

Gills Creek Watershed Association

Annual Report
July 1, 2009 - June 30, 2010



Gills Creek Watershed Association
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The mission of the Gills Creek Watershed Association is to restore and protect the Gills Creek watershed by uniting citizens, government, organizations, and business.

Executive Summary

The Gills Creek Watershed Association (GCWA) was originally formed in the late 1990s by a group of citizens that noticed a decline in water quality in the Lake Katharine area. With the support of Richland County in 2006 and 2007 the GCWA reformed with a major focus on comprehensive watershed management. Since 2007, the GCWA has been working to improve its organizational structure, create a strong and dedicated membership base, implement stream and lake restoration projects, and advocate for policy changes to improve water quality. The GCWA had a number of major milestones in 2009 including electing its first official board of directors, initiating a membership program, and holding its first fundraiser event. Additionally, GCWA has worked to engage citizens and residents in the watershed on how to best protect and restore Gills Creek. Some of our major accomplishments for FY 09/10 include:

- ❖ Participation in 11 events with over 38,000 people in attendance and provided educational information about the watershed, major pollutants which impact water quality, and how people can become more involved.
- ❖ Presentations at 14 meetings with over 1100 people in attendance. These meetings included neighborhood and homeowner associations, civic groups, church groups, and conferences.
- ❖ A variety of stream clean-ups that resulted in the removal of 169 bags of trash, 2 truckloads of trash, 15 bags of recyclables and 100 tires from Gills Creek.
- ❖ Recruitment of 139 members to the GCWA.
- ❖ Successful advocacy for changes in Richland County stormwater regulations that will improve water quality in the Gills Creek watershed and Richland County.

The GCWA recently voted to change their fiscal year. Due to this change, the financial data for the organization is not current and will not be included in this year's annual report.

The GCWA appreciates the hard work and dedication from our volunteers, board members, and staff in the many accomplishments of FY 09/10 and look forward to many more accomplishments in the years to come.

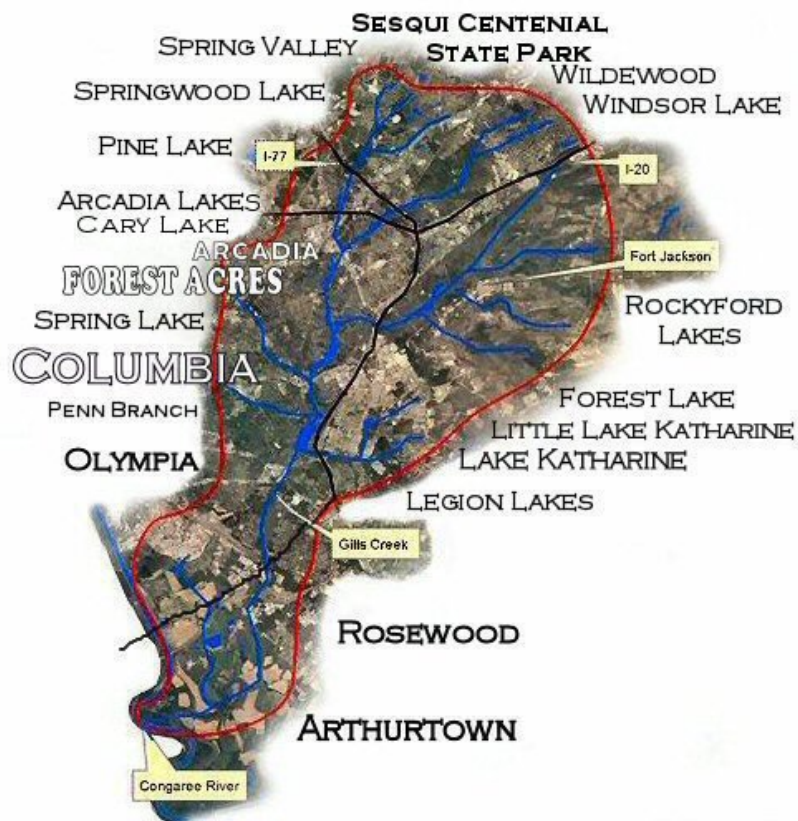
GCWA Annual Report Fiscal Year 09/10

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Location

The Gills Creek watershed is 76 square miles in area, contains approximately 70 miles of streams and over 47,000 acres of land that lies within Richland County and Fort Jackson, South Carolina. The headwaters of Gills Creek begin at Hughes Pond, north-east of Sesquicentennial State Park continuing south through Fort Jackson. A major tributary of Gills Creek is Jackson Creek which begins north of Sesquicentennial State Park and is impounded to form Centennial Lake. Jackson Creek and Little Jackson Creek flow south through a highly urbanized area consisting mainly of residential neighborhoods and shopping centers. These streams are impounded multiple times to create Springwood Lake, Windsor Lakes, Cary Lake, and Arcadia Lakes. After flowing through a largely undeveloped tract of Fort Jackson, Gills Creek is impounded to create the Rockyford Lakes before meeting with Jackson Creek at Forest Lake. The final major lake in the watershed is Lake Katharine. Downstream of Lake Katherine, Gills Creek flows freely through a variety of residential, agricultural, and commercial land uses until its confluence with the Congaree River south of Interstate I-77.



Water Quality Concerns

Richland County, South Carolina has experienced a substantial amount of growth in the last forty years. The population increased from 200,102 in 1960 to 372,023 in 2009 and the increase of growth during the years 2000-2009 was 16% (U.S. Census Bureau, 2010). Residents in this watershed, have noticed rapid degradation of the waterbodies in Richland county including, impaired water quality, siltation of lakes and ponds, bank erosion and litter that may be attributable to this increase in growth.

Waterbodies in the Gills Creek watershed are classified as freshwater, which requires them to be suitable for primary and secondary contact recreation (SCDHEC, 2004). A waterbody is considered impaired for recreational uses, and will be added to the State's 303(d) list, if fecal coliform exceeds the state criterion of a geometric mean of 200cfu/100ml, based on five consecutive samples during any 30 day period or if no more than 10% of the total samples during any 30 day period exceed 400cfu/100ml (SCDHEC, 2010). Aquatic life support is determined by comparing dissolved oxygen, pH, toxicants, nutrients, and turbidity levels to a State criterion. If any one of these parameters does not meet the criterion, then the waterbody is listed as impaired for aquatic life uses (SCDHEC, 2008). State criterion for dissolved oxygen levels are a daily average of not less than 5 mg/l with a low of 4 mg/l (SCDHEC, 2010).

The South Carolina Department of Health and Environmental Control (SCDHEC) collects samples at four water quality monitoring stations within the watershed. Two are located on Gills Creek (C-017 and C-001), one on Forest Lake (C-068), and one on Windsor Lake (C-048). Three of the four stations have exceeded various SCDHEC numeric criteria resulting in those waterbodies being listed as impaired and placed on the State's 2010 303(d) list. Both sites located on Gills Creek are impaired for recreational uses due to an exceedance of fecal coliform concentrations. At the downstream Gills Creek site (C-017) aquatic life uses are also not supported as a result of low dissolved oxygen (DO) levels. Forest Lake (C-068) is impaired for fish consumption caused by high mercury levels (SCDHEC, 2010).

In May 2009, the Gills Creek Watershed Management Plan was completed by BP Barber and Tetrtech. The management plan is to be used as a comprehensive guide to identify and address water quality problems throughout the watershed. The management plan divides the watershed into 17 sub-watersheds and prioritizes them based on SCDHEC reporting, use designations, stakeholder information and Geographic Information Systems (GIS) mapping. This information was compiled and reviewed by BP Barber and Tetrtech and the following major watershed concerns were identified:

- ❖ **“Flooding** - Flooding hazards exist that endanger human life and have caused or may cause property damage in the future;
- ❖ **Sedimentation** - Streams, lakes, and other waterbodies have and continue to receive excessive sediment loads during storm events, which reduce the aesthetic

and recreational value of these water bodies and impact fish and other aquatic life;

- ❖ **Trash** - Streams and other waterbodies contain excessive amounts of trash which reduce the aesthetic and recreational value of the watershed, endanger wildlife, and threaten to clog infrastructure;
- ❖ **Water Quality and Aquatic Ecosystems** - Water quality degradation in streams and other waterbodies has impaired designated uses and threatens human health as well as aquatic life;
- ❖ **Wildlife** - Wildlife habitat has significantly declined, and some remaining wildlife habitat is currently unprotected" (BP Barber and Tetrattech, 2009).

The management plan then identifies the most applicable management strategies to be implemented in each subwatershed. The following management strategies were considered:

- ❖ **"Stormwater BMP Retrofits** - Best Management Practices (BMPs), either structural or nonstructural, that are implemented within existing development to reduce impacts from stormwater runoff;
- ❖ **Stream and Riparian Buffer Restoration** - Revegetation and/or restructuring of a stream channel, banks, and/or floodplain area to reduce high flows, downstream flooding, and erosion and to restore the biological and water quality functions of a stream;
- ❖ **Preservation** - Acquisition and permanent protection of undisturbed natural areas to protect wildlife habitat and downstream water quality;
- ❖ **New Development Policies** - Requirements or other policies to encourage control and treatment of stormwater runoff from new development to protect watershed functions, including water quality and aquatic habitat;
- ❖ **Other Policies and Outreach** - Programs implemented to educate watershed citizens and promote watershed protection efforts" (BP Barber and Tetrattech, 2009).

Purpose of Organization

The Gills Creek watershed lies within six different jurisdictions: 41.48% in Richland County, 36.66% in Fort Jackson, 14.84% in Columbia, 6.18% in Forest Acres, 0.84% in Arcadia Lakes and a small portion in the City of Cayce. Each of these jurisdictions has their own land use policies, including plans for growth, zoning regulations, and sediment and erosion control regulations. The GCWA is a group of interested citizens, stormwater managers, and conservationists that are focused on the rehabilitation of the Gills Creek watershed. The goal of the GCWA is to bring together the different jurisdictions in the watershed to restore and protect the watershed through implementation of the management plan, improving and enforcing stormwater regulations, preserving land along the banks of the streams, and increasing public awareness of local water resources.

Mission Statement

The mission of the GCWA is to restore and protect the Gills Creek watershed by uniting citizens, government, organizations, and business.

Vision

By 2018 the Gills Creek watershed is a national model for watershed management and planning. Citizens are enjoying the bike and walking trails throughout the watershed and it serves as the basis for an environmental education curriculum for Richland County Schools. All new development is carefully studied for its impact on the watershed and many of the mistakes of the past have been corrected. The stream corridors have received special attention, accommodate diverse wildlife and natural flows and capacities have been restored. Water quality is much improved and best management practices are working. An example is that there has been no net loss of pervious surfaces, in fact, there has been a measurable reduction in impervious surfaces in the past 3 years. Current codes reflect strong support from the public and encourage "green" development. The watershed is litter free and sedimentation in the lakes has been drastically reduced. A task force composed of governmental representatives and citizens is a model for a coordinated approach to planning, regulation and development in an environmentally sensitive area.

Board of Directors Events and Activities

Board Meetings

Board meetings are held on the third Wednesday of every month for approximately two hours. During FY 09-10, a meeting took place each month.

Annual Meeting

September 13, 2009, Clemson Extension Lake House

All GCWA members and interested parties were invited to this meeting. A presentation was given about the status of the organization and all current board members were elected by the members in attendance.

Wheels Across the Watershed Fundraiser

October 11, 2009

This event included a bus tour led by Yancey McLeod to three areas of the watershed, followed up by a wine and cheese event. Approximately 40 people attended this fundraiser event.

Board Retreat

June 6, 2010, Congaree National Park

All GCWA board members attended this retreat that was facilitated by Diana Toledo of the River Network. The purpose of the retreat was to set major priorities to assist in developing a strategic plan.



Committees

The work of the Board is guided by the Executive Committee, composed of the officers and the chairs of the standing committees. Current members of the Executive Committee are Elliott Powell, Carol Kososki, Dan Tufford, John Marshall Mosser, Pamela Greenlaw, James B. Atkins, and Emily Jones. The current committees are Education, Finance, Fundraising, Membership and Technical. Committee leadership and activities are summarized as follows:

Education Committee

Pam Greenlaw, Chair

The responsibilities of the Education Committee are to reach out to interested citizens and residents about the work of the GCWA and educate citizens about how they and other activities impact water quality. The Education Committee also assists the Membership Committee in recruiting new members and volunteers to the association.

Accomplishments include:

Events and Festivals

The Education Committee has worked to spread the message of the GCWA by attending a variety of public events. Below is a list of events that the GCWA attended and the Education Committee helped organize. The Education Committee also created a professional table display to educate people about the GCWA, the location of the Gills Creek watershed, and the water quality problems in the watershed.



Jessica Artz at Forest Acres Festival

Table 1 Events with GCWA Representation

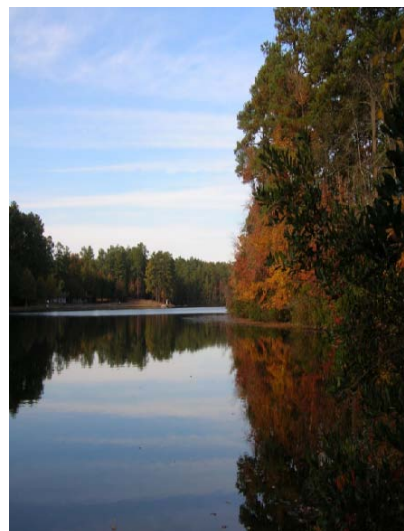
Event	Date	Attendance
Forest Acres Night Out	8/3/09	500
Skate Park Grand Opening	3/6/10	
Recycle mania	3/16/10	50
Farmville	3/20/10	
FLPC Earth Sunday	4/18/10	250
Water, Water Everywhere	4/22/10	
Sparkleberry Fair	4/24/10	30,000
Naturefest	4/24/10	150
Rooftop Rhythms	4/29/10	2,500
Rosewood Crawfish Festival	5/1/10	
Forest Acres Festival	5/22/10	5,000

Presentations

The GCWA Education Committee helps to organize presentations to a variety of groups within or outside of the watershed. The time and detail of the presentations vary depending on the needs of the group. Topics covered generally include information about the GCWA, where the watershed is located, and discussion of specific pollutants such as fecal coliform (FC), sediment, and dissolved oxygen (DO).



Heron on Lake Katharine



Centennial Pond, Sesquicentennial State Park

Table 2 GCWA Presentations

Organization	Date	Attendance
Lions Club	8/6/09	15
Oakwood Ct Neighborhood	8/24/09	10
USC Political Science 121 Class	9/14/09	20
Gardens, Etc.	9/15/09	15
Spring Valley Country Club	9/24/09	
Kilbourne Neighborhood	10/15/09	20
Green Congregations Conference	11/1/09	70
Church Women United	11/6/09	100
SCDHEC Mix Meeting	11/17/09	30
Richland County Master Gardeners	3/2/10	20
Dent Middle School	3/29/10 & 4/27/10	141
Heathwood Neighborhood	5/11/10	6
Conservation Commission	5/24/10	15
Capital Rotary Club	6/2/10	30

Newsletters

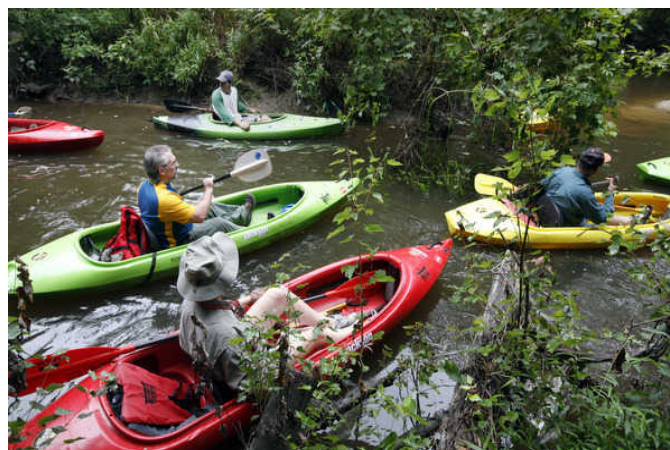
The Big Splash, GCWA's e-newsletter, is distributed monthly to a list of approximately 400 people. E- Newsletters typically include information about upcoming events, current stormwater events, education on stormwater, and acknowledgment of projects and/or volunteers. A newsletter has been sent each month of FY 09-10. Copies of the newsletters can be found on our website.

Clean-up Events

The GCWA focused their stream clean-up events in the lower portion of the watershed between Shop Rd and Beckam Swamp Rd. Gills Creek is wide enough in this area for recreational uses such as kayaking and canoeing. The focus has been on clearing debris and picking up trash so that kayaks and canoes can access this portion of Gills Creek. The organization is committed to creating more public access on Gills Creek as a way to increase awareness about the watershed. Additionally, the GCWA partners with Keep the Midlands Beautiful (KTMB) to help organize clean-up events around the watershed. KTMB has a program called Adopt-A-Waterway in which volunteer groups can adopt certain waterways and pick up trash in these areas twice a year. There are four waterways adopted within the Gills Creek watershed by various groups. Table 3 below is a list of clean-ups that GCWA has been involved in.



Volunteers cleaning up at Lower Rockyford Lake



Volunteers cleaning lower portion of Gills Creek

Table 3 GCWA Clean-up Events

Lead Organization	Volunteer Group	Location	Date	Trash picked up	Volunteer Attendance
GCWA	GCWA members	Gills Creek - Shop Rd. to Beckam Swamp Rd	8/1/09	2 truck bed loads of trash and debris	30
KTMB	Boy Scouts and Delta Sigma Pi	Little Jackson Creek - Trenholm Extension	10/17/09	37 bags of trash and 15 bags of recyclables	30
GCWA	GCWA members	Gills Creek- Bluff Rd to Beckam Swamp Rd	9/26/09	20 bags of trash	7
KTMB	Northwestern University Students	Little Jackson Creek- Trenholm Extension	3/22/10	80 bags of trash and 100 tires	14
KTMB Adopt-a-Waterway	Forest Lake Presbyterian Church	Eight Mile Branch close to Forest Dr	4/18/10	10 bags of trash and debris	25
KTMB	Dent Middle School	Little Jackson Creek behind Fashion Place Shopping Center	4/18/10		
GCWA	GCWA members	Gills Creek- Shop Rd to Beckam Swamp Rd	5/8/10	22 bags of trash	7

Finance Committee

Carol Kososki, Chair

The responsibilities of the Finance Committee include advising the GCWA Board, Treasurer and Program Coordinator on financial matters, assisting the Program Coordinator in developing an annual budget, reviewing monthly financial statements, overseeing an annual audit, filing of tax returns and advocating for GCWA funding.

Accomplishments include:

- ❖ Advocated for and received funding for continuation of facilitation services for GCWA;
- ❖ Reviewed monthly bank statements for fiscal year;
- ❖ Requested annual audit;
- ❖ Acted as advisor to Treasurer;
- ❖ On-going work to implement Quick Books financial reporting system;
- ❖ Requested identification of a CPA to set up and monitor financial reporting system.

Fundraising Committee

Emily Jones, Chair

The Fundraising Committee was formed in the Spring of 2010. This goal of this committee is to develop and oversee fundraising activities for the GCWA.

Accomplishments include:

- ❖ Developed a fundraising plan outlining strategies for raising \$25,000 in new sources in the next fiscal year;
- ❖ Began work on the first fundraiser event of the 10/11 fiscal year.

Membership Committee

Emily Jones & John Marshall Mosser, Co-Chairs

The goal of the membership committee is to recruit new members and engage current members in the mission and work of the GCWA. Members primarily include citizens that live in the watershed and have an interest in protecting water quality in Richland County. The membership committee works to set goals for membership numbers and strategies for achieving those goals.

From June 30, 2009 to July 1, 2010, the GCWA Membership Committee recruited 139 members, resulting in \$2,600 of membership revenue for the organization.

Technical Committee

Buddy Atkins, Chair

The responsibilities of the Technical Committee include reviewing and coordinating technical projects in the watershed, reviewing and responding to regulatory matters such as TMDLs, NPDES and MS4 Permits, identifying potential restoration and water quality improvements, investigating citizen water quality complaints and providing technical guidance to the Board, Executive and Educational Committees.

Accomplishments include:

- ❖ Reviewed the technical aspects of storm water projects of Richland County and the City of Columbia including the Cary Lake Project, the Devils Ditch Project and a Trash Screen Project and advised the Board on these projects;
- ❖ Reviewed the draft dissolved oxygen and fecal coliform TMDL documents issued by the SCDHEC for Gills Creek and prepared a response to SCDHEC for Board approval;
- ❖ Developed a field assessment form to evaluate restoration projects in the watershed;
- ❖ Conducted an initial field survey in the upper portion of the watershed to test the field assessment form and its applicability to targeting restoration projects;
- ❖ Initiated the development of a strategic plan to address future restoration efforts in the watershed consistent with the Gills Creek Management Plan.

Conferences and Workshops Attended

Hazard Mitigation Assistance Workshop, Columbia, SC, July 28
Army Corps of Engineers Mitigation Workshop, Columbia, SC, August 27
Center for Watershed Protection Conference, Columbia, SC, September 22-25
USC Community Partner Breakfast, Columbia, SC, September 29
Fostering Sustainable Behavior, Savannah, GA, October 7-8
Sustainable Site Design Conference, Blythewood, SC, October 20
Greenways Conference, Lexington, SC, October 22
Quickbooks Seminar, Lexington, SC, February 23
South Carolina Association of Non-Profits Conference, Hilton Head, SC, March 10-11
Raising Good Money in Tough Times, Charleston, SC, March 18

Special Projects

Strategic Planning

Beginning in December of 2009, the GCWA sought the assistance of the River Network to develop a strategic plan. A planning committee was formed that comprised of 3 board members, staff, and a consultant for the River Network. The timeline for the work completed thus far on the strategic plan is as follows:

- ❖ January/February 2010 - conducted interviews with 25 stakeholders throughout the community regarding the current and future needs of the community;
- ❖ January/February 2010 - gathered feedback from the board of directors regarding the direction of the organization;
- ❖ March/April 2010 - compiled information and created a list of internal and external critical issues that need to be addressed;
- ❖ June 2010 - held a board retreat to discuss these critical issues and receive feedback from the board regarding the outline of the strategic plan.

Arcadia Lakes Raingarden

The GCWA assisted the town of Arcadia Lakes in the creation of a rain garden located at the Tree of Life Temple. This rain garden was built to accept drainage from the Tree of Life rooftop and parking lot before it drains into Cary Lake. Volunteers from the GCWA assisted with the planning and work days with this rain garden.

Cary Lake Project

The Cary Lake Water Quality Improvement Project was implemented by Richland County in association with GCWA to address water quality concerns, particularly sedimentation and trash/debris that has accumulated over several decades in Cary Lake. Sediment will be removed from two areas of Cary Lake. The first is the outfall area of Jackson Creek, where approximately 21,000 cubic yards will be removed, equivalent to one to five feet of sediment depth, from an eight acre area. In addition,

a trash boom will be installed upstream on the box culvert at Decker Boulevard to minimize trash being transported into Cary Lake from Jackson Creek.

The second area is the outfall from Ashworth Place Pond (at Cary Lane). Approximately 7,000 cubic yards of sediment will be excavated equivalent to one to five feet of sediment depth from a three acre area.

Devil's Ditch Project

This project is the result of a coordinated effort among Richland County Stormwater Management, City of Columbia and GCWA in an effort to prevent further stream bank erosion of Devil's Ditch. The general scope of this project is to perform maintenance and repairs to the ditch including removal of overgrown vegetation, removal of accumulated sediment, and application of appropriate bank & bed stabilization to the ditch to prevent future erosion and scouring. A recent field assessment was performed by both City and County representatives on the Rosewood Community section of Devils Ditch located between Live Oak Street and South Beltline Boulevard. The stream assessment was completed on approximately 7650 linear feet of the ditch to identify needed maintenance and some limited remediation. However, this project is not a full length stream stabilization project. Work is expected to begin in FY 2010-11.

Gills Creek Watershed Research Initiative

The GCWA received an \$8,000 grant from the Richland County Conservation Commission to conduct water quality sampling research throughout the watershed. The purpose of this research was to assess sources of pollutants (bacteria and oxygen-demanding materials) in response to the Total Maximum Daily Load drafted by the Department of Health and Environmental Control. These data can also be used to improve the targeting of educational and restoration efforts in the watershed. The GCWA Program Coordinator worked with Dr. Daniel Tufford, Biological Sciences, Research Associate Professor at the University of South Carolina, and GCWA Board member, on the design and conduct of the effort. Under the general supervision of the Program Coordinator and Dr. Tufford, ten undergraduate students volunteered over 200 hours of time, to collect and analyze water samples for fecal coliform bacteria, ammonia, biological oxygen demand (BOD5) and flow at several locations throughout the watershed. The research was conducted from February through April 2010. A report on the findings of this research is being drafted and will be available on our website in August 2010.

Gills Creek Watershed Video

The GCWA received funding from Richland County and SCE&G to create a promotional video about the GCWA. A video committee was formed to solicit proposals, select a videographer, and assess the progress of the video. The video was recently completed and will be shown at presentations, conferences, etc.

Richland County Stormwater Development Roundtable

The GCWA was a participant in the Richland County Stormwater Development Roundtable. The purpose of the Roundtable was to provide a formalized facilitation of developers, environmentalists, and regulators to discuss changes in upcoming Richland County land use/development regulations impacting water quality. The Roundtable came to consensus on 21 principles that overtime will be made into county regulations that will improve water quality in watersheds throughout Richland County including the Gills Creek watershed. As a result of this effort, new stormwater regulations have been approved by council, which will result in improved water quality in the watershed.



Volunteers working on Arcadia Lakes rain garden.



USC student measuring flow in Jackson Creek.

Acknowledgments

Board of Directors

Elliott Powell, Chair
Carol Kososki, Vice Chair
Dan Tufford, Treasurer
James B. Atkins
Leroy Bolton
Michael Criss
Bernie Gaudi

Pam Greenlaw
Emily Jones
Pete Mayers
Yancey McLeod
John Marshall Mosser
Judy Timmons

Jurisdictional Representatives

Belinda Gergel, City of Columbia
Shaun Greenwood, City of Forest Acres
Jim Manning, Richland County

Advisory Board Members

Amy Maxwell, Natural Resource Conservation Service
Heidi Johnson, Keep the Midlands Beautiful
Rebecca Spratlin, SC Department of Health and Environmental Control
Srinivas Valavala, Richland County
Jim Wilson, Richland County Conservation Commission

Staff

Jessica Artz, Program Coordinator

Partner Organizations

Richland County
City of Columbia
Forest Acres
Arcadia Lakes
Sustainable Midlands
Richland County Stormwater Consortium
Richland County Conservation Commission
Keep the Midlands Beautiful

Sponsors

Grimball Cotterill and Associates
Forest Lake Property Owners Association
Fuss & O'Neil
BP Barber
South Carolina Electric and Gas Co.
Spring Lake Co.
Upper Rockyford Lake HOA
Marjorie and Jim Hightower
Julie and Mark Mayson

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