

Watauga River Basinwide Water Quality Plan

February 2001

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This document was approved and endorsed by the NC Environmental Management Commission on February 14, 2002 to be used as a guide by the NC Division of Water Quality in carrying out its Water Quality Program duties and responsibilities in the Watauga River basin. This plan is the first five-year update to the original Watauga River Basinwide Water Quality Management Plan approved by the NC Environmental Management Commission on April 10, 1997.

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Executive Summary

North Carolina's Basinwide Approach to Water Quality Management

Basinwide water quality planning is a nonregulatory watershed-based approach to restoring and protecting the quality of North Carolina's surface waters. Basinwide water quality plans are prepared by the NC Division of Water Quality (DWQ) for each of the seventeen major river basins in the state. Each basinwide plan is revised at five-year intervals. While these plans are prepared by the DWQ, their implementation and the protection of water quality entails the coordinated efforts of many agencies, local governments and stakeholders in the state. The first basinwide plan for the Watauga River basin was completed in 1997.

This document is the first five-year update of the *Watauga River Basinwide Water Quality Plan*. The format of this plan was revised in response to comments received during the first planning cycle. DWQ replaced much of the general information in the first plan with more detailed information specific to the Watauga River basin. A greater emphasis was placed on identifying causes and sources of pollution for individual streams in order to facilitate local restoration efforts.

DWQ seriously considered comments from a public workshop held in the basin during plan development. This input will help guide continuing DWQ activities in the basin.

Goals of the Basinwide Approach

The goals of DWQ's basinwide program are to:

- identify water quality problems and restore full use to impaired waters;
- identify and protect high value resource waters;
- protect unimpaired waters while allowing for reasonable economic growth;
- develop appropriate management strategies to protect and restore water quality;
- assure equitable distribution of waste assimilative capacity for dischargers; and
- improve public awareness and involvement in the management of the state's surface waters.

Watauga River Basin Overview

The Watauga River basin is situated between the French Broad River basin to the south and the New River basin to the north. The Watauga River basin includes the Elk and Watauga Rivers and their tributaries. The Watauga River, which flows north to northwest from North Carolina into Tennessee, and the Elk River are headwater tributaries of the Holston River. The Watauga River basin is the second smallest basin in the state, encompassing only 205 square miles of watershed and approximately 270 miles of streams and rivers.

Based on 1990 census data, the population of the basin was 16,083 people. The percent population growth over the ten-year period from 1980 to 1990 was 6.1 percent versus a statewide average of 12.7 percent. The overall population density is 78 persons per square mile versus a

statewide average of 139 persons per square mile. While population in the basin is low, there has been significant population growth. The percent population growth was 35.4% over the twenty-year period from 1970 to 1990. The 2000 census data have not been divided according to river basin or subbasin boundaries.

The streams and rivers of the Watauga River basin are still generally of high water quality. There are a number of high quality and outstanding resource waters in the basin. The Watauga River basin is well known for its trout fishery waters. The waters of the Watauga River basin support two fish species, one salamander species and one mollusk, that are listed by North Carolina as either Endangered, Special Concern or Significantly Rare. One of the most beautiful river stretches in the basin can be found at the Watauga River gorge, where the river drops in elevation significantly as it enters Tennessee.

Assessment of Water Quality in the Watauga River Basin

Surface waters are classified according to their best intended uses. Determining how well a water supports its designated uses (use support status) is an important method of interpreting water quality data and assessing water quality. Surface waters are rated fully supporting (FS), partially supporting (PS) or not supporting (NS). The ratings refer to whether the classified uses of the water (i.e., aquatic life protection, primary recreation and water supply) are being met. For example, waters classified for fish consumption, aquatic life protection and secondary recreation (Class C for freshwater or SC for saltwater) are rated FS if data used to determine use support meet certain criteria. However, if these criteria were not met, then the waters would be rated as PS or NS, depending on the degree of degradation. Waters rated PS or NS are considered to be impaired. Waters lacking data, or having inconclusive data, are listed as not rated (NR).

Beginning in 2000 with the *Roanoke River Basinwide Water Quality Plan*, DWQ assesses ecosystem health and human health risk through the development of use support ratings for six categories: aquatic life and secondary recreation, fish consumption, shellfish harvesting, primary recreation, water supply and "other" uses. These categories are tied to the uses associated with the primary classifications applied to NC rivers and streams. A single water could have more than one use support rating corresponding to one or more of the six use support categories. For many waters, a use support category will not be applicable (N/A) to the use classification of that water (e.g., drinking water supply is not the best use of a Class C water). The current method of determining use support differs from that done prior to 2000; in that, there is no longer an *overall* use support rating for a water.

Aquatic Life/Secondary Recreation

The aquatic life/secondary recreation use support category is applied to all waters in North Carolina. Approximately 27 percent of total stream miles (74.1 miles) in the Watauga River basin were monitored for the protection of aquatic life and secondary recreation by DWQ during this basinwide cycle. Overall water quality in the basin is good and there are no impaired waters.

A summary of current aquatic life/secondary recreation use support ratings for monitored and evaluated streams in the Watauga River basin is presented in Table 1.

Table 1 Aquatic Life/Secondary Recreation Use Support Summary Information for Waters in the Watauga River Basin (1999)

Aquatic Life/Secondary Recreation Use Support Ratings	Monitored and Evaluated Streams*		Monitored Streams Only**	
	Miles	Percent	Miles	Percent
Fully Supporting	224.2	83%	74.1	100%
Impaired				
<i>Partially Supporting</i>	<i>0.0</i>		<i>0.0</i>	
<i>Not Supporting</i>	<i>0.0</i>		<i>0.0</i>	
Not Rated	45.9	17%	0.0	0%
TOTAL	270.1		74.1	

* = Percent based on total of all streams, both monitored and evaluated.

** = Percent based on total of all monitored streams.

Fish Consumption

Like the aquatic life/secondary recreation use support category, the fish consumption use support category is also applied to all waters in the state. No streams were monitored for the fish consumption category during this basinwide cycle because of the lack of any significant contaminant issues in the basin. Fish consumption use support ratings are based on fish consumption advisories issued by the NC Department of Health and Human Services (DHHS). Currently, there are no fish consumption advisories specific to the NC portion of the Watauga River basin, and all waters are fully supporting the fish consumption use.

Primary Recreation

There are 44 stream miles currently classified for primary recreation (Class B) in the Watauga River basin. Approximately 44 percent were monitored by DWQ over the past five years, and all are fully supporting the primary recreation use. A basinwide summary of current primary recreation use support ratings is presented in Table 2.

Table 2 Primary Recreation Use Support Summary Information for Waters in the Watauga River Basin (1999)

Primary Recreation Use Support Ratings	Monitored and Evaluated Streams*		Monitored Streams Only**	
	Miles	%	Miles	%
Fully Supporting	19.5	44.3%	19.5	100%
Impaired	0.0		0.0	
Not Rated	24.5	55.7%	0.0	
TOTAL	44.0		19.5	

* = Percent based on total of all streams, both monitored and evaluated.

** = Percent based on total of all monitored streams.

Water Supply

Approximately 8 stream miles are currently classified for water supply (WS-II through WS-III) in the Watauga River basin. All were evaluated within the past five years and all are fully supporting the water supply use. A basinwide summary of current water supply use support ratings is presented in Table 3.

Table 3 Water Supply Use Support Summary Information for Waters in the Watauga River Basin (1999)

Water Supply Use Support Ratings	Evaluated Streams	
	Miles	%
Fully Supporting	8.1	100%
Impaired	0.0	
Not Rated	0.0	
TOTAL	8.1	

Use Support Summary

While there are no impaired waters in the Watauga River basin, there are waters that show notable water quality problems and concerns. These waters showing notable water quality impacts are discussed individually in the subbasin chapter in Section B.

Strategies for Addressing Notable Water Quality Impacts in Unimpaired Waters

Often during DWQ's use support assessment, water quality concerns are documented for waters that are fully supporting designated uses. While these waters are not considered to be impaired, attention and resources should be focused on these waters over the next basinwide planning cycle to prevent additional degradation or facilitate water quality improvements. Waters with notable water quality concerns in the Watauga River basin include the upper Watauga River and its tributaries, Lance Creek and Laurel Fork and its tributaries.

The most prevalent water quality concern throughout the Watauga River basin is habitat degradation. Habitat degradation includes sedimentation, bank erosion, channelization, lack of riparian vegetation, loss of pools or riffles, loss of woody habitat, and streambed scour and is attributed to nonpoint source pollution. The primary sources of nonpoint source pollution in the Watauga River basin are runoff from construction sites, roads (both paved and unpaved) and developed areas. The task of quantifying nonpoint sources of pollution and developing management strategies for these waters is resource intensive. Although no action is required for these unimpaired waters, voluntary implementation of BMPs is encouraged and continued monitoring is recommended. DWQ plans to notify local agencies and others of water quality concerns for these waters and work with them to conduct further monitoring and to locate source of water quality protection funding for these unimpaired waters.

Water Quality Improvement Initiatives in the Watauga River Basin

There are numerous initiatives in the Watauga River basin dedicated to improving and protecting water quality. The Watauga River Steering Committee was formed in 1995 to restore degraded stream corridors and wetlands, preserve high quality stream corridors, implement urban stormwater demonstrations, and to establish riparian greenways. The committee made up of natural resource agency staff and representatives from the Tennessee Valley Authority, local governments, and lands trusts has received over \$1.5 million in grants from the Clean Water Trust Fund and the Section 319 Program for the restoration of over 20,000 linear feet of streams and the creation and protection of 19 acres of wetlands in the basin.

The Tennessee Valley Authority (TVA) is also another organization that is active in the Watauga River basin. TVA in conjunction with stakeholders in the Watauga basin have formed the Upper Holston Watershed Team to discuss water quality concerns and improvement projects in the Holston River watershed. The watershed team also provides sponsorship of a volunteer monitoring program in the Watauga River basin.

Through a grant from the Conservation Trust of North Carolina, the Blue Ridge Rural Land Trust (BRRLT) prepared a riparian corridor conservation design for the Watauga River basin. The goal of the design project was to identify and prioritize areas throughout the basin where preservation or restoration projects would have the greatest positive effect on water quality. The design is used by the BRRLT, the Watauga River Steering Committee and others to identify priority areas for water quality protection and restoration sites in the basin.

Because local natural resource agency staff participate with each of these groups, there is an opportunity for them to guide citizens toward real water quality improvement in the Watauga River basin. The work that these groups do then enhances daily agency program activities (such as work accomplished through the Agricultural Cost Share program or the Environmental Quality Incentives Program). DWQ is just one partner working to reduce nonpoint source pollution and improve water quality in the basin.