

Summary of Findings and Recommendations for the Peachtree-Martins Creek Local Watershed Plan

The Peachtree-Martins Creek watershed is a 39 square mile area in Cherokee and Clay Counties near Murphy, and it includes Martins Creek, Peachtree Creek, Slow Creek, and Mission Branch. It consists of four hydrologic units (06020002090020, 06020002100040, 06020002100050, 06020002170010), and all streams are classified as C waters except for the Hiwassee River and a few smaller tributaries including and upstream of McCombs Branch, which are all classified Water Supply IV, V or IV Critical Area. Land use is a mix of pasture, forest, and residential land. Development pressure on agricultural and forested land is increasing, as growth from the Atlanta metro area expands. The Peachtree-Martins Creek Local Watershed Plan (LWP) expanded on watershed restoration work performed by the Hiwassee River Watershed Coalition and natural resource agencies.

The Peachtree-Martins Creek LWP effort began in 2005 and was completed in 2007. It was divided into three phases: (1) preliminary watershed characterization, (2) detailed watershed assessment, and (3) development of a watershed plan and project atlas. The project team performed intensive water quality, habitat, and channel assessment and landowner outreach activities, carrying out recommendations named by a local advisory committee. The Tennessee Valley Authority developed new land use and riparian buffer datasets from low altitude aerial photography and produced an Integrated Pollutant Source Identification database in March 2006. The local advisory committee consisted of representatives of the Cherokee Soil and Water Conservation District, Natural Resources Conservation Service, Cherokee County Cooperative Extension Service, Wildlife Resources Commission, Hiwassee River Watershed Coalition, Land Trust for the Little Tennessee, and Tennessee Valley Authority, and the Cherokee County manager.

An assessment of ecological conditions revealed that about 17% of the area retains high or very high levels of ecological function. Severe degradation on the sub-watershed scale is currently limited, occurring only in the Mission Quarry area. While many individual sites in the planning area are severely impacted, at the sub-watershed level these impacts are mitigated to some degree by the areas that remain undisturbed or well-managed. On the other hand, almost 18 square miles (about 45%) of the area has seen significant deterioration in ecological condition and is functioning at a low level or worse. Another 15 square miles (38% of the area) is functioning at a moderate level but is at risk of further degradation.

Stressors identified that limit stream integrity throughout the watershed are lack of riparian vegetation, channel modification, excess nutrients and sediments, and fecal bacterial contamination. Localized stressors include stormwater impacts in the Peachtree area, groundwater contamination in the vicinity of Tri-County Community College and the Clifton Precision Products/Moog Components facility, and impacts from Mission Quarry. Ongoing commercial and residential development is expected to continue in the area and is the biggest future threat to water quality and other elements of ecological function.

Management strategies to address both present and future stressors are identified in Table 1. Strategies to address current problems include stream restoration, riparian buffer restoration, agricultural, road, residential, and forestry best management practices (BMPs). Strategies to address future threats and protect current resources include preservation of existing large forested tracts, sustainable forest management, public education, and a number of planning programs to soften development impacts.

Table 1. Key watershed stressors and management strategies for the Peachtree-Martins Creek watershed

Stressors and Issues	Major Impacts	Management Strategies
Lack of Riparian Vegetation	Stream bank instability, poor shading, insufficient woody material in streams, limited pollution removal	<ul style="list-style-type: none"> ● Revegetation of riparian areas
Channel Modification	Habitat degradation, incision, bank erosion, sedimentation	<ul style="list-style-type: none"> ● Stream channel restoration
Excess Sediment Inputs	Habitat degradation-loss of riffle and pool habitat; reservoir filling	<ul style="list-style-type: none"> ● Conservation tillage and other crop land measures ● Livestock exclusion and other BMPs for livestock operations ● Stabilization of eroding road banks and ditches; drainage and grading improvements to reduce erosion from unpaved road surfaces ● Education of landowners regarding property/road maintenance and design ● Stabilization and revegetation of eroding areas on existing developed land ● Education of landowners regarding land disturbance ● Enforcement of existing regulations at Mission Quarry ● Promotion of forestry BMPs ● Stabilization and replanting of eroding stream banks
Excess Nutrient Inputs	Over-enrichment of streams and reservoirs, resulting in low dissolved oxygen levels and altered aquatic communities	<ul style="list-style-type: none"> ● Education of property owners and contractors regarding appropriate fertilization and lawn care practices ● Removal of straight pipes; repair/replacement of faulty septic systems ● Education of landowners regarding proper septic system maintenance ● Livestock exclusion and other BMPs for livestock operations ● Conservation tillage and other crop land measures ● Replanting of riparian vegetation
Bacterial Contamination	Human health risk	<ul style="list-style-type: none"> ● Additional monitoring of fecal coliform bacteria ● Removal of straight pipes; repair/replacement of faulty septic systems ● Education of landowners regarding proper septic system maintenance ● Livestock exclusion practices and other BMPs for livestock operations
Stormwater	Channel erosion due to increased storm discharge; aquatic life impacts from nutrients and toxic substances	<ul style="list-style-type: none"> ● Additional monitoring of stormwater impacts ● Stormwater retrofits for developed areas, especially in McComb Br. area ● Education of citizens regarding stormwater and pollution prevention
Groundwater Contamination	Human health risk (drinking water); impacts to aquatic biota	<ul style="list-style-type: none"> ● Continued remediation of existing contamination in Peachtree area ● Continued monitoring of organic contaminants in Peachtree area
Mission Quarry	Sedimentation and water quality impacts	<ul style="list-style-type: none"> ● Enforcement of applicable water quality, mining and health regulations
New Development	Future increase in sediment, nutrient and stormwater impacts	<ul style="list-style-type: none"> ● Adoption of a subdivision ordinance that encourages Low Impact Development (LID) and other approaches to reduce impacts ● Instituting post-construction stormwater management requirements ● Developing a local erosion and sediment control program ● Ongoing public education regarding watershed and stormwater issues ● Evaluation of stormwater control opportunities on government properties ● Adoption of hillside development standards ● Expansion and revision of existing water supply and floodplain ordinances ● Development of a long-term wastewater management plan ● Development of a comprehensive land use plan
Multiple Stressors	Diverse future impacts	<ul style="list-style-type: none"> ● Preservation of priority areas through conservation easements and proper forest management