

ASHLEY COOPER

STORMWATER EDUCATION CONSORTIUM



Annual Report of Activities

YEAR 13 / JANUARY 2021 - DECEMBER 2021

THIS PAGE INTENTIONALLY LEFT BLANK.

The Ashley Cooper Stormwater Education Consortium's Year thirteen Annual Report of Activities summarizes outreach and involvement programming offered by the Ashley Cooper Stormwater Education Consortium (ACSEC) community and education partners in 2021. The ACSEC implements a region-wide outreach strategy to educate Charleston Tri-County residents on water quantity, quality, and the cumulative impacts of stormwater. Education programming is steered by the ACSEC Stormwater Outreach Strategic Plan 2018-2023, which identifies priority issues to address through messaging and outreach that targets residential and commercial audiences. In year twelve, due to the public health crisis COVID-19, many of our outreach efforts were adjusted for the protection of the public and staff. County agents and staff are available to assist clients through telephone, email, and virtual platforms, and access to lab services (such as soil sampling) are arranged locally. Proper use of Personal Protective Equipment (PPE) and social distancing rules applies to all existing efforts.

Through partner collaboration, new initiatives in stormwater outreach offered creative methods to work with communities to address pollution in the region.

2021 Highlights

- In 2021, ACSEC partnered with South Carolina Native Plant Society and help a soil sample drive. This drive was found to be a great resource for first time to expert gardeners.
- Clemson Extension's hybrid training model delivers in-depth information and applied knowledge opportunities through multi-week training that takes place both online and in the field. The Water Resources Extension Team offers three hybrid trainings; Master Pond Manager, Post Construction BMP Inspector and Master Rain Gardener. After completing the online training, each hybrid course held its associated field days in the Tri-County region in 2021. The field portion provides a hands-on learning opportunity and the chance to apply skills learned.
- Surfrider sponsored of the Folly Beach Wahine Classic in year 2021. This is the second-largest female surfing competition along the east coast. Surfrider board members set up and managed all composting, recycling, and waste sites for the two-day event. Over 200 guests were in attendance and made more aware of the benefits of composting.



ACSEC Co-Coordinator

In August 2021, Samantha Porzelt (Right) joined the Clemson Extension Water Resources Team and assumed the role of ACSEC Co-Coordinator. Samantha has a Bachelor of Science in Marine Biology from Texas A&M University at Galveston and has worked as a biologist in public aquariums for the past 10 years, most recently at the South Carolina Aquarium. Her professional interests include native plant landscaping and marine aquaculture. Samantha Co-Coordinates the ACSEC with Beatrice Calhoun (Left). Bea's professional interests include bacteria pollution management through septic tank and clean marinas. Our goal is to build upon one another's expertise to better suit the needs of the ACSEC region.

2021: A Year in Pictures

Clemson Extension Herbicide Calibration training for Water Quality



Yard Waste Kit Giveaway at Charleston County Public Works



The Town of MT. Pleasant created a contest for members of the public to get involved and help bring awareness for the removal of pet waste from the environment.



FOLLY BEACH WAHINE CLASSIC and Surfrider Charleston provided the Compost, Recycling and did a litter cleanup for 2 days.



Year 2021 ACSEC and Ivy Rainwater Solutions Team up for a Rain Barrel Sale. Over 400 Sold.

Executive Summary

2021: A Year in Pictures

*Clemson Extension Master Gardeners
Monday morning URDA Clean Up*



*Community Shoreline Planting with Sea Grant, SC DNR,
and Clemson Extension*

Clemson Extension BMP Year 2021



Executive Summary.....	I-III
Community Partners.....	1
Education Partners.....	2
Mission and Goals	3
Education and Involvement Program History.....	4
Highlight: Soil Sempel Drive	6
Highlight: Clemson Extension: 2021 Hybrid Training!	7
Highlight: Clemson Extension: 2021 Hybrid Training! Continued	8
Highlight: Surfrider’s Charleston Keeps Folly Beach Wahine Classic Clean	9
Report Format.....	10
Public Education: Indirect.....	15
Public Education: Direct	19
Public Involvement	21
ACSEC Year Thirteen Outreach Summary.....	22
Appendix	24



AAH 2021 Clean-up in the Charleston Area

The majority of designated Small Municipal Separate Storm Sewer Systems (SMS4) communities in the Charleston Urbanized Area, representing approximately 90% of the population, have committed to the ACSEC regional collaboration. These communities are represented by a dedicated group of public servants who have been engaged for many years in building the partnership.

Local SMS4 Consortium Representatives: 2021

Berkeley County	Mikhayla Beste, Thurman Simmons, Kevin Kubiak
Charleston County	Chris Wannamaker, Yaenette Dixon, Brett Champion
Dorchester County	Mike Goldston, Kacy Byrd, Julian Seraphin
City of Charleston	Kinsey Holton
City of Folly Beach	Represented by Charleston County via Inter-Governmental Agreement (IGA)
City of Goose Creek	Represented by Berkeley County via IGA
City of Hanahan	Represented by Berkeley County via IGA
City of Isle of Palms	Represented by Charleston County via IGA
Town of James Island	Represented by Charleston County via IGA
Town of Lincolnville	Represented by Charleston County via IGA
Town of Mount Pleasant	Hillary Repik, Emily DeMore, Devay Dandy
City of North Charleston	Mike Dalrymple, John Peckham, Merry Barton
Town of Sullivan's Island	Represented by Charleston County via IGA
Town of Summerville	Bonnie Miley, Skip Tucker, Matt Halter, Jr.



Collaboration is integral in developing and delivering a successful watershed-scale outreach program that reaches diverse audiences. The ACSEC is fortunate to have a variety of organizations in the Charleston Tri-County region that have joined the effort. Education partners include universities, state and local government agencies, utilities, and non-profits. Each brings unique expertise, resources, ideas, and programs to the ACSEC. The ACSEC fosters communication among organizations and through this cooperative effort programs are being created or enhanced. Lead and supporting partners are noted in the following report of activities.



ACSEC Education Partners

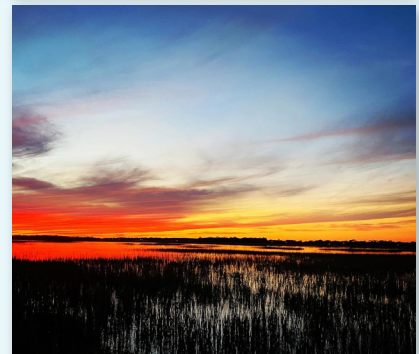
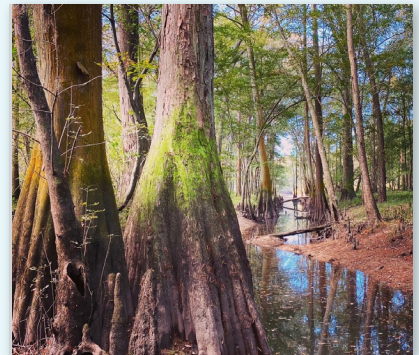


ACSEC MISSION STATEMENT

Improve water quality within the Ashley and Cooper River basins by providing educational opportunities on stormwater impacts and our community roles in supporting healthy, fishable, and swimmable waterways.

PROGRAM GOALS

- Develop and implement an education plan that defines a cohesive education strategy which outlines target audiences and associated target pollutants relevant to the region using a prioritized approach.
- Facilitate compliance with existing and future educational regulatory requirements by capitalizing on local resources and service providers.
- Foster citizen involvement in stormwater management through ACSEC education and participation programs.
- Encourage behavioral change towards environmental quality improvement through stormwater education.
- Utilize mainstream and developing technologies and tools to maximize citizen exposure to ACSEC stormwater goals and objectives.
- Create an interactive reporting process to facilitate information exchange and dissemination among member entities.



Education and Involvement Program History

To meet the ACSEC program goals, community and education partners meet twice a year or more frequently as needed to work collaboratively in the development, implementation, and evaluation of new and existing programming. These meetings and decision making process is open to the public.

ACSEC programming priorities were identified and developed through the Ashley Cooper Stormwater Education Consortium Stormwater Outreach Strategic Plan 2018-2023. The Strategic Plan can be found online at: www.ashleycooper.org. The Strategic Plan provides a framework for prioritizing regional issues, develops target outreach methods, and determines program evaluation metrics to improve the delivery and impact of ACSEC efforts. It is considered a “living” document to allow for refinement, supplementation, and flexibility as regional efforts and issues evolve over the five-year period. The development of the Strategic Plan was a multi-year effort that involved community and education partner input and an evaluation of geography, pollutant concerns, and public perception as identified in the 2019 Carolina Clear Statewide Survey.

The Strategic Plan process helped identify priority issues, contributing issues, target behaviors, and education strategies to address pollutants of concern in the region. The ACSEC residential and commercial audience priorities are as follows:

Bacteria

CONTRIBUTING ACTION	TARGET AUDIENCE	TARGET BEHAVIOR
Improper disposal of pet waste	Dog owners who walk their dog.	Increase the number of dog owners who carry a bag for dog waste on walks.
Failing septic tanks	New and existing homeowners with septic tank systems.	Increase the number of new and existing homeowners with septic tank systems who are working with a professional to perform maintenance.

Litter

CONTRIBUTING ACTION	TARGET AUDIENCE	TARGET BEHAVIOR
Single-use plastic pollution	Shoppers who want to use a reusable bag but forget to bring to the store.	Help understand the ways to recycle plastic or reduce the usage of single-use plastics. Increase the number of shoppers who bring a reusable shopping bag.
Cigarette butts becoming litter	Smokers that do not dispose of cigarette butts in trash.	Increase the number of smokers who carry a personal ashtray or throw away butts in the trash can.

Education and Involvement Program History

Nutrients

CONTRIBUTING ACTION	TARGET AUDIENCE	TARGET BEHAVIOR
Improper use and application of fertilizer by home gardener	Home gardeners that perform their own landscaping.	Increase the number of home gardeners who install native plants.
Improper use and application of fertilizer by commercial company	Landscape professionals that do not currently offer soil testing to clients.	Increase the number of landscape professionals who offer soil testing as part of their services.

These priority issues, and subsequent contributing actions, target audiences, and target behaviors, have formed the core of efforts by the ACSEC; education strategies include five-year timelines for program implementation (see Appendix). To evaluate the effectiveness of outreach and involvement campaigns, evaluation metrics include but are not limited to:

- Five-year surveys to gauge perceptions, knowledge gained, and behavior change of residents living in the consortium area.
- Google Analytics to evaluate impacts of web-based programming and outreach.
- Short and long-term program evaluation to evaluate workshop and training success in delivering information, assisting participants in overcoming barriers to practice implementation, and meeting the needs of the target audience.
- Other methods including analysis of distribution numbers.

The ability of the ACSEC to implement and deliver consistent messaging and programming as well as leverage partner-lead initiatives helps the Consortium-model to successfully address community priorities and concerns across multiple waterway “lines.”

Soil Sample Drive

On October 23rd, 2021 the Ashley Cooper Stormwater Education Consortium collaborated with the South Carolina Native Plant Society Lowcountry Chapter to provide a Soil Sample Drive at the Fall Native Plant Sale. Customers of the plant sale had the opportunity to bring in soil samples from their garden to be submitted to the Clemson University Agricultural Service Laboratory for analysis. The Soil Sample Drive also gave customers of the plant sale an opportunity to learn about Water Resources Agents roles, and what programs and services Clemson Extension has to offer.



IMAGE OF HOW TO TAKE A SOIL SAMPLE

Soil testing is a helpful tool for home gardeners. The soil test results give recommendations on the amount of fertilizer and lime to add to a garden for promoting healthy plant growth. When gardeners follow the recommendations from their soil test, they help reduce excess fertilizer nutrients from entering our waterways.



LOWCOUNTRY NATIVE PLANT SOCIETY'S FALL NATIVE PLANT SALE

Clemson Extension: 2021 Hybrid Training

Clemson Extension's hybrid training model delivers in-depth information and applied knowledge opportunities through multi-week online training courses with an associated field day(s). The overall objective of these courses is to empower participants to design, manage, and maintain stormwater best management practices in South Carolina communities and beyond. In the face of COVID, the hybrid training programs were well suited to deliver in-depth information to technical, professional, and residential audiences. All total, 248 individuals participated in a Hybrid Training in 2021; program highlights are as follows:

Master Pond Manager:

The Master Pond Manager (MPM) course teaches participants a wide range of management knowledge and skills for both stormwater and recreational ponds. The Fall 2021 class had 30 people in attendance, with field days held October 25-26 in Clemson, SC. A shoreline buffer and floating wetland were installed as part of the field days at the State Botanical Gardens in Clemson. The Spring 2021 class was held as a Letter of Completion track only (all virtual), with 13 participants. Due to delays associated with COVID-19 safety precautions, 23 people attended make-up field days held for the Spring 2020 class. The field days were held in the Charleston and Mount Pleasant on September 13-14, 2021. A floating wetland and shoreline buffer were installed at the Park West Recreation Complex as part of this field day.



PARTICIAPANTS BUILDING A FLOATING WETLAND



KIM MORGANELLO ANCHORING FLOATING WETLAND

Clemson Extension: 2021 Hybrid Training

Post Construction BMP Inspector:



In the Post-Construction BMP Inspector certification course, participants gain hands-on knowledge of how to properly inspect and maintain stormwater control structures and practices, including wet ponds, dry detention basins, bioretention, bioswales, permeable pavement, and more. The course was offered online only in Spring 2021 with virtual field days held on April 14-15 resulting in 50 individuals certified. The course was offered in its traditional hybrid format in Fall 2021. Certification and Re-Certification field days were held on December 15-16th at Trident Technical College in North Charleston, SC resulting in 31 individuals certified and 27 re-certified.

Master Rain Gardener:

The Master Rain Gardener program provides design standards and the knowledge-based skill set necessary to design and install rain gardens and rainwater harvesting systems. The 2021 course offering included 25 participants in the Certification Track and 24 participants in the Letter of Completion Track. Due to delays associated with COVID-19, the field days for the 2020 and 2021 classes were combined and held on September 10th at the Enston Home Urban Farm in downtown Charleston. As part of the field day, 40 individuals retrofitted a farm stand with a water management system that includes a 250-gallon metal cistern, rock swale, and two rain gardens.



Learn more about hybrid course offerings at Clemson.edu/extension/water

Surfrider's Charleston Keeps Folly Beach Wahine Classic Clean

Surfrider Charleston is a community-based volunteer group donating its time and efforts to protect and preserve our marine environment. Surfrider fights for the reduction of plastic waste, ocean protection, beach access, coastal preservation, and clean water.

This year, Surfrider conducted 16 litter clean-ups across the Tricounty area with 500 volunteers removing over 4,000 pounds of trash. All litter collected is sorted to target the efforts of the program. Cigarette butts were once again the leading trash offender, and single-use plastics were close behind remaining one of the top four items littered.

Surfrider was also a sponsor of the Folly Beach Wahine Classic, the second-largest female surfing competition along the east coast. Surfrider board members set up and managed all composting, recycling, and waste sites for the two-day event. Over 200 guests were in attendance and made more aware of the benefits of composting.

By reducing food waste, composting mimics nature's method of decomposition, allowing organic material to break down aerobically. This helps to reduce greenhouse gas emissions that affect climate change. By setting up composting at this event, approximately 225 pounds of food waste were diverted from the landfill and sent to the Bees Ferry Composting Facility.

Composting Facts:

- *Compost nourishes our soil and increases stormwater absorption capacity to help reduce flooding.*
- *Composting saves space and taxpayer money needed for disposal in landfills.*
- *Most food waste is generated at home, making it the No.1 item thrown away by Americans.*



MEMBERS OF SURFRIDER WASTE SEPARATION STATION

Charlestonians throw away over 15,000 tons of food scraps each year, which makes up a quarter of solid waste collected in the city. Surfrider is making it their goal to change the narrative of composting and extend composting

Annual Report of Activities Format

The annual report utilizes the same general format as the first seven ACSEC reports and the other regional stormwater consortiums in South Carolina. This annual report, number Thirteen for the consortium, is intended to give the reader a comprehensive look at the ACSEC from January 1, 2021 through December 31, 2021. This report delineates activities into public education and public involvement categories. For each activity, a brief description is provided as well as information on lead provider, supporting partners, date, number of impacts, and target audiences. Furthermore, public education activities are identified as either direct or indirect outreach strategies.

Clemson Extension's Carolina Clear program developed an online database in the first ACSEC reporting cycle to record detailed information on activities conducted by consortium partners. The data collected in the online database includes information on target audiences, pollutants addressed, activity type, lead service providers, supporting partners, number of impacts, location, and several other categories. This annual report provides a condensed version of the information collected in the online database as well as supplementary information sourced from ACSEC partners.

Public education activities are classified into two broad categories, **direct** and **indirect** outreach methods, to express mechanisms by which information has been communicated to the public. Direct methods include activities that are implemented via direct personal contact. Examples of direct methods include workshops, presentations, trainings, and public involvement activities. In contrast, indirect outreach methods refer to contacts through traditional media channels including television, radio, print, and billboards. Indirect methods generally reach a much greater portion of the population due to the nature of their mediums; however, it is often more difficult to gauge specific impacts. When dealing with direct methods, smaller numbers of people are reached yet the ones that are reached generally provide a forum for direct evaluation and feedback. Each method is important in the overall education campaign, and both are part of the five year educational strategy for the ACSEC. Throughout the document, the words "direct" or "indirect" are provided at the top of each reporting table.

*Data provided are as accurate as possible and are reviewed by multiple individuals involved in the reporting process. However, due to the nature of indirect outreach initiatives, indirect impact numbers are typically estimates.

The activities in the report are listed in table format.

DATE	ACTIVITY DESCRIPTION	PARTNERS	NUMBER OF IMPACTS
2021	INTERNET: Total unique views in 2021 for the Carolina Clear, Clemson Extension Water Team, Stormwater Pond Management, Carolina Rain Garden Initiative & Carolina Yards.	Clemson Extension, Clemson University	229,128
2021	INTERNET: Total views for the ACSEC Clemson Extension Webpage in 2021. Consortium webpage has been updated and re-formatted to meet the needs of our communities.	Clemson Extension	1,200
2021	INTERNET: Total Lifetime Post Views for the ACSEC Facebook page in 2021. Followers have increased to 671.	Clemson Extension	1,538
2021	INTERNET: Total unique views for Making It Grow Facebook page in 2021. (Lifetime Post Numbers)	Clemson Extension	1,387,185
2021	INTERNET: Total unique views for Making It Grow Facebook page in 2021.	Clemson Extension	21,236
2021	INTERNET: Total views on Carolina Clear YouTube page (282 subscribers). Numbers based on total page views. For the Carolina Clear YouTube page in 2021! This is up 121% from last year. The average view duration was 2:04 minutes.	Clemson Extension	21,200
2021	INTERNET: Total views on Carolina Clear Facebook page views (Lifetime Post Numbers)	Clemson Extension	58,407
4/16/2021 11/10/2021	INTERNET: ACSEC's "Ripple Effect" provides information on ACSEC education and involvement opportunities.	Clemson Extension	2,176
Continuous	INTERNET: SC Coastal Information Network (SCCIN) hosts an online event calendar and resource portal providing educational and training opportunities for coastal community officials, staff, and public. The SCCIN is a coastal partnership of local, state, and federal partners (23) coordinated through the SC Sea Grant Consortium. This number reflects website visits. 17 members attend both fall and spring virtual meetings.	SC Sea Grant	6,056
2021	INTERNET: Stormwater Pond Collaborative webpage is now complete. Stormwater Ponds Research and Management Collaborative State of the Knowledge Report has hardcopies of the report published/printed March 202 but due to pandemic very few have been distributed (approximately 25); however, the report pdf has been downloaded from the SC Sea Grant Consortium website 69 times.	SC Sea Grant	150

DATE	ACTIVITY DESCRIPTION	PARTNERS	NUMBER OF IMPACTS
Continuous	INTERNET: HGIC Webpage views. The Home and Garden Information Center (HGIC) develops and delivers science-based, sustainable gardening, water quality solutions, and integrated pest management education for better human and environmental health. Data only used to highlight virtual involvement. Not calculated in total involvement pie graph.	Clemson Extension, Clemson University	7,581,989
2021	INTERNET: Seeds to Shoreline Educational Workshop video created for teacher workshop and future educational use. (S.C. Sea Grant proofed and organized) Video Link: https://www.youtube.com/watch?v=xUSfTl39-EU&t=29s	SCDNR, S.C. Sea Grant, Clemson Extension & College of Charleston	44
6/15/2021	INTERNET: In the month of June SC Sea Grant launched the SC Marine Program webpage. This program has been revamped and put back in motion having 213 visitors the site thus far.	SC Sea Grant Consortium	213
2021	TELEVISION: SCETV and Clemson Extension's "Making It Grow" shares home and garden information for South Carolina residents; a water quality tip is included each week during the broadcast.	SCETV, Clemson Extension	21,331
2021	TELEVISION: The 2020-21 Carolina Clear Mass Media Campaign focuses on proper management of fats, oils, and grease (FOGs). If not properly managed, FOGs can lead to costly damage to infrastructure and degrade local water quality. The campaign's television commercial is one minute in length. A complimenting billboard "Can It, Cool It, Trash It" was placed in 3 locations around the region (see BILLBOARD). Commercial was aired on WTAT and WCBD.	WTAT, WCBD, Clemson Extension	382,116
2021	PUBLICATION: A new Pet Waste Infographic was created by Clemson Extension to depict the affects of pet waste on the ecosystem. The rack card is given to the public to help reduce bacteria pollution.	Clemson Extension	50
2021	PUBLICATION: 5 New Factsheets were published and added to the the HGIC Website. Topics include: <i>Life Along the Salt Marsh: Troubleshooting Salt Mard Decline, Repurposing Your Old "Live" Christmas Tree to Benefit Wildlife, Healthy Living: The scoop on reusable water bottles, & Improving Fish Populations in Recreational Ponds.</i>	Clemson Extension	3,026

DATE	ACTIVITY DESCRIPTION	PARTNERS	NUMBER OF IMPACTS
2021	BILLBOARD: F.O.G Management “Can It, Cool It, Trash It” billboards were located in high-visibility locations around the ACSEC region.	Clemson Extension	1,830,401
Continuous	MANUAL: Low Impact Development in Coastal SC: A Planning and Design Guide. This guidance manual is available for download from the SC Sea Grant Consortium’s and NI-WB NERR websites. It continues to be a popular download from the SC Sea Grant’s site totaling 200 visits and 62 copies downloaded from January through December 2021. In August 150 participants attended the LID Workshop Training workshop.	SC DNR ACE Basin NERR, SC Sea Grant Consortium, North Inlet-Winyah Bay NERR, and the Center for Watershed Protection	2,561
Continuous	PERMANENT EXHIBIT: Clemson Extension collaborated with	Charleston County Government, Clemson Extension, Green Hearts Project	40
Continuous	PERMANENT EXHIBIT: A large shoreline planting project and floating wetland at a stormwater pond on the Charleston County Public Services Building campus serves as a demonstration site for stormwater pond best management practices.	Charleston County Government, Clemson Extension	500
Continuous	PERMANENT EXHIBIT: Clemson REC “Ed Shed” includes education signage and stormwater best management practices. This space is used to host workshops, trainings and meetings for diverse groups/classes.	Clemson Extension, Tri-County Master Gardeners	25
Continuous	PERMANENT EXHIBIT: Rain garden and cistern installed at a Berkeley County library “Pollinator Garden” location in Hanahan.	Berkeley County, Tri-County Master Gardeners, Keep Hanahan Beautiful, Berkeley County Government	1,000
Continuous	PERMANENT EXHIBIT: Clemson REC Urban Research and Demonstration Area showcases native plants, a rain garden, rain barrels, and educational signage; open to the public during daylight hours.	Tri-County Master Gardeners, Clemson Extension	1,000
Continuous	PERMANENT EXHIBIT: Rain garden and rain barrel at a North Charleston park and Keep North Charleston Beautiful office location.	City of North Charleston, Tri-County Master Gardeners, Clemson Extension, Keep North Charleston Beautiful	1,000
Continuous	PERMANENT EXHIBIT: Rain garden and signage installed at Mount Pleasant fire station and recreation area.	Town of Mount Pleasant	800

DATE	ACTIVITY DESCRIPTION	PARTNERS	NUMBER OF IMPACTS
Continuous	PERMANENT EXHIBIT: As part of Carolina Schoolyards, a rain garden and rain barrel located at the CREEC School.	Cape Romain Environmental Education School	175
Continuous	PERMANENT EXHIBIT: Rain garden at “Whirlin’ Waters” at Wannamaker County Park.	CCPRC	500
Continuous	PERMANENT EXHIBIT: Rain garden and signage at Caw Caw Interpretive Center.	CCPRC	2,000
Continuous	PERMANENT EXHIBIT: Two rain barrels and drip irrigation at St. Julian Divine Community Center.	St. Julian Divine Community Center	1,500
Continuous	PERMANENT EXHIBIT: Two rain gardens, cistern and native plants installed at Fort Johnson Community Garden.	SCDNR	5,000
Continuous	PERMANENT EXHIBIT: Cistern at Mitchell Elementary School’s Green Hearts Project Garden.	Mitchell Elementary School, Green Hearts	350
Continuous	PERMANENT EXHIBIT: Cistern, rain garden, rain barrels, composing station and native plants at the College of Charleston’s Grice Marine Lab’s Green Teaching Garden.	College of Charleston	500
Continuous	PERMANENT EXHIBIT: Cistern and drip irrigation installed for raised beds at College of Charleston’s Political Science Building.	College of Charleston	200
Continuous	PERMANENT EXHIBIT: Cistern and adjacent rain garden located at the Medway Community Garden. Rainwater harvested is utilized to irrigate adjacent raised beds; rain garden doubles as a pollinator garden.	Charleston Parks Conservancy, Clemson Architecture Community Design Build, Clemson Extension	1,000
Continuous	PERMANENT EXHIBIT: 700 gallon cistern and adjacent rain garden installed at the Medical University of South Carolina’s Urban Farm.	MUSC, Clemson Extension	920
Continuous	DEMONSTRATION SITE: Farm pond retrofit at the CU CREC to include best practices of shorescaping and invasive plant management.	Clemson Extension	Upcoming
Continuous	DEMONSTRATION SITE: Corrine Jones Park- includes wetland plant garden and cistern at the community garden shed. This was installed as part of the Master Rain Gardener course.	Clemson Extension	1,000

DATE	ACTIVITY DESCRIPTION	PARTNERS	NUMBER OF IMPACTS
Continuous	IN-PERSON (LIMITED), PHONE, EMAIL: In the Tri-County, Master Gardeners answered questions relating to a variety of home landscaping issues, topics including compost, mulch, fertilizers, native plants, irrigation, etc. Due to COVID restrictions volunteers were limited in task and numbers.	Clemson Extension, Tri-County Master Gardeners Association	500
Continuous	IN-PERSON (LIMITED), PHONE, EMAIL: Clemson Extension Agents answered questions and provided services to a variety of Tri-County audiences regarding water resources and stormwater BMPs.	Clemson Extension	1,500
Continuous	SOIL SAMPLES: Clemson Extension in cooperation with Clemson's Agricultural Service Lab, processed soil samples for the Tri-County residents and commercial audiences. Impact represents total in Berkeley, Charleston and Dorchester Counties.	Clemson Extension, Clemson's Agricultural Service Lab	2,825
Jan-Dec 2021	Mobile Pumpout Program: This program provides a free pumpout service for boats with marine heads and aims to keep our waterways sewage free. This program is offered in partnership with the South Carolina Department of Natural Resources' Clean Vessel Act Program. Six marinas serviced totaling 1,430 gal waste pumped in year 2021. Six Marinas participated in this program.	Charleston Waterkeeper, SCDNR	260
Continuous	VIRTUAL PRESENTATION: Due to COVID, a series of webinars were presented from Clemson Extension. Titles include Value of Stormwater Ponds, SC Adopt-a-Stream Chemical/Physical & Bacteria Training, It's Alive! What's in your watershed?, Preview for Be Well Informed, Town of James Island Managing Water in The Home Landscape, Carolina Yard Series, and Earth Week Series just to name a few. Audience included technical and residential.	Clemson Extension	1,882
11/30/2021 9/15/2021 4/26/2021 3/2/2021 1/7/2021	PRESENTATION: Town of Mt.Pleasant participated as speakers for a number of public events around the Tricounty area. Topics consisted of Vegetative Buffers, Master Pond Management, Waterfront Memorial Park, F.O.G., and more.	Multiple	1163
2021	VIRTUAL PRESENTATION: Flood 411 is a new webinar series that breakdown the "need to know" information when it comes to coastal hydrology and how it's managed	SC Sea Grant, SCDNR/ ACE Basin, Clemson Extension	120

DATE	ACTIVITY DESCRIPTION	PARTNERS	NUMBER OF IMPACTS
Nov 2021	VIRTUAL PRESENTATION: Be Septic Safe Webinar Series is a workshop that breakdown the basics of Septic Systems and opens up a platform for members of the public to ask experts questions about their septic issues. Every year around the holidays we post a series of tips and promote the "Be Septic Safe" Webpage (997 webpage views)	Clemson Extension, SC DHEC	20
2021	VIRTUAL PRESENTATION: "Calling the Coast Home" Real Estate Professionals Courses is a four-two hour continuing education elective courses to provide Realtors® with information about coastal issues and topics including coastal ecosystem/biodiversity, water quality at the neighborhood level, flooding and flood maps, and rebuilding regulations. 4 training modules were offered. A total of 9 courses were taught in the year 2021.	Clemson University, ACE Basin and NI-WB NERRs, SCDHEC-OCRM, SCDNR, USC, SC Sea Grant Consortium	508
Continuous	VIRTUAL PRESENTATION: "From Seeds to Shoreline" South Carolina Salt Marsh Stewardship Program highlights characteristics, common flora and fauna, ecosystem services and current research of the critically important salt marsh ecosystem. Numbers are based on YouTube views. Use link to see video https://www.youtube.com/watch?v=q_xbfxDFcf0	SC Sea Grant Consortium, SCDNR, Clemson Extension, College of Charleston	605
Continuous	VIRTUAL YOUTH PRESENTATION: Keep Charleston Beautiful offers environmental education programs to local K-12 schools.	Keep Charleston Beautiful, Charleston County School District, City of Charleston	2,167
Continuous Beginning 06/21/21	Educational signage about the stormwater "Treatment Train" and the process for treatment of stormwater runoff from beginning until point of discharge to receiving waters. Signage can be found at the Cypress Gardens in Moncks Corner, SC	Berkeley County Stormwater Management, Berkeley County Cypress Gardens	30,000
12/9/2021	IN-PERSON YOUTH PRESENTATION (LIMITED): College Park Middle Students STEAM Festival (Presentation of WaterGoat apparatus and it's functionality to the general public). This presentation was conducted in the Berkeley County School District	Berkeley County Stormwater Management	150
6/23/2021	Install of WaterGoat Device into College Park Canal with media coverage from 3 major local news agencies.	Berkeley County Stormwater Management	40
2021	VIRTUAL PRESENTATION: The Salt Marsh Short Course is a four-week online class that is offered for free to anyone interested in learning more about the SC salt marsh. This course was made possible in part by funding from NOAA. The course includes information on threats to the salt marsh, flora and fauna highlights, oyster reef ecology and stewardship actions	Clemson Extension, SCDNR, SC SeaGrant	224

DATE	ACTIVITY DESCRIPTION	PARTNERS	NUMBER OF IMPACTS
July 2021	VIRTUAL WORKSHOP: "From Seeds to Shoreline" New Teacher Workshop provided hands-on virtual experience in growing salt marsh plants and leading activities with students. Each participant recieved material packet to try each project with the group.	SC Sea Grant Consortium, SCDNR, Clemson Extension	22
2021	VIRTUAL WORKSHOP: Healthy Pond Series continued operation by creating virtual interactive workshops for attendees. Topics consist of <i>Integrated Aquatic Plant Management</i> , <i>Ups and Downs of Dredging</i> , and <i>Nutrients Management</i> . The Healthy Pond Series is a free networking event for stormwater pond owners in Berkeley, Charleston, and Dorchester counties.	Clemson Extension, SCDNR, ACE Basin NERR Coastal Training Program	182
3/01/2021 8/25/2021 12/31/2021	IN-PERSON TRAINING: Revamp and launch revitalized SC Clean Marina Program (includes product development e.g., informational brochure, flags, decals, certificates); Program goal - protect and improve local water quality by reducing pollution from marinas. This voluntary certification program recognizes marinas, boatyards, and yacht clubs for helping create a cleaner marine environment in South Carolina. 15 Marina Managers and staff attended the SC Clean Marina Certification Workshop.	SCDNR, SCDHEC-OCRM, Clemson Extension, SC Sea Grant Consortium	39
Summer 2021	ONLINE TRAINING: Clemson provides training and certification for the Certified Stormwater Plan Reviewer (CSPR) program to educate personnel on the proper design and review of stormwater and sediment control plans for development sites in order to meet regulatory and environmental requirements. Starting June 2020, all CSPR certification moved to online synchronous and asynchronous formats, including online certification exams.	Clemson Extension	53
Continuous	ONLINE TRAINING: Clemson provides training and certification through the Certified Stormwater Plan Reviewer (CSPR) program to educate personnel on the proper design and review of stormwater and sediment control plans for development sites in order to meet regulator and environmental requirements. Impacts reflect statewide trainings. Due to precautions associated with COVID-19, 2021 certifications and recertifications were offered as online and reduced capacity in-person formats.	Clemson University, Clemson Extension	1051
2021	ENVIROSCAPE: ACSEC makes sure to hit all educational needs for their partners. We maintain educational resources that can be loaned out for program use.	SC Sea Grant, Clemson Extension	27

DATE	ACTIVITY DESCRIPTION	PARTNERS	NUMBER OF IMPACTS
Continuous	ONLINE TRAINING: Clemson's Department of Pesticide Regulation provides training and certification for commercial, non-commercial, and private licensed applicators. Due to COVID-19, only continuing education courses were offered since Aug. of year 2021. Number of impacts represent those in the Tri-County receiving continued educational credits.	Clemson University, Clemson Extension	25
Spring 2021, Fall 2021	ONLINE TRAINING: Master Pond Manager teaches recreational and stormwater pond management training to participants through online classroom and field-based curriculum. We were able to offer MPM in both the spring and fall. Fall class had 30 in attendance and the Spring course had 13. A combined in-person field days were conducted and two new water quality methods were installed at both sites!	Clemson Extension	43
2021	ONLINE TRAINING: Carolina Yards Online provides online learning opportunity to focus on environmentally friendly landscaping practices. 25 individuals registered for the course. 97 Yards were certified and 18 completed the course.	Clemson Extension, Carolina Clear	655
Spring 2021, Fall 2021	ONLINE TRAINING: Post Construction BMP Inspector; online and field-based training focused on inspection and maintenance of best management practices used for stormwater management. The class was offered in 2021 on a virtual platform. 23 were in attendance for make-up field days held for the Spring 2020 class. Both field days were located in the Tri-county area. Shoreline buffer and floating wetland were installed at the Park West Recreation Complex as part of the field day.	Clemson University, Clemson Extension	58
2021	ONLINE TRAINING: The Master Rain Gardener course took place online in 2021 with 25 participants enrolled for the certification track and 24 participants in the Letter of Completion track. 2020 class and 2021 class combined together to install a water management system that includes a 250 gallon metal cistern, rock swale, and two rain gardens in the Enston Home Urban Farm in downtown Charleston. 40 individuals were in attendance for field day component.	Clemson Extension	49
2021	ONLINE TRAINING: "Using the Low Impact Development in Coastal SC Manual" workshop provided demonstration for site design application and Q&A. This workshop audience consisted of engineers, landscape architects, stormwater and plan review staff, and other design professionals. The Center for Watershed Protection provided the bulk of the training.	Clemson Extension, SC DNR, ACE Basin NERR, SC Sea Grant Consortium, North Inlet-Winyah Bay NERR, and the Center for Watershed Protection	100

DATE	ACTIVITY DESCRIPTION	PARTNERS	NUMBER OF IMPACTS
2021	LITTER SWEEP: Volunteer Corps: This program engages community members in active stewardship of their local waterways through debris removal in and around creeks, rivers, and tributaries. Cleanups were conducted in groups before the onset of COVID and individually after. A total of 12 cleanup events and working with 8 volunteer team with varios local organization.	Keep Charleston Beautiful, PalmettoPride, Dorchester County, Keep Dorchester County Beautiful	25
2021	LITTER SWEEP: Keep Charleston Beautiful (KCB) hosts litter cleanups year round with volunteer groups of all sizes. Cleanup events are focused on City of Charleston roadways, parks, and marshes. In 2021, KCB held 101 cleaning events covering 193 miles of road to clean 120,830 pounds of litter from our local environment.	Keep Charleston Beautiful, City of Charleston; various	429
Continuous	LITTER SWEEP: Adopt-A-Boat Landing: Volunteers maintain litter removal at boat landings.	Berkeley County Government, Keep Berkeley Beautiful	Unknown
Five per year (2021 Numbers)	LITTER SWEEP: Adopt-A-Highway (AAH) continued to clean throughout 2021, and even added an additional litter date, bringing the total number of highway clean-ups to 5 per year. The all-volunteer based program not only improves South Carolina's scenic beauty, but the also eliminates thousands of pounds of debris (including single use plastics) from roadsides, which can end up in nearby waterways, ingested by marine life or wildlife. Total pounds collected 61,003. Total number of volunteer groups 114 cleared 228 miles of road. 500 Reuseable bags were purchased for volunteer giveaway.	Charleston County Community Pride, Clemson Extension	1040
2021	LITTER SWEEP: Surfrider conducted 16 litter clean-ups across Charleston County, with 500 volunteers removing over 4,000lbs of trash. Surfrider also a sponsored of the Folly Beach Wahine Classic, the second largest female surf competition along the east coast. Surfrider set up and managed all composting, recycling, and trash sites for the two-day long, 200 people plus event. With composting options for the event in place, approximately 225lbs.of food-waste was diverted from the landfill and sent to the Bees Ferry Composting Facility.	Surfrider of Charleston	700
2021	LITTER SWEEP: Keep Berkeley Beautiful conducted a series of Water Goat litter clean-ups in the South Carolina area. Many of these cleanups were focused in the Ladson area.	Multiple	15
2021	LITTER SWEEP: Berkeley County Adopt-A-Highway; Volunteers adopt a two-mile stretch of road and conduct regular and special cleanups. During 2021, 4.7 tons of litter were removed through the help of 302 volunteers over a course of 15 cleanup events.	Adopt-A-Highway, Keep Berkeley Beautiful	302

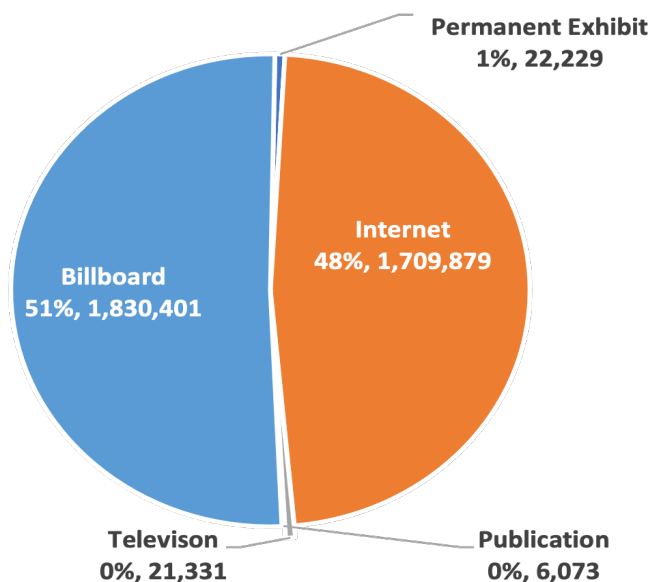
DATE	ACTIVITY DESCRIPTION	PARTNERS	NUMBER OF IMPACTS
Continuous	WATER QUALITY MONITORING: Recreational Water Quality Monitoring Program: This program monitors the recreational quality of local waterways in and around the Charleston Harbor and issues weekly notifications to the public. Volunteers complete annual training to become certified field investigators. Locations of samples Charleston, SC, Mt. Pleasant, SC, Sullivan's Island, SC, and Folly Beach, SC	Charleston Waterkeeper, College of Charleston	59
Jan-Dec 2021	CREEK WATCHERS PROGRAM: This program engages citizen scientists in the monitoring of the health of their local waterways. Creek Watchers complete annual training to gain certification to conduct monthly tests of surface water chemistry at a designated site. Site locations Charleston, SC, North Charleston, SC, Kiawah Island, SC, Ravenel, SC, Mt. Pleasant, SC, Summerville, SC, and Awendaw, SC	Charleston Waterkeeper	115
2021	PUBLIC EVENT: The SCORE Program implements oyster reef dissection lessons with K-12 schools groups. A total of 2 bag dissection lessons were implemented. The SCORE Program also gives educational presentations to interested groups and 3 of these activities took place during this reporting period. Locations: Charleston, Folly Beach, North Charleston, James Island	SCDNR SCORE Program, Multiple	126
2021	PUBLIC EVENT: SCORE Volunteers assist with multiple stewardship activities. These include making shell bags, making MWR's, constructing oyster reefs, oyster shell recycling, monitoring oyster populations, monitoring water quality, marsh seed planting, marsh restoration and fish sampling. A total of 99 events took place during this reporting period. Locations: Charleston, James Island, North Charleston, Mt Pleasant, Daniel Island	SCDNR SCORE Program, Multiple	1139

DATE	ACTIVITY DESCRIPTION	PARTNERS	NUMBER OF IMPACTS
10/8/21	PUBLIC EVENT: The Town gave away 50 three gallon trees to in-town residents during the YMCA Flowertown Festival for planting as a part of our Summerville Roots for Trees tree planting initiative. The trees were Eastern Redbuds and Red Oaks, and we also provided instructions for proper planting.	SC Forestry Commission, Town of Summerville	50
12/3/2021	PUBLIC EVENT: "The Town celebrated Arbor Day by planting 40 trees in honor of the Town's 40th year being designated a Tree City U.S.A. and an additional tree in memory of Tree Protection Board member Virginia Mary "Ginger" Reilly. The Town also gave away 150 trees (Willow Oaks, White Oaks, Tulip Poplars, Sweetbay Magnolias, and Fringe trees) to town residents to plant in the their yards to continue the Summerville Roots for Trees tree planting initiative."	SC Forestry Commission, Town of Summerville	150
Summer 2021	WORKSHOP: From Seeds to Shoreline: 3 schools participated in restorations in James Island. A total of 45 high school students and 310 middle school students.	Multiple	355
2021	STORMDRAIN MARKING: One boy scout group from the Dorchester area conducted a stormdrain marking event. 10 fellow troop leaders joined the soon to be eagle scout .25 stormdrains were marked	Clemson Extension	10
June 2021	RAIN BARREL SALE: Clemson Extension, ACSEC, and Rain Water Solutions teamed up promote and set up a rain barrel sale in the tri-county area. Rain barrels are one of the great affordable ways to manage water on an individual's landscape. This year over 400 were sold.	Clemson Extension, Rain Water Solutions, Town of Summerville, Charleston County	420

Outreach Summary

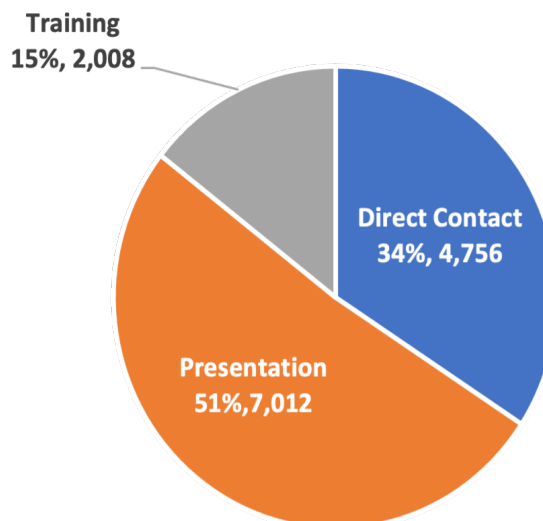
ACSEC program success is, in part, measured by outreach impacts that represent an estimate of individuals reached through direct and indirect education and involvement activities. In-person activities were limited due to COVID-19 restrictions. **Total impacts for the Year Thirteen reporting year (January 1, 2021 - December 31, 2021) total an estimated 2,706,507 individuals.**

Public Education: Indirect



INDIRECT METHODS SUMMARY, TOTAL ESTIMATED IMPACTS: 3,589,913

Public Education: Direct

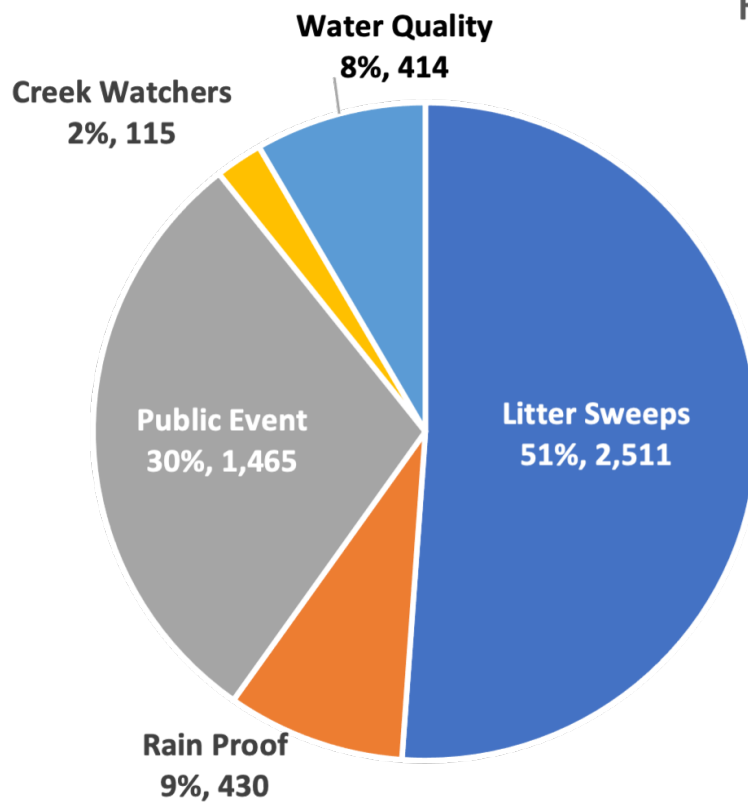


DIRECT METHODS SUMMARY, TOTAL ESTIMATED IMPACTS: 13,896

Public Involvement is considered an activity that provided hands-on opportunities for target audiences to take part in stormwater management and pollution prevention. Public involvement opportunities include oyster reef construction, water quality monitoring, litter sweeps, storm drain marking, rain barrel sales, native plant sales, and youth involvement activities. During 2021, activities were limited due to COVID-19 restriction. Estimated impacts attributed to public involvement were 13,139 individuals.

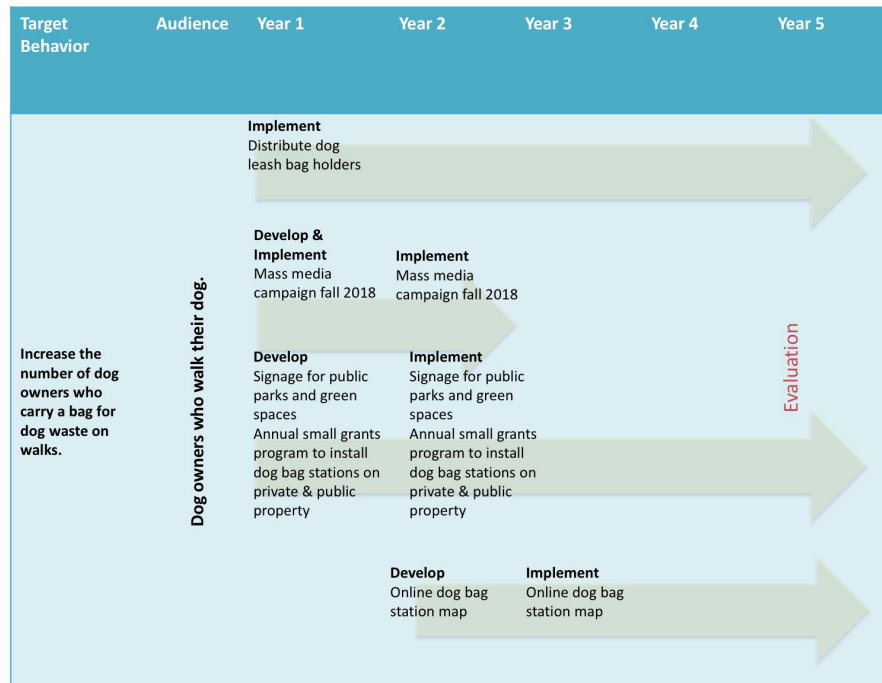
**PUBLIC INVOLVEMENT SUMMARY,
TOTAL ESTIMATED IMPACTS: 4,960**

Public Involvement

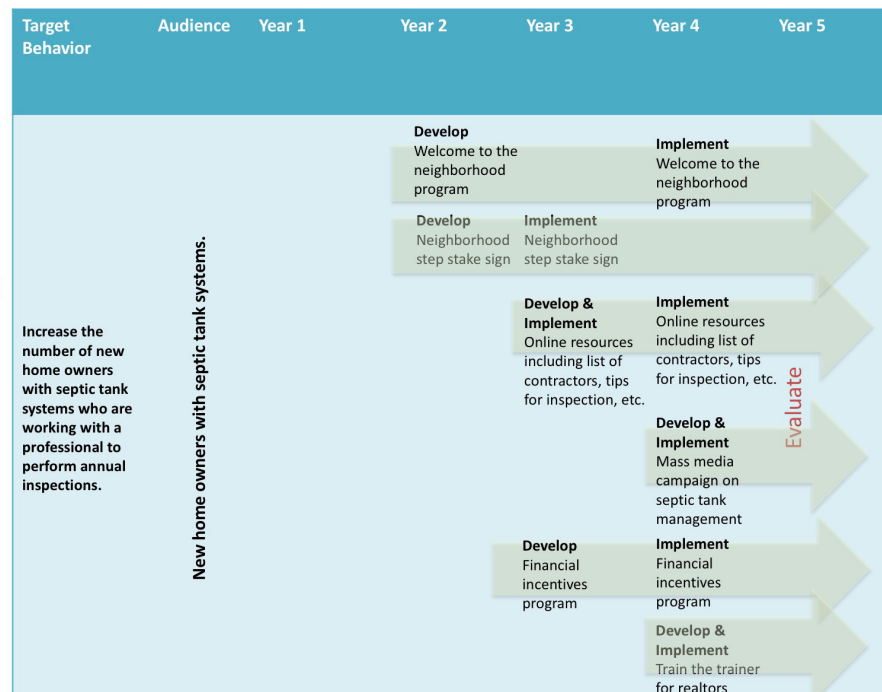


ACSEC 2018-2023 Strategic Plan: Education Timelines

Bacteria Management

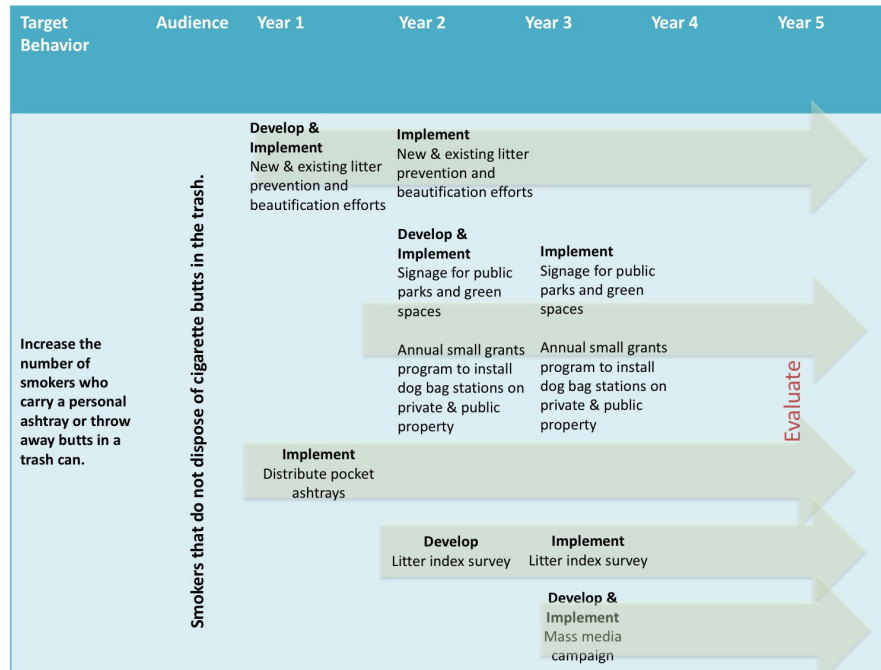


Bacteria Management

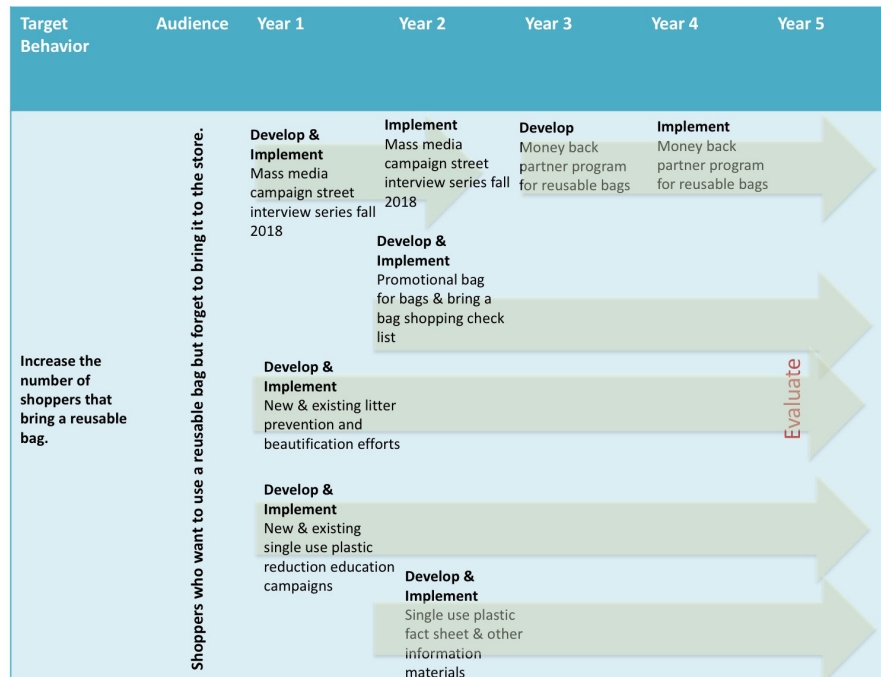


ACSEC 2018-2023 Strategic Plan: Education Timelines

Litter Prevention



Litter Prevention



ACSEC 2018-2023 Strategic Plan: Education Timelines

Nutrient Management

Target Behavior	Audience	Year 1	Year 2	Year 3	Year 4	Year 5
Increase the number of landscape professionals who offer soil testing as part of their services.	Landscape professionals that do not currently offer soil testing to clients.	Develop & Implement Green Industry Training	Implement Green Industry Training			
			Develop "We Soil Test!" seal & branding	Implement "We Soil Test!" seal & branding		
			Develop Soil sample test kit for contractors	Implement Soil sample test kit for contractors		
				Develop & Implement List of landscape professionals that offer soil testing to clients		Evaluate
		Implement Existing professional trainings & resources offered through Clemson Extension				

Nutrient Management

Target Behavior	Audience	Year 1	Year 2	Year 3	Year 4	Year 5
Increase the number of home gardeners who install native plants.	Home gardeners that perform their own landscaping.		Develop & Implement Mass media campaign street interview series fall 2018			
		Implement Existing professional trainings & resources offered through Clemson Extension				
			Develop & Implement Promotional seed packets & transplants			
				Develop Signage & plant tags where native plants are sold	Implement Signage & plant tags where native plants are sold	Evaluate
				Develop Recognition program for nurseries that offer native plants	Implement Recognition program for nurseries that offer native plants	
			Develop Landscape design education materials.	Implement Landscape design education materials		

AUTHORS

BEATRISS CALHOUN

ACSEC Coordinator

Water Resources Agent

Clemson University Cooperative Extension Service

259 Meeting Street, Charleston, SC

843-729-4523

beatis@clemson.edu

SAMANTHA PORZELT

ACSEC Coordinator

Water Resources Agent

Clemson University Cooperative Extension Service

259 Meeting Street, Charleston, SC

843-730-5208

sporzel@clemson.edu

SPECIAL THANKS TO THE FOLLOWING DATA CONTRIBUTORS:

Guinn Wallover, Jeremy Pike, Kim Morganello, Katie Altman, Terasa Lott, Christopher S Burt, Marlo Shedlock, Jamie Gillette, April Turner, Michael Hodges, Elizabeth Vernon Bell, Thurman Simmons, Debbie Eckard, Susan Ferris Hill, Sarah McCarthy Smith, Yaenette Dixon, Devay Dandy, Hollis Lizotte, Steven O'Shields, Haley Parent, Kinsey Holton, Thomas Morgenthal, Miracle Middleton, Mikhayla Beste, Cheryl Carmack, Susan Lunt, Karen Jackson, Abigail Prochaska, and Sean Cannon

SPECIAL THANKS TO OUR REVIEWERS

Kim Morganello and our ACSEC Representatives



Carolina Clear is a program of the Clemson University Cooperative Extension Service. Information is provided by Faculty and Cooperative Extension Agents. 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, gender identity, marital or family status and is an equal opportunity employer.

Produced 03/15/2021



NOTES:



ASHLEY COOPER
STORMWATER EDUCATION CONSORTIUM



Beatriss Calhoun (Left) and Samatha Prozel (Right) are cocoordinators of the ACSEC on a 10 mile paddle down the Edisto River.



COOPERATIVE EXTENSION
College of Agriculture, Forestry and Life Sciences



www.clemson.edu/extension