

Winter
2015-2016



Arbor Day at Catawba Trail Elementary School

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Richland Soil and Water Conservation District



Rainfall Simulator Demonstrates Power of Healthy Soil at Pasture Field Day



With fields already saturated and more rainfall imminent, a dedicated contingent of livestock owners and grazing land managers gathered in Blythewood for the Richland SWCD's first Pasture Field Day in the Twenty-five Mile Creek Watershed on September 29, 2015. During the course of the day, 64 participants learned about mobile fencing options and troubleshooting from Clemson's Dr. John Andrae, weed ID and management from Extension Agent Travis Mitchell, and grazing management and soil health from NRCS Agronomist Gordon Mikell and Grazing Specialist Jill Epley.

One of the highlights of the field day was a rainfall simulation by the SC Grazing Lands Coalition (SCGLC). SCGLC is an organization of SC groups and individuals interested in addressing resource management concerns on grazing lands. Members include livestock

associations, academic and cooperative extension programs, state and federal agricultural agencies, conservation organizations, farmers, and others. Through a recent Conservation Innovation Grant, the SCGLC received a trailered rainfall simulator which provides a powerful demonstration of how grazing management affects soil health.

During the simulation, trays of soil from fields and pastures managed in different ways (overgrazed, rotationally-grazed, cover-cropped, tilled, etc.) are subjected to a simulated rainstorm by a carefully-calibrated overhead sprinkler. When the rainfall hits the soil trays, some of the water runs off over the soil's surface, causing erosion and carrying away nutrients and sediment, while some of the water soaks into, or "infiltrates," the soil. Better pasture management and conservation practices like cover cropping and reduced tillage increase the amount of water that infiltrates the soil while decreasing the amount that runs off over the soil's surface. This increases a crop or pasture's drought tolerance and profitability while protecting water quality.

"It was great to get our attention with the rainfall simulator," said one field day participant. "Seeing is believing! Don't overgraze if you don't want to lose your soil!" For more information about grazing management, contact your local Extension Agent or NRCS Conservationist.



Soil Health Field Day at Carter Farms

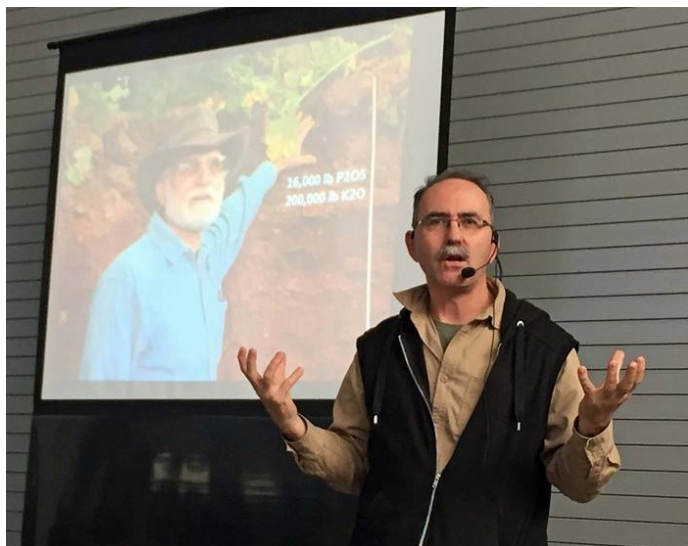
“Whose idea was it to have a field day on the coldest day of the year?” We asked each other this question in just as we set up for the Soil Health Field Day at Jason Carter’s farm in Eastover on January 19th. It was 16° on the farm at daybreak, and the soil samples for the rainfall simulator were frozen in their pans. “Only the true cover-croppers will show up,” Carter warned, cranking up a propane heater and arranging the soil pans in a huddle around it to thaw.

Our fears were allayed as participants began to arrive; by show-time, more than 100 people were present to hear the latest in soil health research and practice from SC’s All-Star Soil Health Team. The Team consists of farmers, including Carter and Commissioner Carl Coleman, both of whom are serving terms as National Soil Health Champions; research scientists, including Clemson’s Dr. Dara Park and USC’s Dr. Robin “Buz” Kloot; NRCS Conservation Agronomist Gordon Mikell; and the SCDNR/SCGLC Rainfall Simulation Facilitators.

Throughout the course of the day, the Team presented results from several local research and demonstration projects which have provided new information about how SC’s coastal plains soils respond to soil health practices. With multi-species cover crops and reduced tillage, farmers have been able to park their subsoilers; cut their phosphorous, potassium, nitrogen, and lime applications (in some cases, completely); and reduce their use of pesticides and fungicides. Soils are healthier, crops are more drought-resistant and resilient, and, in some cases, fields have become more profitable.

“Cover crops beat steel,” Klot said, referring to the advantages a soil-conscious farm management system that includes cover cropping and reduced tillage has over plows, disks, and harrows. “We cannot solve our problems with steel.” To build the kinds of healthy soils that lead to healthy, resilient crops and economies, we must learn to work with nature, not against it.

For more information about soil health and the research findings presented during the field day, join the Carolina Cover Crop Connection on Facebook at <https://www.facebook.com/groups/carolinacovercropconnection/> or visit NRCS’s Soil Health site at <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/soils/health/>.



Top: Dr. Buz Klot emphasizes the importance of considering the nutrients available in the full soil profile, not just in the top six inches of soil, when making fertility decisions. Center: Dr. Dara Park and a student explain

how to prepare soil samples to measure electrical conductivity. Bottom: Eastover farmer Jason Carter (right) and NRCS Agronomist Gordon Mikell describe the equipment used to manage cover crops on Carter’s farm.

2015 “Celebrate Arbor Day” Challenge

The Richland SWCD selected twenty-eight winning entries from Richland County K-12 Students in the 2015 Arbor Day Youth Contests.

This year’s contest theme was “Celebrate Arbor Day,” and students were challenged to respond to the theme using any of four methods: performance/video, writing, recycled art sculpture, and notecard. Responses ranged from a vocal performance of an original song called “Arbor Day” (Isabel Johnson, 4th Grade, Homeschool) to a “Flowering Tree Stump” sculpture made of an oatmeal container “stump” covered with “flowers” made from colored plastic bottles (5th Grade Garden Club, Catawba Trail Elementary School). Winning entries were awarded cash prizes, and many will be displayed at the SWCD’s Spring Banquet.

Arbor Day is a holiday set aside to plant, care for, and celebrate trees. The first Arbor Day was celebrated in Nebraska in 1872. While several states observe Arbor Day in the spring, SC celebrates Arbor Day on the first Friday in December because winter is the best time for planting trees in our climate. More details and a complete list of winners is available online at rcgov.us/rswcd.



Photos: Six students from Mr. George Sims’s art class at Arden Elementary School received prizes for their 2015 Arbor Day entries, including Yaretzi Arzate, who created the winning K-1st Grade notecard shown above.

Arbor Day at Catawba Trail Elementary School



The Richland SWCD celebrated Arbor Day with students at Catawba Trail Elementary School on Friday, December 4th. The day began with a third-grade tree-planting and culminated with a special presentation for the entire

student body by NC-based educator and tree advocate Tim Womick. Councilwoman Julie-Ann Dixon issued an Arbor Day proclamation on behalf of County Council. A second tree was planted by second graders the following week.

Mini-Grants Provide Funding for School Projects



Left: Catawba Trail Elementary students celebrate the opening of the “Kinder Garden,” a project funded by a Richland SWCD Conservation Education Mini-Grant. Bottom, left: Dutch Fork Elementary Principal Julius Scott and Resident Scientist Amy Umberger are congratulated by Richland SWCD Chairman Kenny Mullis and Councilman Bill Malinowski on their Mini-Grant. Bottom, right: Betsy Russell of Bradley Elementary receives a Clean Stream Columbia Award from City representative Susan Licher.

Conservation projects at five local schools received funding through the Conservation Education Mini-Grant and Clean Stream Columbia Programs sponsored by the Richland SWCD and the City of Columbia in the fall 2015 semester. These award programs provide up to \$250 in support of environmental efforts at Richland County schools. This year’s recipients are:

- Bradley Elementary School* (Elizabeth Russell)—Plantings to Reduce Runoff and Provide Habitat
- Catawba Trail Elementary School (Jogie Love)—School Gardens
- Dutch Fork Elementary School (Amy Umberger)—Environmental Science Fair
- Lower Richland High School (Constantina Green)—Indoor Air Quality Campaign
- Ridge View High School (David Degenhardt)—School Gardens

*Denotes Clean Stream Columbia Award Recipient

“We believe that if students...participate in hands on experiences throughout the year...they will be motivated to take care of the earth throughout their lifetime,” says Jogie Love, Kindergarten Teacher and award recipient at Catawba Trail Elementary School. The school’s gardening project “will teach the students how to take care of plants [as well as] the different habitats of animals and what they need to survive.” Additionally, students will learn “patience, team building, cooperation, perseverance and many other great character traits,” says Love.

Faculty and staff members of Richland County schools are eligible to apply for Conservation Education Mini-Grants and Clean Stream Columbia Awards to support campus conservation projects. Since 2012, \$6,750 in mini-grants have been awarded to 27 school conservation projects, including school gardens, wildlife habitats, nature trails, and composting efforts. The next application deadline is February 16, 2016. Details and the application are available online at www.rcgov.us/rswcd.



Conservation Education Highlights

- Applications for spring Conservation Education Mini-Grants to support school environmental projects are due by February 16, 2016. Applications are online at www.rcgov.us/rswcd.
- Nominations for Richland County Conservation Teacher and Principal of the Year are due by April 8, 2016. Winners receive cash prizes, are recognized at the SWCD's Annual Banquet, and progress to the state competition. Nomination forms are online at www.rcgov.us/rswcd.
- The spring Conservation Poster Contest is open to all Richland County K-12 students, and this year's theme is "We All Need Trees." Entries depicting this theme are due by April 8, 2016. Rules and entry forms are online at www.rcgov.us/rswcd.
- To schedule a classroom conservation presentation for your students, contact Chanda Cooper at cooperc@rcgov.us.
- The National Children and Youth Gardening Symposium will be held in Columbia July 13-16, 2016. Save the date, and visit www.ahs.org for details.



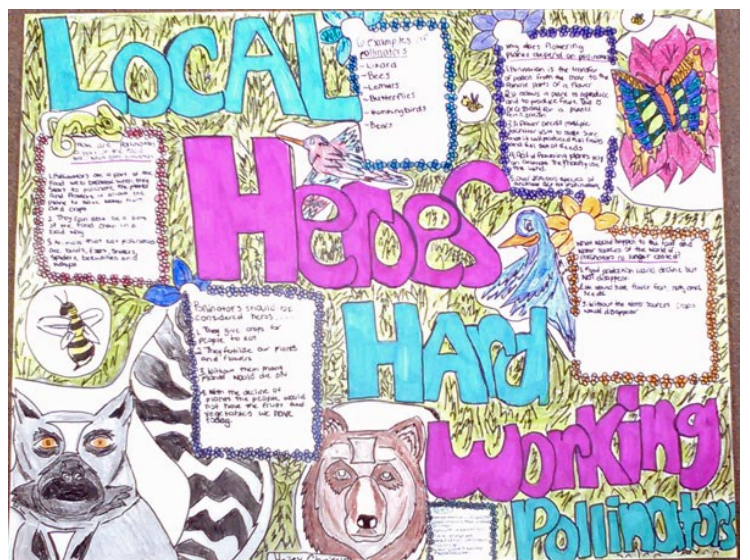
Richland SWCD's centerpiece took **first place** at this year's SC Conservation District Employees Association (SCCDEA) Centerpiece Competition. This fun contest, held during the SCCDEA's annual training workshop, challenges SWCDs to illustrate their counties' programs in creative ways. The Richland SWCD wreath included depictions of soil health programs, pasture best management practices, local agricultural products, pollinators, school programs, and wildlife.

The 2015 SCCDEA training was hosted by the Dillon SWCD.

State Conservation Poster Contest Winners

Richland County students **Joseph Ravindran** and **Hailey Ann Chaisson** were named state winners in the 2015 Conservation Poster Contest, "Local Heroes: Your Hardworking Pollinators." Ravindran, now a 4th grader at Forest Lake Elementary School, participated in the contest as a 3rd grader at Pontiac Elementary School. Chaisson,

now a 9th grader at Blythewood High School, was an 8th grader at Longleaf Middle School when she participated in the contest. Both students received cash prizes and will progress to the national competition. The Conservation Poster Contest is an annual education initiative sponsored by local SWCDs with state and national coordination.



Conservation Interns Join SWCD Staff

Two USC students have joined the Richland SWCD team this spring as conservation interns and will be assisting with conservation education programs throughout the County.



Cheryl Barnes is a senior majoring in Marine Science with an emphasis in Coastal Resource Management and Marine Policy. She will complete her degree this semester and graduate in May. A native of the Washington, D.C. metro area, Barnes came to SC to

explore new places. She served as a Research Assistant in Honduras during the summer of 2014, studying invasive Lion Fish in the Caribbean and diving twice a day. Previously, she interned with Land Trust Alliance and Sustainable Carolina. In her free time, Barnes is an avid SCUBA Diver and is president of USC's SCUBA Club. After graduation, she hopes to have a career where she can continue sharing her love of the outdoors with others while helping to protect our vital natural resources.



Lindsey Shealy is excited to learn more about environmental initiatives and conservation practices at the Richland SWCD this spring as she completes her Master of Education degree. She graduated from Villanova University with a Bachelor of Arts in political science and

philosophy and currently serves as a graduate assistant in the USC Office of Undergraduate Research. She also assists several local organizations with environmental programming, including Camp Discovery, the Carolina Children's Garden, and Sonoco Recycling. After graduation, Shealy hopes to work in environmental education, sharing her passion for the natural world with students in the Carolinas.

Among other duties, Barnes and Shealy will provide classroom presentations on water quality and forestry topics for Richland County schools. To schedule a presentation for your school or community group, contact Chanda Cooper at cooperc@rcgov.us.

Workshops for Environmental Educators

The Richland SWCD partnered with the Environmental Education Association of SC and SC Green Steps Schools to host a School Composting Workshop at Lower Richland High School in November and an Upcycled Gardening Workshop at the Columbia Islamic School in January (pictured at right). The next workshop will be a Teachers' Tour at City Roots Farm on Thursday, March 17, from 4:00-5:30pm. For more information, visit eeasc.org or contact Jane Hiller at jane.hiller@sonoco.com.



Improving Water Quality in Twenty-five Mile Creek



When it rains on pastureland, runoff can carry livestock manure containing bacteria and nutrients into nearby streams. Excess nutrients lead to algal blooms (such as that pictured above), which can cause problems for aquatic and terrestrial wildlife, livestock, pets, and even people.



Preventing livestock from having direct access to ponds and streams, establishing buffers between pastures and water bodies, and improving soil health with rotational grazing can help reduce water pollution while improving livestock health and forage production.

The Richland SWCD is working with several pasture managers in the Twenty-five Mile Creek Watershed (which includes northeastern Richland, western Kershaw, and southern Fairfield Counties) to improve forage and herd health while protecting and improving water quality. Financial assistance is available to livestock owners in the watershed to make certain improvements to pastureland.

Periodic monitoring data suggests the stream experiences elevated levels of bacteria and macro-invertebrate community impairments. Failing septic tanks, urban runoff, wildlife, and pasture runoff carrying bacteria, nutrients, and sediment are some of the factors affecting water quality in Twenty-five Mile Creek.

When fresh manure is washed into waterways, the nutrients it contains can cause algal blooms which may be harmful to aquatic and terrestrial wildlife (including pets and people). Fencing livestock out of ponds and streams and providing alternative water sources can reduce the amount of manure entering waterways while also reducing the herd's exposure to water-borne diseases and algal toxins.

When cattle graze along stream- and pond-banks, their hooves exert some 26.8 pounds of pressure per square inch (psi). For perspective, a D9 bulldozer weighing 52.5 tons only applies 16.1 psi! This pressure destroys streambank vegetation and disturbs or compacts the soil, leading to increased erosion and more pollutants entering the stream. Creating vegetated buffers along waterways and increasing the pasture's resilience through rotational grazing can reverse this problem.

Livestock owners in the Watershed may be eligible to receive up to 70% cost-share funding to implement conservation practices such as fencing, alternate water sources, and the creation of vegetated buffers along waterways that protect water quality. Visit www.rcgov.us/twentyfivemile for more information, or contact **Mike Newman** at (803) 602-2585 to determine if property is eligible for financial assistance.

This Watershed Improvement Project is funded, in part, by the US EPA under a Section 319 Grant through the SC Department of Health and Environmental Control. The Richland SWCD is working closely with the Kershaw SWCD, Richland and Kershaw County, the Natural Resources Conservation Service, and other partners to implement this three-year initiative.

Special Thanks...

The Richland SWCD would like to extend a special thanks to new Affiliate Members **Roger Ross** and **Mike Craven** of **R&G Enterprises**, who donated their time and travel to transport four pallets of educational supplies, including birdfeeders and planter pots, from Charleston to Columbia for distribution to midlands schools.



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Thank you!

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Support the District: Become an Affiliate

Affiliate Members are a vital part of our conservation team. The financial support given by Affiliates helps us carry out many of our conservation and stewardship programs within the County. Please support our efforts by becoming an Affiliate Member today! Affiliate Memberships are good for **one year** from the date of application. Contributions are tax deductible.

- () \$25—Affiliate Member
- () \$50—Silver Affiliate Member
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*Titanium Affiliates' logos can be featured in the RSWCD's quarterly newsletter. If you would like your logo included, e-mail the file to cooperc@rcgov.us.

Please return this form and a check made payable to Richland Soil and Water Conservation District to:

Richland Soil and Water Conservation District
2020 Hampton Street, Rm. 3063A
Columbia, SC 29204

Thank you for your support!

Membership Information

Name: _____

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Phone #: _____

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****Conservation Education Mini-Grants** are awarded to local schools to support conservation projects each fall and spring. Mini-Grants sponsored by individuals or organizations will be awarded through the standard RSWCD award process and donors will be recognized in publicity materials.