NONPOINT SOURCE SUCCESS STORY

South Carolina

Section 319 Grant Impacts More Than 1,000 Citizens in Horry County, South Carolina

Waterbody Improved

Since 2011, the Horry Soil and Water Conservation District (HSWCD) has implemented seven Clean Water Act Section 319-funded water quality improvement projects throughout the Pee Dee River basin. To date, 1,190 septic and 38 agricultural projects have been completed across 26 subwatersheds through the implementation of three nine-element watershed plans. These efforts are dedicated to reducing *Escherichia coli* levels within the watershed where development, agricultural practices and septic tank failures contribute to pollutant loads. The impressive scope of this project and level of participation are due to HSWCD's undeniable commitment to its community. Two staff members, Nina Warren and Sam Ward, have been instrumental in conducting direct outreach, building partnerships, improving relationships with landowners and providing education to encourage behavior change for 13 years.

Water Quality Challenge

These water quality improvement efforts are in the Pee Dee River basin in Horry County, South Carolina. The project area includes 12 monitoring stations that are included on the 2020 – 2022 Clean Water Act Section 303(d) List of Impaired Waters (Figure 1). These sites are impaired by *E. coli*, and their primary use is recreational swimming. The watershed includes channelized waterbodies and swamps underlain by soils with low infiltration rates. Nonpoint sources of pollution in the watershed include bacteria from agricultural facilities and malfunctioning septic systems that contribute to urban and agricultural runoff. Septic tank failure is especially common in rural areas of Horry County, where many homes are served by old and unmaintained

septic systems. Additionally, areas of Horry County, including Myrtle Beach, North Myrtle Beach and Conway, have experienced significant development in recent years and have high potential for future residential and commercial growth, further contributing to pollutants and runoff volumes.

According to the Climate and Economic Justice screening tool, most of the project area is considered disadvantaged based on socioeconomic and environmental factors. Additionally, the population in the project area is reported to be higher than the national average on the socioeconomic, climate change and health disparity indices (Figure 2).

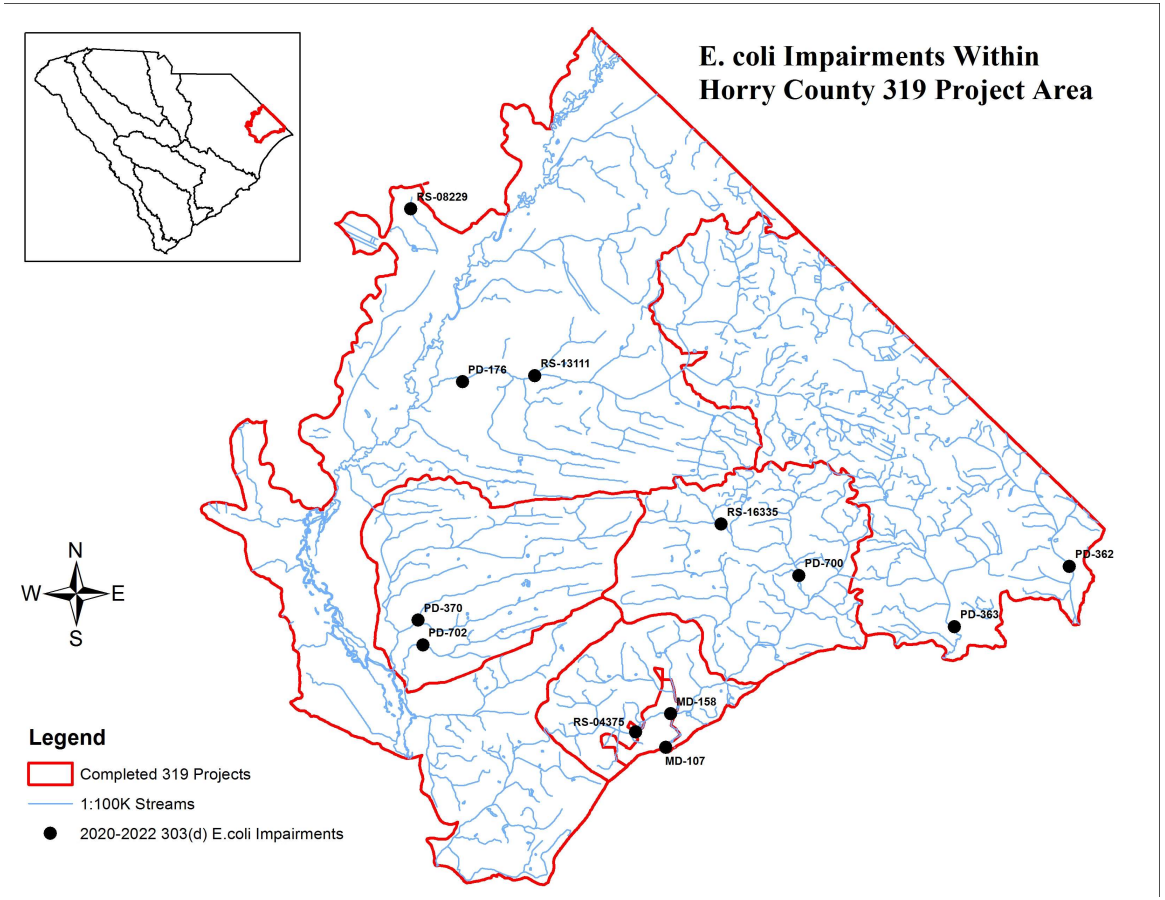

Figure 1. Horry County project areas and impaired monitoring stations

Project Highlights

Seven implementation projects have been completed over 13 years, encompassing efforts from three watershed plans: Kingston Lake with Crabtree, Mitchell Swamp out of Loris, and the Watershed Plan for Little Pee Dee with Chinners Swamp. The recommended practices that have been implemented include repairing or replacing failing or malfunctioning septic systems (Figures 3, 4 and 5), connecting to sanitary sewer systems and applying agricultural best management practices, including alternate watering sources, heavy-use area protection, and rotational grazing.

HSWCD staff have been instrumental in conducting outreach and building partnerships. Their work in the community began in 2011, with goals of repairing 100 septic tanks and completing 10 agriculture projects. HSWCD relied on various techniques to recruit community participation. In-person meetings were highly effective in rural communities (Figures 6 and 7). In residential communities, homeowners association meetings and media outreach were most effective. High-priority areas with failing septic systems and/or poor soil quality were identified through ground surveys and consultation with the South Carolina Department of Environmental Services (previously Department of Environmental Health and Control). With this information, HSWCD conducted door-to-door campaigns and distributed brochures, flyers and door hangers to recruit potential participants with failing septic systems. Educational workshops engaged the agricultural community in discussions on the proper handling of animal waste, grazing techniques and other best management practices to improve water quality. By 2015, HSWCD had completed 28 sewer tie-ons, 120 septic tank repairs and 29 agriculture projects, surpassing their original goal and creating momentum to implement future projects. HSWCD went on to complete six additional Section 319 projects, including a second phase in some areas, with the most recent project closed in 2023.

HSWCD has progressively spent less effort on recruitment because they have earned a trustworthy reputation, resulting in a waitlist of applicants with failing systems needing cost-share assistance. Multiple partnerships have supported these efforts, including additional funding sources that allowed higher cost-share rates for low-income residents. Through multiple projects in Horry County, support and match funding was provided by Grand Strand Sewer and Water, the city of Conway, Horry County Stormwater, and the Natural Resources Conservation Service Environmental Quality Incentives Program.

Efforts to prioritize disadvantaged residents included developing a sliding scale and using adjusted incomes to provide proportionate financial assistance. HSWCD also worked with local septic repair companies to secure a lower service rate for Section 319 participants.

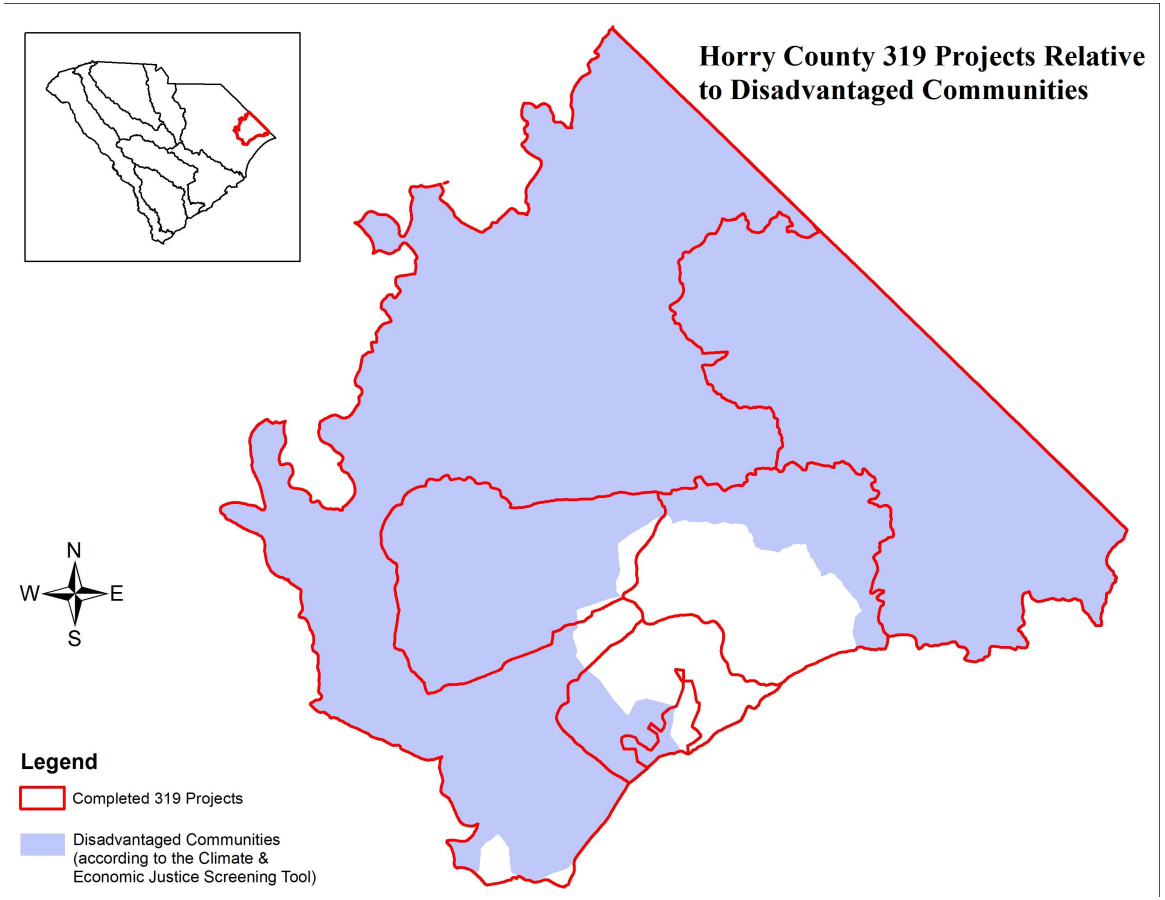

Figure 2. Horry County project areas and disadvantaged communities

Best Management Practice	Number Installed	Units	Comments
Waste Management System	304	AC	
Water Well	11	INDIVIDUAL UNITS	
Alternative Water Sources	25	INDIVIDUAL UNITS	
Controlled Stream Access for Livestock Watering	550	FT	
Prescribed Grazing	592	AC	
Fence	550	FT	
Heavy Use Area Protection	8184	SQUARE FEET	
Pipeline	9321	FT	
Streambank & Shoreline Protection	1800	FT	

Outreach And Education		
Watering Facility	3	INDIVIDUAL UNITS
Stream Exclusion Fencing	1800	FT
Onsite Waste Water System [Repair/Upkeep]	1049	INDIVIDUAL UNITS

Results

In total, HSWCD has completed 908 septic repairs, 282 sewer tie-ons and 38 agricultural best management practices. Horry County has continued outreach efforts to educate community members on the proper care and maintenance of septic systems and to recognize the signs of a failing system. Their personalized efforts and availability have led to more awareness, understanding and, ultimately, behavior changes that support water quality. Since their work began, Horry County has seen an increase in properties implementing sustainable efforts, including improved agricultural practices, the installation of protective barriers around septic systems and continued septic maintenance. HSWCD’s impact is also evident in the positive feedback from participants. These responses reiterate the impact of education, the appreciation and trust built for the organization and the relief from the overwhelming burden of failing septic systems in the community.

Figure 3. Sewage pooling on a residential property due to a malfunctioning septic system

Partners and Funding

Partner Type	Agency	Funding	Notes
Federal	USDA-NATURAL RESOURCES CONSERVATION SERVICE	-	
Federal	FEDERAL (CLEAN WATER ACT SECTION 319)	$3,812,738	
City	CITY OF CONWAY	-	
City	TOWN OF AYNOR	-	
Conservation District	HORRY SOIL AND WATER CONSERVATION DISTRICT	-	
County	HORRY COUNTY STORMWATER DEPARTMENT	-	

Other	GRAND STRAND WATER AND SEWER AUTHORITY	-
Other	MATCH FUNDING SOURCES	$6,355,486
Other	BUCK CREEK AND SIMPSON CREEK WATERSHED DISTRICT	-
Other	CRABTREE WATERSHED BOARD	-

Figure 4. Sewage pooling on a residential property due to a malfunctioning septic system

Figure 5. The same property after septic repair

U.S. Environmental Protection Agency
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