

DURHAM SOIL AND WATER CONSERVATION DISTRICT



ANNUAL REPORT

FY2023-2024

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A Message from the Director

Jimmy Johnson, a famous Dallas Cowboys coach once said, “The difference between ordinary and extraordinary is that little extra.” As I look back over this past year’s accomplishments, I realize it took extra effort on behalf of the staff to produce the outcomes within this annual report. Our staff’s extra efforts are well documented by the success and the number of projects provided to the citizens of the county. Furthermore, this report’s outcomes align with the department’s mission as well as Durham County’s new strategic plan. The department’s mission: “To conserve, enhance, and promote the natural resources of Durham County by providing technical assistance, environmental education, and economic incentives to County citizens through a diversified program to meet the County’s changing needs” can be associated with the various programs within this document. All totaled, these programs are what keep this department leading the 96 North Carolina Soil and Water Districts. This was well documented during the 2024 NCASWCD meetings when the department received the “Technical District of the Year” award from the State Association.



In summary, because of the department’s extraordinary efforts, the citizens of Durham County have a better place to live, work, and play. On behalf of the Soil and Water Department and its staff, I present to you the 2023-2024 Annual Report.

Sincerely,

Eddie Culberson

Meet the Durham SWCD Board of Supervisors

The District is a governmental subdivision of the State; a public body organized in accordance with the provisions of Chapter 139 of the General Statutes of North Carolina and is subject to the powers and restrictions as outlined in G. S. 139.

Under this law, the District has the responsibility of conserving soil, water, and related natural resources within the District boundary. The District board is made up of five Supervisors (two appointed and three elected and six Associate Supervisors).



TALMAGE LAYTON
Chair



ANJALI BOYD
Vice Chair



David Harris
Financial Officer



Kenny Browning
Secretary/Treasurer



Mark Waller
Supervisor

Meet Our Team



PICTURED ABOVE: (FRONT ROW) DIRECTOR, EDDIE CULBERSON;
AGRI BUSINESS & ENVIRONMENTAL SERVICES MANAGER, JACK BROWN
(BACK ROW) NATURAL RESOURCES COORDINATOR, DUSTIN BREWER;
SENIOR ADMINISTRATIVE OFFICER, LISA MAROCHAK;
EDUCATION AND OUTREACH CONTRACTOR, ELICIA SENFF;
AG DEVELOPMENT COORDINATOR, SHERRY SCULLY

Partners



GRACE MESSINGER

*Executive Director for Piedmont
Conservation Council (PCC)*



OLIVIA PLANT

*Supervisory Soil Conservationist for Natural
Resources Conservation Service (NRCS)*

Soil & Water

Vision

To address all natural resources on every acre in Durham County in a way that will benefit the environment, wildlife, its people, and the natural resources themselves, plus produce an environmentally conscious group of citizens who will set a trend of conserving, enhancing and promoting our natural resource base.

Mission

To conserve, enhance and promote the natural resources of Durham County by providing technical assistance, environmental education information and economic incentives to County citizens and by exhibiting a diversified program to meet its changing needs.

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NC ASSOCIATION OF SOIL & WATER CONSERVATION AWARDS



The Durham District Named 2024 NCASWCD Conservation Technical District of the Year

On January 9, 2024, during the 80th annual conference of the North Carolina Association of Soil and Water Conservation Districts (NCASWCD), the Durham Soil and Water Conservation District (DSWCD) was once again named "NCASWCD Conservation Technical District of the Year." This award is given out annually to one of the 96 North Carolina Soil and Water Conservation Districts that excels above the rest in carrying out its local soil and water conservation program. This title is awarded to districts that demonstrate a diversity of programs that meet the needs of its citizens by conserving, enhancing, and promoting the natural resources of the county.



Durham SWCD Board and Staff receiving the Technical District of the Year Award on Jan. 9, 2024

For years the DSWCD has created a statewide reputation of being on the cutting edge for developing programs that meet its diverse citizens' needs. DSWCD's overall program has exceeded the norm by developing the following programs: Agriculture Economic Development Grant Program, Stream Restoration and Stormwater Projects, Green Industry Education Program, Impaired Stream Improvement Program, Voluntary Nutrient Reduction Program, and more. These programs above are exclusive to the DSWCD and are in addition to the normal programs offered.

The award was presented by NCASWCD President, George Y. Teague. The District Board and staff were present to receive this prestigious award before their peers from the other 96 NCASWCD. Additionally, the District Board and staff were recognized at a Durham Board of County Commissioners meeting where NCASWCD Executive Director, Bryan Evans lead the ceremony. The DSWCD is no stranger to receiving these types of awards. Please visit the DSWCD website at www.dconc.gov/swcd to review other DSWCD awards received.

2023 Piedmont Farm Family Winner

Durham SWCD nominated Bull City Farm of Rougemont for the NCASWCD's "Outstanding Conservation Farm Family" which recognizes farmers and their families for taking the initiative to implement sound, innovative, and cost-effective conservation techniques and being actively involved in conservation education. Bull City Farm, owned and operated by Samantha Gasson and Scott Stirrup, competed at the area level before being chosen by the NCASWCD as the Piedmont Farm Family of the Year.



On February 26th the BOCC recognized Bull City Farm for being named the Piedmont Farm Family of the Year

2023 Teachers of the Year

In 2023, the Durham SWCD recognized Monica Unger with R.N. Harris Elementary and Jenny Bailey with Riverside High School as the Conservation Education Teachers of the Year in elementary and secondary education. Ms. Unger and Ms. Bailey went on to compete at the state competition, and both were awarded NC Conservation Education Teachers of the Year by the NCASWCD on January 8, 2024.



NCASWCD Teacher of the Year winners with their principals, and Durham SWCD Board and Staff

AG DEVELOPMENT



Ag Economic Development Grant Program

For FY 2024, the Board of County Commissioners allocated \$250,000 to support the Ag Economic Development Grant Program. This program began in 2018 and was designed to provide financial support for projects that aid in the economic value of farms or ag development in schools of Durham County. In particular, the program weighs the need of farmers who qualify as New & Beginning or Minority or Women Based Enterprises more heavily. The Ag Economic Development Committee, a nine-member committee comprised of members from the farming community and ag-related agencies, reviewed thirty-six applications. Twenty-four projects were selected based on a predetermined set of criteria. The pictures on page 11 show a few of the projects funded and completed within the first year following approval.

Project Types	FY24
Number of farm operations that raise livestock only	10
Number of operations that raise livestock & produce	5
Number of farms that grow produce only	7
Other agriculture commodities produced	4
Projects that improved access/equity/non-profits with direct sales	1
Schools supporting Agricultural Education	5

Program Impact & Data	FY24
Funding level	\$250,000
Request for funding from applicants	\$282,920
Number of applications	34
Number of farm applications	33
Number of M/WBE applications (farms)	21
Number of non-profits that applied	2
Number of schools that applied	1
Number of farm projects funded	29
Percentage of M/WBE contracts awarded	79%

2023 Civic Excellence in Innovation Award

Durham County Soil & Water received one of ten Civic Excellence in Innovation Awards during the 2023 North Carolina Association of County Commissioners Conference in Wake County held August 24th-26th. The Excellence in Innovation Awards program received over 60 applicants this year, highlighting the great work across North Carolina counties. Durham SWCD received the award for the Durham County Agriculture Economic Development Grant Program, which they administer. The program's purpose is to increase agriculture and agribusiness development in Durham County.



Ag Economic Development Grant Program

Past Project Examples



Portable Chicken Coop



Vac Sealer



Solar Panels



Cooler for Flower Farm



Irrigation for U-pick Operation



Propagation House



Large Brooder

Durham Easement Monitoring

Eroded streambanks are one of the biggest contributors of pollution. Eleven restoration easement projects involving landowners, federal and state funders, and the District have been successfully completed. These easements are held by the Durham Soil and Water Conservation District and monitored each year.

Staff is working with GIS Department to add protected easements to the county and state GIS data layers.



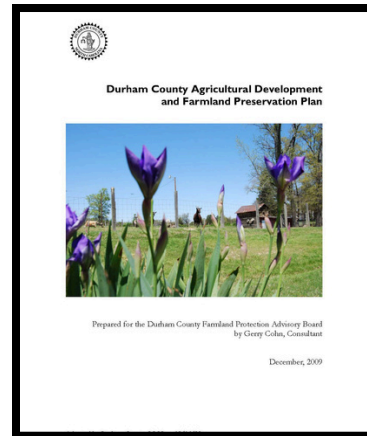
View along Ward restoration project

Durham County Farmland Plan Revision Planned for 2024-2025

The NC Agricultural Development and Farmland Preservation Trust Fund awarded the department's request for \$15,000 in grant funding to support a contract with Foothills Regional Commission to complete a revision of Durham County's 2009 Farmland Protection Plan. Community input will play a vital role in the development of this plan.



North Carolina Department of
Agriculture & Consumer Services



Durham's 3rd World Hunger Day



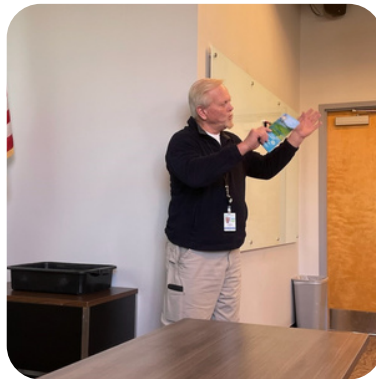
Durham's 3rd Annual World Hunger Day was held June 2nd at Durham Central Park. Soil & Water Conservation Department staff member, Sherry Scully, joined the effort with the planning committee to raise awareness of food insecurity and to showcase opportunities available to Durham community members to address food insecurity. Attendees celebrated World Hunger Day with music, performances, food trucks, giveaways, a bounce house, and more.

Farmer Breakfast Series

Durham Farmers and landowners look forward to the winter Farmer Breakfast series. These sessions are sponsored by the Farmland Protection Advisory Board and offer a variety of information. This year in two hybrid sessions, 54 Durham landowners and farmers joined us to learn more about various government programs available and estate planning.



January 2024 Breakfast



February 2024 Breakfast

Voluntary Agriculture District Program

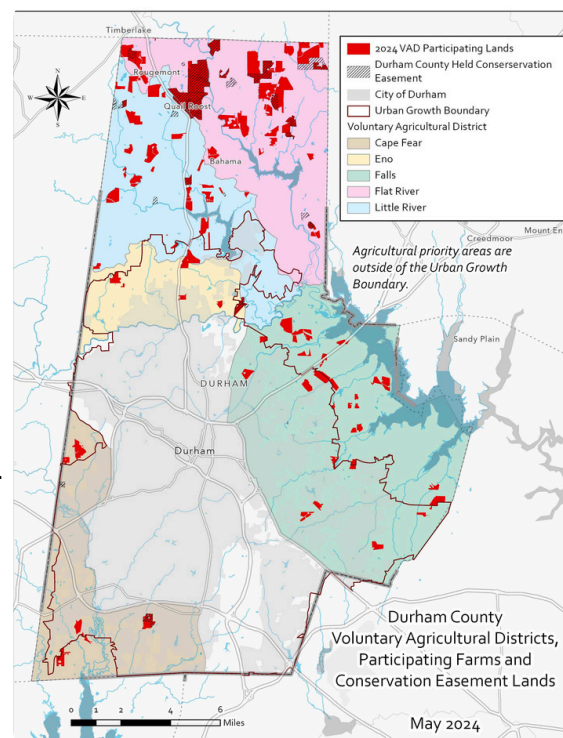
In 2000, Durham put into place the Voluntary Ag District (VAD) program. Farmers who belong to a (VAD) work hard to preserve and conserve farmland and sign a non-binding contract to do so for 10 years. This is an environmental benefit for neighbors who value natural surroundings and limited development.

Durham Soil and Water Conservation District and the Durham Farmland Protection Advisory Board work to preserve farmland and the agricultural way of life. Working farms have an important, positive impact on the economy and culture of our region. VADs, administered by the Durham Soil and Water Conservation District, work with farmers to help ensure the voluntary preservation of their land and the protection of farms. Durham County agriculture faces extreme developmental pressure and thus the challenges of increased population. The result is increasing pressure on natural resources and the local and state economies.



2023-2024 Southern High School Construction Class Builds VAD Signs

105 VAD participants
248 land parcels
8,911 acres



COST SHARE PROGRAMS

(Ag Cost Share, AgWRAP, CCAP, and ISIP)



Agriculture Cost Share Program

The Agriculture Cost Share Assistance Program (ACSP) is a voluntary program for qualifying farmers and agricultural landowners to address natural resource concerns on the land and nonpoint source pollution from agricultural activities. The program provides technical, educational, and financial assistance for the installation of conservation best management practices (BMPs) to address water quality issues found on the farm. The ACSP has been putting conservation on the ground across NC since the mid-1980's. Here in Durham County, it is administered by the Durham Soil and Water Conservation District.

The program is 100% voluntary on the part of the landowner and helps them improve natural resources - air, soil, plant, animal, and water - on their property by utilizing conservation BMPs. Participants can be reimbursed up to 75% of a predetermined average cost for each BMP installed. The applicant is responsible for the remaining 25% of the costs. In some situations, new or limited resource farmers can be eligible for up to 90% cost share.

The Durham County Agriculture Cost Share Assistance Program received \$52,459 from state appropriations for the conservation best management practices in fiscal year 2024. Of the state-appropriated funds, 100% were allocated to local Durham County producers/landowners for the following conservation BMPs; livestock exclusions, heavy-use area protections, cropland conversion-grass, cover crops, residue and tillage management (no-till), and grassed waterways. The BMPs will mitigate or prevent future losses of nutrients and soil from the farms & nearby streams, thereby improving overall water quality in Durham County. Estimated reductions expected once the BMPs are installed on about 250 acres are almost 318 tons per year of soil saved.

The District Staff will work closely with their producers over the next couple of years to provide technical assistance during the installation of the BMPs. Once, completed, the District will monitor the BMPs for 10 years to ensure their function and continued use. On April 1, 2024, two supervisors and three district staff visited six ACSP sites. During the spot check, it was observed that all six contracts were in compliance.



Fence



Established Grass



Top-Corn/ Bottom- Manure Spreader

Agricultural Water Resources Assistance Program (AgWRAP)

Established in 2012, the NC Agricultural Water Resources Assistance Program (AgWRAP) assists the Durham County agriculture community with water resource needs. Instead of being water quality driven like ACSP, the AgWRAP program is strictly water quantity-based to help address water resource concerns and needs on farmland. AgWRAP is intended to identify opportunities to increase water use efficiency, availability, and storage, implement best management practices (BMPs) to conserve and protect water resources, increase water use efficiency, and increase water storage and availability for agricultural purposes.

The state-legislated appropriation for AgWRAP is considerably smaller than ACSP. Therefore the District allocation is much smaller than the ACSP. In FY 2024, the Durham District received \$22,000 which was used for pond sediment removal and a water well. One contract was allocated to a new/beginning farmer to clean out a build-up of more than 20+ years of sediment in his pond so he could use it for irrigation. The other was allocated to a new/beginning farmer also which provides an adequate amount of water for their produce, animals, and perhaps for an outdoor classroom in the future!

Similar to the NC Ag Cost Share Program, once an AgWRAP contract has been signed and approved the producer has two to three years to complete the installation of all BMPs. On April 1, 2024, two supervisors and three district staff visited three AgWRAP sites. During the spot check it was observed that all three contracts were still in compliance.



Pond
FY24 AGWRAP Spot Check



Well



Water Well
FY24 AgWRAP Spot check

Watershed Report

The Durham Local Advisory Committee annual review of crop data discussed the Local Nutrient Control Strategy as outlined by the Neuse Nutrient Management Strategy. Durham farmers reported 820 acres of corn, 450 acres of soybeans, 98 acres of tobacco, 73 acres of wheat, 3 acres of blueberries, 6 acres of grapes, 9 acres of millet, 8 acres of oats, 6 acres of rye, about 3.5 acres of strawberries and pumpkins combined, and 1,148 acres of hay & pastureland as well as other crops and produce totaling more than 2,700 acres of crop land in crop year 2023. The Nitrogen Loss Estimate Worksheet (NLEW) that was compiled has indicated an 82% nitrogen loss reduction.

2024 Area 4 Farm Family

Each year Durham Soil and Water Conservation District selects a Farm Family of the Year within the county that shows great conservation techniques. This year, Advantage Outdoors LLC., owned and operated by Mr. Eddie Dunnagan in Bahama was chosen as our FY 2024 Farm Family of the Year in Durham County. He has also won the Area 4 Farm Family of the Year award which includes 11 counties (Durham, Edgecombe, Fishing Creek, Franklin, Granville, Johnston, Nash, Vance, Wake, Warren, and Wilson).

Advantage Outdoors LLC. has an extortionary operation with a successful future ahead. Durham Soil and Water aims to choose a farm that practices great conservation methods, educates our communities through events and programs, and exemplifies great stewardship. Advantage Outdoors LLC. has practiced no-till methods for over 15 years and utilizes cover crop plantings that help reduce soil erosion and build soil health! His crop rotation includes soybeans, corn, and wheat along with cover crops such as rye. Along with his row crop production, he has fescue hay and manages forestland and wildlife plots. He has participated in various programs through Durham Soil and Water and has planned more for the future! Soil health and water quality, along with other conservation methods are one of Mr. Dunnagan's top priorities on his farm.



Community Conservation Assistance Program (CCAP)



The Community Conservation Assistance Program (CCAP) is a voluntary program that provides landowners with technical assistance and cost-share reimbursement to install best management practices (BMPs) on urban and suburban land. On-site consultations are provided to residents to address erosion, drainage, and water quality concerns along with evaluating those BMPs suitable for a site. Staff also host community outreach meetings with homeowner's associations and local groups to discuss water quality improvement. BMPs available through CCAP include rain gardens, grass swales, cisterns, critical area plantings, impervious surface conversion, and streambank stabilization. The primary mission of CCAP is to reduce the amount of sediment and nutrients from reaching our streams to improve water quality and aquatic habitat.

Durham Soil and Water District was able to secure \$90,000 from the City of Durham and \$94,000 from the EPA. The purpose of these fundings is to implement BMPs. During FY23, Durham Soil and Water staff were pleased to conduct outreach efforts and site visits to encumber and expend these funds. The majority of the BMPs installed were in designated priority areas, with the goal of assisting historically underserved communities in Durham. The City of Durham and Durham Soil and Water District's collaboration effort is a renewal of the partnership that began with the City of Durham funds in FY14. Such funds are vital to the success of the Community Conservation Assistance Program in Durham!



Rain Garden



Rain Garden



Cistern



**Structural Stormwater
Conveyance**



**Structural Stormwater
Conveyance**



**Structural Stormwater
Conveyance**



Rain Garden

FY23 CCAP Measurable Achievements

Technical Assistance	316
Applications Received	20
BMPs Installed	18
Tons of Soil Saved (annually)	67.05
Pounds of Phosphorus removed (annually)	46.96
Pounds of Nitrogen removed (annually)	429.91
Cost Share Reimbursed	\$76,825

CCAP Regional Funding received for 1007 West Main Street Project



Durham Soil and Water Conservation District secured \$25,000 in CCAP Regional funding from the NC Division of Soil and Water to convert a neglected parking area in Downtown Durham into a beautifully landscaped area. The type of practice utilized for this project is an Impervious Surface Removal, where standard impervious surfaces like pavement and concrete are replaced with plant material designed to capture the polluted water flowing off the adjacent surfaces. This practice will treat and remove critical nitrogen, phosphorus, and suspended solids(sediment) from the Durham stormwater system. The plants will also help cool the waters before being released into the stormwater system. This practice not only beautified this area for the restaurant owners and patrons but also created a space for all to enjoy.



Impervious Surface Removal

Impaired Stream Improvement Program (ISIP)

The Impaired Stream Improvement Program (ISIP) seeks to implement conservation best management practices (BMPs) on impaired streams in low-income areas. The selected projects target stream sites where the amount of sediment and nutrients entering the stream can be reduced using best management practices. Several different conservation BMPs can be utilized in Durham County to improve the health of these urban streams including streambank stabilization, critical area planting, rain gardens, and riparian buffers.



Structural Stormwater Conveyance



EDUCATION AND OUTREACH



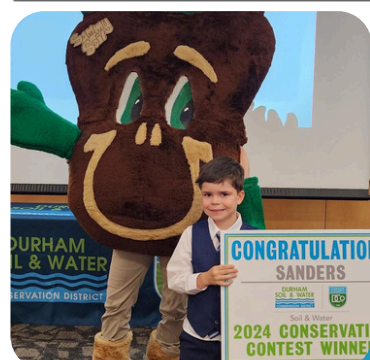
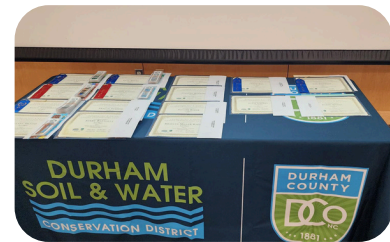
Annual Conservation Awards Celebration

The Annual Conservation Awards Celebration was held on May 14th, at Durham Technical Community College. We honored educators who promoted conservation education in the classroom, our Durham County Envirothon teams, and the winners of the 2024 Conservation Contest and our K-2 Bookmark Contest.

This year's theme for the Conservation Contest was "The Living Soil." The theme for the Bookmark Contest was "Life on a Log." Overall, we received more than 700 entries from Durham County students! Two of our county winners moved on to compete at the regional level. Zoe, who placed 1st in the 9th grade slide show competition, placed 1st at Regionals. Reese, who placed 1st in the 6th grade essay contest, won 2nd place at regionals.

Students who placed 1st in the Conservation Contest were presented with a certificate, personalized yard sign, and \$50. Second-place winners received a certificate, personalized yard sign, and \$25. Teachers of 1st place winners received a cash reward of \$30 for their participation.

Bookmark (K-2 nd) Theme: Life on a Log		
KINDERGARTEN	FIRST GRADE	SECOND GRADE
<u>1st Place</u> Leta White (EK Powe Elementary)	<u>1st Place</u> Leila Thompson (Morehead Montessori)	<u>1st Place</u> Nadia Campbell (Voyager Academy)
<u>2nd Place</u> Sanders Gatlin (Voyager Academy)	<u>2nd Place</u> Clare Dennis (EK Powe Elementary)	<u>2nd Place</u> Adele Herrmann (EK Powe Elementary)
<u>Honorable Mention</u> Jary Sierra Garcia (Holt Elementary)		<u>Honorable Mention</u> Naia Decker (Voyager Academy) Nandi Woods Flores (Carolina Friends School)
Poster (3 rd -5 th) Theme: The Living Soil		
THIRD GRADE	FOURTH GRADE	FIFTH GRADE
<u>1st Place</u> Skylar Spankiel (Voyager Academy)	<u>1st Place</u> Jarrett Hatch (Holt Elementary)	<u>1st Place</u> Taylor Baber (Mangum Elementary)
<u>2nd Place</u> Avery Bartlett (Morehead Montessori)	<u>2nd Place</u> Jameson Hawkins (Voyager Academy)	<u>2nd Place</u> Braelyn Miller Bagley (Holt Elementary)
<u>Honorable Mention</u> Audrey Hawkins (Excelsior Classical Academy) Joshua Rizzo-Cook (EK Powe Elementary)		
Slide Show (6 th) Theme: The Living Soil		
SIXTH GRADE	NINTH GRADE	
<u>1st Place</u> Abram Kim (Voyager Academy Middle School)	<u>1st Place</u> Zoe Robinson (Riverside High)	
	<u>1st place</u> Regional Winner	
Essay (6 th) Theme: The Living Soil		
SIXTH GRADE		
<u>1st Place</u> Reese Moody (Voyager Academy Middle)	<u>2nd place</u> Regional Winner	<u>2nd Place</u> Ellie Cherry (Voyager Academy Middle)



Envirothon

The Area IV Envirothon Competition was held on March 14th at Owen's Recreational Park. Teams from 11 counties are eligible to compete: Durham, Edgecombe, Franklin, Granville, Halifax, Johnston, Nash, Vance, Warren, and Wilson. For the 2024 competition, there were eight middle school teams and 28 high school teams. Of these, five high school teams were from Durham County.

Two of the five high school teams from Durham County placed in the top seven. The Marvelous Maples and Fantastic Firs from NC School of Science and Math placed 3rd and 7th, respectively. These two teams moved on to compete at the NC Envirothon Statewide Competition on April 26-27th. A total of 49 high school teams competed at the State Competition. Marvelous Maples placed 6th, and Fantastic Firs placed 11th. Durham Soil and Water staff volunteered at the statewide event and helped train and prepare the students for the competitions.



Marvelous Maples- NCSSM



Fantastic Firs- NCSSM



Falcon FFA- Jordan High



**Green Knights and Earthletes
- Northern High**

Classroom Trainings

During FY24, Durham Soil and Water staff reached 3,064 students through our various educational opportunities. These include our 3rd-grade field days, classroom lessons, tabling at local events, and volunteering at the Haw River Learning Celebration.

Our classroom and field day lessons covered topics such as water quality, soil health, food webs, recycling, gardening, and more. Soil and Water staff also represented the district at the NC State Fair, Durham Academy Middle School's Career Day, Voyager Elementary School's Science Fair, and the National County Government Month activity at Kestrel Heights Charter School.



Bionomic Education Training Center (BETC)

The BETC Program was created in 2010 as a pilot program to teach students about the growing needs, demands, and technological developments in agri-science, green industries, and green infrastructure. The program enhances middle and high school education by actively engaging students in hands-on implementation, activities, and research, as well as the development of critical thinking skills. The program seeks to improve STEM literacy for students by providing teachers with curriculum and training and advance responsible student behaviors toward the environment by engaging them in water quality projects (e.g. rain gardens) that address how to mitigate urban stormwater runoff that threatens our water quality.

In FY24, with the help of students and teachers from Durham Public Schools, five stormwater BMPs were installed in the Durham County residential area. Seven teachers and 87 students participated in the installation of these practices. Each participant received a stipend for their participation.

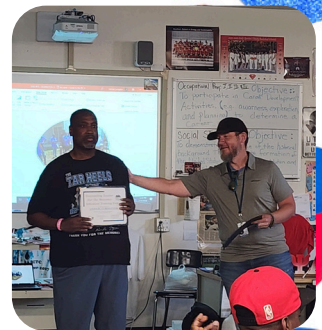


BETC Awards Celebration

On May 30, 2024, the Durham staff celebrated all of the work put in by our Southern High School BETC students!

The BETC Program is designed to teach students about stormwater management and soil and water quality through hands-on lessons. As part of their course, the Southern High School cohort engineered, designed, and installed a rain garden using native plants they grew themselves! They also grew the trees for the Grove Park Stream Restoration project and helped to install them.

To celebrate all of these accomplishments, we hosted an awards ceremony. After a meal and presentation, the teachers and each student were presented with a certificate. Great job everyone!



Outstanding Community Partner Award



We were honored to receive the Outstanding Community Partner award from Jordan High School FFA.



**C.E. JORDAN
HIGH SCHOOL**

Tyler D'Angelo, the school's Agriscience teacher, presented the award to Durham Soil and Water Conservation and District Staff (Lisa Marochak, Sherry Scully, and Elicia Senff) during the FFA Awards Banquet on May 17th. Jordan High School has been an involved partner with Durham Soil and Water for the past several years. They've participated in the Ag Economic Development Grant program and other outreach and funding opportunities. Additionally, the FFA students represented Durham at the 2024 Regional Envirothon Competition, placing 2nd among high school FFA teams.



Pictured above is Lisa Marochak, Elicia Senff, and Sherry Scully

2023 Big Sweep Clean-up

The Annual Durham Big Sweep is the largest litter clean-up event that engages residents, schools, and businesses from around Durham County. The event runs from September 1st – October 31st. Durham Soil and Water Conservation District has sponsored Durham Big Sweep for over 24 years.

Durham Soil and Water Conservation District organized the 2023 Durham County and City Employee Clean-up event at Drew Granby Park. 23 County and City Employees worked to remove 1,100 pounds of litter, 27 bags of recycling, 54 bags of trash, a printer, a car seat, 2 car tires, 2 bike tires, 2 couches, a mattress, shelving, lumber, a mop bucket, stool, 3 broken tents, 4 large buckets, suitcase, bike, and more.



Pictured above: 2023 Durham County and City Employee Big Sweep clean-up group

2024 Creek Week Clean-up

Creek Week, an annual event that encourages residents to learn about and clean up local waterways, took place on March 16th - 23rd. Durham County Soil and Water Conservation partners with Keep Durham Beautiful and the City of Durham Public Works to plan and promote Creek Week as well as host clean-up events.

Durham Soil and Water Conservation District organized a Durham County and City Employee clean-up of Sherwood Park with Durham Co. Engineering & Environmental Services Department. The event took place on March 20th and engaged 22 County and City Employees. We were also joined by County Manager, Dr. Sowell. Together, we removed 39 bags of trash, 14 bags of recycling, two bikes, a lawnmower, a play set, and more from Goose Creek and Sherwood Park.



Pictured left: County Manager, Dr. Sowell and Director of Soil and Water Conservation Department, Eddie Culberson

State and National AR Sandbox Presentations

NCASWCD Presentation

Elicia Senff an Education Contractor with Durham Soil & Water demonstrated our Augmented Reality Sandbox, an educational aid for teaching earth science concepts, at the 2024 NC Association of Soil & Water Conservation Districts Annual Meeting held January 6-9. The AR Sandbox creates 3D visualizations of topography, elevation, and surface water movement. As part of the demonstration, we led the Soil and Water staff and Board Supervisor from the 96 Districts in NC and various partner agencies through lessons for K-12 students. The hands-on approach and modeling ability of the sandbox make it ideal for demonstrating concepts such as landform formation, contour lines, watersheds, and more. [An overview of the AR Sandbox and lesson plans can be viewed on our YouTube page.](#)

The AR Sandbox was acquired with funds provided by the National Conservation Foundation's (NCF) and USDA Forest Service's Diversity Grant.



Pictured above: Elicia Senff doing a demonstration for the NCASWCD Education Committee

NACD Presentation

On February 11, 2024, Lisa Marochak presented at the National Conservation Foundation (NCF) Meeting that was held during the National Association of Soil and Water Conservation Districts (NACD) Annual Meeting. Lisa presented on the Augmented Reality Sandbox which was purchased with funds from the NCF Diversity Grant.



Pictured above: Lisa Marochak



2024 Resource Conservation Workshop (RCW)

This year, the Durham Soil and Water Conservation District Board sponsored Geovanna Alonzo Meraz, a senior at the City of Medicine Academy, to attend the Resource Conservation Workshop (RCW).

The RCW is a weeklong camp held at NC State University for students interested in conservation, the environment, and our state's natural resources. From June 16th – June 21st, Geovanna participated in field studies, tours, and hands-on sessions led by research scientists, foresters, biologists, engineers, and more. Students who attend the RCW are eligible for awards and scholarships which are presented at the end of the workshop.



Pictured: Geovanna Alonzo Meraz



Conservation Store

Durham Soil and Water Conservation District Board's Annual Tree Sale

Our Durham Annual Tree Sale took place March 6th-7th. We sold 353 fruit trees and bushes including apple, fig, peach, pomegranate, blueberry, grape, and pecan. We made a profit of \$2,710.23. All proceeds from the tree sale support our environmental education program.

Thank you to everyone that purchased tree's from us and to Waller Family Farm for allowing us to hold the sale at their farm.



No-till Drill Rental



Durham Soil and Water has a Great Plains 706NT no-till drill available for farmers to rent in Durham, Person, Orange, Wake, Chatham, and Granville Counties.

RENTAL RATES: \$12.00 per acre (min. 8.3 acres) with a \$100 deposit (check or cash only)

Interested renters can call the district today to inquire about renting: 919-560-0558

Blue Bird Boxes and Wildflower Seeds

Check out the full list of items we sale on our website. All proceeds from the items we sale support our environmental education program.

Sammy Soil

Sammy Soil is Durham Soil and Water Conservation District's mascot. During FY2024, he made several appearances around Durham County at booths, in classrooms, and during the 2024 Durham SWCD Conservation Awards Celebration.

Please contact Lisa Marochak if you are interested in Sammy making an appearance at your school. 919-560-0558 or lmarochak@dconc.gov



Pictured above: Durham SWCD staff with their mascot Sammy Soil

STREAM RESTORATION AND STORMWATER PROJECTS



Riverside High School Stormwater Project Completed

The District completed construction on the Riverside High School Stormwater Project last fall. This innovative project restored two old pre-regulation sediment basins that have been failing for years. The smaller pond was maintained as a typical stormwater pond, by making necessary maintenance and repairs. The larger pond was converted to a stormwater wetland and planted with wetland plants that thrive in different depths. The District teamed up with NCSU to research if there is a water quality benefit to converting existing dilapidated ponds to wetlands. There are hundreds, if not thousands, of these stormwater ponds in N.C. and beyond that are in or near the same situation as these two ponds.



**Riverside High School
Stormwater Wetland**

NCSU is continuing to lead a water monitoring effort on this research project. Water quality monitoring stations were installed at the outlets of both ponds. The ponds were monitored for a one-year calibration period prior to construction, during construction and will continue to be monitored for one-year post-construction. NCSU will complete the monitoring by the end of 2024 and will publish the results at that time. A pump was installed in the sediment pond to irrigate the school's nearby greenhouse.



**NORTH CAROLINA
LAND & WATER
FUND**



**NORTH CAROLINA
Environmental Quality**



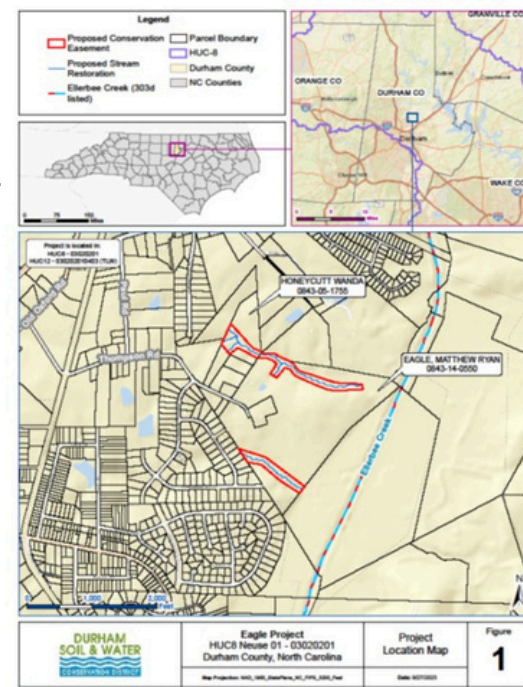
**DURHAM
PUBLIC SCHOOLS**

NC STATE UNIVERSITY

This project was funded by grants received from outside of Durham County Government. The two grants received were from The North Carolina Land and Water Fund (\$392,000) and the Division of Water Resources (\$200,000). Durham Public Schools donated an easement which the District is holding and monitoring.

Eagle/Honeycutt Stream Restoration Project

Durham Soil & Water Conservation District (DSWCD) has recently started the process to restore 4,400 linear feet of stream restoration located near the headwaters of Falls Lake. The project is located on two sediment-impaired, unnamed tributaries of Ellerbe Creek that are presently on the state's 303(d) impaired streams listed in the Neuse River Basin. These tributaries drain a portion of eastern Durham County in a still-growing suburban section of this urban county. Channelization and straightening of the stream channel, as well as uncontrolled stormwater urbanization, have resulted in a deeply incised streambed with eroding vertical banks and trees that are falling into the channel. Although most of the restoration project is located on a cattle operation, its watershed is already partially developed which contributes to increased flows and worsens the sediment pollution problem in the Neuse River System. The purpose of this project is threefold: restore 4,400 linear feet of unnamed tributaries to Ellerbe Creek, reduce sediment loading, and establish vegetated riparian buffers along the stream corridor.



Eagle/Honeycutt Stream Restoration Project - *Continued from page 28*

The project currently is experiencing lateral and vertical instability, excessive bank erosion, headcuts, and will continue to degrade and contribute approximately 974 tons of sediment/year and will be reduced to about 29 tons of sediment/year once construction is completed. The potential removal for nitrogen and phosphorus (pounds/year) are 985.01 and 63.44 respectively.

Thus far grants have been received from the Raleigh Watershed Protection Program (RWPP) and the Division of Soil and Water. Additional grants have been submitted to obtain the needed funds.

Below are the goals and objectives of the project:

Goals:

- Create geomorphically stable conditions along all reaches through the project area,
- Improve habitat quality in a riffle dominated stream by adding pool/riffle sequences and expanding the floodplain while improving overall ecosystem functionality,
- Improve water quality within the restoration project area through reduction of bank erosion and reductions in nutrient and sediment loads,
- Stabilize streambanks through the installation of in-stream structures and establishing a 50 foot riparian buffer consisting of native plant species
- Improve aquatic and terrestrial habitat through increased substrate and in-stream cover, additional woody debris, and reduced water temperature by increasing stream shading, and restored terrestrial habitat.

Objectives:

- Restore existing incised, eroding, and channelized streams by creating a stable channel with access to a floodplain,
- Improve in-stream habitat by providing a more diverse bedform with riffles and pools, creating deeper pools and areas of water re-aeration, and reducing bank erosion,
- Control invasive species within the project reaches,
- Establish native stream bank and floodplain vegetation protected by a permanent conservation easement to increase stormwater runoff filtering capacity, improve bank stability, shade the stream to decrease water temperature, and provide improved wildlife habitat quality.



***Before
pictures***



Charlestowne Apartment Streambank Stabilization Project

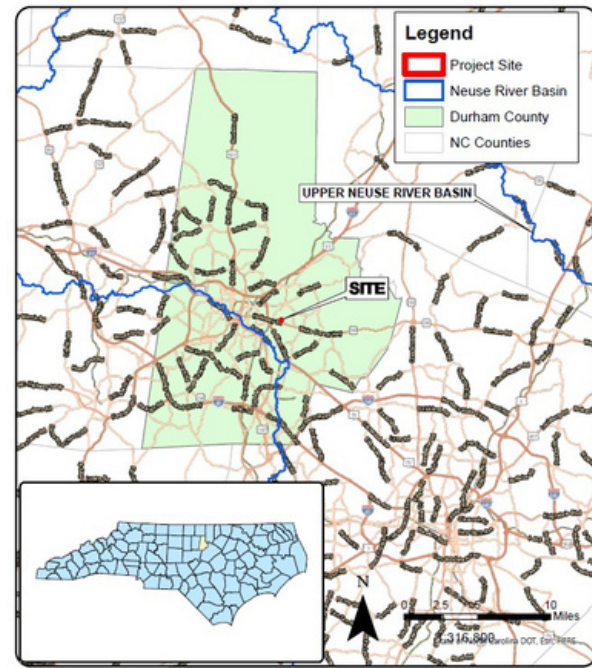
The Durham Soil and Water Conservation District (DSWCD) is currently partnering with Reinvestment Partners (RP) to stabilize a stream bank while treating stormwater runoff from the Charlestowne Apartments. RP is a Durham-based non-profit organization that seeks to foster healthy and just communities by empowering people, improving places, and influencing policy. Currently, RP is renovating the Charlestowne Apartments to provide safe, affordable housing for low-income families in Durham. Adjacent to the complex is an Unnamed Tributary to Little Lick Creek, which has migrated to within 10 feet of the building's external wall resulting from exacerbated bank erosion in recent years. The Charlestowne Apartments Stream Bank Stabilization project seeks to stabilize approximately 150 linear feet of the existing stream through channel realignment, incorporation of in-stream grade control structures, creation of a bankfull bench, and bioengineered bank stabilization techniques. The project scope will also include the implementation of two green infrastructure practices, a linear bio-filtration system (swale) and a stormwater wetland basin, to reduce the impact of on-site stormwater runoff on stream stability. Collectively the stream stabilization and green infrastructure practices will reduce sediment and nutrient transport downstream to Little Lick Creek and Falls Lake, a water supply reservoir for the County of Durham.

Implementation of this project will lead to the treatments of Total Nitrogen (TN), Total Phosphorus (TP), and Total Sediments (TSS) and reduce the amount that enters in the drinking water. It will also increase public awareness regarding water quality, which will lead to the improvement of water health. Percent removal of TN, TP, and TSS will be provided through the treatment of stormwater runoff by the proposed linear biofiltration swale and stormwater wetland basin. Per the SCM Crediting Document, these measures can remove 10 – 35% TN and 10 – 45% TP. Final removal rates will be determined during the design development stage when SCM sizing and drainage area to the SCM are finalized. Proposed streambank stabilization measures will also reduce the contribution of sediment to surface waters within the Little Lick Creek watershed. Sediment reduction estimates will be generated during the design development phase.

DSWCD has received grant funding from the North Carolina Division of Water Resources, EPA, and the NC Division of Soil and Water Conservation StRAP funding. Currently, the project is in the design phase with permit applications to follow. The project is scheduled to go to construction at the end of 2024.



Before picture



PARTNERS

North Carolina Conservation District Employees Association (NCCDEA)



Pictured above: NCCDEA Officers

Jason Byrd (Rockingham SWCD)- Past President, **Nancy McCormick** (Person SWCD), Secretary, **Marybeth Watkins** (Brunswick SWCD)- President, **Lisa Marochak** (Durham SWCD)- Vice President, and **Emily Bateman** (Wake)- Treasurer

The North Carolina District Employees Association (NCCDEA) held its banquet and election of officers on September 20 in Greensboro. The banquet was held during the 2023 Conservation Employees Training (CET) from September 18th-21st for district employees from the 96 Soil & Water Conservation Districts across the state. Lisa Marochak was elected to serve as the Vice President of the NCCDEA Board. She will remain in this role for two years before transitioning to the role of President for the NCCDEA Board. The board's mission is to strengthen the local Soil & Water Conservation Districts of North Carolina by providing a vehicle for personal development of district employees and to assist them to better fulfill their responsibilities.

2023 Tri-County Pasture Field Day

During FY23-24, Person County hosted the 4th Annual Tri-County Livestock and Pasture Field Day with help from Orange and Durham County. This event was held on September 26, 2023, at City Lake Farm in Roxboro, NC with 61 people in attendance. This event is an opportunity for agriculture and livestock professionals from across the Piedmont to learn about pasture and livestock management techniques. The topics this year consisted of animal health, poisonous plants and chemical use, flies and parasites, and silvopasture & agroforestry. There were many sponsors including Durham, Orange, and Person Soil and Water Conservation Districts, NC Cooperative Extension, Smokey Dave's BBQ, Firsthand Foods, Durham Farm Bureau, Orange Farm Bureau, Ag. South Farm Credit, Barenbrug, Southeast AgriSeeds, Southern States Cooperative, Tractor Supply of Hillsborough, Pasture Management Systems Inc., and FarmPLUS Insurance Services.



2023 Tri-County Pasture Field Day Planning Committee



2024 Durham and Orange SWCD Annual Pond Clinic



Each year the Soil and Water Department looks at many existing ponds in the county. Citizen's pond requests can be anything from a leaking dam, a weed problem, or problems from wildlife, to name a few examples. This year the department assisted 84 residents in the management of their reservoirs. The department also looked at several new pond sites during the year. Older ponds eventually fill in with sediment and need to be cleaned out. This is another service the department offers the landowners in the county through the Ag Cost Share Program.

On May 14th, the Durham and Orange Soil and Water Conservation Districts held their annual pond clinic at the Blackwood Farm Park in Orange County. We kicked the event off with a youth fishing tournament which was well attended. During this event, citizens were able to gain knowledge on topics such as pond construction, maintenance, fish production, and wildlife associated with ponds. There were 62 participants at this year's event. Most participants already owned a pond and, for the most part, were interested in managing ponds for weed control and fish production. Foster Lake and Pond Management, Durham & Orange Soil and Water Conservation Districts, Durham County Farm Bureau, Summit Engineering & Design, and Biscuitville of Mebane were the event's sponsors. The event concluded with a fish lunch from Gillis Catering in Hurdle Mills.

Durham SWCD Farmer Appreciation Dinner

Each year Durham Soil and Water Conservation District hosts a Farmer Appreciation Dinner to thank farmers for all their hard work in the county. On November 14th, the Farmer Appreciation Dinner was held at Coffey Ground Ranch in Bahama, North Carolina with a total of 137 guests in attendance. Each year Durham SWCD recognizes a Farm Family of the Year (see page 17) and a Farm Heritage Hall of Fame inductee at the dinner.



**Farm
Heritage Hall
of Fame
inductee
Phillip and
James Ellis**

The Farm Heritage Hall of Fame recognizes those individuals of the past or present who, through agriculture, have made or continue to make our county and state a better place to live and work. This year, Durham SWCD inducted Mr. Phillip and James Ellis, "The Ellis Brothers", as they have had strong agricultural ties and community involvement in Durham County for decades. The Farm Heritage Hall of Fame Committee is made up of farmers, SWCD employees, Farm Bureau members, and a Farm Service Agency employee.

**Jordan High
FFA helped
serve the food
and lead us in
the Pledge of
Allegiance**



Piedmont Conservation Council (PCC)

From the desk of Grace Messinger, PCC Executive Director:

PCC appreciates the working partnership we have with Durham District- being co-located helps to build PCC's network in achieving our mission Leveraging resources and partners to protect and preserve our natural environment while enriching the quality of community life.

This past year we have continued working with Grove Park Homeowners Association to finish the stream restoration project and we are working to submit the final grant reports. An important need to support the long-term success of this work is to provide educational resources to the HOA and the community such that the permanent conservation easements and restoration practices flourish. PCC is creating up to four educational signs to showcase and highlight the projects' purpose, partnerships, long-term ecological improvements. These community engaging signs will be placed in prominent locations throughout the community. Funding to support this work was provided through the PCC's state RC&D's Flood Reduction. Look for them to be completed and installed by fall 2024.

PCC worked with the district staff to apply for two NC-DACS StRAP (Streamflow Rehabilitation Assistance Program) applications for streambank restoration practices. A challenge for any project is obtaining adequate funding to implement the proposed restoration practices. PCC was awarded \$399,000 to support implementation projects along an unnamed tributary to 303(d) listed Ellerbe Creek in the Neuse River Basin and for an unnamed Tributary to Little Lick Creek. This funding will be leveraged with current or pending district grant funds.

This past summer, through the PCC's project request form, David Harris and Grace Messinger met with representatives of the Woodcroft HOA. There are complex issues in this community from stormwater management to eroding stream corridors. PCC will work to help identify the best solutions or partnerships most appropriate to address these long-term challenges as this property is in the Third Fork Creek watershed, part of the Jordan watershed.

PCC, is grateful for the partnership with Durham District and we appreciate the level of support we get from Eddie, Lisa, and David as PCC Council members. If you have project ideas or needs within the regional watersheds or counties PCC serves, please reach out to Grace at grace@piedmontconservation.org or by cell at 484-554-4076.

Be on the lookout for our updated website: www.piedmontconservation.org

Grace Messinger, Executive Director
Piedmont Conservation Council
484-554-4076 (mobile)
grace@piedmontconservation.org
www.piedmontconservation.org



Update from Natural Resources Conservation Service (NRCS)

Working with our wonderful state and county partners in Durham, the Natural Resources Conservation Service (NRCS) strives to assist farms and landowners to protect their natural resources and address resource concerns on their land. Concerns could range from water quality to livestock production, crop health to forest management, and even to wildlife habitat. While our scope and opportunities are expansive, we could not accomplish our goals without the assistance and expertise of our partners and the vibrant communities we serve. Through program administration and technical assistance funded by the Farm Bill, we hope to embody our mission of Helping People Help the Land.

We are currently servicing six active contracts in Durham County, implementing conservation practices such as seasonal high tunnels, livestock exclusion from surface water, and timber management for wildlife habitat. So far in 2024, one application has been funded through our Environmental Quality Incentives Program (EQIP) totaling \$30K in financial assistance to a livestock producer and improving water quality by removing livestock from surface water. We are currently awaiting notification of funding for applications submitted to our Conservation Stewardship Program (CSP).

While still ongoing, our 2024 fiscal year included several opportunities for producers to apply for financial assistance. The primary practices producers in Durham applied for were seasonal high tunnel systems to extend the growing season for vegetable and cut flowers, and livestock exclusion from surface water. Many of the producers we met this year operate small intensive vegetable operations and contribute significantly to the local food economy of Durham. We look forward to continue expanding outreach and sharing opportunities with this strong community of local food producers and reaching new audiences in the coming year to better serve all the agricultural producers in Durham County.



Contact Us



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