

Conservation Highlights

Issue 252
June 2015



“Serving conservation needs in Darke County since 1955”

INSIDE THIS EDITION:

AgWeb.com: 5 Ways to Measure Soil Health..... 1,2
 Manure Science Review in Darke County..... 2
 We All Play a Role in Agricultural Pollution Abatement.....3
 Rain Barrel Contest..... 4
 Rain Barrels: Save That Rain Water..... 5
 Envirothon..... 5
 Water Quality Issues: Senate Bill 1 Update..... 6
 Wetland Wildlife Habitat Workshop.....7
 Manure Regulation in Ohio.....8,9
 Stillwater River Educational Canoe Float..... 10
 Scholarship..... 11
 Conservation Tillage & Technology Conference Recap..... 11

5 Ways to Measure Soil Health

by Ben Potter, AgWeb.com



You know soil testing is important, but do you know what to look for when the results come back? Jim Friedericks, laboratory manager at AgSource Laboratories in Ellsworth, Iowa, says even though tests are similar, they don't always give the same results, so it's especially important to pay attention to the details.

“Soil analysis is the most accurate, cost-effective way to optimize crop production, but when people send soil samples to laboratories for analysis, the reports may be difficult to interpret,” he says.

Friedericks says there are five aspects of a soil test in particular to which farmers should pay close attention.

1. Soil pH. The most suitable soils for field crops generally range between 6.3 to 7 pH. Soils above 7 are basic soils, while soils below 7 are acidic soils. Unbalanced pH can limit availability of phosphorous, manganese, copper, boron and zinc, Friedericks says. Liming is a good investment but a gradual process because it involves reaction between soil and lime particles.

2. Phosphorous levels. This nutrient promotes root growth and winter hardiness. When plants are deficient in phosphorous, they may appear stunted and often have an abnormal, dark-green color. Target levels in Midwest crop production is 20 to 25 ppm, Friedericks says. Soil test results are usually reported as elemental P, while fertilizer recommendations are reported as P205, he notes.

“It requires about 18 lbs of P205 to raise the soil test level by 1 ppm,” he says. “Determining the amount of fertilization needed to raise the

Continued on Page 2

Darke SWCD Staff Members

- Jared Coppess — District Administrator**
- Linda Calland — Secretary**
- Doug Steinbrunner — Technician/Wildlife Specialist**
- Tim Rank — Technician**
- Janell Weiss—Nutrient Mgmt Specialist/Ag Technician**
- Jason Jones—Pheasants Forever Wildlife Biologist**

Darke NRCS Staff Members

- Jim Bennett — District Conservationist**
- John Bleill — Civil Engineering Technician**

DARKE SWCD OFFICE HOURS

Monday — Friday

8:00 AM — 4:30 PM

Manure Science Review to be held in Darke County



ABOVE: Side dress manure application in Harrod's corn field from 2014.

Darke SWCD is helping OSU Extension plan for the 2015 Manure Science Review which is scheduled to be held in Jackson Township. Manure Science Review is an educational field day that focuses on best practices for managing manure nutrients, including equipment demonstrations. This educational program qualifies for continuing education credits for Certified Crop Advisors, ODA Certified Livestock Managers, and Professional Engineers. The

morning program will be held in the Mississinawa Valley cafeteria and the afternoon demonstrations will take place in a field at the northwest corner of State Route 47 and Coletown-Lightsville Road. Manure Science Review will be held on Wednesday, August 12, 2015 from 9:00 AM until 4:00 PM.

The morning program will consist of presentations covering the following topics: a legislative update, lessons learned from this past winter, edge of field study data, Glenn Arnold's research dedicated to extending the application window for manures, and emergency planning. The afternoon will feature demonstrations of different manure sources using multiple application methods, calibrating application rates for dry manures, smoking subsurface tile, proper setbacks, and cover crop application methods. These topics are subject to change as planning of the event is still underway, our intent with this announcement is to get the date marked on your calendar.

More information and registration for the event can be found at <http://oardc.osu.edu/ocamm>.

continued: 5 Ways to Measure Soil Health

amount of P requires calculation, and farmers should take this into consideration.”

3. Potassium levels. This nutrient aids in protein synthesis, photosynthesis and movement of water within plants, Friedericks says. Corn takes up nearly as much potassium as nitrogen in a given year, he says. It's a great investment to protect a crop against disease because of its ability to strengthen stalks and stems against disease, he says. Thicker plant cells can make it more difficult for some diseases to invade plants during stressful periods of the growing season.

4. Organic matter. This is a key measure of soil health and structure. Although it's hard to make immediate changes to organic matter levels, farmers should have a long-term plan for improvement in mind, Friedericks says.

“At the very least, farmers want land management to maintain or increase the organic matter content as a way to improve soil health, thus reducing crop vulnerabilities,” he says.

5. Cation Exchange Capacity (CEC). This, plus base saturation levels, help characterize soil type, Friedericks says. Together, they show how a soil can hold specific plant nutrients in the profile.

“Because there is a strong correlation between CEC values and the amount of clay and organic matter in the soil, the higher the CEC, the more soil can retain and make available moisture for plant growth,” he says.

AgSource has additional information on soil analysis and soil test reporting at www.agsource.com/laboratories.

We All Play a Role in Agricultural Pollution Abatement

by Janell Weiss and Jared Coppess



Water quality has long been a concern, and recent events in Lake Erie, Grand Lake St. Mary's, Buckeye Lake and the Gulf of Mexico have brought that concern to the front of people's minds. Earlier this month, the Governor signed Senate Bill 1 (SB1) which aims to mitigate harmful algal blooms in the Western Lake Erie Basin. Amid new legislation and increased interest in and scrutiny of agriculture, the Darke Soil and Water Conservation District (SWCD) will release a series of monthly articles on agricultural topics. Be on the lookout for future columns from Darke SWCD staff on SB1, manure application setbacks, manure storage and stockpiling, cover crops and other related topics. All articles will be released to local media and available online at www.darkeswcd.com.

Darke SWCD staff would like to engage the county in a conversation on environmental stewardship. This series of articles will provide farmers with information to help them protect water quality. Additionally non-farming community members can learn what farmers are doing and can do to protect water quality in our lakes, rivers and streams. This month's article focuses on the role we all play in agricultural pollution abatement.

Darke SWCD staff encourages and welcomes the public to participate in the Ohio agricultural pollution abatement program. This program depends upon public participation. Darke SWCD has the authority and responsibility to investigate and seek the resolution of all complaints regarding agricultural or silvicultural pollution in the county. Please contact the Darke SWCD at 937-548-1752 if you see a manure spill, are concerned about an imminent manure spill, or have questions about the pollution abatement program.

When submitting a complaint, you may choose to provide your name or submit the complaint anonymously. Complaints may be submitted orally, over the phone, in person, or in writing. Darke SWCD staff will ask you to describe your concern, to provide location information, and to detail what waters of the state are impacted and any other information that may aid the investigation. If you choose to disclose your name and contact information, staff will ask what follow-up you would like to receive.

Darke SWCD investigates every agricultural pollution complaint received. During an investigation, Darke SWCD staff will attempt to determine if waters of the state are being degraded by manure or other agricultural wastes. If waters of the state are impacted, Darke SWCD staff will contact and coordinate with other government agencies that regulate pollution of surface water. The goal of Darke SWCD is to seek a voluntary, cooperative solution with the responsible party. Darke SWCD will recommend and work with producers to establish corrective actions, both temporary and permanent.

When a pollution complaint relates to a manure field application or stockpile, staff will review what agricultural best management practices (BMPs) were followed. These BMPs relate to field conditions and weather forecasts at the time of a manure application and manure application rates and setbacks. Agricultural producers, especially livestock producers, need to be familiar with the recommended BMPs. Please contact Darke SWCD if you need information on BMPs for handling manure.

The participation of the public in this program is crucial to its success. If you see a concern, contact Darke SWCD so staff can investigate the issue. Remember the choice of anonymity is available and will be honored, but it is your responsibility to request anonymity. Darke SWCD is committed to protecting the waters of the state, and part of that commitment is public outreach and education. Throughout this year, Darke SWCD will be releasing a series of timely articles related to agricultural and manure management BMPs.

One final thing to think about, if you see something that causes concern, please participate in the agricultural pollution abatement program by calling Darke SWCD at 937-548-1752 and giving the appropriate details. Let's all commit to protecting and improving Ohio's water quality.

2015 Rain Barrel Contest Entries

For the past four years, Darke SWCD has held an annual rain barrel decorating contest for our local high schools. Each year a theme is chosen, participating schools need to encompass the theme within their paint scheme. 2015 represents 60 years of Darke SWCD putting conservation practices on the ground in Darke County. To help us celebrate our 60th anniversary, we asked the schools to recognize something from the 60's. This year's participating schools come up with some very creative designs. Be on the lookout for these barrels in locations around the county and at the Great Darke Count Fair helping to promote the use of rain barrels around your home.

Darke SWCD donates back the rain barrel and kit to participating schools after their annual meeting in November. The board of supervisors has also agreed to award the top three entries with a cash prize. Below are this year's top three rain barrels, in order from 1st to 3rd place.

Thank you to Versailles Art teacher Michelle Ranly, Ansonia FFA Advisor Brad Lentz and Greenville FFA Advisor Karri Stickley for allowing your students to participate in the contest. We look forward to seeing next year's designs!

1st Place — Ansonia



2nd Place — Versailles



3rd Place — Greenville



Rain Barrels: Save that Rain Water!



Rain barrels are a rain harvesting system designed to collect rain water for landscape and garden purposes. A few of the advantages of collecting rain water are that it can save you money on your water bill, reduce excess runoff, help keep basements and crawl spaces from flooding and they are inexpensive to install and maintain. The water collected can be used in your garden, your flower beds or for washing your car, boots or tools. Never use this water for drinking or cooking!

The barrels are blue, but can be painted to fit any landscape décor. Stop in the Darke SWCD office at 1117 Southtowne Court, Greenville to pick up your rain barrel today. Availability is subject to supply, sometimes supplies are limited.

In the past, Darke SWCD and the City of Greenville have hosted a rain barrel workshop. This workshop goes over the benefits of using a rain barrel on your property and then walks you through putting your rain barrel together. By the end of the evening your barrel is complete. The workshops for 2014 were held at Shawnee Prairie in conjunction with the Darke County Park District. There were two workshops with a total of 38 people in attendance.

If you are interested in buying a rain barrel or if you own one and have a few questions, feel free to visit www.darkeswcd.com or call the office at 937.548.1715, extension 3 for all your rain barrel needs.

Darke SWCD sells rain barrels for \$30. This includes a 55-gallon, plastic barrel and the DIY installation kit.

Area IV Envirothon Held in Loveland, OH



The Ohio Area 4 Envirothon is a competitive, academic, outdoor team event for high school students which tests their knowledge in five areas; Aquatic Ecology, Forestry, Soils, Wildlife, and a Current Environmental Issue (CEI). This year's CEI topic was Urban and Commercial Forestry. The event is designed to stimulate and reinforce the students' interest in environment and our natural resources and encourages cooperative decision making, team building and problem solving.

Students who participate gain a greater awareness of natural resources and environmental issues, a better understanding of interrelationships between living and non-living components of the environment and an increased interest in further science study. Teams consist of five members from the same school and though each student contributes his or her personal best, the score that counts at the end of the day is the TEAM score.



Students from Greenville participate in the Area IV Envirothon. Above the teams work to complete testing at two of the five stations on site.

The Area IV Envirothon was held at Camp Friedlander in Loveland. Camp Friedlander is the premier Boy Scout Summer Camp program with a wide variety of merit badge options, activities for younger and older Scouts, training opportunities for adult leaders, and some of the best camping facilities in the country. Each summer, thousands of Scouts from across the nation make Camp Friedlander their summer camp home for a fun week of learning, achievement, leadership, and Scouting at its best.

This year 87 teams from 19 counties competed in the Area IV Envirothon, only two teams from Darke County participated. Greenville sent both teams, Team 1 placed 20th while Team 2 placed 47th. Darke SWCD would like to thank Greenville for participating. The 2016 Area IV Envirothon will be held in Darke County.

Water Quality Issues Debated in Statehouses and Courthouses across the U.S. and in Ohio

By Janell Weiss

From Vermont to Washington, water quality and manure regulation has been in the news. In Vermont proposed legislation, House Bill 35, specifies that farmers in violation of water quality requirements could be suspended from enrollment in agricultural current use valuation, similar to CAUV in Ohio. Late last year the outgoing Maryland governor Martin O'Malley proposed regulations to dramatically limit manure applications on fields with high soil phosphorus levels. In Iowa, the Des Moines water utility has filed a lawsuit against three counties and ten drainage districts alleging that agricultural drainage tile should be classified as a point source discharge and should require a NPDES permit. In January a U.S. District judge ruled that the leaky lagoons and over-application of manure by seven large dairies in Washington's Yakima Valley qualifies as "open dumping" of solid waste. The dairies are currently settling out of court. The increasing scrutiny of water quality and manure application is also a local trend.

Ohio made national headlines in April by passing water quality legislation as a response to Toledo's drinking water crisis last summer. Governor Kasich signed SB 1 on April 2, 2015. The bill will be effective on July 1, 2015 and bans application of manure and fertilizer in the Western Lake Erie Basin if any of the following conditions exist:

- When the top 2 inches of soil are saturated;
- When ground is frozen or snow-covered;
- For commercial, granular fertilizer, when the local weather forecast contains greater than a 50% chance of precipitation exceeding 1 inch in a 12-hour; or,

- For manure, when the local weather forecast contains greater than a 50% chance of precipitation exceeding ½ inch in a 24-hour period.
- Exemptions to application ban:
- If fertilizer/manure is injected into the ground;
- If fertilizer/manure is incorporated within twenty-four hours of surface application; or
- If fertilizer/manure is applied onto a growing crop.

Medium and small CAFOs can respectively apply for 1-year and 2-year exemptions to the ban. SB1 will be reviewed in 3 years.

Although the final legislation does not apply to any Darke County land, some lawmakers considered a statewide ban. If you have livestock please consider how your operation would run under the ban. Would you be prepared if the ban were extended to our county? This may be a good time to review, update or to obtain a nutrient management plan for your farm. Don't have one? Please contact our office for information.



ABOVE: Governor Kasich signed Senate Bill 1 (SB1) at Maumee Bay State Park in Oregon on April 2, 2015. SB1 aims to reduce pollution contributing to algae blooms on Lake Erie.

Photo courtesy of The Blade/Dave Zapotosky

LEFT: This satellite image provided by NOAA shows the algae bloom on Lake Erie in 2011.

Photo courtesy of NOAA.

Please Join Us!

Wild for Wetlands!

A wildlife habitat workshop for landowners and wildlife enthusiasts brought to you by the West Central Wildlife Committee. This workshop will focus on exploring wetland ecology, wetland wildlife & plant ID, and more. Featured guest speaker for the workshop will be [Jim McCormac](#) from the ODNR Division of Wildlife. You won't want to miss out and space is limited, so be sure to register early!

What: Wetland Wildlife Habitat Workshop

When: Saturday, June 27th 8:30 a.m.-3:00 p.m.

Where: Upper Valley JVS, 8811 Career Dr, Piqua, OH 45356

Dress: after lunch we'll be outside at a nearby wetland, so bring your knee boots!

Cost: \$10 (includes light breakfast, lunch, and take-home packet)

For More Information: Linda Raterman, Miami SWCD (937)335-7645 OR
Diana Malas, ODNR Division of Wildlife (937)372-9261

The West Central Wildlife Habitat Workshop Series is brought to you by:



Complete and detach this portion and send with check made payable to Darke SWCD to:
Darke SWCD, 1117 South Towne Ct, Greenville, OH 45331
REGISTRATION MUST BE RECEIVED BY JUNE 19

NAME _____

ADDRESS: _____

PHONE: _____ **EMAIL:** _____

_____ **(# attending) X \$10 (per person) =** _____

NOTE: please use additional registration forms for multiple participants with different contact info

Manure Regulation in Ohio

By Peggy Hall, OSU Extension Ag Law Specialist

Although long considered a natural fertilizer that can benefit our soils, manure has a history of increased regulation in recent years based on potential impacts to water quality. The following explains how state and federal law regulates the production, storage and application of animal manure in Ohio.

Livestock Environmental Permitting Program

The Ohio Department of Agriculture's Division of Livestock Environmental Permitting (ODA) administers a permit program for Ohio's largest confined livestock operations, or Concentrated Animal Feeding Facilities (CAFFs). Ohio Revised Code Chapter 903 and Ohio Administrative Code 901:10 contain the program's legal provisions.

An owner must obtain a "permit to install" and a "permit to operate" from ODA before operating a CAFF. The permit requirement applies to a CAFF that houses any of the following, at a minimum:

- 700 mature dairy cows
- 2,500 hogs over 55 pounds
- 10,000 baby pigs under 55 pounds
- 82,000 laying hens
- 125,000 pullets or broilers
- 1,000 head of beef animals of any size
- 500 horses
- 10,000 sheep or lambs
- 55,000 turkeys

Related to manure, obtaining the "permit to install" requires a CAFF owner to submit information on:

- Maps indicating CAFF boundaries, manure storage facility dimensions, location and siting distances and locations of subsurface drains within 100 feet of manure storage.
- Geological study results with information on soil; groundwater sampling and analysis; hydrology; geology and topography of land used for manure storage.
- Listing of the type, amount and nutrient content of manure from the facility.

For the permit to operate, the CAFF must submit a Manure Management Plan that outlines the Best Management Practices the CAFF will implement to minimize water impacts from the storage and use of manure. The Manure Management Plan must include:

- A nutrient budget.
- Manure and soil characterizations.
- Manure distribution and utilization methods

- Methods for minimizing odor.
- Inspection, maintenance and monitoring practices.
- Land application methods.

Land Application of Manure for Permitted CAFFs

Land application of manure by a permitted CAFF or by a Certified Livestock Manager working with the CAFF must be in accordance with ODA regulations, which include requirements for:

- Soil and manure tests.
- Crop yields and rotations to determine nutrient needs.
- Setbacks from streams, neighbors and wells
- Limitations on amounts of nitrogen, phosphorus and liquid applied.
- Weather predictions.
- Examination of soil condition for cracks, earthworm burrows and plant root pathways to tile or tile blow-outs in the field.
- Monitoring of tile outlets during and after application.
- Restrictions against runoff or ponding of manure.
- Recordkeeping requirements.
- Inspection requirements.

If a local farmer uses manure from a permitted CAFF for application on another farm, the CAFF must provide the farmer with the ODA's application requirements and a current manure test. The farmer must certify when and how much manure was taken from the CAFF. The farmer's land application of manure then falls under the Agricultural Pollution Abatement Program, described below.

National Pollutant Discharge Elimination System (NPDES) Permits

The federal Clean Water Act requires livestock operations defined as "Confined Animal Feeding Operations" (CAFOs) to obtain a federal NPDES permit if they discharge or propose to discharge a pollutant to surface waters, even if the operation has obtained a permit from ODA. The Ohio EPA administers the NPDES permit process, which requires operators to control spills and runoff from their facilities and from the land application of manure. To obtain a permit, a CAFO must develop and implement a Manure Management Plan that addresses:

- Practices to ensure adequate manure storage capacity and proper maintenance and operation of storage facilities.
- Practices to divert clean storm water away from production areas.
- Practices to ensure that animals and manure in the production area do not come into direct contact with waters of the State.

- A land application plan that includes:
 - ◆ A nutrient budget.
 - ◆ Manure and soil characterizations.
 - ◆ Application methods and timing.
 - ◆ Agronomic application rates.

CAFO owners must also meet ongoing monitoring, recordkeeping and reporting requirements and are subject to enforcement actions for violations.

Certified Livestock Manager Certification

Ohio law requires Ohio's largest CAFFs and every manure broker or manure applicator who handles more than 4,500 dry tons or 25 million liquid gallons of manure per year to obtain the Certified Livestock Manager (CLM) certification from ODA. The applicant must complete core classes on nutrient management standards, manure storage and handling and Ohio manure regulations and must also complete three elective classes on water quality, soil testing, stockpiling, emergency action plans, spill reporting, value of manure nutrients, recordkeeping, biosecurity, liability or applying manure to growing crops. CLMs must complete ten hours of continuing education every three years to maintain their certification.

Ohio Agricultural Pollution Abatement Program

Ohio's Agricultural Pollution Abatement Program (APAP) applies to agricultural operations that are not subject to the above state and federal permit programs for CAFFs and CAFOs. As stated in Ohio Revised Code 1511 and Ohio Administrative Code 1501:15-5, APAP provides state standards for management and conservation practices that aim to abate water pollution resulting from animal manure. The Ohio Department of Natural Resources Division of Soil and Water Resources (ODNR) administers APAP in cooperation with local Soil and Water Conservation Districts (SWCD). Ohio's APAP regulations establish Best Management Practices (BMPs) for livestock operators. The standards encourage operators to:

- Operate and maintain animal manure collection, storage or treatment facilities to prevent seepage, overflow or discharge of animal manure into waters of the state.
- Prevent the discharge of manure-contaminated runoff from animal feedlots and animal manure management facilities.
- Prevent pollution caused by flooding; construct animal feeding operations so that animal manure will not be inundated by a 25 year frequency flood.
- Minimize pollution from land application of manure by adopting manure application practices that consider the characteristics of the animal manure, available land, topography, cropping system, method of application, weather, time of the year, condition of the soil, other nutrients applied and nutrient status of the soil.

Technical expertise and cost-share assistance is available through APAP to help operators install and implement BMPs and develop Operation and Management Plans. The law provides a complaint-driven process for suspected pollution incidents that can result in an in-

vestigation by ODNR or SWCD. Farms that cause pollution and fail to adopt the recommended BMPs to address pollution abatement must develop and implement modifications to their facilities as approved by ODNR or SWCD, or face enforcement actions.

Watershed in Distress Regulations

The Ohio APAP regulations also contain rules that apply to certain producers of manure within areas designated as "watersheds in distress," located in Ohio Administrative Code 1501:15-5-19 to 20. The chief of ODNR's Division of Soil and Water Resources, with approval of the Ohio Soil and Water Conservation Commission, may designate a watershed to be in distress when aquatic life and health is impaired by nutrients or sediment from agricultural land uses and where there is a threat to public health, drinking water supplies, recreation, or public safety and welfare. Within the boundaries of a designated watershed in distress, these additional regulations apply to animal facility owners and operators and manure applicators:

No land application of manure may occur between December 15 and March 1 without prior approval from the agency; before and after these dates, applications of manure on frozen ground or ground covered in more than one inch of snow may occur only if injected into the ground or incorporated within 24 hours of surface application.

No land application of manure if the local weather forecast shows more than a 50% chance that precipitation would exceed one-half inch of rain in the 24 hours after the proposed application.

Restrictions on the application of snowpack manure.

An operation must ensure a minimum of 120 days of manure storage as of December 1 of each year and keep records of manure storage volumes.

Anyone who produces, applies or receives more than 350 tons or 150,000 gallons of manure per year must have an approved Nutrient Management Plan that addresses the methods, amount, form, placement, cropping system and timing of all nutrient applications, unless the farm is already operating under a permit from ODA's DLEP or an NPDES permit from OEPA.

For more information on the regulation of animal manure in Ohio, refer to these resources:

ODA Livestock Environmental Permitting and Certified Livestock Manager Programs - www.agri.ohio.gov/divs/DLEP/dlep.aspx
Ohio EPA Confined Animal Feeding Operations - www.epa.ohio.gov/dsw/cafo/index
Ohio DNR Agricultural Pollution Abatement - www2.ohiodnr.com/soilwater/water-conservation/agricultural-pollution-abatement
Ohio Revised Code - <http://codes.ohio.gov/orc>
Ohio Administrative Code - <http://codes.ohio.gov/oac>
For more information about OSU Extension, Darke County, visit the web site at www.darke.osu.edu or contact Sam Custer at 937.548.5215.



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES



2015 Darke County Educational Canoe Float



Date: FRIDAY, JUNE 12, 2015
Time: 9:00 AM—3:00 PM
Location: WEBSTER UNITED METHODIST CHURCH
8849 Seibt Rd

\$5.00

\$5.00

What the float provides:



- Hands on fish identification
- Riparian and tree identification
- Water quality and stream quality monitoring
- Canoe the scenic Stillwater River
- Recreational and educational experience for all

Come out and enjoy a day on the scenic Stillwater River. The Darke and Miami Soil and Water Conservation Districts, along with the Stillwater Watershed Project and the Park Districts of Darke and Miami Counties, are teaming up to provide an educational and fun trip covering a little over three miles on one of Ohio's most scenic rivers, the Stillwater. Over the course of the float you will hear from the Darke County Park District on stream quality monitoring and the Ohio Department of Natural Resources, Division of Wildlife on electric fish shocking. Along the way there will be some hands on identification activities as well as a lunch stop at the Stillwater Beach. This is a great way to understand the importance and beauty of our state's scenic rivers. Reserve your canoe now for a day of sun, fun and learning on the Stillwater River!

Registration cost is \$5.00, which covers your lunch expense. Call the Darke Soil and Water Conservation District today to reserve your spot. Registration fee must be paid in advance. Reservations will be taken until June 9th or trip is full.

This float is not recommended for those with health problems.

TO REGISTER CALL:

937.548.1752

www.darkeswcd.com

EVENT SPEAKER TOPICS:

Stream Quality Monitoring

Electric Fish Shocking

LUNCH IS INCLUDED!

Darke SWCD Awards 2 Scholarships

Each year the board of supervisors strives to acknowledge an outstanding graduating senior pursuing a degree in an agricultural or natural resources related field by awarding them with a scholarship. This year the board decided to offer a second scholarship. The district received several qualified applicants from five schools around the county. It was a tough choice, but the decision was finally made. Here is a little bit about our two scholarship winners for 2015.

Brice Berger graduated from Versailles High School and will be attending Wright State-Lake Campus pursuing a degree in Food Science. Throughout high school, Brice was involved in FFA, Cross Country and on the Honor Roll all four years. He is a member of the National Honor Society and served as Class President. Brice credits his FFA advisor, Mrs. Dena Wuebker, for helping him learn about and decide to study food science. Brice hopes to have a huge impact in feeding our growing population.

Mackenzie Dirmeyer graduated from Mississinawa Valley High School and will be attending Wilmington College to major in Agricultural Education. Throughout high school Mackenzie was very active in FFA and sports, she was also a member of the National Honor Society. Mackenzie is a 10 year 4-H member and was very active in the Junior Fair. Mackenzie wants to pursue a double major in agricultural education and animal science. Mackenzie is very passionate about agriculture and wants to make a difference.

Congratulations Brice and Mackenzie, Darke SWCD is privileged to recognize you two outstanding graduates as recipients of the 2015 Darke SWCD scholarships.

Conservation Tillage & Technology Conference in Review

By Janell Weiss

The Conservation Tillage & Technology Conference (CTTC) has been held annually in early March at Ohio Northern University's campus in Ada. This year participants had the option to choose from speakers focusing on corn production, soybean production, water quality, and technology in agriculture. As the nutrient management specialist for Darke SWCD, I followed the water quality discussion.

Much of the research presented by speakers discussing water quality involved cover crops. Several presenters promoted cover crops that overwinter (e.g., annual rye, cereal rye, crimson clover, winter wheat) over those that winter kill (e.g., tillage radish, oats). Winter hardy cover crops may be more successful than their less hardy counterparts at decreasing nutrient losses from fields. Jennifer Tank from the University of Notre Dame worked with producers in the Shatto Ditch watershed in Indiana to see how saturating a watershed with cover crops would affect water quality. Her study showed that no-till and an annual rye grass cover crop on a watershed-scale reduced dissolved reactive phosphorus and nitrate loading in the Shatto Ditch. Similarly, Rafiq Islam of the Ohio State University promoted winter-hardy cover crops. Islam explained that living cover crops bind phosphorus in two ways. First, living crops uptake phosphorus for cell growth. Second, living crops respire oxygen. An increase in oxygen in the soil profile drives a redox reaction that makes phosphorus less water soluble. Cover crops, especially those that are winter-hardy, were presented as one of several solutions to the water quality problem.

Kevin King of USDA-ARS presented his research on other potential practices to reduce nutrient losses. King is conducting fascinating water quality research in Ohio. He

is using 38 edge-of-field sites (19 pairs) to measure the effects of conservation treatments. King studied the timing of fertilizer application as it correlated with nutrient losses. He presented that fall and winter applications of phosphorus have the greatest potential for losses. When phosphorus is applied at planting, some losses are seen. The least potential for phosphorus losses occurs during summer after wheat harvest. King recommended that for a 3-year crop rotation, phosphorus be applied at a 3-year crop removal rate after wheat.

King also stressed incorporating or banding fertilizer. Nutrient stratification, where nutrients concentrate near the soil surface, can occur in no-till systems. Stratification can affect both nutrient losses and yields. King cited a study where corn showed no response to increasing phosphorus concentrations in the top 2 inches of soil and a positive response to increasing phosphorus levels in the 2-8 inch soil depth range. These results indicate that injection or banding of fertilizer or light tillage after a fertilizer application can improve plant nutrient availability. In an edge of field trial, light mixing in the top 3-4 inches of soil after a fertilizer application reduced the concentration of dissolved reactive phosphorus in tile discharge five-fold. One of King's recommendations for nutrient retention was to consider subsurface placement of fertilizers.

King also presented research on gypsum, cover crops, blind inlets, and conservation practices that have been promoted by this office and our conservation partners. All of his results were fascinating. Some were controversial. You will have the opportunity to listen to Kevin King this summer in Darke County at the 2015 Manure Science Review. I encourage you to mark your calendar and plan to attend the manure Science Review on August 12th.

Darke SWCD

1117 South Towne Court
Greenville, OH 45331

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**Serving conservation needs
in Darke County since 1955**



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Conservation Highlights

JUNE 2015

CALENDAR OF EVENTS

Memorial Day: Office Closed	May 25
Ohio Envirothon	June 8-9
Stillwater River Educational Canoe Float	June 12
Stillwater River Clean Up	June 19
Wetland Wildlife Habitat Workshop	June 27
Independence Day: Office Closed	July 4
Home Gardener Workshop	August 4
Manure Science Review	August 12
Labor Day: Office Closed	September 7

VISIT US ONLINE:
www.darkeswcd.com