LONG-TIME NUTRIENT MANAGEMENT COMMISSIONER RETIRES

David Baker was recognized for his long-time service to the Nutrient Management Commission. A grain farmer from New Castle County, David was instrumental in the development of the Commission, giving 17 years of service making agriculture sustainable while protecting both the ground and surface waters of Delaware.

Bill Rohrer, the former Program Administrator of the Nutrient Management Program, and current owner of AgroLab, returned to pay tribute to David. He was joined by Delaware Secretary of Agriculture Michael Scuse and current Program Administrator Chris Brosch.

Pictured from left to right: Bill Rohrer, Delaware Secretary of Agriculture Michael Scuse, Commissioner David Baker, and Nutrient Management Program Administrator Chris Brosch.

CONTACT US

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Nutrient Management Program
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VISIT US ONLINE:
http://dda.delaware.gov/nutrients/

University of Delaware

Several specialists from the University of Delaware Extension provide certification training for the Nutrient Management Program. They also assist the program by providing technical recommendations and conducting research and demonstration projects on nutrient management practices. Specialists are located in each county to assist Delaware farmers.

NEW CASTLE COUNTY: (302) 831-2667
KENT COUNTY: (302) 730-4000
SUSSEX COUNTY: (302) 856-7303

County Conservation Districts

The Conservation Districts provide technical agricultural professionals who can assist in nutrient management strategies and recommendations. All nutrient consultants are certified and in most cases, certified crop advisors.

NEW CASTLE COUNTY: (302) 832-3100
KENT COUNTY: (302) 741-2600, ext. 3
SUSSEX COUNTY: (302) 856-3990

DELAWARE NUTRIENT MANAGEMENT COMMISSION ANNUAL REPORT 2016

MISSION

To manage those activities involving the generation and application of nutrients
in order to help improve and protect the quality of Delaware's ground and surface waters,
sustain and promote a profitable agricultural community,
and to help meet or exceed federally mandated water quality standards,
in the interest of the overal public welfare.

The Nutrient Management Program has completed its 17th year since the passage of the Nutrient Management Law in 1999.
The law was enacted to address agriculture's influence on water quality in Delaware.
This Annual Report to the Governor highlights the activities of the program during 2016.

NUTRIENT MANAGEMENT ANNUAL REPORTS

The Nutrient Management Law requires anyone operating under a nutrient management plan or animal waste management plan to submit an annual implementation report for each calendar year. These reports detail all organic and inorganic nutrient handling activities that occurred from January 1st through December 31st.

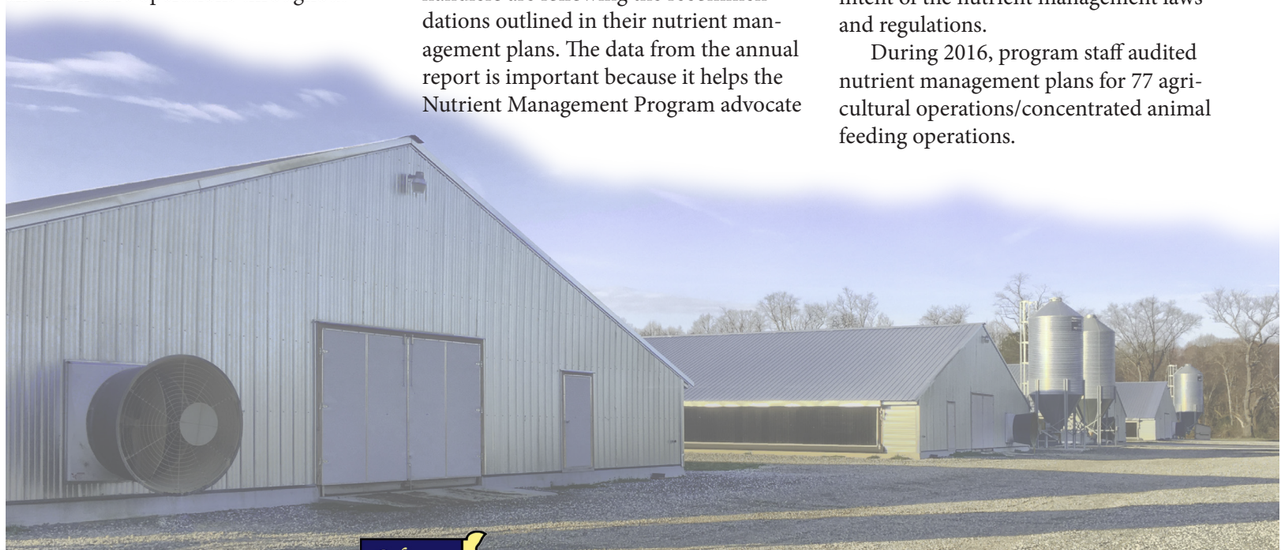
Approximately 2,800 annual reports were mailed to agricultural, golf course and lawn care operations throughout Delaware. Annual reports were also mailed to farmers that live in neighboring states who till ground and raise livestock and/or poultry in Delaware.

Farmers and other regulated facilities who submit the nutrient management annual report ensure an accurate representation of nutrient handling activities within Delaware. The accuracy of the information provided on these annual reports is vital to ensure all nutrient generators and handlers are following the recommendations outlined in their nutrient management plans. The data from the annual report is important because it helps the Nutrient Management Program advocate on behalf of Delaware nutrient handling operations.

NUTRIENT MANAGEMENT PLAN AUDITS

Each year program staff performs audits on a number of facilities required to operate with a nutrient management plan, records and certification. This process helps to ensure that plans meet the intent of the nutrient management laws and regulations.

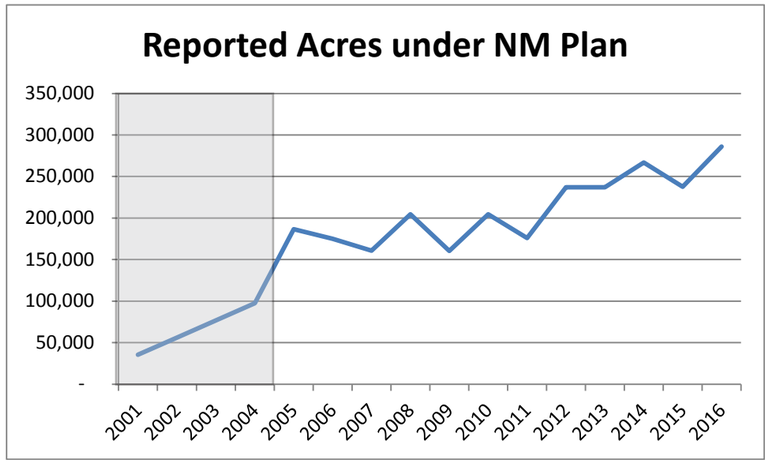
During 2016, program staff audited nutrient management plans for 77 agricultural operations/concentrated animal feeding operations.



NUTRIENT MANAGEMENT PLANNING

A nutrient management plan is a farmer's "business plan" for nutrients. The more efficiently fertilizers are used on the farm; the less nutrients escape to waterways. A plan is developed by a certified nutrient consultant and includes contents such as maps, soil analysis, manure analysis, crop yield goals and nutrient application rates.

The Commission depends on private and public nutrient consultants to develop nutrient management plans. In 2016, 139 farms representing 99,154 acres were reimbursed at a capped rate. The Kent and Sussex Conservation Districts assisted Delaware farmers by writing nutrient management plans totaling 6,963 acres. These acres represent an obligation for at least 3 years of nutrient management planning. The total acreage covered by nutrient management planning reimbursement during 2016, including those farms approved during 2014 and 2015, was 270,771 acres.



2001 - 2005 figures are estimated for the ramp up period of the Nutrient Management Program.

RELOCATION PROGRAM

Managing poultry litter including manure has been a priority of the Commission since inception. Many farmers who do not have cropland or test high for soil phosphorus levels must find alternative uses for poultry manure. The Relocation Program is one of several effective solutions to waste litter challenges on Delaware farms.

The Relocation Program provides financial reimbursement to farmers, brokers and trucking businesses for the transportation cost of relocating manure from Delaware farms to alternative use projects or other farms for land application. The Relocation Program provides farmers with the option to move the manure themselves or hire a broker. The application process validates eligible senders, receivers, truckers and alternative use projects.

Excess manure continues to be transported for land application throughout Delaware as well as to Maryland, New Jersey, Pennsylvania and Virginia.

Alternative use projects are also essential for managing excess poultry manure. In 2016, 76,754 tons of excess poultry manure was relocated, for a ten-year total of over 954,000 tons. During 2016, almost 39% of the excess manure went to alternative use projects such as the Perdue Agri-Recycle fertilizer plant in Blades, DE and mushroom growers in Pennsylvania.

Relocation Summary, FY 2016

- Total Delaware relocation projects with financial assistance: 76,754 tons
- Farm to farm within Delaware: 21,045 tons
- Farm to farm exported from Delaware: 25,804 tons
- Farm to alternative use: Perdue AgriRecycle: 19,968 tons
- Farm to Alternative use: Mushrooms: 9,937 tons

TRAINING, EDUCATION AND CERTIFICATION

The University of Delaware Cooperative Extension continues to offer initial nutrient management certification training three times annually to individuals who apply nutrients to ten or more acres of Delaware land or have a commercial livestock operation. These state-wide training sessions are led with assistance from the Delaware Department of Agriculture. The certification sessions provide the latest information and tools to encourage the adoption of best management practices to reduce the risk of nutrient loss to waterways.

Since its inception in 2001, the University of Delaware Cooperative Extension has provided state-mandated certification training to over 3,500 individuals and certified more than 3,100 individuals. In 2016, the University of Delaware Cooperative Extension offered 19 initial certification sessions and four required examination sessions. In 2016, 106 individuals were newly certified.

DELAWARE NUTRIENT MANAGEMENT COMMISSION ANNUAL REPORT 2016

ABOUT THE COMMISSION

The Nutrient Management Law established a 19 member Commission charged to develop, review, approve and enforce regulations governing the land application of nutrients.

WILLIAM VANDERWENDE, Commission Chairman, was appointed to the Commission by the Senate, and was named Chairman by the Governor. He is a full-time Sussex County dairy producer who represents the state's dairy industry. He operates a farm with 700-head of dairy cattle and 3,000 crop acres. The Chairman can be reached at (302) 349-4423.

DAVID BAKER, Commission Vice Chairman and Chairman of the Personnel and Planning Subcommittees, was appointed by the Senate as a representative of the New Castle County grain industry. He can be reached at (302) 378-3750.

MARK ADKINS was appointed by the Governor to represent swine farmers. He operates a 900-acre family grain farm and 1,000-head swine farm. He can be reached at (302) 732-3007.

BOB PALMER is the acting director of DNREC's Division of Watershed Stewardship. He can be reached at (302) 739-9921.

BRENNA GOGGIN is one of the representatives of an environmental group. She was appointed by the Senate Minority Leader. Since 2008, Brenna has served on various state committees such as the Clean Water and Flood Abatement Task Force. She can be reached at (302) 239-2334.

F. KENNETH BLESSING, JR. was appointed by the Senate to represent Kent County vegetable farmers. Kenny is part of a diversified farming operation consisting of approximately 3,500 crop acres including vegetables, grain, and beef cattle. He can be reached at (302) 422-5746.

LISA MCCORMICK was appointed by the Governor as a Sussex County public citizen representative. She can be reached at (302) 988-8235.

JIM ELLIOTT was appointed by the House of Representatives as an Environmental Advocacy Group representative. He can be reached at (302) 337-3653.

LAURA HILL was appointed by the House of Representatives to represent Sussex County poultry farmers. Laura is part of a family farm that owns a 130,000 capacity broiler operation and farms 3,000 acres of grain and vegetable crops. She can be reached at (302) 945-0725.

JESSICA INHOF was appointed by the Senate as a Nutrient Consultant. She began her career in agriculture in 1996 and has been part owner of AET Consulting, Inc. since 2002. Jessica may be reached at 302-540-8998.

KEN HOREIS was appointed by the Speaker of the House of Representatives to represent the equine industry. He has owned, bred, and showed horses his entire life. He can be reached at (302) 270-2648.

BUD O'NEILL was appointed by the Governor as a representative for the golf course/lawn care industry. Bud owns an agronomic service firm that plans and manages turfgrass for golf courses, athletic complexes and lawns. He can be reached at (302) 653-8618.

RICHARD STERLING was appointed by the Governor as a representative of the commercial nursery industry. He operates a 75-acre nursery specializing in evergreens.He can be reached at (302) 653-7060.

SCOTT WEBB was appointed by the House of Representatives to represent Kent County poultry farmers. He is pasrt of a family farm that operates a 119,000 capacity broiler operation and farms 1,000 acres of grain crops. He can be reached at (302) 381-0402.

CHRIS BROSCH, is the Program Administrator of the Delaware Nutrient Management Program and is an ex-officio member of the Commission. He can be reached at (302) 698-4555.

ED KEE, Secretary of the Delaware Department of Agriculture, is an ex-officio member of the Commission. The Secretary of Agriculture can be reached at (302) 698-4500.

DAVID SMALL, the Secretary of the Delaware Department of Natural Resources and Environmental Control, is an ex-officio member of the Commission. He can be reached at (302) 739-9000.

The **Delaware Nutrient Management Law** applies to any operation applying nutrients to 10 acres or more AND / OR has 8 or more animal units.

8 OR More animal units (1 animal unit = 1000 lbs)

Become a certified **Nutrient Generator**

Attend Certification **Sessions 1 and 2**

Get an **Animal Waste Management Plan** for your operation (Can be written by a person certified as a Nutrient Generator or higher.)

Maintain certification by obtaining **6 Continuing Education Credits every 3 years**

8 animals AND 10 or more acres

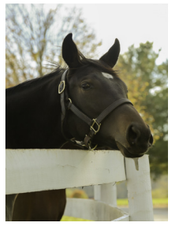
Become a certified **Private Nutrient Handler**

Attend Certification **Sessions 1, 2 and 3**

Get a **Nutrient Management Plan** with an Animal Waste Plan (Must be written by a certified Nutrient Management Consultant.)

Maintain certification by obtaining **6 Continuing Education Credits every 3 years**

THE EQUINE INDUSTRY



The state's equine industry is home to many commercial and hobby stables, as well as several large race horse training facilities, and three public race tracks. During 2016, Nutrient Management Program staff served on the equine planning committee for Delaware Ag Week. Two equine workshops were held by Delaware Cooperative Extension at the 2017 Delaware Ag Week: "Understanding Your Farm's Soil Type and it's Impact on Your Pasture" and "Farm and Manure Management: Tips to Protect the Environment."

We encourage all farms that have pastures to get their soil tested once every three years. This analysis helps determine the nutrients needed to maximize growth and prevents over application of nutrients.

Rotating pastures is a best management tool that reduces overgrazing, weeds and soil compaction, while increasing pasture yield. Horses should be moved to a new pasture when grazed below two inches. Leaving the pasture empty until it reaches six inches, not only promotes growth by reducing plant stress, but it also breaks the parasitic cycle.

IN DELAWARE
More than
700
farms have more than
6,100
horses and ponies.

DELAWARE NUTRIENT MANAGEMENT COMMISSION ANNUAL REPORT 2016

MILFORD FARMERS RECEIVE ENVIRONMENTAL STEWARDSHIP AWARD

Poultry farmers Ted Layton and Scott Willey have been recognized for their efforts to improve water quality and reduce nutrient runoff with the 2016 Delaware Environmental Stewardship Award. Layton and Willey are co-owners of T&S Farms near Milford, growing broiler chickens for Allen-Harim Foods on a 44-acre farm. They have four poultry houses, with a capacity of 134,000 birds per flock. As part of their efforts, they have installed a manure shed and composter, have a storm-water pond, and will plant a tree buffer. They focus on weed control, lane maintenance and pad cleanliness, and have all manure transported by Ellis Farms.

Awards to Layton and Willey and three runners-up were presented Monday during Delaware Ag Week by Nutrient Management Commission Chairman Bill Vanderwende and Nutrient Management Program Administrator Chris Brosch. Runners-up were:

- Alvin and Norma Warner of Milford, grow for Perdue Foods in the Coleman Organic Program. The farm has a capacity of 62,000 organic broilers. They have created 15 acres of riparian buffers and wildlife habitat, planted tree buffers, and installed heavy use pads and a composter.
- Tracey Hill of Laurel, who grows for Mountaire Farms, has a capacity of 116,000 broilers. He has grassed waterways and all pipes lead to a fish-stocked pond which treats storm-water from the production area.
- Jim Nguyen of Georgetown grows for Amick Farms. His farm has a capacity of 110,000 broilers. He has installed heavy use pads, planted trees to reduce exhaust emissions, graded swales to direct storm-water into a one-acre pond, planted apple trees and berry bushes for wildlife, and uses freezers for mortality handling.

CHESAPEAKE BAY PROGRAM

The Chesapeake Bay Total Maximum Daily Load Reduction Effort reached the five-year milestone in 2016. It was marked by record water clarity as well as improving nutrient concentration trends. The Nutrient Management Program increased its participation in this partnership at the Bay Program by membership in the Agriculture Workgroup and related subcommittees as well as a taking part for the first time as part of the Scientific and Technical Advisory Committee.

The following expert panels produced reports evaluating the nutrient pollution reduction potential of several best management practices currently used by Delaware farmers:

- **Nutrient Management Panel,** assigned new pollution reduction values for nutrient management plans that are verified as being implemented and followed due to on farm audits. This new reduction potential was indicated by an increase in nutrient use efficiency as farmers have adopted split nutrient application schedules as well as in-season testing such as pre-side dress nitrogen testing.
- **Conservation Tillage Panel,** redefined the presence of crop residue in fields in order to assign a nutrient and sediment reduction potential. This allows the State of Delaware to use its yearly crop residue transect survey to maximize nutrient reduction credit in the new model.
- **Commodity Cover Crop Panel,** increased the number of crop mixes that yield nutrient reduction potential. Delaware can now receive nutrient reduction credit from cover crops that receive spring nutrients and are harvested for grain.
- **Animal Waste Management Systems Expert Panel,** redefined both the standard conditions of animal confinement areas as well as the resulting nutrient loss prevention gained by proper manure handling and use of covered storage facilities.
- **Manure Technologies Expert Panel,** established pollution reduction efficiencies for manure treatment technologies like incinerating power plants and liquid waste digesters.
- **Agriculture Modeling Subcommittee,** changed application rate goals for over 150 crops grown in the watershed. This was done to reflect modern nutrient management recommendations and to better standardize these values across state boundaries. Other improvements, like proper nitrogen credits for legumes in rotation were accounted for where previously none were included.

Nutrient Management Staff continue to provide support to these expert panels in the form of expertise and data to justify the best management practices Delaware farmers continue to implement to clean up the Chesapeake Bay and other Delaware tributaries.

CAFO GENERAL PERMIT

In 2016, the first CAFO General Permit covering medium and large poultry farms as a group was approved by a joint Secretaries order from DDA and DNREC. The General Permit allows for a more streamlined administration of similar size and type farms.

The permits' focus is on limiting the discharge of pollutants and allowing for enforcement actions if these limitations are exceeded. The General Permit language was developed utilizing the Delaware CAFO regulations, the 1999 Nutrient Management Law and the EPA Permit Writers' Manual.

Coverage, under the permit was issued for 27 farms during 2016 and one farm was awaiting coverage following a requested public hearing. Two subsequent permits are under draft and staff continue to hold meetings to review application documents in advance of public notice coverage for the remaining farms that are indicated needing coverage.

The National Pollution Discharge Elimination System (NPDES) program is a federal program administered by the Environmental Protection Agency under the Clean Water Act (CWA). The Department of Natural Resources and Environmental Control was delegated permitting authority in 1983, to administer the NPDES program for surface water discharges in Delaware. Facilities affected by the Federal NPDES program are defined as point sources of pollution and these include combined sewage overflows, storm water construction projects, industrial activities, municipal treatment plants, and CAFO's.

Concentrated Animal Feeding Operation regulations were jointly promulgated in Delaware by the Department of Natural Resources and Environmental Control and the Department of Agriculture on November 11, 2011. A Memorandum of Agreement signed by the Secretaries of each Department on December 16, 2010 is an integral part of the structure of the Delaware NPDES CAFO Permit program.

The Memorandum of Agreement recognized each agencies experience and expertise and identifies the responsibility of each agency in the implementation of the program. This MOA did not transfer any part of the delegated CAFO program to the DDA, but established that DDA would interact with the regulated community as a point of contact and as a facilitator for DNREC.

FIELD STAGING OF POULTRY MANURE

The most efficient method of handling and storing poultry litter results from handling the poultry litter as few times as possible. Ideally, total house litter cleanouts and crust outs are immediately land-applied, transported to an alternative use facility, or moved to a storage structure. However, timing considerations governed by the growing season may require temporary, outdoor stockpiling of litter before use and must be conducted according to the State Technical Standards.

In situations where temporary field staging of litter is needed, piles may be stored temporarily to preserve litter quality and prevent application at a time of the year when environmental loss risk is greatest. Assessing piles in the winter months is a top priority of the Program and compliance with the standards are a key component to our complaint resolution and plan verification activities.

COMPLAINT RESOLUTION

Complaints related to manure management and general nutrient handling practices are investigated and Complaints related to manure management and general nutrient handling practices are investigated and resolved by program staff. If the violation is deemed serious enough, the complaint can be upgraded from an informal complaint to a formal complaint. In such a case, action is taken by the Commission in the form an administrative hearing.

During 2016, 23 informal complaints were received and resolved by program staff relating to manure management, livestock management, odor and nutrient management certification. There were two formal complaints which were also resolved. The categories of complaints and operation types are below:

Complaint Category	Operation Type
Manure Management 61%	Poultry 52%
Odor 30%	Horse 13%
Fertilizer Management 9%	Field Crop Only 35%

DELAWARE NUTRIENT MANAGEMENT COMMISSION ANNUAL REPORT 2016

PROGRAM BUDGET

	FY 2014 BUDGET	FY 2015 BUDGET	FY 2016 BUDGET
PROGRAM OPERATING COSTS:			
PERSONNEL	309,600	309,600	310,200
FEDERAL FUNDS SECTION 319 (CLEAN WATER ACT)	30,000	30,000	180,000
TRAVEL	600	600	600
CONTRACTUAL	16,000	16,000	15,500
SUPPLIES	4,000	4,000	4,000
INFORMATION/EDUCATION/CERTIFICATION	172,500	172,500	172,500
NUTRIENT RELOCATION PROGRAM	246,000	246,000	246,000
FEDERAL FUNDS SECTION 319 (CLEAN WATER ACT)	99,000	255,793	189,043
FEDERAL FUNDS CHESAPEAKE BAY PROGRAM	150,000	0	227,903
POULTRY COMPANIES	147,891	107,035	107,035
NUTRIENT MANAGEMENT PLANNING	411,800	411,800	411,800
PENALTIES	0	0	2,000
TOTAL:	1,587,191	1,307,574	1,865,781

WINTER BAN OF APPLICATION FOR MANURE AND FERTILIZER

Regulations have remained consistent limiting winter applications for commercial fertilizer and manure in Delaware. The application of nutrients during this time of year to crop fields, pastures, turf and lawns remains an environmental risk. As temperatures drop during the winter months, biological activity in the soil slows to a near stop, even on warm days. The hibernation of nutrient cycles in the soil prevents any measurable amount of nutrients from being taken up by ground covers when the physical leaching risk of nitrogen is at an annual maximum. Surface runoff from winter rains and melting snow is another pathway for nutrient pollution exacerbated by winter applications.

The winter ban rules are:

- **Application may not occur beginning December 7 through February 15.**
- **Application outside those dates is prohibited on frozen or snow-covered ground.**
- **Liming applications free of nitrogen or phosphorus are permitted.**

Application to impervious surfaces, including areas adjacent to field or yards, must be removed the same day as application throughout the year. Failure to comply with these regulations may result in a compliance and enforcement hearing by the Commission. Emergency exceptions, such as the potential for liquid manure storage structures to overflow can be allowed, but are authorized on a case-by-case basis as reported to the Nutrient Management Program.