

Summary of Findings and Recommendations for the Fishing Creek Local Watershed Plan

The Fishing Creek Local Watershed Plan (LWP) area is 70 square miles and is located primarily in Granville County, with small portions of Vance and Franklin counties included. The City of Oxford lies within the watershed boundaries in the north. This watershed is in the north central Piedmont, includes the hydrologic units 03020101020010, 03020101030010, and 03020101030020, and exists as a mix of both rural and urban landscapes. Most streams in the LWP area are classified as C NSW waters, except for the Hachers Run in the headwaters of Fishing Creek that is classified WS-II waters and the Tar River segment running through the southern part of the watershed that is classified as WS-V waters. Agriculture, residential development, mixed industrial usage (around Oxford), and silviculture are the major economic drivers of the area. The majority of the mainstem of Fishing Creek has been on the North Carolina 303(d) list of impaired waters (10.4 miles in 2002 and 2004, decreasing to 4.9 miles in 2006). This stream is listed due to impaired biological integrity of the benthic macroinvertebrate community. While not 303(d) listed, the impounded Hachers Run (Lake Devin) has been identified by the Division of Water Quality (DWQ) as a concern due to a combination of stressors including agricultural and impervious surface runoff. High nutrient and copper levels in the lake were attributed to these stressors. Most of the Tar River running through the study area is designated a Significant Natural Heritage Area by the North Carolina Natural Heritage Program. This watershed provides important habitat for rare aquatic and wetland species including mussels and plants. While listed species of mussels are confined only to the Tar River portion of the watershed, excluding Fishing Creek, it is notable that streams up- and downriver with similar habitat as Fishing Creek have recent records of rare species. Identifying the cause of the absence of these mussel species in Fishing Creek and its tributaries is an important element of this plan.

The local watershed planning effort began in 2005 and will be completed through phase III in 2009. Its objectives were to (1) perform a detailed assessment of watershed conditions, identifying key stressors for stream health (especially for impaired streams), and (2) develop a comprehensive strategy to restore and preserve watershed integrity. The phase I effort includes a watershed situation assessment, three biological assessments (benthic macroinvertebrates, fish, and mussels), a toxicity screening report, a water quality summary and a subwatershed prioritization. Phase II includes a special study of Hachers Run, a water quality report (by DWQ), and a watershed assessment report (by the consulting firm WK Dickson). A wetland assessment study by DWQ was begun during Phase II and will be finalized in 2009. Phase III when completed will consist of a watershed restoration opportunities report and a restoration atlas. A stakeholder group was assembled in 2005 and has been actively reviewing and guiding the content of the local watershed plan reports. It consists of representatives from Granville County Planning Department, North Carolina State University, Granville Cooperative Extension, Granville County Environmental Affairs Committee, Tar River Land Conservancy, Soil and Water Conservation District, Division of Water Quality, WK Dickson (consultant), City of Oxford, Oxford Public Ledger (press), Oxford Waste Water Treatment Plant, Clean Water for North Carolina, Ecosystem Enhancement Program, and several local residents.

Intensive field monitoring and GIS assessment pinpointed major causes of degradation for watershed streams. Streams flowing through Oxford are impacted by a suite of urban stressors, including toxicants, nutrients, channelization, and stormflow scour resulting from high levels of impervious cover. Rural streams were impacted by excess nutrients from agricultural operations and localized habitat degradation caused by stream channelization, excess sedimentation from stream bank erosion and upland erosion, lack of adequate forested buffer, and livestock access to streams.

Key stressors for streams in the Fishing Creek watershed and management strategies to address them are listed in the Table 1. These management strategies address known stressors for the Fishing Creek watershed using a combination of stream and wetland restoration, institutional measures, best management practices (BMPs), and stressor-specific solutions. In order to improve degraded streams and restore degraded habitat, it is essential for multiple stakeholders—State, County, and local governments, natural resource programs, land trusts, and local citizens—to participate in a coordinated strategy for watershed restoration.

Table 1. Key watershed stressors and management strategies for the Fishing Creek watershed

Stressors and Issues	Management Strategies
Stream bank erosion	Stream restoration, riparian buffers, livestock exclusion, sand dredging BMPs
Lack of adequate forested buffer	Stream restoration, riparian buffers
Stream channelization	Stream restoration
Impervious cover	Stormwater BMPs, stormwater ordinance, low impact development
Upland erosion	Agriculture & forestry BMPs, erosion and sedimentation control ordinance, subdivision ordinance modifications, steep slope ordinance, public education
Livestock access to streams	Livestock exclusion
Floodplain development	Floodplain development ordinance
Urban toxicants	Watershed education program, stormwater BMPs
Nutrients	Agricultural BMPs, riparian buffers, watershed education program, stormwater BMPs, additional studies
Fecal coliform bacteria	Retrofit wastewater collection system, agricultural BMPs, watershed education program, stormwater BMPs