmental Protection Agency’s registration database so that applicators and consumers can obtain information on each pesticide product queried, such as the federal registration number, pests controlled, sites of application, formulation, active ingredient and the brand name.

### **INTEGRATED PEST MANAGEMENT IN SCHOOLS**

Pesticide Regulation continues to promote and support implementation of the Integrated Pest Management Program in Public Schools. Regulations that require schools to develop and implement notification and integrated pest management plans for indoor pest control became effective in 1999, and regulations for notification and integrated pest management 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. Pesticide Regulation staff continues to work with Maryland Public School districts to implement integrated pest management on school property. In addition, Pesticide Regulation staff members serve as members of the Northeast Region Integrated Pest Management Center’s School Working Group, the Northeast Region’s K-12 Integrated Pest Management Curriculum Subcommittee, and the Association of Structural Pest Control Regulatory Official’s Integrated Pest Management in School Committee. Pesticide Regulation staff continues to work with Maryland public school district’s on the use and implementation of integrated pest management on school property.

### **TRAINING EVENTS**

During FY 2016, the Pesticide Regulation enforcement program coordinator and inspectors attended the annual Environmental Protection Agency Region III State Pesticide Inspector’s Workshop hosted by the Maryland Department of Agriculture. Seventy inspectors from Maryland, Delaware, Pennsylvania, Washington D.C., Virginia and West Virginia attended. The agenda for the workshop included health and safety training for the inspectors as well as presentations on the importance of personal protective equipment 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.

## SPECIAL PROGRAMS

During FY 2016, the section again offered a recycling program for empty plastic pesticide containers to growers and commercial pesticide applicators. Collection centers were maintained in Frederick, Harford, Kent, Talbot and Washington counties, with the assistance of county government agencies. A total of 20 collection days were held from June through September. In addition, 18 pesticide dealer/custom applicators participated in inspection and collection of containers at their own facilities. A total of 43,500 containers weighing 25 tons were collected. The containers were processed for transport to a plastic recycling facility.

Pesticide Regulation continued to offer outreach and assistance to growers and pesticide dealers under the Worker Protection Program. The Worker Protection Standard was established to minimize occupational exposure to agricultural pesticides. The standard requires agricultural workers who could be exposed to pesticides to receive training on pesticide safety. Brochures on the standard requirements have been produced and widely distributed to the regulated community. The federal Worker Protection Standard was revised in the fall of 2015 and implementation of the revisions becomes effective January 1, 2017.

To aid with on-farm compliance, the section has developed a pocket-sized Worker Protect Standard Compliance Evaluation Checklist which is available to the regulated community. The section also contracted with Telamon Corporation to provide pesticide safety training to farm worker. In 2016, Telamon members provided training in Spanish to 288 farm workers.

## STATE CHEMIST

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 special fund 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 FY 2016, the section registered 12,497 pesticide products; 3,808 fertilizers; 658 soil conditioners; 705 fertilizer/pesticide combinations; 151 liming materials; and 18,342 commercial feeds. Department inspectors also brought 26 previously unregistered products into compliance. *Please see Table 1.*

### INSPECTION

Field inspectors routinely sample randomly selected products at retail outlets, distribution centers, warehouses, and formulating facilities. These inspections enable the department 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, presence of pathogens, plant nutrients, trace elements and/or toxic materials. In FY 2016, the State Chemist Section inspectors performed 1,026 on-site inspections. *Please see Table 2.*

### 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. *Please see Table 3.*

### LABORATORY ANALYSES/INVESTIGATIONS

The department's state-of-the-science laboratory is staffed with chemists and technicians who have expertise and experience in the use of highly sophisticated, computer-controlled instruments which are used to analyze 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 products, which are violative, or violators of state and federal agricultural and environmental laws. The laboratory also provides support to the Maryland Department of the Environment, the Maryland Department of Natural Resources, the U. S. Department of Agriculture, and the U. S. Environmental Protection Agency. *Please see Table 4.*

### RAW MILK PET FOOD

Raw milk for pet food is an up and coming market in the state of Maryland. The program has seen an increase in the number of registrations for this commodity. The program will start an inspectional program for the commodity where samples will be taken, labels checked for proper formatting and information, and laboratory analysis will be conducted on the samples taken. The laboratory analysis will include, but not be limited to, microbial contamination, determination of pasteurization, antibiotics, pesticides, etc. These analyses will help to ensure a healthy and safe pet milk supply for the state. Currently, the program has 11 registrants, and 5 more in the process of registering their products.

### HOMELAND SECURITY

**Ammonium Nitrate – Potential Explosive for Terrorist Activities.** The department inspects fertilizer manufacturers and warehouses twice a year to determine how much

ammonium nitrate is being stored and to monitor sales and distribution records to ensure they are maintained in accordance with federal/state law.

## FOOD EMERGENCY RESPONSE NETWORK FOR CHEMISTRY

The State Chemist Section's laboratory is the primary Food Emergency Response Network chemistry laboratory for Maryland. It is an essential part of a national federal-state-local jurisdictional network of laboratories that are expected to be in a state of readiness for immediate response to a chemical event, whether terrorist or accidental, on human and animal food supplies. In the event of an incident, the laboratory staff provides rapid and accurate analysis of food, feed, crops and water samples to determine if these items that provide points of entry into the food chain should be embargoed or released as safe. The laboratory is an active participant in the proficiency program for the analysis of highly toxic materials in food and water. Since 2005 the laboratory has participated in 25 check sample rounds involving highly toxic materials, four of which are among the most deadly toxins known. The laboratory successfully identified the toxic materials in the check samples. The toxins and chemicals include heavy metals, ricin, alpha amanatin, melamine, mycotoxins, heavy metals, tetramine, cyanide, sodium fluoroacetate, alkaloid toxins and pesticides.

The laboratory has been called upon to analyze samples for the U.S. Food and Drug Administration Baltimore-District Office as an overflow capacity laboratory. The department currently maintains preparedness by participating proficiency testing, validating the network methods in the laboratory and extending the methods to animal feeds and pet foods.

## HUMAN AND ANIMAL HEALTH ACTIVITIES

**Pathogen Screening Laboratory.** Both the U.S. Food and Drug Administration (FDA) and the Maryland Department of Agriculture are concerned about the presence of various pathogenic organisms in dog and cat food. The FDA has indicated that between June and August 2015, ten pet food manufacturers were required to remove products from the market place due to the presence of Salmonella and Listeria pathogens. These pathogens most likely were associated with raw meat, eggs, and poultry that may have become contaminated during the manufacturing of the commercial product.

Pathogens may be transmitted to households via contamination by handling and preparation of pet food in the home kitchen area used both for human and pet food

preparation. Contamination may also result from opening a bag of pet food whereby small particles of pet food become airborne and adhere to kitchen counter top surfaces and improper cleaning of the same kitchen utensils to prepare both human and pet food. The pathogen contaminated pet food may be in bowls, plates, etc. placed in a pet feeding area easily accessible to young children.

In FY 2016, department scientists and technicians routinely screened 36 pet food products collected by the inspection staff from warehouses, distributors and retail outlets. Products found to contain pathogens will be subject to removal from the marketplace via Stop Sale Orders and recalls. The three principle pathogens of concern at this time are *Salmonella sp.*, *Listeria sp.*, and *E. coli*. Screening procedures will be those used by federal regulatory agencies based on DNA identification, bioluminescence, as well as other established techniques.

**Mycotoxins and Environmental Toxins Contamination in Grains and Animal Feed Ingredients.** The department routinely monitors Maryland produced and imported grain products (i.e., livestock and human use), animal feed ingredients, and finished animal feeds for certain mold secondary metabolites (mycotoxins) known as aflatoxins, fumonisins, and vomitoxin. Samples of winter wheat from different areas of Maryland were analyzed for vomitoxin and aflatoxin as requested by Maryland Extension. There were no samples found that had levels of concern for any mycotoxin analyzed.

The laboratory routinely analyzes finished feeds and feed ingredients as part of normal surveillance of the marketplace. Samples that were analyzed ranged from ingredient, i.e., grains and grain by-products, to finished feeds. Results from analysis indicated that the overall mycotoxin contamination was low, as seen by no violations being detected. The department also analyzed animal feed ingredients under a FDA contract for the following mycotoxins: aflatoxins, vomitoxin and fumonisins. None of the samples were found to be violative.

Soybean samples were analyzed for aflatoxins for the department's Food Quality Assurance Program. These were sampled and analyzed to determine if the lots were suitable for export to the Asian marketplace as a product of Maryland. None of the samples analyzed were found to be violative.

**Other State Chemist Public Health Concerns – Beware of Home Use Products That Look Like Candy.** The State Chemist Section inspection and laboratory programs go beyond activities that many citizens do not associate with the

Maryland Department of Agriculture. A significant segment of time is spent on collecting and performing chemical analysis on commercial products solely intended to disinfect kitchen area surfaces, toilet bowls, swimming pools, spas, etc.

Surveillance by the inspection staff ferrets out commercial products that have not been approved for sale. Inspectors also select random samples of products for laboratory scientists and technicians to determine if they are safe and meet the specification as registered (approved) by the State Chemist Section. Swimming pool products intended for control of bacteria and algae are the principle products sampled during summer months. Throughout the year the inspection staff performs surveillance of retail outlets for various household products that are regulated by the department.

Various household cleaners such as those used to clean toilet bowls may have the appearance and color (or even the smell) of candy. For example, children have been mistaking a popular laundry detergent for colorful pieces of candy. The detergent is packaged in the form of a quick dissolving pod which has a unique candy-like shape and colorful appearance. The color and shape have induced some children to digest the tasty-looking pieces and suffered from gastric distress due to the high detergent level.

**Drugs and Pesticides in Livestock Feeds.** An analysis program was initiated for finished feeds as part of the Section's FDA contract. Twenty animal feeds were analyzed for the following drugs: monensin, narasin, nicarbazine, lasalocid, and decoquinate. These drugs are routinely used in Maryland for the control of coccidiosis in cattle, poultry, swine, goats, and rabbits. The drugs are also used to increase feed efficiency, weight gain and milk production. All samples analyzed were found to be within the FDA assay control limits for Type A, B and C medicated feeds. These control limits are set when a drug manufacturer wants to market a particular drug for a particular species of animal. These limits are determined by analysis of the drug by several laboratories at different concentration levels.

Pesticide analysis in finished animal feeds was conducted for the first time under the FDA Prohibited Material Contract. None of the finished feeds were found to be violative. This implies that the feed ingredient supply chain

**Bovine Spongiform Encephalopathy – BSE or Mad Cow Disease.** The department 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 federal

regulations pertaining to the prevention of Mad Cow Disease. Feed mills and/or feed distributors are issued stop sale orders for products determined to be in non-compliance with state and federal regulations. In FY 2016, the section inspected and collected samples from feed mills, various retail and wholesale distributors, grain haulers/storage facilities and pet food manufacturers. All inspected facilities complied with federal regulations.

The section uses multiplex PCR instead of the regular PCR analysis done in the past. The multiplex method allows for the simultaneous determination of DNA from swine, sheep/goats and cattle. This saves the section time in doing the analysis. All samples analyzed were negative for ruminant DNA indicating there was no prohibited material in the animal feed or feed ingredient.

## U.S. DEPARTMENT OF AGRICULTURE PESTICIDE DATA PROGRAM

Since 1997, the USDA has contracted with the department 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 U.S. Environmental Protection Agency Food Safety Program, the data will be used to establish new pesticide food tolerances with added emphasis on the diet of infants and children.

## ENVIRONMENT

### **Protection of the Chesapeake Bay – Fertilizer Restrictions.**

The State Chemist's registration staff carefully reviews and approves the labels of all fertilizers intended for use on lawns/turf and golf courses. The purpose is to ensure that the directions for use comply with the 2011 Fertilizer Use Act which specifies phosphorous monitoring, nitrogen application limits, and removing applied fertilizer from paved surfaces. Nearly all lawn fertilizers containing phosphorus require soil testing prior to application. With regards to nitrogen, application limits are set at 0.7 pounds per 1,000 square feet for rapidly available nitrogen, or 0.9 pound of nitrogen per 1,000 square feet of which at least 20 percent must be slow release. State Chemist inspectors perform surveillance of retail outlets to ensure that lawn/turf products are in compliance and will issue stop sale orders for those that are not. Lawn fertilizer labels without the restriction language may lead to over-application which may increase nutrient runoff due to erosion, driveway run-off, etc. Additionally, the law requires

the registrants and manufacturers of the products to submit annually the amount of these products sold and distributed specifically as fertilizer for lawns, turf, golf courses, nurseries, etc. The purpose of such is to monitor the increase or reduction of these fertilizer products and the corresponding nutrients from year to year.

**Compost Facility Operator Certification.** The Maryland Commercial Compost Regulation requires a department-certified facility operator to be onsite to oversee the compost manufacturing process. Before becoming certified, an

individual must pass an examination. Seven people passed the exam during FY 2016. Since 2010, 65 people have taken the exam and have become certified. Additionally, individuals passing the exam must maintain their certification by attending training courses approved by the Maryland State Chemist as well as participating in facility inspections conducted by State Chemist inspectors. Five individuals were recertified during FY 2016. Since 2010, 10 people have met the qualifications for recertification.

**TABLE 1 FY 2016: REGISTRATION AND ENFORCEMENT**

<b>Registration</b>	
Pesticides	12,497
Fertilizers	3,808
Soil Conditioners	658
Fertilizer/Pesticide Mixtures	705
Liming Materials	151
Feeds	18,342
<b>Total</b>	<b>36,161</b>
Companies with Registered Products	2,847
Registrants	2,239
<b>Enforcement - Non Registered Notices Brought Into Compliance</b>	
Pesticides	0
Fertilizers	1
Soil Conditioners	0
Fertilizer/Pesticide Mixtures	0
Liming Materials	0
Feeds	25
<b>Total</b>	<b>26</b>
<b>Enforcement - Non Registered Stop Sales</b>	
Pesticides	0
Fertilizers	1
Soil Conditioners	0
Fertilizer/Pesticide Mixtures	0
Liming Materials	0
Feeds	25
<b>Total</b>	<b>26</b>

**TABLE 2 FY 2016: INSPECTIONS**

Product Manufacturing Sites Visited [Plants, Warehouses, Retailers]	1,026
FDA Regulation Ruminant Tissue [BSE] Feed Inspections	11
USDA/MDA Pesticide Data Program Sites Visited	266
USDA/MDA Pesticide Data Program Samples Collected	510

**TABLE 3 FY 2016: REGULATORY ACTIONS**

<b>Regulatory Action Stop Sales</b>	
Active Ingredient Deficiencies	
Pesticides	0
Fertilizers	46
Feeds	15
Active Ingredient Over Formulations	
Pesticides	0
Fertilizers	46
Feeds	15
Mycotoxins in Feeds	0
Label Violations	46
Phosphorus Levels in Turf/Lawn Fertilizers	15
<b>Regulatory Action Warnings</b>	
Active Ingredient Deficiencies	
Pesticides	2
Fertilizers	30
Feeds	14
Active Ingredient Over Formulations	
Pesticides	0
Fertilizers	17
Feeds	2
Mycotoxins in Feeds	0

**TABLE 4 FY 2016: LABORATORY ANALYSES PERFORMED**

	Samples Collected	Number of Analyses
Pesticides	218	262
Fertilizers	303	1,818
Liming Materials	42	84
Feeds and Pet Foods	610	3,568
Broiler Feeds for Phytase	46	46
Livestock Feeds – Drugs, Additives, Mineral Supplements, Ingredients	75	930
Ruminant Tissue Analysis – State	7	7
Melamine	0	0
Vomitoxin [DON] in Feeds	65	86
Aflatoxin	45	45
Toxic Metal Screen	45	557
Food Safety - Maryland Grown Produce	0	0
Service Samples	78	10,462
Quality Assurance – National and International Products	59	242
EPA (Pesticide – Washington D.C.)	2	354
EPA (Pesticide Regulation - Maryland)	86	4,885
BSE – FDA	60	3,620
Food Emergency Response Network of Federal & State Laboratories	16	16

**TABLE 5 FY 2016: PRODUCT SALES IN TONS**

Fertilizers	377,287
Fertilizer/Pesticide Mixtures	6,788
Soil Conditioners	248,903
Liming Materials	187,533
<b>Total</b>	<b>1,120,513</b>

## TURF AND SEED

Seed is the single most important input to any agricultural system. To be successful, a grower must begin with quality seed. MDA's Turf and Seed Section conducts regulatory and service programs, including seed and field inspections, testing, certification and quality control services which are designed to ensure 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 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.

### SEED LABORATORY

MDA's seed testing laboratory supports regulatory, certification, supervised seed mixing and turfgrass activities. It also provides service testing for seed producers, dealers, farmers and other seed consumers. Turfgrass professionals depend upon the laboratory to test the purity, germination and noxious weed seed of lots destined for use on golf courses, sod production fields, public grounds and other areas demanding high quality turf. Commercial vegetable growers use 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 use 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. The laboratory conducts Round-up® Ready testing of seeds 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. Currently, five

MDA seed analysts are certified by AOSA in both purity and germination testing. 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 ACTIVITIES

The Maryland Seed Law requires all seed offered for sale in the state be labeled accurately. This includes agricultural, vegetable, flower, lawn and turf seed, as well as seed of trees, shrubs, native species, wildflowers and seed used in reclamation and wetlands mitigation and conservation projects. Quantities of seed offered for sale to Maryland's consumers range from small packets of vegetable and flower seed to bulk sales of thousands of pounds of crop seed. All seed distributed in Maryland is subject to inspection by MDA. For much of its seed needs, Maryland relies on other areas of the country, and the world, where climates are better suited for seed production. Thus, it is important that Maryland maintain a strong and effective regulatory program in order to prevent low quality seed from entering the state. MDA inspects both retail and wholesale seed dealers throughout the state. Inspectors 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 large investments in biotech research by private companies increases, demand for traditional certification services decrease, as does the involvement of public institutions, which have been the source for most certified seed varieties. 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 MDA for expertise in field inspections, sampling, and laboratory analysis for quality control. MDA anticipates that quality control inspection acreage will increase as certified acreage decreases. Staff members help seed growers and conditioners produce 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. MDA cooperates 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 is spent to maintain the genetic purity of foundation seed of public varieties important to Maryland agriculture. This foundation seed is distributed to participating Maryland seedsmen for the production of Maryland certified seed.

### **SUPERVISED SEED MIXING**

The supervised seed mixing system enables certification to be continued when certified lots of different kinds and varieties of seed are mixed together. Demand from the industry and consumers for this service is strong MDA's oversight of this process ensures that consumers receive quality seed. All seed used on State Highway Administration projects and 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 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 contaminants and that only approved seed lots are used in the mixture. Special tags sewn onto each bag verify that the seed was mixed under MDA supervision.

### **TURF REGULATION**

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 most cases, the problems are 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 national model for certification. 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. All certified turfgrass fields are inspected several times during the growing season for quality. 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. Because the marketing and planting of seed is time-sensitive, and because weather has an impact, 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.

## GOAL AND OBJECTIVES

**GOAL 1. 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	Actual 2016
<b>Outcome:</b> Percent of Seed Lots Found to be Correctly Labeled	91.0

## TURF AND SEED ACTIVITIES: 2014 - 2016

	2014	2015	2016
<b>Field Inspections</b>			
Acres of Turf Inspected	7,333	6,641	6,863
Acres of Crop Seed Inspected	11,115	10,088	9,734
<b>Supervised Mixing</b>			
Pounds of Seed Mixed (thousand)	1,882	1,651	1,707,425
<b>Retail and Wholesale Seed Inspections</b>			
Number of Lots Sampled	865	997	897
Number of Regulatory Seed Tests Conducted	2,261	2,767	2,382
<b>Seed Testing</b>			
Samples Tested	2,556	2,777	3,072
Service Seed Tests Conducted	3,877	4,551	4,782



## 2016 Annual Report | Office of Resource Conservation

### OFFICE OF RESOURCE CONSERVATION

The Office of Resource Conservation 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 educational and financial assistance, technical assistance, and regulatory programs to improve resource management and help Maryland achieve Chesapeake Bay restoration goals. Conservation staffers work with local, state and federal agencies to implement policies and programs established by the State Soil Conservation Committee. The Office of Resource Conservation is comprised of five key areas: Program Planning and Development, Conservation Grants, District Operations, Watershed Implementation, and the Nutrient Management Program.

#### STATE SOIL CONSERVATION COMMITTEE

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

In FY 2016, the committee approved or took actions on the following:

- Notified soil conservation districts regarding legal changes to the Tort Claims Act and the Public Information Act that impact the way business is

conducted

- Approved new verification procedures for best management practices installed on farms to assure compliance Total Maximum Daily Load (TMDL) reporting requirements
- Updated the appointment process, responsibilities, and duties of soil conservation district supervisors.

In FY 2016, the committee received the following briefings and tracked these initiatives:

- Updates to the memorandum of understanding between the Maryland Departments of Agriculture and Environment and the State Soil Conservation Committee regarding agricultural water quality enforcement
- Status of pollinator health and programs to improve habitat for pollinators
- Federal soil health initiative and tools available for use by soil conservation districts
- Phosphorus Management Tool on-farm economic study
- Demonstration of animal waste technologies to manage manure
- Guidance from the Maryland Department of the Environment on stormwater management requirements for agricultural activities

#### PROGRAM PLANNING AND DEVELOPMENT

Program Planning and Development is responsible for planning, developing and coordinating policy, programs, and public information about 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 also provides staffing support to the State Soil Conservation Committee and the Conservation Reserve Enhancement Program Advisory Committee.

**Animal Waste Technology Fund.** Established in 2013, the Animal Waste Technology Fund provides grants to companies that demonstrate new technologies on farms and provide alternative strategies for managing animal manure. These technologies may generate energy from animal manure, reduce on-farm waste streams, and repurpose manure by creating marketable fertilizer and other products and by-products. During the fiscal year, the program issued approximately \$1.7 million in grants for two animal waste management technology projects in Somerset and Anne Arundel counties. The grants are part of the state’s ongoing commitment to manage animal manure, protect natural resources, and pursue renewable energy sources.

- **CleanBay Renewables.** \$1.4 million to construct and operate a manure-to-energy plant in Somerset County that will generate electricity by processing 80 tons per day of poultry litter as feedstock. The grant supplements \$15 million in investments already secured by CleanBay Renewables.
- **Veteran Compost and O2 Compost.** \$350,300 to develop a compost demonstration project and public education and training facility in Anne Arundel County for horse operations and other livestock farmers located throughout the state.
- In June the program planning office and Green Mountain Technologies sponsored a tour of a new manure composting system installed at Days End Farm Horse Rescue in Howard County. The innovative composting system—the first completed demonstration project funded by the Animal Waste Technology Fund—can process batches of 1.5 tons of horse manure in two weeks while reducing nutrient and input volume by about 50 percent. Since its inception in 2013, the Animal Waste Technology Fund has issued \$5.4 million in grants to demonstrate alternative technologies for manure management.

**Geographic Information Systems (GIS).** GIS is a powerful software technology used to visualize, question, analyze, and interpret data to understand relationships, patterns, and trends in resource management and development planning. The technology allows a large amount of information to be

linked to a geographic location for decision making and emergency preparedness. Data from many sources, including digitized and scanned maps, aerial photography, soil surveys, and global positioning systems are integrated and analyzed to create and share “smart maps.” In FY 2016, staff continued to provide technical assistance and spatial data to program areas within the department. Training sessions were conducted on new ArcGIS 10.4 functionalities and ArcGIS Online, a cloud-based platform that allows anyone to make, share, and host maps and applications. The department’s web map applications were updated with the most current data and enhanced with additional tools. During the year, technical assistance was provided to the Animal Health Program in preparation for the Highly Pathogenic Avian Influenza (HPAI) Response Plan. The plan provides strategic guidance on responding to an outbreak. Finally, GIS staff continued to participate in an interagency technical committee that implements policies related to the transparency, availability, and quality of spatial data in Maryland.

**Information and Education.** This program provides creative, editorial, web content and graphics and production services to program areas within the Office of Resource Conservation. Displays, brochures, fact sheets, and conservation education materials are provided to soil conservation districts and University of Extension offices to assist with educational outreach. In FY 2016, annual reports for soil conservation districts, the Maryland Agricultural Water Quality Cost-Share (MACS) Program and the Nutrient Management Program were produced along with the spring and winter editions of the Maryland Nutrient Management Newsletter. Educational displays were developed for the Agricultural Certainty Program, Water Quality Trading Program, and Prince George’s Soil Conservation District. Farmer and citizen outreach programs and materials were developed to promote the Animal Waste Technology Fund, Cover Crop Program, Manure Matching Service, Manure Transport Program, Backyard Actions for a Cleaner Chesapeake Bay, Manure Happens Education Program, Nutrient Management Program and Maryland’s Lawn Fertilizer Law. During the fiscal year, educational exhibits were provided for approximately 30 events, including the Maryland State Fair, Horse World Expo, Maryland Home and Garden Show, and county fairs and agricultural events taking place throughout Maryland. An additional 56 requests for conservation brochures and classroom demonstrations were filled for teachers, master gardeners, and other educators.

## CONSERVATION GRANTS

The Maryland Agricultural Water Quality Cost-Share

Program provides farmers with grants to install water quality improvement projects on their farms, adopt sustainable agricultural practices and comply with federal, state and local environmental requirements. In FY 2016, the program provided Maryland farmers with \$33.5 million in grants to install 2,723 conservation projects on their farms that control soil erosion, reduce nutrient runoff and protect water quality in streams, rivers and the Chesapeake Bay. The figure represents the largest annual funding allocation in the program's history and the sixth consecutive year of growth. These grants were used by Maryland farmers to meet or exceed the majority of the Chesapeake Bay's 2017 interim restoration goals. Farmers receiving these grants invested about \$1.5 million of their own money into projects that will prevent an estimated 92,777 pounds of nitrogen and 21,082 pounds of phosphorus from entering Maryland waterways. Cover crops were responsible for the bulk of the nitrogen and phosphorus savings. In addition, the projects will prevent an estimated 20,236 tons of soil from impacting local streams.

**Projects Financed with Special Funds.** The cost-share program receives funding from the Chesapeake Bay Restoration Fund and the Chesapeake Bay 2010 Trust Fund to finance certain highly valued best management practices included in Maryland's Bay milestone commitments. These include the Cover Crop Program and contract signing incentive payment for the Conservation Reserve Enhancement Program. Portions of the Manure Transport Program, certain best management practices, and Manure Incorporation and Injection Grants are financed using these sources.

- **Cover Crop Program.** Cover crops are one of the most cost-effective and environmentally sustainable ways for farmers to meet nutrient and sediment reduction targets outlined in Maryland's Watershed Implementation Plan to protect and restore the Chesapeake Bay by 2025. The program provides grants to help farmers offset seed, labor and equipment costs associated with planting small grains and legume mixes on their fields following the fall harvest. During the 2015-2016 planting season, farmers received \$24.5 million in grants to plant 501,204 acres of cover crops statewide, the largest planting in the program's history. The planting enabled agriculture to exceed its Chesapeake Bay commitment for this practice and marked the first year that Maryland farmers have planted more than half a million acres of protective cover crops on their fields.
- **Manure Transport Program.** This program helps poultry, dairy, beef and other livestock producers

transport excess manure away from farms with high soil phosphorus levels and is critical in helping farmers comply with Maryland's phosphorus management regulations. In FY 2016, the transport program provided Maryland farmers with \$954,300 in grants to transport 213,151 tons of manure to approved farms and businesses. Since 2013, the program has seen a four-fold increase in the amount of manure transported. Nearly 25 percent of the manure was shipped to alternative use facilities and not land applied in the watershed. Delmarva poultry companies provided \$447,882 in matching funds to transport poultry litter, bringing the total amount of financial support provided to farmers through the transport program to \$1,402,182.

- **Conservation Reserve Enhancement Program.** Maryland's Conservation Reserve Enhancement Program is a federal-state partnership program that pays landowners to take environmentally sensitive cropland out of production for 10 to 15 years and install conservation practices that protect water quality and provide wildlife habitat. The cost-share program provides these landowners with grants to establish conservation practices on environmentally sensitive land that they have agreed to no longer till or graze. Special funds are used to award a \$100/acre signing bonus for initial program enrollment or re-enrollment. In FY 2016, the cost-share program provided 78 landowners with \$359,345 in cost-share funds to install stream protection practices and \$510,096 in signing bonuses.
- **Manure Injection and Incorporation Program.** Maryland's nutrient management regulations require farmers to inject or incorporate manure and other organic nutrient sources into the soil within 48 hours of application in order to protect water quality. This grant program helps farmers comply with environmental requirements while making the most of manure resources. In FY 2016, the program provided 95 farmers with \$479,101 in grants to inject or incorporate manure, sludge food waste and other organic products into cropland within 48 hours of application.

## DISTRICT OPERATIONS

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

**Technical Assistance.** In FY 2016, the department funded 75 technical positions in local soil conservation district offices

statewide. An additional 41 agricultural technicians and conservation planners were funded through grants provided by 2010 Chesapeake Bay Trust Fund. During the year, field staff worked with farmers to develop Soil Conservation and Water Quality Plans to manage and protect natural resources on farms. These plans are a key feature in Maryland’s strategy to protect and restore the Chesapeake Bay by 2025. This cleanup strategy addresses actions to meet the Chesapeake Bay Total Maximum Daily Load, or TMDL and requires a wide range of pollution reduction measures to be installed by 2025, with practices in place to achieve at least 60 percent of the necessary reductions by 2017. By the end of FY 2016, Maryland farmers, with the help of soil conservation districts were managing 923,147 acres of agricultural land using Soil Conservation and Water Quality Plans—roughly 90 percent of the annual goal. Soil Conservation and Water Quality Plans often call for a menu of best management practices to protect natural resources and meet the Chesapeake Bay’s reduction goals for nitrogen, phosphorus, and sediment. Field staff work with famers to design, install, and maintain practices such as livestock stream crossings and animal waste storage structures. In FY 2016, field staff helped farmers install 1,067 highly valued best management practices on their farms that were supported by state and federal financial assistance programs.

**Enforcement.** Cases of water pollution caused by agriculture are handled using a progressive approach that is based on the severity of the situation. Conditions likely to cause pollution or that result 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, the Maryland

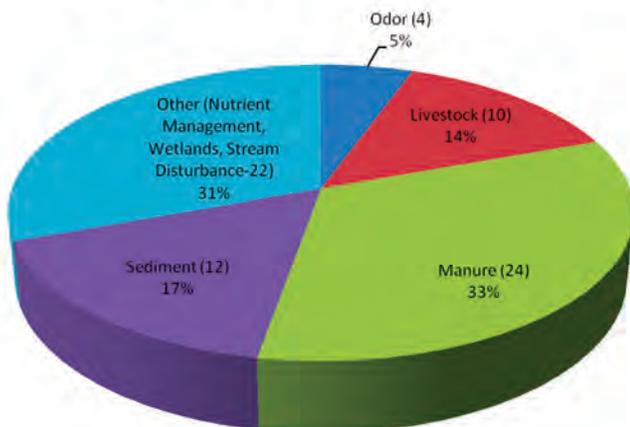
Departments of Agriculture and Environment worked jointly with soil conservation districts to address farm management complaints and take action against polluters when necessary. In FY 2016, the department received 72 complaints concerning odor, livestock, manure, sediment, nutrient management, wetlands and stream disturbance issues. Sixty-three of these complaints were corrected or closed, nine complaints are pending and three enforcement actions were initiated.

**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. The network drains approximately 183,000 acres of agricultural and developed land. The department regulates local public drainage associations to ensure that operation and maintenance plans are in good working order and that best management practices are protecting water quality.

**CAFO Permitting and Compliance Assistance.** The department works closely with the Maryland Department of the Environment to help Concentrated Animal Feeding Operations (CAFO) comply with their permit requirements. The department assesses Eastern Shore poultry operations to help farmers determine if they are subject to permit requirements, works with the department of environment to resolve permit and compliance issues, and helps concentrated animal feeding operations with record keeping, site selection, annual reporting, and facilities maintenance requirements. During the year, the department’s regional office in Salisbury along with soil conservation districts on the Eastern Shore helped 78 farmers obtain Comprehensive Nutrient Management Plans (CNMPs) required by their permits.

**Maryland Envirothon.** The State Soil Conservation Committee and soil conservation districts are primary sponsors of 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 Envirothon moves students out of the classroom to solve real life environmental problems in a natural setting. Students compete at the local, state, and national levels. For the second year in a row, a five-member team of students from Carroll County won the state competition. The team went on to place

**2016 Types of Agricultural Complaints**



5th overall at the National Envirothon held later in the year at Trent University in Peterborough, Ontario. The national event featured teams from more than 50 states and Canadian territories.

### **WATERSHED IMPLEMENTATION PROGRAM**

This program provides direction and leadership in developing and evaluating strategies to carry out agricultural commitments included in Maryland's Watershed Implementation Plan (WIP) to protect and restore the Bay by 2025, as required by the Chesapeake Bay Agreement.

**Chesapeake Bay Restoration Partner.** As part of the Clean Water Act, the U.S. Environmental Protection Agency (EPA) has limited the amount of nutrients and sediments that can enter the Chesapeake Bay. Maryland, and the other Bay jurisdictions have developed Watershed Implementation Plans (WIPs) outlining strategies to achieve these pollution limits by 2025. The goal of this watershed-wide effort is to restore clean water in the Chesapeake Bay and the region's creeks, streams and rivers. By the end of FY 2016, Maryland agriculture was on track to meet or exceed both its annual and 2017 midpoint assessment goals.

**Agricultural Representation.** Department representatives sit on 16 Chesapeake Bay Partnership workgroups to provide technical information and input concerning restoration goals, policies, programs, and research needed to reduce agricultural pollutants entering the Bay and its tributaries.

**Nutrient Trading.** The Maryland Departments of Agriculture and the Environment are working to establish a voluntary, market-based program that promotes the use of nutrient and sediment trading as a viable option for achieving the state's water quality goals. In October 2015, the secretaries of both departments released a Water Quality Nutrient Trading Policy Statement expanding access to the water quality marketplace for all point and nonpoint sources and providing the flexibility to meet and/or maintain nutrient and sediment loads through the acquisition of credits or offsets generated elsewhere. As part of this effort, a new Water Quality Trading Advisory Committee—which includes many of members of the previous Agricultural Nonpoint Trading Advisory Committee—has been convened to offer direction and oversee further development of the trading program. The new committee has begun reviewing and refining a comprehensive trading manual that builds on the policies and guidance issued separately by the two departments, but adds provisions for the first time allowing jurisdictions and entities regulated under Municipal Separate Storm Sewer Systems

(MS4) permits to utilize trading to meet a portion of their impervious surface restoration requirements.

**Agricultural Certainty Program.** Authorized in 2013, Maryland's Agricultural Certainty Program rewards farmers who have gone the extra mile to protect natural resources on their farms. Under the program, Maryland farmers receive a 10-year exemption from new environmental laws and regulations in return for installing voluntary best management practices on their farms that meet the Chesapeake Bay's 2025 water quality goals ahead of schedule. Maryland is one of only nine states that either have a certainty program or are developing one. In FY 2016, the department offered additional training sessions on the use of the Maryland's Certainty Assessment Tool (Chesapeake Bay Nutrient Trading Tool) and certified six individuals as Certified Verifiers under the Program. An outreach campaign was launched to introduce the program to the agricultural community with nearly 1,000 agricultural producers attending six events held throughout the state. As a result, the Certainty Program has identified 172 farms for potential enrollment.

**Research and Special Projects.** This program manages multiple ongoing research and technical assistance grants totaling \$3.7 million dollars. The projects demonstrate new and innovative ways to improve manure management, reduce nutrient runoff, control soil erosion, and safeguard water quality. An on-going demonstration focuses on effective strategies to reduce phosphorus concentrations in dairy manure. Preliminary results indicate that this innovative approach could be used to help Maryland dairy operations comply with Phosphorus Management Tool (PMT) regulations. Additional research projects focusing on bioreactors and phosphorus filters may one day give farmers and landowners new tools to manage or prevent nutrient losses.

**Conservation Tracker.** This integrated database management system tracks agricultural conservation practices implemented in Maryland. The system tracks both publicly and privately funded best management practices outlined in Maryland's Watershed Implementation Plan. In FY 2016, information obtained through Conservation Tracker was reported to the U.S. Environmental Protection Agency's Chesapeake Bay Program for use in assessing restoration progress.

### **MARYLAND NUTRIENT MANAGEMENT PROGRAM**

This program protects water quality in the Chesapeake Bay and its tributaries by ensuring that farmers and turfgrass professionals apply fertilizers, animal manure and other

# CHESAPEAKE BAY CLEAN UP

## Progress through June 2016\*

Milestone	Annual Goal (Due June 30, 2016)	Status as of June 30, 2016	% of Annual Goal Achieved
Cover Crops	Plant 417,014 acres of cover crops each year	01,204 acres planted during 2015-2016 planting season	121%
Manure Transport	Annually transport 51,000 tons of excess poultry litter or livestock manure to farms or alternative use facilities that can use the manure safely and in accordance with nutrient management plans	213,151 tons of manure transported in 2016	418%
Soil Conservation and Water Quality Plans	Develop plans for 1,026,413 acres	923,147 acres planned	90%
Milestone	2017 Midpoint Assessment Goal (Due June 30, 2017 and covers period between 2009-2017)	Status as of June 30, 2016	% of 2017 Midpoint Assessment Goal Achieved
Off-Stream Watering Without Fencing	Construct 4,809 acres of off-stream watering sources for livestock by 2017	17,756 acres protected	369%
Retirement of Highly Erodible Land	Retire 2,554 acres of highly erodible land by 2017	8,303 acres retired and planted with protective vegetation	325%
Streamside Forest Buffers	Plant 927 acres of forest buffers next to streams by 2017	1,535 acres planted	166%
Streamside Grass Buffers	Plant 2,273 acres of grassed buffers next to streams by 2017	4,824 acres planted	212%
Waste Storage Structures/ Livestock	Construct 144 livestock waste storage structures by 2017	340 structures installed	236%
Waste Storage Structures/ Poultry	Construct 31 poultry waste storage structures by 2017	119 structures installed	384%

\*Progress includes practices installed with funds from both or either the Maryland Agricultural Water Quality Cost Share Program and USDA's Natural Resources Conservation Service.

nutrient sources in an environmentally sound manner. The Agricultural Nutrient Management Program implements regulatory requirements, a certification and licensing program for nutrient management consultants and farmers, and continuing education classes. The Turfgrass Nutrient Management Program includes a certification and licensing program for turfgrass professionals, enforcement activities, continuing education classes for certified professionals and a homeowner outreach program.

**Agricultural Nutrient Management Program.** Maryland law requires any farming operation that generates \$2,500 gross income or has 8,000 pounds or more of live animal weight to follow nutrient management plans when fertilizing crops and managing animal manure. These science-based plans specify how much fertilizer, manure or other nutrient sources may be safely applied to crops to achieve yields and prevent excess nutrients from impacting waterways. Nutrient management plans are required for all agricultural land used to produce plants, food, feed, fiber, animals or other agricultural products.

**Revised Regulations.** The department's revised nutrient management regulations went into effect in 2012 and are still being phased in. They provide enhanced protections for Maryland's streams, rivers and the Chesapeake Bay. The program has successfully phased in aspects of the revised regulations regarding buffers, stream fencing, manure incorporation, and timing of nutrient applications. The winter ban on spreading manure will be phased in beginning July 1, 2016 with complete implementation by March 1, 2020.

**Phosphorus Management Tool Regulations.** Maryland's Phosphorus Management Tool (PMT) regulations provide a multi-year process for farmers to transition from the Phosphorus Site Index to the PMT, an updated tool that uses the latest scientific findings to identify the potential risk of phosphorus loss from farm fields and prevent the additional buildup of phosphorus in soils that are already saturated. The program began collecting soil phosphorus data in fall 2015 as required by the regulations. By the end of the fiscal year, data had been received and recorded for approximately 900,000 acres. Early analysis of the data reveals that 82 percent of the acreage statewide is not subject to the PMT. Approximately 1 percent of acreage statewide—primarily farms located on the Lower Eastern Shore—has high soil phosphorus levels and may be restricted in applying additional phosphorus. The program is committed to collecting all soil data statewide so that a complete inventory of soil phosphorus levels is available for future planning and

resource allocation.

- **On-Farm Economic Analysis Project.** The first year of a multi-year Phosphorus Management Tool On-Farm Economic Analysis Project was completed in FY 2016. Eight farms participated in the study, including four dairy farms and four farms that use poultry litter. Early indicators show that commercial fertilizer increased the cost of production. However, another concern may be the reaction of organic and inorganic materials to extreme weather conditions such as the very wet spring experienced by most of the participants in 2015.

**Enforcement.** Ensuring compliance with nutrient management regulations is at the core of the Nutrient Management Program's mission. Maryland farmers are required to run their farms using a nutrient management plan that specifies the amount, timing and placement of nutrients for each crop. These plans are prepared by University of Maryland Extension advisors, certified private consultants, or farmers who are certified to develop plans solely for their own operations, and must be revised and updated before they expire. Since 1999, farmers have been required to submit copies of their initial nutrient management plans to the department. Following this initial plan submission, farmers are required to submit Annual Implementation Reports to the department summarizing their nutrient applications for the previous calendar year. The submission of the initial nutrient management plan is the first step in achieving compliance. Maintaining compliance requires ongoing plan implementation and updates, record keeping, and timely filing of the AIR. The Department's nutrient management specialists conduct site visits and verify that an operator is following the plan as written by a certified consultant.

**Nutrient Management Plan Submissions.** By the end of the fiscal year, 98 percent of the state's 5,448 regulated farm operations had submitted their initial nutrient management plans to the department. The department actively works to locate "new farming operations" and pursues enforcement actions against operators who have met this requirement.

**Annual Implementation Reports.** Farmers are required to submit Annual Implementation Reports to the department by March 1 summarizing their nutrient applications for the previous calendar year. By the end of the fiscal year, approximately 97.5 percent of regulated farmers managing about 1.3 million acres of land had submitted their implementation reports to the department.

**On-Farm Audits and Inspections.** During FY 2016, enforcement specialists conducted 739 random on-farm

audits and 283 targeted audits of farms with suspected violations for a total of 1,022 audits. This represents 19 percent of the state's 5,340 regulated farms. Sixty-six percent of the randomly selected farms were found to be fully in compliance, and 46 percent of the targeted farms were in compliance. The percentage of farms with expired plans was almost identical for random and targeted farms (21 percent vs. 20 percent). The department is actively pursuing full compliance for all audited operations. In FY 2016, the Department issued \$26,000 in fines against 46 farmers who failed to take corrective actions by prescribed deadlines.

### **Certification, Licensing and Education Programs.**

**Nutrient Management Exam Training:** During the year, the Nutrient Management Program continued to expand its base of certified consultants. The program provided a two-day training course for individuals planning to take the certification exam. Sixty-nine new consultants were certified, bringing the total number of certified consultants to 1,358.

- **University of Maryland Consultant Program.** Funded 20 University of Maryland advisors in FY 2016 who provide farmers with nutrient management plans free of charge.
- **Farmer Training and Certification.** Trained and certified 26 farmers to write their own nutrient management plans in FY 2016. To date, 591 farmers have been trained and certified.
- **Nutrient Applicator Voucher Training.** Partnered with Extension to conduct 31 voucher training sessions attended by 551 farmers who wanted to obtain or renew their vouchers. Additionally, 407 farmers attended other training events to obtain their voucher credits, bringing the total number of farmers attending voucher training to 958.
- **Continuing Education.** Certified consultants are required to take 12 hours of continuing education credits every three years. In FY 2016, the program and Extension offered 36 education classes on nutrient management topics and approved an additional 72 courses and field events sponsored by other recognized organizations. These sessions were attended by 2,811 individuals.

### **Turfgrass Nutrient Management Program.**

- **The Fertilizer Use Act of 2011.** Maryland's Lawn Fertilizer Law significantly strengthened the Turfgrass Nutrient Management Program by expanding its regulatory authority to include more than 1,500

individuals and companies that apply lawn fertilizer to properties that they manage, including golf courses, parks, recreation areas, athletic fields, business properties, school campuses, cemeteries, highway right-of-ways and home lawns. The Law requires homeowners and lawn care professionals to obey fertilizer application restrictions, use best management practices when applying fertilizer to lawns, observe designated fertilizer blackout dates, and follow University of Maryland fertilizer recommendations. The Turfgrass Nutrient Management Program, with technical guidance from the University of Maryland, has established a training, certification and licensing program for lawn care professionals and a public education program for homeowners.

- **Certification and Licensing.** In FY 2016, 26 pre-certification training sessions and certification exams were offered across the state for lawn care professionals. As of June 30, 2016, the program issued 922 business licenses and 1,697 Professional Fertilizer Applicator Certificates. Another 1,855 lawn care company employees were trained in turf management techniques and Bay-friendly fertilizer practices.
- **Training, Certification and Licensing.** Professional Fertilizer Applicators are required to complete two hours of continuing education each year in order to renew their annual certificates. During the fiscal year, the program offered 42 recertification courses and approved numerous training courses offered by private industry and trade groups.
- **Annual Activity Reports.** License holders are required to file an annual activity report with the program by March 1 covering the previous year. By the end of the fiscal year, the department had received activity reports from approximately 90 percent of these businesses.
- **Enforcement Activities.** During FY 2016, the program conducted 197 record reviews to assess compliance. Sixteen warnings were issued and all but two have been resolved through follow-up inspections and education. Resources for the remainder of the fiscal year focused on training and certifying professional fertilizer applicators.
- **Homeowner Outreach.** During the year, the program continued to educate citizens about Maryland's Lawn Fertilizer Law using news releases, social media, the Internet and public events. Fact sheets were updated and reprinted and displays were presented at public events and functions statewide.

**MARYLAND DEPARTMENT OF AGRICULTURE BUDGET ALLOCATION FOR FY 2016**

	GENERAL	SPECIAL	FEDERAL	BONDS	TOTAL
Operating	\$26,625,219	\$42,048,618	\$3,984,323		\$72,678,160
Capital		\$27,012,500		\$2,000,000	\$29,012,500
<b>TOTAL</b>	\$26,626,219	\$69,061,118	\$3,984,323	\$2,000,000	\$101,680,660
<b>Bonds</b>					
	MACS	\$2,000,000			
<b>Total</b>		\$2,000,000			

## LONG SERVICE AWARDS

# MARYLAND DEPARTMENT OF AGRICULTURE HONORS EMPLOYEES WITH LONG SERVICE AWARDS

On October 6, 2016 the Maryland Department of Agriculture honored 33 employees for their years of dedicated service to the department and to the state. Of the 33 employees honored – 14 had 30 or more years of service with the state. All together, these 33 employees represent 745 years of public service and more than 1.5 million hours worked and almost 20,000 paychecks. **The following is a listing of department employees by county who were recognized with long-service awards.**

### Anne Arundel

- Mark Anderson, MACS, 15 years
- Diane Chasse, Ag Land Preservation, 20 years
- Regina Dorsey, Animal Health, 30 years
- Melissa Gough, Fiscal Services, 20 years
- Wilfredo Marte, Fiscal Services, 30 years

### Barry Nellenback, Animal Health, 10 years

- Judy Plymer, Attorney General, 35 years
- Pamela Randall, Turf & Seed, 30 years
- George Williams, Central Services, 35 years

### Baltimore City

- Dawn Croxton, Human Resource Office, 30 years

### Baltimore County

- Joseph Eccleston, Weights & Measures, 10 years
- Dimeka Patterson, Weights & Measures, 15 years

### Caroline

- Carroll Middleton, Resource Conservation, 15 years

### Carroll

- Noah Schaeffer, Resource Conservation, 15 years

### Frederick

- Dwight Dotterer, Nutrient Management, 15 years
- Moana Himes, Nutrient Management, 30 years
- Thomas Lupp, Forest Pest Management, 35 years

### Garrett

- Shaun Sanders, Resource Conservation, 40 years

### Harford

- Thomas Bagamsah, MACS, 10 years

### Prince George's

- Jeannine Dorothy, Mosquito Control, 35 years
- Diana Lagunes, Resource Conservation, 10 years
- Michael Webster, Nutrient Management, 20 years

### Queen Anne's

- James Drews, Turf & Seed, 15 years

### St. Mary's

- Weylin Anderson, Nutrient Management, 10 years
- Eileen Beard, Resource Conservation, 15 years

### Talbot

- Carrie Jennings, Resource Conservation, 15 years
- Ellis Tinsley, Pesticide Regulation, 25 years

### Washington

- Ginger Noble, Resource Conservation, 15 years

### Wicomico

- Betty Baine, Food Quality Assurance, 30 years

### Worcester

- Charles Fykes, Resource Conservation, 30 years
- Douglas Jones, Resource Conservation, 25 years

### Other

- Christopher Firme, Forest Pest Management, 30 years, Pennsylvania
- Craig Kuhn, Forest Pest Management, 30 years, Pennsylvania

**EMPLOYEE OF THE YEAR****MARYLAND DEPARTMENT OF AGRICULTURE  
EMPLOYEE OF THE YEAR FY 2015**

The 2016 Employee of the Year was awarded to Dan Schamberger, Mosquito Control. Schamberger was recognized for his leadership as acting Mosquito Control Program manager between May 2015 and May 2016. As the acting program manager, he oversaw statewide operations, which included budgeting and coordinating with local partners. Schamberger also played a pivotal role in developing the state's Zika virus response plan in partnership with the Department of Health and Mental Hygiene. Schamberger remains with the department as Administrator III of the Eastern Shore Mosquito Control office in Salisbury



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