

**Agricultural Inspections**  
**July 1, 2018 through June 30, 2019**

This document summarizes the accomplishments of the expanded agricultural inspection program from the timeframe July 1, 2018 through June 30, 2019. There were not many changes to the program in 2018-2019; however, 2018-2019 was the first full year the centralized geospatial database was used as the method of data collection and the historic tabular data was added to the application for enhanced analysis. Reporting of Act 38 Nutrient Management Plan Approval data was also added to the centralized geospatial database.

**Table 1. Total number of PA farms in the Chesapeake Bay Watershed as identified in the 2017 USDA Agriculture Census and total PA acres in agriculture land use as identified by the Bay Program.**

<b>2017 USDA Ag Census Farms in PA Chesapeake Bay Watershed</b>	<b>30,193</b>
<b>2018 Ag Land Use Acres in PA Chesapeake Bay Watershed</b>	<b>3,067,629</b>

**Table 2. Farms and agriculture acres inspected within Pennsylvania's portion of the Chesapeake Bay Watershed Since the Inception of the Expanded Agricultural Inspection Program**

	<b>2016-2017</b>	<b>2017-2018</b>	<b>2018-2019</b>
<b>Total Farms Inspected</b>	2,823	2,924	2,951
<b>Total Acres Inspected</b>	393,426 (12.7%)	329,468 (10.6%)	315,823 (10.3%)
PA Bay Farms Inspected under the Act 38 Program	743	814	886
PA Bay Ag Acres Inspected under the Act 38 Program	147,762	145,680	138,139
PA Farms Inspected under the CB Ag Inspection Program	2,080	2,110	2,065
PA Acres inspected under the CB Ag Inspection Program	245,664	183,788	177,684

The total number of farms inspected in 2018-2019 increased by 27 over the previous year's total number of farms inspected, while the acreage inspected decreased by 13,645 acres compared to the previous year. Additional comparisons between past years' inspection summaries show that the average farm size inspected under the Chesapeake Bay Ag Inspection program was about 86 acres as compared to 87 acres in 2017-2018 and 118 acres in 2016-2017.

**County Analysis**

To identify localized trends, a county-by-county analysis was completed across the Chesapeake Bay Watershed for all Chesapeake Bay Agricultural Initial Inspections completed for the life of the program. The compliance data collected during inspections conducted in 2018-2019 were analyzed to demonstrate that the work performed at the county conservation districts and DEP Regional Offices facilitated prompt resolution to violations noted on the inspection report. Additionally, the county-by-county analysis will inform the evaluation process as we continue to improve program implementation strategies.

## County Analysis: Demographics

Chesapeake Bay Program land use-land cover data shows that the top five counties with the greatest acreage of agricultural land use are as follows: Lancaster, Bradford, Franklin, York, and Bedford<sup>1</sup>. By the number of estimated farms in the Chesapeake Bay Watershed, the top five counties are as follows: Lancaster, York, Franklin, Bradford, and Cumberland<sup>2</sup>.

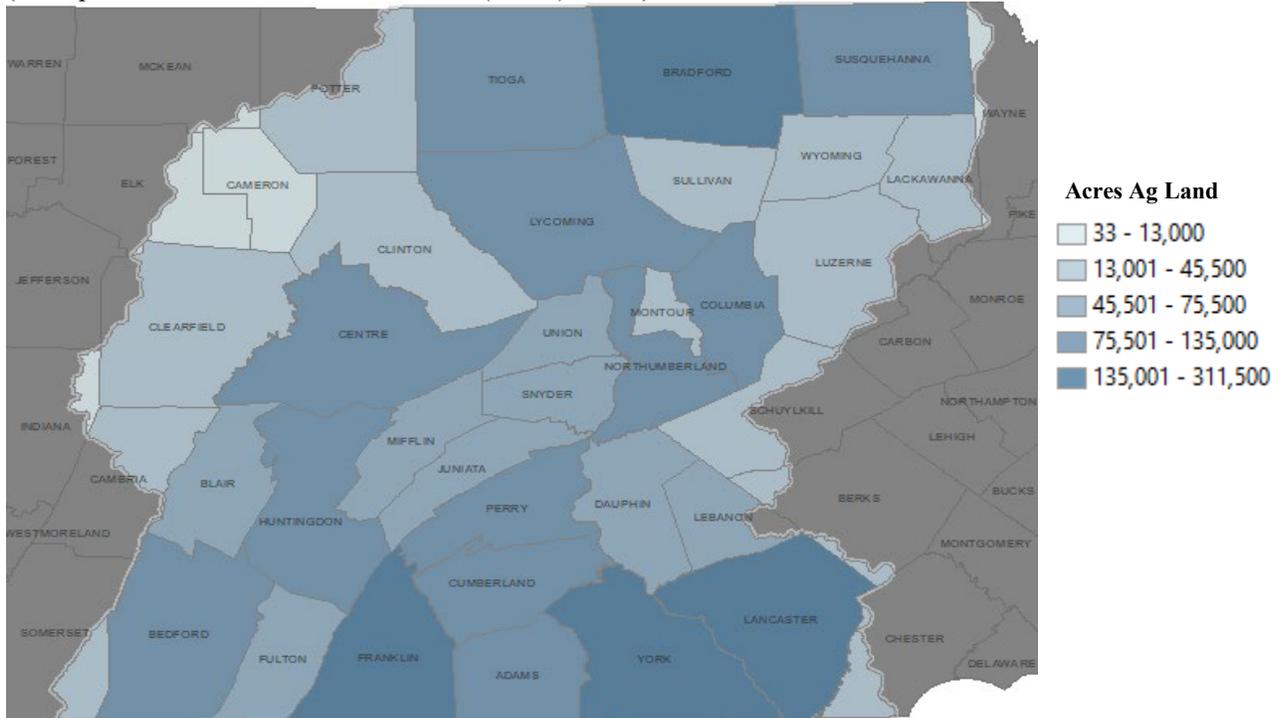
**Table 3: Number of Farms and Agricultural Land Use Acres in the Chesapeake Bay Watershed by PA County**

Pennsylvania County	Estimated Number of Farms in CBWS <sup>2</sup>	Agricultural Land Use Acres in CBWS <sup>1</sup>
Adams	1146	132,851.74
Bedford	1158	134,482.64
Berks	18	20,506.90
Blair	496	66,225.97
Bradford	1447	209,213.98
Cambria	240	29,502.21
Cameron	37	2,543.11
Carbon	(less than 1)	32.60
Centre	1023	100,414.23
Chester	311	38,429.52
Clearfield	450	44,945.67
Clinton	267	35,658.63
Columbia	779	97,203.30
Cumberland	1260	121,325.09
Dauphin	692	65,938.87
Elk	78	3,838.12
Franklin	1580	203,800.23
Fulton	544	66,500.73
Huntingdon	714	91,798.68
Indiana	75	7,219.35
Jefferson	(less than 1)	248.99
Juniata	670	61,830.20
Lackawanna	229	20,799.35
Lancaster	5082	311,103.41
Lebanon	995	75,463.14
Luzerne	386	44,482.57
Lycoming	1043	92,987.25
McKean	7	196.50
Mifflin	711	61,261.56
Montour	356	36,273.90
Northumberland	728	93,983.60
Perry	759	89,802.77
Potter	284	21,777.13
Schuylkill	344	45,419.99
Snyder	864	65,039.71
Somerset	160	13,278.35
Sullivan	190	23,275.69
Susquehanna	908	111,140.94
Tioga	1055	128,995.86
Union	574	54,127.42
Wayne	55	4,682.04
Wyoming	410	38,588.00
York	2067	200,438.80
TOTALS	30,193	3,067,628.73

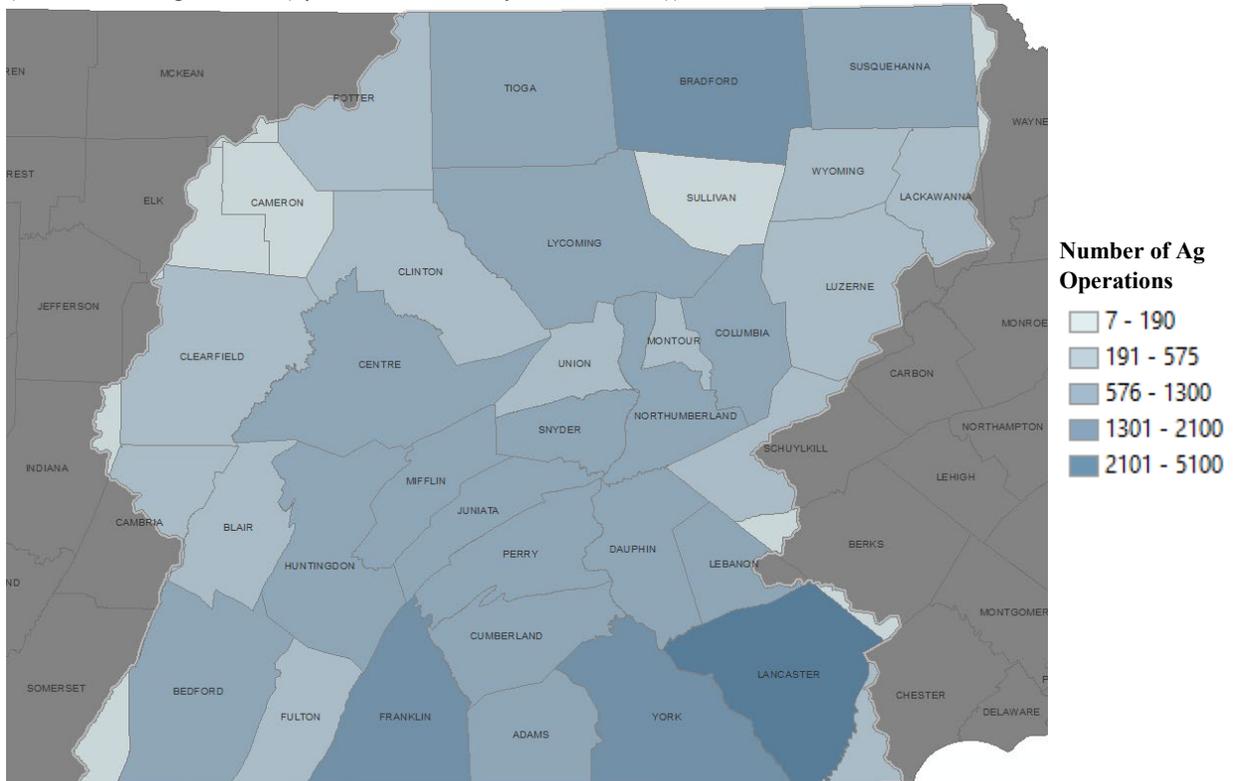
<sup>1</sup> Chesapeake Assessment and Scenario Tool (CAST)

<sup>2</sup> Number of farms in the Chesapeake Bay Watershed (CBWS) in each county is estimated by taking total county farm number identified in the 2017 USDA Agriculture Census by the percentage of county acres in the CBWS.

**Figure 1: Total Acres in Agricultural Land Use in Chesapeake Bay by County**  
(Chesapeake Assessment and Scenario Tool (CAST) - 2018)



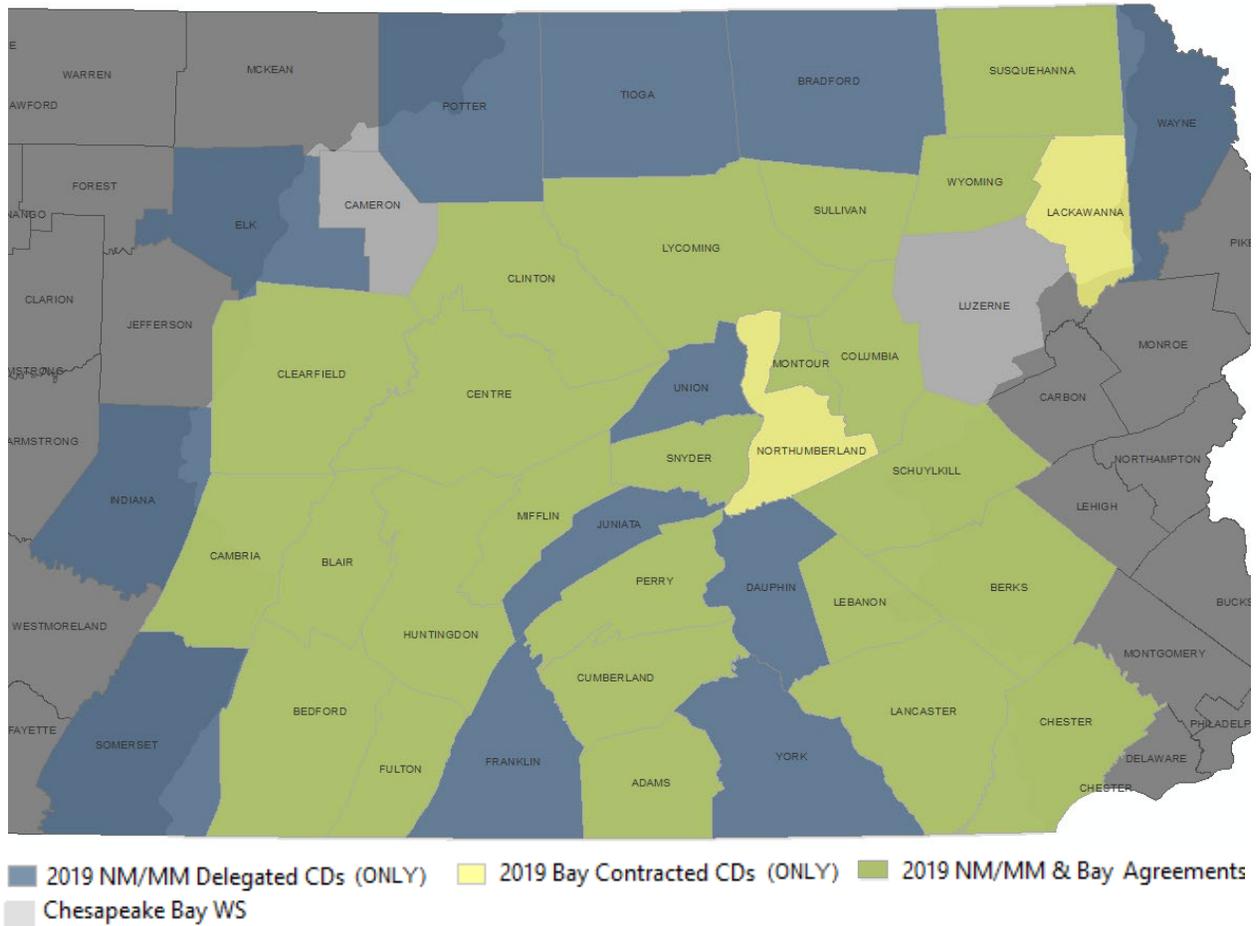
**Figure 2: Total Number of Farm Operations in the Chesapeake Bay Watershed by County**  
(2017 USDA Ag. Census (by Percent of County in Watershed))



### County Analysis: Program Information

In 2018-2019 there were 26 conservation districts (CDs) in the Chesapeake Bay Watershed participating in the Chesapeake Bay Agriculture Initial Inspection Program (Bay Contracted CDs). Additionally, there were 36 Nutrient and Manure Management (NM/MM) delegated conservation districts in the Chesapeake Bay (NM/MM Delegated CDs). Only two conservation districts in the Chesapeake Bay Watershed, Luzerne and Cameron, did not participate in either program in 2018-2019. In counties that are not delegated NM/MM Program and/or the Chesapeake Bay Program, the State Conservation Commission (SCC) and the Department of Environmental Protection (DEP) perform the duties and functions under those programs, respectively.

**Figure 3: Nutrient Management/Manure Management (NM/MM) Delegated CDs and Bay Contracted CDs**



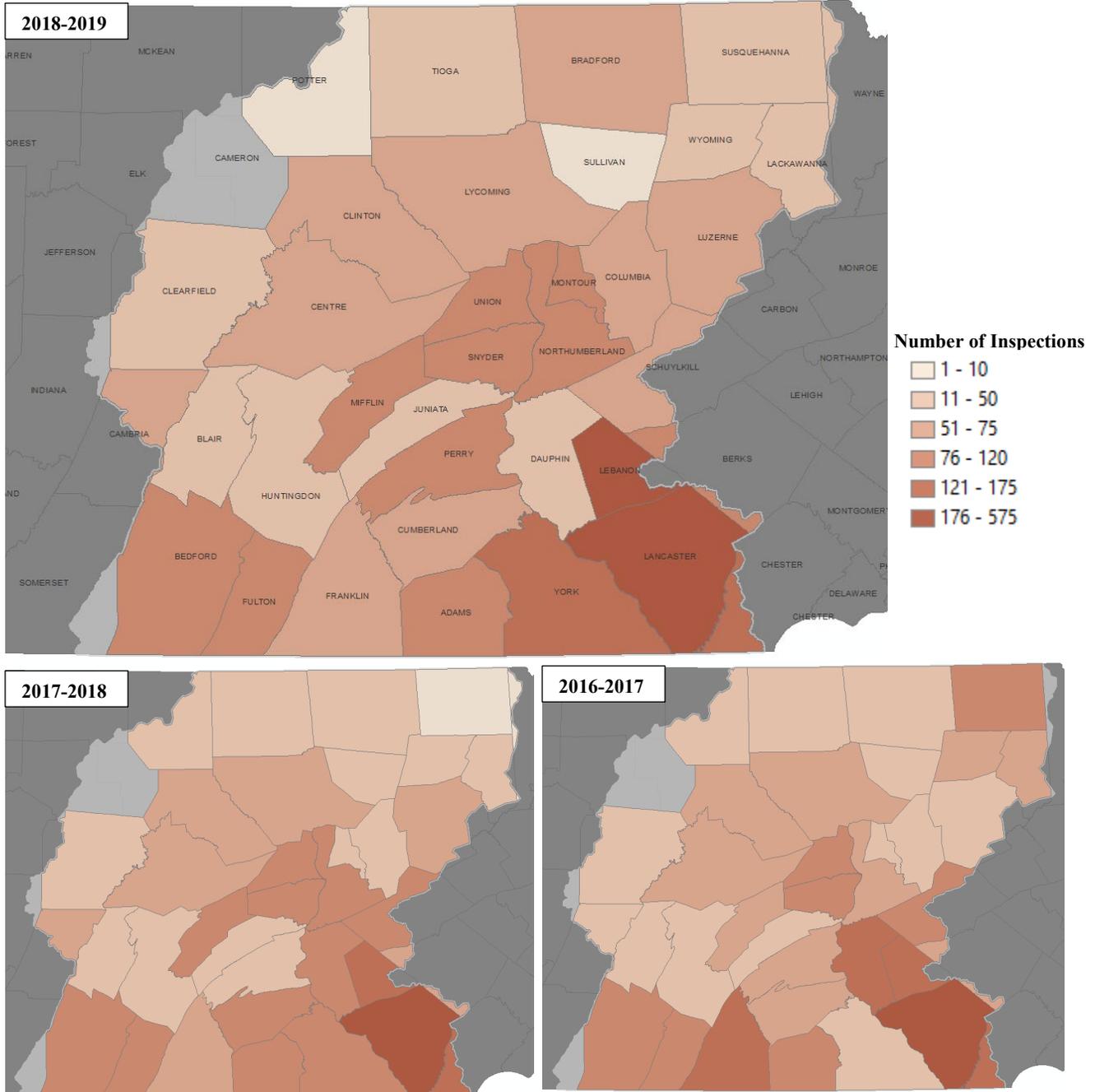
### County Analysis: Inspection Data

The Phase 3 Chesapeake Bay Watershed Implementation Plan introduced the concept in which counties in the Chesapeake Bay are tiered by the necessary nutrient and sediment reductions. Each tier constitutes a total of 25% of the necessary statewide reductions.

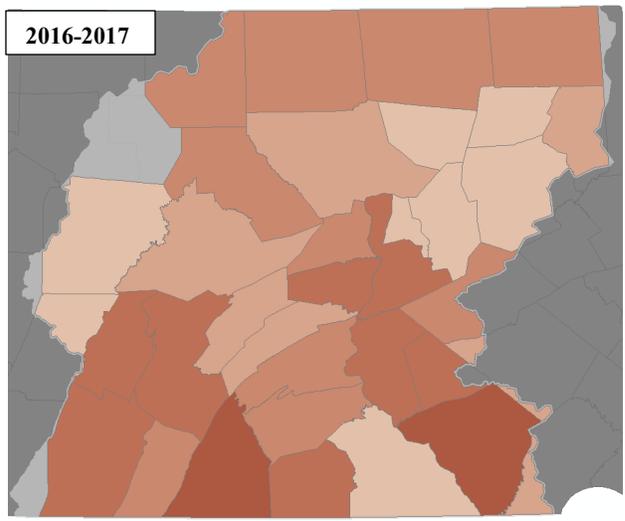
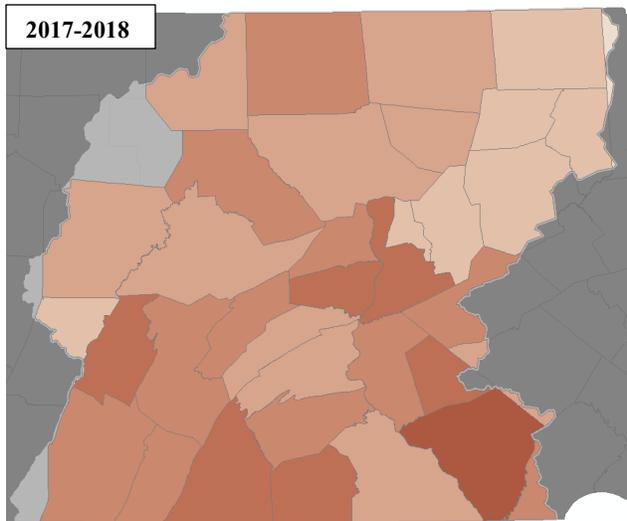
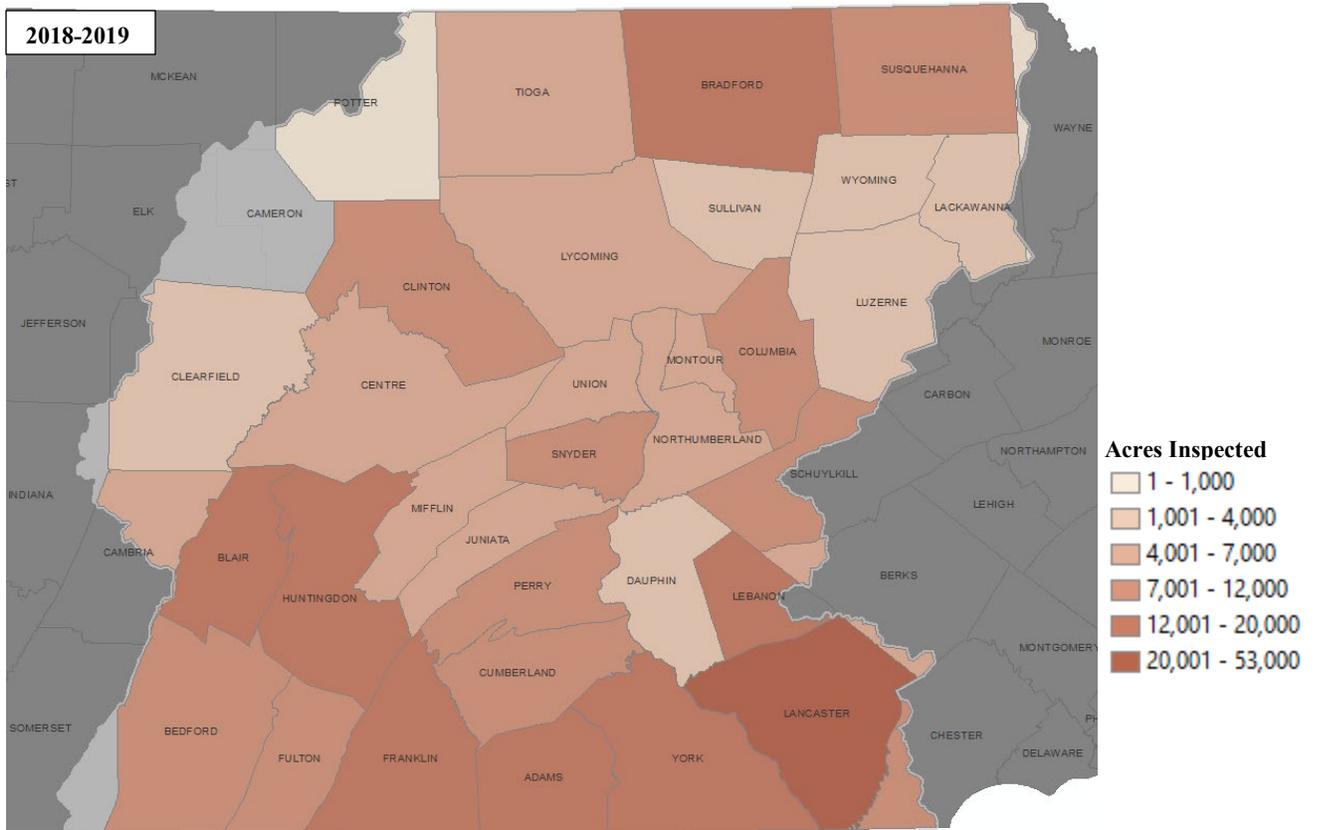
Since 2016-2017, Lancaster (Tier 1) and Lebanon (Tier 2) Counties have consistently ranked in the top 5 counties for number of inspections completed and total acres inspected. Franklin County (Tier 2) has

consistently ranked in the top 5 counties for acres inspected, and Chester County (Tier 4) has consistently ranked in the top 5 counties for number of inspections completed. As DEP has shifted inspection strategies, both the number of inspections completed and the total acres inspected in York County (Tier 1) have continued to increase over time.

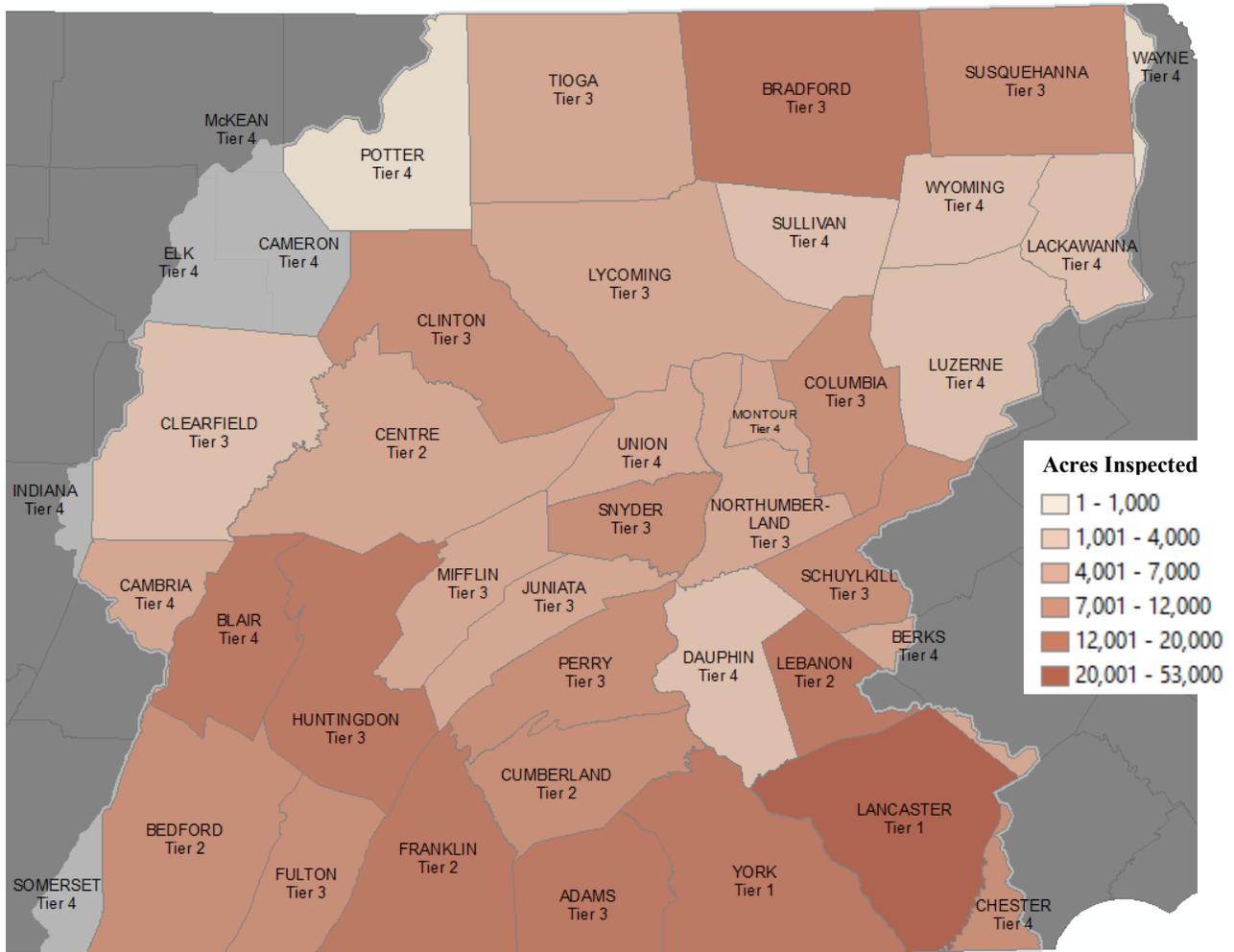
**Figure 4: Total Number of Inspections Completed in Chesapeake Bay by County**



**Figure 5: Total Acres Inspected in the Chesapeake Bay by County**



**Figure 6: Total Acres Inspected 2018-2019 by Phase 3 WIP County Tiers**



**Compliance**

The compliance rate for Act 38 plan development and implementation for the Chesapeake Bay Watershed was found to be 86% at the time of inspection. For agricultural operations that were inspected as part of the Chesapeake Bay Agriculture Initial Inspection Program, farm planning compliance rates at the time of the initial inspection were found to be 63% for MMPs and 64% for Ag E&S plans. With follow-up from the conservation districts and DEP, the compliance rate for these operations increased to 97%.

Not included in the above results are the verifications performed via the Resource Enhancement and Protection (REAP) Program, which is administered by the State Conservation Commission. Since 2007, REAP has approved over 3,300 applications from almost 2,600 farmers (farmers can apply more than once to the program). A farmer must have their environmental compliance status verified each time they apply.

**Chesapeake Bay Agricultural Inspection Program: Compliance and Enforcement**

Compliance rates at the time of initial inspection for Manure Management and Agricultural Erosion and Sediment Control (Ag E&S) Plans are comparable to the previous years. It is important to note the

percentage found to have had planning and/or technical assistance provided by another party (agency or private consultant) to develop the plan.

**Table 3. The percent of administratively complete plans found at the time of initial inspection for farms required to have and implement the plan(s).**

<b>Manure Management Plan</b>	<b>Percent of Total Required</b>
Administratively Complete at the time of Initial Inspection	63%
Planning/Technical Assistance Provided	85%
<b>Agricultural Erosion and Sediment Control (Ag E&amp;S) Plan</b>	<b>Percent of Total Required</b>
Administratively Complete at the time of Initial Inspection	64%
Planning/Technical Assistance Provided	92%

**It should be noted that 97% of all farms inspected in 2018 – 2019 met the planning obligations by the end of the state fiscal year.**

**Table 4. The total referrals to the DEP Bureau of Clean Water for continued non-compliance for plan violations, along with further enforcement actions taken on those operations.**

	<b>2016-2017</b>	<b>2017-2018</b>	<b>2018-2019</b>	<b>Total</b>
<b>Referrals to DEP Bureau of Clean Water</b>	21	87	66	174
<b>Notices of Violation</b>	21	87	66	174
<b>Field Orders</b>	0	22	47	69
<b>Consent Order and Agreement</b>	0	1	2	3
<b>Closed Cases</b>	7	42	64	113

### **BMP Data Collection and Tracking**

The Chesapeake Bay Agricultural Inspection Program will again report the best management practices identified at the time of inspection to the Chesapeake Bay Program for annual progress. These best management practices include reporting the implementation of Manure Management Plans, manure storages, barnyard runoff controls, forested and grassed buffers, stream fencing, and rotational and prescribed grazing. Other practices may be collected by the inspector if the farmer has implemented those practices and is willing to provide the information.

The Chesapeake Bay Program Partnership has instituted credit durations for all best management practices reported for the states' annual progress. The Nutrient Management best management practices for nitrogen and phosphorus are considered annual credits, therefore the states must report progress toward meeting those goals annually. While those farms and acres inspected via the Act 38 Nutrient Management Program typically remain constant over time, compliance is assessed annually. The rate of compliance for Act 38 Nutrient Management plan implementation was approximately 86% at the time of the inspection. Further follow-up activities are required as part of the compliance assessment of Act 38 regulated farms, with the vast majority of those found to be out of compliance coming into compliance within 6 months after the annual inspection.

The farms and acres inspected under the Chesapeake Bay Agricultural Inspection Program are unique operations. This means that the operations had not been re-visited, unless a follow-up inspection was needed. Out of the total 2,065 farms inspected, 1,617 were inspected by conservation districts and 448 were inspected by DEP regional offices.

Since November of 2017, we have included a voluntary records check for farms which indicate if they are following their Manure Management Plans. From the farms inspected 2018-2019 the Chesapeake Bay Inspection Program will be reporting over 29,450 acres of implemented Manure Management Plans, which meets the requirements of the Nutrient Management Core Nitrogen best management practice. Between 2017-2018 and 2018-2019, we have increased the total acres of implemented Manure Management Plans documented and reported through the Chesapeake Bay Ag Inspection Program by almost 30%.

Manure Storage Facilities have a 15-year credit duration in the Chesapeake Bay Program modeling tools. As such, if the facilities are not re-verified to show that it is existing and functioning every 15 years, the practice is removed from the system. Through the Chesapeake Bay Ag Inspection Program, we can report for progress 129 existing liquid manure storage facilities that are equal to or greater than 15 years of age going back to 1985. The total capacity of these reported liquid manure storage facilities is over 35,992,700 gallons.

According to the Pennsylvania Phase 3 Chesapeake Bay Watershed Implementation Plan, Table 2.2 Modeled Existing Programs Resulting in Reductions, the Act 38 Nutrient Management Program contributed nitrogen reductions of 867,000 pounds and phosphorous reductions of 14,000 pounds in 2017-2018. The Chesapeake Bay Inspection Program contributed nitrogen reductions of 487,000 pounds, phosphorous reductions of 13,400 pounds, and sediment reductions of 31,959,000 pounds. It is anticipated that the programs will show similar reductions for 2018-2019.

### **Conclusion**

Another successful year of the expanded agricultural inspection program has shown that most farmers are getting the plans they need. A large part of the inspection program is education. Conservation district and DEP staff are using inspections as a catalyst to help farmers understand what is needed and to get them on track to implement their plans. Implementing best management practices on the land helps to ensure long-term farm sustainability and environmental protection.

Planning and technical assistance are of paramount importance. The development and implementation of plans hinges on the professionals who provide assistance. Funding resources continue to be needed as well. State programs like the Agricultural Plan Reimbursement Program, Small Business Advantage Grants, Resource Enhancement and Protection (REAP) Program, and Growing Greener as well as federal programs like NRCS Environmental Quality Incentives Program (EQIP), EPA Chesapeake Bay Implementation Grant (CBIG), and EPA Chesapeake Bay Regulatory Accountability Program (CBRAP) are critical for the continued improvements made to our local waters.

### **Acknowledgements**

This work would not be accomplished without the active participation of conservation district and DEP staff. Their efforts are much appreciated and the individuals performing inspections and enforcement actions are recognized for the professional and effective way they continue to carry out these activities.