

IMPLEMENTING AGRICULTURAL COMPONENTS OF THE UPPER COOSA-WATTEE TMDL IMPLEMENTATION PLANS THROUGH BEST MANAGEMENT PRACTICE INSTALLATION

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Abstract. The Georgia Soil and Water Conservation Commission utilizes Section 319(h) funding from the Clean Water Act to execute the agricultural components of TMDL implementation plans through various projects throughout Georgia. The Upper Coosawattee 319 project is located predominantly in Gilmer County in the north central portion of the state. Through the Upper Coosawattee 319 project, 35 landowners have utilized funding to protect water and soil quality on their farms through the installation of stackhouses, incinerators, stream crossings, winter feeders, heavy use areas, composters, and other available practices. In addition, seven orchards have participated in a pest monitoring/scouting program in conjunction with developing an integrated orchard management plan (IOMP) to reduce the amount of pesticides being utilized in Gilmer County.

INTRODUCTION

The Upper Coosawattee River Watershed (HUC 03150102-040) begins at source waters in northeast Gilmer County within the headwaters of the Coosa River Basin. This watershed was ranked a Category 1 Watershed during the State's Unified Watershed Assessment. Most the 285,000 acre Upper Coosawattee River Watershed is contained within the jurisdictional boundaries of Gilmer County with minor portions in Dawson, Fannin and Murray counties.

Approximately 25,000 acres of the project area are designated as agricultural, with approximately 9,500 acres in pasture, animal agriculture, or currently practicing nutrient and pesticide applications. According to the 2005 Georgia County Guide, Gilmer County is home to 543 poultry houses including broilers, pullets and layers. There are approximately 1,000 head of dairy cattle and 5,600 beef cattle within the county. Production of agricultural nutrients and manure is associated with approximately 6,400 head of beef cattle, 800 head of dairy cattle, and 170 poultry operations with over 1000 houses. The Upper Coosawattee River Watershed has approximately 300 active farms.

In the Upper Coosawattee River 319 project area, there are also an estimated 400 acres of intensive apple production from nine orchards. Apple producers within this area typically use large amounts of inorganic fertilizer and pesticides to control pests. In addition, many are broad range pesticides and can have detrimental impacts on other species. Traditionally, growers have not fertilized and applied chemicals as part of any developed management program.

Water quality violations in the watershed's streams and reservoirs have hampered recreation use and adversely impacted public water supplies at intakes more than 100 river miles downstream. As delineated in the State's Section 303(d) and Section 305(b) Reports, *Water Quality in Georgia*, 26 stream miles in the Upper Coosawattee River Watershed have been identified as "not supporting" or "partially supporting" designated uses due to NPS pollution with fecal coliform as the criterion violated. In addition, water quality problems in Carter's Lake due to upstream nutrient loads have been documented.

TMDL Implementation Plans have been finalized for seven stream segments (26 miles) in the Upper Coosawattee River Watershed listed as either "partially supporting" or "not supporting": Cartecay River (3 miles), Coosawattee River (9 miles), Cox Creek (3 miles), Ellijay River (2 miles), Flat Creek (1 mile), Mountaintown Creek (5 miles) and Tails Creek (3 miles). The TMDL Implementation Plans identify general sources of fecal coliform, including urban stormwater, agriculture, on-site sewage systems, and recommend measures to reduce fecal coliform loads. The approved plans recommend activities and strategies to reduce fecal coliform loads including technical assistance, education and outreach, and agricultural BMP implementation.

PROJECT STRUCTURE

GSWCC initially sought funding during the FY2003 Georgia Environmental Protection Division funding cycle. Funding was received in the amount of \$1.08 million

dollars for a five year period. Almost \$800,000 was designated for landowner contracts to install BMPs on farms within the project area. Once awarded, a project coordinator was hired to work with local landowners. Through print announcements and farm visits, the project coordinator developed a list of interested land owners.

After site visits and technical guidance with the Georgia Natural Resources Conservation Service (NRCS), the project coordinator developed landowner applications, design specifications for the project, a timeline for construction and a costs estimate. GSWCC relies on NRCS to provide technical guidance and to approve all completed construction projects as meeting NRCS standards and specifications. A steering committee was created that included soil and water conservation district supervisors, local stakeholders, NRCS representatives, county representatives and Cooperative Extension Service (CES) representatives. This committee reviewed each application and made recommendations to GSWCC regarding funding based on participation criteria and project goals.

The goal of this project has been to contract with 40 to 60 landowners to implement agricultural BMPs addressing nonpoint source pollution, specifically fecal coliform, nutrients and pesticides. Most BMPs have been incorporated as groups or systems of practices to achieve greater nonpoint source pollution reduction. There are approximately 65 practices in the USDA-NRCS Technical Guide that are applicable to this area. The BMPs installed in the Upper Coosawattee 319 Project are based on NRCS Standards and Specifications. A majority of the implementation costs are paid based on the most current NRCS EQIP Cost List. The Upper Coosawattee 319 Project is a 60 percent cost share program in which the landowner is responsible for 40 percent of total costs and the remaining costs are received from grant funding.

Each landowner participating in this GASWCC program is required to develop and work towards implementing a nutrient management plan (NMP) that meets the minimum USEPA standards including 1) provide and maintain buffers or equivalent practices; 2) divert clean water; 3) prevent direct contact of confined animals with waters of the U.S.; 4) address animal mortality; 5) address chemical disposal; 6) address proper operation and maintenance; 7) address record keeping and testing; 8) maintain proper storage capacity; and 9) address rates and timing of land application of manure and wastewater.

To reduce the over application of these chemicals, GSWCC also proposed to work with the University of Georgia Cooperative Extension Service (CES) to educate and assist producers in the development and implementation of integrated orchard management plans (IOMP). An IOMP is a combination of management practices that encompasses both nutrient and integrated pest management (IPM) practices. The implementation of such a strategy allows for the prevention and/or abatement of

nonpoint source pollutants like fertilizer nutrients and pesticides. IOMP provides producers advantages that are critical to their production and enhances water quality benefits for those surrounding water bodies violating TMDLs in the watershed and also Carter's Lake.

GSWCC personnel work primarily during the September to March time frame monitoring and changing pheromone traps each week and analyzing the findings to generate a spraying schedule that is specific to the needs of each particular land block to prevent excessive or unnecessary pesticide application. In addition, soil and leaf tissue samples are collected to create a yearly report for producers to use when making their production and purchasing decisions. Growers have access to a real-time website to monitor scouting results and to determine degree-days. These tools allow for the more efficient application of pesticides to target specific pests rather than overall pesticide applications that are non-specific and may not address the actual pest problems in the orchard.

PROJECT RESULTS

As of January 31, 2007, GSWCC has contracted with 35 landowners in the Upper Coosawattee River Watershed. As of October 2006, 22 contracts have been completed utilizing nearly \$482,000 in funding and 13 projects are in construction. More than \$700,000 of the grant funding has currently been allocated for BMP installation in landowner contracts. An additional \$90,000 remains available for landowner contracts with a little less than two years remaining in the project. Landowners have contracted with GSWCC for the following practices: Stack Houses (14), Incinerators (7), Agrichemical Facilities (2), Manure Irrigation Transfer Systems (1), Stream Crossings (2), Watering Ramps (2), Exclusion Fencing (1), Cross Fencing (1), Heavy Use Areas (2), Winter Feeders (1) and Nutrient Management Plans (32). Nutrient management plans were developed for approximately 1,595 acres in the project area. A majority of these projects were completed on or near the following TMDL listed streams: Cartecay River, Mountaintown Creek, Flat Creek and the Ellijay River.

Not surprisingly, stack houses and incinerators have been the most commonly applied for practice. Many of the producers in the watershed have inadequate storage for litter. Some have older facilities that are too small and are in disrepair. Others have no storage other than piling litter on the ground and covering it with plastic. These stack houses allow for proper storage for extended periods of time in an area protected from wind and rain.

Incinerators offer producers a more environmentally friendly method of carcass disposal. Many producers have traditionally used pits to dispose of carcasses but more are realizing the serious potential negative impacts

of these pits. Despite rising fuel costs, many are still opting to install incinerators. Economically, pits are cheaper but for many landowners, the risks outweigh the financial benefits.

Agricultural chemical mixing facilities are an innovative practice being installed on two orchards in the Upper Coosawattee 319 Project area. Currently, these facilities are not eligible for EQIP installation. Agricultural chemical mixing facilities provide growers with a central location to fill their spray pumps and mix chemicals for necessary applications. The walled structure with concrete floors and a collection tank reduces risks associated with spills and allows for the proper disposal of spilled chemicals. There are safety eyewash stations and showers installed as well as room designed for chemical storage. All of the installed BMPs work to reduce nonpoint source pollution and further protect the environment. The Upper Coosawattee 319 Project has allowed producers the opportunity to improve their operations while doing their part to protect Georgia's natural resources.

While GSWCC does not directly monitor water quality in the project area, it does believe that, by providing financial and technical assistance to these smaller, high density farms, there is a direct, positive water quality benefit. Not only are negative agricultural impacts reduced through BMP installation but, through the landowner's participation, their awareness and knowledge of their impacts to the surrounding environment is increased and remains as a legacy of the project long after the GSWCC project ends.

GSWCC reviews data from the GAEPD Nonpoint Source Monitoring and Assessment Program as released. GAEPD currently monitors water quality yearly at two permanent monitoring stations in the watershed: the Coosawattee River (Station # 14109901) located at GA Hwy 5 near Ellijay and Mountaintown Creek (Station #14115001) located at U.S. Hwy 76. More monitoring is planned for 2006 and 2011 as resources allow. In addition, GSWCC anticipates working with other local groups that are planning to monitor various sites throughout the watershed as well.

FUTURE PLANS

This is an on-going 319 funding project for the Georgia Soil and Water Conservation Commission which will end in March of 2009. With the success of this project,

GSWCC plans to pursue additional funding to continue working in the Coosawattee River Watershed by expanding the project area.

The Clean Water Act Section 319(h) funding has allowed GSWCC to compliment other established cost share programs in the Upper Coosawattee area. NRCS EQIP funding is limited. Typically, only a portion of EQIP applications are able to be funded. The GSWCC Upper Coosawattee 319 Project is able to fund projects for farmers within the watershed that either don't qualify for EQIP funding or aren't selecting for funding. This allows GSWCC and NRCS to work together to further positively impact water quality in the Upper Coosawattee River Watershed.

CONCLUSION

Implementing Components for Watershed TMDLs in the Upper Coosawattee River Watershed has resulted in 35 landowner contracts to date. This accounts for nearly 75 individual BMPs being installed within the project area to protect and improve water quality. In addition, seven apple orchards have on-going scouting for pest problems and many of those are participating in an IOMP program hosted by the UGA CES. GSWCC believes that these BMPs and will reduce the amount of animal waste, sediment and agricultural chemicals entering streams within the project area and will improve and protect water quality. This type of hands-on approach to protecting water quality is one of the strongest components of the GSWCC nonpoint source pollution prevention program. GSWCC has built a reputation of working with farmers through cost share programs such as the Upper Coosawattee River 319 Project and hopes to continue to promote and improve that reputation throughout the state.

LITERATURE CITED

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