



A Service of Clemson Extension



Annual Report of Activities

YEAR 9 / JANUARY 2017 - DECEMBER 2017

MARCH 2017





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Executive Summary

Sumter Stormwater Solution's Year Eight 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.

Demonstration sites and permanent exhibits throughout the Sumter area continue to provide our community with an educational opportunity for stormwater best practices. A new planted shoreline was added at Palmetto Park, in addition to the educational opportunities provided by rain gardens, a shorescape, rainwater harvesting systems, and dog waste stations that the consortium has already installed.

Several pollutants were addressed this year through educational campaigns, including dog waste, fats, oils, and grease (FOG), nutrient management, and litter. Katie continued to write about stormwater pollution prevention in a biweekly newspaper column and quarterly online newsletter.

SSS conducted several public involvement programs in 2017. Volunteers were instrumental in stream cleanups and shoreline planting. Demand for rain barrel workshops continued, and a nearly full workshop was held in March. Also back by popular demand, the Rain Barrel Art Contest had five schools participate, painting seven rain barrels.

The year 2017 saw the launch of the next phase in a billboard mass media series, impacting roadways and highways across the state. The billboard, which focused on pond management, sought to encourage the use of shoreline plantings and drive viewers to the Clemson Extension "Stormwater Pond Management" website.

In 2018, as we continue to implement our strategic plan, we will add several new programming efforts and continue ongoing programs to target pollutants. Rain barrel workshops will continue to provide residents with a way to reduce stormwater runoff at home. A new FOG educational poster and door hanger was designed in 2017 and will be distributed to grease-troubled areas in 2018. 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 joined the Carolina Clear team in September 2017 and is the coordinator of Sumter Stormwater Solutions. Katie comes to Clemson Extension with a background in wetland ecology research, informal science education, and natural resources management.



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Year 9 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).
- Proper care and maintenance of stormwater ponds was encouraged through multiple workshops and trainings and through billboards throughout Sumter County (p. 6 & 16).
- Five local schools (7 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 sixteen 9-14 year olds attended 4H₂O camp. They learned about Sumter's water resources and how their actions impact water quality (p. 14).
- Master Pond Manager participants came to Sumter County from all over South Carolina and surrounding states to participate in field days at Poinsett State Park and Palmetto Park. They gained knowledge from hands-on experience and direct instruction on how to properly manage recreational and stormwater ponds (p. 17).

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

1. Television: 22,162 reached
2. Billboard: 155,000 reached
3. Webpages & social media: 63,346 reached
4. Brochures & outreach materials: 985 reached
5. Publications: 17,612 reached
6. Fairs and festivals: 2,500 reached
7. Demonstration sites: 250,160 reached
8. Trainings, presentations, conferences, and direct contact: 2,342 reached
9. Public involvement (cleanups, volunteer workdays, workshops, BMP installations): 250 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. 2017 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 2017 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 2017 to December 2017. 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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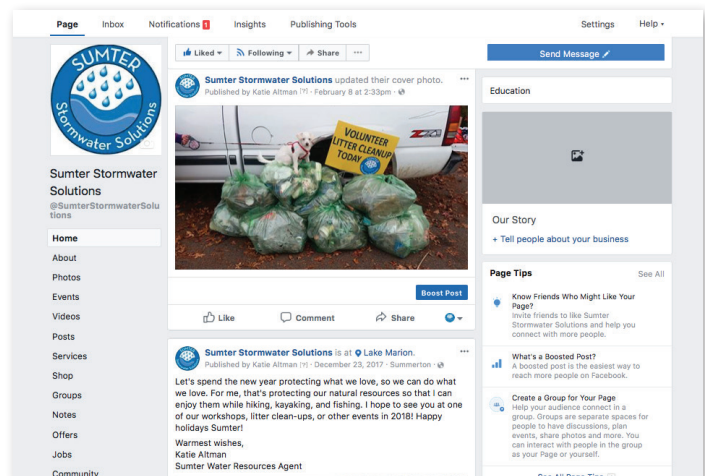
Public Education

Internet (Indirect)

| LEAD PROVIDER | ACTIVITY | DATE | NUMBER OF IMPACTS | TARGET AUDIENCE |
|-------------------|---|---------|-------------------|-----------------|
| Clemson Extension | Sumter Stormwater Solutions website | Ongoing | 194 | GP |
| Clemson Extension | Sumter Stormwater Solutions Facebook page | Ongoing | 6,309* | GP |
| Clemson Extension | Carolina Clear website | Ongoing | 18,150 | GP |
| Clemson Extension | Carolina Clear Facebook page | Ongoing | 25,372 | GP |
| Clemson Extension | Stormwater Pond website | Ongoing | 13,321 | GP, T, SP |
| Clemson Extension | Carolina Yards website | Ongoing | 18,985 | GP, R |

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 1/1/17-12/31/17





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Public Education

Television/Radio (Indirect)

| LEAD PROVIDER | SUPPORTING PARTNER | ACTIVITY | DATE | NUMBER OF IMPACTS | TARGET AUDIENCE |
|-------------------|--------------------|---|---------|-------------------|-----------------|
| Clemson Extension | N/A | Water quality segments on <i>Making It Grow</i> television show on ETV | Weekly | 22,162 | GP |
| Clemson Extension | N/A | Billboard reading "Healthy Landscapes. Healthy Ponds." and displaying photos of a bare vs planted shoreline | Ongoing | 155,000 | R, T, SP |

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

**Number reported is the average number of persons per household applied to the projected number of households that viewed Making It Grow during the 2017 calendar year. This number is conservative as it does not account for the SC Channel and only represent's one episode's viewing.*





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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 | 160 | GP |
| Clemson Extension | <i>SC Waterways</i> fact sheets (28 fact sheets total) | Ongoing | 2,452 | GP |

Katie Altman wrote water quality articles for the Sumter Item's "Keeping Sumter Beautiful" column on topics such as FOG disposal, green gardening principles, 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 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.

SC Waterways is a comprehensive fact sheet series found on the Carolina Clear website and the Clemson Home and Garden Information Center website. Fact sheets cover a wide variety of topics from pond management to porous pavement.

SC Waterways answering today's water resource challenges for future generations

CU > Cooperative Extension > HGIC > Shorelines, Stormwater, Ponds and Other Water Topics > Stormwater: General Topics > Rain Garden Plants: Introduction

Rain Garden Plants: Introduction

Sarah A. White, Nursery Extension Specialist, Clemson Extension Service
December 2013

Choosing Plants Tolerant of Drought and Flooding

This series of factsheets provides in-depth cultural and design-based information for selection and use of rain garden plants. This information helps you decide when and where it is appropriate to use a particular plant species.

The main purpose of rain gardens is to slow and detain stormwater runoff from impervious surfaces such as roadways, rooftops, parking lots, and sidewalks, permitting water infiltration to the groundwater table and reducing runoff into surface waters. If water running off of these impervious surfaces is treated using plants, soils, and native bacteria, we can reduce pollutant pressure (nutrient, bacterial, sediment, oils, and metals) on nearby surface waters and help to improve the health of the environment, while reducing strain on water management infrastructure.

"Rain gardens are landscaped depressions that receive stormwater runoff and allow the runoff to slowly infiltrate to the groundwater table."
Rain Gardens: A Rain Garden Manual for South Carolina

Typical conditions in southeastern rain gardens include extended periods of drought interspersed with periods of rainfall where flooded conditions might occur. Most ornamental plant species are not adapted to widely fluctuating moisture conditions and would not survive in this rapidly changing environment. Since rain gardens are designed to slow and gradually permit water infiltration, flooded conditions should not persist over three days. The three-day limit is to reduce the likelihood of mosquito breeding and emergence, and also to provide a large buffer to retain

TAKE ACTION E-NEWS

Be part of the solution!

Recent News:

4-H2O Camp

On August 8th, I rolled out of bed and immediately checked the forecast for the next few days. My heart sank. Myself, 4H agent Terri Sumpster, Josh Castelberry of Central Carolina Technical College, and 16 youth (ages 9-14) were looking forward to spending the next 2 days outside for 4-H2O camp. Unfortunately, it looked like we were going to get forced inside by thunderstorms.



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Public Education

Outreach Materials (Indirect)

BROCHURES, BOOKLETS, MANUALS

| LEAD PROVIDER | ACTIVITY | DATE | NUMBER OF IMPACTS | TARGET AUDIENCE |
|-------------------|--|---------|-------------------|-----------------|
| Clemson Extension | <i>Rainwater Harvesting for Home Owners Manual</i> : Created to assist SC homeowners in designing and installing rain barrel systems | Ongoing | 10 | R |
| Clemson Extension | <i>Rain Gardens- A Rain Garden Manual for South Carolina</i> : Provides SC residents with step-by-step information on planning and constructing a rain garden | Ongoing | 100 | R |
| Clemson Extension | 9 postcards 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 | 200 | GP |
| Clemson Extension | Dog waste brochures: distributed to local pet stores, veterinarians, and animal shelters to encourage picking up after pets | Ongoing | 150 | P |



A Basic Step Towards Healthier Soil

Composting is the process of allowing for the natural decay of grass clippings, vegetable scraps, leaves and other organic matter with the intention of using them in a garden, plant bed or yard. Bacteria do the work for you, as these small organisms break down garden and landscape trimmings to produce a dark-colored and crumbly form of decomposed organic matter.

Once added to the soil, compost breaks up heavy clay soils and also reduces the risk of "crusting," which would cause more water to runoff than penetrate to roots. Compost also helps sandy soils retain water and help that water move laterally underground. From a stormwater volume perspective, compost increases storm storage and infiltration. Compost also contains beneficial organisms that build up the soil and make nutrients available to plants. Improving your soil is the first step towards growing healthy plants!



Better Manage Fats, Oil and Grease: *Don't clog our communities' arteries!*



Storm drains throughout our communities function much like the arteries of our bodies. When fats, oil and grease (FOG) flows through the stormwater system, it poses a serious threat to the health of the receiving rivers, lakes and ocean downstream. FOG can also solidify, leading to blockages that cause localized flooding. FOG accumulation in storm drains and pipes cause foul odors, bacterial contamination and harm to local waterways. **Stormwater is not treated before it is released to local waters!**





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Public Education

Outreach Materials (Indirect)

PROMOTIONAL ITEMS

| LEAD PROVIDER | SUPPORTING PARTNER | ACTIVITY | DATE | NUMBER OF IMPACTS | TARGET AUDIENCE |
|-------------------|--------------------|--|---------|-------------------|-----------------|
| Clemson Extension | Master Gardeners | Doggie bandanas: Distributed to veterinarians, pet stores, shelters, and to pet owners at tabling events, presentations, and local parks | Ongoing | 100 | P |
| Clemson Extension | N/A | 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 koozies: Distributed at events and programs | Ongoing | 50 | GP |
| Clemson Extension | N/A | SSS reusable bags: Distributed at events and programs | Ongoing | 25 | GP |
| Clemson Extension | N/A | SSS reusable water bottles: Distributed at events and programs | Ongoing | 50 | 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, Master Gardeners | Rain garden at Dillon Park (1200 square feet) with interpretive sign | Ongoing | 27,500 | GP, YT |
| Sumter County | Clemson Extension | Two rain gardens at Sumter County Public Works with interpretive sign | Ongoing | 40 | GP, T |
| Central Carolina Technical College | 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.



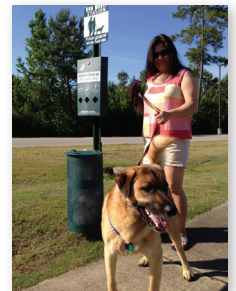
Butterfly weed at the Dillon Park rain garden in fall 2016.



Educational sign installed at the shorescape at Patriot 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 Extension | N/A | Rain Barrel Display at the Sumter County Fair | October 2017 | 2,000 | GP |

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

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; topics including compost, mulch, fertilizers, native plants, irrigation, etc. | Ongoing | 1,250 | 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 | 30 | 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 | 1227 | 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 | Presentation at Ebenezer Middle School on stormwater pollution, bacteria from pet waste, and litter | 4/18/17 | 250 | YT |
| Clemson Extension | Master Gardeners | Carolina Yards presentation to Sumter Master Gardeners In Training | 3/20/17 | 11 | R |
| Clemson Extension | N/A | Presentation to local women's club about Sumter's water resources and how their actions can protect water quality | 4/20/17 | 30 | R |
| Clemson Extension | N/A | "Rain as a Resource" presentation at Sumter County Master Gardener Association Meeting | 10/18/17 | 50 | R |

Several presentations in 2017 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.



Left: Students at Ebenezer Middle school learned about protecting water quality by cleaning up pet waste and litter. Student volunteers modeled this behavior by racing to pick up litter the fastest.

Above: Sumter Master Gardeners learned how to use rain as a resource in their garden through stormwater best management practices such as rain gardens and rainwater harvesting.



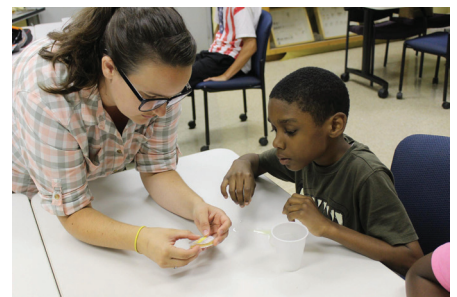
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Public Education

4-H₂O

| LEAD PROVIDER | SUPPORTING PARTNER | ACTIVITY | DATE | NUMBER OF IMPACTS | TARGET AUDIENCE |
|-------------------|------------------------------------|--------------------------|-------------|---------------------------------|-----------------|
| Clemson Extension | Central Carolina Technical College | Water-themed summer camp | August 2017 | 16 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.





A Service of Clemson Extension

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 2017 | 11 | GP, R |
| Clemson Extension | <i>Carolina Yards Online Guide to Environmentally Friendly Gardening</i> | Fall 2017 | 340 yards certified, to date | GP, R |
| Clemson Extension | Master Naturalist Training: Midlands | March-June 2017 | 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 will launch 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

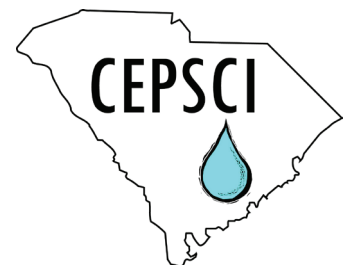
| LEAD PROVIDER | ACTIVITY | DATE | NUMBER OF IMPACTS | TARGET AUDIENCE |
|--------------------|--|---------------------------|-------------------|-----------------|
| Clemson University | CEPSCI (Certified Erosion Prevention and Sediment Control Inspector) courses | Ongoing | 1208 | C, T |
| Clemson University | CSPR (Certified Stormwater Plan Reviewer) courses | Ongoing | 55 | C, T |
| Clemson University | Master Pond Manager hybrid course | Spring 2017; Fall 2017 | 49 | C, T, SP |

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 2017.



Participants in the Spring 2017 Master Pond Manager course received hands-on training in pond management





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Public Involvement

Master Pond Manager Field Day HOSTED FALL 2017 IN SUMTER COUNTY

| LEAD PROVIDER | SUPPORTING PARTNER | ACTIVITY | DATE | NUMBER OF IMPACTS | TARGET AUDIENCE |
|-------------------|--------------------|-------------------------------------|-------------|-------------------|-----------------|
| Clemson Extension | City of Sumter | Shoreline planting at Palmetto Park | August 2017 | 17 volunteers | YT |

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. In fall 2017 the field days were hosted in Sumter County. Participants learned about recreational pond management at Poinsett State Park and about stormwater pond management at Palmetto Park.





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Public Involvement

Stream and Forest Cleanups

| LEAD PROVIDER | SUPPORTING PARTNER | ACTIVITY | DATE | NUMBER OF IMPACTS | TARGET AUDIENCE |
|-------------------|--------------------|------------------------|---------|-------------------|-----------------|
| Clemson Extension | Pack's Landing | Pack's Landing cleanup | 12/2/17 | 8 volunteers | GP, YT |

Volunteers made a difference in Sumter this year by participating in a cleanup at Pack's Landing on Lake Marion. At the Pack's Landing cleanup, volunteers removed litter and debris from our waterways and upland forests, not only improving water quality, but also enhancing the beauty of the community.





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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 | 5/24/16 | 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 | 7 classes; 210 students | GP, YT, R, GP |

The 2017 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 spigots and overflow hoses, transforming them into rain barrels. These barrels were then distributed to schools in Sumter County, and students painted them with their interpretation of the theme “Water is life.”

The painted barrels made their debut at the City of Sumter Earth Day Celebration. In total, 7 classes participated ranging from kindergarteners to high schoolers. Hundreds of Earth Day attendees voted for their favorite rain barrel.



Photos from the 2017 Rain Barrel Art Contest



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Outreach Summary

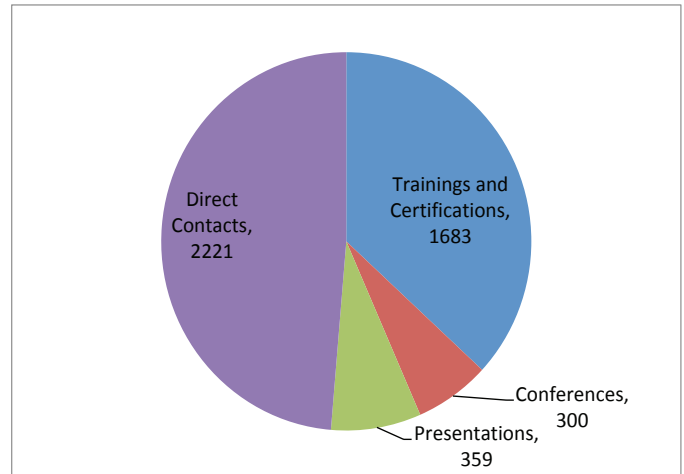
Year 9, January 2017 - December 2017

SSS impacts from public education and outreach in 2017 reached 516,578 people.

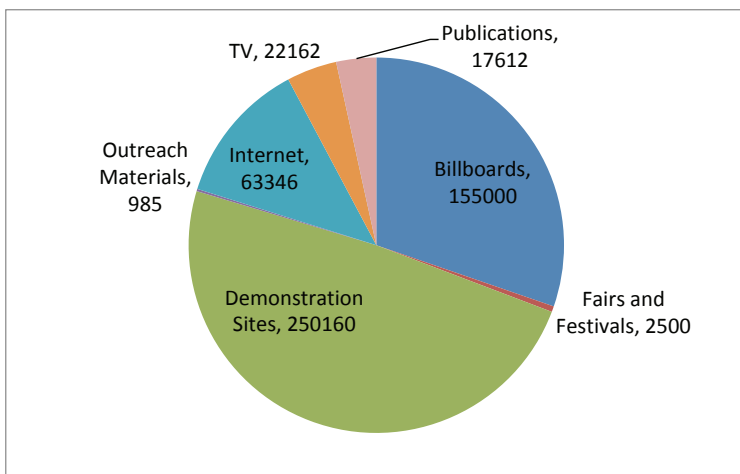
Public education through indirect methods reached 511,765 people. Indirect methods include fairs and festivals, mass media, publications, outreach materials, and demonstration sites. Public education through direct outreach methods totaled 4,563. This includes trainings and certifications, conferences, presentations, and direct contacts.

Public involvement reached 250 people. This included the rain barrel art contest, volunteer workdays, rain barrel workshops, and litter cleanups.

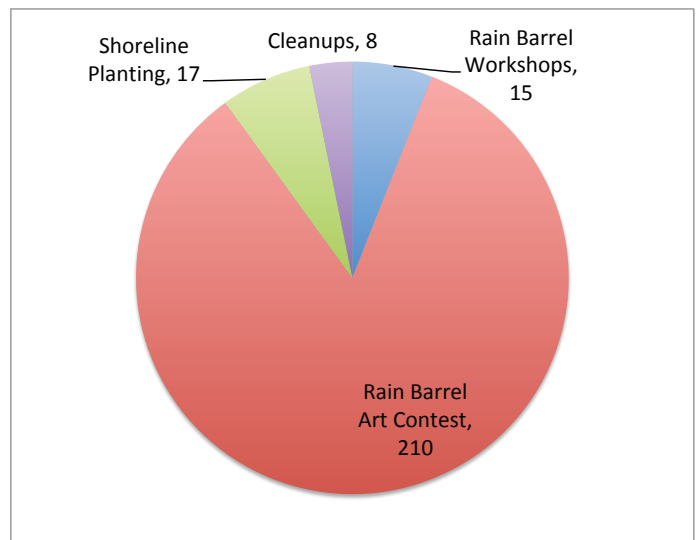
PUBLIC EDUCATION, DIRECT 4,404 TOTAL IMPACTS



PUBLIC EDUCATION, INDIRECT 510,750 TOTAL IMPACTS



PUBLIC INVOLVEMENT 280 TOTAL IMPACTS





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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 Breann Liebermann and published on April 23, 2017.

Keeping Sumter Beautiful

By Katie Altman-Goff, 4/23/17
Water Resources Extension Agent

Water, Water Everywhere

Simply turn on your tap and fresh, safe drinking water pours out. That is a wonderful convenience that we often take for granted. And your water bill is probably one of your cheapest bills. Water seems abundant and cheap so we tend to use (and often abuse) it. Look at a satellite photo of Earth and it is obvious why we call it "the blue planet." Water takes up around 70% (over two-thirds) of Earth's surface. That's a lot of water right? We're practically swimming in the stuff... pun intended. Let's take a closer look.

It's true that most of Earth's surface is covered by water but most of that water is saltwater. In fact, 97% of our water resides in the ocean! So we have 3 % freshwater, but a lot of it is not readily available to us. Of freshwater, 69% is frozen in glaciers, 30% is underground, and less than 1% is located in lakes, rivers, and swamps. Maybe it's not quite as plentiful as we thought.

We need that freshwater to drink, grow our food, and so much more. Let's take care of our water. Wondering how you can help? Here are a few actions you can take to keep pollution out of our water:

Properly dispose of fats, oils, and grease (FOG). Never pour

FOG down the drain! Keep your sewers fat-free by recycling used oil or bottling it up to throw it away.

Pick up your pets' waste. Dog waste has 2.5 times more bacteria than human waste. If left on the ground, it gets washed into our waterways. Do you really want that in the water you swim, boat, and fish in? When dooty calls, pick it up!

Create a water-wise landscape in your yard. Check out www.clemson.edu/cy to learn how to conserve water and reduce erosion and other pollutants in your yard.

Harvest the rain. Rain barrels and cisterns allow you to capture rainwater and use it later to water your plants, wash your car, or any other outdoor use.

For more information about how you can protect Sumter's water resources, visit www.clemson.edu/carolinaclear and click on "What You Can Do" on the right side of your screen. Keep our water clean for everyone to enjoy. And remember, we all live downstream!

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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, 2017.

Keeping Sumter Beautiful

By Katie Altman-Goff,
Water Resources Extension Agent

ABCs of Stormwater BMPs

When I first started working in stormwater education, I had a steep learning curve. During my first week on the job, I attended a statewide meeting of stormwater managers. At the beginning of the meeting, I pulled out my notebook and started writing down every acronym I was unfamiliar with so I could look them up later. By the end of the meeting my list was 2 pages long! Now, I often have to remind myself to define these terms and acronyms to others who, like that slightly younger version of me, are unfamiliar with them. One of those acronyms, and an important one, is BMP.

BMPs (Best Management Practices) are practices that reduce or eliminate the negative impacts of stormwater runoff. As stormwater flows over land, especially paved surfaces, it picks up pollutants like excess nutrients, bacteria, chemicals, and sediments. BMPs help by removing these pollutants from the water before it enters our local streams and rivers. Here is a list of just a few stormwater BMPs that can be installed at home:

Rain Garden: A landscaped depression that receives stormwater runoff and allows the runoff to slowly infiltrate to the groundwater table. Sediment is trapped in the garden and plants take up excess nutrients and water.

Shoreline Buffer: A buffer zone around a water body that is mowed

less often or has been planted with water-loving plants. Shoreline plants take up excess nutrients before those nutrients can enter the pond and plant roots help to prevent erosion.

Rain Barrel: Rain barrels and cisterns reduce runoff by capturing rainwater that can later be used for watering plants, washing your car or pet, and many other outdoor uses.

Visit clemson.edu/carolinaclear to learn more about these at-home BMPs. And be sure to like the Sumter Stormwater Solutions Facebook page for updates about local programs related to water quality and quantity.

If you are interested in learning more about stormwater BMPs you can use at home, there is a free tour and workshop at Clemson's Sandhill REC on Wednesday, August 16th 9:00 AM to 11:30 AM. The tour will include a pollinator garden, rain garden, shoreline buffer, rain barrels, a Certified Carolina Yard, and the launch of a floating wetland. For more information or to register, visit the Richland Countywide Stormwater Consortium Facebook page or contact Karen Jackson at karen7@clemson.edu or 803-865-1218 (ext 116).

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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 |



A Service of Clemson Extension

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Rain barrels, decorated by Sumter County students, were displayed at the Sumter Stormwater Solutions booth on Earth Day. Visitors voted on their favorite barrel and had the opportunity to bid on 2 of the barrels to take home and use in their yard.



www.clemson.edu/carolinaclear

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