

2011 Annual Report

July 1, 2010 through June 30, 2011



WAKE SOIL AND WATER
CONSERVATION DISTRICT



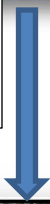
United States Department of Agriculture
Natural Resources Conservation Service

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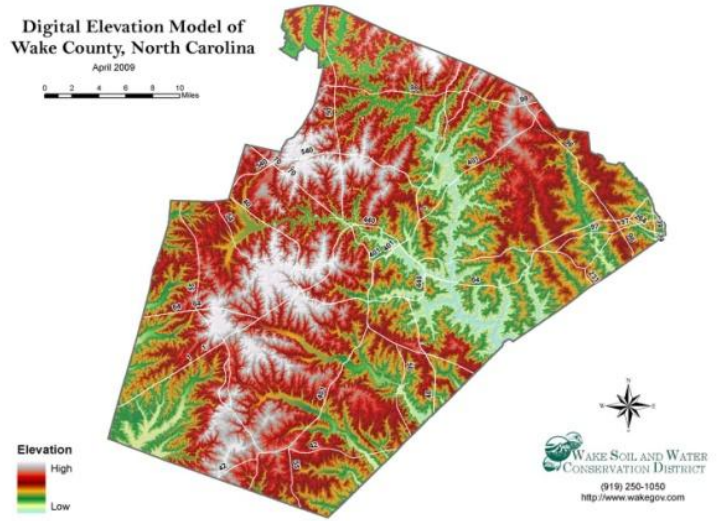
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BEFORE: An eroded streambank at a livestock stream crossing delivering sediment into Falls Lake



AFTER: A stabilized livestock stream crossing protecting water quality in Falls Lake



Wake Soil and Water Conservation District

Board of Supervisors (as of August 2011)

Thomas Dean, Chair
William Cole, Vice-Chair
Laura Parker, Secretary - Treasurer
Marshall Harvey
Jennifer Wadsworth



Associate Board of Supervisors

Marilyn Grolitzer	Robin Hammond	Shaunnika Johnson
Samuel Laurie	Marcia Lieber	John Phelps
John Rogers	Carlyle Teague	Donnie Woodlief

Voluntary Agricultural District Advisory Committee

Caroline MacNair Carl, Chair

Wake County Soil and Water Conservation Department Staff

Teresa Furr, Natural Resources Conservationist
Teresa Hice, Natural Resources Conservationist
Sheila Jones, Environmental Educator
Larry Petrovick, Natural Resources Conservationist
Dale Threatt-Taylor, District Director

USDA Natural Resources Conservation Service Raleigh Field Office Staff

Matthew Kinane, District Conservationist

North Carolina Department of Agriculture Division of Soil and Water Conservation

Wake County Soil Survey Project
Joshua Vetter, Project Leader Soil Scientist
Larry Sink, Soil Scientist



Mission: *To protect the natural resources of Wake County through voluntary technical, educational and funding assistance to citizens, businesses, communities, municipalities and partners.*

2010 – 2011 Year in Review

Provide citizens with a comprehensive management plan for their farm to be viable while protecting natural resources	Conservation planned acres written for compliance with USDA
County Staff	883.89 acres
NRCS DC	64.2 acres
Total	948.09 acres

Complete ongoing work by installing conservation practices to improve water quality	Number of acres of practices installed
County Staff	242.44 acres
NRCS DC	126.8 acres
Total	369.24 acres

Nutrient Management	Planned acres
County Staff	883.89 acres

Nutrient Management	Implemented acres
County Staff	233.6 acres

Sediment prevented from reaching water courses	Tons of soil
County Staff	26,371.45 tons

Wake County Farms	Number visited
County Staff	322

Streams assessed/restored	Linear Feet
County Staff	1,970

Water Quality

Best Management Practices – Conservation on the Land

The Wake Soil and Water Conservation District is in the forefront of natural resources work and water quality protection. The District strategically focuses its projects on priority watersheds, impaired streams, and targeted funding areas for state and federal water quality improvements. The priority areas are Falls Lake, Little River, Swift Creek and Jordan Lake ... all drinking water supply watersheds. Priority is then directed to rural areas that have EPA 303(d) impaired streams and working lands active in farm, forest, and local food production. Work is directed to match the resource concerns that are increasing due to Wake County's extensive number of horse operations with nutrient management concerns. The District responds to these concerns with collaborative funding projects to address stormwater erosion issues, but state funds are limited. Citizens and businesses provide a shared cost amount for each project.



This livestock waterer, under construction for horses, will eliminate the need for access to creeks and streams and reduce manure discharge into our water supply.

Falls Lake Watershed rules - work on watershed assessment of agricultural operations and voluntary options that will reduce nutrient loading into Falls Lake	Watershed acres evaluated for resource concerns
Total	5,121.71 acres



Water Quality

Falls Lake Agriculture Rules compliance for Wake County

The Wake District staff evaluated the Falls Lake watershed and assessed potential sites for improvement of natural resources issues and reduction of nutrient runoff into the lake. This was the first step in assisting Wake County's citizens with the collective nitrogen and phosphorus reduction goals outlined in the Agricultural portion of 15A NCAC 2B Rule 0280 of the Falls Lake Nutrient Management Rules.

Conservation best management practices meet engineering technical specifications and guidelines



Falls Lake Initiative Partnership (EPA 319 Grant)

The Wake Soil and Water Conservation District has implemented Phase II and Phase III of the EPA 319 Grant which Wake County Environmental Services received (via soil and water conservation section) in 2007.

Phase II installation of the EPA 319 Grant was started in May 2010 with the construction of a horse manure composter that will store and properly treat the manure to a low nutrient compost product that can be utilized on the pastureland. Installation of one stream crossing, five watering facilities with heavy use areas, and 1,340 ft. of water pipeline has been installed to remove the animals from the stream and to provide an alternative watering source. The contractor has also installed 1,957 linear feet of livestock exclusion to remove the animals from Upper Barton Creek. This will reduce the bank erosion that was taking place from the animals having access to the creek and also reduce the amount of nutrients being deposited into the stream.

Phase III installation of the EPA 319 Grant was started in November 2010 with the installation of one stream crossing and 350 feet of streambank

stabilization that empties directly into Upper Barton Creek. The contractor has also installed 981 linear feet of livestock exclusion fencing to remove the animals from the tributary of Upper Barton Creek. This will reduce the bank erosion that was taking place from the animals having access to the creek and also reduce the amount of nutrients being deposited into the stream. By stabilizing 350 feet of stream bank, future stream bank failures will be prevented and will significantly decrease deposits of sediment into Upper Barton Creek and eventually Falls Lake. The streambank stabilization project also opens up the flood prone areas and stabilizes the banks with vegetation. The ford-type stream crossing will help provide the landowners access to the pasture across the stream so that pasture can be utilized for grazing rotation.

The installation of these best management practices manages 1,309 lbs. of manure generated nitrogen and 374 lbs. of manure generated phosphorus with the horse manure composter. (Manure had previously been stored uncovered on the ground next to drainage swale.) The installation of the stream protection system saves an estimated 15 tons of sediment per year, 262 lbs. of nitrogen per year and 75 lbs. of phosphorus per year from reaching Upper Barton Creek.



Wake County landowners hire Wake County's small businesses to install conservation practices which improve Wake County watersheds for Wake County's future generations



Community conservation on Non-Ag areas	Square Feet of installed BMPs
County Staff	544,948 ft²

Wake County Voluntary Agricultural Districts	New VADs acres added
County Staff	571 acres

*The CCAP funds and the NCACSP funds are available to county landowners and businesses **only** through the Soil and Water Conservation District*

Water Quality

Best Management Practices – Conservation on the Land

The Wake Soil and Water Conservation District is currently working on or has completed the following projects under the new, statewide Community Conservation Assistance Program (CCAP) that was administered by the NCDENR Division of Soil and Water Conservation (Division is now under the NCDA&CS):

A CCAP cost share contract in the Falls Lake watershed was completed to repair and stabilize a stormwater easement that was eroding at 110 tons of sediment per year. The best management practices installed were grassed swale, streambank stabilization and shoreline protection on 66 ft. stream, drop structure, and critical area planting.

The Town of Morrisville completed a CCAP cost share contract in Morrisville Community Park to stabilize an eroding area next to a tributary of Crabtree Creek. This reduced sediment movement by 3.6 tons per year. They also installed three pet waste receptacles to reduce fecal matter from entering the water courses.

Two landowners implemented CCAP contracts for critical area plantings. Both owners used compost blankets and compost socks to establish vegetation on bare, highly erodible areas that were contributing sediment and nutrient runoff directly into the Neuse River.

A.B. Combs Elementary School in Raleigh completed a CCAP cost share contract for a 2,240 square foot bioretention area. The bioretention area will treat the stormwater runoff from the school's parking lots and driveway. This stormwater best management practice will reduce the sediment and nutrients from this school site and improve the water quality of Walnut Creek.

The Town of Wake Forest Public Works and Utilities installed two additional cisterns last year, for a 6000-gallon capacity increase. The collected stormwater will be reused for sediment removal, boring machines, brine system, watering new trees, and for use in street sweeping. The five large cisterns installed in the last 2 years with a collective capacity of 17,500 gallons are currently removing 2.42 lbs. Total Nitrogen/year. The critical area planting will filter stormwater runoff entering a tributary to Smith Creek. Two abandoned wells were closed which will reduce the high risk for groundwater contamination.

Increase landowner and homeowner understanding of erosion and nutrient loading problems	Citizens assisted with environmental education or information
Total	5,465

Advance adult environmental literacy, Maximize outreach by training others	Number trained in EE Training / Outreach
Total	36 / 13,188



Landowners participate in pasture management training

Coordinate Wake County Big Sweep Program for cleaner streams, lakes and wetlands	Total Number of Volunteers
Total	1,102

Donated services to Wake County by District Volunteers (estimated by using the <i>Independent Sector</i>)	Value of volunteered services donated
County	\$63,693.50
NRCS Earth Team	\$5,455.39
Total	\$69,148.89



Big Sweep volunteer removes litter from Falls Lake.

Environmental Education

Stewardship, outreach, information



The Wake Soil and Water Conservation District **hosted two pasture management trainings**. The first training was at Black Horse Run Clubhouse and Equine Center located in the Falls Lake watershed. The other pasture management training was held at Fred Burt's farm in Fuquay-Varina, NC. At both pasture management trainings, the District provided technical training to livestock owners on proper management of pastures including rotational grazing, forage species selection, nutrient management concerns, and the proper storage and application of animal waste onto pastures. Over 50 owners/operators attended the two trainings.

Upon special request from Project WET State Coordinator, Wake District **modeled Project WET lessons** for 16 new facilitators-in-training and provided numerous handouts, plus a sample Project WET Workshop Agenda conducted at NC Center for Wildlife Education on Centennial Campus to serve as a template.

Wake County's Fall and Spring Big Sweep events: A total of 1,069 volunteers led by 33 Zone Captains **collected 18,375 lbs.** or 9.2 tons of debris from **81.25 miles of shoreline**, parkland and roads in 27 waterways in 9 municipalities. This year's volunteers donated the equivalent to 1.5 FTE. Wake County Big Sweep is coordinated by Wake Soil & Water Conservation District as part of the larger, statewide NC Big Sweep.

Making the Conservation Connection: Wake District led the development of an inaugural outreach event, where citizens could obtain answers to their conservation questions. Wake County residents throughout the Triangle were invited to meet and talk with local conservationists, foresters, wildlife biologists, beekeepers, etc.

District Environmental Educator conducted public outreach to 3,774 citizens on water quality at various special events: Eno River Festival, Earth Day Celebration at Pleasant Union Elementary, Frog Fest at Crowder County Park, Science Night at Wiley Elementary and Science Night at Fuquay -Varina High School.

Leveraging resources through collaborations with volunteers, NGOs, businesses, and government agencies at all levels.	Total Number of partners
Total	352

Youth Environmental Education to Wake County children (ages 4-18)	Total Number of hours of Environmental Education for specific youth projects
Total	396



Facilitated a successful Keeping the Farm Workshop for Wake County farm and forest landowners	Total Number landowners attended
Total	120



Students learn the importance of soils and topography in understanding the protection of water quality at the Resource Conservation Workshop

Environmental Education and Outreach

Stewardship, outreach, information

The Wake Soil and Water Conservation District conducted a total of 35.5 contact hours through three adult workshops, including Food, Land & People workshop - that trained a total of 51 educators/District colleagues with a potential outreach to 13,188.

A total of **\$1,000 was awarded** by the NC Foundation of Soil and Water Conservation, Inc. to the Wake District to work with Wiley and Willow Springs Elementary Schools to develop seating for their outdoor classrooms.

The NC Association of Soil and Water Conservation Districts Auxiliary awarded a \$500 grant to Heartwood Montessori to further develop its lower elementary garden under the guidance of the Wake District.

Youth environmental educational outreach included: **Rain Garden Planting Day** at A.B. Combs Elementary, Wake County Soil and Water **Poster Contest** on Urban (storm)Water Cycle, and **Take A Child Outside Week** with a Soils session at Schenck Forest. The District also teamed up as a Community Partner with York Elementary to conduct a water quality project as part of the Neuse Riverkeeper Foundation's "Environmental Challenges".

District Technical, Administration, and Environmental Education staff conducted Soil and Water Conservation Day during the **Resource Conservation Workshop** for 82 High School students.

Ten Wake County teams participated in the Area IV **Envirothon**. Three Wake County teams advanced to the NC Envirothon statewide competition, with one team placing a respectable 4th place.

Wake County Board of Commissioner proclaimed October 2, as "**Wake County Big Sweep Day**".

Economic \$ Impact of Wake District's Work

Develop cost share contracts to address natural resources problems and improve water quality	Number of contracts written
County Staff	47
NRCS DC	23
Total	70 contracts

Encumbered Federal or State funds to implement conservation practices with completed designs per NRCS Engineering Technical Specifications/Guide	Funds locked in contract for Wake County
County Staff	\$91,190
NRCS DC	\$55,056
Total	\$146,246

Paid Federal or State funds to implement conservation practices with completed designs	Funds dispersed for completed contracts
County Staff	\$206,239
NRCS DC	\$13,032
Total	\$219,271

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Federal funds for Wake County paid through District collaboration NRCS DC	Funds dispersed for completed contracts
Obligated for projects	\$195,000
Paid for completed project	\$213,362
Total	\$408,362

Resources for Wake County

Funding for Best Management Practices

To assist landowners with conservation actions, the Wake District matches projects with outside funding sources. During FY 2011, Natural Resources Conservationists reimbursed landowners \$219,271 for conservation projects from federal and state funds. The District encumbered \$146,246 of federal and state funds into contractual agreements with landowners for future conservation work. Through partnerships, the District Conservationist administered \$408,362 of federal funds. The District visited 322 farms or problem sites in FY11.

The North Carolina Agricultural Cost Share program funds water quality and conservation projects that require a 25% match on a set rate for area counties. Wake County's cost is, on average, higher than the landowner's share typically exceeds 25%. Essentially all public and private lands are eligible for the programs. Eligible participants include landowners, businesses, schools, community groups and local governments.

Wake County Soil and Water Department
FY 11 Budget:
\$430,338
(Includes staff and operational budget)



Highlights

Wake Soil and Water Conservation District Board of Supervisors set the FY 2011 work goals in alignment with the Wake County Board of Commissioners work goals. The District's work supports the Board of Commissioners' goals numbers III. Environmental Stewardship and I. Economy and Jobs.

- ★ **Grant Completed!** Wake District completed the final stage of the Black Horse Run EPA 319 Watershed Grant project in the Falls Lake watershed. In partnership with Wake County Environmental Services, Wake District completed all the field work and successfully managed the resources and state cost share contracts for the three year project.
- ★ **Wake Proposal Approved!** NC Soil and Water Commission **ruled in favor of Wake County's proposal** to accept the Technical Review Committee's recommendation to design parameters and guidelines for a new component to the well practice for well permits. The ruling will not only favor Wake County farms, but is now available across North Carolina. Citizens' concerns were met successfully, without change to Wake County well ordinance and without action from Board of Commissioners.
- ★ **Wake County Highlighted!** Wake District was selected to host NC Community Conservation Assistance Program Tour. The CCAP Team members visited from across the state to view three of the District's conservation projects. Wake County was highlighted for its community conservation work and efficient use of state funds.
 - Special thanks to Deputy County Manager Joe Durham for attending and greeting the state-wide team for Wake County.
- ★ **Leaving a Legacy!** The District celebrated Donnie Woodlief's 30 years of dedicated service to Wake County citizens through his service on the Wake Soil and Water Conservation District Board of Supervisors and past Chair of the Board.
- ★ **New Supervisors Elected to Wake District Board!** Marshall Harvey and Jennifer Wadsworth were elected to the Wake Soil and Water Conservation District Board of Supervisors in the November 2010 county-wide election.
- ★ **Community Leaders!** Soil and Water Conservation facilitated a meeting between the Town of Knightdale, farm owners, and the Wake County Planning Department; to foster better communication and reduce tension concerning Knightdale's ETJ expansion.
- ★ **Winners in the News!** Wake County's Top Ten poster contest winners and their posters on stormwater pollution and solutions were featured on WRAL-TV 5 6 o'clock News with Chief Meteorologist Greg Fishel.
- ★ **Giving Back, Paying it Forward!** Technical volunteers (Engineers, Natural Resources Graduate students, etc.) donated over 150 hours to help with increasing workload of conservation staff. All have graduated or successfully completed their job search.

To contact the Wake Soil and Water Conservation District call 919-250-1050.

The technical text contributed by Teresa Furr and environmental education text by Sheila Jones. 9-1-2011DRT-T