

ASHLEY COOPER

STORMWATER EDUCATION CONSORTIUM



Annual Report of Activities

YEAR 4 / JULY 2011 - JUNE 2012

AUGUST 2012

The Ashley Cooper Stormwater Education Consortium (ACSEC) partnership experienced a year of positive growth and development. In reporting Year Four, July 1, 2011 to June 30, 2012, approximately 2.2 million educational impacts were recorded, including 2,136,217 through indirect outreach methods and 80,194 through direct outreach methods.

In Year Four, the “We All Live Downstream” mass media campaign was launched utilizing the overlapping themes and characters in both television commercials and billboards. ACSEC internet resources were expanded to include an ACSEC electronic newsletter entitled *The Ripple Effect* and an ACSEC Facebook page, both of which provide ample opportunity to learn about Consortium-related activities and water stewardship information.

Also in Year Four, additional permanent learning exhibits were created including the “Ed Shed” located at the Clemson Coastal Research and Education Center, the “Green Teaching Garden” located at College of Charleston Grice Marine Laboratory, a rainwater harvesting display at the SC Aquarium, and additions to “The Green Home” at the Sustainability Institute. These additional sites join numerous other permanent exhibits across the Tri-county area, each with a variety of stormwater best management practice (BMP) infrastructure; together in Year Four over 71,000 educational impacts were measured at ACSEC permanent exhibits.

As for direct impacts, the inaugural Charleston Area Stormwater Pond Management Conference was held on March 22, 2012 as an ACSEC effort, in partnership with the Clemson Carolina Clear, ACE Basin Coastal Training Program and SC Sea Grant Consortium. The conference was well-attended with over 180 registrants representing diverse audiences from across the Tri-county area. Also an inaugural effort, SC DNR, SC Sea Grant, and Clemson Carolina Clear hosted a teacher workshop expanding the youth involvement wetland restoration initiative “From Seeds to Shoreline.”

As of March 28, 2012, Goose Creek becomes the first new community member since the ACSEC was formed in 2008, joining seven area municipalities along with Berkeley, Charleston, and Dorchester Counties. Also a first, Year Four was the first reporting cycle that the Consortium was led by Co-Coordinators. Kimberly Counts joined Clemson Carolina Clear and began working alongside David Joyner towards the end of ACSEC reporting year three in May of 2011. Lastly, in January 2012, the ACSEC Stormwater Outreach Strategic Plan was finalized providing guidance and prioritization of efforts for 2012 to 2017.



*David Joyner and Kimberly Counts
Co-Coordinate the Ashley Cooper
Stormwater Education Consortium.*

*Dave and Kim work for the Clemson
Carolina Clear Program as Water
Resources Agents. They first met
in graduate school at the College
of Charleston where they both
received a Masters of Science in
Environmental Studies. Dave
and Kim first worked together in
a professional setting in 2008,
while Dave was already working
with Clemson Carolina Clear
and Kim was still with the SC
Department of Natural Resources.
For both Dave and Kim, one of their
favorite aspects of their jobs is the
opportunity to work with and learn
from the talented and knowledgeable
professionals of the ACSEC.*

2012 Highlights

- The City of Goose Creek joins the ACSEC. As of March 28, 2012, Goose Creek becomes the first new community member since the ACSEC was formed in 2008, joining seven area municipalities along with Berkeley, Charleston, and Dorchester Counties.
- In September 2011, *The Ripple Effect* was launched. *The Ripple Effect* is the Bi-monthly electronic newsletter of the ACSEC designed to provide dependable, up-to-date information on Consortium-related activities and good stewardship practices.
- In Year Four, the ACSEC Thank You! Campaign was developed to thank individuals for their actions to help protect water quality. This simple message will be utilized across a variety of ACSEC outreach platforms to illustrate the connections between individual actions, stormwater, and healthy waterways. The campaign was launched on a series of Tri-county billboards as part of the “We All Live Downstream Campaign.”
- On March 22, 2012, the ACSEC hosted the inaugural Charleston Area Stormwater Pond Management Conference. Over 180 individuals attended the conference to learn from a diverse array of pond experts and professionals from around the region.
- The 4-H₂O Exploring Lowcountry Waterways summer camp was offered for the fourth year to youth from the Berkeley, Charleston, Dorchester County area. Multiple ACSEC partners were involved creating an unique opportunity for youth to experience the Ashley and Cooper River Basins.

OUTREACH ACTIVITIES AND TOTAL NUMBER REACHED (*estimated*)

1. ACSEC Internet Resources expanded to include an ACSEC E-newsletter and an ACSEC Facebook page to compliment the ACSEC website.
NUMBER REACHED: 4,015
2. Mass Media Campaign “We All Live Downstream” commercial rotations on cable stations and billboards.
NUMBER REACHED: 401,768
3. Permanent Demonstration Sites across the Ashley Cooper region demonstrate diverse best management practices for protecting water.
NUMBER REACHED: 71,375
4. ACSEC representation at Fairs and Festivals, providing information on ACSEC and ways to protect water quality.
NUMBER REACHED: 119,650
5. Diverse array of public workshops, trainings, presentations and conferences pertaining to stormwater.
NUMBER REACHED: 3,853
6. ACSEC Public Involvement opportunities included rain garden installations, litter sweeps, oyster reef construction, water quality monitoring, etc.
NUMBER REACHED: 9,140

Executive Summary.....	I
Community Partners.....	1
Education Partners.....	3
Mission and Goals	4
Report Format.....	5
 Public Education	
Indirect Outreach Methods	
Internet	6
Radio and Television.....	9
Billboards.....	10
Publications-Articles	12
Outreach Materials-Brochures, Booklets, Manuals.....	13
Outreach Materials-Promotional Items	16
Permanent Exhibits	17
Public Events-Fairs, Festivals	22
 Direct Outreach Methods	
Direct Contacts.....	24
Presentations	25
Presentations-Youth	27
Workshops.....	29
Trainings and Certifications	32
 Public Involvement	
Litter Sweeps.....	36
Storm Drain Marking.....	38
Rain Garden Installations	39
Native Plant Sales.....	40
Oyster Reef Construction	41
Water Quality Monitoring	41
Youth Involvement Activities	42
Year 4 Highlights, Check pages	2, 8, 11, 35, 44
ACSEC Year 4 Summary.....	45
Appendix A - Articles	46-54

The majority of designated Small Municipal Separate Storm Sewer Systems (SMS4) communities in Charleston-North 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

SMS4	Consortium Representatives
Berkeley County	Frank Carson, Clint Busby, Sonia Shannaj
Charleston County	Charles Jarman, Niles Desai, Stuart Ruelle
Dorchester County	Jack Ellis, Kelly Billbrough
City of Charleston	Fowler Del Porto, Laura Cabiness, Steve Kirk
City of Folly Beach	Inter-Governmental Agreement (IGA) with Charleston County
City of Goose Creek Beginning March 28, 2012	Steve Price, Chick Foster
City of Hannahan Concluding November 9, 2011	Larry Sturdivant
City of Isle of Palms	Represented by Charleston County via IGA
Town of Lincolnville	Represented by Charleston County via IGA
City of North Charleston	Mike Dalrymple, John Peckham, Merry Barton
Town of Sullivan's Island	Represented by Charleston County via IGA
Town of Summerville	Russ Cornette



Welcome City of Goose Creek!

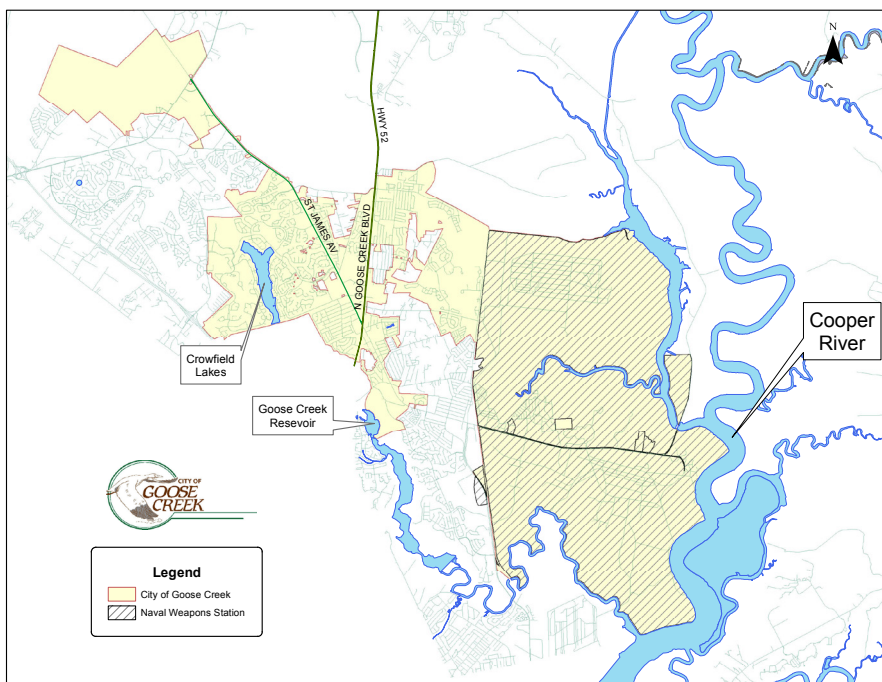


Goose Creek Mayor Michael J. Heitzler signed the joint resolution formally announcing the City of Goose Creek's commitment to water quality through regional education in partnership with the ACSEC. Also pictured from left to right, Steve Price (Goose Creek Director of Public Works), Katie Giacalone (Clemson Carolina Clear Statewide Coordinator), David Joyner (ACSEC Co-Coordinator) and Kimberly Counts (ACSEC Co-Coordinator)



On March 28, 2012, The City of Goose Creek officially joined the Ashley Cooper Stormwater Education Consortium (ACSEC). The City of Goose Creek becomes the first new community member since the ACSEC was formed in 2008, joining seven area municipalities along with Berkeley, Charleston, and Dorchester Counties.

The ACSEC is a regional approach to stormwater education and public involvement; this strategy is of course, strengthened by gaining another community member within the region. The City of Goose Creek is one of the fastest growing municipalities in the region, located in a significant geographic area within the Cooper River drainage basin. The City of Goose Creek will be represented by Steve Price, City of Goose Creek Director of Public Works, and Chick Foster, Project Coordinator for the City of Goose Creek Department of Public Works. We are proud that this vital area to our region has chosen to join forces with the ACSEC and look forward to working together on future projects and shared initiatives.



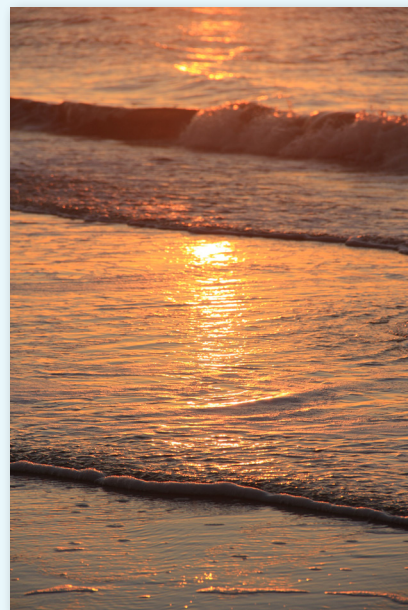
Partner collaboration is key in developing and delivering a successful watershed-scale outreach program that reaches diverse audiences, and the ACSEC is fortunate to have a variety of organizations in the Tri-county region that have joined the effort. Education partners include universities, state and local government agencies, utilities and non-profits. Each brings unique expertise, resources, ideas and programs to the ACSEC. The ACSEC is fostering communication among organizations, and programs are being created or enhanced through this cooperative effort.



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.

- 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.



*“All the water that will ever be,
is right now.”*

-National Geographic, 1993

*“When the well is dry, we will
learn the worth of water.”*

-Benjamin Franklin, 1746

Annual Report of Activities Format

The annual report utilizes the same general format as the first three ACSEC reports and the other regional stormwater consortiums in South Carolina. This annual report, the fourth for the Consortium, is intended to give the reader a comprehensive look at the ACSEC from July 1, 2011 and June 30, 2012. 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 University Carolina Clear 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, 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 additional, supplementary information sourced from ACSEC partners.

The activities in the report are listed in table format. Due to space limitations, target audiences are abbreviated as follows:

Target Audience Abbreviations

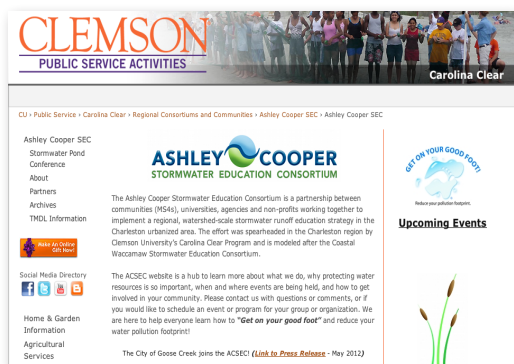
GP	General Public
R	Residential-Homeowners and Renters
YT	K12 Youth and Teachers
HE	Higher Education
T	Technical-Engineers, Contractors, Developers, Staff
EA	Elected and Appointed Officials and High Level Staff
C	Commercial
B	Boat Owners, Operators, and Marinas
P	Pet Owners

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. Whereas 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 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 to indicate which category an effort belongs.

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

Internet (Indirect)

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Carolina Clear		ACSEC Website: Impacts are based on Google Analytics for the Charleston Tri-county area.	Continuous	3,145 (ACSEC Home Page)	GP, R, PO, P, T, B, C



WEBSITE: The ACSEC website is part of the Carolina Clear website, which continues to add new features and resources for the public. For example, in Year Four, the website added information on stormwater pond management. The ACSEC website also includes archived information including annual reports, meetings, as well as the ACSEC Strategic Education Plan. Both the Carolina Clear and ACSEC websites are significant components in the overall public awareness and education efforts. In Year Four, efforts to increase use of the ACSEC website via the ACSEC E-newsletter the “Ripple Effect” and the ACSEC Facebook page. Both refer readers/visitors to the ACSEC website.

Internet (Indirect) continued

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Carolina Clear	ACSEC SMS4 and Education Partners	ACSEC Electronic Newsletter: <i>The Ripple Effect</i> : Bimonthly Consortium e-newsletter.	Bi-monthly (6 editions Total)	800	GP, R, HE, EA, PO, P, T, B, C



WEBSITE: *The ACSEC e-newsletter “Ripple Effect,” was designed to provide awareness of Consortium-related activities, including past, on-going and future events. The “Ripple Effect” also includes links to pertinent electronic resources providing information on good stewardship practices. The “Ripple Effect” is issued on a bimonthly basis. ACSEC community and education partners are encouraged to submit information for inclusion in the Ripple Effect and also to distribute the e-newsletter to others (see highlight).*

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Carolina Clear	ACSEC Partners	ACSEC Facebook Page: Provides daily/weekly information regarding ACSEC activities, news, and events.	Continuous	70	GP, R, PO, P, T, B, C

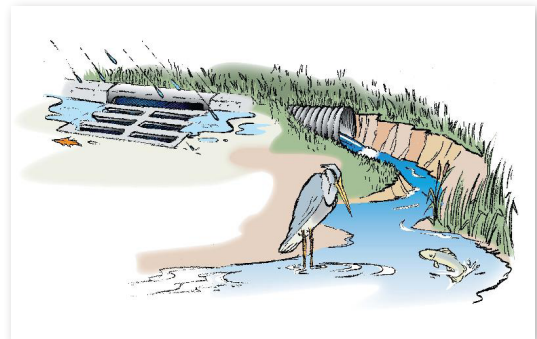


ACSEC FACEBOOK PAGE: *As social media becomes an increasingly effective tool in day to day communication, a Facebook page was established for the ACSEC in Year Four. The page provides time sensitive information including camp and workshop registration deadlines, volunteer opportunities, and other pertinent news items. The ACSEC Facebook page is visually driven, utilizing photographs from demonstration sites and educational events to provide awareness of Consortium-related activities and information. Facebook allows for an additional avenue for communication as followers may post to the page or message the admins (ACSEC Co-Coordinator). Additionally, the ACSEC Facebook page has “liked” and follows ACSEC partner pages, increasing awareness of partner activities.*

Expanding ACSEC Digital Outreach



The ACSEC E-newsletter masthead



Above image is depicted in the beginning of each issue of the ACSEC's Ripple Effect. Below this image the words always included are "Storm Drains and Ditches Lead to SC Waterways."

Beginning in September 2011, the ACSEC launched an official bimonthly e-newsletter entitled *The Ripple Effect*. *The Ripple Effect* was designed to provide awareness of Consortium-related activities, including past, present and future events. *The Ripple Effect* also includes links to pertinent electronic resources providing information on good stewardship practices. The e-newsletter is bimonthly, creating an opportunity for dependable and up-to-date communication regarding ACSEC news and events. Recipients of the e-newsletter may forward the newsletter to others or unsubscribe at any time. Archive links are provided below. Archive links are also available at the Charleston County Public Works Stormwater Program Website. All ACSEC community and education partners are encouraged to submit information for inclusion in *The Ripple Effect* and to distribute the newsletter widely.

For more day-to-day Consortium related information, interested individuals may visit the ACSEC Facebook page. Here, posts are made multiple times a week regarding daily activities within the Consortium. Similar to *The Ripple Effect*, ACSEC community and education partners are encouraged to submit information for inclusion on the ACSEC Facebook page.

Both *The Ripple Effect* and the ACSEC Facebook page were created with the objective to increase awareness of Consortium-related activities, and ultimately, increase adoption of behaviors to protect water quality. With many exciting opportunities, resources, and teachable moments within the ACSEC, there is truly no shortage of material. Both *The Ripple Effect* and ACSEC Facebook page are communication tools to be viewed as a shared resources for the Consortium members.

Ripple Effect Archives from September 2011 to June 2012

Sept/October- <http://archive.constantcontact.com/fs053/1106449307932/archive/1107197592105.html>

Nov/December- <http://archive.constantcontact.com/fs053/1106449307932/archive/1108230504901.html>

Jan/February- <http://archive.constantcontact.com/fs053/1106449307932/archive/1109124252254.html>

Mar/April- <http://archive.constantcontact.com/fs053/1106449307932/archive/1109425269086.html>

May/June- <http://archive.constantcontact.com/fs053/1106449307932/archive/110995269570.html>

Television (Indirect)

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Public Service	SC ETV	Television: <i>Making It Grow</i> : award-winning weekly one-hour TV program on PBS. Live call-in show airs Tuesday evenings from 7-8PM and answers home gardening and landscape questions from around South Carolina.	Continuous	600,000	GP, R
Clemson Carolina Clear		Television: "We All Live Downstream:" Mass media campaign highlighting the connection between clean water and quality of life in South Carolina	Comcast 5/7-6/11, 2012 Knology 5/19-6/11, 2012	170,950 (Total spots shown = 760)	GP
Clemson Carolina Clear		Internet Television: "We All Live Downstream:" On Knology.net, commercial precedes news and other videos	Knology 5/19-6/11, 2012	NA	GP



Beginning August 1, 2011, the "We All Live Downstream" television commercial aired across South Carolina in Carolina Clear partner regions. This 30-second spot includes discussion of proper management of pet waste, yard debris, household hazardous chemicals, and fertilizing practices and what people can do to prevent household-related stormwater pollution. In the Charleston Tri-county, the ACSEC commercial broadcasts on both Knology and Comcast providers. All regional commercials can be viewed at Carolina Clear's YouTube channel by searching for "Carolina Clear" on You Tube.

Radio (Indirect)

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Public Service	SC ETV	Radio: <i>Your Day</i> : One hour weekly radio program on NPR.	Continuous M-Th Noon-1PM	30,000 state-wide each week	GP

RADIO: "Your Day" is a radio magazine produced as a public service of Clemson University Radio Productions, featuring a wide range of topics of interest to South Carolina residents and visitors alike. Each Monday through Thursday at noon, "Your Day" provides programming in the NPR tradition, but with a South Carolina flavor. Recurring programs highlight horticulture, entomology/pesticides and natural resources.

Billboards (Indirect)

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Carolina Clear		BILLBOARD: ACSEC "We All Live Downstream" Billboard located at Hwy 17 south of I-26.	continuous	est 158,047	GP
Clemson Carolina Clear		BILLBOARD: ACSEC "We All Live Downstream" Billboard located at Rivers Ave less than one mile west of Montague.	continuous	est 72, 771	GP



BILLBOARD: Billboards featuring actors from the "We All Live Downstream" commercial were displayed in the ACSEC region. The statewide "We All Live Downstream" billboard was diversified in a series in the Tri-county to emphasize pollutants and behaviors that are of particular importance to the ACSEC region: bacteria and proper disposal of pet waste; auto oil and recycling; and greater awareness of storm drains and their connection to waterways. In total, four billboards were presented to the public with this variety of messages, and three utilized the new Thank You! Campaign logo, which looks to celebrate the action of each individual to positively affect water resource protection. The billboards were released in July/August 2011 and conclude in fall 2012.



Thank You! Campaign

The ACSEC developed the Thank You! Campaign in ACSEC reporting Year Four in conjunction with the second statewide mass media campaign. The slogan represents an effort to help convey the personalized nature of outreach efforts by thanking individuals for their stewardship actions to help protect water quality. An overall development goal was to create a simple message that illustrates the connections between individual actions, stormwater and the health of local waterways. The Thank You! Logo is being implemented across a variety of ACSEC outreach platforms to send a positive message to the public and encourage their help in protecting local waterways.

The ACSEC kicked off the campaign by including the Thank You! Logo into three of the “We All Live Downstream” billboards. The billboards were displayed in the Tri-county area and illustrate three ACSEC priorities, the proper disposal of pet waste, proper disposal of car oil, and core message that all storm drains lead to SC waterways. The Thank You! Campaign graphic was included in the billboards as a positive reinforcement for stewardship behaviors.

Also in Year Four, the ACSEC logo received a face lift. The new version of the Consortium logo utilizes brighter colors and provides a fresh look to help the logo stand out in future promotional and educational materials. The ACSEC logo is now provided in linear and medallion formats.

Thank You!

The new Thank You! Logo encourages watershed stewardship with positive messaging.



The new ACSEC logo utilizes brighter colors. Here the old ACSEC logo is depicted at top, the new versions of the logo at bottom



ACSEC Thank You! billboard has been in rotation in the Charleston Tri-county area for a majority of the Year Four reporting term, impacting thousands of road travellers and promoting watershed stewardship.

Publications (Indirect)

ARTICLES

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Post and Courier		Articles: Newspaper: <i>Get Back to Nature with Green Roofs and Walls</i>	Sept 4, 2011	96,005	GP, R, T
Post and Courier		Articles: Newspaper: <i>Feeding Lowcountry Grasses</i> (addressed little to no phosphorus fertilizers)	Oct 16, 2011	96,005	GP, R
Post and Courier	Clemson Carolina Clear	Articles: Newspaper: <i>Keeping Retention Ponds Clean</i>	March 3, 2012	96,005	GP, PO, R
Post and Courier	Clemson Carolina Clear	Editorial: Newspaper: <i>Reduce Litter to Protect Waterways</i>	March 28, 2012	85,689	GP
Post and Courier	Charleston County, SCNPS	Articles: Newspaper: <i>Earth Day Festival Promotes Green Living</i>	April 15, 2012	96,005	GP
Post and Courier		Articles: Newspaper: <i>Biodiversity Can Help Curb Garden Pests</i> (promoted use of native plants in home landscape)	April 29, 2012	96,005	GP, R
Post and Courier	Lowcountry Earthforce	Articles: Newspaper: <i>Kids Make a Difference for Earth</i>	May 16, 2012	96,005	GP, YT
West Of	Community Pride	Articles: Newspaper: <i>Taking Pride In Their Work</i>	May 16, 2012	20,000	GP
Goose Creek Gazette		Articles: Newspaper: <i>Council OK's Water Plan</i> (City of Goose Creek joins the ACSEC)	May 13, 2012	11,000	GP
Goose Creek Gazette		Articles: Newspaper: <i>Goose Creek Focused on Stormwater</i> (Mayor Heitzler signs ACSEC joint resolution)	May 24, 2012	11,000	GP
SC Sea Grant Consortium	NERR, SCDNR, Clemson University	Articles-Magazine: SC Sea Grant quarterly Coastal Heritage summer 2011 edition cover story <i>Water's Edge, Managing Coastal Runoff</i> .	Summer 2011	5,500	GP, PO, C, T, R
Charleston County Env. Management		Articles-Newsletter: <i>Commercial Food Waste Composting</i> , emphasis on county composting efforts	February 2012	180,000	GP, C, R
EPA		Articles-Newsletter: US EPA Watershed News: Feature included on Carolina Clear and the regional stormwater education strategy.	February 8, 2012	16, 450	GP, T, C, HE, EA
Soil and Water Conservation District		Articles-Newsletter: Conservation Corner: Reports on water quality outreach initiatives	April 30, 2012	1100	GP, YT, R

Outreach Materials (Indirect)

BROCHURES, BOOKLETS, MANUALS

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension	SC DHEC	BOOKLET: <i>Carolina Yards and Neighborhood (CYN) Yardstick Workbook</i>	Continuous	275	GP, R, PO

The Carolina Yard Workbook provides a guide to the nine principles of the Carolina Yard and Neighborhood (CYN) program. This statewide program provides guidance on environmentally friendly home landscaping to minimize impact on SC's natural resources. The program focuses on techniques for water resource management, including stormwater runoff, and continues to be one of Clemson Extension's primary outreach methods to reach residential audiences. Workbooks were distributed at public events, individual workshops and presentations.



Clemson Carolina Clear		MANUAL: <i>Rain Gardens-Green Solutions to Stormwater Pollution</i> : Provides overview and procedures for installing a rain garden in the landscape	Continuous	240	GP, R
Clemson Carolina Clear		MANUAL: <i>Rainwater Harvesting for Homeowners</i> . Provides an overview and procedures for installing a residential rainwater harvesting system	Continuous	200	GP, R

Carolina Clear produced both a Rainwater Harvesting and Rain Garden Manual specifically geared towards residential audiences in South Carolina. The Rainwater Harvesting manual is written to assist homeowners with designing and installing small-scale rainwater harvesting systems, primarily rain barrels. The Rain Garden manual provides information on constructing a rain garden and emphasizes the step-by-step planning process including site selection, plant design, and soil preparation. Both manuals are distributed at public events, including fairs and festivals, as well as to individuals attending workshops and presentations. The publications are also made available, as free low-resolution downloads in the Carolina Clear toolbox to best serve the public and water resource protection.



Outreach Materials (Indirect) continued

BROCHURES, BOOKLETS, MANUALS

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
SC Sea Grant	NOAA, HML, Clemson Strom Thurman Inst.	BOOKLET: <i>Tidal Creek Habitats: Sentinels of Coastal Health</i> . The booklet highlights the ecological services and economic value of tidal creek ecosystems and threats to their health, specifically from non-point source stormwater runoff	Continuous	50	GP, R, PO
SC Sea Grant		BROCHURE: <i>Polluted Stormwater</i> : Part of SC Sea Grant's stormwater series. Brochure provides overview of stormwater runoff pollution, and provides specific actions for individuals to reduce pollution	Continuous	50	GP, EA, T
SC Sea Grant	Multiple	BOOKLET: <i>Maintenance of Low Impact Development Stormwater Practices</i>	Continuous	50	R, T, C
Project Impact		BROCHURE: <i>Marine Vessel Cleaning and Maintenance</i> : Best Management Practices for boaters to reduce negative impacts on area waterways	Continuous	25	B, GP
Clemson Extension	SC DHEC	BOOK: <i>Coast-A-Syst</i> : Provides practical information for reducing negative impacts on water quality	March 22, 2012 (CHS area Pond Conf.)	25	PO, T, R, HE
Clemson Caorlina Clear	Center for Watershed Excellence	BROCHURE: <i>Watershed Stewardship Map for South Carolina</i> : Information on location of SC Watersheds and organizations involved in stewardship of them	Continuous	50	GP, R, HE, YT
Clemson Carolina Clear	Center for Watershed Excellence	BROCHURE: <i>Low Impact Development Atlas for South Carolina</i> : Information on sites demonstrating LID practices	Continuous	50	GP, T, R, HE
SCDNR		BOOKLET: <i>Managing Ponds for Recreational Fishing</i> : Addresses considerations for pond design, construction and management for pond owners	Continuous	25	PO

Outreach Materials (Indirect) continued

POSTCARDS

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Carolina Clear		POSTCARD: <i>What is a Rain Garden?</i> : Provides brief description and purpose of a rain garden and links interested individual to online resources and additional information	Continuous	200	GP, R, YT
Clemson Carolina Clear		POSTCARD: <i>Trashing Our Environment</i> : Provides information on what can be done to prevent litter in SC	Continuous	200	GP, R, YT
Clemson Carolina Clear		POSTCARD: <i>What To Do About Pet Waste</i> : Provides information to pet owners on how to prevent added pollution by dogs	Continuous	200	GP, R, YT
Clemson Carolina Clear		POSTCARD: <i>We All Live Downstream</i> : Stormwater is not treated, common ways to prevent stormwater pollution	Continuous	200	GP, R, YT
Clemson Carolina Clear		POSTCARD: <i>Septic Systems Care and Maintenance</i> : Tips for maintaining septic systems to reduce negative impacts on water quality	Continuous	200	GP, R, YT

In the 2011-2012 ACSEC reporting year, staff representing the ACSEC tabled a variety of events including fairs, festivals, conferences, and meetings. In order to meet the needs for representation at such events, while also providing quality take-home education material; postcards were utilized. The postcards offered in the 2011-2012 ACSEC reporting year highlighted stormwater outreach including general stormwater stewardship, rain gardens, litter, pet waste, and septic systems. Additional postcard topics will be offered in the 2012-2013 reporting year. All postcards provide links to find more information online.



Outreach Materials (Indirect) continued

PROMOTIONAL ITEMS

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Carolina Clear		PROMOTIONAL ITEM: <i>Stormwater Pond Management Sticker</i> : Utilized to promote the newly launched Clemson Extension Stormwater Pond Management website	Continuous	200	PO, T, C, R
Clemson Carolina Clear		PROMOTIONAL ITEM: <i>Be Wise When You Fertilize Sticker</i> : Sticker distributed specifically for reseal of fertilizer bags to encourage only using what is needed	Continuous	50	GP, R, YT
Clemson Carolina Clear		PROMOTIONAL ITEM: <i>AshleyCooper.org Sticker</i> : Basic ACSEC logo and website utilized to promote website visitation and increase awareness of Consortium logo/efforts	Continuous	200	GP, R, YT
Clemson Carolina Clear		PROMOTIONAL ITEM: Clemson Carolina Clear Note pad "We all live downstream."	Continuous	100	GP, R, YT
Keep America Beautiful	Keep Charleston Beautiful	PROMOTIONAL ITEM: Personal Ash-tray: provided by KAB and distributed at events tabled; this item encourages responsible disposal of cigarette butts	Continuous	50	GP, R, YT



The ACSEC logo was updated in Year Four and utilized in a variety of mediums including the ACSEC e-newsletter "Ripple Effect," Facebook, and promotional materials. A few versions of the updated logo were created, depicted here is the medallion version which includes the ACSEC website.

Thank You!

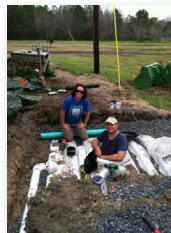
Also, developed in Year Four, the newly created Thank You! Logo will be utilized in ACSEC promotional items in Year Five. This logo is intended to promote good watershed stewardship practices.

Permanent Exhibits (Indirect)

SITE DEVELOPMENT

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Carolina Clear	Clemson University Coastal Research and Education Center (CREC)	PERMANENT EXHIBITS DEVELOPMENT: The “Ed Shed” located at CU’s CREC was developed to host educational workshops; features include rain garden, rainwater harvesting, native plants, previous pavers, etc.	Continuous	500	GP, R, YT, HE, T, EA, PO, C

The “Ed Shed” located at Clemson University’s Coastal Research and Education Center (CREC), provides a demonstration and training area with several examples of stormwater best management practices (BMPs). Pervious hardscapes is one of the BMPs demonstrated at the “Ed Shed” and include pervious pavers, pervious concrete, and a gravel pave system. The site also showcases both above-ground and below-ground rainwater harvesting systems, rain gardens/bioretention cells, and landscaping utilizing native plants and no-till gardening techniques. To date, various meetings, workshops, and trainings have been held at the “Ed Shed.”



LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
SC Aquarium, Clemson Carolina Clear		PERMANENT EXHIBITS DEVELOPMENT: Rain barrel display at the SC Aquarium	Continuous	1000	GP, R, YT, HE, T, EA, PO, C

The SC Aquarium and Clemson Carolina Clear installed two 55-gallon rain barrels located along the highly visible exit walkway. The barrels are supported on an aesthetically pleasing support structure, well-built with intention to reduce hesitancy of rainwater harvesting systems. In ACSEC reporting year 5, this site will become increasingly impactful as interpretive signage is added to the display; the SC Aquarium hosts over 400,000 individuals per year. In year 4 the structure was built, rain barrels installed, and drip irrigation system developed.



Permanent Exhibits (Indirect) continued

SITE DEVELOPMENT

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
College of Charleston	Clemson Carolina Clear	PERMANENT EXHIBITS DEVELOPMENT: The College of Charleston installed a rain garden as part of the <i>Green Teaching Garden</i> located at the Grice Marine Lab	Continuous	500	GP, HE, R

In May 2011, the College of Charleston initiated the Green Teaching Garden with a cistern installation (reported in year three). In Year Four, the associated features were further established including four raised beds (native plants, butterfly garden, herbs, and vegetables) each irrigated via drip irrigation from the cistern. A rain garden was constructed central to the four raised beds to receive cistern overflow. Furthermore, eight rain barrels were installed to capture additional runoff from adjacent roof areas.



Sustainability Institute	Clemson Carolina Clear	PERMANENT EXHIBITS DEVELOPMENT: Additional features and further development took place at the Sustainability Institute's Green Home	Continuous	275	GP, R, YT, C
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The Sustainability Institute

In Year Four, the ACSEC continued to partner with the Sustainability Institute (SI) to add more stormwater BMPs to their Green Home demonstration site. Pervious concrete walkways and

a gravel walkway were added to the front of the home, as well as new drip irrigation extending from the rainwater harvesting system for the new raised beds made from recycled materials. The site continues to receive a great deal of visitation from the surrounding neighborhoods of North Charleston and beyond, and also serves as a demonstration site for the Carolina Yards and Neighborhoods program.



Permanent Exhibits (Indirect)

EXISTING SITES

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension Master Gardeners	Exchange Club, Clemson Carolina Clear	PERMANENT EXHIBIT EXISTING: The Exchange Park in Ladson hosts the <i>Carolina Yard Living Classroom</i> . Stormwater BMP features include pervious pavers, rain barrel, rain garden and landscaping with native plants. This demonstration site is particularly impactful during the Coastal Carolina Fair hosted on Exchange Park grounds during the fall. Clemson Master Gardeners staff the site to answer questions for fair attendees.	Continuous	50,000	GP, R
SCDNR	Clemson Carolina Clear	PERMANENT EXHIBIT EXISTING: <i>Ft. Johnson Community Garden</i> developed as a demonstration garden adjacent to the SCDNR outdoor classroom. Stormwater BMPs present include two rain gardens, a 1500 gallon cistern, native plants and drip irrigation	Continuous	5,000	GP, R, YT
Michaux Conservancy	Clemson Carolina Clear	PERMANENT EXHIBIT EXISTING: <i>Save Noisette Creek Mural</i> created by students at the North Charleston School of the Arts and supported by the ACSEC. The mural aims to encourage the public to protect SC's natural resources	Continuous	5,000	GP, R, YT, C
SC Native Plants Society	Charlestown Landing State Park, Clemson Carolina Clear	PERMANENT EXHIBIT EXISTING: Rain Garden demonstration site at the Legare-Waring House at Charlestown Landing State Park. This site includes interpretive signage on rain gardens and is frequented by public both walking the grounds of Charlestown Landing as well as those visiting for weddings and other events.	Continuous	5,000	GP, R



Permanent Exhibits (Indirect) continued

EXISTING SITES

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Carolina Clear	Clemson Extension Master Gardeners	PERMANENT EXHIBIT EXISTING: Bowens Island Rain Garden is a 900 square foot large-scale rain garden managing nearly 2000 square feet of roof area runoff. This popular dining destination provides rain garden exposure to the public.	Continuous	1000	GP, R, C
Clemson Extension Master Gardeners	Clemson Carolina Clear	PERMANENT EXHIBIT EXISTING: <i>Urban Research and Demonstration Area(URDA)</i> is located at the Clemson Coastal Research and Education Center. This site is maintained by Clemson Extension Master Gardeners and includes a rain garden (installed in Fall 2008) and native plants.	Continuous	1000	GP, R
College of Charleston	Clemson Carolina Clear	PERMANENT EXHIBIT EXISTING: Rain-water harvesting cistern and pump located adjacent to the Political Science Building on College of Charleston's downtown campus.	Continuous	500	GP, R, YT, C



Permanent Exhibits (Indirect)

YOUTH INITIATIVES

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Farms to Schools Initiative	Clemson Extension, Clemson Carolina Clear	PERMANENT EXHIBIT DEVELOPMENT: Alston Middle School: Established rainwater harvesting features and raised beds.	Fall 2011	900	YT, GP

Alston Middle School located in Summerville, SC was awarded a Farm to Schools Grant in 2011, resulting in a school-wide initiative to promote healthy living and consumption of local fruits and vegetables. Clemson Extension and Carolina Clear became involved with the project to help in the production of on-site produce, pollinator plants and rainwater harvesting. Six rain barrels were established throughout the schoolyard as well as a drip irrigation system supplying captured water to raised beds.



College of Charleston, Early Childhood Development Center (ECDC)	Clemson Carolina Clear	PERMANENT EXHIBIT DEVELOPMENT: Project was a partnership between CofC, ECDC, and Carolina Clear to install a set of rain barrels at ECDC. The rain barrels were part of a sustainability class project at CofC. ECDC is going to the site of future low impact development BMPs	Continuous	100	GP, YT, HE
Charleston Children's Garden Project	Clemson Carolina Clear	PERMANENT EXHIBIT DEVELOPMENT: 300 Gallon tank installed at Stono Park Elementary School as part of Charleston Children's Garden Project	Continuous	400	GP, YT
Clemson Carolina Clear	Charleston Children's Garden Project	PERMANENT EXHIBIT EXISTING: Mt. Zion Elementary School's Rain Garden was established in May 2011. The rain garden complements other sustainability features on the schools' grounds including rain barrels, compost bins and a variety of vegetables and native plants.	Continuous	200	GP, YT



Public Events (Indirect)

FAIRS AND FESTIVALS

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Charleston Green Fair	Charleston Water Systems, Keep Charleston Beautiful, Surfrider Foundation	EXHIBITS: <i>Charleston Green Fair</i> : During the 2011 Festival, the ACSEC sponsored the Water Conservation Tent which included demonstrations and information on keeping Charleston's water clean. ACSEC staff manned a booth within the tent to raise awareness of Consortium related activities and resources.	October 1, 2011	5000	GP,R, YT
Charleston Waterkeeper	Clemson Carolina Clear, Keep Charleston Beautiful, SC Aquarium, CCPRC	EXHIBITS: <i>Great Oyster Point Runoff Event</i> : Held at Colonial Lake in downtown Charleston, event included festive atmosphere to celebrate the Lowcountry's water resources.	Nov 5, 2011	200	GP
Charleston Soil and Water Conservation District	SCDNR, NRCS	EXHIBITS: <i>Southeastern Wildlife Exposition</i> : Exhibits in the Conservation Tent provided Program informational handouts on water quality, soils and other conservation topics. Focus on educational and water quality materials.	Feb 17-19, 2012	10,000	GP, YT, R, C
College of Charleston Masters of Environmental Studies Student Association (MESSA)	CofC MES Program, Surfrider Foundation	EXHIBITS: <i>8K for H2O</i> is an annual road race geared towards raising awareness about local water quality issues. Information was included in race packets on stormwater runoff and impacts on water quality. The CofC MES program and The Surfrider Foundation tabled the event providing information on local efforts and ways to get involved.	Feb 25, 2012	175	GP, HE



Public Events (Indirect) continued

FAIRS AND FESTIVALS

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Charleston Soil and Water Conservation District	SC Native Plants Society, Clemson Carolina Clear, SCDNR	EXHIBITS: <i>Ashley Scenic River Event 5th Annual-Ides on the Ashley River</i> : SC Native Plants Society and ACSEC booths were displayed and provided educational materials on stormwater best management practices and the use of native plants.	Mar 15, 2012	75	GP, R, EA
Clemson Carolina Clear	Keep Dorchester County Beautiful	EXHIBITS: <i>Flowertown Festival</i> : Hosted in downtown Summerville, this well attended event provides an opportunity for ACSEC to table the event and distribute educational and promotional materials	March 31, 2012	100,000	GP, R, YT
Medical University of South Carolina (MUSC)	Multiple	EXHIBITS: <i>MUSC Earth Day Festival</i> : Multiple ACSEC Education Partners set up booths providing information to MUSC staff, students, and general public on good stewardship practices. This event is hosted in the horseshoe on MUSC campus.	April 12, 2012	200	GP, HE, R
Charleston County	Multiple	EXHIBITS: <i>Charleston County Earth Day Festival</i> : Seeks to increase awareness of environmental issues in a celebratory manner. The festival is a hands-on, science based experience. At the 2012 Festival, the ACSEC booth was located in the water conservation tent. The ACSEC booth provided information on good watershed stewardship practices.	April 14, 2012	4,000	GP, R, YT



In-Person, Phone, Email (Direct)

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension, Master Gardeners		In-Person, Phone, Email: In the Tri-county, 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.	Continuous	Approx. 64,000	GP, R, C
Clemson Extension		In-Person, Phone, Email: Clemson Extension Agents answered questions and provided services to a variety of pond owners and managers throughout the Tri-county area.	Continuous	66	PO, R, C
Clemson Extension, Clemson's Agricultural Service Lab		Soil Samples: Clemson Extension, in cooperation with Clemson's Agricultural Service Lab processed soil samples for the Tri-county residents and commercial audiences.	Continuous	Berkeley 552, Charleston 1786, Dorchester 797	R, C

CLEMSON[®]

COOPERATIVE EXTENSION

The Charleston Tri-county area is home to 10 Clemson Extension Agents and 413 active Master Gardeners. Throughout the year, Extension Agents and Master Gardeners in the Berkeley, Charleston, and Dorchester County Extension offices respond to calls, walk-ins, and emails from the public, as well as field questions during public events. The types of information requested is by individuals representing both the private and commercial sectors, with diverse interests ranging from agriculture, forestry, home landscaping, horticulture, and pond management. Each question is addressed by a dedicated group of Master Gardener volunteers and Extension Agents. Extension offices also provide services in concert with the university, including processing soil samples, non-potable water samples, 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. From July 2011 to June 2012, Master Gardeners volunteered approximately 7,370 hours to the community.



Presentations (Direct)

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Carolina Clear	Surfrider Foundation	PRESENTATION: Presentation to local Surfrider chapter on stormwater impacts on water quality in the lowcountry, also introduction to stormwater BMPs.	Sept 8, 2011	20	GP, R
CCPRC	Clemson Carolina Clear	PRESENTATION: <i>Living in a Watershed</i> provided information to Master Naturalist in training on water budget and water stewardship practices.	Sept 8, 2011	15	GP, R
Clemson Extension	Clemson Carolina Clear	PRESENTATION: <i>Native Plants in the Home Landscape</i> ; highlighted native plants as a BMP for water quality.	Sept 20, 2011	40	GP, R
Surfrider Foundation		PRESENTATION: <i>Bag It</i> : Movie screening and panel discussion on impacts of marine debris, emphasis on plastic.	Nov 29, 2011	35	GP, R
Keep Charleston Beautiful	Surfrider Foundation	PRESENTATION: Presentation to local Surfrider chapter on KCB debris removal efforts.	Jan 1, 2012	20	GP, R
SCDNR	Surfrider Foundation	PRESENTATION: Presentation on Clean Marinas, boater stewardship.	Feb 10, 2012	20	GP, R, B
Clemson Carolina Clear		PRESENTATION: <i>Landscaping with Native Plants</i> : Presentation to Mothers and More group in Summerville.	Feb 28, 2012	5	R
Clemson Carolina Clear		PRESENTATION: <i>Existing Programs and Resources for Stormwater Education and Involvement</i> : Presented at Charleston Area Stormwater Pond Management Conference.	March 22, 2012	35	C, T, PO, R, EA
Clemson Carolina Clear	Clemson Extension Service	PRESENTATION: <i>Celebrating South Carolina's Natural Heritage with Native Plants</i> : Presented to participants in 2012 Carolina Yard Gardening School to promote native plants	March 24, 2012	40	GP, R
Clemson Carolina Clear	Charleston County	PRESENTATION: Charleston County Earth Day Main Stage Address: Emphasis on watershed stewardship.	April 4, 2012	50	GP, R, YT
Surfrider Foundation	Clemson Carolina Clear	PRESENTATION: <i>Ocean Friendly Gardens</i> : Presentation on water stewardship in the garden.	April 12, 2012	20	GP, R

Presentations (Direct) continued

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension Service		PRESENTATION: <i>Carolina Yard and Neighborhoods</i> : presentation to Master Gardeners showcasing the flexibility of outreach through current CYN programming across SC.	Mar 16, 2012	14	R
Clemson Carolina Clear		PRESENTATION: Charleston Exchange Club: Presentation on water quality and stormwater issues in the region	Aug 4, 2011	88	GP
Clemson Carolina Clear		PRESENTATION: Rose Club of Charleston: Rainwater Harvesting presentation	Oct 21, 2011	4	PO
Clemson Carolina Clear		PRESENTATION: Master Gardeners: Water resource management in the home landscape	Nov 7, 2011	18	R
Clemson Carolina Clear		PRESENTATION: Charleston County Extension Advisory Committee: ACSEC regional efforts	Feb 9, 2012	22	GP
Clemson Carolina Clear		PRESENTATION: Plantasia: Rain Garden design, installation, and maintenance	April 13, 2012	5	R
Clemson Carolina Clear		PRESENTATION: Ashley Scenic River Board Meeting: Stormwater Issues in the Tri-county area, ACSEC efforts	April 18, 2012	9	GP



Presentations (Direct) continued

Youth Presentations

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Surfrider Foundation Charleston Chapter		PRESENTATION: Youth: Ocean Stewardship presentation provides information to students on ways humans harm the ocean by negatively impacting water quality on land. During Spring 2012 Surfrider presented to James Island Middle School, James Island High, and Academic Magnet Charter School.	Spring 2012	100	YT
Lowcountry Earthforce	SCDNR, SC Aquarium, CCPRC, Clemson Carolina Clear	PRESENTATION: Youth: Lowcountry Environmental Summit is a day long event in which students visit a variety of educational stations and displays to learn about stewardship of natural resources. Enviroscape and other water related stations were present.	May 15, 2012	330	YT
Charleston County	City of North Charleston, Lowcountry Earthforce, Clemson Carolina Clear, Sustainability Institute	PRESENTATION: Youth: Charleston County School District Sustainability Symposium was held at North Charleston City Hall. Over 200 students attended from area schools. Speakers from Sustainability Institute, Clemson Extension, Charleston County, etc spoke on sustainability initiatives.	March 30, 2012	200	YT



Presentations (Direct) continued

Youth Presentations

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Charleston Soil and Water Conservation District		PRESENTATION: Youth: Enviroscape demonstration to youth as part of student science summer camp at the Charleston Airforce Base.	June 26, 2012	30	YT
Charleston Soil and Water Conservation District		PRESENTATION: Youth: As part of the an annual Earth Day Event held at Charleston Air Force Base, Charleston County-wide fifth graders attended two hours of water quality presentations.	Mar 30, 2012	850	YT
Charleston Soil and Water Conservation District		PRESENTATION: Youth: <i>Peek Into Healthy Soils</i> : Contest driven event that included twelve separate interactive presentations given to students, teachers, and families in Charleston County Public and Private Schools on soils and how it relates to water quality.	May 2-31, 2012	425	YT
Charleston Soil and Water Conservation District		PRESENTATION: Youth: Earth Day/ Arbor Day: Program presentations were given to students and teachers at Mary Ford Elementary School. The Program incorporated water quality, water run-off issues, and the value of trees in our environment. Saplings were given to all students with instructions on care and the important role that water plays for human health and the environment	Dec 2, 2011	70	YT



Workshops (Direct)

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
ACE Basin NERR CTP		WORKSHOP: <i>Water Words That Work</i> : Emphasized environmental messaging pertaining to water resources.	Jan 25, 2012	64	HE, EA, T



On January 25, 2012, The Water Words That Work (WWTW) training was held at the USDA Vegetable Laboratory in Charleston, SC. This workshop, designed and led by communication expert Eric Eckl, is geared towards environmental messaging pertaining to water resources. The WWTW training included lessons on how to best utilize budget for effective communication, strategies to engage audiences long-term, and how to most appropriately deal with conflict. Attendees included property management companies, environmental and engineering consultants, community staff, environmental education organizations and universities.

Clemson Extension Service		WORKSHOP: <i>Carolina Yard Gardening School-The More You Know The More You Grow</i> : Full day of gardening lectures and demonstrations.	Mar 24, 2012	100	GP, R
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The theme of this year's Clemson Extension Service's Carolina Yards Gardening School was "The More You Know The More You Grow." This Charleston Tri-county educational effort was held at the central location of The Exchange Park in Ladson on Saturday March 24, 2012. The full day event was well attended with over 80 registered participants as well as over 20 Master Gardener volunteers. Participants learned about gardening techniques that are both effective and environmentally friendly. Attendees participated in both lectures and hands-on workshops and registration included one soil test, complimentary compost, plant problem diagnosis clinic, and educational exhibits. Clemson Carolina Clear gave a presentation on watershed stewardship with emphasis on gardening with native plants as a way to protect water quality.



Workshops (Direct)

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
SC Sea Grant Consortium	Clemson Carolina Clear, SCDNR	WORKSHOP: <i>From Seeds to Shoreline</i> (S2S) Teacher Workshop: Multi-day teacher training focused on S2S.	June 11-13, 2012	15	YT

ACSEC partners SCDNR, SC Sea Grant, and Clemson Carolina Clear worked together to facilitate the first ever “From Seeds to Shoreline” Teacher Workshop from June 11 to June 13, 2012. Teachers participated in experiential learning opportunities as a way to provide familiarity and comfort with program content; such activities included walking in the pluff mud, building an oyster reef, planting *Spartina alterniflora*, and practicing *Spartina* seed harvesting and preparation techniques. The workshop was held in the heart of the Ashepoo Combahee and Edisto (ACE) River Basin, hosted at the National Estuarine Research Reserve’s McKenzie Field Station located at Bennett’s Point, SC.



Clemson University Center for Watershed Excellence	City of Aiken, Clemson Cooperative Extension	WORKSHOP: <i>Aiken Green Infrastructure Design and Implementation</i> : Lecture and demonstration of green infrastructure elements in Aiken, SC	June 26, 2012	100	HE, EA, T, C
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The Aiken Green Infrastructure Design and Implementation Workshop was held in Aiken, SC to showcase Green Infrastructure and research being conducted within the city. In 2009, the City of Aiken, Clemson University, and several other partner organizations embarked on an ambitious project to use available surface area in Aiken parkways to treat stormwater, which was causing significant and costly impairments downstream. The first part of the workshop focused on presentations by principal research scientists covering different project components, including bioretention and bioswales, permeable parking, and essential technologies to help interpret the results. Then participants hit the streets where they were able to see the practices being used to treat water quality and water quantity concerns. Participants were able to talk to the scientists, researchers, and engineers who have studied and investigated the processes.



Workshops (Direct) continued

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
ACE Basin NERR Coastal Training Program	NOAA Coastal Services Center	WORKSHOP: <i>Project Design and Evaluation Workshop</i> : NOAA Coastal Services Center led this free, two-day course for coastal resource managers, local decision-makers, and education and outreach providers. Participants obtained the knowledge, skills, and tools to design and implement projects that have measurable impacts on a targeted audience.	April 3-4, 2012	22	T, C, HE, EO
ACE Basin NERR Coastal Training Program		WORKSHOP: <i>A Local Official's Guide to the Community Rating System</i> : The ACE Basin NERR partnered with FEMA to provide training on FEMA's Community Rating System (CRS) to floodplain managers, emergency managers, planners, stormwater engineers, building and construction officials, county and municipal government officials, and landscape architects. This training included a summary of the program's benefits, information on the process for becoming part of the program, and addressed changes to the CRS program to occur in 2012/2013.	Nov 9, 2011	27	T, C, HE, EO
ACE Basin NERR Coastal Training Program	NOAA Coastal Services Center	WORKSHOP: <i>Introduction to Green Infrastructure for Coastal Resilience</i> : The ACE Basin partnered with NOAA Coastal Services Center to provide this training for city and county officials, developers, engineers, floodplain managers, landscape architects, NGO's, and planners. Trainers from CSC presented introductory information and case studies on green infrastructure concepts and community resilience as well as how the two are related.	Oct 5, 2011	22	T, C, HE, EO
ACE Basin NERR Coastal Training Program		WORKSHOP: <i>Isolated Wetlands: Roles, Regulations, and Rulings</i> : The ACE Basin NERR provided a training to local governments, planners, engineers, landscape architects, and other CDM's involved in coastal planning and land management activities to address issues associated with isolated wetlands. They presented information about how their respective agencies are involved in the jurisdiction and regulation.	Sept 21, 2011	41	T, C, EO, HE

Trainings and Certifications (Direct)

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension Service		TRAININGS: Master Gardener Training: Multi-Day class spanning months resulting in certified Master Gardeners.	Fall 2011	40	GP, R
Clemson Extension Service		ONLINE TRAINING: Master Gardener On-line Training: Provides Master Gardener training online.	Fall 2011, Spring 2012	120, 60	GP, R

The Master Gardener program annually trains approximately 40 new students to become certified Master Gardeners (MG). In the 2011-2012 ACSEC reporting year, Clemson Extension provided a new service, online Master Gardener training. This successful pilot project boosted the number of individuals able to receive Master Gardeners training. Both the traditional MG training and the online MG training require volunteer hours before certification. Part of the MG curriculum includes programs relevant to protecting area water quality including rainwater harvesting, rain garden construction, and landscaping with native plants. Furthermore, each class receives a presentation during their training on area water quality and stormwater issues. These skills help them to translate that information to the thousands of people they educate during the year with home landscaping and related questions.



South Carolina
Master Gardener
a Clemson Extension Program

Charleston County Parks and Recreation Commission	Clemson Extension Service, CofC, SCDNR, Citadel	TRAININGS: Master Naturalist Certification Programs in Fall 2011 and Spring 2012.	Fall 2011, Spring 2012,	24	GP, R
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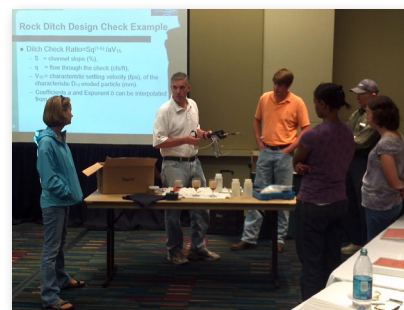
Charleston County Parks and Recreation Commission is the host site for the Charleston Master Naturalist program. Master Naturalists receive training in a 14-week course and then become certified once volunteer hour requirements have been met, similar to the Master Gardener program. Water resource education is a fundamental component of the program, and Master Naturalists likewise help translate that information to the public.



Training and Certifications (Direct) continued

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson University		TRAININGS: Clemson's Department of Pesticide Regulation provides materials and testing for Commercial and Private Pesticide Applicators Licenses. Number of impacts reflects those that have been certified in the Tri-county area.	Mar 28, 2012	67	C, T, R, PO

The purpose of the Certified Erosion Prevention and Sediment Control Inspector Program (CEPSCI) is to educate field personnel on the proper installation, maintenance, and inspection of erosion prevention and sediment control measures. Clemson University initiated this program in 2004 and since has certified over 4,000 individuals. CEPSCI involves a series of one-day workshops to teach attendees the latest techniques for erosion prevention and sediment control. Land disturbing activities have significant potential to adversely impact water quality.



SC DNR-SCORE		TRAININGS: SCORE program trained volunteers to monitor water quality parameters in the Charleston Harbor Area	2011-2012	13	GP
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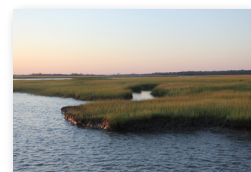
SC Department of Natural Resources SCORE (SC Oyster Restoration and Enhancement) program annually trains volunteers to monitor water quality at designated sites around the Charleston Harbor vicinity. In 2011-2012, SCORE trained 13 new water quality monitoring volunteers, who join nearly 60 other trained volunteers to monitor 18 sites around the region. Volunteers monitor temperature, pH, salinity, turbidity, and dissolved oxygen. Water quality data is available online through the SCORE website at www.score.dnr.sc.gov



Conferences (Direct)

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
SC Sea Grant Consortium	Multiple	CONFERENCE: Tidal Creek Summit: Leading tidal creek experts presented research and suggested management strategies.	Dec 5-6, 2011	140	GP, EA, T, C, HE

The summit was organized and sponsored by the S.C. Sea Grant Consortium in partnership with North Carolina Sea Grant, Georgia Sea Grant, North Carolina State University, The Coastal Society, and the Taylor and Francis Group. The summit was designed to provide a forum for exchange of information among scientists, resource managers, local governments, environmental groups and concerned citizens on the status of tidal creeks in the southeast. Leading tidal creek researchers from the region presented their work on tidal creek functions, impacts, and strategies for future research and sustainable management techniques. Five facilitated discussions covered identification of research gaps, information needs for effective management, linking research with management, restoration of tidal creek systems, and a wrap-up discussion on the future of research, management, and restoration efforts.



Clemson Carolina Clear, ACE Basin NERR Coastal Training Program, SC Sea Grant Consortium	Multiple	CONFERENCE: Charleston Area Stormwater Pond Management Conference: Hosted at Trident Technical College to provide diverse information on addressing stormwater pond management issues (see highlight on page 35)	March 22, 2012	180	PO, T, C, EA, R, GP
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The inaugural Charleston Area Stormwater Pond Management Conference occurred on March 22, 2012. With attendance rate of nearly 180 individuals, the conference indicated that the ACSEC educational priority of stormwater pond management information is in high demand. The conference was attended by a wide array of representatives, from homeowner associations (HOA) and management companies, to golf course and park managers. Experienced professionals from around the state provided presentations on a variety of topics including shoredscaping, aeration, nuisance wildlife, and homeowner education. See "Year Four Highlights" on page 35 for additional information.



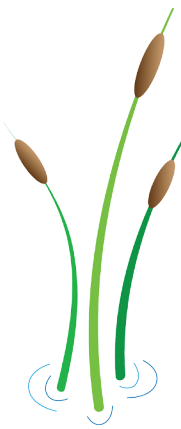
SCDNR-Soil and Water Conservation District	NRCS	CONFERENCE: SC Annual Partnership Conference: This event highlights awards and achievements accomplished in conservation and water quality. Presentations and Displays are provided on water quality and ways to improve water quality.	Feb 27-29, 2012	350	T, EA, H, C
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Charleston Area Stormwater Pond Management Conference

On March 22, 2012, the ACSEC hosted the inaugural Charleston Area Stormwater Pond Management Conference. Clemson Extension and the Carolina Clear program, South Carolina Department of Natural Resources, Ashepoo Combahee Edisto River (ACE) Basin National Estuarine Research Reserve and the South Carolina Sea Grant Consortium partnered to organize the conference. The conference featured a variety of pond management presentations from pond management professionals from around the region. The goal was to help pond managers, specifically targeting home owner associations (HOA) representatives, to understand the latest information on successfully managing stormwater ponds, physically and financially.

The conference was attended by over 180 people, representing a range of pond managers, from HOA and HOA management to golf course superintendents and park managers. Evaluations illustrated that the event was very well received and that pond management information is a significant need for the region. Along with the pond conference in Myrtle Beach, SC, which took place earlier in the month, the regional consortiums are meeting a significant need for the area. The conference will be offered on even years in the future.

Charleston Area
STORMWATER
pond
MANAGEMENT
conference 2012



Attendees of the inaugural Charleston Area Stormwater Pond Management Conference receive information from pond management professionals from around the region.

Litter Sweeps

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
SC Sea Grant Consortium	SC DNR	LITTER SWEEPS: Beach Sweep/River Sweep.	Sept 17, 2011	1500	GP, R, C



During the 2011 Beach Sweep/River Sweep litter cleanup, 1500 volunteers in Berkeley, Charleston, and Dorchester Counties collected 18,450 pounds of litter from the local beaches, waterways, and surrounding uplands. Through the use of volunteers and funding provided by the private sector, the annual Beach Sweep/River Sweep litter cleanup contributes to the economic, environmental, and societal well-being of the state. By participating in Beach Sweep/River Sweep, the public is more informed about natural resource issues, such as litter's detrimental effects on the landscape and wildlife, and people are empowered to take action and become environmental stewards. Results are available online at www.scseagrant.org



Adopt-a-Highway, Community Pride Inc, Clemson Ext.	SC DOT	LITTER SWEEPS: Adopt-a-Highway conducts four sweeps seasonally each year. Volunteers adopt a 2 mile stretch of highway.	Quarterly	2,474	GP, R, C
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Initiated in South Carolina in 1988, the Adopt-A-Highway program utilizes volunteered time of caring citizens to combat litter along SC highways. Volunteers complete a report card which provides information on how many volunteers participated in the cleanup, how many bags of trash were collected and how many hours the group worked. The program eliminates thousands of pounds of debris from roadsides, which can end up in nearby waterways, as well as improve South Carolina's scenic beauty.

ADOPT A



HIGHWAY

2011-2012 ADOPT-A-HIGHWAY TOTALS FOR TRI-COUNTY

County	Total Pounds Collected	Total Miles Adopted	Total Groups Participating	Total Volunteers Participating
Berkeley	32,000	120	45	310
Charleston	50,955	324	162	2,030
Dorchester	8,010	59	33	134
Totals	90,965	503	240	2,474



Litter Sweeps continued

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Keep Charleston Beautiful	Palmetto Pride	LITTER SWEEPS: Keep Charleston Beautiful coordinates volunteers to support a variety of litter sweeps throughout the year.	continuous	2,133	GP, R, YT, C, HE
Surfrider Foundation Charleston Chapter		LITTER SWEEPS: Surfrider conducts biweekly beach sweeps on Folly Beach during the summer and several marsh sweep events in the winter.	Summer-biweekly; three winter sweeps	225	GP, R, YT, C



Keep Charleston Beautiful (KCB) is dedicated to promoting the cleanliness and beautification of the City of Charleston through

education, public awareness and community involvement. KCB strives to teach litter prevention and waste responsibility through their education programs and public awareness campaigns, all of which are offered free of charge to the community. KCB offers creative ways for individuals to become involved. For example, the “Dash for Trash” event held on October 22nd appealed to the competitive nature of over 100 College of Charleston students who formed teams and collected litter in shopping carts. During the 2011-2012 reporting year, KCB organized 2,133 citizens whom volunteered 7,066 hours of community service and removed 2,199 bags of trash.



The Charleston Chapter of The Surfrider Foundation concentrates on reducing litter in area beaches and waterways as well as work to raise awareness of the importance

of ocean stewardship. The Charleston Chapter of The Surfrider Foundation has roughly 270 members, with approximately 30 being the most active. The Surfriders host biweekly beach sweeps during the summer months, (May to September) at the Folly Beach pier area averaging 15 volunteers per sweep. During the winter months, Surfrider hosts fewer, but larger clean up events that focus on a marsh area that is accessible by road. During the 2011-2012 winter season, three events were held along the Folly Road Causeway, one in November (25 volunteers), January (50 volunteers) and February (100 volunteers). The February event was offered in partnership with Comcast cable services.



Storm Drain Marking

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Carolina Clear	Mason Prep School	STORM DRAIN MARKING: Storm drains were marked (approx. 75) in the Harleston Village Neighborhood by students from Mason Prep School.	Nov 19, 2011	12	YT, R
Clemson Carolina Clear	East Side	STORM DRAIN MARKING: Storm drains were marked (approx. 75) on America and Amherst Streets.	Jan 21, 2012	6	YT, R
Clemson Carolina Clear	Ashley Hall School	STORM DRAIN MARKING: Storm drains were marked (approx. 50) on Radcliffe, Warren, Vanderhorst and Thomas Streets by students from Ashley Hall.	Jan 23, 2012	50	YT, R



Three separate storm drain marking events occurred in the 2011-2012 reporting year. All three events took place on the peninsula of Charleston with over 200 storm drains being marked. The style of storm drain marker utilized currently by the ACSEC are compact, and with small text size are not intended to be read by vehicular traffic. The ACSEC storm drain markers are most appropriate for an urban/suburban setting where pedestrians are more likely to be present. Downtown Charleston is compatible as most locations experience moderate to heavy foot traffic along sidewalks. During the 2011-2012 reporting year, 68 individuals participated in storm drain marking. However, it is important to note that the reported impact numbers are conservative as nearly all houses located along marking routes received a door hanger with information on watershed stewardship.



Rain Garden Installations

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Carolina Clear, College of Charleston		RAIN GARDEN INSTALLATION: Grice Marine Lab's Green Teaching Garden- rain garden was installed to capture overflow from cistern.	Mar 16, 2012	25	GP, R, HE
Clemson Carolina Clear, CCPRC		RAIN GARDEN INSTALLATION: As part of spring Master Naturalist program, a rain garden was installed at Clemson's CREC's "Ed Shed."	Mar 27, 2012	20	R

An ACSEC public involvement initiative with great potential is the use of rain gardens in both commercial and residential landscapes. During the 2011-2012 ACSEC Reporting Year, only two Rain Garden installation programs were held. However, it can be viewed as a quality over quantity sort of year as both rain gardens are located in highly visible and utilized demonstration areas.

The first Rain Garden Installation program took place at The College of Charleston's Grice Marine Laboratory (Grice) located at the Fort Johnson Marine Center on James Island. The Grice School has utilized students and staff to create the "Green Teaching Garden" (see permanent exhibits page 18 for additional information). The Rain Garden workshop held at the Green Teaching Garden was open to the public and publicized within the College of Charleston Community. Approximately 25 people attended the workshop, one of which was with the local Television station.

The second Rain Garden Installation program took place at the Clemson Coastal Research and Education's "Ed Shed" (see permanent exhibits page 17 for additional information). This program was part of the Master Naturalist in training series. This rain garden will be utilized for years to come by Clemson Carolina Clear staff and ACSEC partners to demonstrate the features of a rain garden.



Native Plant Sales

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
SC Native Plants Society		NATIVE PLANT SALE: The biannual SCNPS native plant sale is open to the public and offers a variety of native plants for home landscaping.	Oct 22, 2011, Mar 17, 2012	300	GP, R,



The Lowcountry Chapter of the Native Plant Society sponsors two native plant sales per year, one in the fall and one in the spring, held at Charles Towne Landing. The plant sales are open to the public, free of charge, and provide an opportunity to purchase native plants for home landscaping that may not be readily available otherwise. Landscaping with native plants requires little to no fertilizer, and typically requires less irrigation. Therefore, use of native plants in landscaping is considered an important best management practice for protecting water quality. The SCNPS utilizes native plant sales to increase awareness of the diverse array and aesthetically pleasing native plant varieties to choose from. As interest in native plants increases, ideally so too will demand and supply as they become more widely used.



PHOTO BY: TERI LYNN HERBERT, SCNPS



PHOTO BY: LISA LORD, SCNPS



Oyster Reef Construction

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
SC DNR SCORE	Multiple	OYSTER REEF CONSTRUCTION: SCORE facilitated 17 reef building events and 23 oyster bagging events.	Continuous	1,554	GP, R, YT, HE

The South Carolina Department of Natural Resources (SCDNR) is responsible for managing the state's oyster resources. Appropriate management includes the planting of material to provide substrate for recruitment of juvenile oysters. SCDNR's South Carolina Oyster Restoration and Enhancement (SCORE) program coordinates oyster shell recycling and community-based restoration. During the 2011-2012 ACSEC reporting year, SCORE utilized 573 individuals volunteering 1,511 hours of time to construct the bags for oyster reef builds. An additional 801 people donated 2,625 hours of volunteer time to construct oyster reefs in the Berkeley, Charleston, and Dorchester County areas. The total combined number of volunteers and hours for bagging oyster shell and reef building events was 1,554 volunteers donating 4,136 hours. A component of the SCORE volunteer events includes presentation or discussion on the impacts of stormwater on the lowcountry's oyster reefs. The SCORE program not only involves the public and provides awareness of water quality and the need to recycle oysters, but the reefs themselves help to improve water quality as new oysters inhabit them and filter the water.



Water Quality Monitoring

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
SC DNR- SCORE	Multiple	MONITORING: SCORE program initiated volunteers to gather water quality parameters at 16 sites in the Tri-county area.	weekly-monthly	77	GP, R

SCDNR's South Carolina Oyster Restoration and Enhancement (SCORE) program includes a water quality monitoring component. Water monitoring is performed at oyster restoration sites throughout the year by trained volunteers. Volunteers collect data on dissolved oxygen, salinity, temperature, and water clarity. Volunteers then enter those data into an on-line database. During the 2011-2012 ACSEC Reporting Year, 77 volunteers donated 244 hours of volunteer time monitoring water quality in Tri-county area sites.

Youth Involvement Events

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
Clemson Extension, Clemson Carolina Clear	Multiple	YOUTH INVOLVEMENT: 4-H2O "Exploring Lowcountry Waterways" Summer Camp for youth 10-13. This week long camp emphasizes watershed stewardship (see highlight)	July 25-29, 2011 (20), June 18-22, 2012 (17)	37	YT



SC Sea Grant Consortium	SCDNR, Clemson Carolina Clear	YOUTH INVOLVEMENT: <i>From Seeds to Shoreline</i> initiative involves students in germination and planting <i>Spartina alterniflora</i> to emphasize the significance of the saltmarsh and actions for clean water.	Winter-Spring 2012	680	YT
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From Seeds to Shoreline is the only student driven wetland restoration project in South Carolina. The SC Sea Grant Consortium, SC Department of Natural Resources, and Clemson Carolina Clear partner to facilitate this school program aimed at engaging students in hands-on education that includes seed collection, germination, cultivation and planting of *Spartina alterniflora*. The program creates an opportunity to learn about the importance of salt marsh ecosystems while participating in a community service learning project with emphasis on environmental stewardship. During the 2011-2012 school year, William Reeves Elementary School, Sullivan's Island Elementary School, James Island Charter High School, James Island Middle School, Ashley Hall, Mason Prep, and Archibald Rutledge Academy participated.



Youth Involvement Events continued

LEAD PROVIDER	SUPPORTING PARTNER	ACTIVITY	DATE	NUMBER OF IMPACTS	TARGET AUDIENCE
SCDNR- Soil and Water Conservation District		YOUTH INVOLVEMENT: The SC Conservation Districts Youth Workshop was held at Lander, University. The Charleston Soil & Water Conservation Districts sponsors students each year for this week long event where students are given the opportunity to study the environment in areas of water quality management, wildlife management, soils and geology, and natural resource management.	June 11-15, 2012	32	YT
SCDNR- Soil and Water Conservation District	Multiple	YOUTH INVOLVEMENT: SC Envirothon: Educational outreach week-long program at Sandhills Research Center in Columbia. Students study soils, water quality resources, forestry, wildlife, and other conservation topics. This is a competition in which the Charleston Soil and Water Conservation district sponsored 15 students.	Winter-Spring 2012	15	YT



4-H₂O Exploration Programs

The 4-H₂O Exploration Program is a statewide camp program implemented by Clemson University Cooperative Extension Service. This statewide youth initiative emphasizes environmental education for youth with focus on water quality, conservation, and watershed stewardship. The 4-H₂O Exploration Program provides hands-on, experiential learning opportunities for youth across the state.

In the ACSEC region, the 4-H₂O program is entitled “Exploring Lowcountry Waterways” and is offered to children living in Berkeley, Charleston, and Dorchester Counties. Two weeks of camp are offered each summer. In June, the “Cooper Camp” explores the Cooper River from the freshwater reaches found at Santee Canal Park and Cypress Gardens down to the estuarine environment of Charleston Harbor. In July, the “Ashley and Edisto Camp” explores the Ashley and Edisto Rivers from ancient Cypress Tress found at the Francis Beidler Forest to the dramatically different barrier island environment found at Morris Island.

The 4-H₂O Exploring Lowcountry Waterways summer camps are a Clemson Carolina Clear-led effort; however, in the ACSEC region, multiple Consortium partners play a vital role in the camps success. During the two weeks of camp, the ACSEC Education partners involved include the Charleston County Parks and Recreation Commission, Charleston Water Systems, Keep Dorchester County Beautiful, The SC Aquarium and the SC Department of Natural Resources. This effort is truly an example of ACSEC partnership in the Ashley Cooper Region.

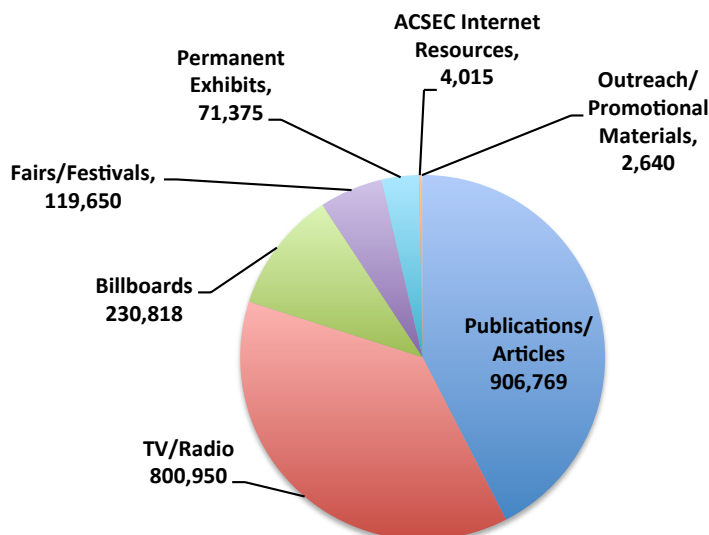


The ACSEC impacts from both direct and indirect outreach methods reached approximately 2,216,411 people in the Tri-county area between July 1 2011 and June 30, 2012.

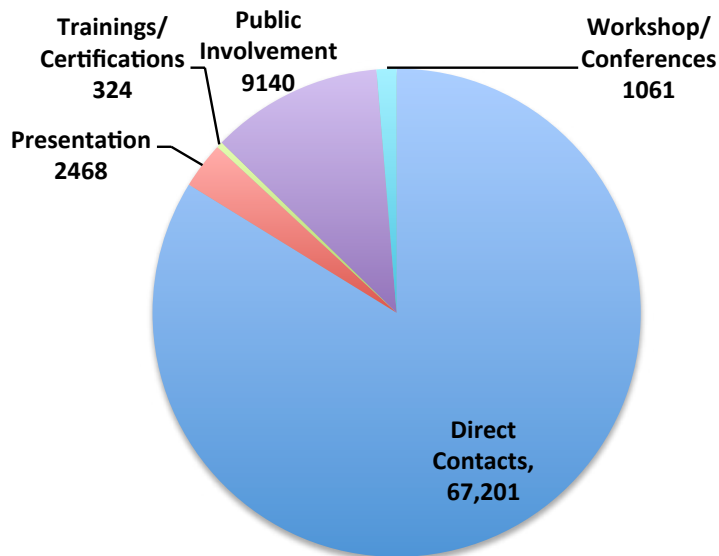
Indirect methods reached 2,136,217 through mass media efforts, print, public events and permanent exhibits. This is up nearly 52% from the year three reporting cycle in which 1,108,519 impacts were measured from indirect methods. The increase in Year Four is largely due to the “We All Live Downstream” mass media campaign, increased internet resources, additional permanent exhibits, and a near doubling of publications and articles impacts during the reporting cycle.

Direct methods reached 80,194 individuals through direct contacts, presentations, trainings, workshops and public involvement opportunities.

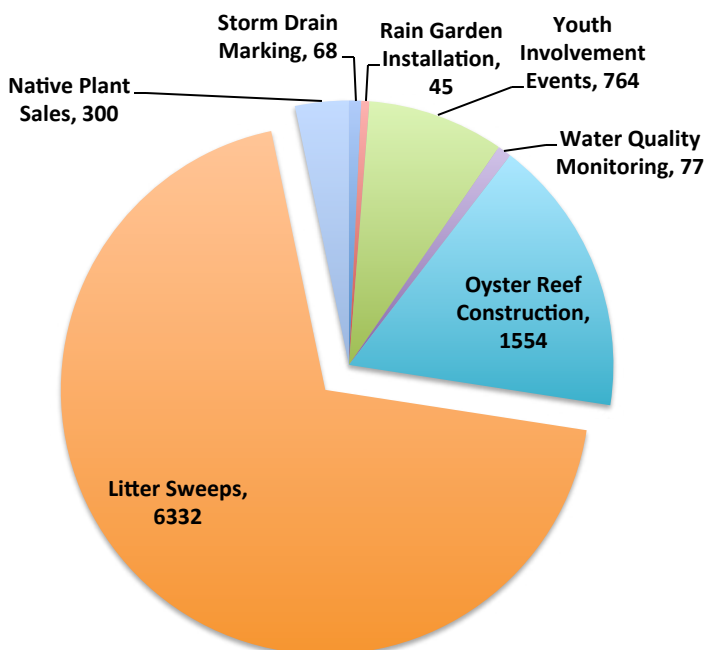
INDIRECT METHODS SUMMARY



DIRECT METHODS SUMMARY



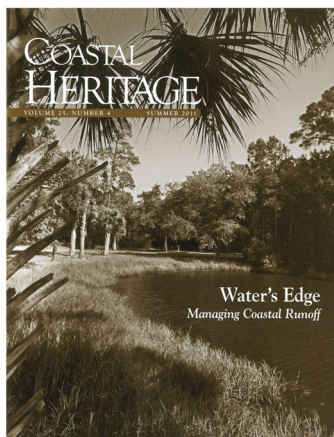
PUBLIC INVOLVEMENT SUMMARY



Articles

Coastal Heritage: A Quarterly Publication of the SC Sea Grant Consortium

Summer 2011



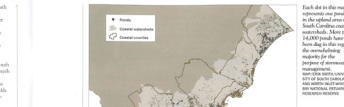
Water's Edge Managing Coastal Runoff

Krank Island is located just off the coast of Charleston, South Carolina. It's a small, undeveloped island that's home to a variety of wildlife, including bald eagles, ospreys, and cormorants. The island is also home to a small community of people who live there year-round. They are the descendants of the original settlers who founded the island in the 17th century. Today, the island is managed by the South Carolina Department of Natural Resources. The department is responsible for protecting the island's natural resources and ensuring that the island remains a safe and healthy place for both people and wildlife. One of the challenges the department faces is managing coastal runoff. Coastal runoff is the process by which rainwater flows over the land and into the ocean. This runoff can carry a variety of pollutants, including sediment, nutrients, and chemicals, which can harm the island's ecosystem. To manage coastal runoff, the department has implemented a variety of measures, including installing stormwater management systems, planting native vegetation, and creating artificial wetlands. These measures have helped to reduce the amount of runoff that enters the ocean and has helped to protect the island's natural resources.



MANICURED. The past reports of dredging in coastal South Carolina have been largely dismissed as mere speculation.

Coastal Heritage is a quarterly publication of the SC Sea Grant Consortium. The publication is dedicated to providing information about coastal issues, including coastal erosion, coastal flooding, and coastal development. The publication is written by experts in the field and is intended for a general audience. The publication is available online and in print. The online version is available at www.coastalheritage.org. The print version is available for purchase from the SC Sea Grant Consortium. The publication is a valuable resource for anyone interested in coastal issues.



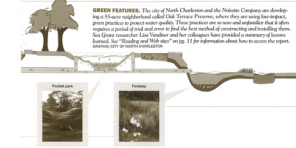
POINTS IN COASTAL WATERSHEDS OF SOUTH CAROLINA

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GREEN FEATURES. The city of North Charleston and the National Oceanic and Atmospheric Administration are developing a green infrastructure plan for the city.

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SHORE LANDSCAPE. The shoreline of the South Carolina coast is a beautiful sight.

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Articles

Charleston County Environmental Management Newsletter (February 2012)

Charleston County Environmental Management
13 Romney Street
Charleston, SC 29403-3844



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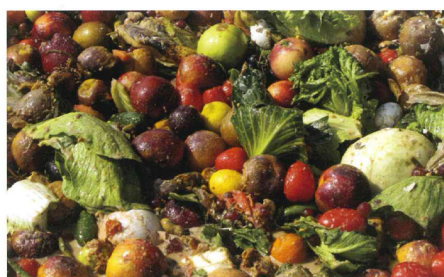
Commercial Food Waste Composting

by Christina Moskos, Community Representative

In 2009-2010 a waste composition study was conducted to estimate the composition of municipal solid waste disposed in the County's solid waste management system. The study indicated that 22% of the County's waste consists of organics, such as food and yard waste. Removing organics from the County's waste stream that would normally be headed to the landfill reduces the reliance on valuable landfill space and can reduce the cost of garbage disposal, sometimes significantly, due to the heavy weight of food waste.

In September of 2010, the S.C. Department of Health and Environmental Control (DHEC) approved Charleston County Environmental Management Department's request to implement a Food Waste Composting Pilot Demonstration for large generators, the first such project in the state. With a successful demonstration of the Food Waste Composting Pilot, the County anticipates permanent authorization from DHEC to compost food waste at the Bees Ferry Compost Facility.

The County's food waste program is geared toward commercial generators of food waste, although



residents are welcome to bring their food waste to the Bees Ferry Compost Facility. Commercial food waste generators may call the Recycling Center at (843) 720-7111 to obtain more information about joining the program. A list of food waste collection partners will be provided.

Increasing the intake of food waste tonnage supports the County's achieving its 40% recycling goal and allows the Environmental Management Department to receive an economic benefit through the sale of finished compost product. Compost may be purchased by the bag or in bulk at the Bees Ferry Compost Facility.

Articles

The Post and Courier: "Kids Make Difference for Earth"

(May 16, 2012)

Kids make a difference for Earth

National program in local schools plants seeds of awareness, action

BY DIETTE COURRÉGE
dcourrage@postandcourier.com

Seventh-grader Evan Dockery had fun collecting marsh grass seeds and watching them grow this year, but his favorite part of the school project was putting those plants back in the marsh to prevent erosion.

"It's really a great sight," he said. "You look at it, and you're like, 'I did that.'"

Dockery and his classmates from James Island Middle School were among 300 Lowcountry youths from nine schools who gathered Tuesday to celebrate their efforts to better their community and the environment.

Students came together with the help of Earth Force, a national program that partners with local schools to enable stu-

dents to effect environmental change. The nonprofit guides teachers and after-school leaders who work with students to create and implement projects.

"We get to talk about how we can save the Earth, and we came up with ideas on how we can help," said Savannah Woods, a sixth-grader at James Island Middle.

Some of the projects are done as part of a class curriculum, while others happen after school. Students in the Stiles Point Elementary School after-school program found out about the Harbor View Road widening plans that could have torn down many trees.

They got involved in the "Save Harbor View Road" campaign and wrote letters

Please see **EARTH**, Page B3



NANI RICE/STAFF
Evan Dockery of James Island Middle School talks about his Seeds to Shoreline project, where he has learned about restoring marsh grass. A national nonprofit, Earth Force, helped students with their efforts Tuesday at James Island County Park.

Kids make difference

EARTH, from B1

to Charleston County Council. "I don't have to push them,"

said Breanna Brown, one of the school's after-school counselors.

"They pushed me to do this."

At Tuesday's Environmental Youth Summit held at James Island County Park, students cheered on their peers as they presented their projects.

The entire sixth grade at

James Island Middle, as well as its Earth Force after-school club, worked on the Seeds to Shoreline project that involved growing and planting marsh grass. They took kayaks out to collect the seeds, and they spent most of the year growing those in a classroom greenhouse.

They took the grass back into the marsh a few weeks ago, and the plants will provide new habitats for wildlife while lim-

iting erosion.

"It's easier to learn when we're doing stuff," said sixth-grader Zach Ahearn. "I don't feel like sitting in class all day."

James Island Middle science teacher Sandie Nichols said she does service-learning projects with every class.

"This whole celebration is all about every kid having done something to make a difference," she said.

Reach **Diette Courrégé** at @Diette on Twitter or 937-5546.

Articles

The Post and Courier: "Earth Day Festival Promotes 'Green' Living"

(April 15, 2012)



Articles

West of: "Taking Pride in Their Work"

May 16, 2012



Taking Pride In Their Work

COMMUNITY PRIDE AWARDS OF CHARLESTON COUNTY RECOGNIZES THREE JAMES ISLAND ORGANIZATIONS

By Kristin Hacker
Staff Writer

Since 1966, Community Pride, Inc. has been acknowledging the citizens of Charleston County who have gone out of their way to give back to their community. An award winner on the local, state, and national levels itself, Community Pride coordinates the Charleston County Adopt-A-Highway program and supports "local efforts to enhance the visual landscape and environment of Charleston County." And part of this support is shown through their annual Community Pride Awards.

This year, the 46th Annual Community Pride Awards presentation was held in the Felix C. Davis Community Center of North Charleston. With more than 25 area businesses in attendance, the room was filled with the excited chatter of recipients. Since the awards are typically kept secret until announced on stage, the attendees sat with baited breath as the awards were announced.

Among the many organizations who have given back to the Charleston community this past year, five were from the West Ashley area.

COMMUNITY IMPROVEMENT AWARD

Taking home first place in this category was the South Windermere Garden Club for demonstrating the greatest improvement to their community. Presented by Michael Pound of the Council of Garden Clubs, the South Windermere Garden Club was acknowledged for several recent projects, including: adding a garden space in the common area at Frankie at Seaside, decorating for the Christmas season at Bonnie Doone Plantation, and holding their annual Holiday Boutique as a fundraiser for the Club's projects.

"Congratulations to the... continued on pg. 10

news WEDNESDAY, PAGE 10

COMMUNITY PRIDE CONTINUED FROM PAGE 1



Charleston Mayor Joseph P. Riley, Jr. speaks at the 46th annual Community Pride Awards luncheon.

South Windermere Club for their tireless efforts and worthwhile accomplishments that so many others can enjoy!" said Pound.

ADOPT-A-HIGHWAY AWARD

Given to groups that excelled in the results of miles of highway cleaned, numbers of pickups made, pounds of trash collected, and the amount of materials recycled, the Adopt-A-Highway Award also relies on the amount of enthusiasm and interest generated by the recipient organization. Coming in third place for the Adopt-A-Highway Award this year was the Old Charles Towne District Task Force.

The Old Charles Towne District Task Force adopts the area of San Rittenburg from Orange Grove Road to the World War II Memorial Bridge. Consisting of a team of six to eight individuals, the Task Force mainly focuses on clearing the dirt drive under the bridge where old tires are often dumped, as well as the small park area upstream of the causeway.

"Many thanks to the Charles Towne

JOHNNIE DODDS EDUCATION AWARD

Two West Ashley organizations were proud to receive the Johnnie Dodds Award this year. Given to individuals or youth-oriented groups who perform outstanding community service through clean-up or beautification efforts, the Charleston Charter School for Math and Science received third place while St. Andrews Middle School took home first.

Through the Service Learning Class at Charleston Charter School for Math and Science, students learned how to calculate their carbon footprint, as well as their water usage and researched ways to cut down on both. By educating fellow students on correct ways to recycle as well as personally collecting and sorting recyclable materials throughout the school on a weekly basis, the school was congratulated for the long-

term impact of their work.

For their creation of a flower bed and litter clean up as part of the Clean Cities Survey, St. Andrews Middle took home first place. Not only did students pick up litter around their school, they also cleared an unattractive space between two buildings on their campus and filled the area with evergreens and perennials. Special thanks go to school science teacher Jennifer Middleton and Benjie Middleton, who donated their time for the project.

CAPTAIN PRIDE AWARD

The largest category for the Community Pride Awards, the Captain Pride Award is given to the top ten individuals, businesses, governments and/or civic organizations that have undertaken tasks that have significantly improved the environment. Taking home the award in West Ashley was the Charles Towne Landing State Historic Site.

Having received the gold LEED (Leadership in Energy and Environmental Design) certification for the design, development, and use of the new Founders Hall at Charles Towne Landing, the council awarded Charles Towne Landing for the efforts they have made above and beyond LEED standards. The 9,000 square foot building incorporates strategies that save energy and water, reduce carbon dioxide emissions, and improve environmental quality while at the same time remaining sensitive to their surrounding environment.

"The certification underscores a redevelopment project at Charles Towne Landing that left a softer footprint on the culturally and naturally significant site. This 664-acre historic site is now even greener with these improvements and is a true treasure to the State of South Carolina," said presenter Angela Crouch, Community



Rep. Powell of Charles Towne Landing accepts the Captain's Pride Award from Community Pride chairman Donna Gardner.



Jennifer Middleton of St. Andrews Middle School receives an award for her work on Clean Cities Survey.

Pride Coordinator. Thanks to Community Pride, Inc., organizations that go out of their way to improve our communities and work toward a better environment are acknowledged for their hard work and dedication. But the organization does more than just cheer on our community role models. Because of the Adopt-A-Highway program coordinated by the organization, 59,955 pounds of trash were collected last year - the equivalent of more than 25 tons of trash. The litter was collected along 324 miles of highway by more than 160 groups consisting of more than 2,000 volunteers. www.communityprideinc.org

To find out more about Community Pride, Inc. and the Community Pride Awards, visit www.communityprideinc.org.

Articles

Goose Creek Gazette: "Council OK's Water Plan" (May 13, 2012)

"Goose Creek Focused on Stormwater" (May 24, 2012)

Council OKs water plan

BY STEFAN ROGENMOSER
The Gazette

Goose Creek City Council unanimously approved a resolution to adopt a Regional Stormwater Education Strategy at its April 10 meeting.

The resolution deals with the city's federal storm water permit that comes from the Environmental Protection Agency but is

implemented by the South Carolina Department of Health and Environmental Control (DHEC). "Under this permit we have six minimum measures as a municipality that we have to adhere to," Goose Creek Director of Public Works Steve Price said. "Two of those measures are public participation and outreach and public education."

Council member Marguerite H. Brown said council has heard about the storm water education plan for five or six years, adding that it came from DHEC, and the city doesn't have a choice on whether it gets to participate or not. Goose Creek Mayor Michael Heitzler led into the topic by discussing the history of the issue. Heitzler. See CITY COUNCIL, Page 7A

CITY COUNCIL

from page 1A

said President Jimmy Carter made improvements to the Clean Water Act in the late 1970s. "We have federal regulations, you have to meet certain standards, you have to test for that water," Heitzler said. "The act was expanded to address storm water."

The city is responsible for storm water runoff and it's going to cost a lot of money, Heitzler said. "All the bugs are not worked out," Heitzler said. "One step toward this is adopting an education strategy. How are we going to inform our citizens, how are we going to inform our workers, how are we going to do the task before us?"

Council member John McCants made a motion seconded by Brown and the resolution was passed with all councilmembers in favor. The resolution means Goose Creek will partner with the Ashley Cooper Storm Water Consortium (ACSWC) to work with other Lowcountry

entities such as Clemson University on a regional concept for these two minimum measures.

Communities already participating with the consortium include the counties of Berkeley, Charleston, and Dorchester and the municipalities of Charleston, Folly Beach, Hanahan, Isle of Palms, Lincolnville, North Charleston, Sullivan's Island and Summerville.

"We would like to be part of the regional effort," Heitzler said. Now that the city is a paying member of the consortium, Goose Creek can use the regional resources, Goose Creek Department of Public Works Projects Coordinator Chick Foster said.

"We just get so much bang for our buck," she added. "It's just a resolution to coordinate resources and share resources."

While the consortium's only scheduled meeting is the Stormwater, Sediment Control and Erosion Control Solutions Seminar on May 17 at the Hilton Garden Inn in North Charleston, Goose

Creek is looking at ways to bring storm water outreach and education directly to its citizens through events, Foster said.

Being part of the consortium will allow the city to not just do what is minimally required but also puts the city in good shape to do a great job, Foster said.

"(Water) tends to go lower until it falls into a river and it all ends up in the ocean eventually," Heitzler said. "The federal government has regulations saying agencies have to protect that water to make sure that before the water goes out to a river or outfall or ocean that it meets certain standards and that it not be polluted."

"Nonpoint storm water is what's really tricky. And

that's the water that ends up in your front yard. It goes across your grass and picks up all the insecticide you put down the week before... and it goes into the gutter and flows down the street picking up oils off the asphalt and mercury and different heavy metals."

"By the time it ends up down the road and into the creek it's pretty nasty stuff. That is the difficult challenge of regulating that water before it goes into an outfall such as a major river or an ocean."

For more information visit the ASCEC website at www.clemson.edu/public/clear/consortium/ascec_home

WATER

from page 1A

(ACSEC) as most other local municipalities and counties have done.

The consortium is made up of 11 local governments — Berkeley, Dorchester and Charleston counties, and municipalities of Charleston, Folly Beach, Hanahan, Isle of Palms, North Charleston, Summerville, Lincolnville, Sullivan's Island and now Goose Creek — who have joined Clemson University's Carolina Clear program, which tackles regional storm water issues.

Most of the area's drinking water comes from surface water, with the Goose Creek Reservoir serving as the primary source of Charleston-area drinking water. This means that such simple acts as picking up after dogs or limiting the amount of fertilizer used on lawns can help keep rivers, lakes and streams clean, Clemson Extension Water Resource Agent Kim Counts said.

One of the main objectives is to educate the public youth, builders, developers, home-

owners and government officials with targeted messages about how to maintain water quality. The less pollution that streams into storm water runoff, the better the water quality of the state's streams, rivers, basins and reservoirs remain.

"It's a pretty robust strategy targeted for each of those audiences," Clemson Extension Water Resources Agent David Joyner said.

The group aims to help homeowner's associations understand storm water ponds, Joyner said. The message to HOAs is fertilizer isn't really needed because there is a lot of phosphorus in the Lowcountry's soil, according to Joyner. He said most litter also goes through the storm drain network.

"We work with civic organizations, churches, youth groups," Joyner said. "We don't want to confuse the public with information overload."

There are two to three consortium meetings each year along with fairs, festivals and mass media communication.

The consortium is happy to share its electronic newsletter "The Ripple Effect," Counts said.

There is also a June summer camp called Clemson 4H20 for children age 10 — 13. Campers will start at the Santee Canal in Moncks Corner and study the flow of the Ashley River all the way to a barrier island.

The camp is not full yet and parents can still register their children online.

Goose Creek Public Works Director Steve Price said the resolution helps the city in a number of ways.

First it meets two (public education and public participation) of the six minimum measures the Environmental Protection Agency requires certain municipalities and counties to comply with under their National Pollution Discharge Elimination System Phase II storm water permit program.

Price said Goose Creek is located in a critical environmental area and that the Goose Creek Reservoir provides drinking water for the entire Charleston area. There are also a number of creeks and streams, he said. "Waterways are what people enjoy about our region," Joyner said.

Goose Creek focuses on storm water

BY STEFAN ROGENMOSER
The Gazette

Goose Creek residents are one step closer to learning about maintaining cleaner water.

On May 16 Goose Creek Mayor Michael Heitzler signed a resolution to adopt

a regional storm water education and pollution prevention strategy.

At its April 10 meeting, Goose Creek City Council approved the resolution to join forces with Ashley Cooper Storm water Education Consortium. See WATER Page 4A

From left, Goose Creek Public Works Director Steve Price, Carolina Clear Coordinator Katie Giacalone, Mayor Michael Heitzler and Clemson Water Resources agents David Joyner and Kim Counts gather in the mayor's office as he signs a resolution for cleaner storm water.

Stefan Rogenmoser/Gazette



Articles

The Post and Courier: Letter to the Editor “Reduce Litter to Protect Waterways”

(March 28, 2012)



Letters

Wednesday, March 28, 2012: A11

STAFF/FILE PHOTO

Trash mars the scene along the Santee River near Wilson's Landing in Pineville.

Reduce litter to protect waterways

A recent letter to the editor urged officials “to get serious about rural litter.” A number of organizations and programs deal with with litter prevention and removal.

That includes South Carolina's waterways. They are vital to what makes our region one of the most beloved, visited and fastest growing in the nation.

The waterways are connected to land by a vast stormwater sewer system, which includes thousands of miles of ditches, pipes, inlets and outlets that take stormwater runoff to our waterways, not to a treatment plant.

Some call storm drains the “front door” to our waterways — places that provide drinking water, food, recreation and many livelihoods.

This extensive network is necessary for a healthy and prosperous society.

The system requires a great deal of management and maintenance. County and municipal stormwater utilities routinely clean drains, pipes and ditches, and transport millions of pounds of debris to landfills every year so that it does not end up in our waterways. Most of the trash that ends up in the rivers, marshes, creeks and ocean is deposited during rain storms. Our county and municipal stormwater management programs have resulted in direct benefits to homeowners from insurance discounts through the community rating system.

Several programs clean up and provide awareness of litter and its affects, such as Keep America Beautiful affiliates, Community Pride Inc., the S.C. Department of Transporta-

tion's Adopt-a-Highway, Surfrider, Clemson Extension-Carolina Clear, S.C. Sea Grant Consortium and the S.C. Department of Natural Resource's Annual Beach Sweep/River Sweep. These programs complement neighborhood and grass-roots efforts to remove litter in our communities. Last year, Ashley Cooper Stormwater Education Consortium (ACSEC) partners recorded the removal of over 100,000 pounds of litter from the tri-county's rivers, beaches, marshes and roadsides.

This is bittersweet, as it illustrates successful litter removal initiatives but also challenges associated with pollution prevention. Partners in the ACSEC share experiences and resources when possible. A key aim is to make people aware of the connections between our individual actions and the vitality of our community.

In 2008 Berkeley, Charleston and Dorchester counties, and eight municipalities, signed a joint resolution to adopt a regional strategy and work together through the ACSEC. The ACSEC also partners with more than 20 education organizations to address a wide range of pollution issues.

To learn more about the ACSEC and what you can do to be a good steward, visit www.ashleycooper.org.

DAVID F. JOYNER
ACSEC Program Coordinator
Clemson Extension-Carolina Clear
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Articles

Post and Courier: "Keep Retention Ponds Clean"

March 3, 2012

I WORKED AT A GOLF COURSE IN HIGH SCHOOL.

WE RINSED OFF EQUIPMENT AFTER EVERY USE. ONE JULY AFTERNOON, I DRANK FROM THE HOSE. IT WAS COLD AND HIT THE SPOT. SOMEONE TOLD ME THAT THE WATER WAS PUMPED FROM THE POND. NOT WANTING TO LOOK LIKE AN IDIOT, I TOLD HIM I KNEW THAT AND KEPT DRINKING. WHO'S THE DUMMY NOW?

THE LOWCOUNTRY AVERAGES 52 INCHES OF RAIN A YEAR. NEIGHBORHOOD PONDS, OR RETENTION PONDS, CAPTURE STORMWATER FROM ROADS AND THE SURROUNDING AREA. SOMETIMES, FOR MARKET-ING PURPOSES, THEY'RE REFERRED TO AS LAGOONS, BUT THEY OFTEN SERVE A SIMILAR ROLE. IN SOME DEVELOPMENTS, AS MUCH AS ONE-THIRD OF THE LAND IS USED FOR THIS PURPOSE.

RUNOFF FROM IMPERVIOUS SURFACES CARRIES POLLUTANTS SUCH AS OIL, HEAVY METALS AND MINER-ALS. IN SOME CASES, THE RETENTION POND MAY EMPTY INTO A RIVER STILL CONTAINING THESE CON-TAMINANTS.

EXCESS MINERALS, NITROGEN AND PHOSPHORUS IN PARTICULAR LEAD TO ALGAE BLOOMS. PONDS BE-COME CHOKED WITH SLIMY, FOUL MATS OF ALGAE THAT CAN LOWER OXYGEN LEVELS AND CAUSE FISH KILLS. SOME ALGAE PRODUCE TOXINS THAT POSE RISKS TO PETS AND WILDLIFE.

HERE SOME THINGS TO CONSIDER TO HELP KEEP RETENTION PONDS A LITTLE CLEANER:

ONE RELATIVELY RECENT METHOD OF WATER QUALITY CONTROL IS ARTIFICIAL ISLANDS, OR FLOAT-ING WETLANDS. RAFTS OF BUOYANT MATERIAL ARE PLANTED WITH AQUATIC PLANTS, FLOATED INTO A POND AND ANCHORED INTO PLACE. ROOTS GROW THROUGH THE BOTTOM AND DANGLE IN THE WATER, ABSORBING EXCESS MINERALS.

IN MOST CASES, ONLY THE SHORELINE IS CAPABLE OF SUPPORTING MINERAL-ABSORBING PLANTS, BUT WITH FLOATING WETLANDS, MORE SURFACE AREA CAN BE USED TO SUPPORT PLANT GROWTH FOR CON-TAMINANT CONTROL AS WELL AS BEAUTIFICATION AND WILDLIFE NESTING. PLUS, THE ROOTS SUPPORT A RANGE OF MICROORGANISMS, CALLED BIOFILM, THAT CONTRIBUTE TO THE AQUATIC FOOD CHAIN AND BREAK DOWN CONTAMINANTS.

FLOATING WETLANDS NEED ANNUAL MAINTENANCE. IDEALLY, ISLANDS ARE PULLED ASHORE AND PLANTS REMOVED AND REPLANTED. IF EXISTING PLANTS ARE ALLOWED TO DIE, ALL THE ABSORBED MINERALS ARE RETURNED TO THE WATER AS IT DECOMPOSES.

RESEARCH HAS SHOWN THAT FLOATING WETLANDS CAN HAVE A SIGNIFICANT REDUCTION IN POLLUT-ANTS, SUCH AS COPPER AND ZINC. THE WETLANDS ALSO CAN VISIBLY SUPPRESS ALGAE GROWTH BY REDUCING THE AMOUNT OF EXCESS MINERALS.

VISIT WWW.FLOATINGWETLANDS.COM OR WWW.BEEMATS.COM.

USE RAIN BARRELS TO CAPTURE RUNOFF FROM THE ROOF AND AIR-CONDITIONER CONDENSATE. THE COLLECTED WATER CAN BE USED FOR IRRIGATION OR EVEN TO FLUSH TOILETS.

REDUCE FERTILIZER AND PESTICIDE APPLICATIONS WHENEVER POSSIBLE. MANY WEED PROBLEMS RIGHT NOW ARE WINTER ANNUALS THAT CAN JUST AS EFFECTIVELY BE MOWED AS SPRAYED. IF GRASS CLIP-PINGS ARE BAGGED, COMPOST THEM OR CONSIDER A MULCHING MOWER THAT RETURNS THEM TO THE GROUND. GRASS CLIPPINGS CONTAIN NITROGEN AND DO NOT CONTRIBUTE TO THATCH.

Articles

Post and Courier: "Keep Retention Ponds Clean" (Continued)

USE RAIN BARRELS TO CAPTURE RUNOFF FROM THE ROOF AND AIR-CONDITIONER CONDENSATE. THE COLLECTED WATER CAN BE USED FOR IRRIGATION OR EVEN TO FLUSH TOILETS.

REDUCE FERTILIZER AND PESTICIDE APPLICATIONS WHENEVER POSSIBLE. MANY WEED PROBLEMS RIGHT NOW ARE WINTER ANNUALS THAT CAN JUST AS EFFECTIVELY BE MOWED AS SPRAYED. IF GRASS CLIPPINGS ARE BAGGED, COMPOST THEM OR CONSIDER A MULCHING MOWER THAT RETURNS THEM TO THE GROUND. GRASS CLIPPINGS CONTAIN NITROGEN AND DO NOT CONTRIBUTE TO THATCH.

LOW-IMPACT DEVELOPMENT SEEKS TO REDUCE THE NEGATIVE IMPACT OF EXCESSIVE RUNOFF. PRESERVING MATURE TREES HAS MANY ADVANTAGES, BUT THEY ALSO ARE CONSIDERED "WATER TANKS" BECAUSE THEY CAN RETAIN AND TRANSPIRE AS MUCH AS 85 PERCENT OF WATER FLOW IN FORESTED AREAS DURING DRY PERIODS.

AVOID MANICURED TURF UP TO THE POND'S EDGE THAT ALLOWS MORE FERTILIZER, CLIPPINGS AND PESTICIDES TO ENTER VIA RUNOFF. INSTEAD, CONSIDER MAINTAINING A BUFFER STRIP WITH WETLAND PLANTS, SUCH AS SPARTINA, THAT EFFECTIVELY TRAPS AND ABSORBS THESE CONTAMINANTS.

SOME NEIGHBORHOODS MAINTAIN BIOSWALES THAT ARE PLANTED DRAINAGE DITCHES INTENDED TO HOLD WATER LONG ENOUGH TO BE ABSORBED OR PERCOLATE THROUGH SOIL. THIS REDUCES THE AMOUNT OF RUNOFF DIRECTED TO CATCH BASINS. WHEN WATER IS ALLOWED TO INFILTRATE THE SOIL, NUTRIENTS AND CONTAMINANTS ARE FILTERED BY MICROORGANISMS AND ROOTS. IT ALSO ALLOWS WATER TO RECHARGE AQUIFERS, OUR SOURCE OF DRINKING WATER.

CONSIDER ADDING MORE PERVIOUS SURFACES. AN ACRE OF CONCRETE HAS SIGNIFICANTLY MORE RUNOFF THAN TURF, AS MUCH AS 20 TIMES MORE. PERMEABLE PAVERS AND PERVIOUS CONCRETE ARE PRODUCTS THAT ALLOW WATER TO PENETRATE THE SURFACE AND INFILTRATE THE SOIL BELOW.

MORE INFORMATION

THE CHARLESTON AREA STORMWATER POND CONFERENCE WILL BE 8 A.M.-4:30 P.M. MARCH 22 AT TRIDENT TECHNICAL COLLEGE. GO TO WWW.PONDCONFERENCE-CHARLESTONAREA.ORG.

TONY BERTAUSKI IS A HORTICULTURE INSTRUCTOR AT TRIDENT TECHNICAL COLLEGE. TO GIVE FEEDBACK, EMAIL HIM AT TONY.BERTAUSKI@TRIDENTTECH.EDU.



Photo Included in Post and Courier online

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SPECIAL THANKS TO THE FOLLOWING REVIEWERS:

Katie Giacalone (Clemson Carolina Clear) and Nell Orsheln (Clemson Carolina Clear)
and
Ashley Cooper Stormwater Education Consortium Representatives



Carolina Clear is a program of Clemson University's Public Service Activities. 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, sex, religion, national origin, disability, political beliefs, sexual orientation, marital or family status and is an equal opportunity employer.

Produced 09/01/2012



Spring 2012 ACSEC meeting at the Clemson University Coastal Research and Education Center's "Ed Shed." ACSEC Community and Education Partners discuss a recently installed rain garden.

