



2019



Maryland Department of Agriculture | 2019 Annual Report



Governor Larry Hogan



Lt. Governor Boyd K. Rutherford



Secretary Joseph Bartenfelder



Deputy Secretary Jullianne A. Oberg

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.



Maryland
Department of Agriculture

Wayne A. Cawley, Jr. Building
50 Harry S Truman Parkway
Annapolis, MD 21401-7080
Baltimore/Annapolis 410-841-5700
Washington Metro Area 301-261-8106
Maryland Relay Service (TTY Users) 800-735-2258
Toll Free 800-492-5590
Fax 410-841-5914
www.mda.maryland.gov
mda.news@maryland.gov
On Twitter @MdAgDept
On Facebook www.facebook.com/MdAgDept

Design by Conni Leigh James, www.designz.com

*Front cover photo— Chesapeake Bay Farms, Owner Danny Holland
Back cover photo— Coveside Crabs in Dundalk MD with Captain Richard Young and mate Shaun Dishon
Photos by Edwin Remsberg, www.remsberg.com*



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GREETINGS,

On behalf of Governor Larry Hogan and Lt. Governor Boyd Rutherford, I am pleased to present the Maryland Department of Agriculture's Annual Report for FY 2019.

It is no secret that Maryland agriculture is the number one industry in the state, contributing \$8.25 billion to the state's economy every year and impacting over 45,000 jobs. Here at the department, we work every day 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.

FY 2019 presented some unique challenges for Maryland agriculture with historic rainfall totals throughout the summer that affected farmers' yields. The department also confirmed the state's first sighting of spotted lanternfly, an invasive pest that has caused significant damage to agricultural operations in neighboring states.

Despite these challenges, FY 2019 also provided opportunities for the industry to continue its growth. New programs, like the Maryland Industrial Hemp Research Pilot Program and the Blue Catfish Purchasing Initiative, have helped expand new markets for farmers and watermen. The continued efforts of our marketing program helped to promote Maryland products regionally, nationally, and abroad. The Maryland Horse Industry Board added seven new Horse Discovery Centers and started to make upgrades to the Maryland Horse Park System through improvement projects like those at Fair Hill International.

Additionally, I am thrilled to report that Maryland farmers continued to have among the highest participation rates in the country for conservation practices. Through our use of best management practices and initiatives aimed at curbing nutrient runoff and improving soil health, Maryland farmers have made significant headway in restoring the health of the Chesapeake Bay. I take deep pride in knowing that our farmers serve as national leaders for sustainable agriculture.

We have a lot to be optimistic about for Maryland agriculture. As we move forward into the Hogan-Rutherford administration's second term, the department is excited to build upon the progress we have made thus far and will continue to make sure that rural Maryland remains open for business!

Sincerely,

Joe Bartenfelder
Maryland Secretary of Agriculture



2019 Annual Report | Office of the Secretary

MARYLAND AGRICULTURAL LAND PRESERVATION FOUNDATION (MALPF)

The Maryland Agricultural Land Preservation Foundation (MALPF) is one of the oldest and most successful farmland preservation programs in the country. MALPF was created in 1977 by the Maryland General Assembly. MALPF's primary purpose is to preserve productive agricultural land and woodland to provide for the continuing production of food and fiber for the citizens of Maryland.

MALPF purchases agricultural preservation easements that forever restrict development on prime farmland and woodland and has permanently preserved land in each of Maryland's 23 counties. In fiscal year (FY) 2019 alone, MALPF settled 45 easements and preserved 5,430 acres of farmland. Since its inception through the end of FY 2019, MALPF has purchased easements on a cumulative total of 2,347 properties and permanently preserved 318,215 acres of farmland at a public investment of over \$752 million.

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 reported by the Maryland Department of Planning, total private land under easement by MALPF, GreenPrint, Rural Legacy, and local preservation programs was 662,923 acres as

of the end of FY 2019, according to best available data as of August 23, 2019. This represents over 64% of the goal.

After a decade of combining two fiscal year's funding into a single application cycle, FY 2019 saw the return to the single year application cycle. MALPF staff continues to work with our sister agencies and county partners to adjust aspects of the application and acquisition process that are particularly impacted by returning to an annual application cycle. The program anticipates funding levels to remain steady, enabling MALPF to sustain single-year application cycles for the foreseeable future. With the return to an annual application cycle, the MALPF program will be able to increase the rate at which we are able to protect Maryland's agricultural lands.

Goals and Objectives	2019 Actual
Output: Total Number of Easements, Cumulative	2,347
Outcome: Total Acres Under Easements	318,215

OFFICE OF THE ATTORNEY GENERAL

The Assistant Attorneys General assigned to the Maryland Department of Agriculture (MDA) provided counsel and advice to the Secretary of Agriculture and other department officials in carrying-out the department's broad statutory mission to promote agriculture while protecting animal health, the

environment, farmland, and consumers. In addition to advising the department's Secretary, Deputy Secretary, and Assistant Secretaries on such matters, the Office of the Attorney General (OAG) provided counsel and advice to the State Veterinarian, the State Chemist, and the Chief of Weights and Measures.

The OAG also advises the many programs that the department administers. The OAG assisted the department's Animal Health Program in drafting legislation and regulations implementing its statutory programs. The OAG advised the department's Pesticide Regulation Section on enforcement actions it took against pesticide businesses and other licensees that violated the Pesticide Applicator's Law. The OAG assisted MDA in implementing standard of care regulations for animal shelters owned by counties or municipalities, contractors providing sheltering services to counties or municipalities, and shelters that have received a grant from the Maryland Spay and Neuter Grants Program. They also reviewed for legal sufficiency solicitations issued by the department's Marketing Program designed to promote Maryland agricultural products. The OAG performed similar work for MDA's Animal Waste Technology Fund in its effort to find technologies that can convert animal wastes into energy or otherwise dispose of this material in an innovative manner. The OAG assisted the department's Office of Resource Conservation in its administration of the Water Quality Improvement Act of 1998, including: advising Resource Conservation on enforcement actions it took against farm operators who violated the state's Nutrient Management Law. The OAG also reviewed for legal sufficiency agreements that Resource Conservation entered into with other state agencies, soil conservation districts, and landowners in its effort to address nonpoint source pollution.

Additionally, the OAG also provided counsel and advised the many boards housed within the department. For the Maryland

Horse Industry Board, the OAG advised on enforcement actions it took against stables that violated the Maryland Horse Industry Law. The OAG reviewed for legal sufficiency grant solicitations issued by the Spay and Neuter Board. For the Maryland State Board of Veterinary Medical Examiners (SBVME), the OAG assisted in its mission to protect the public and animal health and welfare. In its role as Board Counsel to the SBVME, the OAG advised the SBVME on legal issues that came before the board, including compliance with the Open Meetings Act and Public Information Act. The OAG also helped draft regulations governing the practice of veterinary medicine, including regulations governing mandatory reporting of animal cruelty. In its role as Board Prosecutor, the OAG prepared charges and prosecuted disciplinary cases against licensed veterinarians and veterinary hospital facilities, and advised the SBVME regarding informal actions intended to improve the practice of veterinary medicine.

The OAG also assisted the Maryland Agricultural Land Preservation Foundation (MALPF) in meeting its mission, which includes preserving productive farmland and woodland for the continued production of food and fiber for all of Maryland's citizens. The OAG advised the MALPF Board of Trustees at its monthly meetings on matters affecting easements that come before the board.

Lastly, the OAG also assisted the Rural Maryland Council (RMC) and many of the 24 soil conservation districts in the state.

GOVERNMENT RELATIONS

With several new legislators taking office in the 2019 legislative session, a main point of focus for the government relations team at the Maryland Department of Agriculture (MDA) was to educate new members on the current state of agriculture in Maryland and to discuss the role of the department.

Our goal is to ensure legislators and their staff know the department is a readily available resource for anything related to Maryland agriculture, whether it be constituent issues, drafting legislative proposals, etc.

2019 LEGISLATIVE SESSION

During the 2019 legislative session, the MDA's government relations staff conducted a number of meetings with legislators, and attended numerous bill hearings, sub-committee workgroups, and full committee voting sessions. Secretary Bartenfelder and MDA staff also presented

agricultural briefings to multiple 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 positive and negative impacts on the agriculture industry and on the operational and fiscal functions of the department.

MDA put forward six departmental bills during the 2019 legislative session that were adopted by the General Assembly and signed by Governor Larry Hogan:

- **HB 50 – Department of Agriculture – Maryland Produce Safety Program.** HB 50 establishes a Maryland Produce Safety Program in the Maryland Department of Agriculture, which must conform with federal standards for growing, harvesting, packing, and holding produce for human consumption. The bill is effective as of July

1, 2019, and terminates if the federal standards are repealed or federal funding to implement the bill either is not received or is exhausted.

- **HB 1353 – Agriculture – Nuisance Insects.** HB 1353 authorizes the Secretary of Agriculture to implement a program to use *Bacillus thuringiensis israelensis* (Bti) to control or eliminate nuisance insects in the state. The Secretary may carry out a project under the program if the county or municipality in which the nuisance insects are located agrees to pay 50% of the costs; these matching funds are paid into a newly established Nuisance Insects Fund. The bill also repeals provisions that authorize the Maryland Department of Natural Resources (DNR) to implement a program, in conjunction with MDA, to control the spread of black flies in the state.
- **SB 25 – Real Property – Conservation Easements, Covenants, Restrictions, and Conditions – Recording Notice.** SB 25 allows for a specified notice to be recorded in applicable land records, and indexed in a specified manner, if an easement, covenant, restriction, or condition has been granted, devised, dedicated, reserved, or donated to the Maryland Agricultural Land Preservation Foundation (MALPF), the Maryland Historical Trust (MHT), the Maryland Environmental Trust (MET), a land trust that has executed a cooperative agreement with MET, a county, or DNR
- **SB 56 – Secretary of Agriculture – Regulation of Poultry to Protect Animal Health and Control Avian Influenza.** SB 56 expands the existing authority of the Secretary of Agriculture to regulate live poultry markets, production facilities, and poultry dealers to protect animal health and control avian influenza, by broadening the definition of the markets to which the Secretary's authority applies and by providing the Secretary with certain flexibility to determine how to apply that authority.
- **SB 57 – Agriculture – County Agricultural Land Preservation Programs.** SB 57 makes specified changes to MALPF provisions under the Agriculture Article of the Maryland Annotated Code which are consistent with (1) provisions under the Tax – Property Article governing the amount of time counties have to spend or commit funds received from the agricultural land transfer tax and (2) provisions governing certification or recertification of county agricultural land preservation programs under the State Finance and Procurement Article. The bill also clarifies that a county agricultural preservation advisory board's duties include approving or disapproving an application by the county for certification or

recertification of a county agricultural land preservation program.

- **SB 58 – Maryland Agricultural Land Preservation Foundation – Board of Trustees and Elimination of District Agreements.** SB 58 deletes obsolete references to “agricultural districts” associated with an agricultural land preservation process involving district agreements that was phased out pursuant to Chapter 650 of 2007. The bill also (1) transfers to codified statute certain uncoded provisions from Chapter 650 of 2007 concerning the dates applicable to the ending of the process and the preservation of certain districts and (2) authorizes each ex-officio member of the board of trustees of MALPF to appoint any designee to serve in the member's place on the board.

The department also monitored a number of bills considered by the General Assembly in 2019. For a full list of those bills and any comments from the department, please visit: https://mda.maryland.gov/about_mda/Pages/2019-Legislation.aspx

Governor Hogan's fiscal year (FY) 2020 budget also provided continued support to rural Maryland by including funding for the Rural Maryland Council (RMC), Rural Maryland Prosperity Investment Fund (RMPIF) and the Maryland Agricultural Education and Rural Development Assistance Fund (MAERDAF).

The Chesapeake and Atlantic Coastal Bays 2010 Trust Fund received \$53.6 million in FY 2020, marking the fourth year in a row that the Hogan administration has fully funded Bay restoration efforts. The department uses these funds for the implementation of agriculture practices, such as the Cover Crop Program; Conservation Reserve Enhancement Program (CREP); grants to farmers; the Manure Transport Program; and the Governor's Phosphorus Management Tool Initiative. The FY 2020 supplemental budget included \$1.5 million pledged by Governor Hogan to provide funding to enable Maryland's dairy farmers to participate in the Federal Dairy Margin Coverage Program, allowing them to leverage up to \$17 million in federal funds. Also included in the supplemental budget was \$110,500 to support inspection, compliance, and enforcement activities related to the federal Food Safety Modernization Act Produce Safety Rule.

On April 24, the department hosted the 5th Annual Chesapeake Bay Agriculture Leaders Meeting with officials from Delaware, Virginia, West Virginia, Pennsylvania, and New York Departments of Agriculture to discuss issues facing agriculture throughout the region. This year's meeting featured discussions with officials from the Environmental

Protection Agency (EPA) and the National Association of State Departments of Agriculture (NASDA). The group discussed a wide range of issues including the WIP Phase III

and Chesapeake Bay restoration, the Dairy Margin Coverage Program, and labor issues (H-2A and H-2B visas) facing the agriculture industry.

COMMUNICATIONS AND PUBLIC INFORMATION

The Communications and Public Information Office serves as the Maryland Department of Agriculture's (MDA) liaison to the media, government agencies, elected officials, agriculture and environmental stakeholders, agency employees, and the general public. Its goal is to disseminate public information in a way that reaches a variety of audiences while promoting engagement with agency 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 fiscal year (FY) 2019, staff distributed 216 news releases to more than 500 media contacts and interested parties, which generated 227 logged inquiries from the media.

NEWS STORIES

The Communications Offices handled a variety of inquiries throughout FY 2019. Highlights included:

- The state's first confirmed sighting of an adult spotted lanternfly on Oct. 25, 2018. The discovery of this invasive pest resulted in regional media coverage and increased traffic to the department's website.
- The rollout of the state's Industrial Hemp Research Pilot Program, which generated significant interest among farmers, industry groups, and media outlets.
- Governor Hogan's announcement of a state cost-share program that covers premium costs for Maryland dairy farmers enrolled in the U.S. Department of Agriculture's (USDA) Dairy Margin Coverage program.
- A joint campaign from MDA and the State Highway Administration urged motorists to share the road with slow-moving farm equipment during the harvest season of 2018 and planting season of 2019.
- Following a historically wet spring/summer and a bad

mosquito season, the department's Communications Office received many media inquiries concerning MDA's Mosquito Control Program and mosquito spraying. The department distributed 20 press releases in the early part of FY 2019 notifying media, stakeholders, and the public about unscheduled mosquito control sprayings due to public health concerns.

- The department received a number of inquiries related to animal health issues including: avian influenza, equine herpesvirus, animal cruelty, and use of antibiotics in livestock.
- Various buy local promotions, including: Maryland's Buy Local Week; the Buy Local Challenge; the Governor's Buy Local Cookout; the Maryland's Best Ice Cream Trail; Maryland's Best Seafood; buy local Christmas trees; buy local turkeys; Maryland's Best Food & Beverage Expo; farmers' market activities; Homegrown School Lunch Week; and the Farm to School Program.

DIGITAL ENGAGEMENT

The Communications Office continues to prioritize strategic use of social media and other digital platforms to enhance the agency's reach and foster engagement with its messaging and outreach. The office uses a holistic approach across different platforms to reach a variety of audiences while maintaining a comprehensive voice for the agency.

The overriding goal of the office's digital engagement strategy is to ensure that the public sees this agency as the authoritative, honest, and credible source for information about the agricultural activities, services, regulations, and issues under the agency's purview.

Website. The agency's website, mda.maryland.gov, functions as our primary source for all information regarding the agency and its programs. In addition to program information, all press releases and public messaging are posted under the website's "Newsroom."

There were 375,132 sessions on the website during FY 2019 – up 70,002 (23%) from the year before. The website's number of total page views increased by 11% for a total of 722,193.

About 46% of the site's traffic came from mobile devices – a 10% increase over last year.

Compared to previous years, the department's website has seen a significant change in the way users are directed to the website. In FY 2019, Facebook referrals accounted for 59,627 sessions compared to 11,210 in FY 2018 (432% increase). An additional 2,823 sessions came from Twitter referrals, which marks a 44% increase from last year.

In recent years, the Communications Office has put an emphasis on using social media to increase the reach of the agency's messaging and drive traffic to the MDA website. These numbers indicate that strategy has been successful.

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. The rise of social media has revolutionized the way information is shared between government agencies, the media, and the public. The department uses social media to expand the reach of its messaging and engage directly with its constituents. These platforms are a cost-effective way to promote agency initiatives, respond to breaking news, and build a sense of community with constituents.

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; AND
- To continually promote the agency's website as the authoritative source of information.

The department continued to emphasize its social media presence during FY 2019 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, and more tech savvy audience.

- MDA's official Facebook page ended FY 2019 with 12,513 followers, a 12% increase from the previous fiscal year. MDA's official Twitter feed ended the year with more than 14,000 followers.

Agency Social Media Accounts. The department continues to maintain several program-specific accounts in addition to its official Facebook and Twitter.

Twitter.

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

Note: The department also maintains Flickr, Instagram, YouTube, and Soundcloud accounts.

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 media, social media, and the public during times of emergency; monitors emergency events; and helps manage rumor control.

Special Projects for FY 2019. The Communications Office works closely with the department's marketing programs on a number of projects and events intended to promote Maryland products. In FY 2019, this included the Governor's Buy Local Cookout, a Homegrown School Lunch Week kick-off event at Eldersburg Elementary School in Carroll County, and Maryland's Best Ice Cream Trail events throughout the summer.

The department continues to serve as a co-producer of the Maryland Public Television (MPT) series "Maryland Farm and Harvest," which debuted in November 2013. The Communications Office serves as a liaison to MPT and plays a role in story development. The series enjoyed continued

success during its sixth season, which began November 2018. It is MPT's highest-rated locally-produced show with more than 6 million viewers.

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.

Additionally, staff is actively involved in the membership of the Communications Officers of State Departments of Agriculture, a group of communications professionals from other state departments of agriculture.

ADMINISTRATIVE SERVICES

The Office of Administrative Services manages all technical and support services for the Maryland Department of Agriculture (MDA). It is comprised of four sections – Fiscal Services, Central Services, Emergency Management, and Human Resources.

Fiscal Services handles all centralized accounting transactions for the agency. This encompasses all phases of the operating and capital budgets, federal grant financial reporting and billing, accounts receivable, accounts payable, travel reimbursement, corporate credit card monitoring and auditing, and employee payroll.

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 246 vehicles in addition to semi-annual inspections on all vehicles. The

departmental fleet traveled more than 2.1 million miles last year.

Emergency Management for MDA prepares for and responds to any hazard or emergency affecting the agricultural community in Maryland. The department continues to evaluate and revise threat-specific management plans in cooperation with the Maryland Emergency Management Agency (MEMA). Additionally, the department continues to provide annual training and drills for first responders to ensure staff are adequately prepared to respond to emergency events.

The Human Resources Office facilitates recruitment and compensation. MDA has 352 permanent employees and a varying number of contractual employees over the course of the year.

MDA's IT functions have been absorbed and transitioned into DoIT. This transition began in FY 2016 and was completed in FY 2018.

MARYLAND AGRICULTURAL COMMISSION

The Maryland Agricultural Commission is an advisory group to the Maryland Secretary of Agriculture. Its 19 members represent the state's major commodity groups as well as representatives from the University of Maryland, consumer interests, and other agricultural business sectors.

The commission meets every month, besides April, July, and September, to discuss issues and topics concerning Maryland's

agriculture industry. This year, commission meetings included presentations from the following: the Maryland Agricultural Education Foundation (MAEF), the United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) Wildlife Services, the Maryland Horse Industry Board, the University of Maryland, and the University of Maryland Extension's Food Supplement Nutrition Education (FSNE). Presentation topics included: the Right-to-Farm Bill

and legal options for farmers, how wildlife affects agriculture, equine improvement projects for the Fair Hill Natural Resources Management Area, and the drafting of Maryland's strategic plan. During every meeting, members also provided commodity reports for each sector.

In addition to monthly meetings, the commission conducts two farm tours every year, one in the fall and another in the

spring. The commission visited agricultural operations in Talbot and Caroline Counties in the fall and more operations in Harford and Cecil Counties in the spring.

Commission meetings along with farm tours keep the group proactive and up-to-date with agricultural issues, and ensures 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 eight 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 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 from the following people: Lynn Rubin from the University of Maryland Extension's Food

Supplement Nutrition Education (FSNE) Program discussing the importance of farming to local communities and the different incentives for farmers; Kevin Sullivan from the United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) Wildlife Services on how wildlife effects agriculture as a whole and what programs are available to help; and Amy Cawley from the Maryland Food Bank gave a presentation focused on food access.

These presentations along with reports from each member and agency representative, keeps the board up-to-date with challenges and opportunities facing young farmers, and ensures the fulfillment of the board's mission.

GOVERNOR'S INTERGOVERNMENTAL COMMISSION FOR AGRICULTURE (GICA)

The Governor's Intergovernmental Commission for Agriculture (GICA) was established by Executive Order under Governor Ehrlich 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 first meeting of calendar year 2019 took place on Tuesday, June 4, 2019. A number of things were discussed at the meeting, including: a presentation of the 2017 Census of Agriculture; a review of the executive order and accomplishments of GICA; a discussion of the agriculture ombudsmen at each state agency; and a discussion around updates to the GICA toolkit.

ACCOMPLISHMENTS

GICA's accomplishments include:

- Completed a toolkit for local communities and farmers, entitled, "Understanding and Responding to the Changing Needs of Agriculture."
- Developed a list of issues and recommendations for agritourism operations.
- Commissioned a survey for farmers related to county zoning and health regulations.
- Initiated outreach to county planners and health officers.
- Reviewed issues such as storm water management, leasing, water resources, wildlife management, health, and zoning regulations.
- Requested state agencies establish ombudsmen to be the initial point of contact for farmers with questions concerning agricultural matters.
- Assisted wineries and other farmers that produce value-added products with navigating through state and local environmental, health, and zoning regulations.
- Established a definition of agritourism in 2018, which

was something GICA had been working on since 2014. (defined in the Land Use Article)

AGRICULTURE OMBUDSMEN

HB 239 of 2006 required the Secretary of the Department of Health and Mental Hygiene to designate an agricultural ombudsman to (1) serve as the primary point of contact for individuals involved in agriculture who interact with the department; and (2) provide information regarding departmental regulations relating to on-farm food processing, on-farm food preparation, and other on-farm activities. In 2007, GICA expressed a strong interest in identifying agricultural ombudsmen at all of the major state agencies. The Maryland Department of Agriculture (MDA) reached out to cabinet secretaries to ensure the department has the current ombudsmen. The list is shared on the GICA webpage

on MDA's website.

GICA TOOLKIT UPDATES

In late 2006, the Maryland Agricultural Commission developed "Maryland's Statewide Plan for Agricultural Policy and Resource Management." This plan outlined some of the issues important to Maryland agriculture and tasked GICA with the implementation of certain aspects of the plan, including the development of a toolkit. In May 2011, GICA released "Understanding and Responding to the Changing Needs of Maryland Agriculture – A Toolkit for Local Communities."

The department is anticipating the next GICA meeting to be held in late fall or early winter of 2019. The topic of that meeting will be to discuss the new strategic plan for Maryland agriculture.

USDA-NATIONAL AGRICULTURAL STATISTICS SERVICE (NASS)

The Maryland field office of the U.S. Department of Agriculture's (USDA) National Agricultural Statistics Service (NASS) – which has offices in the Maryland Department of Agriculture's headquarters 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.

USDA NASS publishes a comprehensive national census for agriculture every five years. In April 2019, the 2017 Census of Agriculture was published and the census data provided valuable insights into demographics, economics, land, and activities on U.S. farms. The census found that in 2017 there were 12,429 farms with an average size of 160 acres. Approximately 96% of Maryland farms were family owned. Total farmland in Maryland was nearly 2 million acres – one third of the state's entire land area. The census estimated that the total value of production of Maryland agriculture was \$2.47 billion for the state's producers, an increase of 9% from the previous

2012 census. Per farm average net income also increased from \$38,920 in 2012 to \$52,997 in 2017 – up nearly 36%.

As for demographics of Maryland farmers in 2017, there were a total of 21,279 producers. A majority of them were male age 35-64 years old. The census also found that there were 8,148 female producers, an increase of 33% from 2012. There were 5,764 producers classified as new and beginning producers with 10 years or less of farming. Young producers, age 35 years or less, comprised of 2,262 producers with an average age of 28.6 years old. Producers with military service were published for the first time with 2,054 producers represented.

Maryland's leading cash commodities, in order of highest to lowest sales, were found to be: poultry/eggs; grains; nursery/greenhouse/floriculture/sod; milk; cattle and calves; and vegetables/melons/potatoes/sweet potatoes. The top counties for farmland, from most to least acreage, were: Frederick, Queen Anne's, Carroll, Kent, and Dorchester.

The 2017 Census of Agriculture helps paint a clear picture of agriculture in the state of Maryland. It helps farmers make critical decisions for their operations and helps legislators determine priorities for their region. USDA NASS' mission is to provide timely, accurate, and useful statistics in service to U.S. agriculture, and that would not be possible without the voluntary cooperation of Maryland farmers who take valuable time to respond to these surveys.



2019 Annual Report | Office of Marketing, Animal Industries, and Consumer Services

AGRICULTURE MARKETING AND DEVELOPMENT

The goal of the Maryland Department of Agriculture (MDA) Marketing Section is to develop markets for Maryland agricultural products and to connect farmers, watermen, and food producers to those markets. Through this economic development and promotion activity, the department helps create a profitable and viable future for Maryland's number one industry, agriculture.

MARYLAND'S BEST

Maryland's Best is the agricultural marketing program at MDA. From in-store promotions of Maryland-grown apples and watermelons, to advertising, to media events, and press releases, the department's marketing projects continued to build demand and connect farmers with markets during fiscal year (FY) 2019. An analysis of Maryland's Best, showed the program's efforts increased farm sales by \$7.6 million over five years, and for every \$1 the program spent in advertising and promotions \$15 was returned to the Maryland farmer and state economy. Primarily funded by the U.S. Department of Agriculture (USDA) Specialty Crop Block Grant Program (SCBGP), Maryland's Best encourages consumers to buy Maryland-grown fruits, vegetables, flowers, nursery products, wine, and Christmas trees. Due to restrictions on federal funds, state funds were used to promote dairy, meat, poultry, and agritourism.

Marketing efforts for the Maryland's Best program have been focused on reaching the entire supply chain. Beginning with Maryland farmers, the program works to ensure that farmers are growing the products that are currently in demand. From grocery store produce buyers to regional chefs, Maryland's Best business-to-business marketing goals were achieved through connecting producers and buyers with farm tours, strategic events, and advertising in key industry publications.

The Maryland's Best Food and Beverage Expo, formerly

known as the Buyer-Grower Expo, was held in January 2019. This tradeshow is the premiere event in the state to connect Maryland farmers and processors with wholesale buyers. The 2019 expo had over 65 exhibitors and nearly 300 buyers from grocery stores, restaurants, distributors, schools, and other venues. In addition, Maryland's Best partnered with growers to host the second annual cut flower expo, Growing the Movement, which aims to connect Maryland cut flower growers with regional florists.

In FY 2019, more than 3 million consumers received promotional messages from the department through radio, print, and online advertising. Press releases promoting Maryland agricultural products were distributed to more than 400 media outlets. For consumers, the Maryland's Best website continues to serve as the primary source of information about what's in season and where to find local farm stands, farmers markets, and Maryland farms. The website includes: farm contact information; directions; and video interviews with about 1,000 farmers, wineries, and small food processors.

Governor Larry Hogan supported Maryland's Best buy local promotion by kicking off the 2019 Maryland Buy Local Week at the 12th annual Governor's Buy Local Cookout held at Government House on July 18, 2019. During the event, the Governor encouraged Marylanders to incorporate one thing Maryland-grown, harvested, or produced into their meals each day during Maryland Buy Local Week, July 20-28, as part of the Maryland Buy Local Challenge. The event was well attended by farmers, watermen, legislators, chefs, culinary students, food and beverage buyers, and the media.

Additionally, the 2019 Maryland's Best Ice Cream Trail promoted the state dairy sector and encouraged buyers to visit nine dairy farms around Maryland that sell fresh, from-the-farm ice cream directly to consumers. Over 70 participants completed the ice cream trail in FY 2019 and submitted their

passports for a chance to be named the 2019 Maryland's Best Ice Cream Trailblazer.

MARYLAND'S BEST SEAFOOD

MDA's seafood marketing program, Maryland's Best Seafood, ran a significant advertising campaign in 2018 to boost crab sales as Maryland's crab industry was threatened by a lack of H-2B workers. To help support the industry through this critical time, Governor Hogan appropriated an additional \$375,000 to bolster the department's seafood marketing efforts.

In 2018, Maryland's Best Seafood promoted Maryland's crab industry through radio, television, billboard, newspaper, and online advertisements. Radio ads were featured on the following stations: WTOP, CBS Radio, Mix 106.5, Radio One, Magic 95.9, 92Q Jams, Adams 93.5, The Beach, Fox Sports Radio, WNAV, WYPR, WRNR, WAMU, Froggy 99.9, and WCBM. The radio ads reached an estimated 4.7 million people. The department produced two 15-second advertisements that ran on WBAL-TV, WMAR-TV, and WJZ TV, reaching an estimated 2.2 million viewers. Those commercials can be viewed on Maryland's Best YouTube account. Billboards were featured throughout the Washington D.C., Maryland, and Virginia area, off of major highways, including I-95, I-83, and the Baltimore beltway. These billboard advertisements reached about 3 million viewers. An ad in the Washington Post featured a classic crab cake recipe, reaching 876,292 readers.

With the additional appropriated funds, MDA also funded a documentary with Maryland Public Television (MPT) called, "Maryland Crabs: Tradition and Taste." The documentary takes an up close look at the Maryland crab industry and the economic and human impact it has on the state. This production reached approximately 1.2 million viewers. MPT also supported the crab promotion campaign with online lesson plans for teachers about Maryland's crab industry. This can be found on ThinkPort.

True Blue Program. Part of the state's seafood marketing efforts is the True Blue program. This program aims to promote the state's iconic blue crab industry by certifying restaurants and establishments that source at least 75% of its crabmeat from Maryland. During 2018, MDA's Marketing Program worked on confirming compliance with regulations to be part of the True Blue program. The department also distributed materials, including window clings, aprons, and hats, with True Blue branding.

Blue Catfish. Maryland's Best Seafood launched a significant campaign to increase the consumption of and demand for the invasive blue catfish. The blue catfish is a non-native species

proliferated throughout the Chesapeake Bay and has had a negative impact on its ecosystem, outcompeting native species and feeding on blue crabs and rockfish. The campaign has included press releases, advertising, and sampling events in Baltimore, Annapolis, and Washington D.C.

Maryland's Best Seafood has hosted and promoted several tasting events to introduce blue catfish to Maryland consumers, including a weekly presence at WTMD's First Thursday concert series in Baltimore and Tides & Tunes Summer Concert Series every Thursday in Annapolis. At WTMD First Thursday concerts, MDA Chef Ambassador developed unique recipes with blue catfish, for nearly 10,000 consumers.

One way to lessen its impact is to create a strong market for the fish to be sold in, which would help control its population. In September 2018, MDA, the Maryland Department of General Services (DGS), and the Maryland Department of Natural Resources (DNR) partnered together to establish the Blue Catfish Purchasing Initiative. This initiative creates sales of Maryland-harvested blue catfish to state institutions providing food services. State institutions, including correctional facilities, higher education institutions, hospitals, public schools, etc., can purchase cases of blue catfish for their food service needs directly from Maryland Correctional Enterprises — a program within the Department of Public Safety and Correctional Services. Through this initiative, state prisons now include blue catfish regularly on their menus. The Maryland Department of Corrections also reports that Hagerstown and Cumberland prisons are currently using 1,120 pounds of blue catfish a month. Facilities in Jessup are using 1,157 pounds per month and Eastern Correctional Institute in Westover uses 778 pounds a month.

National and International Seafood Marketing Efforts. The department also coordinated a Maryland Seafood Pavilion at the 2019 Seafood Expo North America in Boston, March 17-19, 2019. Crab processors, oyster dealers, and Baltimore's Tulkoff sauce company were exhibitors at the pavilion. Approximately 30,000 buyers from all over the world attended this expo.

Additionally, the department brought in a delegation of Canadian seafood buyers in 2018. They toured crab processing and aquaculture oyster facilities on the Eastern Shore and in Southern Maryland.

MARYLAND FARM TO SCHOOL PROGRAM

Governor Hogan designated September 24-28, 2018 as Maryland Homegrown School Lunch Week, a time when Maryland schools promote and serve local foods in the cafeteria. In its eleventh year, Maryland Homegrown School

Lunch week gave students in public schools across the state the opportunity to experience Maryland-grown, harvested, and produced food in their lunches.

The 2018 Maryland Homegrown School Lunch Week kick-off event was held on Sept. 20, 2018, at Eldersburg Elementary School in Carroll County. The event started with an all-school assemble attended by students, teachers, and local government officials, and included the following speakers: Eldersburg Elementary Principal Cindy Bell; Maryland Agriculture Secretary Joe Bartenfelder; Maryland State Department of Education Chief Performance Officer Dr. Sylvia Lawson; Carroll County Public Schools Superintendent Dr. Steven Lockard; and Carroll County Public Schools Supervisor of Food Services Karen Sarno.

Following the assembly, Eldersburg Elementary students led guests on a tour of activities that included: a presentation on dairy farming; FFA high school student-run stations including butter making and apple taste testing from Baugher's Orchards; and the Maryland Agricultural Education Foundation's "Maryland Ag Products" mobile science lab.

After the tour, invited guests joined students in the school cafeteria to enjoy a lunch that featured local products. The menu included roasted potatoes from Wilke's Family Farms in Hampstead; fresh melons, peppers, and tomatoes from Deep Run Farms in Hampstead; apples, plums, and peaches from Baugher's Orchards in Westminster; cucumbers from Miller Farms in Clinton; and local milk from Dairy Maid Dairy in Frederick.

Local school districts across the state celebrated Maryland Homegrown School Lunch Week. Highlights from the week included:

- Caroline County Public Schools' "Maryland Farm-to-Tray" event at Federalburg Elementary School on Sept. 28, 2018. Culinary students provided Maryland vegetable crab soup with crabmeat donated by J.M. Clayton Seafood Company in Cambridge. Caroline County was the first school system in the state to add blue catfish to its menu with the Caroline Blue Catfish Taco. This dish was created by the county's culinary students and showcased at the 2018 Governor's Buy Local Cookout. The event also featured an oyster shucking and spat demo by Phillips Wharf Environmental Center.
- On Wednesday, Sept. 26, 2018 — in cooperation with the University of Maryland Extension — St. Mary's County Public Schools celebrated Farm to School Day at White Marsh Elementary. Students rotated through three

stations throughout the day, which included lessons on animal agriculture, nutrition, and planting/farming, and participated in hands-on activities for an interactive learning experience. The school lunch that day highlighted local produce purchased from the Loveville produce auction.

The Homegrown School Lunch Week, an element of the Jane Lawton Farm to School Program, was signed into law in 2008. According to the latest USDA Farm to School Census, Maryland spends \$18 million dollars annually on local products in school meals. Maryland ranks ninth in the nation with the average school district spending 23% of their food budget on local products.

The Healthy, Hunger-Free Kids Act of 2010 formally established a Farm to School Program within the USDA to improve access to local foods in schools. In 2013, the USDA conducted the first nationwide Farm to School Census, in order to establish realistic goals with regard to increasing the availability of local foods in schools. In 2015, the USDA conducted a second Farm to School Census to measure progress towards reaching this goal.

School Collateral Materials. The Farm to School Program distributed more than 8,800 posters, 9,800 window clings, and 145,250 stickers among Maryland's 24-county school systems. The program also distributed 390 "This Farm Feeds Schools" signs to producers who provided products to schools during Maryland Homegrown School Lunch Week. New this year, 885 vinyl banners were also distributed to schools. The department created over 20 Farmer-Specialty Crop Trading Cards and distributed over 144,000 of these cards across the state. The card featured a specialty crop product on one side and the farmer on the other side. The producer on the card sold a Maryland-grown product to a particular school system. These materials were designed by the department and printed by the Maryland State Department of Education's Community and School Nutrition program.

PROJECT GREEN CLASSROOMS

The department is on the Leadership Team and Steering Committee for Governor Hogan's Project Green Classrooms. The initiative serves as an advisory body, working collectively across multiple disciplines, the public sector, and the private sector, to identify gaps and barriers and make recommendations to decision-makers regarding solutions that will bring about change in the areas of environmental literacy, nearby nature, and career pathways for youth.

LINKING ENVIRONMENTAL AND ACADEMIC PROGRAMS

The department signed a Memorandum of Understanding (MOU) between the U.S. Environmental Protection Agency (EPA), the University of Maryland Eastern Shore (UMES), the Maryland Coastal Bays Program (MCBP), the Maryland Department of the Environment (MDE), and DNR to increase cooperation to advance and promote environmental and agriculture program activities intended to advance the development of the full human capital of this nation; promote equal opportunity in higher education; contribute to the capacity of UMES to provide high-quality education; and encourage the participation of UMES in the nation's environmental programs.

SPECIALITY CROP BLOCK GRANT PROGRAM

The department's Marketing Program administers the USDA Specialty Crop Block Grant Program funds. During FY 2019, the MDA awarded over \$497,987 to six projects that enhanced the competitiveness of specialty crops in Maryland. Those projects are designed to:

- Continue to mitigate specialty crop food safety risks by reducing barriers to implementing Good Agricultural Practices (GAP) programs through specialty crop producer technical assistance, training programs, one-on-one assistance on developing GAP programs, and USDA GAP and USDA Harmonized GAP audit certification cost-share assistance.
- Continue to strengthen consumer awareness of local specialty crops and connect specialty crop farmers with markets through seasonal promotions of Maryland specialty crops. These promotions include: mass media, the Maryland's Best website, direct partnerships with Maryland specialty crop associations such as the Mar-Del Watermelon Association and the Maryland Apple Promotion Board, and other strategic promotional avenues.
- Research geographic information system (GIS) data and conduct site visits to determine if the highly valuable black or burgundy truffles can be cultivated in Maryland. Data will be shared to promote value-added and specialty crop development with an indication of which sites may be of interest to new business entities; which existing sites may be beneficial for their owners to lease to external investors; and which unoccupied real estate may hold further value for investment beyond traditional residential, commercial, or agricultural use.
- Investigate host plant usage of the spotted lanternfly through assessing insect arolia morphology and detecting plant DNA in their gut contents. Findings will be disseminated to Maryland growers and other stakeholders through field day events, commodity and in-service meetings, local conferences, and extension publications. This information will help growers and other stakeholders monitor and accurately predict spotted lanternfly dispersal from non-crop host plants to specialty crop plants.
- Assess surface irrigation water sources in Maryland to determine how levels of E. coli and Salmonella correlate over the growing season. The project will also determine whether differences in timing of water testing affect water quality profiles. Factsheets will also be developed that focus on Salmonella in the environment with a particular focus on: Delmarva, how the pathogen can be introduced onto fields, its fate and potential for dispersal, and what measures can be taken to reduce risks.
- Perform pre-award and post-award activities to administer USDA Specialty Crop Block Grant Program funding and ensure that the state agency and sub-awardees abide by federal and state requirements and regulations.

GOVERNOR'S ADVISORY COMMISSION ON MARYLAND WINE AND GRAPE GROWING

The Governor's Advisory Commission on Maryland Wine and Grape Growing (§10-1201 Agricultural Article) was authorized in 2005. The commission advises the Maryland Wine and Grape Promotion Council (§ 2-1103 Agriculture Article) on the allocation of funds from the Maryland Wine and Grape Promotion Fund.

MARYLAND WINE AND GRAPE PROMOTION FUND

The Maryland Wine and Grape Promotion Fund, authorized in 2005, provides grants to non-governmental organizations to encourage the production and consumption of Maryland wine and promote the production of wine grapes in the state. The department administers grants from the Maryland Wine and Grape Promotion Fund.

In FY 2019, this competitive grant program received 16 applications totaling \$527,228 in requested funding. After review by the Governor's Advisory Commission on Maryland Wine and Grape Growing, 10 projects totaling \$181,877 were recommended to be approved by the Maryland Secretary of Agriculture.

MARYLAND WINE AND GRAPE PROMOTION FUND GRANTS

Organization	Purpose	Grant Amount
Maryland Grape Growers Association	Testing of Traditional and Novel Grape Cultivars in the Diverse Regions of Maryland	\$5,500
Maryland Grape Growers Association	Competitive Inhibition of Magnesium for Potassium for Improved Grape Quality	\$5,274
Maryland Grape Growers Association	Late Season Bunch Rots: Profiling, Distribution, Prevalence, Fungicide Sensitivity, and Cultivar Susceptibility	\$38,540
Maryland Wineries Association	A GIS-based Vineyard Site Evaluation Tool for Maryland Growers	\$5,000
Maryland Wineries Association	Maryland Wine Experience Promotion	\$30,000
Maryland Wineries Association	How to Scale a Commercial Vineyard	\$5,000
Maryland Wineries Association	Curriculum Development for a Viticulture and Enology Workforce Enhancement Program for Maryland	\$5,947
Maryland Wineries Association	Completing Grape Section of the MyIPM to Facilitate Communication of Integrated Pest Management (IPM) Practices	\$11,616
Maryland Wineries Association	Maryland Wine Promotion Program	\$60,000
Maryland Wineries Association	Maryland Wine & Grape Speaker Series	\$15,000

See chart on next page for a list of applications that were approved for the Maryland Wine and Grape Promotion Fund.

FARMERS MARKET PROGRAMS

The goal of the Farmers Market Programs within the department’s Marketing Program 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 (FMNP)

The Farmers’ Market Nutrition Program (FMNP) is a USDA-funded nutrition grant program that is administered by MDA in conjunction with the Maryland Department of Health and the Maryland Department of Aging. The USDA gives grants to state agencies to provide checks to low-income participants that are a part of the Special Supplemental Nutrition Program

for Women, Infants, and Children (WIC) or the Senior Farmers’ Market Nutrition Program (SFMNP). Checks can be used to buy fresh fruits, vegetables, cut herbs, and honey (for seniors only) at Maryland farmers markets.

Participants in WIC and SFMNP also receive nutrition information and a participant brochure, which includes details on the program and a “What’s in Season” chart to help them to shop for local produce.

MDA’s FMNP runs every year from June 1 through November 30. In Maryland, about 195 farmers participate in the FMNP annually. All of the 110 recognized markets in Maryland have authorized farmers present who participate in the FMNP.

MDA’s FMNP also partnered with the University of Maryland Extension’s Food Supplement Nutrition Education program to promote local produce to WIC families. Through this initiative, 522 tastings were conducted at farmers markets and more than 60,000 Maryland consumers received educational material on healthy eating.

FARMERS MARKET DIRECTORY

More than 60,000 printed Maryland Farmers Market Directories were distributed to the public through tourism offices, libraries, farmers markets, senior centers, WIC clinics, welcome centers, and other facilities. This directory includes all the farmers markets in the state recognized by the department. Maryland has farmers markets in all 23 counties and Baltimore City. The online version of the directory is also available on MDA's website and the Maryland's Best website.

INTERNATIONAL MARKETING

The department's International Marketing Program represents Maryland's farmers, breeders, processed food companies, and nurseries in the Southern United States Trade Association (SUSTA). The department is a member of the trade association through its membership in the Southern Association of State Departments of Agriculture (SASDA). The trade association's activities for Maryland in FY 2019 included food trade shows in the United Arab Emirates and South Korea as well as three inbound trade missions from Canada.

Equine Mission to France. In June 2019, MDA led a trade mission to France to connect Maryland Thoroughbred and Standardbred breeders with potential markets for Maryland horses. The department's Maryland Horse Industry Board, International Marketing staff, and industry representatives identified members of the French equine industry to meet with, events to attend, and places to tour.

The group met with leadership from Le Trot, the agency promoting the French Trotter, the Training Center at Chantilly, the Polo Club of Chantilly, the Haras de Quesnay, the Haras de Bonneval, and the Haras de Sassy. The delegation also toured racetracks and met with government officials. Following the trip, it is now expected that members of the French government and equine officials may visit Maryland to learn more about our horse industry and to develop mutually beneficial exchange programs.

Southern United States Trade Association (SUSTA)

Activities. The department connected 22 Maryland companies with new international markets through SUSTA activities, including trade shows and missions. Sales from those activities were valued at more than \$42 million and included six first time export sales.

ACRES AND CROP INSURANCE PROMOTION

The department administers two federally funded programs, the Crop Insurance Promotion and the Maryland Agricultural

Conflict Resolution Service (ACRES). The Crop Insurance Promotion is funded with \$285,000 from the USDA's Risk Management Agency. Through press releases, newsletters, presentations, and advertisements in agricultural media, the department increased participation of Maryland farmers in federal crop insurance programs to 6,441 farmers in FY 2019. Farmer investment in crop insurance helps stabilize the Maryland agriculture economy as weather and market volatility make farming a challenging sector. In FY 2019, more than \$303 million of agricultural production was insured on more than 839,000 acres. The ACRES program, funded by the 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, dust, etc.

SPAY AND NEUTER GRANTS PROGRAM

Created in 2014 by the Maryland General Assembly, the Spay and Neuter Grants Program was established to assist in the reduction of animal shelter overpopulation and cat and dog euthanasia rates. The program carries out its mission by financing competitive grants to local governments and qualifying animal welfare organizations for programs that will effectively facilitate and promote spay and neuter services for cats and dogs. Funding for this program comes solely from fees paid for by the pet food industry. As mandated by the Maryland General Assembly, a fee is levied on all pet food companies that sell their product(s) in the state. In the first year, companies paid \$50 per product. In 2014, the fee increased to \$75 per product and in 2015, the fee capped at \$100 per product. As of June 30, 2019, the program has funded 118 projects, which have provided 51,498 spay and neuter procedures across the state.

ANIMAL HEALTH & DIAGNOSTIC LABS

ANIMAL HEALTH PROGRAM

The Maryland Department of Agriculture's (MDA) Animal Health Program prevents and controls infectious and contagious diseases in Maryland livestock and poultry with particular emphasis on those diseases that threaten 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: Administration with eight full-time staff in MDA's Annapolis headquarters; Field Operations with five full-time and two part-time staff members; and the Diagnostic Laboratory System in Frederick and Salisbury with 15 full-time employees, one part-time staff, and two contractual relief veterinary pathologists. In fiscal year (FY) 2019, due to multiple vacancies and absences, the U.S. Department of Agriculture (USDA) provided extended relief veterinary pathologist services at both laboratories and provided field support for auction and exhibition inspections and Animal Disease Traceability Program enforcement. This additional assistance from the USDA was critical to maintaining Maryland's animal health operations.

In addition to routine or scheduled work, the Animal Health Program also responded to all animal emergencies under the State Emergency Operations Plan, Emergency Support Functions 6 and 16. Animal emergencies are categorized as: animal health emergencies, such as a disease outbreak in livestock or poultry; and 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.

The department 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. The Animal Health program also has a Memorandum of Understanding with

the Maryland Department of Natural Resources to provide diagnostic testing and necropsies for wildlife, and works collaboratively on wildlife disease surveillance, prevention, and outbreak concerns.

REGULATORY AND FIELD 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 livestock and poultry moving into or out of Maryland must: be examined for signs of contagious or infectious disease; have the required vaccines and disease testing; and be accompanied by a Certificate of Veterinary Inspection. In FY 2019, Animal Health Program staff processed certificates of movement for 70,707 livestock animals, including 14,381 horses and 61 billion poultry.

Animal Exhibitions and Back Yard Flocks. In FY 2019, Animal Health Program staff performed 50 inspections of exhibitions at fairs and shows and processed 8,739 interstate health certificates for exhibitions, races, and sales in the state. With the help of federal partners, exhibition officials, and trained volunteers, the department's field inspection staff 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 2019, Animal Health Program staff also continued outreach, inspection, and training in the back yard flock sector. This sector continues to increase in size and has the potential to cause a disease risk. Due to the popularity of back yard flocks, the Animal Health Program began identifying, inspecting, and regulating small flocks selling poultry and hatching eggs to improve sanitation and disease traceability. In addition, the program worked to bring flocks into compliance with existing state regulations and interstate movement requirements.

MDA's Animal Health Program is the National Poultry Improvement Plan's (NPIP) Official State Agency (OSA). Our active participation provides biosecurity and hatchery sanitation standards as well as on-site monitoring and testing to meet programmatic disease certification programs,

interstate movement, or export requirements for commercial and backyard poultry. These disease surveillance programs — including avian influenza, Salmonella species, and Mycoplasma species — protect the poultry industry from significant and potentially devastating flock losses as well as protect food safety and public health.

The Animal Health Program certifies individuals in poultry sampling techniques for Salmonella Pullorum and avian influenza as part of the Poultry Testing Agent Program. This program allows our poultry testing agents to provide low-cost services to owners and producers who wish to exhibit or sell birds in Maryland or other states. In FY 2019, the Animal Health Program held four trainings and 34 in-field certifications for a total of 86 independent and 51 commercial Maryland Authorized Poultry Testing Agents.

Maryland regulations require, regardless of residency, all sellers of poultry or hatching eggs in the state to acquire a Maryland Permit to Sell. Maryland implemented a process to ensure out-of-state sellers comply with Maryland agriculture laws. Although the NPIP Avian Influenza H5/H7 Clean Program remained voluntary for in-state sellers, most Maryland backyard NPIP participants elected to include the 180-day testing to maintain this status.

Due to the Pullorum Typhoid (PT) antigen shortage, the Animal Health Program has issued a Conditional Permit to Sell. Maryland residents are required to show proof of avian influenza testing, and are waived from the PT requirement. Out-of-state sellers are required to show avian influenza negative test results and must show proof of flock of origin, by 9-3 or a micro-titer PT testing of the flock.

Livestock and Poultry Auctions and Dealers. During FY 2019, Animal Health Program staff inspected 136 livestock auctions held at four USDA/MDA Approved Livestock Tagging Stations in Maryland. During the inspections, animals are observed for signs of infectious or contagious disease, including foreign animal diseases, and for compliance with welfare, animal identification, and other market regulations. Surveillance is conducted for diseases of concern such as avian influenza or swine influenza. In FY 2019, there was one case of Avian Influenza Type A that was detected in one of the poultry at an auction market. This incident was quickly controlled and eradicated. FY 2019 was an alternating year for dealer inspection, therefore no inspections were conducted for the 25 livestock dealers. An additional 63 farm stores that sell chicks and ducklings in the spring were inspected. The premises were inspected for diseased animals, record-keeping compliance, and education regarding animal disease traceability.

Biologics. In FY 2019, the Animal Health Program evaluated 59 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 biological agents in Maryland. In addition, in FY 2019, the Animal Health Program worked with legislators, veterinarians, farmers, and constituents to revise laws and regulations for antibiotic use in food animals. New federal mandates requiring “Judicious Use of Antibiotics” became effective this fiscal year, restricting use of antibiotics in food animals to veterinary prescriptions and the use of “Veterinary Feed Directives” for addition of antibiotics to feed. State laws were passed in April 2019 which supplement the federal restrictions. The new state law requires Maryland veterinarians submit documentation of “Veterinary Feed Directives” and other prescriptions for antibiotic use in food animals on an annual basis beginning January 2020, and restricts the use of antibiotics in cattle for mastitis beginning 2021. Work on regulations and procedures to implement the new law are expected to be complete by early 2020.

Contagious Equine Metritis (CEM) Import Quarantine Station. The department operates one USDA CEM quarantine station 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 U.S. In FY 2019, the department issued 171 import permits through the CEM program, accruing \$160,200 in revenue.

Animal Disease Traceability (ADT) Program. Four livestock markets throughout the state continued to function as approved Livestock Tagging Stations. They are under a combined USDA and MDA authority. This allows them to provide tagging and recordkeeping services to livestock producers at the market, facilitating interstate movement and official identification of Maryland animals. In Maryland, official identification is a USDA-authorized ear tag. Ear tag distributors, livestock dealers, and the livestock auction markets are required to maintain records of tag issuance. In FY 2019, to increase compliance with ADT requirements, there was outreach to producers, markets, veterinarians, and University of Maryland Extension officials. The Animal Health Program continued its ADT policy by requiring the use of radio-frequency identification tags (RFID) in animals entering exhibitions. This upgrade will enable better and more efficient tracking of animals moving in, out, and throughout Maryland. To implement this requirement, the Animal Health Program set up an ADT Advisory Board that developed outreach and

educational information informing producers, exhibition sponsors, extension officials, and veterinarians throughout the state about the new identification upgrade. The eventual goal of ADT is to use automated recordkeeping for all livestock movements — similar to that used for tracking packages — to trace the movements of animals implicated in a disease outbreak within 24 to 48 hours. In FY 2019, USDA traceback tests for cattle, swine, and poultry indicated that Maryland could meet the 24 to 48 hour proposed federal standard for tracing individual animals back to the farm of origin. MDA uses the Federal Surveillance Collaboration Services' Core One system database to maintain identification data. This enables tracing of 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.

Livestock and poultry producers must register their premises. Premises registration is needed to improve the ability to trace animals. Livestock premises registration is required for animals to move interstate. To date, property owners and operators with livestock have registered 90 new premises in Maryland for a total of 816 registered premises. 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. To date, 6,770 poultry premises are registered under the state program; 440 were added in FY 2019.

EMERGENCY RESPONSE READINESS

The Animal Health Program continually prepares and trains for an emergency response. During FY 2019, Animal Health Program 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. Program staff led or participated in five emergency response exercises or trainings in FY 2019, primarily focused on HPAI response. Through continued training, department personnel are assigned and trained to respond to agricultural emergencies by utilizing the Incident Command System, the State Web EOC system, and the federal EMRS system. In addition, Animal Health Program personnel collaborated with the Maryland Department of Health (MDH), the State Board

of Veterinary Medical Examiners, MEMA, and the Maryland veterinary community to assemble the State Voluntary Veterinary Corps — a group of about 185 veterinarians and technicians willing to support emergency operations when activated.

This fiscal year marked the seventh and last year of partial federal funding for the department's 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. This voluntary initiative provides significant contributions by and for the industry and participating states in practicing "whole farm" biosecurity. The coalition includes twelve eastern states, with the following states as full members: Delaware, Georgia, North Carolina, New Jersey, New York, Maryland, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia. Better cooperation among states to promote biosecurity procedures on dairy farms enhances 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. As of FY 2019, Maryland has certified three premises, two private farms and one processing plant, as "qualified" under the Secure Milk Supply Program.

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 funds much of the enhanced surveillance. Enhanced surveillance is an increased frequency or number of tests for a disease of particular significance or risk. Specific enhanced 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 and throughout the Delmarva region. In FY 2019, with the continual threat of HPAI entering the United States, the department continued: enhanced surveillance at auction markets; requirements for avian influenza testing of resident poultry entering exhibitions within 21 days of entry; and required testing of out-of-state poultry within 21 days of entry. MDA performed

6,746 avian influenza tests in FY 2019. The live virus was not detected in this testing. Suspect avian influenza results were detected in two cases, and the program worked with USDA and producers to conduct control zone surveillance while confirmatory testing was completed and concluded no live virus was present.

Foreign Animal Disease. No foreign animal diseases were detected in Maryland during FY 2019. Four foreign animal disease investigations were conducted this fiscal year. The department has three qualified foreign animal disease diagnosticians (FADD) on staff, and three department veterinarians attended one FADD Continuing Education Training this year.

Tuberculosis and Brucellosis. Maryland remains free of bovine tuberculosis and bovine swine brucellosis. In FY 2019, Animal Health Program staff participated in a USDA refresher training for tuberculosis and brucellosis diseases regulatory actions. In FY 2019, three bovine tuberculosis responders were reported by Maryland-accredited veterinarians. They were re-tested by the Comparative Cervical Test (CCT) method and determined to be negative for tuberculosis.

Equine Herpes Virus. The neurologic strain of equine herpes virus (EHV) is a contagious and potentially fatal disease for horses that can result in quarantines and disruption of the horse industry overall. Therefore, the program has developed the ability to rapidly test for EHV of high concern to prevent the spread of disease. In FY 2019, 48 horses were tested for EHV-1 at the department’s animal health labs; none tested positive for the fatal neuropathogenic strain of EHV.

Quarantines. As a result of disease surveillance and response efforts in FY 2019, 21 quarantines (hold orders) were placed and after being cleared, 15 quarantines were released on these farms. Additionally, there were 284 30-day quarantines for swine entering the state that were placed through the Swine Permit process. There were an additional 171 quarantine actions for 135 mares and 35 stallions associated with horses moving through the CEM Quarantine Import Stations in Maryland.

Selected parameters of Animal Health activities are reflected on the chart below.

ANIMAL HEALTH PROGRAM FY 2019 – SELECTED PARAMETERS

Parameter	Total Number
Animals Certified to Move In, Out or Within Maryland	70,707
Avian/Poultry Export	24,647
Avian/Poultry Import	61,131,235
Biological Authorizations	59
CEM Permits (Quarantines)	171
Equine Health Certificate – Export	8,812
Equine Health Certificate – Import	5,569
Exhibition Inspections	50
Export Certificates (Non Equine)	16,630
Foreign Animal Disease Investigations	4
Import Certificates (Non Equine)	30,957
Inspections and Investigations – Total Combined	326
Intrastate Certificates Total (Show)	8,739
Livestock Dealer Licenses	26
Market Inspections	136
Quarantines Issued for Disease Investigations	21
Swine Permits Issued (Quarantines)	284

LABORATORY SYSTEM MISSIONS AND STAFF

The Animal Health Laboratory System supports the animal and public health regulatory and emergency response missions of the department, other state agencies, and local and federal governments. It assists veterinarians and livestock and poultry producers 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:

- National disease control programs of the USDA, e.g. avian influenza in poultry, tuberculosis in cattle, and brucellosis in swine;
- The U.S. Food and Drug Administration's (FDA) Center for Veterinary Medicine initiative to promote animal and human health by investigating potential biologic contaminants in animal feeds, animal products, or produce;
- The Maryland Department of Health (MDH) in diagnosing animal rabies and other animal diseases of public health significance; AND
- The Maryland Department of Natural Resources (DNR) 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 daily 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 of the department's 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. In FY 2019, both labs were the first and second veterinary diagnostic laboratories in the nation to meet the new 2017 ISO 17025

Accreditation Standards. As such, they are assisting other state laboratories in meeting these new standards.

Both labs 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 and Frederick Laboratories are also National Poultry Improvement Plan (NPIP) laboratories, 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 MDH.

The laboratory system also provides educational and training opportunities to a diverse group of students, including students from: the Virginia-Maryland Regional College of Veterinary Medicine, the University of Maryland, Salisbury University, and other U.S. colleges, universities, and veterinary schools. Additionally, the laboratory system provides training to veterinary pathology residents from Johns Hopkins University, the Armed Forces Institute of Pathology, and poultry industry veterinarians.

Both labs are staffed with a veterinary pathologist, four laboratory scientists, one laboratory technician, and two administrative team members to perform or assist with diagnostic activities in necropsy, molecular biology, bacteriology, serology, parasitology, virology, and mycology as well as important duties of supervision, quality assurance, safety assurance, and operational support. The veterinary pathologist conducts post mortem examination of animals and interprets results generated by the science staff. This person also serves as the laboratory director with responsibility for all activities of the laboratory. A quality and safety manager assists both laboratories in maintaining the quality assurance programs to meet accreditation standards. In addition, an IT specialist manages and troubleshoots the laboratory information management system, essential for rapid and efficient data input and reporting.

Within the broad system missions, each laboratory has specific geographic and technical missions. The primary mission of the Frederick Animal Health Diagnostic 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 Lab primarily serves constituents on the Western Shore of the state. The laboratory testing 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. Swine influenza testing was added in FY 2019 to enable rapid detection and response to this disease in both laboratories, as it has twice affected Maryland fairs and shows and can be contagious to humans. Avian influenza testing of poultry was added to the Frederick Lab’s 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.

The primary mission of the Salisbury Animal Health Diagnostic Laboratory focuses on infectious diseases of poultry within Maryland. The Salisbury Lab primarily serves the large commercial poultry industry of Delmarva and the Eastern Shore region of Maryland, but also provides expertise for the growing organic, free-range, and backyard poultry

sector. Secondary missions include: full service post mortem diagnostic support for certain disease 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 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.

See chart below: ANIMAL HEALTH PROGRAM LABORATORY STATISTICS: FY 2018 VS. FY 2019

OTHER ANIMAL HEALTH PROGRAM ACTIVITIES

In FY 2019, the Animal Health Program conducted four classes and provided accreditation to 75 veterinarian participants.

ANIMAL HEALTH PROGRAM LABORATORY STATISTICS: FY 2018 VERSUS FY 2019

Diagnostic Activity	FY18 Data	FY19 Data
Total Accessions	13,697	13,209
Total Tests	42,269	48,899
Mammalian Necropsy	183	234
Poultry Necropsies (flocks)	515	526
Avian Influenza	7,554	6,746
Brucellosis	926	1,123
Contagious Equine Metritis	2015	2,161
Equine Herpes Virus (EHV-1)	57	6
Equine Infectious Anemia	9,302	8,786
Johne’s Disease in Cattle	2,133	2,445
Rabies	91	114
Salmonella Pullorum	1,990	1,382

A summary of testing carried out in FY 2019 and FY 2018 at the department’s Animal Health Diagnostic Laboratories for regulatory or otherwise select significant diseases.

STATE BOARD OF VETERINARY MEDICAL EXAMINERS

The State Board of Veterinary Medical Examiners mission is to protect animal and public health and welfare by enforcing the Veterinary Practice Act and related Code of Maryland regulations. To that end, the board licenses and/or registers veterinarians, veterinary technicians, veterinary hospitals, and animal control facilities. The board's activities also include inspecting veterinary hospitals and animal control shelters, investigating consumer complaints as well as initiating its own investigations and determining whether disciplinary action will be taken against any licensees.

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. 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 also an active, voting member of the American Association of Veterinary State Boards (AAVSB), a national 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. The board reports disciplinary action information to the AAVSB as well as to other state veterinary boards and the general public through its website. Several board and staff members represented the Maryland board at the AAVSB's annual meeting in Washington, D.C. in fiscal year (FY) 2019.

FY 2019 HIGHLIGHTS

Board activities during FY 2019:

- The board licensed 165 new veterinarians and renewed the license of 2,853 veterinarians throughout the state.
- The board licensed 52 new veterinary hospitals and renewed licenses for 547 veterinary hospitals.
Note: Most of the new hospital licenses represent ownership changes rather than brand new facilities being built.
- The board renewed 49 Registered Veterinary Technicians (RVTs) licenses. *Note: RVT licenses are valid for three years.*
- The board licensed a total of 30 animal control facilities across the state.

INSPECTIONS

The board shares two inspectors with the Maryland Horse Industry Board. Together, they inspect about 600 veterinary hospitals and 750 licensed horse stables at least once every two years.

Inspections during FY 2019 were as follows:

- Number of Hospitals Inspected: 399
- Number of Hospitals Requiring Follow-up Before Passing: 17
- Number of Total Inspections Conducted: 416

COMPLAINTS

The board continues to have a backlog of complaint investigations. During FY 2019, the board handled 95 complaints, which includes infractions found by board inspectors during hospital inspections that were serious enough to warrant board attention. A total of 88 complaint investigations were closed during the year. At year end, the board had 84 open complaint investigations and one full-time investigator.

ONLINE SERVICES LAUNCHED

During FY 2018, the board began a significant upgrade of its internal database and online services. That project continued in FY 2019. In June 2019, the board launched an online portal that allows those applying for a veterinary license, an RVT license, or a veterinary hospital license for the first time to apply online. Prior to this, all initial licensing was a paper-based process which took several weeks to complete. In addition, the portal allows the general public to look up the name of these licensees to ensure they are dealing with properly licensed professionals and facilities. Consumers can also now make complaints online, rather than sending in a paper form. The portal also allows licensees to track their continuing education requirements, update their contact and employment information, and renew their licenses online. All online functionality and historical data migration for inspections and disciplinary actions are scheduled to be completed in FY 2020. Staff members have also spent considerable time training on the new systems and transitioning to the new process.

The board also updated its Code of Maryland regulations to allow the board to accept applications and payments online.

REGULATIONS

HB 1463 – Veterinary Practitioners – Animal Cruelty and Animal Fighting – Reporting. HB 1463 passed during the 2017 Legislative Session, requiring veterinarians who have reason to believe that an animal they are treating has been subjected to cruelty or animal fighting to report it to the appropriate law enforcement agencies. During FY 2019, the board adopted regulations to protect the identity of veterinarians who make a report in good faith and to establish conditions under which the substance of a report may be disclosed. Those regulations took effect on December 31, 2018. The board's website was also updated to provide veterinarians with information about what they need to report and where to report. The board also worked with the Professional Animal

Workers of Maryland (PAWS) to provide veterinarians with a list of animal control officials in each county who they could consult with about reporting requirements.

LEADERSHIP

Dr. David Handel, a Montgomery County veterinarian, served as the board's president for the past five years and as a board member for the last 10 years. Dr. Handel termed off the board at the end of FY 2019. He received a Governor's Citation and a Secretary's Citation for his contributions. Dr. Elizabeth Callahan, co-owner of a mixed practice on the Eastern Shore, was elected president of the board by her fellow board members. Dr. Callahan is the first woman to ever lead the board. All board members are volunteers.

MARYLAND HORSE INDUSTRY BOARD

The Maryland Horse Industry Board (MHIB) consists of the Maryland 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 fiscal year (FY) 2019, the MHIB operated with a full slate of board members and conducted 11 monthly board meetings. The board continued its active involvement with the Fair Hill Natural Resources Management Area's Special Event Zone Improvements Project. This initiative, involving a number of state agencies and various equine industry stakeholders, is an outgrowth of the 2015 Maryland Horse Park System Study, that was commissioned by the MHIB and conducted by the Maryland Stadium Authority. The effort intensified when Fair Hill International won the bid to host one of the seven premiere 5-Star equestrian events in the world. The first one of these annual events will be held in October 2020.

In addition, the board successfully applied for a U.S. Department of Agriculture (USDA) Rural Business Development Grant and hired its first full-time contractual employee, Anne Litz. This position will serve as a field marketing specialist to grow equine-related small businesses in rural areas of the state, mainly our Horse Discovery Centers and licensed stables. With this extra assistance, the MHIB was able to expand its marketing efforts and accomplish the following in FY 2019:

- Helped promote the World of Pets Expo at the Timonium fairgrounds;

- Added seven new Horse Discovery Centers to its network;
- Rolled out a new online stable licensing system;
- Helped the Potomac Horse Center in their first round of fundraising to raise \$75,000 to replace a roof on an indoor arena;
- Led the industry effort to host a successful Maryland Horse Industry Day in Annapolis for state lawmakers; AND
- Held another successful 11-day Horseland exhibit at the Maryland State Fair.

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 MHIB 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 MHIB in FY 2019 are listed below.

Licensing. The MHIB licensed 745 stables in FY 2019. This figure represents the fourth highest number of stables licensed by the board. The new online licensing system will likely contribute to an increase in licenses since the new process is more accessible for stables, allows stables to pay online, and makes it easier for stables to communicate with the board through email. A total of 27,434 tons of feed were sold, resulting in a \$213,624 contribution to the board's Feed Fund.

Moving Forward to Make Major Improvements at Equine Competition Venues in the Maryland Horse Park System.

The 2015 Maryland Horse Park System Study identified two venues in need of major upgrades in order for Maryland to have a world-class Horse Park System. The study recommended the Fair Hill Natural Resources Management Area in Elkton serve as Maryland's major field event venue and the Prince George's Equestrian Center serve as the state's major show/expo complex. A third site will serve as the cultural and educational center, but it has not yet been identified. The idea of the 2015 Maryland Horse Park System Study originated in 2004 from feedback generated at the first Maryland Horse Forum, attended by leaders of the state's equine community. After 15 years of various stops and starts, Phase I of construction at the antiquated Fair Hill facility began in June 2019.

Improvements to venues in the Maryland Horse Park System in FY 2019 included:

- **Fair Hill.** The Fair Hill project is a public-private partnership with the State contributing 50% of infrastructure costs and the private sector providing the other 50%. MHIB member Jay Griswold is at the helm of the Fair Hill Foundation, the entity raising the private funds. Under the leadership of the Maryland Department of Natural Resources (DNR), who owns and manages the Fair Hill site, and the Maryland Sports Commission/Maryland Stadium Authority, the MHIB is working with the Fair Hill Foundation, Fair Hill International, Fair Hill Training Center, Fair Hill Races, the National Steeplechase Association, and others to raise \$10 million to match \$10 million already committed to the project by the State of Maryland. By July 1, 2018, \$2 million had been raised

from both the State and private donors to start design, engineering, environmental, water, and various other studies. Phase I of the \$20 million construction project got underway June 1, 2019, in time to host the first 5-star event in October 2020. The Fair Hill construction will include: improvements to the racetrack; building new facilities to hold internationally-rated horse shows and 5-star events; and upgrading all the current equine amenities, such as the site's 70 miles of bridle trails. The site is already home to the National Steeplechase Association and the world-renowned Fair Hill Training Center. During FY 2019, the MHIB helped with and supported the 85th anniversary of the Fair Hill Races and the 30th anniversary of the Fair Hill International 4-Star Event. The board also started working with the Fair Hill Community Group, a team of civic leaders working to involve Cecil County neighborhoods in the Fair Hill project, and hosted Jane Atkinson, an original founder/director of the Kentucky Horse Park and the Rolex Kentucky Three-Day Event, for a two-day briefing at Fair Hill.

- **Goucher College.** The Maryland Horse Breeders Association moved into the third year of its lease to house its headquarters at the Goucher College – Towson Campus, which has a nationally-renowned equestrian team. The school's stable and riding center is licensed by the MHIB. Plans include development of a Maryland horse museum and sporting library as well as a plan by Goucher College to build a new \$14 million equestrian complex. This facility could eventually serve as the Maryland Horse Park System's cultural and educational center. However, because of extenuating circumstances, fundraising efforts have been put on hold and the future of the project is uncertain.
- **Prince George's Equestrian Center.** Efforts to explore options to make improvements to the Prince George's Equestrian Center were put on hold after a developer, who had become greatly interested in the project, passed away. The center remains filled to capacity with a full schedule of horse shows and equestrian events throughout the year. The county continues to make improvements to the facility and recently repaired a storm-damaged stable among other improvements. A new general manager, Bryan Anthony, was hired in spring 2019.

STRATEGIC MARKETING PLAN

The MHIB continued to implement its strategic marketing plan, which includes the following key components:

- **In its fourth year at the Maryland State Fair, Horseland continued to grow and drew 70,000 visitors. The Horse Show for Military Veterans and Mounted Police Officers returned for its third year. The famed Caisson Platoon from Ft. Myer, Virginia returned as an exhibitor.** In conjunction with a group of horse industry partners, the 11-day exhibit opened in 2015 to introduce new faces to Maryland's equine community. Horseland has since grown to become a major industry outreach initiative. At the Horseland exhibit, fairgoers are able to: pet horses; learn how to work around equines; make stick horses and jump through 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 45 stables, organizations, and Horse Discovery Centers. In addition, people were introduced to farms and stables in their neighborhoods where they could learn to ride and learn more about horses. Through Horses Healing Maryland's Military program, the MHIB and its network of therapeutic riding programs that offer horsemanship programs to veterans, staged the third Military and Mounted Police Horse Show for veterans and first responders. Veterans from the STAR Equestrian Center in Hagerstown, the Freedom Hills Therapeutic Riding in Port Deposit, and members of the Caisson Platoon competed in equitation and obstacle classes. The show continues to be a success and plans were made to hold it again at the 2019 Maryland State Fair.
- **Horse Discovery Center program and the affiliated Horse School Curriculum, Horses for Courses, continues to mature.** As previously mentioned, the MHIB hired Anne Litz as a field marketing specialist through the help of a grant acquired from the USDA. This position worked with rural Horse Discovery Centers, licensed stables, and equine organizations to help them grow their businesses, largely through expanded marketing activities and social media. Anne held four regional workshops during FY 2019 and expanded the program into two more counties, Queen Anne's and Charles. Seven new stables were also certified. There are now 40 Horse Discovery Centers in 18 counties. Days End Farm Horse Rescue, Molly Hill Farm, and Full Moon Farm are among stables using the Horses for Courses school curriculum for student visits. Anne attended and presented at various venues about the program,

including the Maryland Association of Environmental and Outdoors Education and Grow & Fortify conferences.

- **"Hope's Legacy" feature film, a teen drama with an equestrian-themed backstory that aims for Showtime/Netflix cinema outlets, was produced at two Maryland Horse Discovery Centers.** Doug Maddox, a Towson-area filmmaker, directed and wrapped up production in June 2019 of a sequel to his successful "Christmas Ranch" movie. "Christmas Ranch" was also set in Maryland and has drawn over 5 million viewers. The new film is titled "Hope's Legacy" and features Three-Day Eventing. "Hope's Legacy" was filmed at Full Moon Farm in Finksburg, Fairwinds Farm & Stables in North East, and GreenMount Farm in Glyndon. Full Moon Farm and Fairwinds Farm & Stables are both Horse Discovery Centers. The MHIB helped with the script, local actors and extras, and a small amount of funding.
- **The MHIB continued the Touch of Class Award, social media programs, and distribution of promotional materials.** During 2019, the MHIB honored Maryland horses and riders who won national and international recognition with the monthly Touch of Class Award in these disciplines: interscholastic polo, sport horse breeding, jousting, steeplechasing, Thoroughbred racing, and Quarter Horse competitions. The horse board has more than 5,000 Facebook and Twitter followers. Promotional materials are available at Welcome Centers around the state, Clark's Elioak Farm in Ellicott City, Horse Discovery Centers, and major tourism centers. All publications can be downloaded on the MHIB website. The MHIB participated in a two-page horse industry spread in Destination Maryland, the State's official tourism magazine; and advertised trail riding opportunities and equine spectator events in the Baltimore County Tourism Guide and Recreation News.
- **The MHIB conducted national and international outreach.** In June 2019, the Maryland Department of Agriculture (MDA) received a grant from the U.S. Livestock Genetics Export Association (USLGE) to take officials and Thoroughbred and Standardbred breeders to France. The group consisted of the following people: MDA's Assistant Secretary Steve Connelly; MDA's International Marketing Director Theresa Brophy; MHIB Executive Director Ross Peddicord; Maryland Horse Breeders Association's Executive Director Cricket Goodall; Thoroughbred Breeder Mike Pons from Country Life Farm; and Standardbred Breeder Garrett Bell from Winbak Farm.

The group visited major Thoroughbred stud farms in Normandy, including: Alec Head Stud Haras du Quesnay, Aga Khan Stud Haras de Bonneval, and Nicolas Chambure Stud Haras d'Etreham. The trade mission also included tours of the trotting farms of Sebastien Guarato and Haras de Sassy along with visits to the training centers at Chantilly and Grobois. The group also toured racetracks at Deauville, Compiègne, and Vincennes, and made a stop at the Arqana horse auction house.

The group was hosted by the French national harness racing governing body, Le Trot; the national Thoroughbred racing bureau, Galop; and officials from the Hauts de France region. In turn, MDA plans to host French officials in Maryland during the upcoming year.

In FY 2019, MHIB hosted David Burns from the Irish Thoroughbred Marketing Board and Patrick Diamond from the Irish National Stud, at the Preakness and Maryland Million races. During their visit they also toured Fair Hill International and major Thoroughbred breeding farms around Maryland.

In FY 2019, MHIB Executive Director Ross Peddicord travelled on several fact-finding missions to the following major three-day event competitions: the Burghley Horse Trials in England, the World Equestrian Games in North Carolina, and the Land Rover Kentucky Three-Day Event. Ross also made a presentation about the Fair Hill 5-Star Event at the U.S. Eventing Association annual conference in New Orleans and represented MDA at the USLGE conference in Dallas-Fort Worth. This year, Ross also toured the new World Equestrian Center that is currently under construction in Florida.

MHIB designated Bob Zhang, from the Maryland Sister States Program, to be its Asian representative. In October 2018, Bob took Laurel jockey Angel Serpa to an international invitational race in China. The Maryland jockey won the race over competitors from 10 other nations.

- **Promotions and participation at 97 Maryland horse and community events.** During the year, the horse board provided sponsorships for the Kids Korral at the Maryland Million race; Horseland at the Maryland State Fair; Horse Industry Day in Annapolis; Eastern Shore Horse Expo in Denton; the EQUUS Film Festivals in New York and Timonium; the Hays-Heighe House Jim MacKay Award at Harford Community College; and the Maryland Horse Council.
- **MHIB had booths, attended, and/or made presentations at 45 venues.** These events included: the Argentina International Polo Match in Poolesville; Cecil County horse history talk; Tik Maynard's book signing at Full Moon Farm; the Maryland Association of Counties (MACo) Conference; Marlborough Horse Trials; Maryland State Jousting Finals; Appy Fest; Thoroughbred Makeover in Kentucky; Harford County Historical Society film night; Tuckahoe "Celebration of the Horse"; Maryland Day at Fair Hill; Harrisburg harness horse sales; Waredaca Pasture Walk; Potomac Horse Center fundraising party; Sally O'Connor party; Cecil County holiday party; the Governor's Buy Local Cookout; Potomac Plate Night at Rosecroft; Taste of Maryland Agriculture dinner; TROT dinner and annual meeting; Maryland Tourism Development Board quarterly meeting; Days End annual fundraising gala; Talisman Therapeutic Riding Center Derby fundraiser; Horseland for 11 days at the Maryland State Fair; the Maryland Travel & Tourism Summit; the EQUUS Film Festival in New York City; Lisbon Horse Parade; Maryland Association of Environmental and Outdoors Educators Conference; Horse Industry Day; Maryland Horse Council quarterly and annual meetings; Maryland Horse Council annual barbecue; World Trade Center annual dinner; Grow & Fortify conference; National Steeplechase Association awards dinner; World of Pets Expo; Cloverleaf awards dinner; Renaissance awards dinner; USLGE conference; LEAD Maryland; City Ranch fundraiser; Rural Maryland Council annual meeting; PAWS meetings; MARBIDCO meetings; Equine Nutrient Management Day; Fair Hill public meeting; Horse Talk; Elk Creek Driving Event; Camp Letts Horse Show; Land Rover Kentucky Four Star event; Preakness; Fair Hill Races; and Fair Hill International.
- **MHIB attended and participated in an additional 52 equine industry meetings and events.** Many of these meetings involved the Fair Hill project and planning for the 2019 Maryland Horse Forum held on Aug. 8, 2019 during FY 2020. MHIB also hosted a meeting of the Maryland High School Rodeo Association at the department's headquarters.
- **MHIB awarded \$29,700 in grants to 30 Maryland horse organizations and individuals.** MHIB distributed \$29,700 in grants funding, one of the highest amounts in the board's 21-year history.
- **Cross-Disciplinary Cooperation.** MHIB continued coordinating meetings with the Maryland Horse Industry Marketing/Leadership Circle, comprised of 14 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 regularly to discuss prospective initiatives and to provide industry updates. For the fifth year, the group hosted Horse Industry Day in Annapolis, which included legislative training sessions, visits to legislative offices, and lunch with public officials at the Miller Senate Office Building. Approximately 150 industry folks attended and spoke with nearly 70 legislators and their aides. The

group also funds Horseland at the Maryland State Fair. Previously, the group has funded the following: “Racing the Times” documentary film; the writers for the School Horse Curriculum project; the industry’s 2016 Economic Impact Survey; the breakout study for Maryland in the American Horse Council’s national horse industry economic impact study; and other marketing and advertising programs.

MHIB SELECTED STATISTICS: 2019

Category	
Number of Stable Licenses Issued	745
Number of Inspections Performed Annually	587
Percentage of Facilities Inspected and Brought into Compliance	100%
Revenue Collected from Licensing Horse Stables in Maryland	\$91,900
Revenue Collected from Assessment Based on Tons of Horse Feed Sold in Maryland	\$213,624
Outcomes	
Total Amount of Money Distributed as Grants for Promotional, Educational or Research Projects for Maryland Horse Industry	\$29,700
Percentage of Total Revenue Distributed as Grants for Maryland Horse Industry	14%
Staffed Booths or Presented Talks at Trade Shows, Conferences, Fairs and Exhibitions Promoting Maryland Equine	45

FOOD QUALITY ASSURANCE

The Food Quality Assurance Program offers producers and processors a voluntary certification program for agricultural commodities, including: meat, poultry, eggs, fruit, vegetables, and grain. The department's graders sample commodities and compare them with standards developed by the U.S. Department of Agriculture (USDA) and/or the Maryland Department of Agriculture (MDA) for microbial/chemical/physical contamination, quality, size, labeling, and packaging. 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 by year and season depending on the type of commodities being harvested and 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:

- 160 million pounds of poultry
- 21 million dozens of shell eggs
- 18 million pounds of meat
- 5 million pounds of vegetables
- 14 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, the department 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 department's Good Agricultural Practices (GAP) food safety program for fruit and vegetable producers has experienced a significant increase in participation. The number

of producers participating in GAP increased to 40 growers inspected and certified in fiscal year (FY) 2019. Although there were several growers new to the program, the number did not increase significantly, as some MDA-certified growers instead obtained USDA Harmonized GAP certification through the department.

Food Quality Assurance has been funded to date through the USDA Specialty Crop Grants Program and has provided food safety training to over 1,400 fruit and vegetable producers. An additional 28 fruit and vegetable producers were audited by Food Quality Assurance Program compliance auditors and received USDA GAP certification. The Maryland Department of Agriculture's GAP program requirements continue to be revised as the requirements of the U.S. Food and Drug Administration (FDA) Food Safety Modernization Act (FSMA) Produce Rule change to assist Maryland growers in achieving compliance.

FOOD SAFETY MODERNIZATION ACT PRODUCE SAFETY RULE

MDA completed the third year of work related to a five-year cooperative, fully-funded agreement with the FDA to assist growers with compliance by developing a Produce Safety Program to implement the FSMA Produce Rule. The Maryland Department of Agriculture, University of Maryland Plant Sciences Department, University of Maryland Extension, and University of Maryland Agricultural Law Education Initiative cooperatively provided education, outreach, and technical assistance to Maryland fruit and vegetable growers to assist them in compliance with the rule.

The department provided outreach to agricultural organizations, produce growers, and relevant state/local government agencies via mailings, informational meetings, and attendance at various grower meetings.

Technical assistance was provided to growers through conducting 25 On-Farm Readiness Reviews. An On-Farm Readiness Review consists of a voluntary on-site, non-regulatory visit to a produce grower by a team comprised of one department regulator, one University of Maryland specialist, and one local University of Maryland Extension representative. The team evaluates a growers' compliance with the FSMA Produce Rule and provides growers with notes on what is in compliance and areas that need improvement. The produce grower is given resources to assist in correcting

any potential problem areas. During the On-Farm Readiness Reviews, MDA regulatory staff observed the lack of required training for workers on their duties related to food safety in their native language. The department developed a curriculum in Spanish and English and held four regional sessions that were taped in Spanish. The training has been provided to growers on USB drives and is posted on the department's website making it easily accessible for farmers.

The FDA-approved Produce Safety Alliance Produce Safety Rule course was held regionally to assist produce growers meet the FDA mandated training requirements. To date, the department has provided the FDA mandated training to 278 produce growers.

During the 2019 legislative session, the department received legislative authority to conduct inspections and enforcement of the Produce Safety Rule in lieu of the FDA enforcing the FSMA Produce Safety Rule. The FDA will continue to fund the program, but will not inspect or enforce the Produce Safety Rule unless a Maryland grower is implicated in an interstate outbreak. MDA conducted 10 inspections of produce growers with more than \$500,000 in fruit and vegetable sales. All of the inspected farms had an On-Farm Readiness Review prior to inspection and there were very few observations of deficiencies that need correction.

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 program 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 increased to 90% this year — up

from 84.92% last year. The number of lots being inspected increased as two contractual agricultural inspectors were hired and trained.

The department continues to conduct Country of Origin labeling reviews for the 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 114 farms and handlers of organic products during FY 2019. The program also registered an additional four 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 the USDA. This cost-share program allowed the department to reimburse 75% of the fees growers paid for certification.

GRAIN LAWS

The department regulates all persons in the business of buying, receiving, exchanging, or storing grain from a grain producer. Licenses are issued to businesses that meet requirements set by law for insurance and financial status. There are four categories of licenses issued based on the number of bushels purchased in a calendar year. Fees range from \$50 to \$300. A "Directory of Licensed Grain Dealers" is published and distributed annually. The department licensed 37 businesses with 86 locations in FY 2019.

POULTRY AND RABBIT SLAUGHTER

The Poultry and Rabbit Slaughter Program helps small poultry and rabbit producers slaughter their animals on the farm and sell them to restaurants, at farmers 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. The department certifies producers who follow the requirements. Since the program's inception in May 2010, more than 750 producers have been trained and 32 producers are currently certified.

WEIGHTS AND MEASURES

The regulation of Weights and Measures is one of the oldest continual functions of government. The Maryland Department of Agriculture's (MDA) 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 meat. 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. It provides a professional forum for the discussion and development of uniform policy and protocols that guide the regulation of weights and measures.

Maryland's Metrology Laboratory is recognized by the National Institute of Standards and Technology (NIST) Office of Weights and Measures Metrology (OWMM). The program has one full-time metrologist who is recognized as a signatory with NIST OWMM. The program's goal is to increase its laboratory calibrating scope as additional laboratories are upgraded.

The 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 NCWM. 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.

There are a total of 60,941 weighing and measuring devices in commercial use in Maryland at 8,805 separate businesses locations. The department has 18 inspectors who are specially trained and certified to test and inspect these devices according to established protocols ensuring 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.

MODERNIZATION

The program has built a database to track the registration of approximately 6,700 businesses across the state, and is now using electronic inspection software instead of paper reports. With these new tools, staff is able to quickly locate information and target critical areas, while field inspectors are able to plan inspections more strategically, reducing travel time, and providing more uniform inspection coverage statewide.

By modernizing its operations, the program has become more efficient and cost-effective in its mission to better protect Maryland consumers while maintaining a level playing field for industries that operate in the state.

The program is currently in the process of replacing aging lab and field equipment necessary to carry out the program's responsibilities and improve the efficiency of the program. The field and laboratory programs rely on special funds for these upgrades.

As technology changes in the marketplace, so must the Weights and Measures program. In addition to using electronic inspection software, inspectors have been participating in specialized training and accredited testing in order to stay current with trends in the marketplace. For instance, inspectors have increasingly been responsible for inspecting gas pumps and scales for credit card skimming devices as their presence increases throughout the state.

Weights and Measures is as much needed today as it was in the past, and continues to provide a vital service to consumers and businesses alike.

FY 2019 ACTIVITY

The program's field staff conducted 27,124 device inspections in fiscal year (FY) 2019. Inspectors also tested 5,114 individual lots of prepackaged commodities. Price verification inspections were conducted at 30 stores across the state.

During FY 2019, the field staff also investigated 325 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 time to investigate.

WEIGHTS AND MEASURES ACTIVITY TABLE: FIELD INSPECTION AND TEST EFFORT

Activity	2017		2018		2019	
	% Violations	Total Tests	% Violations	Total Tests	% Violations	Total Tests
Weighing Systems						
Large Scales	15.5	817	15.7	700	16.3	650
Medium Scales	13.6	398	21.4	608	14.7	455
Small Scales	15.8	4,399	18.5	6,811	13.7	7,201
Liquid Measuring Systems						
Retail Gasoline Meters	16.8	18,247	21.5	14,896	19.2	17,505
L P Gas Meters	13.0	407	25.5	157	16.7	245
Vehicle Tank Meters and Other Large Meters	11.2	890	18.7	375	12.6	800
Grain Moisture Meters	3.7	108	2.8	105	3.4	89
Programmed Tare Inspections	11.6	856	12.4	1,975	14.8	1,657
Price Scanning and Method of Sale	2.3	3,255	2.2	2,386	14.3	1,729
Delivery Ticket Inspections	0.4	1,484	6.8	1,289	0.3	2,109
Package Lots	22.7	4,460	15.7	5,474	16.4	5,114

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

WEIGHTS AND MEASURES ACTIVITY TABLE: LABORATORY EFFORT

Inspection and Test	2017		2018		2019	
	% Rejected	# Tested	% Rejected	# Tested	% Rejected	# Tested
Weights	19	593	9	1,384	16	952
Volumetric Measures, (Non-Glass)	53	32	57	47	97	69
Length Devices	0	0	0	0	0	0
Temperature Devices	0	0	0	0	0	0
Timing Devices	0	0	0	0	0	0
Volumetric (Glass)	0	0	0	0	0	0
Scales/Meters	0	0	0	0	0	0
Standard Grain Samples	N/A	147	N/A	146	N/A	146

The laboratory is reorganizing with one full time metrologist and in hopes of increasing laboratory scope within pursuing years.

**WEIGHTS AND MEASURES ACTIVITY TABLE:
ADMINISTRATIVE CONTROLS AND MISCELLANEOUS**

Activity	2017	2018	2019
Weighing and Measuring Devices Registration Certificates Issued	6,810	6,718	6,686
Type Evaluation of Devices Conducted (NTEP)	32	17	13
Citizen Complaints Received and Investigated	430	455	325
Disciplinary Hearings, Criminal Arrests, Summonses Obtained and/or Civil Penalties	3	13	2

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

MARYLAND AGRICULTURAL FAIR BOARD

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

The board is composed of eight members appointed by the Governor. Term of office is five years and a member may serve a maximum of two terms. Members 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 quarterly and communicates throughout the year by phone and email. Most meetings are held at MDA's headquarters.

Funding comes through the Maryland Racing Commission by a special grant and is made up of unclaimed parimutuel tickets and various fees. The current annual budget is \$1.46 million.

The grant process starts in December and is finalized in April. Grants to fairs and shows may be used for ribbons, awards, and premiums only. Currently the board funds approximately 165 events. These events include: the Maryland State Fair, county fairs, local community shows, youth activities in 4-H and FFA, and more.

Every year, the board publishes the Maryland Agricultural Fairs & Shows brochure — an annual guide listing fairs and shows that it funds. These brochures are distributed to welcome centers on state highways, extension offices, fairs and shows, chambers of commerce, libraries, county farm bureaus, and the Maryland Farm Bureau. The brochure is also posted on the department's 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 2019 FINAL BUDGET FIGURES

0100 – PERSONNEL COSTS	\$39,953
0300 – COMMUNICATION COSTS	\$1,812
0400 – TRAVEL.....	\$12,142
0700 – MOTOR VEHICLE OPERATIONS	\$0
0800 – CONTRACTUAL SERVICES.....	\$3,775
0900 – SUPPLIES & MATERIALS.....	\$163
1036 – REPLACEMENT EQUIPMENT	\$0
1207 – GRANTS TO NON-GOVERNMENT ENTITIES	\$674,003
1299 – GRANTS, SUBSIDIES & CONTRIBUTION	\$599,232
1300 – FIXED CHARGES	\$6,767

TOTAL APPROPRIATION – \$1,337,847



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PLANT PROTECTION AND WEED MANAGEMENT

APIARY INSPECTION

The department's Apiary Inspection Program works with beekeepers to control honeybee diseases, parasitic mites, and other pests in order to maintain healthy colonies for the pollination of Maryland crops. Honeybees 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 parasitic mites have nearly eliminated feral honeybee colonies.

American foulbrood. American foulbrood is the most serious brood disease of honeybees and can destroy a colony in one year. In 2018, two colonies were confirmed to have American foulbrood by the U.S. Department of Agriculture (USDA) Bee Laboratory in Beltsville and were destroyed to prevent the spread of this bacterial disease into healthy colonies. The incidence of disease remains low at 0.139% 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 honeybee colonies. Mack is a yellow Labrador retriever who has been trained to detect and alert his handler to the presence of American foulbrood. Now that Mack is on the job, he works to reduce the incidence of American foulbrood in Maryland bee colonies during fall and winter, when the bees are dormant and the weather is below 52 degrees. A trained dog can inspect 100 honeybee colonies in 25 minutes; an average human inspector can inspect around 50 colonies in one day. Early detection of the disease will save Maryland beekeepers substantial monetary loss from eradication of diseased colonies and destruction of infected equipment. In total, Mack inspected 1,846 colonies in 2018. A second dog was purchased in June of 2017 and trained into 2018. Clark, a beagle-springer spaniel mix, was purchased

by the state under the Farm bill. He was trained in 2017 through May 2018. Unfortunately, Clark did not pass the exam required to become a certified American foulbrood inspector. Clark has since retired and was adopted by the department's chief apiary inspector. Another canine named Tukka was acquired in June 2018 from the Maryland Department of Public Safety and Correctional Services and trained on the American Foulbrood scent from June 2018 through December 2018. Tukka was certified in mid-December 2018. Tukka is the sixth bee disease detector dog for Maryland's Apiary Inspection Program.

Varroa mite. Varroa mite (*Varroa destructor*) populations were again very high in Maryland in 2018, and brood problems and hive death attributed to this pest. One of the serious problems caused by varroa mite is the transmission of viruses that can be fatal to the hive. Ten prevalent honeybee viruses have been discovered and the majority have an association with varroa mites. Therefore, controlling varroa mite populations in a hive will often control both the associated viruses and symptoms of the viral diseases.

Africanized honeybees (AHB). The department is working with two groups – the Mid-Atlantic Apiculture Research and Extension Consortium (MAAREC) and the Apiary Inspectors of America (AIA) – to provide information to the general public about emergency incidents and for information on the control of AHB movement other than through natural spread. The department continues to work with the Port of Baltimore with onsite eradication of all swarms.

The small hive beetle. The small hive beetle (*Aethina tumida*) was detected in packaged bees and either reported or detected in all 23 counties in 2018. 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 both a major pest of stored equipment and in honey houses, rendering stored honey in the hive unmarketable. With historic rainfall totals in the spring, summer, and fall of 2018, there was an increase in the small hive beetle population found in Maryland beekeepers' hives.

Apiary Inspection Permits. Entry permits were issued for 3,865 honeybee colonies to move into Maryland for overwintering and beekeeper purchase. Exit permits were issued for 2,474 colonies to move out of Maryland, primarily for pollination services. For the tenth year, Maryland beekeepers have sent colonies to California for almond pollination. About 1,600 colonies were transported to California in winter 2017 for the 2018 almond pollination season.

Surveys. The Apiary Inspection Program assisted with one full survey in 2018, the National Honeybee Survey. The program also finished the last 3 months of the Giant Asian Hornet/ Invasive Survey. The survey information is 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 component of Maryland's number one industry, agriculture. The USDA's 2017 Census for Agriculture found that Maryland's "nursery, greenhouse, floriculture, and sod" sector had the third highest sales in the state's agriculture industry, generating more than \$230 million in sales in 2017.

A primary goal of state plant protection and quarantine efforts is to facilitate the production, sale, and distribution of healthy and pest-free Maryland nursery stock. This is accomplished in large part by inspection and certification activities conducted on-site by the department's 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 they produce is free of dangerously injurious plant pests. Additionally, plant dealers are inspected regularly to ensure plant materials are received from suppliers in a healthy and pest-free condition, and maintained in that condition for wholesale and retail sale.

In calendar year (CY) 2018, the Maryland Nursery Inspection Program licensed 311 nurseries, as well as 1,469 plant dealers and plant brokers. In 2018, 9,237.5 acres of nursery stock and 11,822,541 square feet of greenhouse production

were certified. Plant Protection & Weed Management staff performed routine inspections at 676 Maryland locations.

In general, the health of Maryland-produced nursery stock was found to be excellent. Additional certification activities for 2018 involved shipment specific inspections. These included 440 state phytosanitary certificates issued to 21 states and U.S. territories. Phytosanitary inspection and certification is performed to ensure Maryland's agriculture and green industry is compliant with established U.S and state domestic quarantines and phytosanitary requirements for Maryland-produced plant material and grain commodities. In 2018, 33 shipment specific inspections were performed, and federal phytosanitary certificates were issued to export Maryland-grown and produced plant material and grain to two foreign countries – ensuring that Maryland-produced agricultural commodities meet international quarantine regulations.

A continuing effort to prevent further introduction to, and slow the possible spread of boxwood blight (*Cylindrocladium buxicola*) in the Maryland nursery and landscape industry occupied hundreds of hours of staff time throughout the year. Nursery Inspection Program staff were again involved not only in the process of inspecting for evidence of the disease at the majority of establishments visited, but were also engaged in issuing Condemnation/Seizure and Pest Control Orders when infected plant material was found. Program staff were also tasked with overseeing the destruction of boxwoods infected with this highly destructive, infective, and easily transmitted disease.

An additional plant pathogen, *Phytophthora ramorum* – the causal agent of sudden oak death, and a plant disease which has many host species that are common in the green industry and nursery trade – was detected by survey in 2016. The department and the USDA Animal and Plant Health Inspection Service (APHIS) Plant Protection and Quarantine (PPQ) program staff conducted a follow-up inspection. The agencies worked together to develop a compliance agreement for the affected commercial establishment. Survey work continued in 2018 to ensure eradication of this very destructive disease.

The department's program staff continued its role evaluating federal USDA permits to move plant germplasm and plant and insect pests into the state for purposes of scientific study, breeding (plant germplasm), controlled release (insect and weed biological control organisms), and evaluation. The Maryland Department of Agriculture (MDA) regularly reviews permit applications to ensure that importers meet security and containment requirements for importation of otherwise prohibited or restricted taxa. In addition to initial permit

review, there are also site visits and follow-up inspections performed by the department.

In a related concern, the department's Plant Protection and Weed Management (PPWM) program is one of a small group of stakeholders nationwide participating on a working group that will evaluate the restructuring of the USDA APHIS PPQ Post Entry Quarantine (PEQ) program. USDA APHIS PPQ is considering a significant restructuring of the PEQ program after it was reviewed by the Agricultural Quarantine Inspection Board. This working group currently participates in telephone conferences with representatives from USDA and other states, and is working towards modifying and streamlining import processes that will increase efficiency, while at the same time reduce risk. As in the past, until policies and protocols are changed, department program staff will continue to conduct post entry quarantine and facility inspections per status quo within the state of Maryland.

In another matter, distribution of information to the green industry and enforcement of new invasive plant regulations that took effect in 2016 have proven to be an additional challenge for program staff. Educating, providing outreach, inspections, and enforcement of these regulations has become very time consuming and demanding.

Staff continues to be vigilant and participate in inspections and surveys aimed at early detection and slowing the spread of serious pests and diseases. Insect pest threats, like the Asian longhorned beetle (*Anoplophora glabripennis*) and spotted lanternfly (*Lycorma delicatula*), and plant diseases, such as sudden oak death (*Phytophthora ramorum*) and thousand cankers disease of walnut (*Geosmithia morbida*), are considered high risk Maryland. Additionally, field and clerical staff work year-round to ensure that licensing and compliance regulatory statutes are met by the industry. This year staff also updated the enforcement letters used when a facility is found to be in violation.

In 2018, all program staff members attended training workshops, conferences, professional meetings, and field exercises – both in Maryland and regionally. On-going trainings and events has enabled staff to remain informed on developing new issues and to better serve the program, the department, industry stakeholders, and the citizens of Maryland.

PEST SURVEY

The Cooperative Agricultural Pest Survey (CAPS) and Farm Bill surveys are joint projects between MDA and the USDA

APHIS PPQ program. 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 USDA APHIS 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 protects Maryland agriculture, nursery stock, and the environment from potential devastating losses. Federally funded CAPS surveys include: exotic wood borers, corn commodity, and imported fire ant (*Solenopsis invicta*); the Farm Bill surveys include: *Phytophthora ramorum*, nursery, small fruit commodity, solanaceous commodity, and spotted lanternfly (*Lycorma delicatula*).

In 2018, MDA deployed and monitored 451 insect traps and collected 2,596 samples from these traps. There were seven extensive surveys targeting 38 exotic pests that impact apiaries, fields, forests, orchards, and nursery stock.

CAPS SURVEYS

Corn Commodity. Corn is one of the most valuable crops grown in Maryland. Ensuring that our state is free of exotic pests is critical to the success of this commodity. This survey was conducted from June through mid-October in five counties known to have high production rates of corn, based on harvested acreage in previous years. None of the targeted pests were found to be present in any of the traps throughout the sampling period.

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 U.S. 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 2018, ten sites that receive goods packed with wood dunnage were surveyed for exotic wood boring bark beetles. In addition, a visual survey for spotted lanternfly (*Lycorma delicatula*), an invasive insect of concern, was also completed. This survey ran from late March until November. All trap samples were negative for the species being targeted.

Red Imported Fire Ant. The red imported fire ant (*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 infested nursery stock does make its way into Maryland. The yearly fire ant survey focuses on tropical plants arriving from the southern U.S. In 2018, 146 sites were surveyed and five were found positive for imported fire ant. Sites were issued eradication treatment orders under an MDA Treatment Order. Following the treatment order, each site has completed the treatments, has been resurveyed, and were found free of imported fire ant.

FARM BILL SURVEYS

Small Fruit Commodity Survey. The small fruit crop, including blackberries, blueberries, cherries, raspberries, and strawberries, is growing in Maryland, particularly with growers that participate in U-pick activities. The 2018 survey was conducted from June through October, in eight orchards across seven Maryland counties, with emphasis on orchards that had as many different types of small fruit as possible. Survey targets included five insect pests and three plant pathogens known to infest these fruit crops. One of the pests being surveyed was the spotted wing drosophila (*Drosophila suzukii*). The spotted wing drosophila was present in six of the eight orchard sites surveyed. This nuisance pest has been reported anecdotally throughout Maryland and this survey confirms those reports. None of the other targets were found during surveying.

Solanaceous Commodity Survey. Solanaceous crops, including eggplants, peppers, potatoes, and tomatoes, are an important specialty crop in Maryland. The 2018 survey was conducted from June through October, in eight fields across seven Maryland counties. Survey emphasis was on fields with the greatest variety of solanaceous crops. Survey target pests included four insects, four nematodes, and three plant pathogens known to infest these crops. No targeted pests or pathogens were discovered in any of the survey samples collected.

Phytophthora Ramorum Nursery Survey. The nursery industry is one of the most economically important agricultural industries in Maryland. The *Phytophthora Ramorum* survey was conducted from July through October, at eight nurseries across six Maryland counties, focused on nurseries that receive a majority of their plant material from other states.

In 2018, PPWM obtained Farm Bill funding and completed several surveys. A survey for *Phytophthora ramorum* covered nurseries, garden centers, and landscape sites in Maryland. Staff visited eight nurseries and garden centers receiving plant material from Oregon, California, and Canada. Staff inspected 1,521 azalea, Camellia, Kalmia, Pieris, Rhododendron, and Viburnum plants, of which 30.2% of plants exhibited symptoms similar to those produced by *Phytophthora*. Symptomatic samples were collected and tested for *Phytophthora spp.* by ELISA kit. Of these, only 4.6% of samples were found positive for *Phytophthora spp.* These positive samples were then submitted to the Cornell University Diagnostic Clinic for *Phytophthora Ramorum* confirmation. All samples tested negative for *Phytophthora Ramorum*. In addition, a nursery that tested positive for *Phytophthora Ramorum* in 2016 was surveyed in Fall and Spring, but no symptoms were found.

Phytophthora Ramorum surveys also targeted three insect pests known to infest a wide variety of plants. None of the targeted pests were found in the survey traps.

Spotted Lanternfly Survey. Spotted lanternfly (SLF), an invasive plant hopper native to Asia, is a destructive pest with a wide variety of hosts, including many economically important crops in Maryland such as grapes, hops, and tree fruits. The SLF survey was conducted from July through December at 15 sites covering the four counties located in close proximity to known populations of SLF in neighboring states. The survey was conducted via visual inspection, in addition to the use of sticky tree bands to capture the pests. At one site, a single male SLF was captured on a sticky band trap. A more in-depth delineation survey was conducted at the site, but no other SLF specimens were found at that time. An additional site was also located, less than 5 miles from the original find, with only one adult SLF feeding on wild grapes. This additional site was discovered by a nursery inspector and was not part of the official survey.

DIAGNOSTIC LABORATORIES

The department's PPWM program laboratories provide testing, analyses, and identifications to support MDA programs, as well as providing answers to inquiries from outside the department.

Entomology Laboratory. In addition to all the usual expected target and non-target species that were collected by nursery inspectors, other staff members, and Cooperative Extension that were found in survey traps or submitted by the public, the entomology lab received a number of noteworthy specimens.

A perfect-condition male earwig scorpionfly (*Merope tuber*) and wings of two other specimens were recovered. This strange species is rather rare in collections. Another unique insect, a male twisted wing parasite (*Strepsiptera*) which lives inside insect abdomens, was also found. A flightless white-fringed beetle (*Naupactus*) managed to climb up a trap stand and fall into a cup. A few giant resin bees (*Megachile sculpturalis*) were collected. This large, harmless pollinator often utilizes old carpenter bee (*Xylocopa virginica*) tunnels to rear its young. In 2018, both the sites and numbers captured an increase of the camphor shoot borer (*Cnestus mutilates*), a small scolytid beetle attracted to stressed trees that are exuding ethanol. This insect is also known to seriously bore into plastic gas cans because of ethanol fumes.

The strawberry rootworm beetle (*Paria fragariae*) caused unsightly leaf-feeding damage to a nursery's entire crop of azaleas, making them unsellable. Finally, the number of bed bugs (*Cimex lectularius*) and bat bugs (*Cimex adjunctus*) submitted for identification this year were consistent with the past few years.

Plant Pathology Laboratory. The plant pathology lab provides testing, analysis, and recommendation services for problems caused by abiotic – water, soil, chemical, and management– and biotic pathogens – fungi, bacteria, viruses, and nematodes – to support the department's programs. MDA's plant pathologist also reviews and suggests changes on import permits for plant pathogens and genetically modified plant materials as part of state regulatory responsibility.

The diagnostic services' primary responsibility is to test and confirm causes of problems encountered during inspection of plant materials in nurseries, landscape, and retail stores throughout Maryland. The pathology laboratory received 91 plant samples for diagnosis and management solutions during the 2018 growing season. A majority of samples came from nursery inspectors, with some from pesticide inspectors, landscapers, and homeowners. This year, several samples tested were due to pesticide damage, especially early in the season after heavy rain. In addition, 13% of samples received were abiotic-related, such as watering issues, soil management, pesticide damage, cold damage, etc. while other samples were caused by biotic pathogens, such as fungi, bacteria, viruses, and nematodes. The majority of biotic samples received were caused by fungal pathogens. Management strategies based on an integrated pest management approach were recommended for these problems.

The exotic disease boxwood blight (*Cylindrocladium buxicola*) remained a high priority problem. Two nurseries under

compliance agreement for clean and disease-free boxwood production tested positive for boxwood blight. One incident of boxwood blight was found at a big box store in a Christmas decoration. A number of received boxwood samples were also tested for *C. buxicola* and many were found to have the pathogen.

The laboratory obtained Farm Bill funding for a small fruit commodity survey. Visual observation of symptoms for Blueberry Shock Virus, Blueberry Scorch Virus, and Tomato Black Ring Virus was completed. A total of 395 leaf samples were collected and tested for these viruses and phytoplasma diseases using ELISA. The laboratory also received a solanaceous crop survey grant for a plant virus, Tomato Black Ring, and nematodes. Due to late funding and bad weather, this survey collected only 26 samples of leaves for virus testing and soil for nematode studies. No targets were found during the surveys.

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. MAM stem cuttings were taken and over 1,000 MAM plants were transplanted and grown in the greenhouse to be used as food for colonies of the stem-boring weevil (*Rhinoncomimus latipes*).

New this year, a nematode survey project is currently underway in the greenhouse. Tomato plants potted in local soils are being grown in the greenhouse for use as incubators to document and investigate naturally occurring nematodes present in agricultural soils throughout the state. This year-round project is slated to continue.

Virus indicator plants – plants that show symptoms in the presence of certain viruses – of fifteen different genera and species, are seeded and transplanted weekly to be used, when needed, to test plants submitted by the nursery inspection staff for possible presence of virus diseases. Additional support for the Nursery Inspection Program is provided when plant specimens believed to be infected with disease are brought in by nursery inspectors and held at the greenhouse for observation and further tests.

The greenhouse continues to provide large-scale sterilization of infested or weedy plant material and soil, in order to maintain colonies of MAM and dispose of quarantined nursery material.

A variety of other programs take place at the greenhouse on a yearly basis. These include plants produced to support department displays at the Maryland Home and Garden

Show as well as the Maryland State Fair. Plants are also grown and maintained for use during the Certified Professional Horticulturist (CPH) exams given at MDA's headquarters twice a year and proctored by program staff in cooperation with the Maryland Nursery, Landscape, and Greenhouse Association (MNLGA).

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. The department conducts a management program in cooperation with the U.S. Fish and Wildlife Service (USFWS). The program follows established protocols and Convention on the International Trade in Endangered Species (CITES) regulations to ensure continued viability of this potentially threatened native resource and to protect it from over harvesting. Through this program and the inspection and certification process, licensed dealers are enabled to legally sell the wild-harvested plant interstate and in international markets.

The department also works with growers of wild-simulated and woods-grown ginseng to allow them to meet regulatory requirements, and to market and export their highly valued crops. These roots, both dried and green (fresh), are highly prized, especially in China and Korea, for properties that putatively promote good health.

During the 2017-2018 season, the program licensed 11 ginseng dealers and 175 ginseng collectors in the state. For the 2018-2019 season, 11 dealers and 51 collectors were licensed. Licensing for ginseng dealers and collectors starts after July 1 of each year, as the collection season for wild-harvested ginseng does not begin until September 1. Harvest season ends December 15 and the sales season ends March 31 of the following year. Harvest numbers reported are for the program season beginning Sept. 1, 2017 and ending March 31, 2018.

Over the 2017-2018 harvest and sales season, the program inspected, collected size and age data from, and weighed and certified: 54.79 pounds of dry wild ginseng root; 5.37 pounds of green wild ginseng root; 11.49 pounds of wild-simulated dry ginseng root; 65.5 pounds of wild-simulated green ginseng root; and 4 pounds of green woods-grown ginseng root. No cultivated ginseng root was certified for the 2017-2018 harvest season. For the purpose of this report, both artificially propagated, cultivated and woods-grown, and wild-simulated ginseng harvests are recorded as artificially

propagated. Both artificially propagated and wild-simulated ginseng are being grown as alternative agricultural crops in Maryland.

As compared to numbers recorded for the 2016-2017 season, the 2017-2018 harvest and certification numbers were about 50% lower for dry wild ginseng and 62% lower for artificially propagated dry ginseng. The amount of wild green ginseng root certified in the 2017-2018 season represents an approximate 27% decrease as compared to the previous harvest. For wild-simulated green root, there was a decrease of about 47% compared to the 2016-2017 season.

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. Many ginseng collectors and growers refuse to sell ginseng in a depressed market, preferring to wait until the price increases with a market rebound. As is done each year, harvest and sales data were gathered and reported in accordance with the USFWS and CITES requirements. The USFWS' Office of Management Authority continues to find Maryland's wild ginseng harvest as sustainable and non-detrimental to wild American ginseng populations in Maryland.

The amount of ginseng cultivated and certified by the department, including woods-grown and wild-simulated designations in Maryland, continues to keep pace with the amount of wild ginseng harvested and certified in the state. This reflects both continuing interest in ginseng as an alternative crop and the ability of Maryland growers to produce high-quality ginseng.

Responses to annual questionnaires mailed to ginseng collectors and dealers at the time of licensing were modified in 2018 to gather currently pertinent information on the concerns and opinions of program participants. Many respondents continue to relate that the incidence of out-of-season poaching of wild ginseng in Maryland remains high. Also, respondents expressed that preventing legally licensed collectors from harvesting on state-managed land actually promotes poaching, as there are fewer legal harvesters active to report illegal activity. Most participants in the Maryland Ginseng Management Program view themselves as stewards and protectors of a natural heritage.

In 2017-2018, program staff participated in working groups that included members of each of the 19 states and one tribe that actively manage the harvest and sale of ginseng. These

working groups share ideas and experiences with the goal of achieving a higher level of consistency and understanding regarding both the preservation and certification practices regarding American ginseng. Groups were formed during the American Ginseng Coordination Meeting between the USFWS and state and tribal ginseng management programs in July 2017 and focused on issues including the biology, regulatory practices, and public outreach methods for ginseng management. Each group conclusively submitted their findings for consideration by USFWS representatives. The results of these efforts could help to shape the way that MDA and other state and tribal agencies handle the preservation of American ginseng in the future.

WEED INTEGRATED PEST MANAGEMENT

The department's PPWM program entomologists and staff continued to work with the Maryland Department of Transportation's (MDOT) State Highway Administration (SHA) to conduct an integrated pest management program aimed at providing biological control for certain targeted weed species on SHA right-of-ways.

In 2018, weed integrated pest management research and demonstration activities were conducted on the SHA right-of-ways, using funding from SHA and the USDA APHIS PPQ program. The department's weed management and biological control research and demonstration projects have been conducted over the past 20 years under current program management, and have involved cooperation with the SHA, the Howard County Department of Recreation and Parks, the Maryland National Capitol Park and Planning Commission, the Maryland Department of Natural Resources, USDA Agricultural Research Service (ARS), USDA APHIS, the U.S. Forest Service, the USFWS, the U.S. Geological Survey, and, in certain cases, private Maryland businesses and landowners.

Currently, the department is focused on biological control of mile-a-minute weed *Persicaria perfoliata* and purple loosestrife (*Lythrum salicaria*) using very specific insect biological control agents. During 2018, PPWM worked with the Landscape Operations Division of SHA to continue biological control driven suppression of mile-a-minute weed, and to reinstate a program aimed at suppression of purple loosestrife on state highway right-of-ways. Activities include: lab and greenhouse rearing; field release and monitoring of the weevil (*Rhinoncomimus latipes*); and field release and monitoring of *Galerucella* (*Neogalerucella*) leaf beetles. Funding for rearing, release, and monitoring of the weevils and purchase, release, and monitoring of the leaf beetles is provided in part by SHA. Additional funds for this project come from a cooperative

agreement with USDA APHIS PPQ that has been renewed on an annual basis.

In 2018, the insect rearing lab staff produced 10,245 weevils. A total of 7,107 adult weevils were released at 26 sites statewide. Release numbers were supplemented by an additional 3,000 weevils acquired from the New Jersey Department of Agriculture's Phillip Alampi Beneficial Insects Laboratory.

The rearing program also involves growing of the weevil's host plant *Persicaria perfoliata*, a mile-a-minute weed, at MDA's greenhouse in Annapolis. In 2018, nearly 1,200 *Persicaria perfoliata* plants were grown to maintain the weevil colony and ensure weevil releases throughout the state.

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

See map titled 2018 MDA Mile-A-Minute Weevils (*Rhinoncomimus Latipes*) Release Sites on next page.

NOXIOUS WEED MANAGEMENT

The purpose of this program is the control and eradication of designated noxious weeds in order to reduce their economic and aesthetic impact on farmers and landowners. Noxious weeds, such as Johnsongrass, shattercane, and thistles, can cause losses in excess of \$25 million annually to Maryland agriculture due to reduced yields, quality of crops and forages, and increased control costs. Increased expenses are also incurred for roadside and non-crop property management.

The Noxious Weed Law has a provision that MDA may enter into cooperative agreements with county or political subdivisions to provide management, technical assistance, training, and education for implementing noxious weed control programs. The county weed control programs are supervised by state personnel as specified by these cooperative agreements.

In the 15 participating counties, a Weed Control Advisory Committee, with representatives from farming organizations, government agencies, local farmers, and property owners, provides guidance for the program in that county. A county weed control coordinator is employed to determine infestations within the county, inspect uncontrolled infestations, provide information on appropriate control practices, and initiate control agreements with landowners to

implement control.

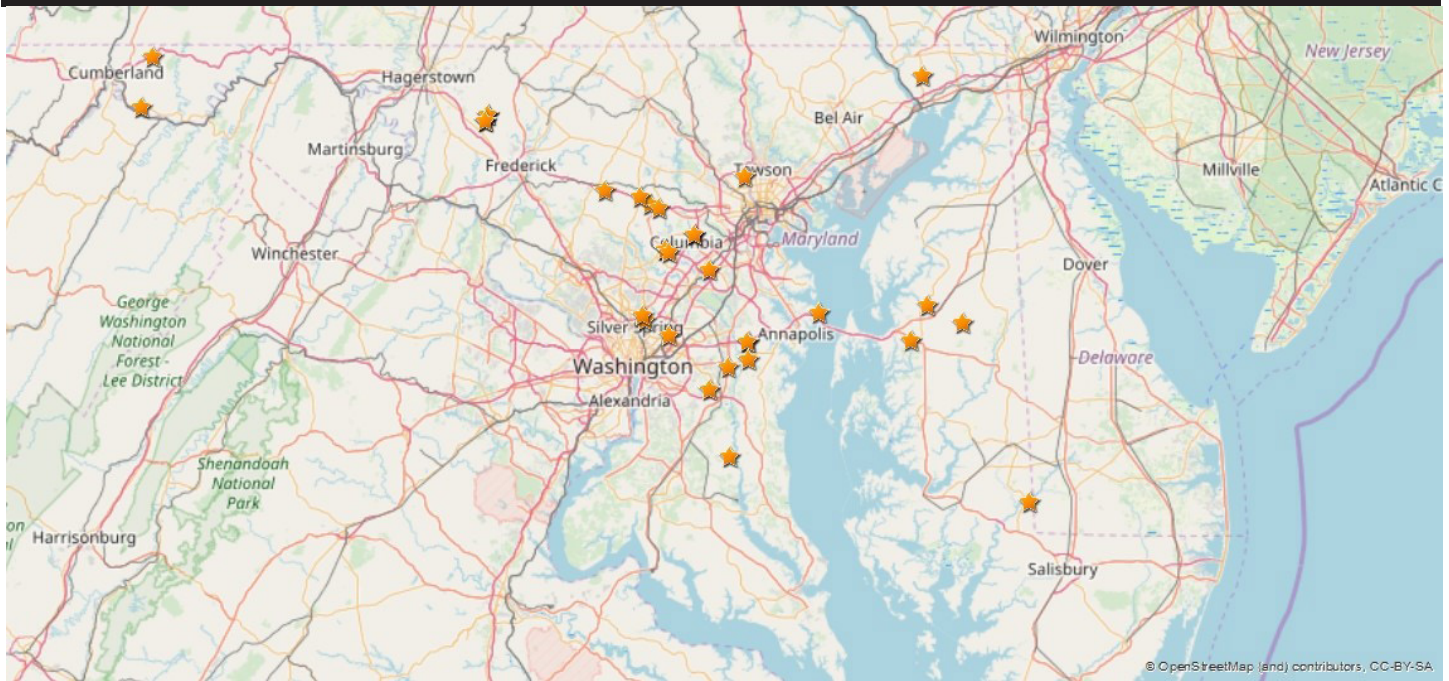
In 2018, noxious weed advisory notices were sent to 243 managers of property infested with noxious weeds. Generally, these notices were effective in obtaining compliance. When notifications are unsuccessful, the department may take legal action.

In 2018, HB 515 required the department to conduct a Palmer Amaranth Summer Study to: assess the adverse financial impact of the invasive weed Palmer amaranth (*Amaranthus palmeri*) on Maryland's agriculture industry; and determine the necessary actions each stakeholder must take to reduce the impact of Palmer amaranth and the cost of each action. Palmer amaranth stakeholder meetings were held on February 28 and December 11 for input by farmers, the public, organizations, and agencies. The department also held meetings with: the University of Maryland Extension; Maryland Farm Bureau; Maryland Grain Producers; county weed control programs; county, state, and federal agricultural agencies; agri-businesses; farmers; and other interested stakeholders. Results were then provided in a written report to the Maryland Legislature.

The weed control program also responds to citizens' requests for technical assistance in controlling invasive, difficult to control, persistent weeds such as *Phragmites*, multiflora rose, kudzu, and mile-a-minute weeds. In addition, the weed control program also monitors giant hogweed (*Heracleum mantegazzianum*), a federal noxious weed, that was first detected in Maryland in 2003. It exists on sites in Baltimore, Harford, and Garrett counties. In 2018, two sites were treated in Garrett County. County weed control programs provided spray crews and materials to treat these giant hogweed infestations. Eradication is a multi-year effort and the weed control program will treat infestations at the expense of the landowner.

The weed control staff partnered with the Maryland Department of Natural Resources (DNR) for the seventeenth year in providing a *Phragmites* Management Program. Upon request from landowners or managers, program staff supplies technical and spraying assistance for control. DNR provided 100% of the herbicides applied in the nine Eastern Shore counties for spraying *Phragmites*.

2018 MDA MILE-A-MINUTE WEEVIL (*RHINOCOMIMUS LATIPES*) RELEASE SITES



PLANT PROTECTION AND WEED MANAGEMENT SUMMARY OF ACTIVITIES: CALENDAR YEAR (CY) 2016 – 2018

Activity	CY 2016	CY 2017	CY 2018
Beekeepers Registered	2,017	2,180	2,119
Honeybee Colonies Registered	15,550	15,630	14,415
Honeybee Colonies Inspected	2,095	3,011	3,284
Honeybee Colonies Inspected (Human)			1,438
Honeybee Colonies Inspected (Canine)			1,864
Ginseng Dealers Registered	18	11	11
Ginseng Collectors Licensed	209	175	151
Nurseries Certified	311	299	311
Plant Dealers and Brokers Licensed	1,434	1,446	1,446
Phytosanitary Certificates Issued	326	176	473
Plant Pest Surveys – Number of Target Pests	52	36	38
Plant Pest Surveys – Number of Samples Processed	3,107	5,594	2,596
Target Pests Detected	6	13	12
Number of Noxious Weed Advisory Notices Issued	318	337	243

** Due to the seasonal nature of this program and calendar year federal reporting requirements, data is reported on a calendar year basis.*

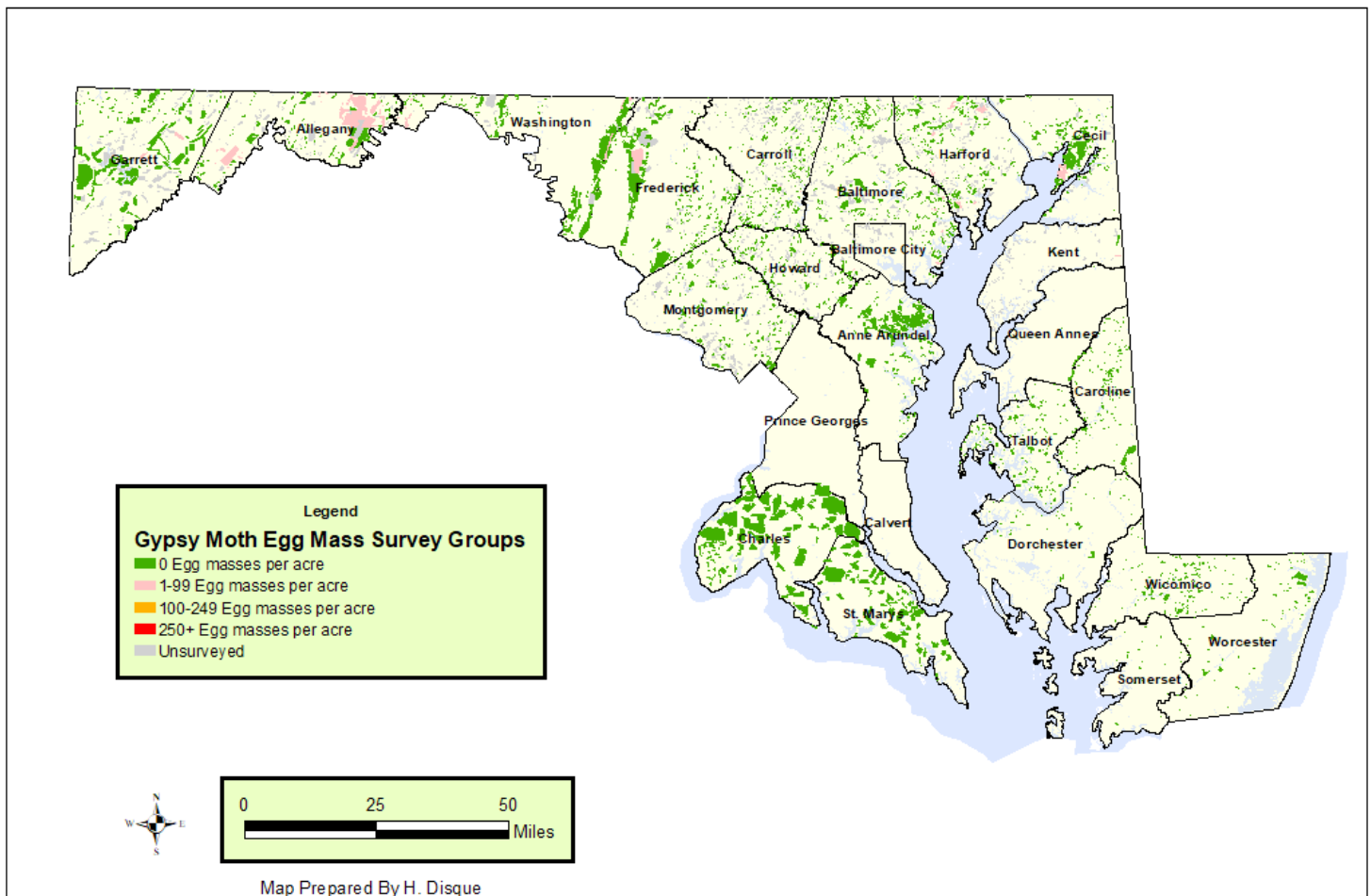
FOREST PEST MANAGEMENT

FOREST PEST MONITORING AND SURVEYING

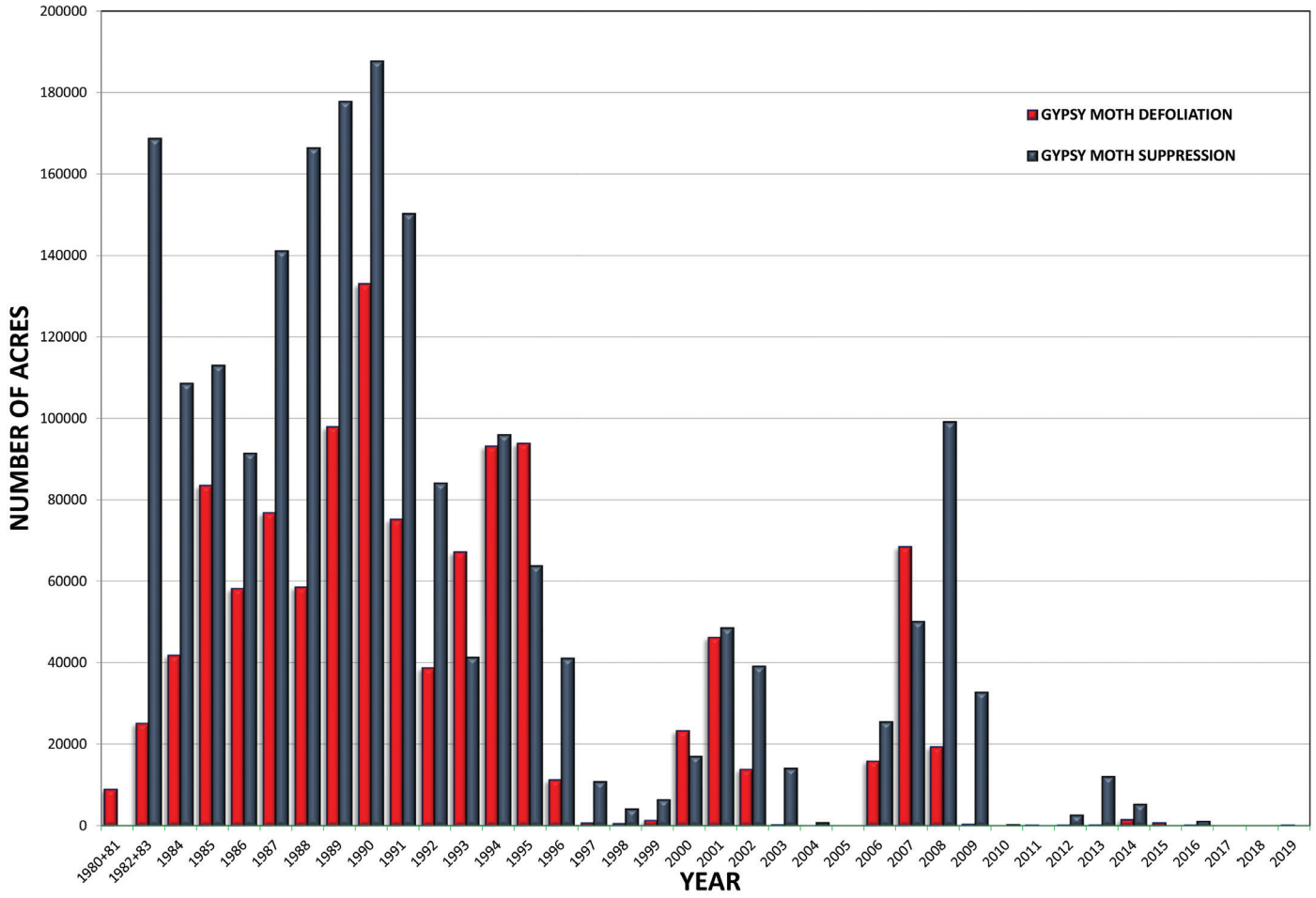
Gypsy Moth. The gypsy moth is the most serious threat to oak forests in the United States. The first eggs were detected in Maryland in 1971 and the first extensive defoliation occurred in 1981. Each fall and winter, the department conducts an extensive survey for gypsy moth egg masses to determine potential areas of defoliation. From August 2017 through March 2018, the Maryland Department of Agriculture (MDA) Forest Pest Management personnel conducted gypsy moth egg mass surveys on 481,829 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 the current populations were insufficient to cause moderate to heavy defoliation on high value rural and urban forest in 2018. Western Washington County recorded areas with high populations of gypsy moth. Gypsy moth defoliation was minimal this year.

Maryland Department of Agriculture 2018 - 2019 Maryland Gypsy Moth Survey Results Forest Pest Management Section



MARYLAND GYPSY MOTH DEFOLIATION AND SUPPRESSION 1980 TO 2019



Maryland Department of Agriculture
2018 - 2019 Maryland Gypsy Moth Egg Mass Survey Summary
Forest Pest Management

County	Total	Private & County	State	# Positive	% Positive	# Blocks	# Acres	% Positive 2017-2018
EASTERN SHORE								
Caroline	42	0	42	0	0.0	6	3,848	0
Dorchester	118	80	38	16	13.6	64	2,899	10.2
Queen Anne's	14	0	14	0	0.0	7	354	0
Somerset	71	71	0	22	31.0	30	1,551	19
Talbot	224	220	4	8	3.6	147	7,391	3
Wicomico	206	200	6	34	16.5	144	6,421	5
Worcester	185	145	40	10	5.4	86	5,927	9
TOTALS	860	716	144	90	10.5	484	28,391	6.6
SOUTHERN								
Charles	182	150	32	15	8.2	80	35,449	0
St Marys	186	175	11	8	4.3	61	32,234	0
Anne Arundel	375	372	3	20	5.3	105	28,745	0
Prince Georges	0	0	0	0	0.0	0	0	0
Calvert	0	0	0	0	0.0	0	0	0
TOTALS	743	697	46	43	5.8	246	96,428	0
NORTHEAST								
Baltimore	861	780	81	10	1.2	233	37,769	1.4
Cecil	464	380	84	3	0.6	102	27,353	0.9
Harford	504	477	27	8	1.6	143	25,880	1.5
Kent	10	0	10	1	10.0	3	808	0
Baltimore City	0	0	0	0	0.0	0	0	0
TOTALS	1,839	1,637	202	22	1.2	481	91,810	1.3
WESTERN								
Allegany	785	383	402	52	6.6	121	51,941	17.2
Garrett	962	586	376	9	0.9	151	72,700	6
Washington West	360	241	119	11	3.1	56	7,905	15.6
TOTALS	2,107	1,210	897	72	3.4	328	132,546	11.8
CENTRAL								
Carroll	636	607	29	2	0.3	270	20,876	1.4
Frederick	938	859	79	8	0.9	289	53,187	2
Howard	324	287	37	0	0.0	110	11,583	3.2
Montgomery	593	526	67	0	0.0	184	19,259	1.9
Washington East	330	259	71	3	0.9	68	22,491	1.3
TOTALS	2,821	2,538	283	13	0.5	921	127,396	2
TOTALS	8,370	6,798	1,572	240	2.9	2460	476,571	4.7

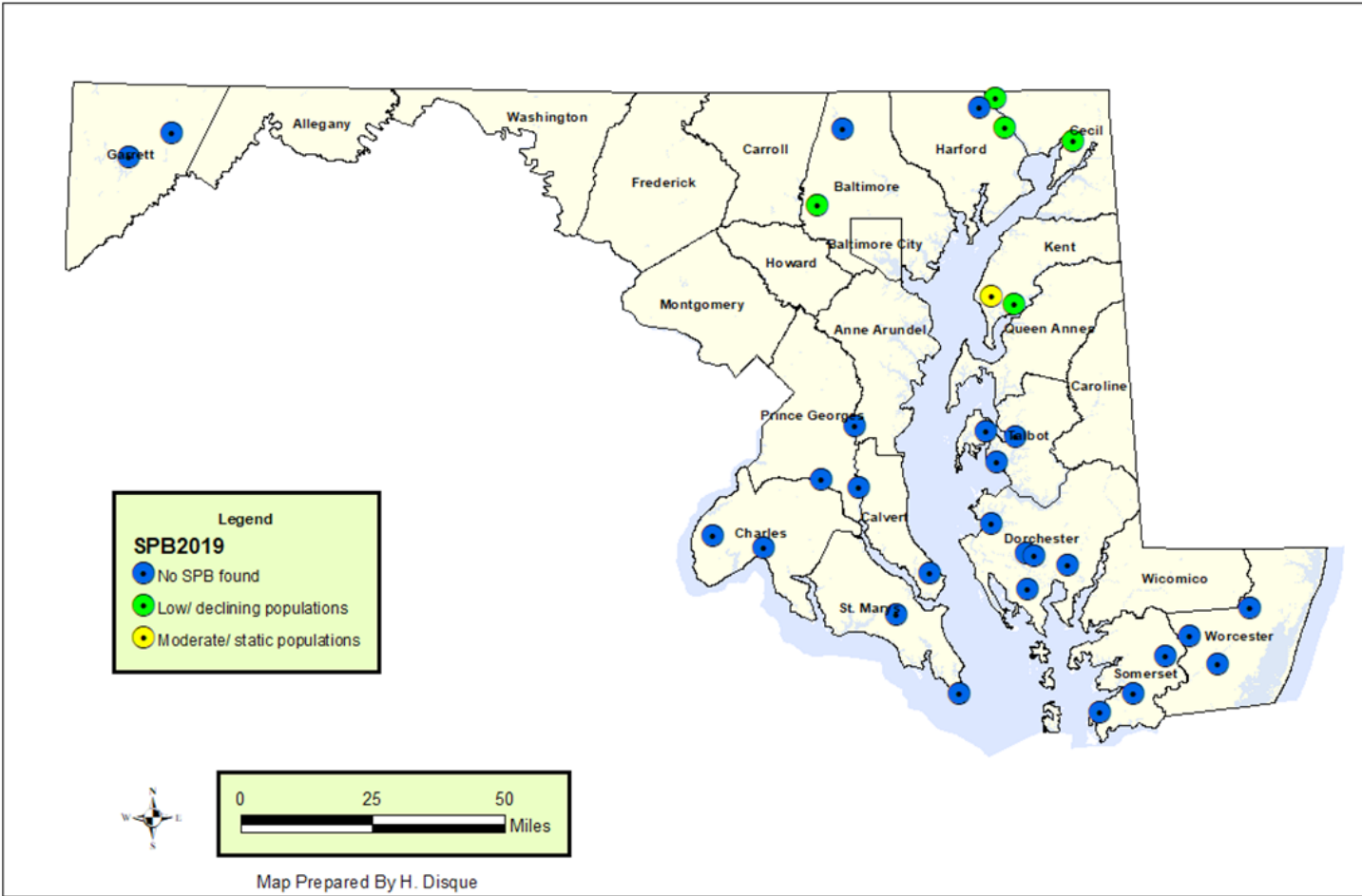
Southern Pine Beetle (SPB). The southern pine beetle (SPB) is one of the most destructive insect pests of pines. Maryland is at the northern edge of its range and is commonly found on the lower Eastern Shore and Southern Maryland. Since 1989, Maryland has participated in a multi-state SPB survey throughout the Southern United States using pheromone-baited traps.

Traps were set up in 14 counties across Maryland. Additional traps in Southern Maryland were added into the survey in

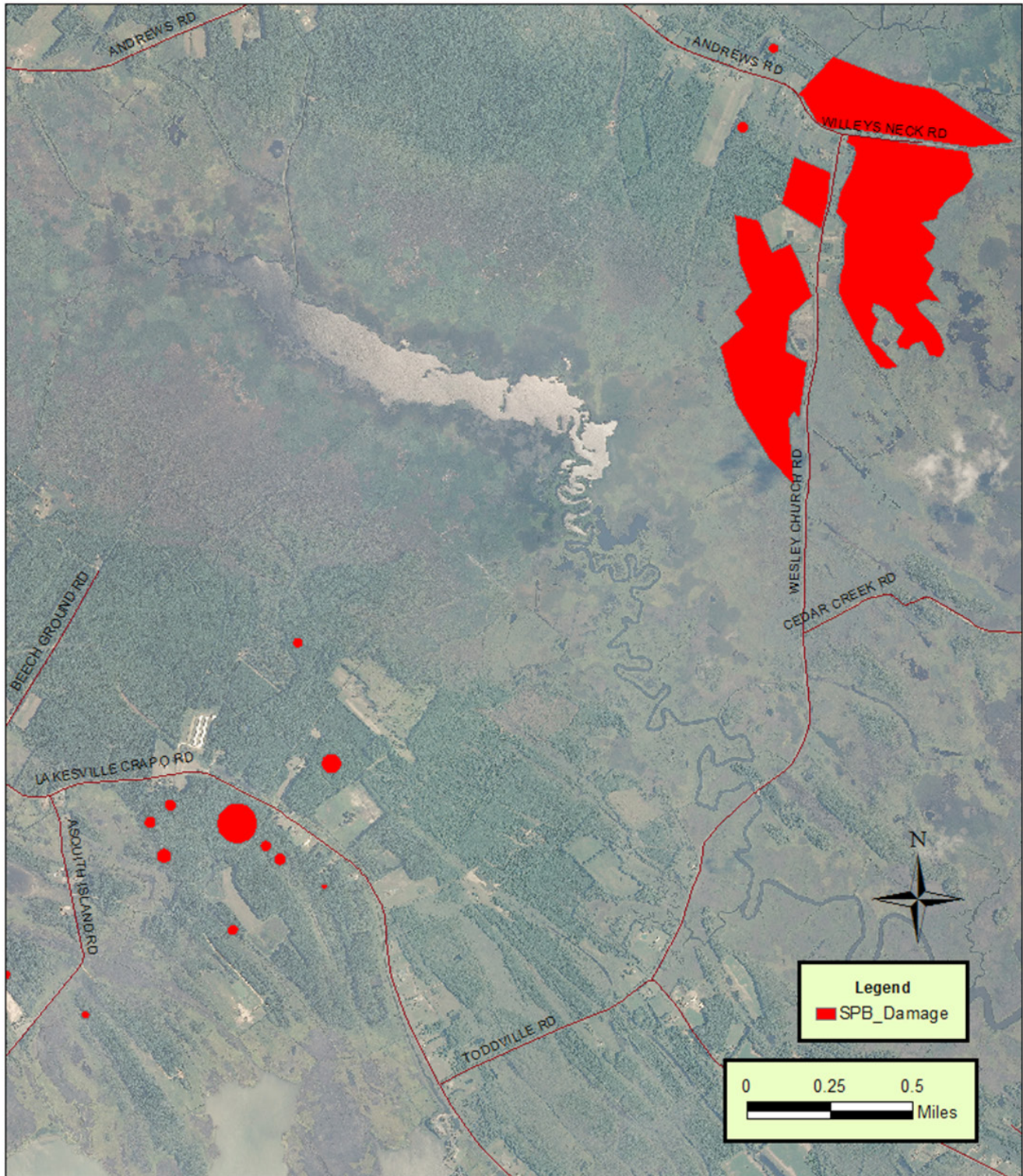
2019. All traps collected low to no levels of SPB, indicating that populations are to remain low in 2019. The traps were set up shortly after the time of redbud bloom.

The Dorchester County area that had experienced an SPB outbreak in 2015-2016 saw no additional loss of trees in 2018. No SPB were caught in traps nearby the infestation area. There are many loblolly pines in the area with chlorotic needles. The low levels of SPB could be due to flooding and salt-water intrusion in the area.

**Maryland Department of Agriculture
2019 Southern Pine Beetle Trap Results
Forest Pest Management Section**

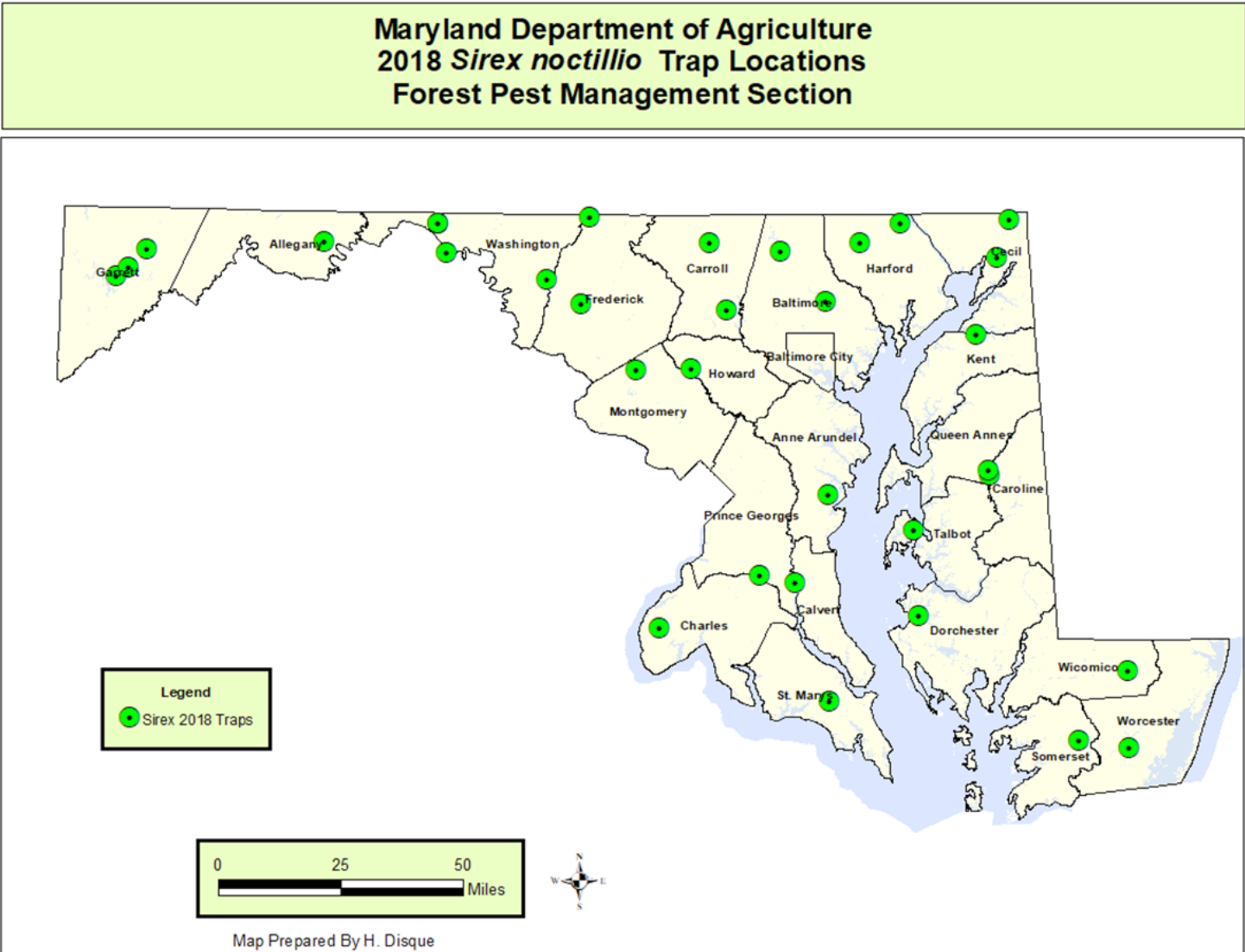


**Maryland Department of Agriculture
Forest Pest Management Section
Southern Pine Beetle Affected Area 2015-17
Dorchester County**



Woodwasp (*Sirex noctilio*). The sirex woodwasp has been the most common species of exotic woodwasp detected at U.S. ports-of-entry associated with solid wood packing materials. Recent detections of this woodwasp outside of port areas in the United States have raised concerns because this insect has the potential to cause significant mortality of pines. The sirex

woodwasp has not been detected in Maryland, but is known to be in Pennsylvania. To detect this insect, the department placed two traps per county on northern tier counties and one trap for all other counties, totaling 32 traps in pine woods. All traps were negative during calendar year (CY) 2018.



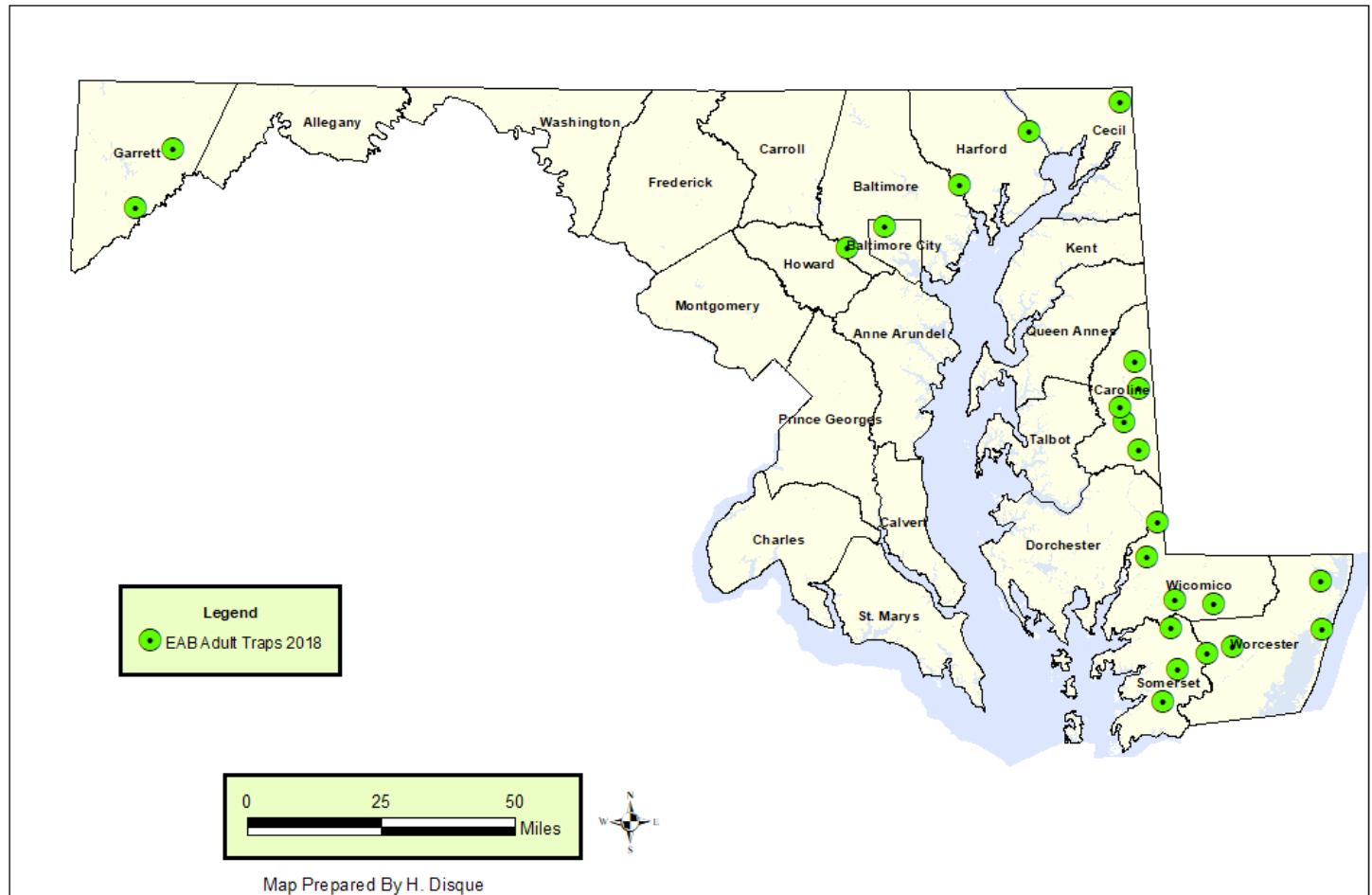
Emerald Ash Borer (EAB). The department’s Forest Pest Management Program put up 23 green funnel traps in non-positive counties around the state and in the parasitoid release areas. Emerald ash borer (EAB) was found in the previously positive counties of Harford, Cecil, and Baltimore, as well as Baltimore City. No new counties were positive in CY 2018. Large-scale rapid tree die off has begun in the Baltimore County and City parasitoid release locations.

During the 2018 field season the Forest Pest Management Program released 57,313 parasitoids of the EAB. The parasitoids were released at seven state park locations and one National Wildlife Refuge across Maryland, including: Garratt, Harford, Baltimore, Cecil, Caroline, and Dorchester Counties, and Baltimore City. There were 11,600 *Oobius agrili*

released as pupae in 116 vials; 39,354 *Tetrastichus planipennis* released in 446 bolts as pupae and 46 cups as adults; and 6,359 *Spathius agrili* released as adults in 168 cups. This work is part of the integrated pest management for the EAB landscape grant.

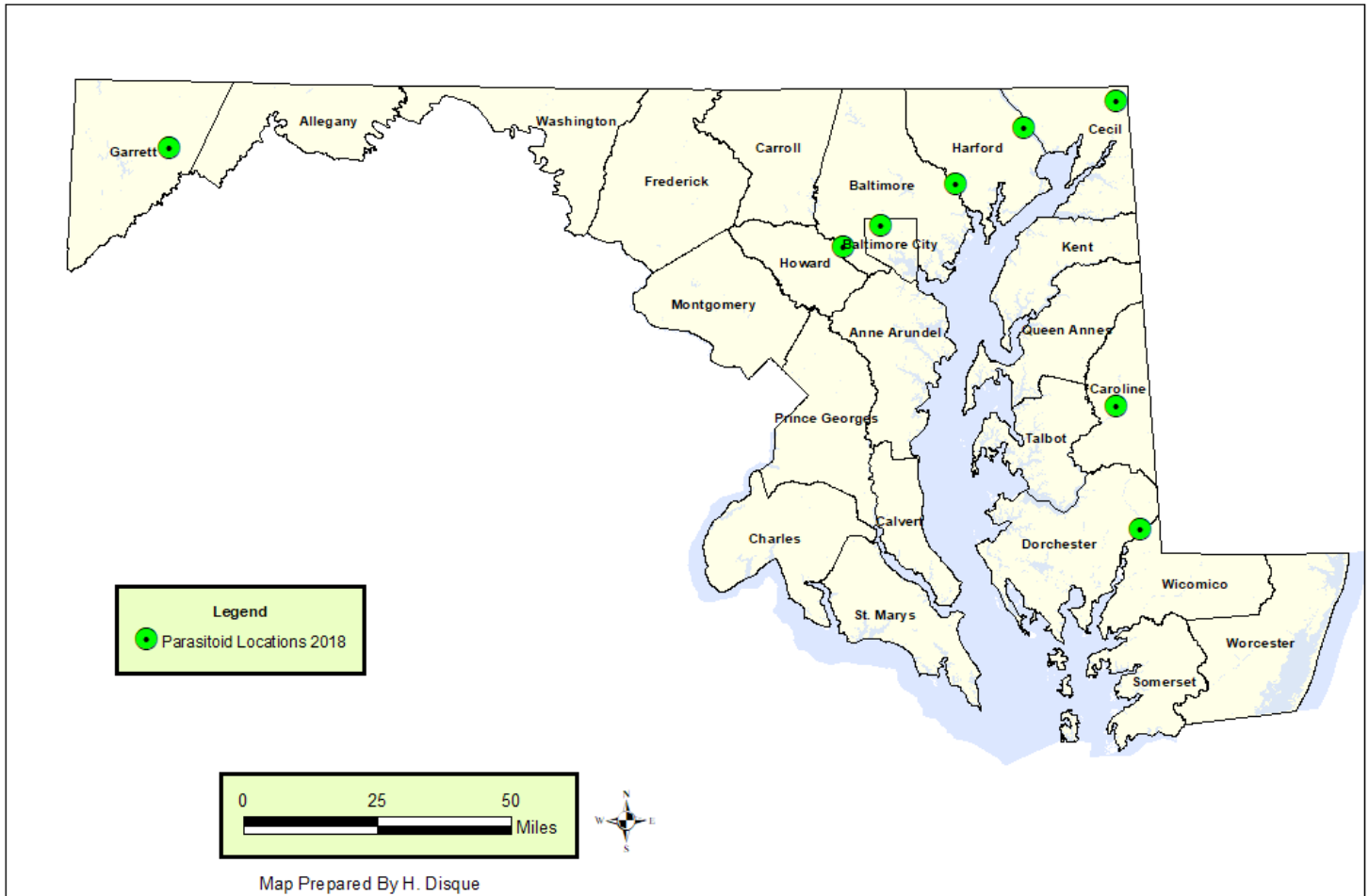
In addition, Forest Pest Management personnel supervised treatments of ash trees around the state. This work was done at parks in cooperation with the Maryland Department of Natural Resources (DNR) and the Maryland Conservation Corps (MCC). In total 147 ash trees, 2,477” diameter at breast height (DBH) were treated using 10,665 ml of TREE-äge (*emamectin benzoate*). Many of the trees treated were in riparian areas targeting rare tree species to provide seed for the future regeneration.

Maryland Department of Agriculture 2018 Emerald Ash Borer Adult Trap Locations Forest Pest Management Section

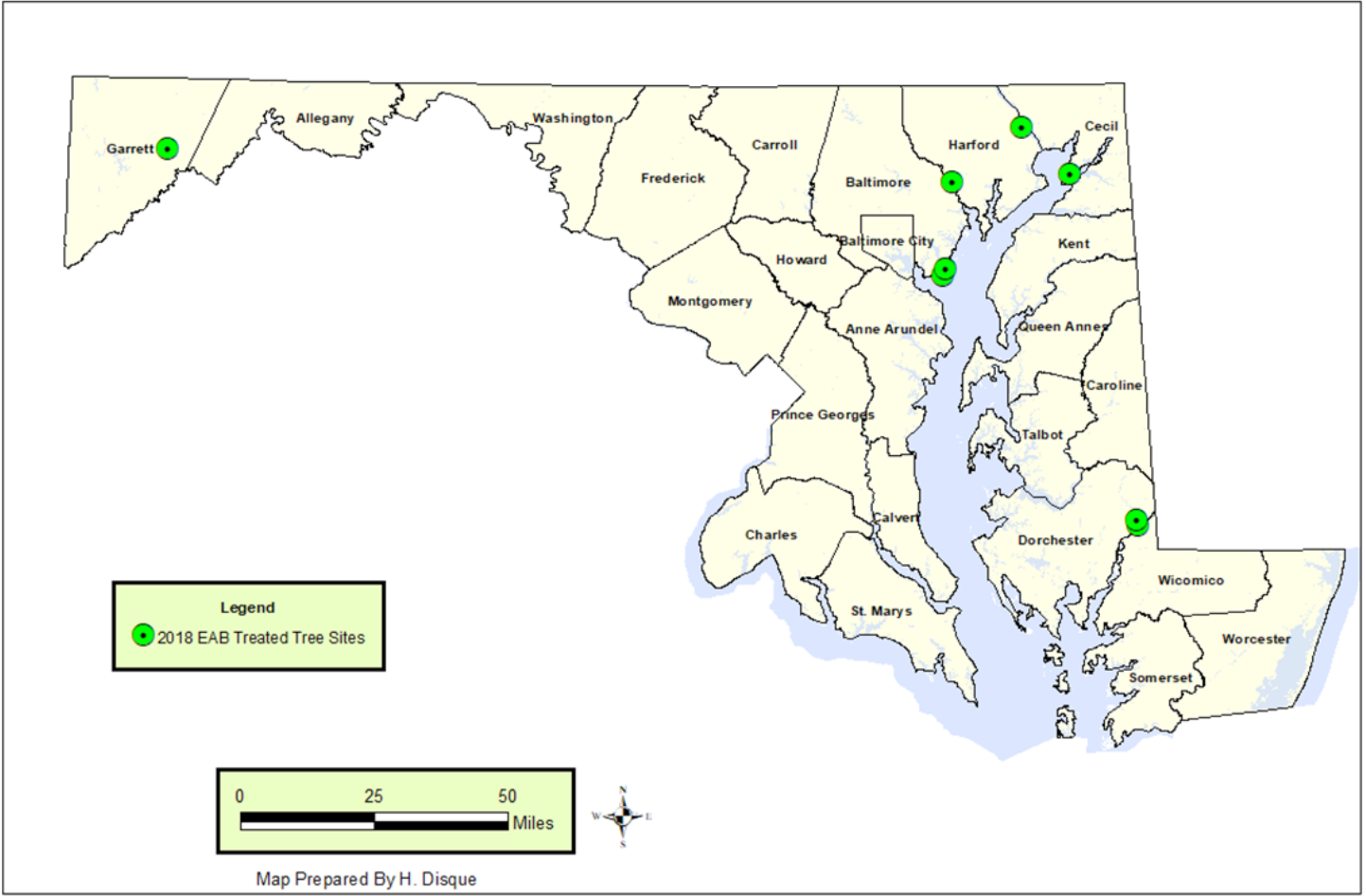


Maryland Department of Agriculture Forest Pest Management 2018 Emerald Ash Borer Parasitoid Release Summary											
Site Name	Latitude	Longitude	Oobius agrili (vials)		Tetrastichus planipennis		Tetrastichus planipennis Adults			Spathius agrili	
			# vials	Total	# bolts	Total	# female	# male	Total	# cups	Total
Cylburn Arboretum	39.3513	-76.6537	17	1700	46	2888	569	313	882	24	934
Big Run State Park	39.5449	-79.1385	20	2000	73	4523	1153	451	1604	16	618
Martinak State Park	38.86002	-75.8415	29	2900	51	4733	656	200	856	56	2179
Gunpowder Falls State Park	39.46263	-76.3924	6	600	40	2792	222	97	319	0	0
Susquehanna State Park	39.61383	-76.151	9	900	46	5121	270	189	459	8	293
Patapsco Valley State Park	39.29593	-76.7836	17	1700	48	3121	535	244	779	24	899
Fair Hill State Park	39.70282	-75.8288	4	400	39	3522	206	55	261	8	284
Blackwater NWR	38.52594	-75.7618	14	1400	103	7494	0	0	0	32	1152
Totals			116	11600	446	34194	3611	1549	5160	168	6359

**Maryland Department of Agriculture
2018 Emerald Ash Borer Parasitoid Release Locations
Forest Pest Management Section**



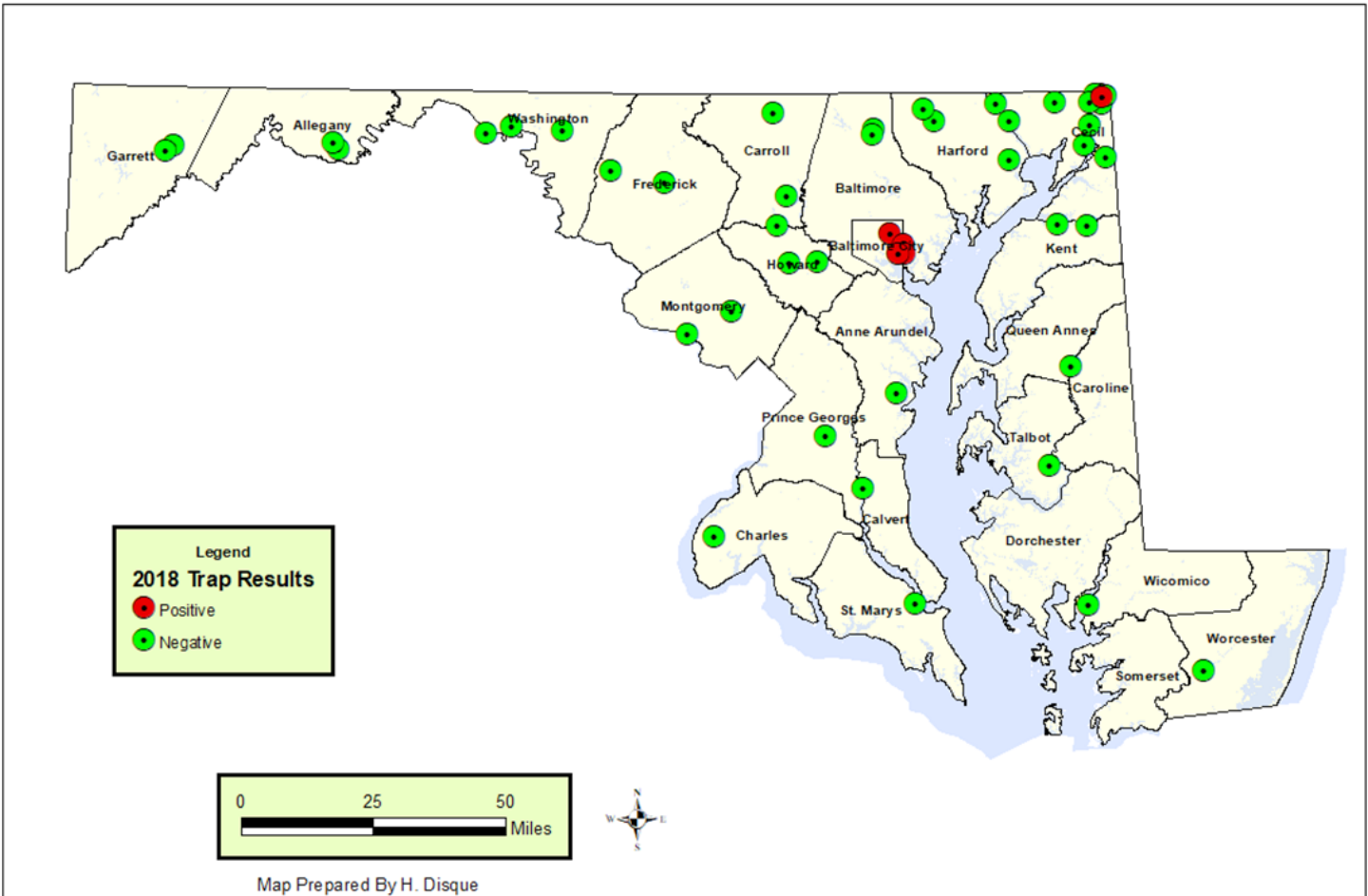
Maryland Department of Agriculture 2018 Emerald Ash Borer Treated Tree Sites Forest Pest Management Section with MD DNR & MD Conservation Corps



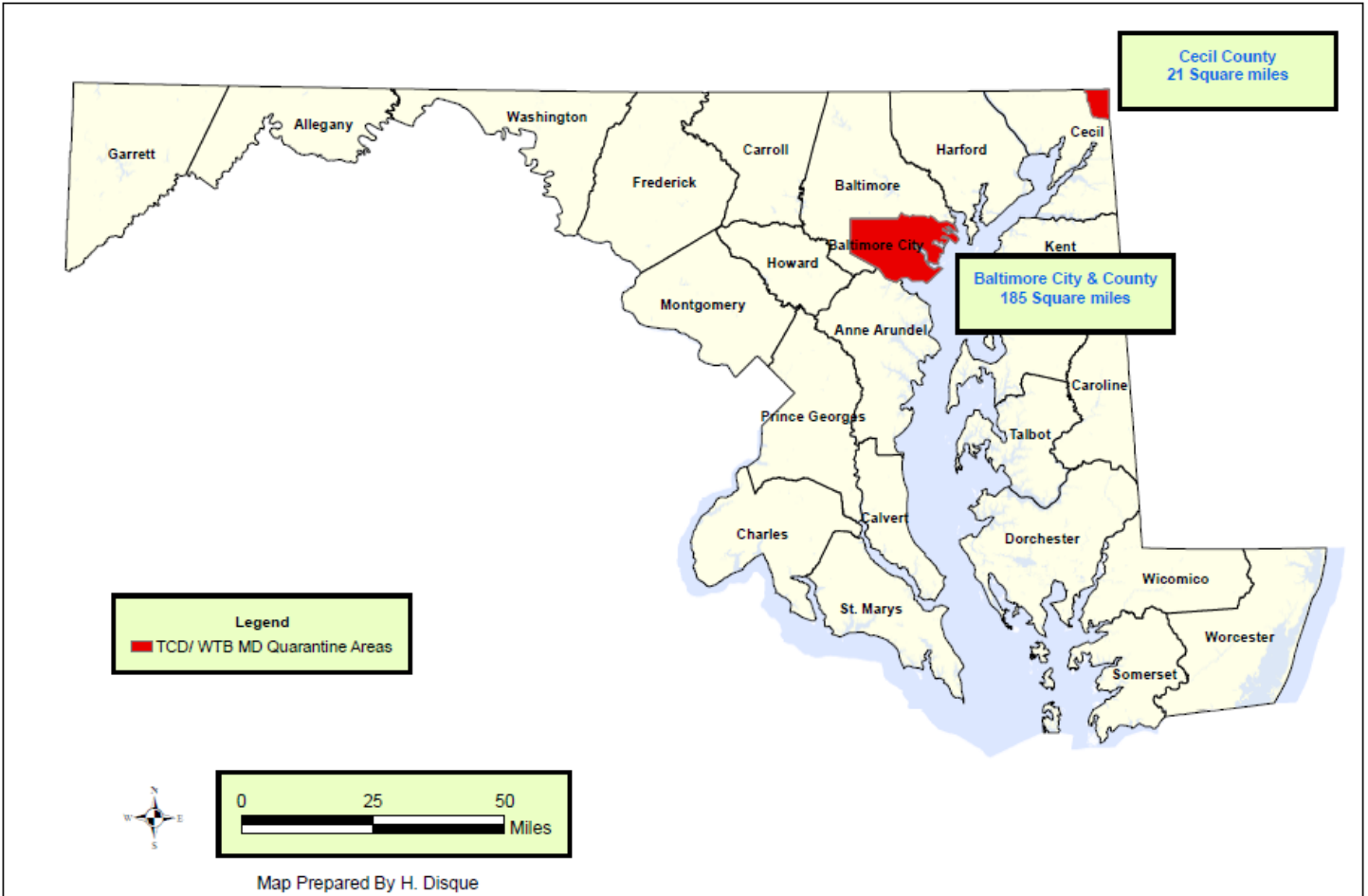
Thousand Canker Disease (TCD) of Black Walnut and Walnut Twig Beetle. Thousand canker disease (TCD) was recognized in 2008 as a complex consisting of the walnut twig beetle (*Pityophthorus juglandis*) and the fungus *Geosmithia morbida*, and is blamed for widespread mortality of eastern black walnut planted in the Western United States. It has since spread east and was first reported in the natural range of the eastern black walnut in 2010, where it was discovered in Tennessee. Since then, it has been found in seven eastern states. In 2011, Maryland along with several other Mid-Atlantic states started surveying for this disease. The walnut twig beetle was first detected in Maryland in 2013 and by October 2014 TCD was confirmed. A quarantine order was issued by MDA in January 2015 to limit the spread of TCD. The quarantined area was in the northeastern corner of Cecil County.

Forty-nine Lindgren funnel traps baited with the walnut twig beetle lure were set across 20 counties and Baltimore City in 2018. Eight traps were set in Cecil County to try to delimit the outbreak near the positive site discovered in 2013, and positive again in 2014, 2015, and 2017. Four traps were placed around a positive walnut twig beetle site discovered by Plant Protection & Weed Management in 2017. Traps were checked every two weeks, field samples were collected, samples were sorted and labeled in office, and then sent to the Pennsylvania Department of Agriculture for identification. The previously positive site, trap CE01, was again positive in 2018. Trees at the original positive site have not shown evidence of decline as of yet. All four traps delimiting the Baltimore City site were positive. A branch sample was taken and TCD was detected. As a result, the quarantine order was updated to include Baltimore City and parts of Baltimore County.

**Maryland Department of Agriculture
2018 Walnut Twig Beetle Survey
Forest Pest Management Section**



Maryland Department of Agriculture Thousand Canker Disease & Walnut Twig Beetle Quarantine Areas



Hemlock Woolly Adelgid (HWA) 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 to 2004, a joint task force comprised of the department’s Forest Pest Management and 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, either 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.

A total of 11,455 hemlock trees and 113,432” DBH were treated in Maryland between July 1, 2018 and June 30, 2019. Of this total, 1,451 trees or 14,975” DBH were trunk (stem) injected and 9,831 trees or 98,104” DBH were soil injected. The remaining 83 trees totaling 353” DBH were treated using CoreTect.

Maryland Department of Agriculture Forest Pest Management Fall 2018 - Spring 2019 Imidacloprid Treatments for Hemlock Woolly Adelgid Control in Maryland							
Hemlock Stand	County	Trunk Injection #Trees	Trunk Injection Inches DBH*	Soil Injection # Trees	Soil Injection Inches DBH*	Total #Trees	Total Inches DBH*
Prettyboy Reservoir	Baltimore	7	101.4	660	6839.6	667	6941
Frederick Watershed	Frederick			1801	10924.3	1801	10924.3
Potomac Garrett S F	Garrett	70	605			70	605
Rocks S P	Harford					0	0
Hagerstown Watershed	Washington					0	0
Green Ridge S F	Allegany					0	0
Big Run SP	Garrett	59	901.2	18	238.7	77	1139.9
Wolf Swamp SRSF **	Garrett					0	0
Savage River S F	Garrett	68	731.3	1473	15614.2	1541	16345.5
Cunningham Falls S P	Frederick	296	2307.2	24	246.4	320	2553.6
Pickering Creek	Talbot					0	0
South Mountain State Park	Washington					0	0
Broad Creek SC	Harford	32	393.6			32	393.6
Deep Creek Lake State Park	Garrett	26	243.5	427	3662.8	453	3906.3
Swallow Falls State Park†	Garrett	893	9691.9	5428	60577.7	6321	70269.6
Total		1451	14975.1	9831	98103.7	11282	113078.8

*DBH = the diameter of the tree trunk at 4.5 feet above the ground

**Treatments done in cooperation between Forest Pest Management and Maryland Conservation Corps (Department o

† Treatments done separately by FPM/MCC and FPM alone.

Maryland Department of Agriculture Forest Pest Management Maryland Hemlock Woolly Adelgid Predator Releases 2003 - 2019						
Hemlock Stand	County	<i>Laricobius nigrinus</i>	<i>Laricobius osakensis</i>	<i>Scymnus coniferarum</i>	<i>Scymnus sinuanodulus</i>	<i>Sasajiscymnus tsugae</i>
Rocky Gap State Park	Allegany	3476	0	105	0	5000
Prettyboy Reservoir	Baltimore	3172	0	0	0	0
Cunningham Falls State Park	Frederick	810	0	0	0	0
Frederick City Watershed	Frederick	3393	0	0	945	0
Broad Creek Scout Camp	Harford	2702	0	0	0	15410
Rocks State Park	Harford	1924	0	0	0	0
Hagerstown Watershed	Washington	853	0	0	0	0
Big Run (Savage River State Forest)	Garrett	1685	0	0	0	0
Big Run State Park	Garrett	325	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	1684	0	0	0	0
Lostland Run (Potomac State Forest)	Garrett	1857	500	0	0	0
Poplar Lick (Savage River State Forest)	Garrett	2799	1510	0	0	0
Elk Lick (Savage River State Forest)	Garrett	1691	500	0	0	0
Gunpowder Falls State Park	Baltimore	0	1010	0	0	0
Total		26821	3520	105	945	20410

Hemlock Woolly Adelgid Predator Releases. Over 51,801 predators have been released in Maryland since 1999. In 2018, 2,652 *Laricobius nigrinus* were released at sites in Baltimore, Frederick, and Garrett Counties.

See chart above.

HWAS Efficacy Surveys. Treatment efficacy surveys have been conducted annually since 2006. Data analyzed through 2017 shows 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 period. In 2018-2019, efficacy surveys were done at treatment sites in Frederick, Talbot, and Baltimore Counties.

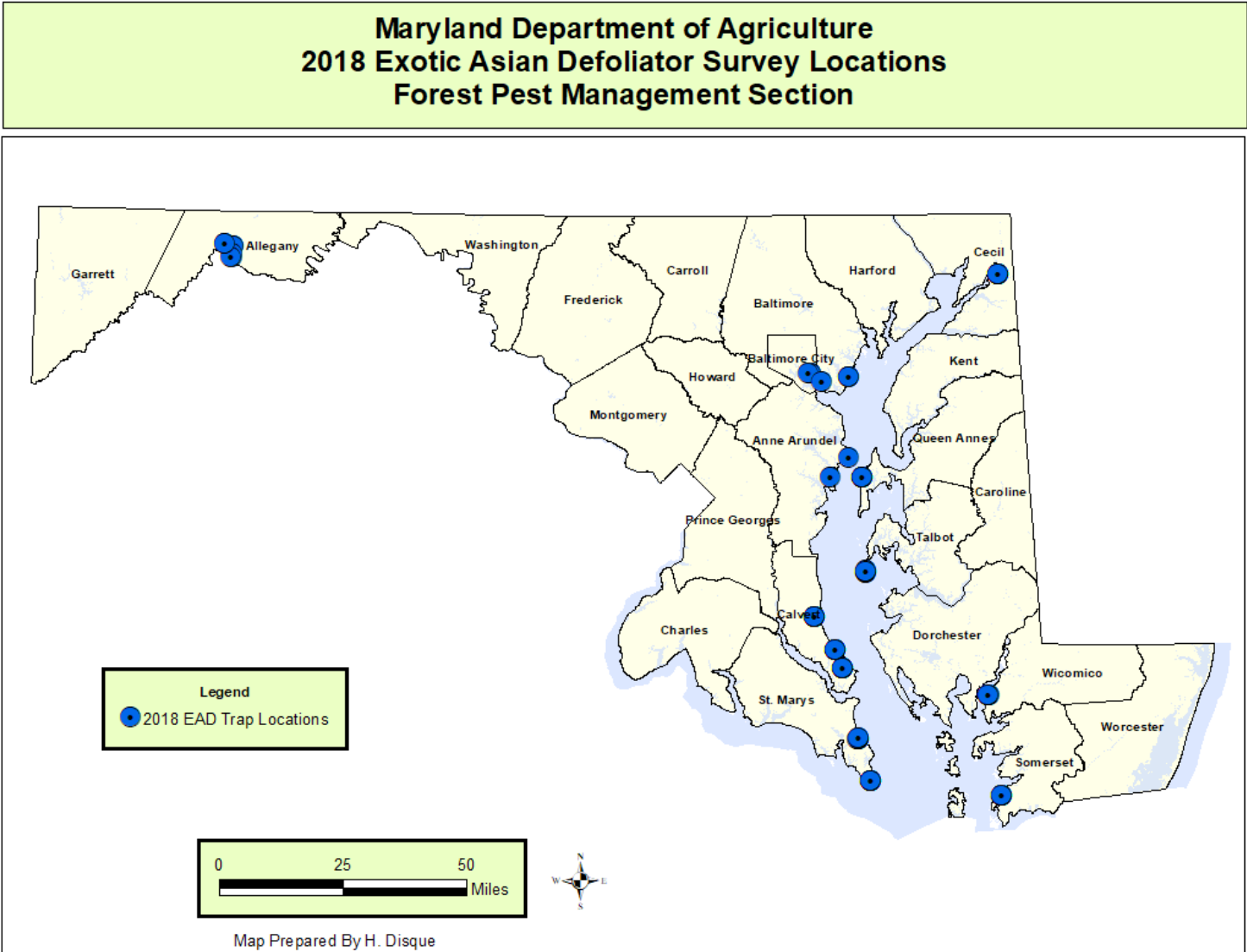
Bacterial Leaf Scorch. In 2018, Bacterial Leaf Scorch (BLS) was prevalent throughout the state. BLS was observed on

ornamental trees and throughout the state’s forested areas. BLS was as severe this year as last year.

Exotic Asian Defoliator Survey. A comprehensive exotic Asian defoliator survey was proposed and funded through the Farm Bill for 2018. This survey increases the likelihood that this harmful invader can be detected early and that an appropriate eradication response can be mounted to protect Maryland’s forest industry. One of the high-risk areas targeted is the Chesapeake Bay, as it is a major thoroughfare for ships coming into the Port of Baltimore. An increase in the size of ships and ship traffic coming to Baltimore has increased the risk of an accidental introduction of exotic Asian defoliators. Seven moths were chosen to survey based on their biological characteristics that enable them to become successful invaders, for their habitat preference, and prior intelligence that suggests an increased risk of introduction.

The department's Forest Pest Management Program deployed traps at 12 locations statewide to determine the presence or absence of Asian defoliator moths. At each location five traps were set up to survey for the seven species of moths. Traps ran from May to September and were checked bi-weekly. Forests composed of oak, willow, sweet gum, poplar, beech, pine, and other host trees and shrubs were surveyed. Several

Asian gypsy moth (*Lymantria dispar asiatica/japonica*) traps have been positive for gypsy moths. The European and Asian gypsy moths are difficult to morphologically separate, so the specimens were sent to the U.S. Department of Agriculture's Otis Laboratory for genetic testing and species determination. All specimens were determined to be European gypsy moth (*Lymantria dispar dispar*).

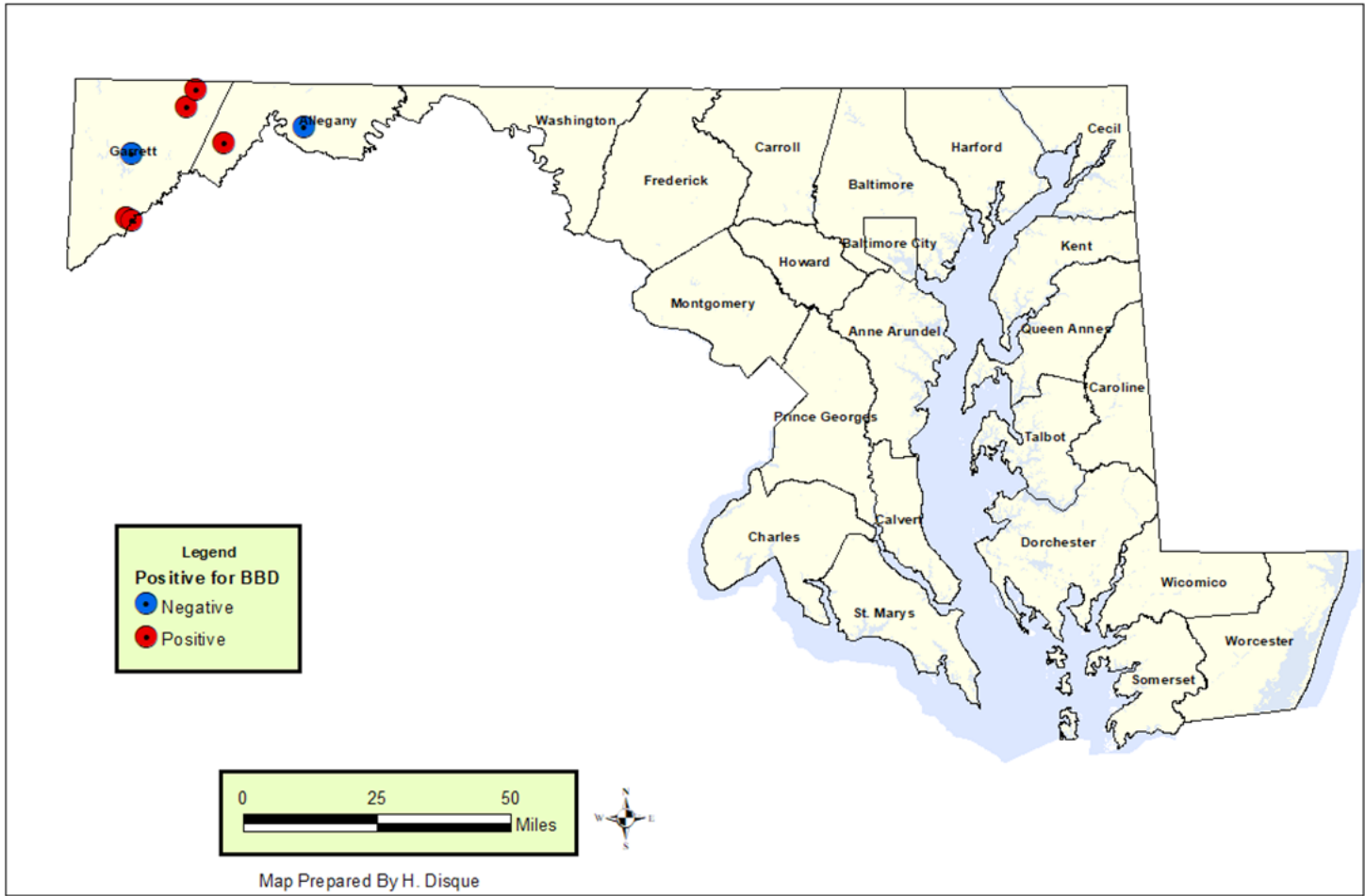


Beech Bark Disease (BBD). Beech bark disease (BBD) has been found in approximately 160,000 acres in Allegany and Garrett Counties.

In 2013, four permanent BBD monitoring sites were set up.

Dan's Mountain was positive for BBD in 2017. This is the first positive site for Allegany County. A new hot spot for BBD was identified in March 2017. This area is approximately 20 acres and is in northern Garrett County. The BBD is very evident and trees are in decline.

Maryland Department of Agriculture 2018 Maryland Beech Bark Disease (BBD) Monitoring Sites Forest Pest Management Section



Saltwater Intrusion. In July 2018, a saltwater intrusion delineation flight was flown across the Lower Eastern Shore. This flight mirrored the flight taken in 2017 in order to determine the areas affected by saltwater intrusion and to map changes.

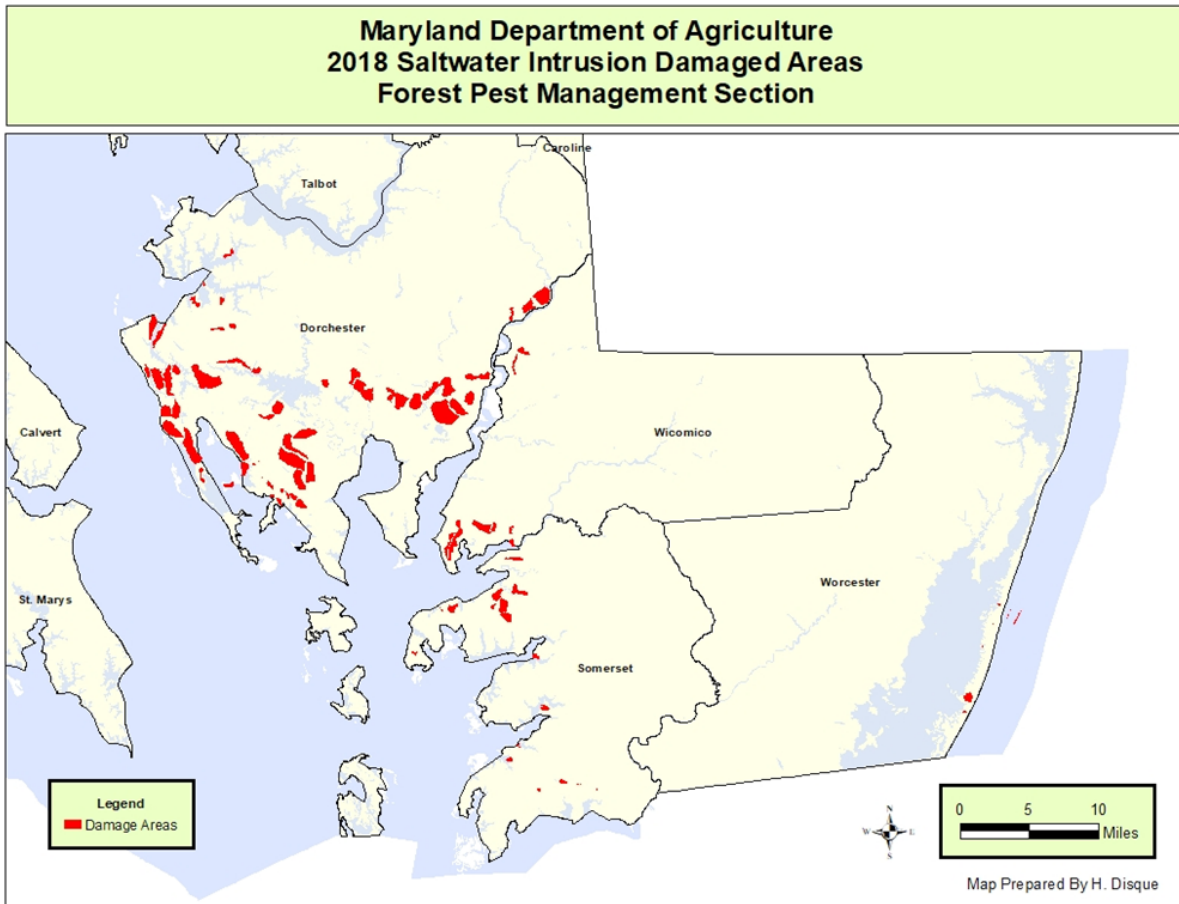
In total, 41,094 acres of forest were found to be affected by saltwater intrusion. The majority of the affected acres were in Dorchester County. Somerset, Worcester, and Wicomico Counties were also affected by saltwater intrusion. This is in contrast to 2017, when 13,096 acres were found to be affected by saltwater intrusion. Sixty-two percent of the mapped forests were either very severely or severely affected by saltwater intrusion.

MDA Forest Pest Management Saltwater Intrusion Flight Summary – Percent of Forest Affected

Percent of Forest Affected	Acres
Very light (1-3%)	0
Light (4-10%)	4,307
Moderate (11-29%)	11,407
Severe (30-50%)	11,778
Very Severe (>50%)	13,602
Total	41,094

MDA Forest Pest Management Saltwater Intrusion Flight Summary

County	Acres Affected
Dorchester	34,008
Somerset	3,438
Wicomico	3,097
Worcester	551
Total	41,094



FOREST PEST DAMAGE

Gypsy Moth – 19 acres defoliated
Forest Tent Caterpillar – 1,015 acres defoliated
Ash Rust – 250 acres defoliated

Areas surrounding the Nanticoke and Choptank Rivers saw extensive leaf disfigurement and defoliation due to ash rust.

Mature chestnut and red oaks are dying in Maryland's most northern tier counties and one county on the Eastern Shore. Secondary pests are present, but likely not the cause of mortality. Trees have been tested and some in Carroll County tested positive for oak wilt. As such an oak wilt survey has begun across the state and samples are currently being taken.

MOSQUITO CONTROL

MOSQUITO CONTROL

The department's Mosquito Control Program provides an important public health and quality of life service to Maryland residents in 1,854 communities in 15 counties through mosquito abatement work, arbovirus surveillance, public education, and enforcement.

The program is staffed by 16 classified employees, eight long-term contractual employees, and 75 seasonal contractual employees. The program's administration, laboratory, and the Anne Arundel County program staff are all located at the department's headquarters in Annapolis. Regional offices and laboratories are located in College Park, Hollywood, and Salisbury.

The work of Mosquito Control 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). West Nile Virus (WNV) continues to be the mosquito-borne disease of greatest public health importance in Maryland. In 2018, 46 human cases were reported by the Maryland Department of Health (MDH). In addition to these human cases, four pools of mosquitoes tested positive for WNV.

Eastern Equine Encephalitis (EEE). Eastern Equine Encephalitis (EEE) is one of the most severe mosquito-borne diseases in the United States. In 2018, EEE was not detected in any mosquito pools in Maryland and no human cases of EEE were reported. EEE has an average mortality rate of 33% and most survivors experience significant brain damage.

Zika Virus. Zika virus seems to be taking on less importance as a disease of concern. This virus was the mosquito-borne disease of most concern in 2016. There was a large outbreak of zika virus in the American tropics, which was first reported in the winter of 2015 into 2016. Much of the concern was based on the fact that zika infections can cause severe birth defects in developing fetuses. The State of Maryland quickly developed a plan for combating this virus in the event that a person came into Maryland infected with the virus after having traveled to the tropics. The Mosquito Control Program responded to no travel-related cases of zika virus infection in the summer of 2018. In Maryland, no zika infections were transmitted by local mosquitoes. Maryland residents that travel to the tropics should still be concerned about zika virus and other mosquito-borne infections.

PERMANENT WORK PROJECTS

The Kubota Excavator, which went into service in 2012, is still our primary unit used for ditching and water management projects. At this time, we do mostly land-based ditching projects because of the many restrictions placed on open marsh water management. The total area managed by source reduction projects in calendar year (CY) 2018 was 1,018 acres. In cooperation with the Commissioners of Somerset County, several projects are ongoing. Most of the ditching is done in the fall, winter, and spring, when mosquito control crews are not busy with other projects. It is very important that we have this resource available, as it allows us to rectify or prevent issues that create mosquito problems. The use of the excavator was higher in 2018 than in recent years because the ditcher recently finished maintenance issues that kept it out of service for parts of the years before 2018. 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 habitats.

Mosquito Control continued its annual inspections of the Crisfield City Dike system. Mapping is still ongoing. The program mapped areas in need of future repairs. In addition to the excavator, the department also used an all-terrain Argo ATV for personnel and equipment transport to remote areas of this system.

The department 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, the department 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 by the Mosquito Control Program are reared in a facility at the Salisbury Regional Office. From there, the fish are transported and stocked into suitable habitats such as storm water management facilities, closed ditches, or artificial containment sites. These areas are inspected by department personnel to determine if the introduction of the mosquitofish 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 2018 mosquito season, 600 fish were stocked in closed pond habitats. The use of these fish is down for a couple reasons. One, most areas that are suitable for fish have already been stocked. Second, more scrutiny is taking place with regard to areas that are suitable for fish release. The department will continue to monitor and inspect suitable sites to determine where future mosquitofish stocking is necessary.

PUBLIC EDUCATION

Our public education efforts this season were split between media, social media, school, professional associations, and general presentations. At the beginning of mosquito season, the department distributed two press releases – one about general tips to rid your home of mosquito breeding sites and the other announcing the start of mosquito control spraying in areas around the state. Another 20 press releases were

distributed to the media, stakeholders, and constituents every time there was an unscheduled mosquito control spraying due to a public health concern. These messages along with others about protecting yourself from mosquito-borne illnesses were posted on the department's social media pages throughout the season. There were about 15 interviews done in CY 2018 by Mosquito Control personnel or communications staff with both print, television, and radio media outlets.

Outreach was also done at 11 different school functions in 2018. In Prince George's County, mosquito control employees judged science fairs and acted as judges for the county's science quiz show, The Science Bowl. Staff also did presentations for two university classes – one for Salisbury University and another for University of Maryland Eastern Shore. Mosquito control employees spoke at 11 community meetings – six in Prince George's County and five in St Mary's County. The program hosted six large workshops on mosquito biology, ecology, and control for local health department personnel and the public in response to the Asian tiger mosquito, Zika, and WNV. Mosquito Control also staffed a one-day event at the Maryland State Fair that highlighted the program.

Public education continues to be an important part of MDA's Mosquito Control Program, particularly with the continuing problems created by the introduction and spread of the Asian tiger mosquito, the reoccurrence of WNV, and imported diseases of concern like Zika virus.

AERIAL SPRAY

The aerial spray program continues to provide a high-level of service to the state. The department 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 aerial spray program.

The aerial spray season began in April 2018 with applications of biorational larvicide to 5,939 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 these species helps to reduce the risk of transmission of arboviruses to horses and humans later in the season.

In 2018, 213,334 acres were treated by aircraft, the majority for control of adult mosquitoes. In 2018, we had record-breaking amounts of rainfall. We were treating large acreages to control flood-water mosquitoes. This is in contrast to most years when

we spray saltmarsh mosquitoes. Precision navigation and flow control equipment are critical for the safe and efficient aerial application of insecticides. The Mosquito Control Program uses Ag-Nav Guia, a state-of-the-art GPS-based navigation system, for all aerial applications of insecticides. 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% or more are achieved within a defined target area at a cost that is lower than spraying with truck-mounted spray equipment.

MOSQUITO CONTROL ACTIVITY SUMMARY: CY 2016 – 2018

Activity	CY 2016	CY 2017	CY 2018
Communities Participating in Mosquito Control Program	2,150	1,977	1,854
Number of Light Trap Nights	2,223	2,675	2,358
Percent of Light Trap Nights Below Threshold	64.01%	61.53%	946
Number of Landing Rate Counts Performed	19,430	17,070	15,162
Percent of Landing Rate Counts Below Action Threshold	35.05%	20.03%	19.91%
Number of Public Service Requests	4,679	4,400	5,256
Number of Inspections by Request	681	925	1,449
Number of Mosquitofish Stocked	5,050	1,300	600
Acres Managed by Open Marsh Water Management	200	205	1,018
Acres Treated with Insecticide	1,741,794.42	1,322,042.4	1,305,790.27
Acres Treated for Mosquito Larvae	5,322.9	26,628.92	7,014.87
Acres Treated for Adult Mosquitoes	1,428,790.72	1,295,413.48	1,298,783.50
Acres Treated by Aircraft	156,480	126,138.64	213,334
Acres Treated by Ground Equipment	1,585,314.42	1,196,141.76	1,092,456.27
Number of Mosquitoes Tested for Arboviruses	17,470.00	18,140	17,890
Number of Human Cases of West Nile Virus Statewide	6	5	46
Number of Cases of Arbovirus in Domestic Animals	0	11	6
Number of Mosquito Pools Positive for Arbovirus	6	9	4*

*West Nile Virus Positive Mosquito Pools: Prince George's County 2, Anne Arundel County 2

PESTICIDE REGULATION

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. The PRS contains five major programs: Pesticide Applicator Certification and Training; Pesticide Use Inspection and Enforcement; Pesticide Technical Information Collection and Dissemination; Integrated Pest Management in Schools and on School Grounds; and Special Programs.

PESTICIDE APPLICATOR CERTIFICATION AND TRAINING

Two types of pesticide applicators are certified by the PRS — private and commercial. Private applicators are farmers and other individuals applying restricted-use pesticides to their own land or rented land for the purpose of producing agricultural commodities. Commercial applicators apply general use and restricted-use pesticides as employees of licensed pest control businesses, not-for-hire businesses, or public agencies.

A total of 116 new private applicators were certified in fiscal year (FY) 2019 for a three-year period after passing a closed book examination administered by section personnel. In FY 2019, 616 private applicators renewed their certificates by attending recertification meetings. There were 837 private applicators whose certificates expire on Dec. 31, 2019. Section staff approved and monitored 195 private applicator recertification sessions conducted by the University of Maryland Extension, the Maryland Department of Agriculture (MDA), or the pesticide industry.

In FY 2019, 773 new commercial pest control applicators and consultants were certified in FY 2019 in one or more of the 13 categories of pest control by satisfying the minimum experience of education requirements and by passing a written certification examination. The section certified 218 public agency applicators in FY 2019.

This brings the total number of commercial, public agency applicators, and consultants in FY 2019 to 4,600. Eighteen exam sessions were held, during which 2,453 exams were administered to 833 applicants. Certified commercial

applicators are required to participate in at least one MDA-approved training session each year in order to renew their certificate. 592 recertification training sessions for commercial pesticide applicators were approved and monitored by the PRS and were conducted by the pesticide industry, the University of Maryland Extension, or MDA. In FY 2019, 5,216 applicators were recertified.

During FY 2019, the PRS licensed 1,162 commercial businesses and 116 not-for-hire businesses to apply pesticides and to perform pest control services. 253 public agency permits were issued to government agencies that apply pesticides. 47 pest control consultant licenses were issued. A total of 10,243 registered employee identification cards were issued in FY 2019. These employees of pesticide businesses and public agencies are registered to apply pesticides under the supervision of certified applicators. 190 dealer permits were issued to businesses that sell restricted-use pesticides.

PESTICIDE USE INSPECTION AND ENFORCEMENT

In addition to enforcing state pesticide laws, MDA enforces federal pesticide laws under a Cooperative Enforcement Agreement with the U.S. Environmental Protection Agency (EPA). Routine inspection activities are conducted throughout the year and include pesticide use observations and inspections of pest control businesses, public agencies, pesticide dealers, market places, and producer establishments. Consumer complaints and pesticide misuse investigations are also conducted by the PRS inspectors. In FY 2019, 670 routine business inspections and 20 complaint investigations were performed. Of the inspections conducted, 179 violations were cited. Out of those violations, six civil penalties were issued, totaling \$5,500, to individuals performing pest control without a license.

PESTICIDE TECHNICAL INFORMATION COLLECTION AND DISSEMINATION

A list of pesticide sensitive individuals was first compiled in 1989. During FY 2019, MDA registered 135 individuals. These individuals receive advance notification of pesticide applications made to adjacent properties by commercial ornamental plants and turf, pest control businesses, and public agencies.

A searchable database of registered pesticide products, licensed pesticide businesses, commercial and private

applicators, and restricted-use pesticide dealers continue to be posted on MDA's website. This database provides information to applicators and the public about pesticides that may be legally sold, distributed, and used in Maryland along with the names and addresses of licensed pesticide businesses. Pesticide dealers can check the certification status of pesticide applicators prior to selling them restricted-use pesticides. This database is linked to EPA's registration database so that applicators and consumers can obtain information on each pesticide product queried, including the EPA registration number, intended use, sites of application, formulation, active ingredients, and the brand name.

INTEGRATED PEST MANAGEMENT IN SCHOOLS AND ON SCHOOL GROUNDS

The section continues to promote and support implementation of the Integrated Pest Management (IPM) Programs in public schools. Regulation that requires schools to develop and implement notification and IPM plans for indoor pest control became effective in 1999, and regulations for notification and IPM plans for school grounds became effective in 2002. Staff provided technical assistance in the development of the plans and distribution of information on potential adverse effects of pesticides applied. The PRS staff continues to work with Maryland public school districts on implementation of IPM on school property.

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

TRAINING EVENTS

During FY 2019, the PRS program manager, enforcement coordinator, and inspectors attended the EPA Region 3 Pesticide Inspector's Workshop which was held in Pocono Manor, Pennsylvania. The agenda for this meeting included health and safety information regarding pesticides and respirator fit tests. In addition, two inspectors attended Pesticide Inspector Residency Training (PIRT) and one of our inspectors attended a week long residency training with the EPA's Region 3 Office in Philadelphia.

In FY 2019, the PRS entered into an agreement with FieldWatch. FieldWatch is a pesticide sensitive crop locator database which has taken the place of MDA's outdated Pesticide Sensitive Crop Locator Map. Not only does the agreement include FieldWatch, it also comes with DriftWatch, a cropping database, and BeeCheck, a program that allows beekeepers to enter colony locations. Both DriftWatch and BeeCheck show locations of crops and honeybee colonies that are sensitive to pesticide damage so that pesticide applicators can avoid these areas while spraying pesticides on nearby properties. Information contained within FieldWatch is voluntarily provided by the beekeeper or grower of the sensitive crop. There were 128 registrations accepted during FY 2019 — 100 honeybee colonies and 28 sensitive crops.

environment, the general public, and the regulated industry. During calendar year (CY) 2019, the section registered 13,199 pesticide products; 4,597 fertilizers; 655 soil conditioners; 694 fertilizer/pesticide combination products; 181 liming materials; and 6,769 commercial feeds. Department inspectors also brought 133 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 CY 2019, the State Chemist Section inspectors performed 1,038 on-site inspections. Please see Table 2.

STATE CHEMIST SECTION ONLINE REGISTRATION PORTAL

The Department of Information Technology, NIC, and the State Chemist Section, developed a new online platform for the registration of pesticides and animal feeds. Initial planning meetings started in July of 2016 and culminated in the pesticide renewals going live for the 2018 registration year. Approximately 65% of pesticides were registered through the NIC portal. There are still some registrants that cannot renew online. The online renewal percentage for animal feeds was about 58%. The system, both what registrants use and the State Chemist staff use, are constantly being improved for better efficiency and usability. The remaining commodities will be put in the pipeline when the majority of bugs in both systems are worked out. The program's goal is to have 80% online renewal rate. Tonnage reporting and inspection fee payment will be the last to migrate to the online portal.

ENFORCEMENT

Any regulated product determined to be ineffective, misbranded, or deleterious to the public, agriculture, or the environment is removed from the marketplace. 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 is used to assist farmers and to initiate or support regulatory actions against products that violate 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 (USDA), and the U.S. Environmental Protection Agency (EPA). 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 department 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 24 registrants, and four 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 and 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 (FDA) 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 FDA and the department are concerned about the presence of various pathogenic organisms in dog and cat food. The FDA has indicated that between June 2017 and August 2018, 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 or plates placed in a pet feeding area easily accessible to young children.

In CY 2019, department scientists and technicians routinely screened 215 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, and other established techniques. Twenty samples of fresh and frozen pet food, pet treats, and pet nutraceuticals were screened as part of State Chemist's FDA contract for Salmonella sp. Out of the 20 samples analyzed, one was found to be positive. State Chemist will isolate the Salmonella sp. to send to the FDA District Laboratory in Denver for Serotyping and Whole Genome Sequencing.

Mycotoxins and Environmental Toxins Contamination in Grains and Animal Feeds. 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, ochratoxin, zearalenone, and vomitoxin.

The laboratory analyzed finished feeds as part of the State Chemist's FDA Contract. Samples analyzed were finished feeds. Results from analysis indicated that the overall mycotoxin contamination was low, as seen by no violations being detected.

Metals in Animal 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 metals: aluminum, arsenic, beryllium, cadmium, chromium, mercury, nickel, antimony, selenium, tellurium, thallium, uranium, vanadium, and zinc. None of the metals analyzed, either nutritive nor toxic, were over regulatory limits.

Bovine Spongiform Encephalopathy – BSE or Mad Cow Disease. The department continued an inspection program in conjunction with the 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 fiscal year 2019, 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 polymerase chain reaction (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.

USDA 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 diverse items, such 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 (EPA) Food Safety Program, the data will be used to establish new

pesticide food tolerances with added emphasis on the diet of infants and children.

ENVIRONMENT

Maryland Bee Pollen Survey. In conjunction with the University of Maryland's Honey Bee Lab, headed by Dennis vanEngelsdorp, Ph.D., the State Chemist Section has been supporting the lab through the analysis of pesticides in bee pollen. The Honey Bee Lab at the University of Maryland has diverse personnel with multidisciplinary scientific backgrounds. Research in the laboratory is focused on an epidemiological approach to honeybee health.

Major mechanisms that are responsible for reoccurring high loss levels in honeybee populations include pests and pathogens associated with honeybees, loss of natural forage habitat due to large monocultural croplands, and pressure from human induced changes in the environment.

The lab is a major partner and founding member of the Bee Informed Partnership (BIP), who collaborates closely with beekeepers from across the country to study and better understand the loss in honeybee colonies in the United States. Through the BIP, the largest and most comprehensive honeybee survey in the world was conducted. The data that is compiled through the BIP survey is then utilized to conduct research to better improve Integrated Pest Management (IPM) practices for beekeepers.

The State Chemist Section has provided laboratory support for the determination of approximately 198 pesticides in bee pollen samples. The bee pollen samples are gathered from sentinel hives and from apiary colonies. The data submitted to the Honey Bee Lab becomes part of the National Honey Bee Survey and is used to help improve IPM practices for beekeepers and to improve colony health. The State Chemist Section has been analyzing samples for the past four years.

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% 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 then may increase nutrient runoff due to erosion, driveway run-off, etc. Additionally, the law requires the registrants and manufacturers of the products to annually submit the amount of these products sold and distributed specifically as fertilizer for lawns, turf, golf courses, nurseries, etc. The purpose of this 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. Fifteen people passed the exam during CY 2019. Since 2010, 105 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.

TABLE 1—CY 2019: REGISTRATION AND ENFORCEMENT

Registration	
Pesticides	13,199
Fertilizers	4,597
Soil Conditioners	655
Fertilizer/Pesticide Mixtures	694
Liming Materials	181
Feeds	17,816
Total	37,142
Companies with Registered Products	1,998
Registrants	1,479
Enforcement - Non Registered Notices Brought Into Compliance	
Pesticides	8
Fertilizers	19
Soil Conditioners	1
Fertilizer/Pesticide Mixtures	0
Liming Materials	3
Feeds	124
Total	157
Enforcement - Non Registered Stop Sales	
Pesticides	8
Fertilizers	19
Soil Conditioners	1
Fertilizer/Pesticide Mixtures	0
Liming Materials	3
Feeds	124
Total	157

TABLE 2—CY 2019: INSPECTIONS

Product Manufacturing Sites Visited [Plants, Warehouses, Retailers]	1,038
FDA Regulation Ruminant Tissue [BSE] Feed Inspections	10
FDA cGMP Inspections	10
USDA/MDA Pesticide Data Program Sites Visited	266
USDA/MDA Pesticide Data Program Samples Collected	510

TABLE 3—CY 2019: REGULATORY ACTIONS

Regulatory Action Stop Sales	
Active Ingredient Deficiencies	
Pesticides	7
Fertilizers	10
Feeds	10
Active Ingredient Over Formulations	
Pesticides	7
Fertilizers	26
Feeds	20
Mycotoxins in Feeds	0
Label Violations	9
Phosphorus Levels in Turf/Lawn Fertilizers	0
Regulatory Action Warnings	
Active Ingredient Deficiencies	
Pesticides	27
Fertilizers	17
Feeds	5
Active Ingredient Over Formulations	
Pesticides	0
Fertilizers	62
Feeds	3
Mycotoxins in Feeds	0

TABLE 4—CY 2019: LABORATORY ANALYSES PERFORMED

	Samples Collected	Number of Analyses
Pesticides	165	174
Fertilizers	242	600
Liming Materials	0	0
Feeds and Pet Foods	488	1,962
Feed – Microbiology	76	215
Broiler Feeds for Phytase	52	52
Livestock Feeds – Drugs, Additives, Mineral Supplements, Ingredients	436	1,910
Toxic Metal Screen	47	385
Maryland Bee Pollen Survey	58	11,484
EPA (Pesticide Regulation – Maryland)	145	15,127
FDA Contract – Prohibited Material	20	60
FDA Contract – Heavy Metal Screen	20	480
FDA Contract – Mycotoxin Screen	20	100
FDA Contract – <i>Salmonella sp.</i>	20	20
Food Emergency Response Network of Federal & State Laboratories	16	16

TABLE 5—CY 2019: PRODUCT SALES IN TONS

Fertilizers	310,851
Fertilizer/Pesticide Mixtures	9,104
Soil Conditioners	269,787
Liming Materials	123,198
Total	712,940

TURF AND SEED

Seed is the single most important input to any agricultural system. To be successful, a grower must begin with quality seed. The Maryland Department of Agriculture (MDA) 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 consumers. Today's seed industry exists in an environment of rapid change. The continued development of biotechnology and the expansion of genetically modified organisms (GMOs) has had an enormous effect on the production, distribution, and marketing of seed as well as on state seed programs nationwide. 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 department's 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 the 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. A well-trained staff is key to a successful laboratory operation. 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 exams, are

certified as official purity and germination analysts. Currently, six 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 across 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 to be labeled accurately. This includes: agricultural, vegetable, flower, lawn, and turf seed; seed of trees, shrubs, native species, and 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. Maryland relies heavily on other states and countries, where climates are better suited for seed production, to supply its seed needs. Thus, it is important that Maryland maintains 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 statewide. 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 relabeling, 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. Large investments in biotech research by private companies are increasing, driving the demand for traditional certification services down and decreasing the involvement of public institutions, which have been the primary source for 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 rise 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, which has helped strengthen Maryland's agriculture industry and the state 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 maintaining the genetic purity of foundation seed of public varieties that are 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.

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 the 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.

INDUSTRIAL HEMP

The purpose of the Maryland Industrial Hemp Research Pilot Program is to authorize and facilitate the research of industrial hemp and any aspect of growing, cultivating, harvesting, processing, manufacturing, transporting, marketing, or selling industrial hemp for agricultural, industrial, or commercial purposes. This program requires farmers to partner with institutes of higher education to grow industrial hemp under a research program. Industrial hemp may not be grown in Maryland for general commercial activity, only as part of a research project. Farmers will be allowed to sell their crop for profit at the end of the growing season. Maryland currently does not limit acres or number of applications for this pilot program. The Turf and Seed Section approves farmers and registers the fields where industrial hemp is grown. In 2019, 66 farmers had research projects with seven different institutions to grow and conduct research on industrial hemp.

CUSTOMER SERVICE

Providing good customer service is a priority of the Turf and Seed Section. Since the marketing and planting of seed is time-sensitive and dependent on the weather, 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 2019
Outcome: Percent of Seed Lots Found to be Correctly Labeled	87%

TURF AND SEED ACTIVITIES: 2017- 2019

	2017	2018	2019
Field Inspections			
Acres of Turf Inspected	5,585	6,990	4,749
Acres of Crop Seed Inspected	8,372	8,931	5,978
Supervised Mixing			
Pounds of Seed Mixed (thousand)	2,104	1,878	2,081
Retail and Wholesale Seed Inspections			
Number of Lots Sampled	775	779	453
Number of Regulatory Seed Tests Conducted	2,047	2,056	1,435
Seed Testing			
Samples Tested	2,592	2,587	2,947
Service Seed Tests Conducted	4,218	4,082	4,388



2019 Annual Report | 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, financial, and technical assistance programs along with 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 (SSCC) 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 Maryland Agriculture Secretary on these matters. Importantly, the committee serves as a forum for all agencies involved in protecting natural resources.

In fiscal year (FY) 2019, the SSCC:

- Received an update from the Delmarva Poultry Industry on ongoing efforts by their members to improve air quality around poultry houses.
- Learned more about the role of the Maryland Department of Natural Resources in siting and evaluating solar energy projects during a briefing

focused on the increasing number of project proposals on farmland.

- Coordinated a series of discussions with the Maryland Department of the Environment (MDE) on the joint roles and responsibilities of soil conservation districts and state agencies regarding composting facilities, erosion and sediment plan reviews, and agricultural water pollution compliance and enforcement.
- Received an update on Maryland's proposed Phase III Watershed Implementation Plan (WIP) for agriculture, invited soil conservation districts to review the plan, and recommend programmatic changes that will support its goals.
- Received a briefing from the U.S. Department of Agriculture Natural Resources Conservation Service and the Maryland Department of Agriculture on soil health initiatives under development that will support farmer understanding and implementation of practices that build healthy soils.

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 (SSCC) 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 in streams, and repurpose manure by

creating marketable fertilizer and other products and by-products.

In FY 2019:

- The Animal Waste Technology Fund issued a request for proposals. It received one bid that was reviewed by a five-member technical review subcommittee and subsequently rejected.
- The fund continues to support six active projects that were approved in previous years. Grants awarded through the Animal Waste Technology Fund are part of the State's ongoing commitment to manage animal manure, protect natural resources, and pursue renewable energy sources.
- To date, the fund has issued \$5.86 million in grants to approved projects.

Geographic Information Systems (GIS). A Geographic Information System (GIS) captures, stores, manipulates, visualizes, and presents all types of data for decision-making, resource management, and development planning. Data from many sources, including digitized and scanned maps, aerial photography, soil surveys, and global positioning systems, are integrated and analyzed using GIS to create and share “smart maps.”

In FY 2019, GIS staff continued to provide technical assistance and spatial data to program areas within the department. Training sessions were conducted on the new ArcGIS Pro interface and its functionalities. ArcGIS Pro is a next generation 64-bit desktop GIS product that provides professional 2D and 3D mapping capabilities. The department's web map applications were updated with current data and enhanced with additional tools. GIS staff is developing an Interactive Agricultural Map of Maryland that includes data sets from different programs within the department. When complete, the web map will provide a user-friendly composite picture of Maryland agriculture. GIS staff attended conferences, training sessions, and workshops on ArcGIS Pro and participated in an inter-agency technical committee that implements policies related to the transparency, availability, and quality of spatial data in Maryland.

Soil Health Program. During the year, significant progress was made in promoting soil health. Established by Maryland law in 2017, the Maryland's Healthy Soils Program charges the department to develop a program to improve the health, yield, and profitability of soils; increase biological activity and

carbon sequestration in agricultural soils; and promote further education and adoption of healthy soil practices.

In FY 2019:

- The Maryland Department of Agriculture (MDA) partnered with the U.S. Department of Agriculture (USDA) Regional Conservation Partnership Program on a \$1 million grant to promote soil health and adaptive management strategies on Maryland's Eastern Shore. Farmer interest was high, with 71 applicants signing up for this special funding opportunity. Grant funds were targeted to farmers in Caroline, Kent, Queen Anne's, and Talbot Counties to support the installation of practices that increase soil organic matter, reduce erosion, promote nutrient cycling, improve water retention, and reduce competition from weeds and pests.
- A Healthy Soil Biomass Pilot Program was offered to farmers who were approved to plant cover crops through the cost-share program, but were unable to plant before the November 1 deadline. The program allowed for late season planting, but required kill down after May 1 to maximize the co-benefits of soil health and water quality.

Information and Education. This program provides creative, editorial, web content, 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 Maryland Extension offices to assist with educational outreach. 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. Staff developed several new educational brochures, including a multi-page booklet on conservation practices for equine operations and a 56-page booklet on Maryland Drainage Law and Regulations. Farmer and citizen outreach programs, displays and materials were developed/updated to promote the Animal Waste Technology Fund, the Conservation Reserve Enhancement Program, Conservation Grants, Backyard Actions for a Cleaner Chesapeake Bay, the Manure Happens Education Program, the Phosphorus Management Tool, Nutrient Management Program, Manure Transport Program, and Maryland's Lawn Fertilizer Law. During the fiscal year, educational exhibits/educational materials were provided for approximately 25 events.

CONSERVATION GRANTS

The Maryland Agricultural Water Quality Cost-Share (MACS) Program helps farmers finance water quality improvement projects on their farms, invest in sustainable agricultural practices, and comply with federal, state, and local environmental requirements. In FY 2019, the program provided Maryland farmers with \$23.3 million in cost-share grants to install 1,852 conservation projects on their farms to prevent soil erosion, manage crop nutrients, and protect water quality. Grants cover up to 87.5% of the cost to install more than 30 eligible best management practices, including: cover crops, grassed waterways, manure storage structures, and stream protection practices. Farmers receiving these grants invested about \$700,165 of their own money into projects that will prevent an estimated 2.6 million pounds of nitrogen, 23,963 pounds of phosphorus, and 4,712 tons of soil from entering Maryland waterways.

Projects Financed with Special Funds. MACS receives funding from the Chesapeake Bay Restoration Fund and the Chesapeake Bay 2010 Trust Fund to finance highly-valued best management practices included in Maryland's Bay restoration commitments. These include the state's popular Cover Crop Program and the contract signing incentive payment for the Conservation Reserve Enhancement Program, a federal-state partnership program that provides incentives to farmers to protect environmentally sensitive land. Portions of the Manure Transport Program, certain best management practices and grants to help farmers cover the cost of injecting manure into the soil, are financed using these funding sources.

- **Cover Crop Program.** The Cover Crop Program is the largest and most popular cost-share program offered by MACS. It provides farmers with grants to help offset seed, labor, and equipment costs associated with planting fall cover crops to control erosion, recycle unused plant nutrients, build healthy soils, and protect water quality in the Chesapeake Bay and its tributaries. During the 2018-2019 planting season, farmers planted 362,976 acres of traditional cover crops statewide using approximately \$17.1 million in MACS cost-share grants. This figure does not include cover crops planted for harvest, which were not eligible for cost-share this year. For the second straight year, planting was hindered by excessive rainfall resulting in poor field conditions.
- **Healthy Soil Biomass Pilot Program.** To make the best of an especially tough planting season, the program offered a Healthy Soil Biomass Pilot Program for farmers who were approved to participate in the Cover Crop

Program, but were unable to plant all of their acreage. This performance-based program paid farmers a flat rate of \$45 per acre to plant qualifying small grains in leftover, unplanted fields to create a healthy soil biomass and protect local water quality. Farmers enrolled in this program planted approximately 15,000 acres of cover crops, however only two-thirds of this acreage passed the performance-based inspection requiring the establishment of a healthy soil biomass. Based on the results of this pilot program, the department will offer an extended season incentive option in 2019-2020 for farmers who terminate their cover crops after May 1.

- **Manure Transport Program.** The Manure Transport Program provides grants to help poultry, dairy, beef, and other livestock producers transport manure away from farms with high soil phosphorus levels. The program experienced continued growth in FY 2019 as farmers transitioned to Maryland's Phosphorus Management Tool regulations. During the year, the transport program provided Maryland farmers with \$1,070,479 million in grants to transport a record 249,840 tons of manure to approved farms and businesses. Delmarva poultry companies provided \$373,875 in matching funds to transport poultry.
- **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. MACS provides participating landowners with grants to establish conservation practices on environmentally-sensitive land that they have agreed to no longer till or graze. During the fiscal year, MACS provided landowners with \$60,821 in grants to install 17 CREP-related projects. Special funds are used to award a \$100 per acre signing bonus to landowners who enroll or re-enroll land in the program. During the year, landowners received \$280,342 in signing bonuses during a shortened acreage enrollment period.
- **Manure Injection Program.** Injecting manure below the soil surface, as opposed to spreading it on top, helps prevent nutrient runoff, reduces odors, and preserves beneficial surface residue. In FY 2019, the program provided 53 farmers with \$338,447 in cost-share grants to inject manure into the soil.

DISTRICT OPERATIONS

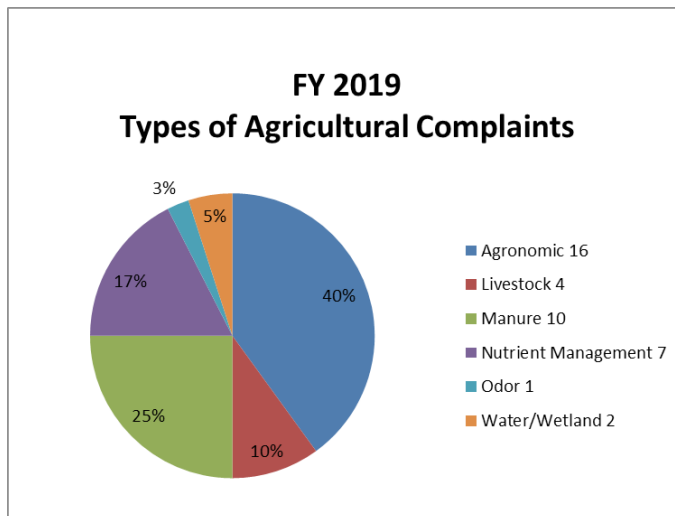
This program provides operating funds and staffing support to the state's 24 soil conservation districts for promotion and delivery of local soil conservation and water quality programs to the agriculture community.

Technical Assistance. In FY 2019, the program funded 75 technical positions throughout the state's 24 local soil conservation district offices. An additional 35 agricultural technicians and conservation planners were funded by grants provided by the Chesapeake and Atlantic Coastal Bays Trust Fund.

Soil Conservation and Water Quality Plans. Technical staff worked with farmers to develop Soil Conservation and Water Quality Plans to protect natural resources on farms. These plans are required by many state and federal programs as a condition for receiving cost-share funds. The Maryland Department of the Environment (MDE) requires certain livestock and poultry farmers to implement Soil Conservation and Water Quality Plans as part of its Maryland Animal Feeding Operation (MAFO) permit requirements. In addition, Soil Conservation and Water Quality Plans are included in Maryland's Watershed Implementation Plan (WIP) to restore the health of the Chesapeake Bay. In FY 2019, 884,130 acres of agricultural land were managed using Soil Conservation and Water Quality Plans. Also during the year, technical staff helped farmers install 2,002 best management practices on their farms to control soil erosion, manage nutrients, and protect water quality. These best management practices were supported by both state and federal financial assistance programs.

Enforcement. Agricultural complaints concerning water pollution 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, MDA and MDE worked jointly with soil conservation districts to investigate farm management complaints and take action against polluters when necessary. In FY 2019, the program received 40 complaints concerning odor, livestock, manure, sediment, nutrient management, and wetlands and stream disturbance issues. Twenty-nine of these complaints were corrected or closed, 10 complaints are pending, and one enforcement action was initiated.



Agricultural Water Management. Drainage ditches are common on Maryland's Eastern Shore, where 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. This network drains approximately 183,000 acres of agricultural and developed land. The District Operations Program coordinates the activities of public drainage associations to ensure that operation and maintenance plans are in good working order and that best management practices are protecting water quality.

Permitting and Compliance Assistance. During the year, program staff helped farmers comply with MDE's Animal Feeding Operation (AFO) permit. Field staff prepared Comprehensive Nutrient Management Plans (CNMPs) for farmers; secured cost-share assistance to install best management practices; provided status updates; organized partner agency site visits; performed site inspections; and conducted pre-transfer analyses to ensure a smooth transition as poultry farms are constructed, transferred, sold, and decommissioned. The high frequency of farm sales and transfers continues to challenge staff resources. In FY 2019, program staff worked with real estate agents, lending institutions, and integrators to ensure positive outcomes for all parties.

In FY 2019, MDE announced proposed changes to its Animal Feeding Operation permit regulations. The General Discharge Permit for AFOs is revised and reissued every five years. It is set to expire November 30, 2019. Farmers who are not

registered under the current permit will not be allowed to extend permit coverage into the 2019—2024 cycle. The AFO permitting process is complicated and can directly impact a farmers’ bottom line. Program staff worked with farmers throughout the year to provide assistance with the permitting process. By the end of the fiscal year, fewer than a dozen farms out of approximately 600 regulated farms were still in need of permit assistance.

Recognizing the current struggles of dairy farmers, program staff continued to provide these operations with direct assistance to register for AFO permits. In FY 2019, the program strengthened its communications network, developed new record keeping tools, and began writing new compliance guidebooks for dairy and livestock operations.

Maryland Envirothon. The State Soil Conservation Committee (SSCC) and soil conservation districts are primary sponsors of the Maryland Envirothon — an outdoor natural resources competition that challenges high school students to identify and categorize living resources, perform soil surveys, and solve other complex natural resource issues. Students are trained and tested in aquatics, forestry, soils, wildlife, and a special environmental issue that changes from year to year. The special issue for 2019 was “Agriculture and the Environment: Knowledge & Technology to Feed the World.” Approximately 1,000 students from 15 counties across Maryland took part in this year’s competition. The event was held June 19-20 at St. Mary’s College in Southern Maryland. A five-member team of students from Calvert County won the Maryland competition and went on to place tenth out of 53 teams participating in the National Envirothon competition held at North Carolina State University in Raleigh.

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 restore the health of the Chesapeake Bay, as required by the Chesapeake Bay’s Total Maximum Daily Load (TMDL) cleanup plan.

Maryland and other states that drain into the Bay are required under the Chesapeake Bay’s TMDL to reduce the amount of nitrogen, phosphorus, and sediment entering its waters to levels that will allow the estuary to be removed from the federal government’s list of “Impaired Waters.” Established by the Environmental Protection Agency (EPA) in December 2010, the Chesapeake Bay TMDL is designed to ensure that all

pollution control measures needed to fully restore the health of the Bay and its tidal rivers are in place by 2025.

Phase III Watershed Implementation Plan (WIP). Maryland submitted its final Phase III WIP to the EPA in April 2019. The Phase III WIP builds on previous plans and includes considerable public input. The plan’s agricultural component was developed based on stakeholder feedback obtained through a series of public meetings held over the summer and fall in every Maryland county. Follow-up meetings were organized to address concerns once stakeholders had an opportunity to review the draft plan. Overall, Maryland’s WIP III is a solid, realistic, and achievable plan for meeting Maryland’s nutrient and sediment reduction goals. The plan is the first to take into account the potential impacts of climate change. A midpoint assessment of Maryland’s cleanup progress showed that while the state is on track to meet its phosphorus and sediment reduction goals, additional focus is needed to reduce nitrogen levels in the Bay. Accordingly, the agricultural component of Maryland’s plan will focus on the need to lower nitrogen levels in the Bay while continuing to build on previous statewide and local efforts. Implementation will begin once the final Phase III WIP is approved by the EPA.

Agricultural Representation. MDA representatives serve on a number of Chesapeake Bay Partnership workgroups, where they provide technical information and input concerning restoration goals, policies, programs, and research needed to reduce agricultural pollutants entering the Bay and its tributaries. The department has chaired the State’s Agriculture Workgroup since 2018.

Nutrient Trading. MDA and MDE continue their collaborative efforts to establish a voluntary, market-based program to promote the use of nutrient and sediment trading as a viable option for achieving the state’s water quality goals. During the year, the platform’s online agricultural assessment tool was calibrated with the latest Phase 6 version of the Chesapeake Bay Program Watershed Model. In addition, changes to the platform’s registry component were compiled. The State of Pennsylvania indicated that it plans to join Maryland in using the online trading platform to conduct trading activities. This will create consistency between the two states and lay the groundwork for possible future interstate transactions.

Conservation Tracker. Conservation Tracker is an integrated database management system that tracks agricultural best management practices installed on Maryland farms to protect and restore the Bay. The system tracks both publicly and privately funded best management practices outlined in

Maryland's WIP. Information obtained through Conservation Tracker is regularly reported to the Chesapeake Bay Program for use in assessing restoration progress. As part of the Chesapeake Bay TMDL Midpoint Assessment, the department was required to strengthen accountability and transparency of best management practices installed on Maryland farms. In response, the program developed a six-member verification task force to provide an objective, third-party review of all best management practices installed since 1985. By the end of the year, the verification task force had reviewed approximately 13,800 best management practices. Seventy-seven percent of these practices continue to meet quality standards, approximately 20% were no longer present on the farm, and 3% required maintenance.

Agricultural Certainty Program. Maryland's Agricultural Certainty Program rewards farmers who install multiple best management practices on their farms to protect natural resources. Participating farmers receive a 10-year exemption from new environmental laws and regulations in return for voluntarily installing conservation measures that help the state meet its 2025 water quality goals ahead of schedule. During FY 2019, MDA continued to promote the program to the farm community and began planning for the next round of required training sessions on the use of the re-calibrated version of the online assessment tool.

Research and Special Projects. The Watershed Implementation Program manages multiple ongoing research and technical assistance grants totaling \$1.5 million. The projects demonstrate new and innovative ways to improve manure management, reduce nutrient runoff, control soil erosion, and safeguard water quality.

MARYLAND NUTRIENT MANAGEMENT PROGRAM

The Nutrient Management Program protects water quality in the Chesapeake Bay and its tributaries by ensuring that farmers and lawn care professionals apply fertilizers, animal manure, and other 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 oversees a certification and licensing program for lawn care professionals, enforcement activities, continuing education classes for certified professionals, and a homeowner education program.

Agricultural Nutrient Management Program. Maryland law requires farming operations that generate \$2,500 in gross income or have 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. To further protect water quality, farmers with fields containing high soil phosphorus levels are required to transition to the new Phosphorus Management Tool over the next several years. This updated tool identifies fields at risk for phosphorus loss and prescribes best management practices that prevent the additional buildup of soils that are already saturated.

Phosphorus Management Tool. The Phosphorus Management Tool (PMT) is 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. Farms with soils that are over certain thresholds will be limited in how much phosphorus can be applied to their fields. High soil phosphorus levels are typically found on farms that have used manure or poultry liter as a crop nutrient over an extended period.

In November 2018, the PMT Advisory Committee voted to have an economic analysis performed to evaluate the potential impact of implementing the PMT on farmland with high soil phosphorus levels. Based on the study's findings, the committee may ask the Maryland Agriculture Secretary to provide farmers with a one-year extension to implement the PMT. This extension is allowed under certain circumstances by Maryland's PMT regulations. The program will notify farmers of the results of the analysis on its website at mda.maryland.gov.

As of June 30, 2019:

- The program has compiled soil phosphorus data for 1,120,668 acres of regulated farmland. Approximately 20% of farm fields tested have soil phosphorus levels that will require use of the PMT.
- The program continues to target farms that have not submitted soils data for audits and inspections.
- Three tier groups have been established for farmland required to transition to the PMT based on average soil phosphorus levels. Tiers govern how long a farmer has to transition to the PMT.

- The high risk and medium risk groups have already begun transitioning to the PMT. The low risk group will begin transitioning to the PMT in 2020. All farm fields with high soil phosphorus levels will be required to implement the PMT fully by 2022, unless the deadline is extended.

Compliance and Enforcement. Maryland farmers are required to follow nutrient management plans that specify 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 for their own operations. Farmers are required to update their nutrient management plans before they expire, submit Annual Implementation Reports summarizing nutrient applications for the previous year, and most importantly, follow their nutrient management plans. The program’s team of eight nutrient management specialists analyzes Annual Implementation Reports and conducts site visits to verify that operators are following their plans. The following are enforcement figures for FY 2019:

- **Nutrient Management Plan Submissions.** New farming operations are required to submit copies of their initial nutrient management plans to the department. This is the first step toward achieving compliance. The program actively works to locate “new farming operations” and pursues enforcement actions against operators who have not met this initial requirement.
- **Annual Implementation Reports.** Farmers are required to update their nutrient management plans before they expire and submit Annual Implementation Reports to the department by March 1, summarizing nutrient applications for the previous calendar year. By the end of the fiscal year, approximately 97% of regulated farmers managing about 1.3 million acres of land had submitted these reports. The program issued \$36,250 in fines against 145 operators for late or missing implementation reports.
- **On-Farm Audits and Inspections.** During the fiscal year, enforcement specialists conducted 1,035 on-farm audits, a 30% increase from 2018. Sixty-eight percent of these farms were in compliance. The program is actively pursuing full compliance for all audited operations. In FY 2019, \$21,700 in fines were issued against 30 operators for violations.

Certification and Licensing Programs. The following activities took place in FY 2019:

- **Nutrient Management Exam Training.** The Nutrient Management Program provided two nutrient management certification exams attended by 36 individuals.
- **University of Maryland Consultant Program.** The University of Maryland (UMD) Consultant Program funded 20 UMD advisors to provide farmers with nutrient management plans free of charge.
- **Consultant Certification.** MDA certified 19 new consultants to write nutrient management plans for farmers and renewed 146 certifications.
- **Farmer Training and Certification.** MDA trained and certified 23 farmers to write nutrient management plans for their own operations and renewed 125 certifications.
- **Nutrient Applicator Voucher Training.** The department partnered with the University of Maryland Extension to conduct a series of statewide voucher training sessions and issued 298 vouchers.
- **Continuing Education.** Certified consultants are required to take 12 hours of continuing education credits every three years. During the year, 116 continuing education events were attended by 2,541 individuals.

Turfgrass Nutrient Management Program. Maryland’s Lawn Fertilizer Law requires lawn care professionals hired to apply fertilizer to turf to be certified by the department or work under the direct supervision of an individual who is certified. The law applies to professionals hired to fertilize home lawns, as well as individuals responsible for turf management at golf courses, public parks, airports, athletic fields, businesses, cemeteries, and other non-agricultural properties. The law requires both 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 UMD fertilizer recommendations.

The following activities took place in FY 2019:

- **Certification and Licensing.** Seven professional fertilizer applicator exams were offered across the state and attended by 127 lawn care professionals. The program issued 892 business licenses and 1,536 Professional Fertilizer Applicator Certificates. An additional 1,546 lawn care company employees have

been trained to apply fertilizer under the supervision of a certified professional.

- **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 year, the program offered 12 recertification courses for turfgrass professionals and approved numerous training opportunities offered by private industry and trade groups. Additionally, a free, on-demand prerecorded webinar session was posted online to make recertification easier.
- **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 program had received activity reports for 919 businesses representing a 97% compliance rate.
- **Enforcement Activities.** During the year, 192 record reviews were conducted. Seventy-seven of the firms reviewed were in compliance.
- **Homeowner Outreach.** The program continued to educate citizens about Maryland's Lawn Fertilizer Law through partnerships with UMD Master Gardeners, news releases, social media, online, and at public events. During the year, the program updated several pieces of collateral. The "How to Test Your Soil", "Backyard Actions for a Cleaner Chesapeake Bay", "Maryland's Fertilizer Law", and "How to Work with a Lawn Care Professional" brochures were all updated, reprinted, and distributed at community and public events.

MARYLAND DEPARTMENT OF AGRICULTURE BUDGET ALLOCATION FOR FY 2019

	GENERAL	SPECIAL	FEDERAL	BONDS	TOTAL
Operating	\$34,473,725	\$52,554,867	\$5,573,174		\$92,601,766
Capital		\$48,976,000			\$48,976,000
TOTAL	\$34,473,725	\$101,530,867	\$5,573,174		\$141,577,766
Bonds					
MACS				\$8,500,000	\$8,500,000
Animal Health Labs				\$4,975,000	\$4,975,000
Total				\$13,475,000	\$13,475,000

LONG SERVICE AWARDS

MARYLAND DEPARTMENT OF AGRICULTURE HONORS EMPLOYEES WITH LONG SERVICE AWARDS

In early October, the Maryland Department of Agriculture honored 48 employees for their years of dedicated service to the department and to the state. Of the 48 employees being honored – 11 have 30 or more years of service and three of those individuals have more than 40 years. All together, these 48 employees represent 1,900 years of public service and approximately 3.6 million hours worked and about 45,600 paychecks.

The following is a listing of department employees by county who were recognized with long-service awards.

Anne Arundel

- Donna Hill, Marketing, 30 years
- Derrick Howe, State Chemist, 25 years
- Offiah Offiah, State Chemist, 25 years
- Sheila Saffell, Fiscal Services, 25 years
- Mary Darling, Human Resources, 20 years
- Jennifer Schaafsma, Maryland Agricultural Water Quality Cost-Share (MACS) program, 20 years
- Karen Fedor, Marketing, 15 years
- Therese Montano, Food Quality Assurance, 10 years
- Kimberly Abramo, Animal Health, 5 years
- Alisha Mulkey, Resource Conservation, 5 years

Baltimore City

- Aaron Webb, Weights & Measures, 45 years
- Sonya Gaynor, State Chemist, 25 years
- Joseph Boako, Weights & Measures, 20 years
- Kay-Megan Washington, Marketing, 5 years

Baltimore County

- Kenneth McManus, State Chemist, 35 years
- Theresa Brophy, Marketing, 30 years
- Rona Flagle, Resource Conservation, 30 years
- Erika Nix, State Chemist, 15 years
- Russell Noratel, Pesticides, 10 years
- Joseph Bytella, State Chemist, 5 years
- Kelly Love, Pesticides, 5 years

Calvert

- Jennifer David, Resource Conservation, 20 years

Caroline

- Deborah Minnich, Resource Conservation, 25 years
- Jeffrey Dean, Resource Conservation, 5 years

Dorchester

- Ronald Mitchell, Mosquito Control, 30 years

Harford

- Darren Alles, Nutrient Management, 20 years
- Cybil Preston, Plant Protection and Weed Management, 15 years
- Ellen James, Horse/Vet Board, 5 years

Howard

- Harwood Owings, State Chemist, 50 years
- Kimberly Arnold, Animal Health, 30 years
- Elizabeth Koncki, Weights & Measures, 10 years

Montgomery

- Berhanu Argaw, Pesticides, 10 years

Prince George's

- Christal Stanbrough, Animal Health, 45 years
- Roshawn Burgess, Resource Conservation, 20 years
- Christopher Hickerson, Central Services, 5 years

Queen Anne's

- Lynne Willson, Resource Conservation, 35 years
- Gwendolyn Schindler, Human Resources, 25 years
- Phyllis Riggan, Maryland Agricultural Water Quality Cost-Share (MACS) program, 20 years

St. Mary's

- John Lyon, Resource Conservation, 5 years

Talbot

- Levin Schwaninger, Resource Conservation, 20 years

Wicomico

- Mark Taylor, Plant Protection and Weed Management, 35 years
- Daniel Schamberger, Mosquito Control, 25 years
- Barbara Kunie, Animal Health, 20 years

Other

- Charles Hayes, Resource Conservation, 20 years, West Virginia
- Stephanie Knutsen, Resource Conservation, 20 years, Delaware
- Paul Nuwer, Mosquito Control, 20 years, Delaware
- Jorge Velasquez, Food Quality Assurance, 5 years, Delaware
- Rhonda Cagle, Food Quality Assurance, 5 years, Delaware



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Wayne A. Cawley, Jr. Building

50 Harry S Truman Parkway

Annapolis, MD 21401-7080

Baltimore/Annapolis 410-841-5700

Washington Metro Area 301-261-8106

Maryland Relay Service (TTY Users) 800-735-2258

Toll Free 800-492-5590

Fax 410-841-5914

www.mda.maryland.gov

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