



A Service of Clemson Extension



Annual Report of Activities

YEAR 10 / JANUARY 2018 - DECEMBER 2018

MARCH 2018





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Executive Summary

Sumter Stormwater Solution's Year Ten Annual Report of Activities summarizes education, involvement, and participation programming provided by Sumter Stormwater Solutions' (SSS) community and education consortium partners. Programming activities strive to educate community members about stormwater quality and quantity and its role in the health of our local waterways. Program areas are determined by the SSS Strategic Plan, which identifies target pollutants of concern, outreach strategies, and short-term and long-term goals.

In 2018, educational information about stormwater issues was distributed indirectly through a variety of Clemson Extension websites, the SCETV program Making It Grow, and the Keeping Sumter Beautiful newspaper column. Booklets, brochures, and promotional items were distributed and educational displays were featured at several fairs and festivals. Several permanent exhibits; including rain gardens, shorescapes, rain barrels, and dog waste stations; were maintained throughout the county and city of Sumter. In total, these indirect means of public education impacted 348,386 people.

Direct education efforts impacted 2,725 people in 2018. Stormwater knowledge was gained through a wide variety of programs including youth programs, educational presentations, statewide training and certification programs, and direct contact with Clemson Extension Agents and Master Gardeners.

Also in 2018, 229 people participated in public involvement programs designed to address stormwater issues in Sumter. Through litter clean ups, a storm drain marking event, a rain barrel workshop, and a rain barrel art contest; participants made a positive impact in Sumter and gained knowledge and skills that they can pass along to others.

In 2019, we will implement our new strategic plan, adding new programming efforts and continue ongoing programs to target pollutants of concern. Rain barrel workshops will continue to provide residents with a way to reduce stormwater runoff at home. Litter will be targeted through beautification and clean-up events. Water body signs will be installed along roadways to familiarize the community with local water body names and increase general stormwater awareness.



Katie Altman
Water Resources Agent

Katie Altman has been a Clemson Extension Water Resources Agent since September 2016 and is the coordinator of Sumter Stormwater Solutions. She is a native South Carolinian and is passionate about protecting the natural resources and quality of life in Sumter and throughout the state.



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Year 10 Highlights

- Information about stormwater issues including: pet waste disposal, FOG disposal, septic system maintenance, reducing stormwater runoff, reducing litter, and general watershed knowledge was featured bi-weekly in the Keeping Sumter Beautiful column of The Sumter Item (p. 7 & appendix A).
- Attendees of Sumter's first eSTEAM Festival learned about common stormwater issues through temporary storm drain murals and demonstrations.
- Five local schools (6 classes) participated in a rain barrel art contest to inspire creativity and concern for local streams and rivers. The decorated barrels were unveiled at the Sumter Earth Day Celebration, where hundreds of votes were cast for the best decorated barrel (p. 20).
- A group of fourteen 9-14 year olds attended 4H₂O camp. They learned about Sumter's water resources and how their actions impact water quality (p. 14).
- Carolina Clear launched a billboard and television commercial, aimed at reducing bacteria from pet waste in runoff. The billboard was displayed in Sumter on US 378. The commercial aired in Sumter in November and December.

TOTAL OUTREACH ACTIVITIES AND TOTAL NUMBER REACHED (*estimated*)

1. Television: 112,886 reached
2. Billboard: 72,000 reached
3. Webpages & social media: 165,992 reached
4. Brochures & outreach materials: 780 reached
5. Publications: 15,039 reached
6. Fairs and festivals: 449,512 reached
7. Demonstration sites: 222,660 reached
8. Trainings, presentations, conferences, and direct contact: 2,725 reached
9. Public involvement (cleanups, volunteer workdays, workshops, BMP installations): 229 reached



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Program Planning and Assessment

Consortium goals are determined at quarterly, open-to-the-public meetings with community partners, education partners, and other stakeholders. To offer the most relevant and impactful programming, meeting members determined pollutants of concern (POCs) in our community through an open voting process. POCs were selected based on impaired water bodies on the 303(d) list, total maximum daily loads (TMDLs), and field observations.

Outreach strategies and goals were then determined by the consortium based on stakeholder input, current state of the knowledge, prior programming efforts, and feedback gained from Carolina Clear survey results. See Appendix B for the SSS Strategic Plan, which details POCs, target audience, outreach strategies, and short-term and long-term goals. 2018 marked the third year of the SSS five-year strategic plan.

SSS focus areas and goals are summarized as follows:

Target Issue (POC)	Goal
Dog waste disposal (bacteria)	Increased number of pet owners pick up dog waste
Septic system maintenance (bacteria)	Improved septic system maintenance
Sediment and erosion on construction sites (sediment)	Proper use of sediment and erosion control BMPs
Sediment from diffuse sources (sediment)	Increased use of landscaping practices that minimize erosion
Illegal dumping (litter)	Increased knowledge of litter impacts
FOG disposal (FOG)	Proper FOG disposal at homes, apartments, and restaurants

Program assessment is a crucial step in determining the impacts of past outreach efforts and in developing future efforts. Program assessment includes, but is not limited to, the following:

- Five-year regional telephone surveys to determine attitudes and behavior related to water resources and pollution prevention
- Google analytics to evaluate impacts of web-based programming and outreach
- Short-term and long-term program evaluations (written and web) to determine knowledge gained, program value, implementation of stormwater practices, and behavior change
- Impact numbers: distribution, viewership, and participant reach
- Individual feedback from program partners and participants on program strengths, weaknesses, and suggested changes



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Community Partners

Sumter Stormwater Solutions community partners include Sumter County and the City of Sumter. Both City and County were instrumental during 2018 for prioritizing efforts, evaluating stormwater pollutants and challenges, and developing new initiatives. In addition, the communities assisted with cleanups, displayed stormwater information at public events, and participated in planning meetings. Their leadership and support is essential to the function and progress of this group.

Municipality & Position	Representative
SUMTER COUNTY	
Stormwater Manager	Alfred Conyers
Environmental Technician	Dan Geddings
Environmental Technician	Reggie Felder
CITY OF SUMTER	
Stormwater Manager	Teige Elliott
Engineering Associate	Jeremy Garland





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Education Partners

Sumter Stormwater Solutions education partners include government agencies, non-profit and community organizations and businesses who share the consortium's mission of providing education to the public on stormwater issues throughout the City and County. Each partner brings a unique skill set to the organization and enhances the variety of programs the consortium is able to offer.





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Mission and Goals

GOAL STATEMENT

To enhance water resource protection and stewardship through education, public involvement and partnerships.

OBJECTIVES

- Use a watershed approach to develop and implement a comprehensive education strategy that addresses stormwater pollution using a prioritized approach capitalizing on local training resources.
- Foster and expand upon citizen involvement in stormwater management through education and participation programs to encourage behavioral change towards improved environmental protection and awareness.
- Facilitate collaboration among local organizations interested in watershed-related education to best meet the educational needs of local communities.
- Through partnerships, leverage education resources and organize outreach programs to meet the NPDES Phase II permit requirements for public stormwater education and outreach to achieve greater water resource protection.
- Participate in collaborative stormwater education that can serve as a model for others.



Photo by Breann Liebermann

*“Water links us to our neighbor
in a way more profound and
complex than any other.”*

John Thorson



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Report Format

This annual report details all stormwater education, outreach, involvement, and participation activities provided by Sumter Stormwater Solutions from January 2018 to December 2018. Activities are obtained from an online database managed by Carolina Clear that consortium partners contribute to throughout the year.

Activities are divided into two categories: public education and public involvement. Public education is further broken down into direct and indirect outreach methods. Direct methods include activities that are implemented through direct contact (workshops, presentations). Indirect activities include internet, television, radio, print, and billboard activities.

For each activity, the following information is provided: lead provider, supporting partners (if applicable), date conducted, number of impacts, and target audience.

Target audiences have been abbreviated as follows:

Target Audience Abbreviations

Abbreviation	Audience
GP	General Public
R	Residential Homeowners and Renters
YT	K-12 Youth and Teachers
HE	Higher Education
T	Technical Engineers, Contractors, Developers, and Staff
EA	Elected and Appointed Officials and High Level Staff
C	Commercial
SP	Stormwater Pond Managers
B	Boat Owners, Operators, and Marinas
P	Pet Owners



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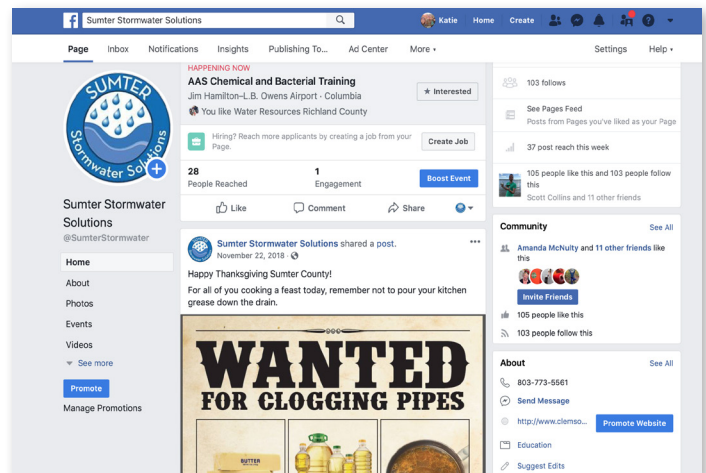
Public Education

Internet (Indirect)

LEAD PROVIDER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension	Sumter Stormwater Solutions website	Ongoing	105	GP
Clemson Extension	Sumter Stormwater Solutions Facebook page	Ongoing	3,817	GP
Clemson Extension	Carolina Clear website	Ongoing	22,367	GP
Clemson Extension	Carolina Clear Facebook page	Ongoing	47,879	GP
Clemson Extension	Stormwater Pond website	Ongoing	43,001	GP, T, SP
Clemson Extension	Carolina Yards website	Ongoing	32,562	GP, R
Clemson Extension	Carolina Clear Youtube page	Ongoing	9,900	GP
Clemson Extension	Clemson Extension Water Resources page	Ongoing	3,869	GP

Sumter Stormwater Solutions maintains a website and a Facebook page. The Sumter Stormwater Solutions website details consortium activities and relevant documents, such as previous years' annual reports. It also includes useful links to resources such as SC Waterways fact sheets, the stormwater pond website, and the Carolina Yards website. Regular Facebook posts provide audiences with information about upcoming events, pollution prevention tips, and stormwater related news.

*Sum of Daily reach 1/1/18-12/31/18





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Public Education

Television/Billboard (Indirect)

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension	N/A	Water quality tips and segments on <i>Making It Grow</i> television show on ETV	Weekly	23,376 statewide	GP
Clemson Extension	N/A	Billboard reading "Bring a bag. Always be prepared." and displaying a photo of someone correctly picking up pet waste	Ongoing	72,000 in Sumter	R, T, SP

Carolina Clear's 2018-2019 media campaign is focused on reducing bacteria in runoff, specifically targeting pet waste as a source. The billboard presents a simple message and modeling of the desired behavior (picking up pet waste).

Clemson University's Making it Grow gardening program features information about practices for protecting water quality; the show airs Tuesdays at 7:00 PM.

*Disclaimer: *Number reported is the average number of persons per household applied to the projected number of households that viewed Making It Grow! For October – November 2018. This number is conservative as it does not account for the SC Channel and only represents one episode's viewing.*



BE PREPARED. ALWAYS BRING A BAG!





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Public Education

Television (Indirect): Pet Waste Commercial

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension	N/A	Pet Waste Commercial	Nov-Dec 2018	89,510	GP

Bacteria is the leading cause of water quality impairment in South Carolina, and pet waste is often the culprit. While there are many barriers that prevent people from picking up pet waste, previous surveys across South Carolina indicate that lack of knowledge of the effect of pet waste bacteria on water quality is not a key one. A more commonly identified barrier to disposal is forgetting to bring a bag on walks. Targeting this audience that picks up sometimes, but not every time, our commercial encourages them to always bring a bag, to create the desired behavior change of always picking up pet waste to protect water quality. Research on the effectiveness of previous pet waste campaigns around the country led us to several key recommendations when creating this commercial: include humor, demonstrate the positive behavior you want people to adopt, share a clear message, and target social diffusion of neighbors learning from other neighbors. As a result, we created a “scooper hero” who arrives just in time to deliver a pet waste bag when the need arises. Using three different vignettes of dog owners caught in the act of leaving pet waste on the ground, the person who receives a bag from the scooper hero in one scene becomes the scooper hero providing a bag in the next one. The tagline of “be prepared, always bring a bag” was developed using a Community Based Social Marketing/Behavior Change planning process, was tested on a focus group of South Carolina dog owners, and is used across our pet waste outreach materials for a consistent message. The commercial was shared on 5 stations around the state, and reached over 1.5 million viewers across South Carolina during the 2 months it aired in the fall of 2018. The commercial is part of a larger pet waste outreach strategy that includes the development of billboards, pledge cards, rack cards, pet waste dispenser installations, and bag giveaways.





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Public Education

Publications (Indirect)

NEWSPAPER, MAGAZINE, ONLINE ARTICLES AND NEWSLETTERS

LEAD PROVIDER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension	Keeping Sumter Beautiful column written for the Sumter <i>Item</i> newspaper	Biweekly	15,000	GP
Clemson Extension	<i>Take Action E-News</i> (online newsletter)	Quarterly	39	GP

Katie Altman wrote water quality articles for the Sumter Item's "Keeping Sumter Beautiful" column on topics such as FOG disposal, the importance of trees in relation to stormwater, litter prevention, rainwater harvesting, and local watersheds. See Appendix A for article examples.

Take Action E-News is a quarterly newsletter sent out through email to stakeholders and individuals that have participated in Sumter Stormwater Solutions programs in the past. The publication keeps readers up to date on recent and upcoming programs as well as local news related to water quality.


AB | WEDNESDAY, MARCH 28, 2018 | THE SUMTER ITEM

Keeping Sumter Beautiful

Katie Altman, Water Resources Extension Agent

For the Love of Trees
 When my nieces were around 7 and 9 years old, I took them to Huntington Beach State Park, where I worked at the time. I loved taking them to an old oak tree we called "the octopus tree" and letting them climb up the twisted limbs that looked like octopus arms sticking up through the sandy soil. I climbed on those same twisted limbs when I was their age. Trees have been like touchstones for memories throughout my life. My favorite rope swing hung from a giant oak in my parents' back yard. I was greeted with the sweet smell of Magnolia flowers every time I walked out the front door in the summer. I can't see a Red Cedar without thinking of those that grow beside my family dock, where I've spent so many wonderful summer


Protection Agency, a tree with a 25-foot diameter canopy and associated soil can manage the 1-inch rainfall from 2,400 square feet of impervious surface.
 If you're looking to help support a healthy landscape, a great place to start is by planting a tree or two. Clemson Extension has some great educational resources to help you pick the right tree and plant it in a location and manner that will help it thrive. Start by looking at the Carolina Yards Plant Database at clemson.edu/cy/plants. The Plant Database will help you pick the right plant for the right place in your yard. You can also specify if you want a native species of tree, which will provide added benefits to our native South Carolina species. Be sure to check out HGIC fact sheet 1001:



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TAKE ACTION E-NEWS

Be part of the solution!



Clemson Extension Stakeholder Survey

In an effort to determine our strengths and weaknesses in meeting the Extension mission and improve future services, we are asking Stakeholders



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Public Education

Outreach Materials (Indirect)

BROCHURES, BOOKLETS, MANUALS

LEAD PROVIDER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension	<i>Rain Gardens- A Rain Garden Manual for South Carolina: Provides SC residents with step-by-step information on planning and constructing a rain garden</i>	Ongoing	150	R
Clemson Extension	9 educational postcards/rack cards covering the following topics: rain gardens, litter prevention, stormwater pollution prevention, septic system maintenance, fats, oils, and grease (FOGs), pressure washing, rain barrels, freshwater shorescapes, and dog waste	Ongoing	100	GP
Clemson Extension	Dog waste brochures: distributed to local pet stores, veterinarians, and animal shelters to encourage picking up after pets	Ongoing	150	P

New rack cards were designed with updated information and graphics and covered the following topics: Composting for Healthy Soil; Capture the Rain; Garden Like a Local; Keep Storm Drains Clear of Yard Waste; Put Waste in It's Place; Gardening for Clean Water; and Better Manage Fats, Oil, and Grease.





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Public Education

Outreach Materials (Indirect)

PROMOTIONAL ITEMS

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension	N/A	Doggie bandanas: Distributed to veterinarians, pet stores, shelters, and to pet owners at tabling events, presentations, and local parks	Ongoing	50	P
Clemson Extension	Sumter County	Dog bag dispenser: Distributed to veterinarians, pet stores, shelters, and to pet owners at tabling events, and presentations	Ongoing	300	P
Clemson Extension	N/A	SSS reusable water bottles: Distributed at events and programs	Ongoing	30	GP, R, YT

Doggie bandanas include the message “Clean Water. Clean Yards. Clean Shoes. When dooty calls...pick it up!” These are a great reminder for pet owners to pick up after their pets and are one of the most popular promotional items that Sumter Stormwater Solutions distributes.



Dog bag dispensers come with a carabineer to attach to a dog leash and offer a simple way to ensure bags are always handy when needed. They are also a very popular promo item with pet owners.



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Public Education

Permanent Exhibits (Indirect)

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Sumter County	Clemson Extension	Shorescape at Patriot Park	Ongoing	100,000	GP, YT
Sumter County	Clemson Extension, Master Gardeners	Rain garden at Patriot Park with interpretive sign	Ongoing	100,000	GP, YT
Sumter County	Clemson Extension	Two rain gardens at Sumter County Public Works with interpretive sign	Ongoing	40	GP, T
Central Carolina Technical Collge	Clemson Extension	Rain barrel at Natural Resources Management Center with interpretive sign	Ongoing	120	GP, HE
Sumter County	Clemson Extension	Dog waste stations: 4 located at Patriot Park, 4 located at Dillon Park	Ongoing	2,000	P
City of Sumter		Dog waste stations: 5 at Palmetto Park	Ongoing	500	P
City of Sumter	Clemson Extension	Shorescape at Palmetto Park	Ongoing	20,000	GP

Permanent exhibits offer great opportunities to educate our community on stormwater best practices. The rain gardens at Patriot Park and Dillon Park continue to treat stormwater from the surrounding area. Also at Patriot Park and Palmetto Park are shorescapes, where native plants and grasses were planted along the stormwater pond shorelines. A rainwater harvesting system and educational sign installed by Central Carolina Technical College students remains at their interpretive center. Dog waste stations continue to be widely used throughout the county at both Patriot Park and Dillon Park. They provide dog walkers with a convenient way to pick up after their pets.



A low-mow shoreline at Patriot Parkin spring.



Educational sign installed at the shorescape at Patiot Park.



Rainwater harvesting at Central Carolina Technical College.



A dog owner using the dog waste station at Patriot Park.



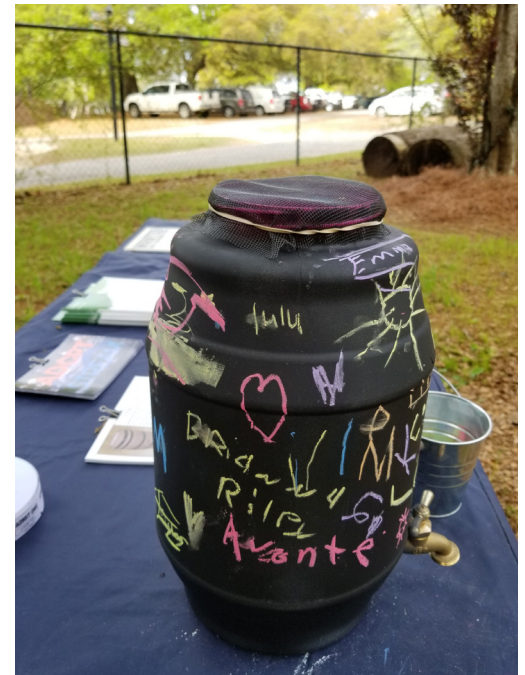
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Public Education

Fairs and Festivals (Indirect)

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension	City of Sumter	Displays at the Sumter Earth Day Celebration	4/22/17	500	GP
Clemson Master Gardener Association	Clemson Extension	Rain Barrel Display at the Sumter County Fair	October 2018	2,000	GP
Clemson Extension	N/A	Water quality/Clemson Extension table at Crestwood High career fair	2/15/18	300	YT

Festivals and fairs offer great opportunities to reach a large number of people at one time. General events such as the Sumter County Fair, attract a broad audience that may know little about environmental protection, while environmentally themed events, such as the Sumter Earth Day Celebration, attract audiences already tuned into green issues and eager to learn more ways to make a difference. By drawing visitors with colorful displays and hands-on activities, such as a rain barrel or free giveaways, Sumter Stormwater Solutions can build general awareness and provide detailed information on specific issues.



Visitors to the Sumter Earth Day Celebration had the opportunity to view rainbarrel art created by local students and create their own chalk art on a tabletop rain barrel replica.



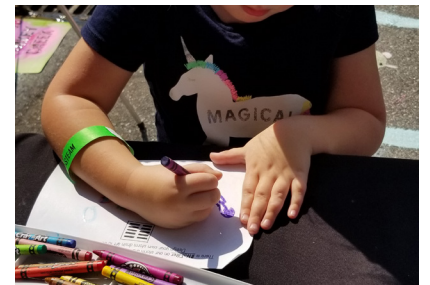
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Public Education

Fairs and Festivals (Indirect)

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension	Sumter County, City of Sumter	Temporary Stormdrain Murals and Sumter County Stormwater table at Sumter's eSTEAM festival	10/6/18	3,000	GP

The City of Sumter hosted a new festival focused on science, technology, engineering, art, and math in 2018 and saw a turn out of 3,000 people. Before the festival, we painted five temporary storm drain murals using a simple mixture of water, corn starch, and food coloring. These murals displayed messages about stormwater issues and all contained the words, "Drains to Turkey Creek," which is the local receiving water body for Sumter's downtown storm drains. At the Sumter County Stormwater table, we performed Enviroscape demonstrations every 15-30 minutes to explain common stormwater issues and encouraged visitors to design their own stormdrain murals with crayons and paper, based on what they learned.





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Public Education

Fairs and Festivals (Indirect)

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension	N/A	Water Resources themed Clemson Extension booth at SC State Fair	October 2018	443,712	GP

Every year, Clemson Extension has a large display area at the state fair. The booth is staffed with Extension Agents at all times that the fair is open. This year, the Clemson Extension booth focused on Water Resources in South Carolina. The displays included rain barrel display, an interactive game about aquatic habitats, a water availability demonstration, and information about soil sampling, stormwater pollution, and how water impacts human health. Each night of the fair, at least one Water Resources Agent was present to answer questions about water, as well as a variety of other Extension Agents.





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Public Education

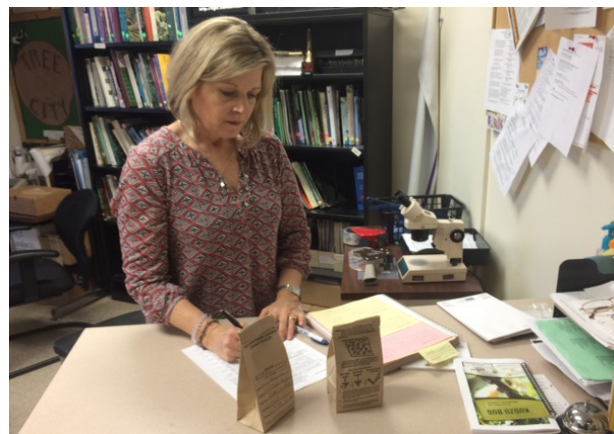
In-Person, Phone, Email (Direct Contacts)

LEAD PROVIDER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension, Master Gardens	In-Person, Phone, Email: Clemson Extension Agents and Master Gardeners answered questions relating to a variety of home landscaping issues that impact water quality; topics including compost, mulch, fertilizers, native plants, irrigation, etc.	Ongoing	Unknown	GP, R, C
Clemson Extension	In-Person, Phone, Email: Clemson Extension Agents answered questions and provided services to a variety of Sumter County audiences regarding water resources and stormwater-related best management practices	Ongoing	150	GP, R, YT, HE, T, C, SP, P
Clemson Extension, Clemson's Agricultural Service Lab	Soil Samples: Clemson Extension, in cooperation with Clemson's Agricultural Service Lab, processed soil samples for Sumter County residents and commercial audiences	Ongoing	900	R, C, GP

Sumter County is home to 12 Clemson Extension Agents and over 150 active Master Gardeners. Throughout the year, Extension Agents respond to calls, walk-ins, and emails from the public, as well as field questions during public events. Information is requested by individuals representing both the private and commercial sector, with diverse interests ranging from agriculture, forestry, home landscaping, horticulture, and pond management. Extension offices also provide services in concert with the University, including processing soil samples, irrigation water analysis, plant and weed identification and identification of plant problems. These direct contacts with the public yield some of the most positive results in addressing specific concerns and problems, most of which relate to water quality at some level.



Master Gardeners In Training learn about plant propagation to prepare for clients' questions.



A Master Gardener processes soil samples in the Sumter County Extension office.



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Public Education

Presentations (Direct)

LEAD PROVIDER	SUPPORTING PARTNERS	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension	N/A	Carolina Yards presentation for Azalea Garden Club	2/1/18	30	
Clemson Extension	N/A	Stormwater presentation for Kiwanis Club	3/16/18	40	
Clemson Extension	N/A	Water Quality presentation for Going Green week at Sumter High School	3/28/18	25	
Clemson Extension	N/A	Aquatic invertebrates and water quality activity for Earth Day at Cherryvale Elementary	4/20/18	100	
Clemson Extension	N/A	Carolina Yards presentation for Sumter Master Gardener class	5/14/18	12	

Several presentations in 2018 focused on general stormwater knowledge, prevention of stormwater pollution, improvement of stormwater pond health, and Carolina Yards. The Carolina Yards program recognizes homeowners that implement the principles of environmental landscape management. Yards are evaluated using a scorecard, where each action earns “inches” towards certification.





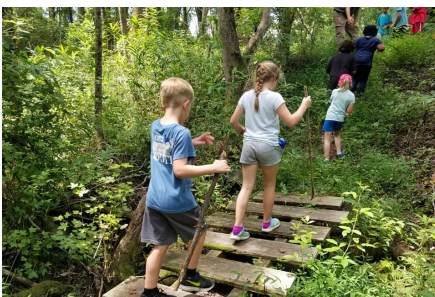
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Public Education

Presentations: 4-H₂O

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension	Central Carolina Technical College	Water-themed summer camp	July 2018	14 participants 2 volunteers	YT

Sumter County Clemson Extension Water Resources and 4H agents partnered with Central Carolina Technical College's Environmental and Natural Resources department to provide a hands-on, water-themed, science summer camp called 4H₂O for 9-14 year olds. Participants learned how to sample several water quality indicators including macroinvertebrates, pH, dissolved oxygen, and temperature. They also learned about Sumter's native flora and fauna and how our actions impact habitat and water quality.





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Public Education

Trainings and Certifications (Direct)

TRAININGS AND CERTIFICATIONS

LEAD PROVIDER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension	Master Gardener Training- new certified Master Gardeners	Spring 2018	12	GP, R
Clemson Extension	<i>Carolina Yards Online Guide to Environmentally Friendly Gardening</i>	Fall 2018	424 yards certified, to date	GP, R
Clemson Extension	Master Naturalist Training: Midlands	March-June 2018	20	GP, R

As part of the Master Gardener coursework, information and programs are incorporated on both structural and behavioral stormwater best management practices. Once an individual has completed the course, their status remains active by performing internship and volunteer hours focused on community outreach. The Master Gardeners provided support to Sumter Stormwater Solutions in a variety of ways. These dedicated volunteers are an enormous asset to Sumter Stormwater Solutions.

Carolina Yards online training is offered through Clemson Extension and is designed to help gardeners maintain low maintenance yards that work with South Carolina's natural environment, rather than against it. Topics covered include healthy soils, native vegetation, fertilizing, and smart irrigation. Training is conducted online over five weeks. The Carolina Yards online course underwent a major redesign during Fall 2017 and the new and improved online course launched in Spring 2018.

The Master Naturalist Training is offered through Clemson Extension and includes hands-on coursework in a variety of topics including natural history, birds and insects, geology, plant identification and foraging, stream ecology, and fish biology. Those who complete the program become volunteer citizen scientists who assist in natural resources and water resources-related programs and activities. Training is conducted once a week over several months.

SOUTH CAROLINA

Master
Naturalist

A CLEMSON EXTENSION PROGRAM



SOUTH CAROLINA

Master
Gardener

A CLEMSON EXTENSION PROGRAM





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Public Education

Trainings and Certifications (Direct)

TRAININGS AND CERTIFICATIONS

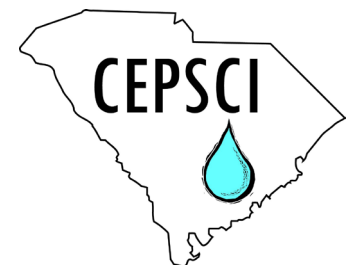
LEAD PROVIDER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson University	CEPSCI (Certified Erosion Prevention and Sediment Control Inspector) courses	Ongoing	763	C, T
Clemson University	CSPR (Certified Stormwater Plan Reviewer) courses	Ongoing	80	C, T
Clemson University	Master Pond Manager hybrid course	Spring 2018; Fall 2018	72	C, T, SP
Clemson University	Master Rain Gardener	2018	83	R, T, C

The CEPSCI and CSPR courses educate stormwater professionals on the proper design and review of stormwater and sediment control plans for development sites and on the proper installation, maintenance and inspection of erosion prevention and sediment control measures at construction sites in order to meet regulatory and environmental requirements. Preventing sediment-laden runoff not only protects our rivers, creeks and streams, but it is also a trademark of a quality construction project. The lists of certified inspectors and reviewers for South Carolina are available at <http://www.clemson.edu/public/cepisci/inspectors.html> and <http://www.clemson.edu/public/cspr>.

The statewide Master Pond Manager course offers research-based pond management strategies to pond owners and managers through an online classroom and in-person training. The course was offered twice in 2018.



Participants in the Spring 2018 Master Pond Manager course received hands-on training in pond management





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Public Involvement

Litter Clean-ups and Stormdrain Marking

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Central Carolina Technical College	Keep Sumter Beautiful	Natural Resource Management Club Litter Clean-up	4/28/18	15 volunteers	GP, YT
Shaw Airforce Base volunteers	Keep Sumter Beautiful	Volunteer Litter Clean-up at Patriot Park	6/9/18	8 volunteers	GP, YT
Clemson Extension	Keep Sumter Beautiful	River Sweep @ Pack's Landing	12/2/18	4 volunteers	GP
Clemson Extension	Boy Scout Troop 339	Storm Drains marked at Sumter Civic Center and Fairgrounds	5/1/18	7 volunteers	GP, YT

Volunteers made a difference in Sumter this year by participating in litter cleanups at Airport rd, Patriot Parkway, and Pack's Landing on Lake Marion. At litter cleanups, volunteers removed litter and debris from our waterways, forests, and roadways; not only improving water quality, but also enhancing the beauty of the community. Keep Sumter Beautiful provided supplies for these cleanups

Boy Scout Troop 339 (sponsored by American Legion 15), volunteered to install Sumter Stormwater Solutions markers on storm drains at the Sumter Civic Center and Fairgrounds. The markers read, "No Dumping," "Drains to waterways," and "Only rain down the storm drain."





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Public Involvement

Rain Barrel Workshops

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension	Sumter County, Coca-Cola, Central Carolina Technical College	Rain barrel workshops	6/13/18	15	GP, R

A rain barrel workshop was offered this year to give homeowners a chance to create and install their own rain barrels. Rain barrels are a direct way citizens can improve water quality. By capturing and storing roof runoff, rain barrels reduce local flooding and decrease the amount of pollution carried by runoff from yards and driveways. Barrels were donated by Coca-Cola Bottling Co. Consolidated and Central Carolina Technical College.





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Public Involvement

Rain Barrel Art Contest

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension	Sumter County; City of Sumter	Rain Barrel Art Contest for Sumter County Schools	4/22/17	6 classes; 180 students	GP, YT, R, GP

The 2018 Rain Barrel Art Contest was hosted by Sumter Stormwater Solutions, the City of Sumter, and Sumter County. The Sumter Young Professionals donated 55 gallon drums. Many hands were involved in creating the final product. Barrels that once held syrups were donated from Coca-Cola. Hardware was added to the barrels such as hose bibs and overflow hoses, transforming them into rain barrels. These barrels were then distributed to schools in Sumter County. Students used their imagination and some paint to turn each barrel into a unique work of yard art.

The painted barrels made their debut at the City of Sumter Earth Day Celebration. In total, 6 classes participated ranging from 6th to 12th grade. Hundreds of Earth Day attendees voted for their favorite rain barrel.



Winner (by popular votes) of the 2018 Rain Barrel Art Contest: Alice Drive Middle School



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Appendix A

Articles

Article on water availability and protecting water quality, published in the Sumter *Item* newspaper as part of the Keeping Sumter Beautiful series. Written by Katie Altman and published on April 23, 2018.

Keeping Sumter Beautiful

Katie Altman, Water Resources Extension Agent

For the Love of Trees

When my nieces were around 7 and 9 years old, I took them to Huntington Beach State Park, where I worked at the time. I loved taking them to an old oak tree we called “the octopus tree” and letting them climb up the twisted limbs that looked like octopus arms sticking up through the sandy soil. I climbed on those same twisted limbs when I was their age. Trees have been like touchstones for memories throughout my life. My favorite rope swing hung from a giant oak in my parents’ backyard. I was greeted with the sweet smell of Magnolia flowers every time I walked out the front door in the summer. I can’t see a Red Cedar without thinking of those that grow beside my family dock, where I’ve spent so many wonderful summer days fishing, crabbing, and swimming in the salt marsh. I look at all these tall, sturdy trees and I see my life reflected back to me in their branches.

As you may have picked up, I love trees. Aside from evoking a swell of nostalgia in me, they serve many important purposes. Trees provide important ecosystem services including providing food and shelter to native animals, reducing soil erosion, and even reducing flooding. Trees also improve air quality and water quality by filtering pollutants, promote infiltration to the groundwater table, and reduce energy use by providing shade to nearby buildings. According to the Environmental

Protection Agency, a tree with a 25-foot diameter canopy and associated soil can manage the 1-inch rainfall from 2,400 square feet of impervious surface.

If you’re looking to help support a healthy landscape, a great place to start is by planting a tree or two. Clemson Extension has some great educational resources to help you pick the right tree and plant it in a location and manner that will help it thrive. Start by looking at the Carolina Yards Plant Database at clemson.edu/cy/plants. The Plant Database will help you pick the right plant for the right place in your yard. You can also specify if you want a native species of tree, which will provide added benefits to our native South Carolina species. Be sure to check out HGIC fact sheet 1001: Planting Trees Correctly. You can find it by visiting clemson.edu/hgic and searching “1001”

Planting one tree may seem like an unimportant act, but don’t let that discourage you. These small efforts add up over time and grow to make a real difference. As Dr. Seuss wrote in *The Lorax*:

“I know it may seem small and insignificant, but it’s not about what it is, it’s about what it can become.”

Clemson University Cooperative Extension Service offers its programs to people of all ages, regardless of race, color, gender, religion, national origin, disability, political beliefs, sexual orientation, marital or family status and is an equal opportunity employer.



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Appendix A

Articles

Article on stormwater best management practices that can be installed at home, published in the *Sumter Item* newspaper as part of the Keeping Sumter Beautiful series. Written by Katie Altman and published on July 18, 2018.

Keeping Sumter Beautiful

Katie Altman, Water Resources Extension Agent

WEDNESDAY, AUGUST 1, 2018

The rescue of Gary the sea turtle (part 2)

Two weeks ago, I wrote about my experience rescuing a Loggerhead sea turtle from the mud of a salt marsh in Pawley's Island. Although we ended the experience covered in mud and with a few broken or missing shoes, my friends and I had the easy job. The really difficult part of Gary's recovery came later, at the Sea Turtle Care Center at the South Carolina Aquarium.

When he arrived at the care center, Gary was lethargic and showed all the signs of Debilitated Turtle Syndrome (DTS). Various health issues may result in a turtle developing DTS. Poor water quality, litter, and discarded fishing gear are common initial causes and escalating factors in the illness. Gary had barnacles and other epibionts on his skin and shell and was emaciated, lethargic, and dehydrated. He also had a fishing hook embedded in the bottom of his shell.

Staff at the care center began treating Gary right away. He received treatments for low blood sugar and cardiovascular concerns and antibiotics to prevent secondary infections. Over the course of the next year, Gary's health improved and he steadily gained weight thanks to the efforts of the dedicated staff at the aquarium. Gary wasn't always an easy patient. He would knock down the spray bar on his tank multiple times a day and splash staff as they walked by. He also proved to be a picky eater, preferring salmon. I can't say I blame him. I like salmon too. Finally, after a year and two months of careful

treatment and hard work, Gary was cleared for release! He was released back to his ocean home on July 19th at Folly Beach County Park.

What does all of this have to do with folks in Sumter? Our actions here impact the water quality and wildlife in Sumter, all along the river downstream of us, and even into the ocean. Our actions can lead to low dissolved oxygen and fish kills, meaning less food for sea turtles and other predators. Litter in the water is often mistaken for food by sea turtles and causes digestive issues. Littered plastic and fishing gear is often found entangling or in the stomachs of turtles taken to the Sea Turtle Care Center. Remember that your actions on land and in the water impact the health of your neighbors and wildlife at home and down stream.

To see photos of Gary's rescue and release and to learn more about water quality, visit www.facebook.com/sumterstormwatersolutions.

Loggerhead sea turtles are a protected species. Please do not approach or try to handle one if you are not properly trained. If you ever see a sick, injured, or dead sea turtle; call the 24-hour DNR Hotline at 1-800-922-5431.

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Appendix B

SSS Strategic Plan

Target Pollutant	Target behavior	Target audience	Short-term goal	Long-term goal	Programs
Bacteria	Dog waste disposal	P	More pet owners pick up dog waste	Reduced bacteria levels in MS4 water bodies	Dog waste stations, brochures, promo items, posters
Bacteria	Septic system maintenance	R	Improved septic system maintenance	Reduced bacteria levels in MS4 water bodies	Postcards
Sediment	Construction practices	T	Better use of sediment and erosion control BMPs	Reduced sediment levels in MS4 water bodies	CEPSCI, CSPR, Silt Fence and Beyond
Sediment	Land and pond management	R	Increased practices that prevent erosion (mulch, shorescape)	Reduced sediment levels in MS4 water bodies	Carolina Yards, Master Pond Manager, demo sites, workshops
Litter	Illegal dumping	GP	Increased knowledge of litter impacts	Reduced amount of trash in MS4 water bodies	Cleanups, signage
FOG	FOG disposal	C	Improved FOG disposal at restaurants	Decreased number of FOG spills, backups, and sanitary sewer overflows	FOG materials for restaurants
FOG	FOG disposal	R	Improved FOG disposal at homes and apartments	Decreased number of FOG spills, backups, and sanitary sewer overflows	FOG materials for homeowners and renters
General awareness	N/A	YT	Increased stormwater awareness	Improved water quality in MS4 water bodies	4-H2O, Rain barrel art contest, enviroscape, citizen science
General awareness	N/A	R	Increased stormwater awareness	Improved water quality in MS4 water bodies	Rain barrel workshops
General awareness	N/A	GP	Increased local water body and watershed knowledge	Improved water quality in MS4 water bodies	Water body and watershed roadway signs
General awareness	N/A	YT, GP	Increased stormwater and storm drain awareness	Improved water quality in MS4 water bodies	Storm drain marking, storm drain artwork
General awareness	N/A	C, GP	Increased stormwater awareness	Improved water quality in MS4 water bodies	BMP demonstration sites



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*From Carolina Clear's 2018 statewide commercial:
Be a "Scooper Hero" in your neighborhood. Be prepared. Always bring a bag!*



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