2014 Grant Projects

Battle Grove Regenerative Stormwater Conveyance (Grant Award: $227,180; 1/1/15-9/30/18)

The University of North Carolina at Chapel Hill collaborated with North Carolina State University and local contractors to daylight the Battle Grove Stream, which originally flowed through UNC Chapel Hill's campus into Battle Branch, before being piped in 1939 for construction. After uncovering 280 feet of the original stream, further stream restoration measures were taken including implementation of the regenerative stormwater conveyance technique, riparian buffer planting, and the addition of another 118 feet of natural channel. Additionally, wet weather monitoring was conducted by NC State faculty, macroinvertebrate monitoring was conducted by Eaton Scientific, and dry weather monitoring and geomorphic baseline studies were conducted by UNC students for educational experience. Further educational opportunities from this project included signage, an internship, tours, events, tabling, and a middle school lesson plan.

Durham County Community Conservation Assistance Program (Grant Award: $83,104; 1/1/15-12/31/17)

Durham County Soil and Water Conservation District partnered with local HOAs and landowners to implement BMPs within the Third Fork Creek, North East Creek, and Ellerbe Creek of the Cape Fear and Neuse River basins. The projects were designed to address excess nitrogen, phosphorus, and sediment loads, as well as low dissolved oxygen, pesticides, and temperature within the creeks. In total, 14 streambank stabilizations, 12 rain gardens, 2 bioretention cells, 11 cisterns, 1 impervious surface conversion, and 1 riparian buffer were installed to address these pollutants. Outreach efforts included community meetings, K-12 educational events, and local news coverage.

Hewletts Creek Water Quality Improvement (Grant Award: $194,249; 1/1/15-7/31/18)

North Carolina State University, The City of Wilmington, North Carolina Department of Transportation, and North Carolina Cooperative Extension Services partnered to improve water quality and reduce stormwater volume in Hewletts Creek, which drains into tidal shellfish waters. The stormwater control measures (SCMs) implemented include a 1,680-square-foot bioretention cell, a 17-foot swale on a golf course, a 200-foot wet swale (drains a residential lot 32-acre catchment area), 8 residential disconnected downspouts, 2 roadside bioswales, and 1 roadside infiltration trench. The bioretention cell drains a 3.04-acre commercial parking lot and is estimated to reduce runoff volumes by 52%, fecal coliform by 93%, E. coli concentrations by 94%, and total nitrogen and phosphorous levels by 70%. Beyond the SCMs, a coastal BMP workshop and several stakeholder information sessions were held to interact with and educate the local community.

Clean Water Act Section 319 Grant
North Carolina

Implementing the Watershed Restoration Plan for the Lower White Oak River (Grant Award: $141,830; 1/1/15-6/30/17)

The North Carolina Coastal Federation, East Carolina University, and local stakeholders collaborated to design and install a series of BMPs that reduce stormwater runoff from the Town of Cedar Point into the White Oak Watershed. Practices included a rain garden, 5 water control structures, 4 rock check dams, 42 rain barrels, a reconstructed walkway, a replacement culvert, and 13 ditch bank overhauls. In total, the BMPs are designed to reduce stormwater runoff by more than 61,000 gallons during the 1 year 24-hour storm event. Education, outreach, trainings, and a media tour were used to build greater community understanding, engagement, and enthusiasm in stormwater management.

Ivy River BMP Installation Project (Grant Award: $172,103; 1/1/15-6/30/18)

Mountain Valleys Resource Conservation & Development collaborated with the Ivy River Partners, the Environmental Quality Institute, Mars Hill University, Natural Resource Conservation Service, NC Agricultural Extension-NC State, and multiple local stakeholders to improve water quality in the Ivy River, a tributary of the French Broad River. Deliverables from this grant period included 4,650 square feet of heavy use areas, 5,543 feet of livestock exclusion fencing, 560 feet of riparian buffers, 763 feet of access roads, 11 watering facilities, 140 feet of streambank stabilization, 3 septic tank installations, 4 septic tank repairs, 1 rain garden, and 2 cisterns. Furthermore, efforts were made to raise awareness about the importance of water quality within the community through the "Shade Your Stream" workshop series, newspaper articles, litter cleanups, "Kids in the Creek" program, and more. The Ivy River Partners were awarded a new round of 319 grant funding that will help them continue their mission of removing impaired streams from 303(d) listing in the coming years.

Lick Creek Watershed Restoration via Improved Wastewater Management (Grant Award: $162,000; 1/1/15-6/30/18)

East Carolina University partnered with Durham County Public Health, NC Department of Health & Human Services, Wake County Environmental Services, NC Agricultural & Technical State University, the City of Durham, Tetra Tech, and local stakeholders to conduct restoration in the Lick Creek Watershed. Lick Creek drains parts of Durham and Wake County and discharges into Falls Lake. Throughout the grant period, the team pumped septage from 37 septic tanks, installed 2 new drainfields, replaced or repaired broken supply lines on 4 properties, replaced a septic tank, installed a drainageway bioreactor, and conducted monthly monitoring. These integrated BMPs were designed to reduce nitrogen and phosphorus loads by about 26 kg and 8 kg per year, respectively.

Richland-Racoon Creeks Watershed Restoration (Grant Award: $202,713; 1/1/15-2/28/17)

The Haywood Waterways Association, Haywood Soil and Water Conservation District, Southwestern NC Resource Conservation & Development Council, USDA Natural Resources Conservation Service, NC Division of Soil and Water Conservation, Haywood County, and the Town of Waynesville collaborated to restore Richland and Raccoon Creeks, tributaries of the Pigeon River Watershed in Haywood County. Throughout the project period, 1 bioretention cell and 3 cisterns were implemented to reduce annual runoff and protect 175 feet of stream. An additional 5,100 feet of streambanks were stabilized across 3 project sites, and 8 failing septic systems were repaired with one septic system modified into a permitted stream discharge. Finally, monitoring was conducted including stormwater pollutant loads and substrate composition at one streambank restoration site, as well as E. coli concentrations before and after each septic repair (100% elimination of E. coli from septic repairs). Successes and results were communicated through public outreach meetings, press releases, and presentations statewide, regionally, and nationally.

Torrence Creek Stream Restoration at the Park (Grant Award: $59,961; 1/1/15-8/31/18)

Charlotte Mecklenburg Storm Water Services, Mecklenburg County, Town of Huntersville, Wildlands Engineering, and Baker Grading & Landscaping collaborated to conduct stream restoration practices on Torrence Creek, which flows into the McDowell Creek Watershed of Mecklenburg County. The 319 grant was allocated to restore about 700 feet of Little Torrence Creek (an unnamed tributary of Torrence Creek) with natural channel design techniques. Other funding allowed for approximately 3,400 feet of stream restoration along the main Torrence Creek. This included geomorphic improvements, pools and riffles, and replacement of invasive/non-native plants with native flora. Finally, a follow up monitoring period was set to assess the BMPs' effectiveness 2 years following completion of the project.