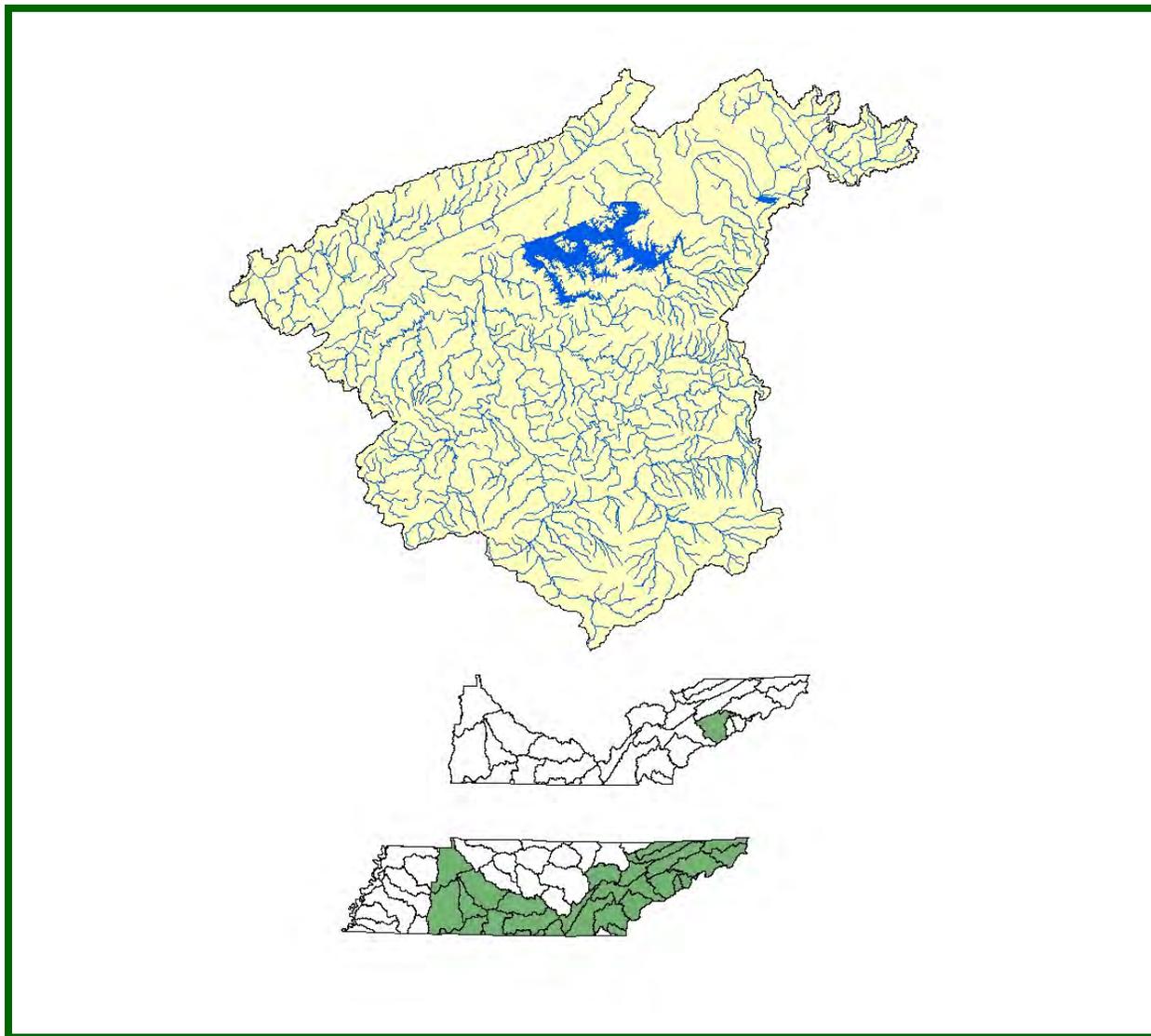


# LOWER FRENCH BROAD RIVER WATERSHED (06010107) OF THE TENNESSEE RIVER BASIN

## WATERSHED WATER QUALITY MANAGEMENT PLAN



TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
DIVISION OF WATER POLLUTION CONTROL  
WATERSHED MANAGEMENT SECTION

# LOWER FRENCH BROAD RIVER WATERSHED WATER QUALITY MANAGEMENT PLAN

## TABLE OF CONTENTS

**Glossary**

**Summary**

**Chapter 1.** Watershed Approach to Water Quality

**Chapter 2.** Description of the Lower French Broad River Watershed

**Chapter 3.** Water Quality Assessment of the Lower French Broad River Watershed

**Chapter 4.** Point and Nonpoint Source Characterization of the  
Lower French Broad River Watershed

**Chapter 5.** Water Quality Partnerships in the Lower French Broad River Watershed

**Chapter 6.** Restoration Strategies

**Appendix I**

**Appendix II**

**Appendix III**

**Appendix IV**

**Appendix V**

## GLOSSARY

**1Q20.** The lowest average 1 consecutive days flow with average recurrence frequency of once every 20 years.

**30Q2.** The lowest average 3 consecutive days flow with average recurrence frequency of once every 2 years.

**7Q10.** The lowest average 7 consecutive days flow with average recurrence frequency of once every 10 years.

**303(d).** The section of the federal Clean Water Act that requires a listing by states, territories, and authorized tribes of impaired waters, which do not meet the water quality standards that states, territories, and authorized tribes have set for them, even after point sources of pollution have installed the minimum required levels of pollution control technology.

**305(b).** The section of the federal Clean Water Act that requires EPA to assemble and submit a report to Congress on the condition of all water bodies across the Country as determined by a biennial collection of data and other information by States and Tribes.

**AFO.** Animal Feeding Operation.

**Ambient Sites.** Those sites established for long term instream monitoring of water quality.

**ARAP.** Aquatic Resource Alteration Permit.

**Assessment.** The result of an analysis of how well streams meet the water quality criteria assigned to them.

**Bankfull Discharge.** The momentary maximum peak flow before a stream overflows its banks onto a floodplain.

**Basin.** An area that drains several smaller watersheds to a common point. Most watersheds in Tennessee are part of the Cumberland, Mississippi, or Tennessee Basin (The Conasauga River and Barren River Watersheds are the exceptions).

**Benthic.** Bottom dwelling.

**Biorecon.** A qualitative multihabitat assessment of benthic macroinvertebrates that allows rapid screening of a large number of sites. A Biorecon is one tool used to recognize stream impairment as judged by species richness measures, emphasizing the presence or absence of indicator organisms without regard to relative abundance.

**BMP.** An engineered structure or management activity, or combination of these, that eliminates or reduces an adverse environmental effect of a pollutant.

**BOD.** Biochemical Oxygen Demand. A measure of the amount of oxygen consumed in the biological processes that break down organic and inorganic matter.

**CAFO.** Concentrated Animal Feeding Operation.

**Designated Uses.** The part of Water Quality Standards that describes the uses of surface waters assigned by the Water Quality Control Board. All streams in Tennessee are designated for Recreation, Fish and Aquatic Life, Irrigation, and Livestock Watering and Wildlife. Additional designated uses for some, but not all, waters are Drinking Water Supply, Industrial Water Supply, and Navigation.

**DMR.** Discharge Monitoring Report. A report that must be submitted periodically to the Division of Water Pollution Control by NPDES permittees.

**DO.** Dissolved oxygen.

**EPA.** Environmental Protection Agency. The EPA Region 4 web site is <http://www.epa.gov/region4/>

**Field Parameter.** Determinations of water quality measurements and values made in the field using a kit or probe. Common field parameters include pH, DO, temperature, conductivity, and flow.

**Fluvial Geomorphology.** The physical characteristics of moving water and adjoining landforms, and the processes by which each affects the other.

**HUC-8.** The 8-digit Hydrologic Unit Code corresponding to one of 54 watersheds in Tennessee.

**HUC-10.** The 10-digit NRCS Hydrologic Unit Code. HUC-10 corresponds to a smaller land area than HUC-8.

**HUC-12.** The 12-digit NRCS Hydrologic Unit Code. HUC-12 corresponds to a smaller land area than HUC-10.

**MRLC.** Multi-Resolution Land Classification.

**MS4.** Municipal Separate Storm Sewer System.

**Nonpoint Source (NPS).** Sources of water pollution without a single point of origin. Nonpoint sources of pollution are generally associated with surface runoff, which may carry sediment, chemicals, nutrients, pathogens, and toxic materials into receiving waterbodies. Section 319 of the Clean Water Act of 1987 requires all states to assess the impact of nonpoint source pollution on the waters of the state and to develop a program to abate this impact.

**NPDES.** National Pollutant Discharge Elimination System. Section 402 of the Clean Water Act of 1987 requires dischargers to waters of the U.S. to obtain NPDES permits.

**NRCS.** Natural Resources Conservation Service. NRCS is part of the federal Department of Agriculture. The NRCS home page is <http://www.nrcs.usda.gov>

**Point Source.** Any discernable, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural storm water discharges and return flows from irrigated agriculture (Clean Water Act Section 502(14)).

**Q Design.** The average daily flow that a treatment plant or other facility is designed to accommodate.

**Reference Stream (Reference Site).** A stream (site) judged to be least impacted. Data from reference streams are used for comparisons with similar streams.

**SBR.** Sequential Batch Reactor.

**Stakeholder.** Any person or organization affected by the water quality or by any watershed management activity within a watershed.

**STATSGO.** State Soil Geographic Database. STATSGO is compiled and maintained by the Natural Resources Conservation Service.

**STORET.** The EPA repository for water quality data that is used by state environmental agencies, EPA and other federal agencies, universities, and private citizens. STORET (Storage and Retrieval of National Water Quality Data System) data can be accessed at <http://www.epa.gov/storet/>

**TDA.** Tennessee Department of Agriculture. The TDA web address is <http://www.state.tn.us/agriculture>

**TDEC.** Tennessee Department of Environment and Conservation. The TDEC web address is <http://www.tdec.net>

**TMDL.** Total Maximum Daily Load. A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of the amount to the pollutant's sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The calculation includes a margin of safety to ensure that the waterbody can be used for the purposes the State has designated. The calculation must also account for seasonal variation in water quality. A TMDL is required for each pollutant in an impaired stream as described in Section 303 of the Federal Clean Water Act of 1987. Updates and information on Tennessee's TMDLs can be found at <http://www.tdec.net/wpc/tmdl/>

**TMSP.** Tennessee Multi-Sector Permit.

**USGS.** United States Geological Survey. USGS is part of the federal Department of the Interior. The USGS home page is <http://www.usgs.gov/>.

**WAS.** Waste Activated Sludge.

**Water Quality Standards.** A triad of designated uses, water quality criteria, and antidegradation statement. Water Quality Standards are established by Tennessee and approved by EPA.

**Watershed.** A geographic area which drains to a common outlet, such as a point on a larger stream, lake, underlying aquifer, estuary, wetland, or ocean.

**WET.** Whole Effluent Toxicity.

**WWTP.** Waste Water Treatment Plant

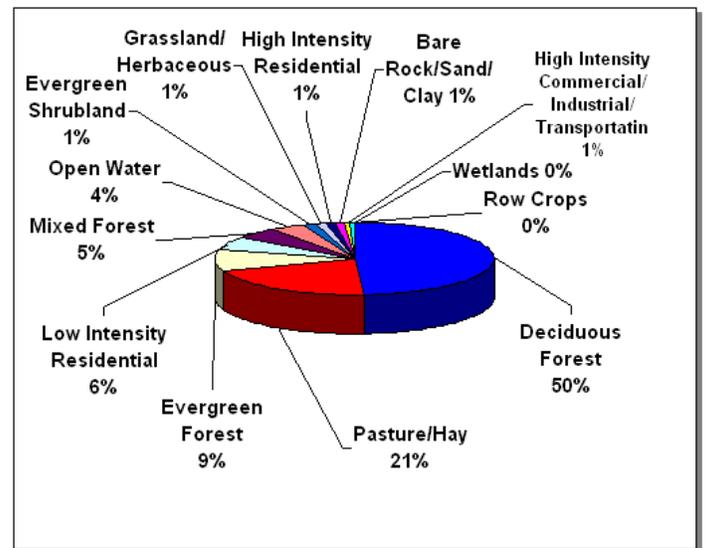
## Summary – Lower French Broad River Watershed (06010107)

In 1996, the Tennessee Department of Environment and Conservation Division of Water Pollution Control adopted a watershed approach to water quality. This approach is based on the idea that many water quality problems, like the accumulation of point and nonpoint pollutants, are best addressed at the watershed level. Focusing on the whole watershed helps reach the best balance among efforts to control point sources of pollution and polluted runoff as well as protect drinking water sources and sensitive natural resources such as wetlands. Tennessee has chosen to use the USGS 8-digit Hydrologic Unit Code (HUC-8) as the organizing unit.

The Watershed Approach recognizes awareness that restoring and maintaining our waters requires crossing traditional barriers (point vs. nonpoint sources of pollution) when designing solutions. These solutions increasingly rely on participation by both public and private sectors, where citizens, elected officials, and technical personnel all have opportunities to participate. The Watershed Approach provides the framework for a watershed-based and community-based approach to address water quality problems.

Chapter 1 of the Lower French Broad River Watershed Water Quality Management Plan discusses the Watershed Approach and emphasizes that the Watershed Approach is not a regulatory program or an EPA mandate; rather it is a decision-making process that reflects a common strategy for information collection and analysis as well as a common understanding of the roles, priorities, and responsibilities of all stakeholders within a watershed. Traditional activities like permitting, planning and monitoring are also coordinated in the Watershed Approach.

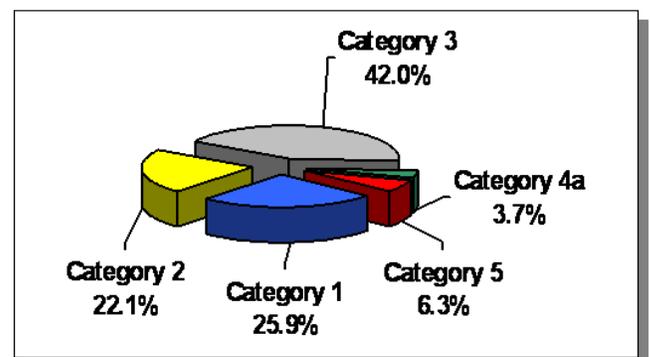
A detailed description of the watershed can be found in Chapter 2. The Lower French Broad River Watershed is approximately 796 square miles and is located primarily in four counties. A part of the Tennessee River drainage basin, the watershed has 1,205.6 stream miles and 30,400 lake acres.



*Land Use Distribution in the Lower French Broad River Watershed.*

The Lower French Broad River Watershed has two State Scenic Rivers, one designated state natural area, three wildlife management areas, part of one national park, two refuges, and three streams listed in the National Rivers Inventory. One hundred thirty-one rare plant and animal species have been documented in the watershed, including nine rare fish species, ten rare mussel species, and one rare crustacean species.

A review of water quality sampling and assessment is presented in Chapter 3. Using the Watershed Approach to Water Quality, 800 sampling events occurred in the Lower French Broad River Watershed in 2000-2005. These were conducted at ambient, ecoregion or watershed monitoring sites. Monitoring results support the conclusion that 82.8% of stream miles assessed fully support one or more designated uses.



*Water Quality Assessment of Streams and Rivers in the Lower French Broad River Watershed. Assessment data are based on the 2006 Water Quality Assessment of 1,205.6 stream miles in the Watershed.*

Also in Chapter 3, a series of maps illustrates overall use support in the watershed, as well as use support for the individual uses of Fish and Aquatic Life Support, Recreation, Irrigation, and Livestock Watering and Wildlife. Additional maps illustrate streams that are listed for impairment by specific causes (siltation, nutrients, E.coli).

Point and Nonpoint Sources are addressed in Chapter 4 which is organized by HUC-12 subwatersheds. Maps illustrating the locations of STORET monitoring sites and stream gauging stations are also presented in each subwatershed.

Point source contributions to the Lower French Broad River Watershed consist of 27 individual NPDES-permitted facilities. Other permits in the watershed (as of October 13, 2008) are Aquatic Resource Alteration Permits (110), Tennessee Multi-Sector Permits (34), Construction General Permits (197), mining permits (6), Ready-Mix Concrete Permits (11), Underground Storage Tank permits (1), and Water Treatment Plant permits (1)

Agricultural operations include cattle, chicken, hog, and sheep farming. Maps illustrating the locations of permit sites and tables summarizing livestock practices are presented in each subwatershed.

HUC-8	HUC-10	HUC-12
06010107	0601010701	060101070101 (Douglas Lake, Upper)
		060101070102 (Douglas Lake, Middle)
		060101070103 (Douglas Lake, Lower)
		060101070104 (Mud Creek)
	0601010702	060101070201 (French Broad River)
		060101070202 (Boyds Creek)
		060101070203 (Dumplin Creek)
		060101070204 (French Broad River)
		060101070205 (Tuckahoe Creek)
	0601010703	060101070301 (M. Prong Little Pigeon)
		060101070302 (Porters Creek)
		060101070303 (E. Prong Little Pigeon)
		060101070304 (Webb Creek)
		060101070305 (Bird Creek)
		060101070306 (E. Fork Dunn Creek)
		060101070307 (W. Prong Little Pigeon)
		060101070308 (Le Conte Creek)
		060101070309 (Baskins Creek)
		060101070310 (Roaring Fork)
		060101070311 (Dudley Creek)
		060101070312 (Waldon Creek)
		060101070313 (W. Prong Little Pigeon)
		060101070314 (Middle Creek)
		060101070315 (Little Pigeon, Lower)

Chapter 5 is entitled *Water Quality Partnerships in the Lower French Broad River Watershed* and highlights partnerships between agencies and between agencies and landowners that are essential to success. Programs of federal agencies (Natural Resources Conservation Service, U.S. Fish and Wildlife Service, U.S. Geological Survey, Tennessee Valley Authority, and National Park Service), and state agencies (TDEC/State Revolving Fund, TDEC Division of Water Supply, Tennessee Department of Agriculture, and Tennessee Wildlife Resources Agency). Local initiatives of organizations active in the watershed (Smoky Mountain RC&D Council, French Broad Preservation Association) are also described.

Point and Nonpoint source approaches to water quality problems in the Lower French Broad River Watershed are addressed in Chapter 6. Chapter 6 also includes comments received during public meetings, links to EPA-approved TMDLs in the watershed, and an assessment of needs for the watershed.

The full Lower French Broad River Watershed Water Quality Management Plan can be found at: <http://www.state.tn.us/environment/wpc/watershed/wsmplans/>

*The Lower French Broad River Watershed is Composed of twenty-four USGS-Delineated Subwatersheds (12-Digit Subwatersheds).*

## CHAPTER 1

### WATERSHED APPROACH TO WATER QUALITY

- 1.1 Background
- 1.2 Watershed Approach to Water Quality
  - 1.2.A. Components of the Watershed Approach
  - 1.2.B. Benefits of the Watershed Approach

**1.1 BACKGROUND.** The Division of Water Pollution Control is responsible for administration of the Tennessee Water Quality Control Act of 1977 (TCA 69-3-101). Information about the Division of Water Pollution Control, updates and announcements, may be found at <http://www.state.tn.us/environment/wpc/index.html>, and a summary of the organization of the Division of Water Pollution Control may be found in Appendix I.

The mission of the Division of Water Pollution Control is to abate existing pollution of the waters of Tennessee, to reclaim polluted waters, to prevent the future pollution of the waters, and to plan for the future use of the waters so that the water resources of Tennessee might be used and enjoyed to the fullest extent consistent with the maintenance of unpolluted waters.

The Division monitors, analyzes, and reports on the quality of Tennessee's water. In order to perform these tasks more effectively, the Division adopted a Watershed Approach to Water Quality in 1996.

This Chapter summarizes TDEC's Watershed Approach to Water Quality.

**1.2 WATERSHED APPROACH TO WATER QUALITY.** The Watershed Approach to Water Quality is a coordinating framework designed to protect and restore aquatic systems and protect human health more effectively (EPA841-R-95-003). The Approach is based on the concept that many water quality problems, like the accumulation of pollutants or nonpoint source pollution, are best addressed at the watershed level. In addition, a watershed focus helps identify the most cost-effective pollution control strategies to meet clean water goals. Tennessee's Watershed Approach, updates and public participation opportunities, may be found on the web at <http://www.state.tn.us/environment/wpc/wshed1.htm>.

Watersheds are appropriate as organizational units because they are readily identifiable landscape units with readily identifiable boundaries that integrate terrestrial, aquatic, and geologic processes. Focusing on the whole watershed helps reach the best balance among efforts to control point source pollution and polluted runoff as well as protect drinking water sources and sensitive natural resources such as wetlands (EPA-840-R-98-001).

Four main features are typical of the Watershed Approach: 1) Identifying and prioritizing water quality problems in the watershed, 2) Developing increased public involvement, 3) Coordinating activities with other agencies, and 4) Measuring success through increased and more efficient monitoring and other data gathering.

Typically, the Watershed Approach meets the following description (EPA841-R-95-003):

- Features watersheds or basins as the basic management units
- Targets priority subwatersheds for management action
- Addresses all significant point and nonpoint sources of pollution
- Addresses all significant pollutants
- Sets clear and achievable goals
- Involves the local citizenry in all stages of the program
- Uses the resources and expertise of multiple agencies
- Is not limited by any single agency's responsibilities
- Considers public health issues

An additional characteristic of the Watershed Approach is that it complements other environmental activities. This allows for close cooperation with other state agencies and local governments as well as with federal agencies such as the Tennessee Valley Authority and the U.S. Army Corps of Engineers, U.S. Department of Agriculture (e.g., Natural Resources Conservation Service, United States Forest Service), U.S. Department of the Interior (e.g. United States Geological Survey, U.S. Fish and Wildlife Service, National Park Service). When all permitted dischargers are considered together, agencies are better able to focus on those controls necessary to produce measurable improvements in water quality. This also results in a more efficient process: It encourages agencies to focus staff and financial resources on prioritized geographic locations and makes it easier to coordinate between agencies and individuals with an interest in solving water quality problems (EPA841-R-003).

The Watershed Approach is not a regulatory program or a new EPA mandate; rather it is a decision making process that reflects a common strategy for information collection and analysis as well as a common understanding of the roles, priorities, and responsibilities of all stakeholders within a watershed. The Watershed Approach utilizes features already in state and federal law, including:

- Water Quality Standards
- National Pollutant Discharge Elimination System (NPDES)
- Total Maximum Daily Loads (TMDLs)
- Clean Lakes Program
- Nonpoint Source Program
- Groundwater Protection

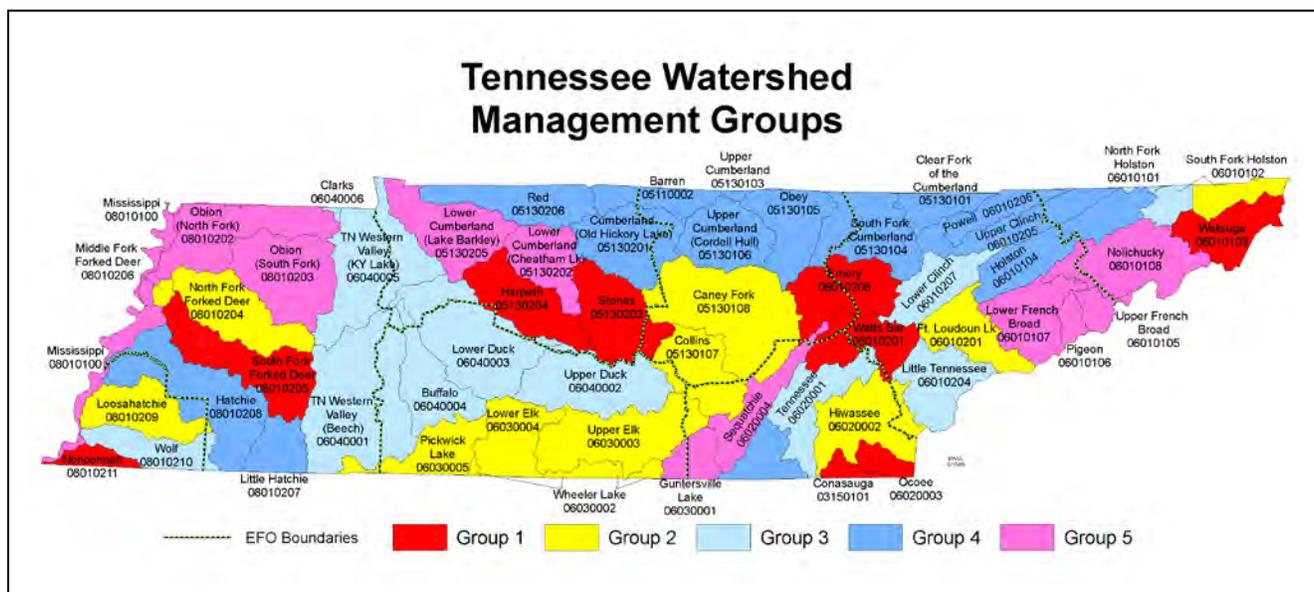
Traditional activities like permitting, planning, and monitoring are also coordinated in the Watershed Approach. A significant change from the past, however, is that the Watershed Approach encourages integration of traditional regulatory (point source pollution) and nonregulatory (nonpoint sources of pollution) programs. There are additional changes from the past as well:

THE PAST	WATERSHED APPROACH
Focus on fixed-station ambient monitoring	Focus on comprehensive watershed monitoring
Focus on pollutant discharge sites	Focus on watershed-wide effects
Focus on WPC programs	Focus on coordination and cooperation
Focus on point sources of pollution	Focus on all sources of pollution
Focus on dischargers as the problem	Focus on dischargers as an integral part of the solution
Focus on short-term problems	Focus on long-term solutions

**Table 1-1. Contrast Between the Watershed Approach and the Past.**

This approach places greater emphasis on all aspects of water quality, including chemical water quality (conventional pollutants, toxic pollutants), physical water quality (temperature, flow), habitat quality (channel morphology, composition and health of benthic communities), and biodiversity (species abundance, species richness).

**1.2.A. Components of the Watershed Approach.** Tennessee is composed of fifty-five watersheds corresponding to the 8-digit USGS Hydrologic Unit Codes (HUC-8). These watersheds, which serve as geographic management units, are combined in five groups according to year of implementation.



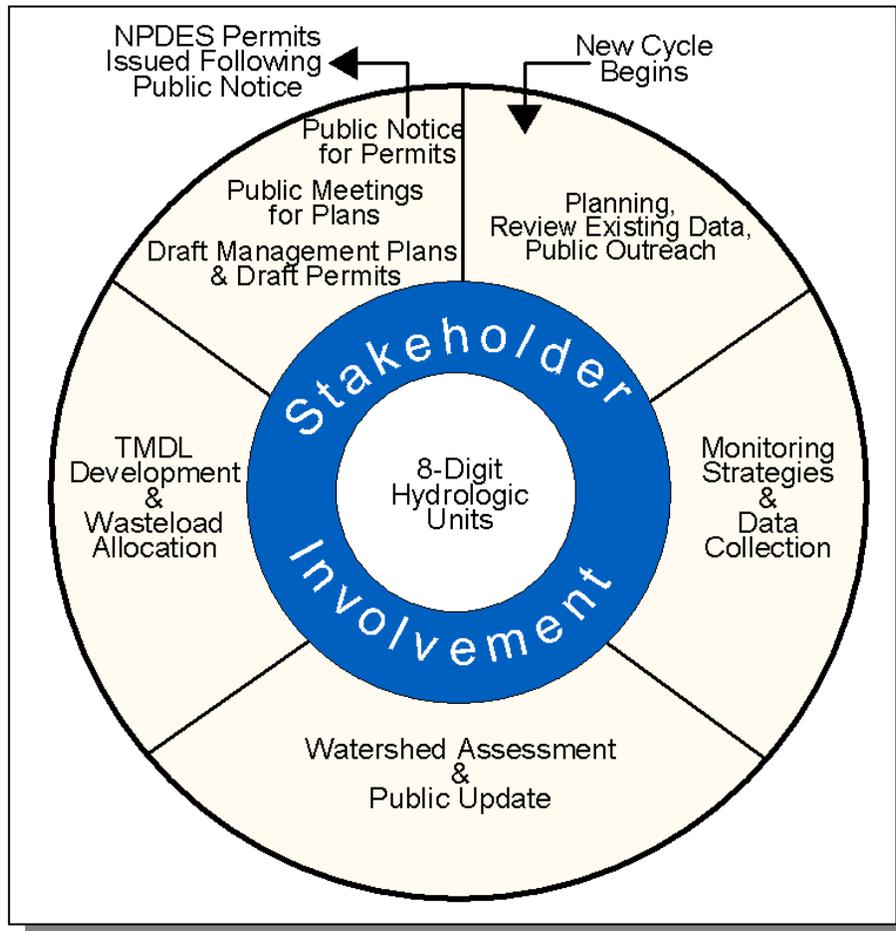
**Figure 1-1. Watershed Groups in Tennessee’s Watershed Approach to Water Quality.**

Each year, TDEC conducts monitoring in one-fifth of Tennessee's watersheds; assessment, priority setting and follow-up monitoring are conducted in another one fifth of watersheds; modeling and TMDL studies in another one fifth; developing management plans in another one fifth; and implementing management plans in another one fifth of watersheds.

<b>GROUP</b>	<b>WEST TENNESSEE</b>	<b>MIDDLE TENNESSEE</b>	<b>EAST TENNESSEE</b>
<b>1</b>	Nonconnah South Fork Forked Deer	Harpeth Stones	Conasauga Emory Ocoee Watauga Watts Bar
<b>2</b>	Loosahatchie Middle Fork Forked Deer North Fork Forked Deer	Caney Fork Collins Lower Elk Pickwick Lake Upper Elk Wheeler Lake	Fort Loudoun Hiwassee South Fork Holston (Upper) Wheeler Lake
<b>3</b>	Tennessee Western Valley (Beech River) Tennessee Western Valley (KY Lake) Wolf River	Buffalo Lower Duck Upper Duck	Little Tennessee Lower Clinch North Fork Holston South Fork Holston (Lower) Tennessee (Upper)
<b>4</b>	Lower Hatchie Upper Hatchie	Barren Obey Red Upper Cumberland (Cordell Hull Lake) Upper Cumberland (Old Hickory Lake) Upper Cumberland (Cumberland Lake)	Holston Powell South Fork Cumberland Tennessee (Lower) Upper Clinch Upper Cumberland (Clear Fork)
<b>5</b>	Mississippi North Fork Obion South Fork Obion	Guntersville Lake Lower Cumberland (Cheatham Lake) Lower Cumberland (Lake Barkley)	Lower French Broad Nolichucky Pigeon Upper French Broad

**Table 1-2. Watershed Groups in Tennessee's Watershed Approach.**

In succeeding years of the cycle, efforts rotate among the watershed groups. The activities in the five year cycle provide a reference for all stakeholders.



**Figure 1-2. The Watershed Approach Cycle.**

The six key activities that take place during the cycle are:

1. **Planning and Existing Data Review.** Existing data and reports from appropriate agencies and organizations are compiled and used to describe the current conditions and status of rivers and streams. Reviewing all existing data and comparing agencies' work plans guide the development of an effective monitoring strategy.
2. **Monitoring.** Field data is collected for streams in the watershed. These data supplement existing data and are used for the water quality assessment.
3. **Assessment.** Monitoring data are used to determine the status of the stream's designated use supports.
4. **Wasteload Allocation/TMDL Development.** Monitoring data are used to determine nonpoint source contributions and pollutant loads for permitted dischargers releasing wastewater to the watershed. Limits are set to assure that water quality is protected.
5. **Permits.** Issuance and expiration of all discharge permits are synchronized based on watersheds. Currently, 1700 permits have been issued in Tennessee under the federally delegated National Pollutant Discharge Elimination System (NPDES).
6. **Watershed Management Plans.** These plans include information for each watershed including general watershed description, water quality goals, major water quality concerns and issues, and management strategies.

Public participation opportunities occur throughout the entire five year cycle. Participation in Years 1, 3 and 5 is emphasized, although additional meetings are held at stakeholder's request. People tend to participate more readily and actively in protecting the quality of waters in areas where they live and work, and have some roles and responsibilities:

- Data sharing
- Identification of water quality stressors
- Participation in public meetings
- Commenting on management plans
- Shared commitment for plan implementation

**1.2.B. Benefits of the Watershed Approach.** The Watershed Approach fosters a better understanding of the physical, chemical and biological effects on a watershed, thereby allowing agencies and citizens to focus on those solutions most likely to be effective. The Approach recognizes the need for a comprehensive, ecosystem-based approach that depends on local governments and local citizens for success (EPA841-R-95-004). On a larger scale, many lessons integrating public participation with aquatic ecosystem-based programs have been learned in the successful Chesapeake Bay, Great Lakes, Clean Lakes, and National Estuary Programs.

Benefits of the Watershed Approach include (EPA841-R-95-004):

- Focus on water quality goals and ecological integrity rather than on program activities such as number of permits issued.
- Improve basis for management decisions through consideration of both point and nonpoint source stressors. A watershed strategy improves the scientific basis for decision making and focuses management efforts on basins and watersheds where they are most needed. Both point and nonpoint control strategies are more effective under a watershed approach because the Approach promotes timely and focused development of TMDLs.
- Enhance program efficiency, as the focus becomes watershed. A watershed focus can improve the efficiency of water management programs by facilitating consolidation of programs within each watershed. For example, handling all point source dischargers in a watershed at the same time reduces administrative costs due to the potential to combine hearings and notices as well as allowing staff to focus on more limited areas in a sequential fashion.
- Improve coordination between federal, state and local agencies including data sharing and pooling of resources. As the focus shifts to watersheds, agencies are better able to participate in data sharing and coordinated assessment and control strategies.
- Increase public involvement. The Watershed Approach provides opportunities for stakeholders to increase their awareness of water-related issues and inform staff about their knowledge of the watershed. Participation is via three public meetings over the five-year watershed management cycle as well as meetings at stakeholder's request. Additional opportunities are provided through the Department of Environment and Conservation homepage and direct contact with local Environmental Assistance Centers.
- Greater consistency and responsiveness. Developing goals and management plans for a basin or watershed with stakeholder involvement results in increased responsiveness to the public and consistency in determining management actions. In return, stakeholders can expect improved consistency and continuity in decisions when management actions follow a watershed plan.

Additional benefits of working at the watershed level are described in the Clean Water Action Plan (EPA-840-R-98-001), and can be viewed at <http://www.cleanwater.gov/action/toc.html>.

The Watershed Approach represents awareness that restoring and maintaining our waters requires crossing traditional barriers (point vs. nonpoint sources of pollution) when designing solutions. These solutions increasingly rely on participation by both public and private sectors, where citizens, elected officials and technical personnel all have opportunity to participate. This integrated approach mirrors the complicated relationships in which people live, work and recreate in the watershed, and suggests a comprehensive, watershed-based and community-based approach is needed to address these (EPA841-R-97-005).

## CHAPTER 2

### DESCRIPTION OF THE LOWER FRENCH BROAD RIVER WATERSHED

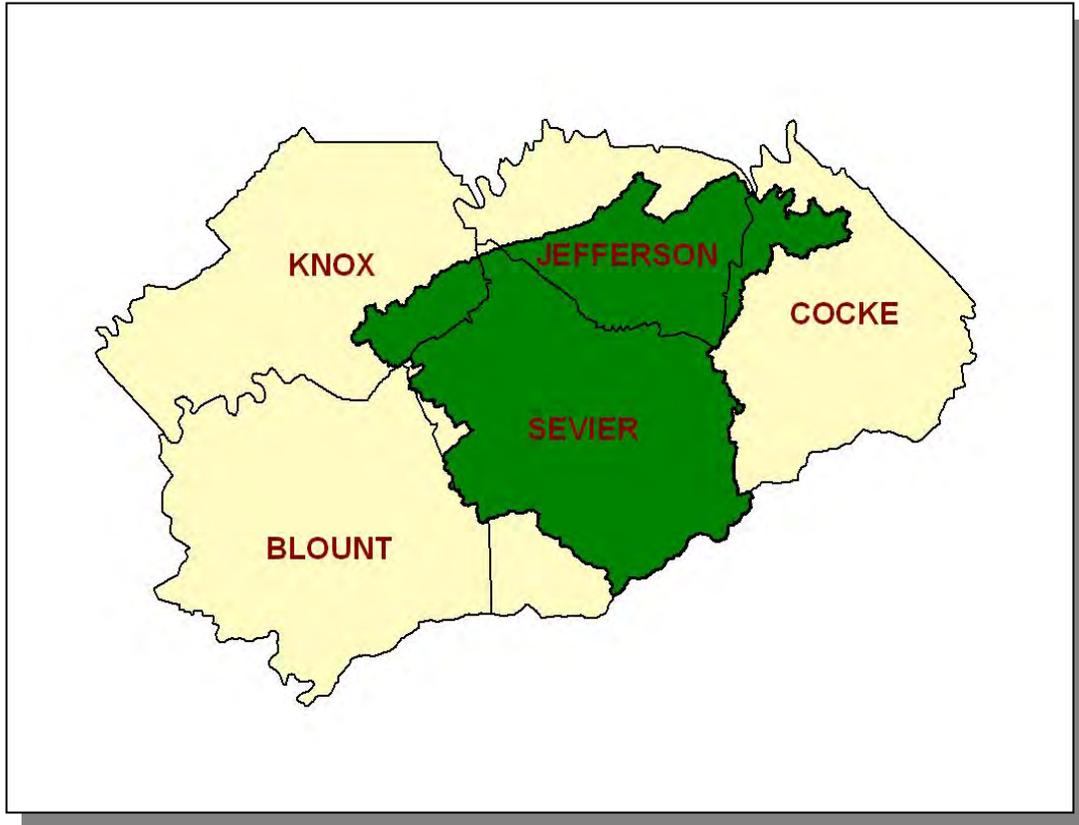
- 2.1. Background
- 2.2. Description of the Watershed
  - 2.2.A. General Location
  - 2.2.B. Population Density Centers
- 2.3. General Hydrologic Description
  - 2.3.A. Hydrology
  - 2.3.B. Dams
- 2.4. Land Use
- 2.5. Ecoregions and Reference Streams
- 2.6. Natural Resources
  - 2.6.A. Designated State Natural Areas
  - 2.6.B. Rare Plants and Animals
  - 2.6.C. Wetlands
- 2.7. Cultural Resources
  - 2.7.A. State Scenic River
  - 2.7.B. Nationwide Rivers Inventory
  - 2.7.C. Public Lands
- 2.8. Tennessee Rivers Assessment Project

**2.1. BACKGROUND.** The French Broad River is 210 miles long, rising in the Blue Ridge Mountains in western North Carolina. The river flows north and northwest to Knoxville, where it joins with the Holston River to form the Tennessee River. The river was an important settlers' route from the southeast coastal states into Tennessee during the colonial period and was named for being one of two broad rivers in western North Carolina and Eastern Tennessee. The one which flowed into formerly French territory was named the French Broad, and the other which stayed in English territory (the American colonies) was named the English Broad, now just the Broad River. On the river is Douglas Dam, part of the Tennessee Valley Authority (TVA), forming Douglas Lake, which is used for flood control.

This Chapter describes the location and characteristics of the Lower French Broad River Watershed.

**2.2. DESCRIPTION OF THE WATERSHED.**

**2.2.A. General Location.** The Lower French Broad River Watershed is located in East Tennessee and includes parts of Blount, Cocke, Jefferson, Knox, and Sevier Counties.

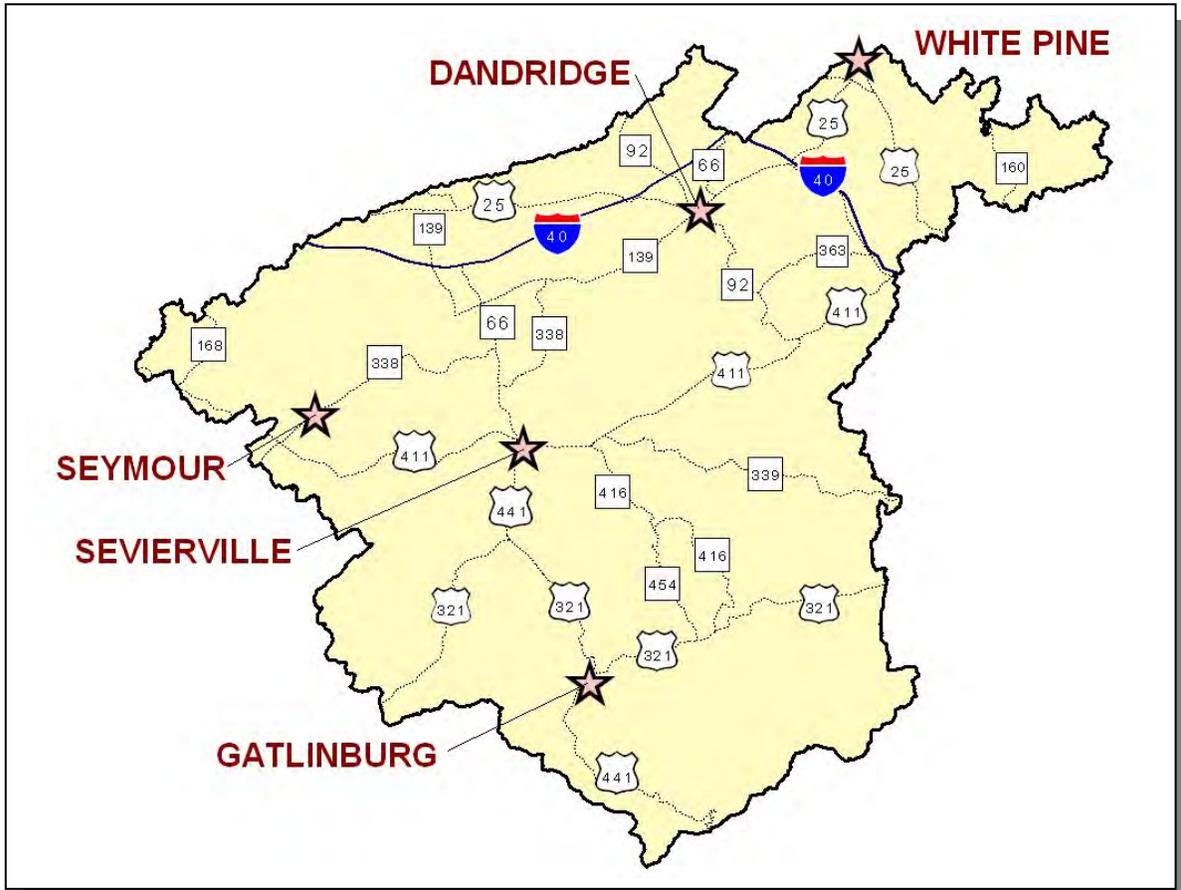


*Figure 2-1. General Location of the Lower French Broad River Watershed.*

COUNTY	% OF WATERSHED IN EACH COUNTY
Sevier	65.54
Jefferson	22.96
Knox	6.55
Cocke	5.86
Blount	0.08

*Table 2-1. The Lower French Broad River Watershed Includes Parts of Five East Tennessee Counties.*

**2.2.B. Population Density Centers.** One interstate and fifteen highways serve the major communities in the Lower French Broad River Watershed.



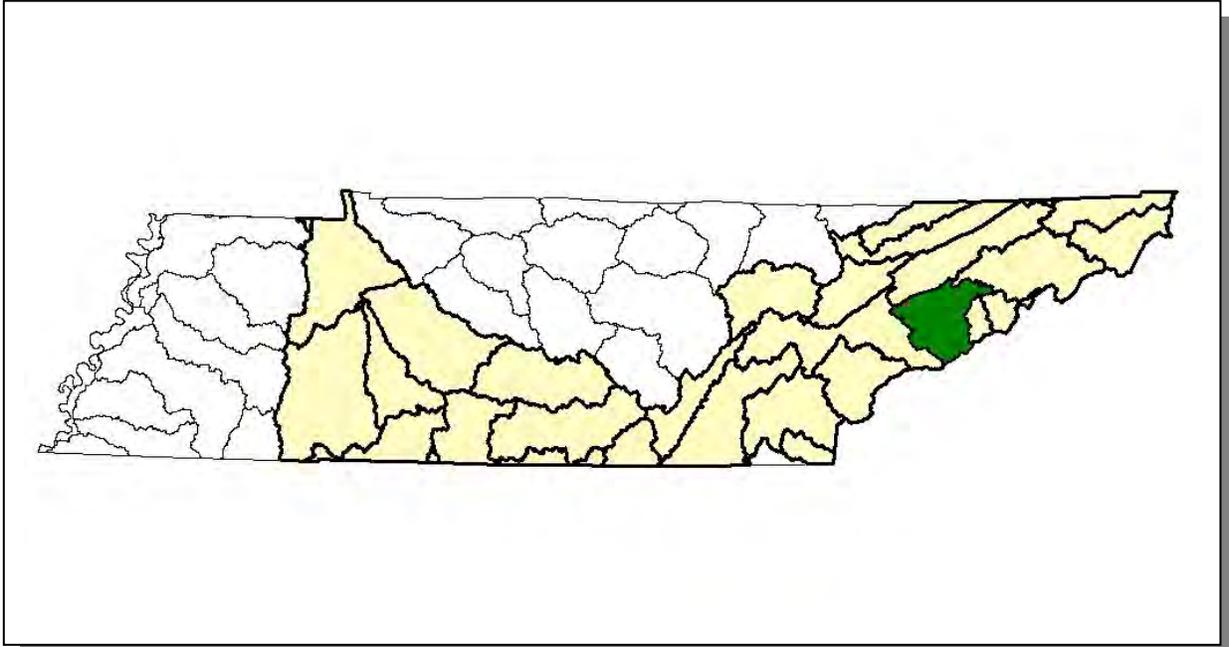
**Figure 2-2. Communities and Roads in the Lower French Broad River Watershed.**

MUNICIPALITY	POPULATION	COUNTY
Sevierville*	12,434	Sevier
Seymour	8,850	Sevier
Gatlinburg	3,382	Sevier
Dandridge*	2,078	Jefferson
White Pine	1,997	Jefferson

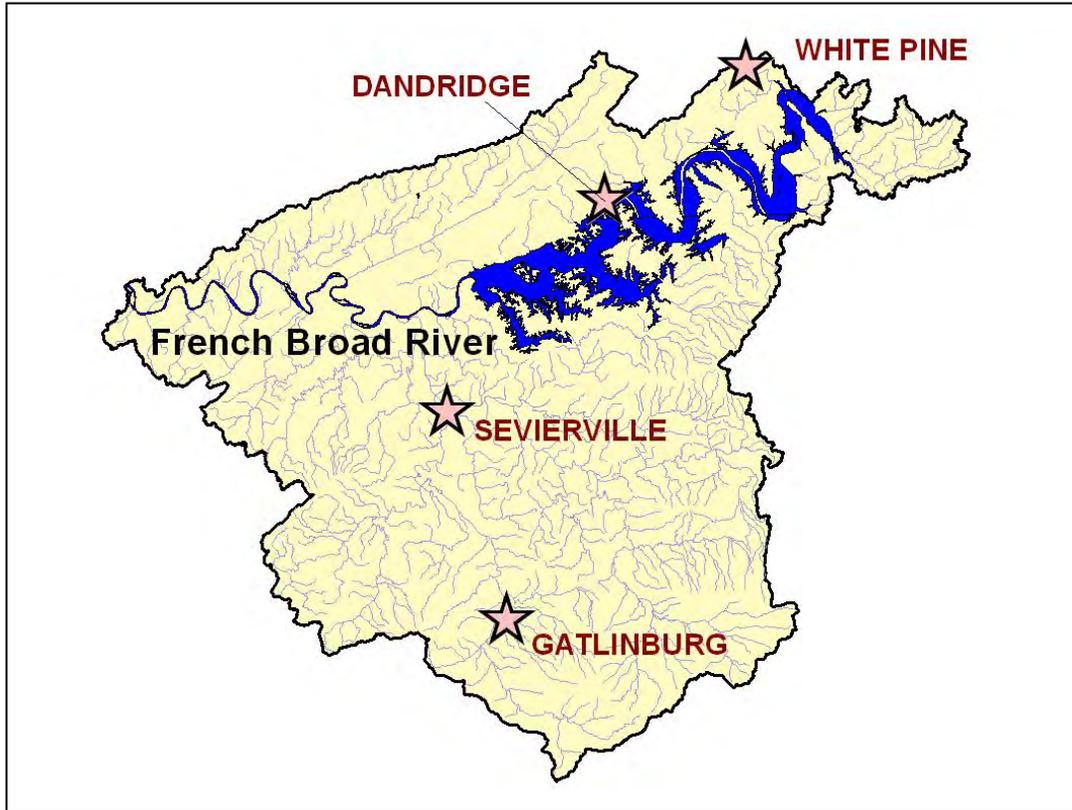
**Table 2-2. Municipalities in the Lower French Broad River Watershed.** Population based on 2000 census (Tennessee Blue Book) or <http://www.hometownlocator.com>. Asterisk (\*) indicates county seat.

### **2.3. GENERAL HYDROLOGIC DESCRIPTION.**

**2.3.A. Hydrology.** The Lower French Broad River Watershed, designated 06010107 by the USGS, is approximately 796 square miles and drains to the French Broad River.

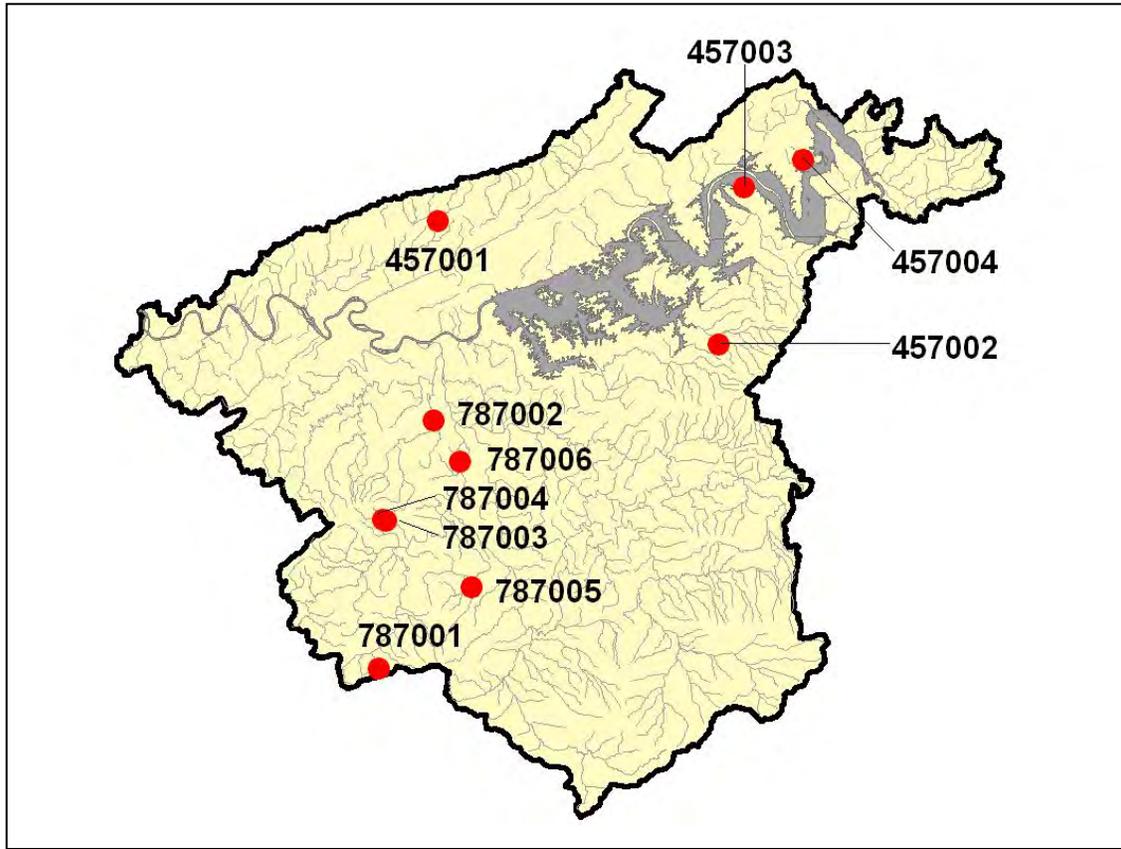


*Figure 2-3. The Lower French Broad River Watershed is Part of the Tennessee River Basin.*



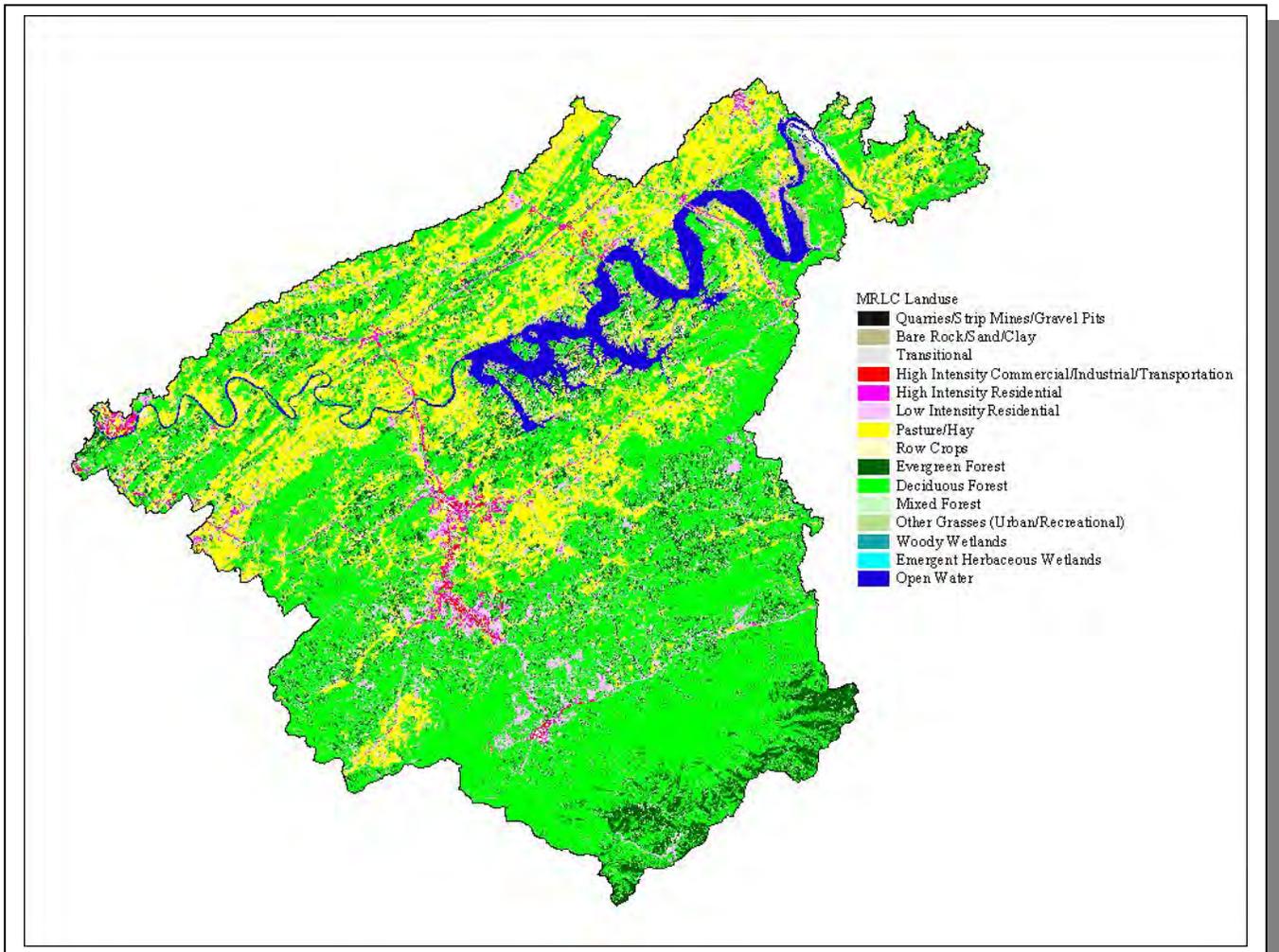
**Figure 2-4. Hydrology in the Lower French Broad River Watershed.** There are 1,205.6 stream miles and 30,400 lake acres recorded in River Reach File 3 in the Lower French Broad River Watershed. Location of the French Broad River including Douglas Lake, and the cities of Dandridge, Gatlinburg, Sevierville, and White Pine are shown for reference.

**2.3.B. Dams.** There are 10 dams inventoried by TDEC Division of Water Supply in the Lower French Broad River Watershed. These dams either retain 30 acre-feet of water or have structures at least 20 feet high.

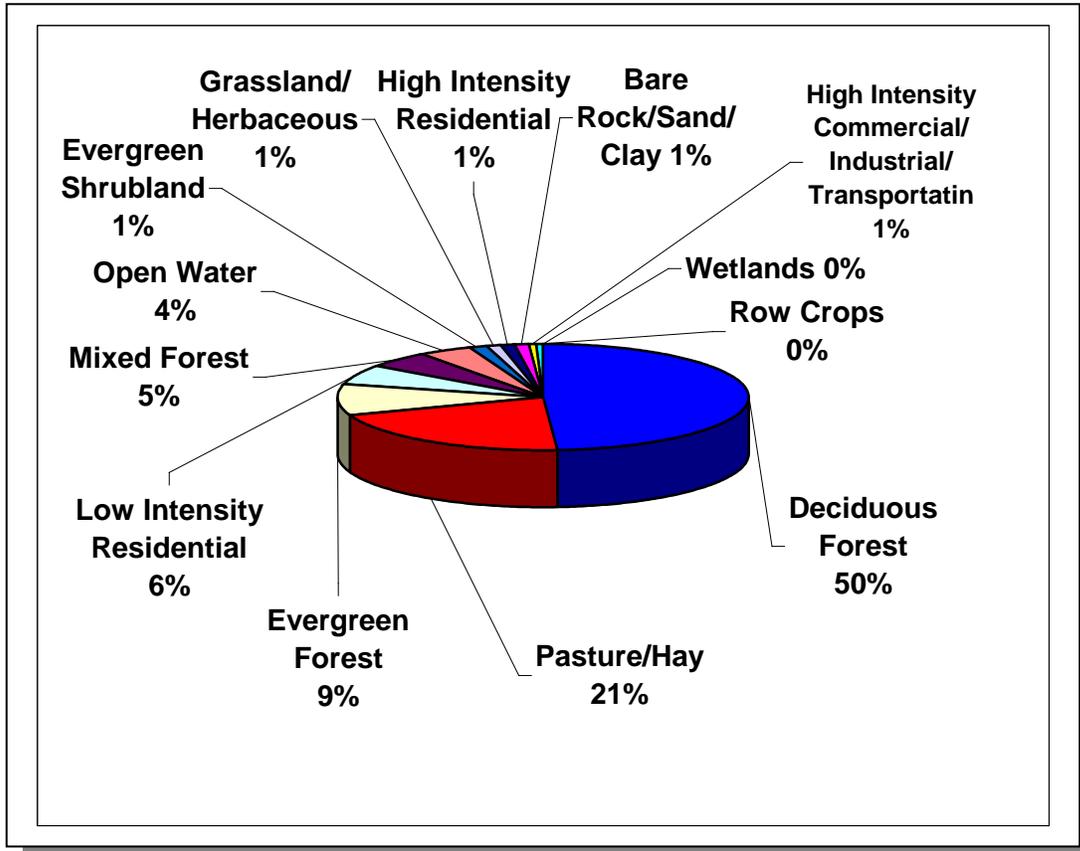


**Figure 2-5. Location of Inventoried Dams in the Lower French Broad River Watershed.** More information, including identification of inventoried dams labeled, is provided in Appendix II and at <http://qwidc.memphis.edu/website/dams/viewer.htm>.

**2.4. LAND USE.** Land Use/Land Cover information was provided by EPA Region 4 and was interpreted from 2001 Multi-Resolution Land Cover (MRLC) satellite imagery.

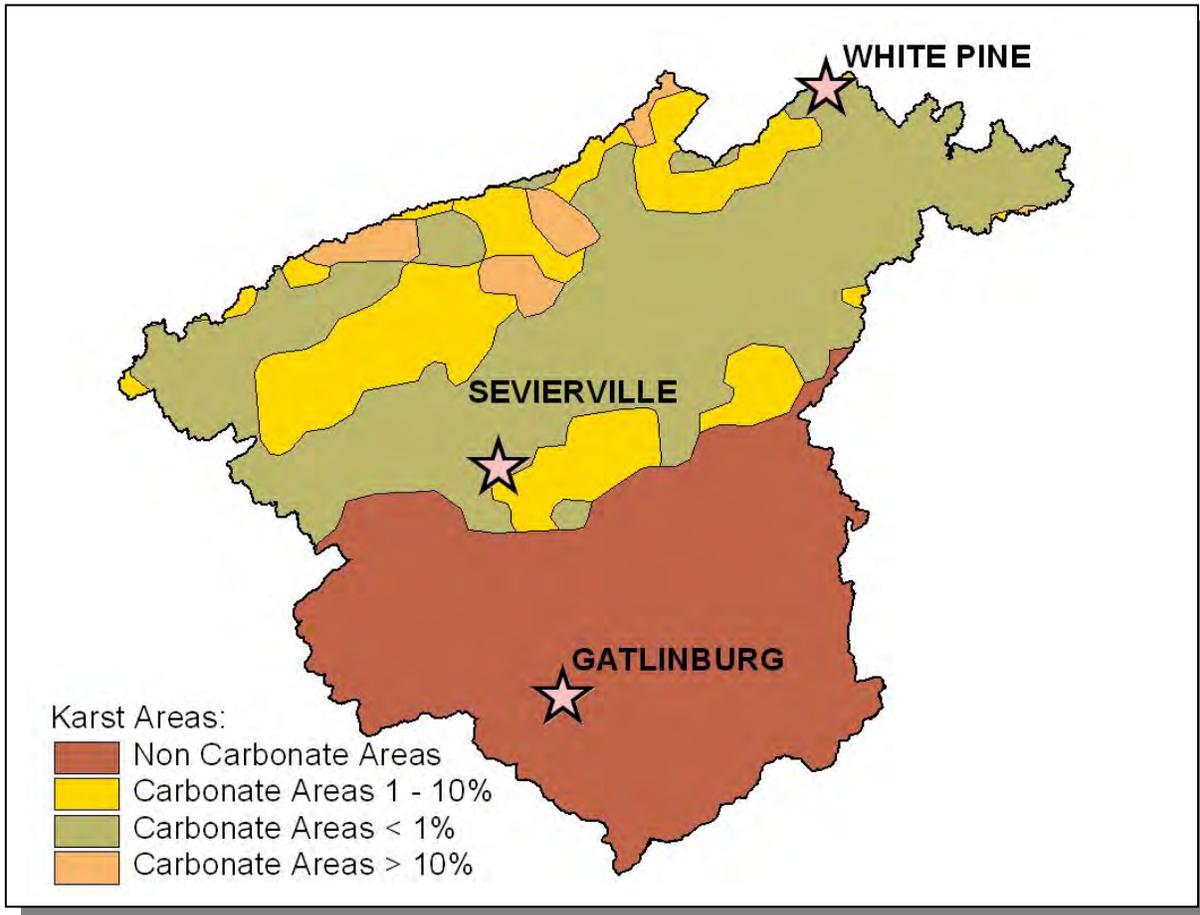


*Figure 2-6. Illustration of Select Land Cover/Land Use Data from MRLC Satellite Imagery.*

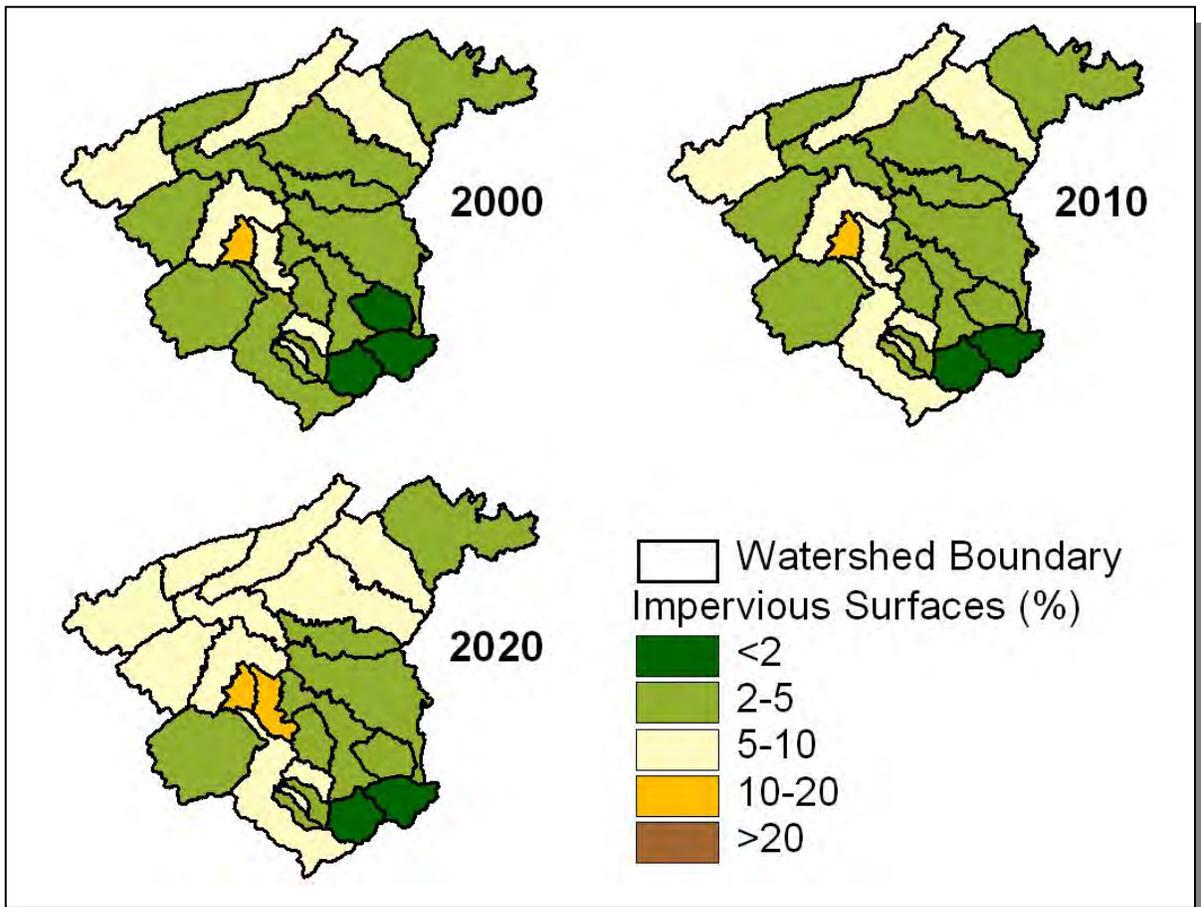


**Figure 2-7. Land Use Distribution in the Lower French Broad River Watershed.** More information is provided in Appendix II.

Sinkholes, springs, disappearing streams and caves characterize karst topography. The term “karst” describes a distinctive landform that indicates dissolution of underlying soluble rocks by surface water or ground water. Although commonly associated with limestone and dolomite (carbonate rocks), other highly soluble rocks such as gypsum and rock salt can be sculpted into karst terrain. In karst areas, the ground water flows through solution-enlarged channels, bedding planes and microfractures within the rock. The characteristic landforms of karst regions are: closed depressions of various size and arrangement; disrupted surface drainage; and caves and underground drainage systems. The term “karst” is named after a famous region in the former country of Yugoslavia.



**Figure 2-8. Illustration of Karst Areas in Lower French Broad River Watershed.** Locations of communities in the watershed are shown for reference.



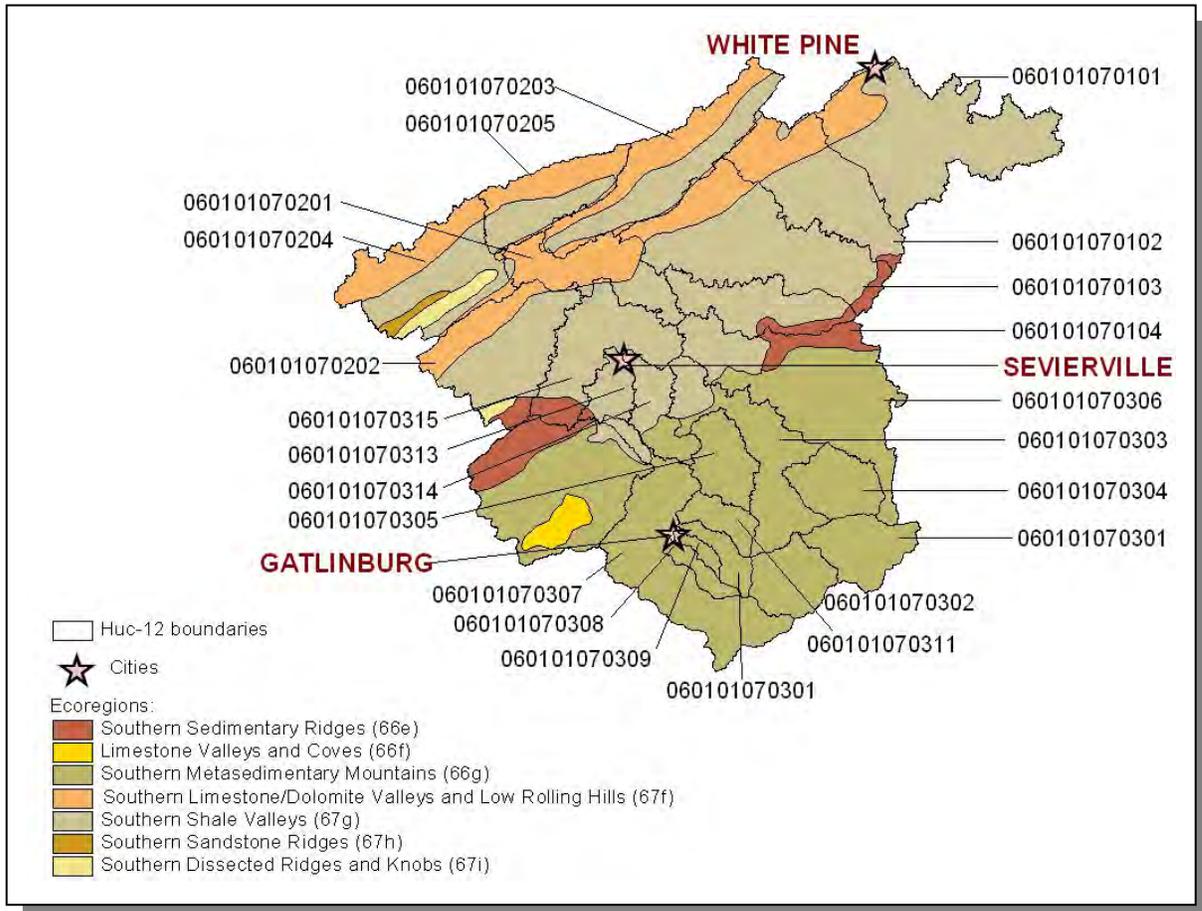
**Figure 2-9. Illustration of Total Impervious Area in the Lower French Broad River Watershed.** All HUC-12 subwatersheds are shown. Current estimates and projected total impervious cover calculated by HUC-12 are provided by EPA Region 4. More information can be found at: <http://www.epa.gov/ATHENS/research/impervious/>.

**2.5. ECOREGIONS AND REFERENCE STREAMS.** Ecoregions are relatively homogeneous areas of similar geography, topography, climate and soils that support similar plant and animal life. Ecoregions serve as a spatial framework for the assessment, management, and monitoring of ecosystems and ecosystem components. Ecoregion studies can aid the selection of regional stream reference sites, identifying high quality waters, and developing ecoregion-specific chemical and biological water quality criteria.

There are eight Level III Ecoregions and twenty-five Level IV subecoregions in Tennessee. The Lower French Broad Watershed lies within 2 Level III ecoregions (Blue Ridge Mountains and Ridge and Valley) and contains 7 Level IV subecoregions:

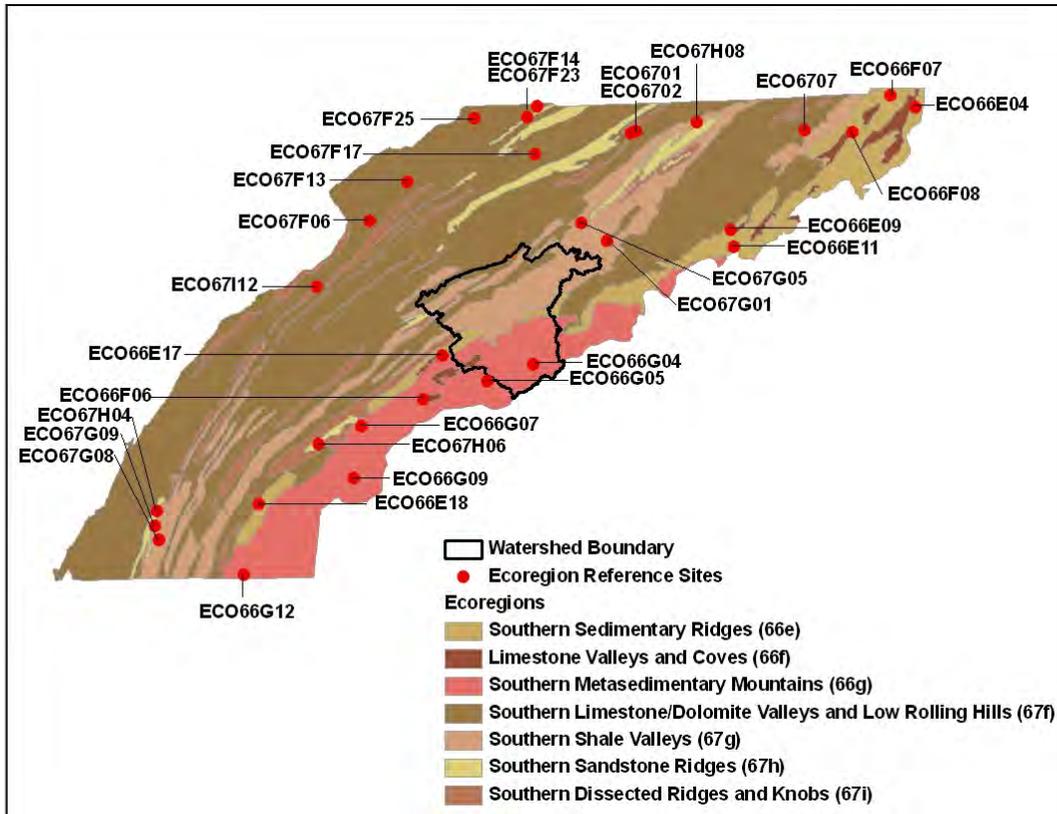
- **Southern Sedimentary Ridges (66e)** include some of the westernmost foothill areas of the Blue Ridge Mountains ecoregion, such as the Bean, Starr, Chilhowee, English, Stone, Bald, and Iron Mountain areas. Slopes are steep, and elevations are generally 1000-4500 feet. The rocks are primarily Cambrian-age sedimentary (shale, sandstone, siltstone, quartzite, conglomerate), although some lower stream reaches occur on limestone. Soils are predominantly friable loams and fine sandy loams with variable amounts of sandstone rock fragments, and support mostly mixed oak and oak-pine forests.
- **Limestone Valleys and Coves (66f)** are small but distinct lowland areas of the Blue Ridge, with elevations mostly between 1500 and 2500 feet. About 450 million years ago, older Blue Ridge rocks to the east were forced up and over younger rocks to the west. In places, the Precambrian rocks have eroded through to Cambrian or Ordovician-age limestones, as seen especially in isolated, deep cove areas that are surrounded by steep mountains. The main areas of limestone include the Mountain City lowland area and Shady Valley in the north; and Wear Cove, Tuckaleechee Cove, and Cades Cove of the Great Smoky Mountains in the south. Hay and pasture, with some tobacco patches on small farms, are typical land uses.
- **Southern Metasedimentary Mountains (66g)** are steep, dissected, biologically-diverse mountains that include Clingmans Dome (6643 feet), the highest point in Tennessee. The Precambrian-age metamorphic and sedimentary geologic materials are generally older and more metamorphosed than the Southern Sedimentary Ridges (66e) to the west and north. The Appalachian oak forests and, at higher elevation, the northern hardwoods include a variety of oaks and pines, as well as silverbell, hemlock, yellow poplar, basswood, buckeye, yellow birch, and beech. The native spruce-fir forest, found generally above 5500 feet, has been affected greatly over the past twenty-five years by the great woolly aphid. The Copper Basin, in the southeast corner of Tennessee, was the site of copper mining and smelting from the 1850's to 1987, and once left more than fifty square miles of eroded bare earth.

- **Southern Limestone/Dolomite Valleys and Low Rolling Hills (67f)** form a heterogeneous region composed predominantly of limestone and cherty dolomite. Landforms are mostly low rolling ridges and valleys, and the soils vary in their productivity. Landcover includes intensive agriculture, urban and industrial, or areas of thick forest. White oak forests, bottomland oak forest, and sycamore-ash-elm riparian forest are the common forest types, and grassland barrens intermixed with cedar-pine glades also occur here.
- **Southern Shale Valleys (67g)** consist of lowlands, rolling valleys, and slopes and hilly areas that are dominated by shale materials. The northern areas are associated with Ordovician-age calcareous shale, and the well-drained soils are often slightly acid to neutral. In the south, the shale valleys are associated with Cambrian-age shales that contain some narrow bands of limestone, but the soils tend to be strongly acid. Small farms and rural residences subdivide the land. The steeper slopes are used for pasture or have reverted to brush and forested land, while small fields of hay, corn, tobacco, and garden crops are grown on the foot slopes and bottom land.
- **Southern Sandstone Ridges (67h)** encompass the major sandstone ridges with areas of shale and siltstone. The steep, forested ridges have narrow crests with soils that are typically stony, sandy, and of low fertility. The chemistry of streams flowing down the ridges can vary greatly depending on the geological material. The higher elevation ridges are in the north, including Wallen Ridge and Powell, Clinch and Bays Mountains. White Oak Mountain in the south has some sandstone on the west side, with abundant shale and limestone. Grindstone Mountain, capped by the Gizzard Group sandstone, is the only remnant of Pennsylvanian-age strata in the Ridge and Valley of Tennessee.
- The **Southern Dissected Ridges and Knobs (67i)** contain more crenulated, broken, or hummocky ridges, compared to the smoother, more sharply pointed sandstone ridges of Ecoregion 67h. Although shale is common, there is a mixture and interbedding of geologic materials. The ridges on the east side of Tennessee's Ridge and Valley tend to be associated with the Ordovician-age Sevier shale, Athens shale, and Holston and Lenoir limestones. These can include calcareous shale, limestone, siltstone, sandstone, and conglomerate. In the central and western part of Ecoregion 67, the shale ridges are associated with the Cambrian-age Rome Formation: shale and siltstone with beds of sandstone. Chestnut oak forests and pine forests are typical for the higher elevations of the ridges, with areas of white oak, mixed mesophytic forest, and tulip poplar on the lower slopes, knobs, and draws.



**Figure 2-10. Level IV Ecoregions in the Lower French Broad River Watershed.** HUC-12 subwatershed boundaries and locations of Gatlinburg, Sevierville, and White Pine are shown for reference.

Each Level IV Ecoregion has at least one reference stream associated with it. A reference stream represents a least impacted condition within that ecoregion and may not be representative of a pristine condition.



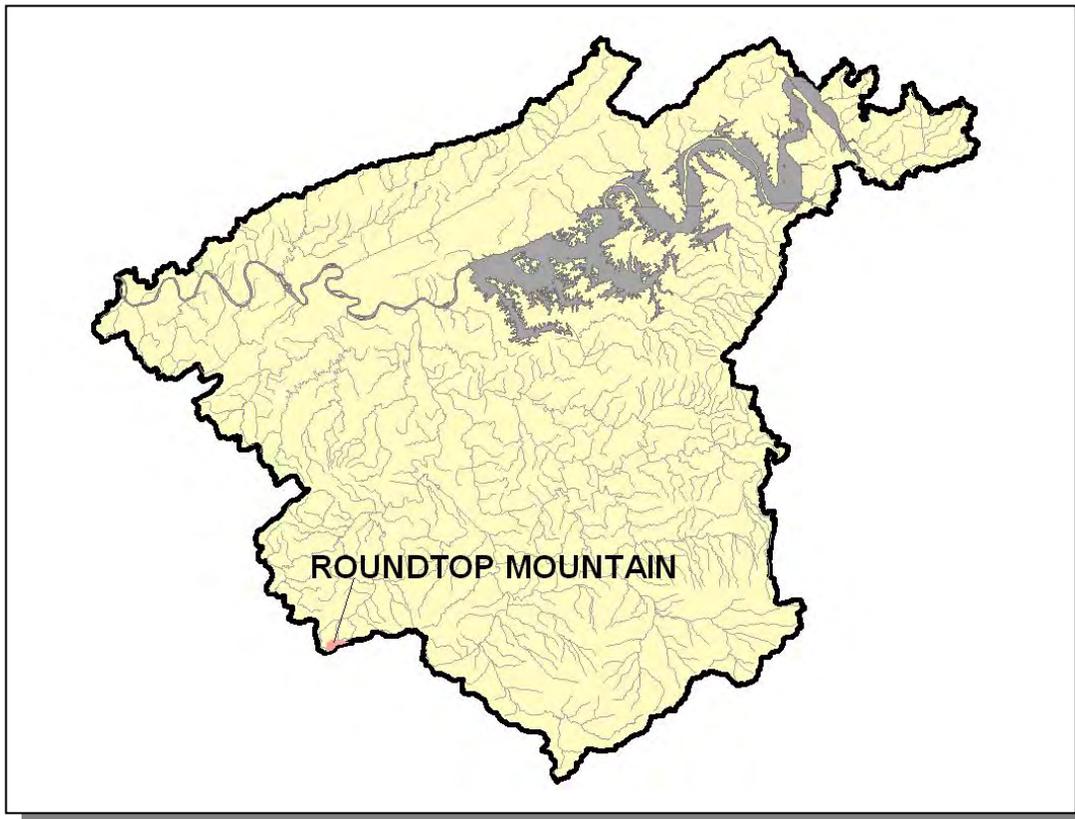
**Figure 2-11. Ecoregion Monitoring Sites in Level IV Ecoregions 66e, 66f, 66g, 67f, 67g, 67h, and 67i.** The Lower French Broad River Watershed is shown for reference. More information, including which ecoregion reference sites were inactive or dropped prior to 01/01/2006, is provided in Appendix II.

## 2.6. NATURAL RESOURCES.

**2.6.A. Designated State Natural Area.** The Natural Areas Program was established in 1971 with the passage of the Natural Areas Preservation Act. TDEC/Division of Natural Areas administers the State Natural Areas program. Further information may be found at <http://www.state.tn.us/environment/na/>.

The Lower French Broad River Watershed has one Designated State Natural Area:

**Roundtop Mountain** is a 237-acre natural area located in the southwest corner of Sevier County west of Wears Cove Gap and east-northeast of Townsend. It forms a section of the northwest boundary of the Great Smoky Mountain National Park (GSMNP). When it was originally acquired, Roundtop Mountain was contiguous with approximately 1 mile of GSMNP boundary. It was acquired by the State in 1975 to protect this area of the Unaka Mountain range as a state natural area. At the time of its acquisition, and even today, this area remains highly susceptible to development, particularly from summer homes and vacation rentals. While the State initially planned to manage this area, it was soon determined that Roundtop Mountain could best be managed by the National Park Service as a part of the GSMNP.



*Figure 2-12. There is One Designated State Natural Area in the Lower French Broad River Watershed.*

**2.6.B. Rare Plants and Animals.** The Heritage Program in the TDEC Division of Natural Areas maintains a database of rare species that is shared by partners at The Nature Conservancy, Tennessee Wildlife Resources Agency, the US Fish and Wildlife Service, and the Tennessee Valley Authority. The information is used to: 1) track the occurrence of rare species in order to accomplish the goals of site conservation planning and protection of biological diversity, 2) identify the need for, and status of, recovery plans, and 3) conduct environmental reviews in compliance with the federal Endangered Species Act.

<b>GROUPING</b>	<b>NUMBER OF RARE SPECIES</b>
Crustaceans	1
Insects	1
Mussels	10
Snails	1
Other	1
Amphibians	3
Birds	8
Fish	9
Mammals	15
Reptiles	1
Plants	81
<b>Total</b>	<b>131</b>

**Table 2-3. There are 128 Known Rare Plant and Animal Species in the Lower French Broad River Watershed.**

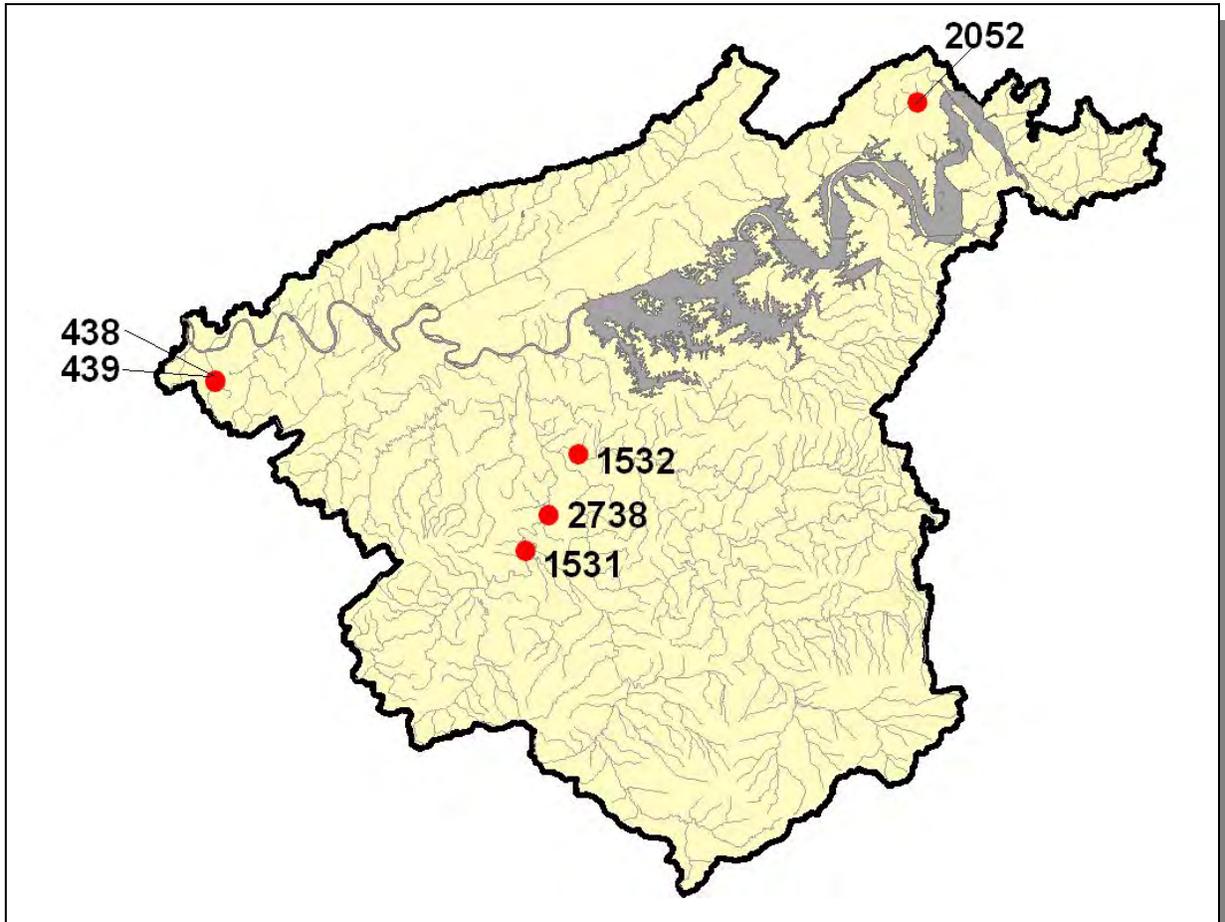
In the Lower French Broad River Watershed, there are nine known rare fish species, three rare amphibian species, one known rare crustacean species, ten rare mussel species, and one known rare snail species.

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS
<i>Acipenser fulvencis</i>	Lake sturgeon		E
<i>Etheostoma luteovinctum</i>	Redband Darter		D
<i>Etheostoma microlepidum</i>	Finescale Darter		D
<i>Cycleptus elongates</i>	Blue sucker		T
<i>Carpionodes velifer</i>	Highfin Carpsucker		D
<i>Percina aurantiaca</i>	Tangerine Darter		D
<i>Percina macrocephala</i>	Longhead Darter		T
<i>Percina tanasi</i>	Snail Darter	LT	T
<i>Phoxinus tennesseensis</i>	Tennessee Dace		D
<i>Desmognathus wrighti</i>	Pigmy Salamander		D
<i>Cryptobranchus alleganiensis</i>	Hellbender		D
<i>Eurycea junaluska</i>	Junaluska Salamander		D
<i>Orconectes shoupi</i>	Nashville Crayfish	LE	E
<i>Epioblasma brevidens</i>	Cumberlandian Combshell	LE	E
<i>Obovaria retusa</i>	Ring Pink	LE	E
<i>Plethobasus cooperianus</i>	Orange-foot Pimpleback	LE	E
<i>Plethobasus cyphus</i>	Sheepnose		C
<i>Pleurobema plenum</i>	Rough Pigtoe	LE	E
<i>Quadrula cylindrica cylindrica</i>	Rabbitsfoot		
<i>Lampsilis abrupta</i>	Pink Mucket	LE	E
<i>Cyprogenia irrorata</i>	Eastern Fanshell Pearly Mussel	LE	E
<i>pioblasma capsaeformis</i>	Oyster Mussel	LE	E
<i>Dromus dromas</i>	Dromedary Pearlymussel	LE	E
<i>Lo fluvialis</i>	Spiny Riversnail		

**Table 2-4. Rare Aquatic Species in the Lower French Broad Watershed.** Federal Status: LE, Listed Endangered by the U.S. Fish and Wildlife Service; LT, Listed Threatened by the Tennessee Wildlife Resources Agency. State Status: T, Listed Threatened by the Tennessee Wildlife Resources Agency; E, Listed Endangered by the Tennessee Wildlife Resources Agency; D, Deemed in Need of Management by the Tennessee Wildlife Resources Agency. More information may be found at <http://www.state.tn.us/environment/na/>.

**2.6.C. Wetlands.** The Division of Natural Areas maintains a database of wetland records in Tennessee. These records are a compilation of field data from wetland sites inventoried by various state and federal agencies. Maintaining this database is part of Tennessee's Wetland Strategy, which is described at:

<http://www.state.tn.us/environment/na/wetlands/>

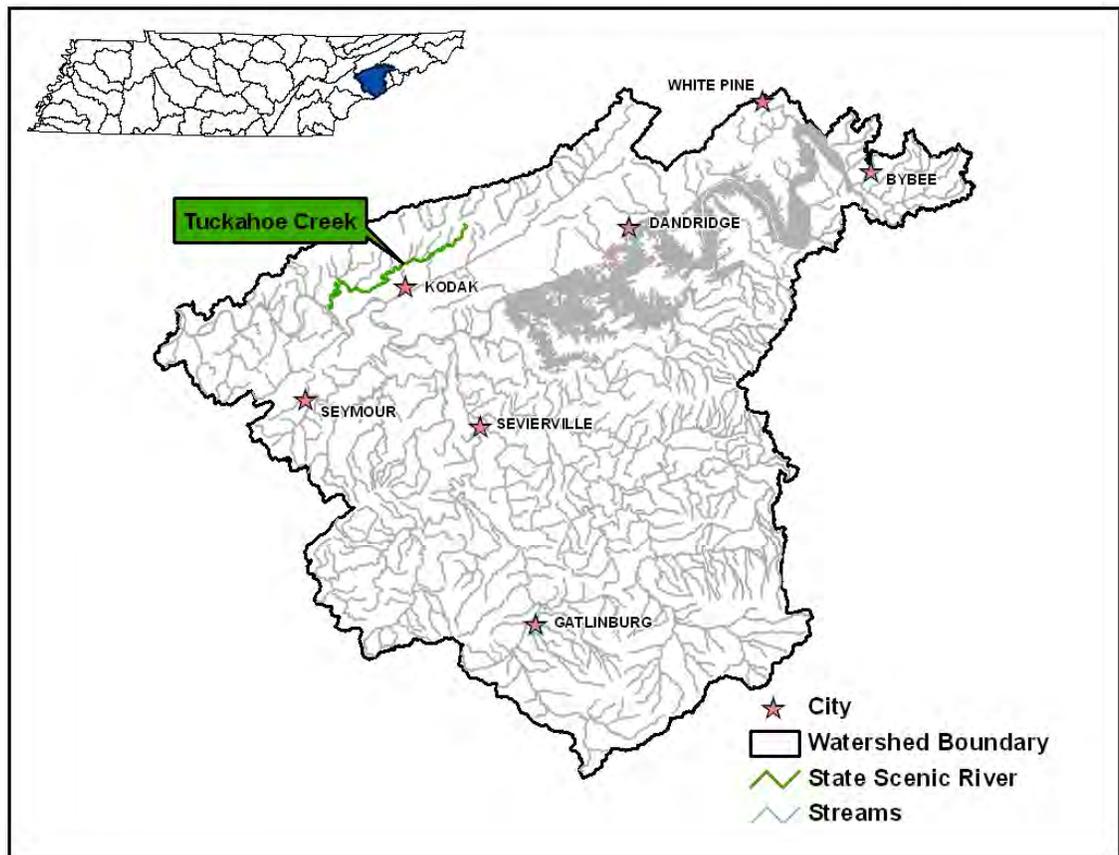


**Figure 2-13. Location of Wetland Sites in TDEC Division of Natural Areas Database in Lower French Broad River Watershed. This map represents an incomplete inventory and should not be considered a dependable indicator of the presence of wetlands. There may be additional wetland sites in the watershed. More information, including identification of wetland sites labeled, is provided in Appendix II.**

## 2.7. CULTURAL RESOURCES.

**2.7.A. State Scenic River.** Tuckahoe Creek and portions of the French Broad River are designated as State Scenic Rivers.

**Tuckahoe Creek** is designated as a Class III Developed River Area.



**Figure 2-11. Tuckahoe Creek (Within Knox County) is Designated as a State Scenic River.** Locations of Bybee, Dandridge, Gatlinburg, Kodak, Sevierville, Seymour, and White Pine are shown for reference. More information can be found at: <http://www.state.tn.us/environment/na/scenicrivers/>.

**2.7.B. Nationwide Rivers Inventory.** The Nationwide Rivers Inventory, required under the Federal Wild and Scenic Rivers Act of 1968, is a listing of free-flowing rivers that are believed to possess one or more outstanding natural or cultural values. Exceptional scenery, fishing or boating, unusual geologic formations, rare plant and animal life, cultural or historic artifacts that are judged to be of more than local or regional significance are the values that qualify a river segment for listing. The Tennessee Department of Environment and Conservation and the Rivers and Trails Conservation Assistance branch of the National Park Service jointly compile the Nationwide Rivers Inventory from time to time (most recently in 1997). Under a 1980 directive from the President's Council on Environmental Quality, all Federal agencies must seek to avoid or mitigate actions that would have an adverse effect on Nationwide Rivers Inventory segments.

The most recent version of the Nationwide Rivers Inventory lists portions of three rivers in the Lower French Broad Watershed:

French Broad River (RM 0 to North Carolina State Line) is a mountainous stream with good whitewater and scenic gorge areas, numerous rock gardens, boulder beds, rapids, islands, and ledges. It has a diversity of flora and fauna and significant archaeological sites border the river.

Little Pigeon River – Middle Prong (RM 10 to RM 34) is a scenic, sparkling, excellent whitewater stream with waterfalls and is noted as a trout habitat.

Little Pigeon River, West Prong (RM 19 to RM 29) is a scenic, clear mountain stream with considerable recreational potential.

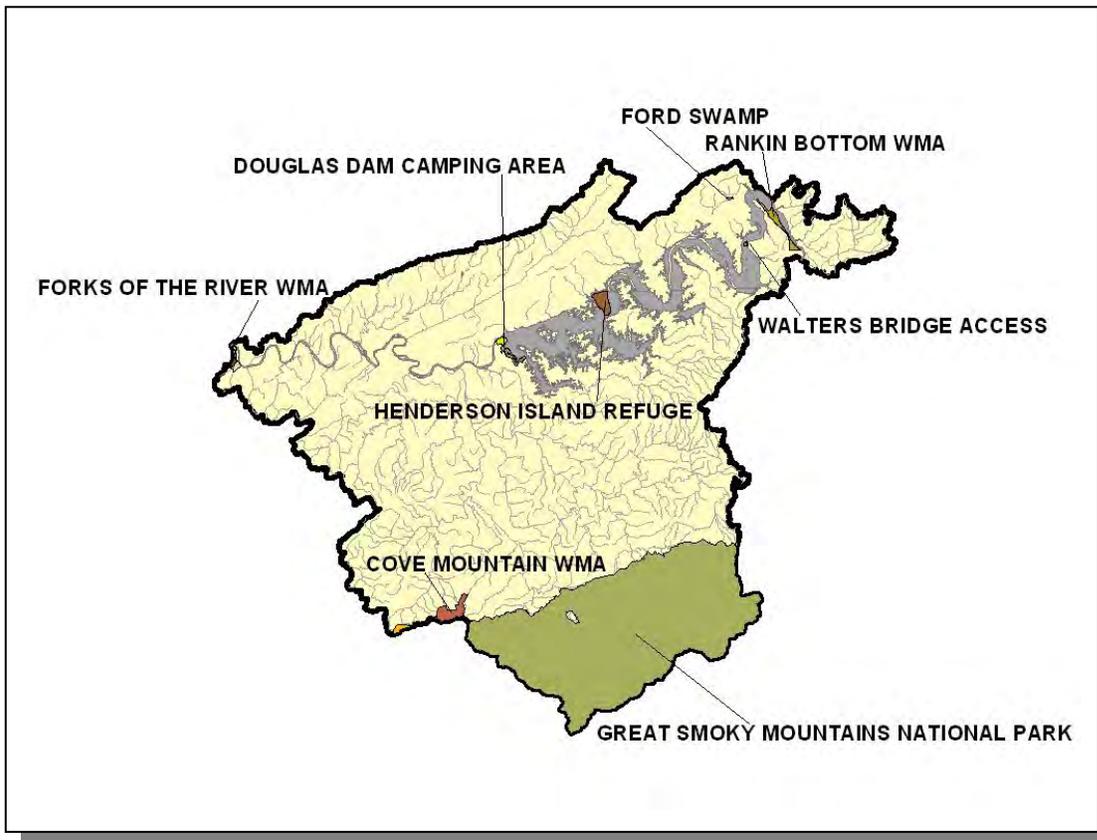
RIVER	SCENIC	RECREATION	GEOLOGIC	FISH	WILDLIFE	HISTORIC	CULTURAL
French Broad	X	X	X	X	X	X	X
Little Pigeon River, Middle Prong	X	X	X	X	X	X	X
Little Pigeon River, West Prong	X	X	X				

**Table 2-5. Attributes of Streams Listed in the Nationwide Rivers Inventory.**

Additional information may be found online at <http://www.ncrc.nps.gov/rtca/nri/>

**2.7.C. Public Lands.** Some sites representative of the cultural heritage are under state or federal protection:

- Cove Mountain WMA is managed by the Tennessee Wildlife Resources Agency (TWRA). More information may be found at: <http://www.state.tn.us/twra/hunt001b2b.html>
- Douglas Dam Camping Area is managed by the Tennessee Valley Authority (TVA). More information may be found at: <http://www.tva.gov/river/recreation/camping.htm>
- Forks of the River WMA is managed by the Tennessee Wildlife Resources Agency (TWRA). More information may be found at: <http://tennessee.gov/twra/gis/wmapdf/Forks%20of%20the%20River.pdf>
- Ford Swamp is administered by the TWRA.
- The Great Smoky Mountains National Park consists of 521,621 acres of land managed by the National Park Service. More information may be found at: <http://www.nps.gov/grsm/>
- Henderson Island Refuge is managed by the Tennessee Wildlife Resources Agency (TWRA) and Ducks Unlimited, Inc. More information may be found at: <http://tennessee.gov/twra/gis/region4maps.html> and at <http://www.ducks.org/Tennessee/TennesseeProjects/1500/HendersonIslandWMAWetlandsEnhancement.html>
- Rankin Bottom WMA is managed by TWRA. More information may be found at: <http://www.state.tn.us/twra/gis/wmapdf/Rankin.pdf>
- Walters Bridge Access is administered by the TWRA.



**Figure 2-15. Public Lands in the Lower French Broad River Watershed.** Data are from Tennessee Wildlife Resources Agency. WMA, Wildlife Management Area.

**2.8. TENNESSEE RIVERS ASSESSMENT PROJECT.** The Tennessee Rivers Assessment is part of a national program operating under the guidance of the National Park Service’s Rivers and Trails Conservation Assistance Program. The Assessment is an inventory of river resources, and should not be confused with “Assessment” as defined by the Environmental Protection Agency. A more complete description can be found in the Tennessee Rivers Assessment Summary Report, which is available from the Department of Environment and Conservation and on the web at:

<http://www.state.tn.us/environment/wpc/publications/riv/>

STREAM	NSQ	RB	RF	STREAM	NSQ	RB	RF
Ball Creek	4			Koontz Creek	4		
Bird Creek	3			Leconte Creek	1		
Boyds Creek	3			Little Pigeon River	1,4	1,2,3	1
Clear Creek	4			Middle Creek	4		
Cove Creek	3		2	Muddy Creek	4		
Dudley Creek	2		1	Porter Creek	1		
Dumplin Creek	3		3	Rimmer Creek	4		
Dunn Creek	2			Roaring Fork Creek	2		
East Fork Pigeon River	3			Seahorn Creek	4		
French Broad River	2,3	2,3		Spring Creek	4		
Gists Creek	3			Tuckahoe Creek	3		2
Goose Creek	4			Walden Creek	3,4		
Happy Creek	3			Webb Creek	2		
Hettie Creek				West Prong Little Pigeon River	1,3	2	
Knob Creek	3			Wilhite Creek	2		

**Table 2-6. Tennessee Rivers Assessment Project Stream Scoring in the Lower French Broad River Watershed.**

Categories: NSQ, Natural and Scenic Qualities  
 RB, Recreational Boating  
 RF, Recreational Fishing

Scores: 1. Statewide or greater Significance; Excellent Fishery  
 2. Regional Significance; Good Fishery  
 3. Local Significance; Fair Fishery  
 4. Not a significant Resource; Not Assessed

## CHAPTER 3

### WATER QUALITY ASSESSMENT OF THE LOWER FRENCH BROAD RIVER WATERSHED

- 3.1. Background
- 3.2. Data Collection
  - 3.2.A. Ambient Monitoring Sites
  - 3.2.B. Ecoregion Sites
  - 3.2.C. Watershed Screening Sites
  - 3.2.D. Special Surveys
- 3.3. Status of Water Quality
  - 3.3.A. Assessment Summary
  - 3.3.B. Use Impairment Summary

**3.1. BACKGROUND.** Section 305(b) of The Clean Water Act requires states to report the status of water quality every two years. Historically, Tennessee's methodologies, protocols, frequencies and locations of monitoring varied depending upon whether sites were ambient, ecoregion, or intensive survey. Alternatively, in areas where no direct sampling data existed, water quality may have been assessed by evaluation or by the knowledge and experience of the area by professional staff.

In 1996, Tennessee began the watershed approach to water quality protection. In the Watershed Approach, resources—both human and fiscal—are better used by assessing water quality more intensively on a watershed-by-watershed basis. In this approach, water quality is assessed in year three of the watershed cycle, following one to two years of data collection. More information about the Watershed Approach may be found in Chapter 1 and at <http://www.state.tn.us/environment/wpc/watershed/>

The assessment information is used in the 305(b) Report (The Status of Water Quality in Tennessee) and the 303(d) list as required by the Clean Water Act.

The 305(b) Report documents the condition of the State's waters. Its function is to provide information used for water quality based decisions, evaluate progress, and measure success.

Tennessee uses the 305(b) Report to meet four goals (from 2008 305(b) Report):

1. Describe the water quality assessment process.
2. Categorize waters in the State by placing them in the assessment categories suggested by federal guidance.
3. Identify waterbodies that pose eminent human-health risks due to elevated bacteria levels or contamination of fish.
4. Provide detailed information on each watershed.

EPA aggregates the state use support information into a national assessment of the nation's water quality. This aggregated use support information can be viewed at EPA's "Surf Your Watershed" site at <http://cfpub.epa.gov/surf/locate/index.cfm>.

The 303(d) list is a compilation of the waters of Tennessee that fail to support some or all of their classified uses. The 303(d) list does not include streams determined to be fully supporting designated uses nor streams the Division of Water Pollution Control cannot assess due to lack of water quality information. Also absent are streams where a control strategy is already in the process of being implemented.

Once a stream is placed on the 303(d) list, it is considered a priority for water quality improvement efforts. These efforts not only include traditional regulatory approaches such as permit issuance, but also include efforts to control pollution sources that have historically been exempted from regulations, such as certain agricultural and forestry activities. If a stream is on the 303(d) list, the Division of Water Pollution Control cannot use its regulatory authority to allow additional sources of the same pollutant(s) for which it is listed.

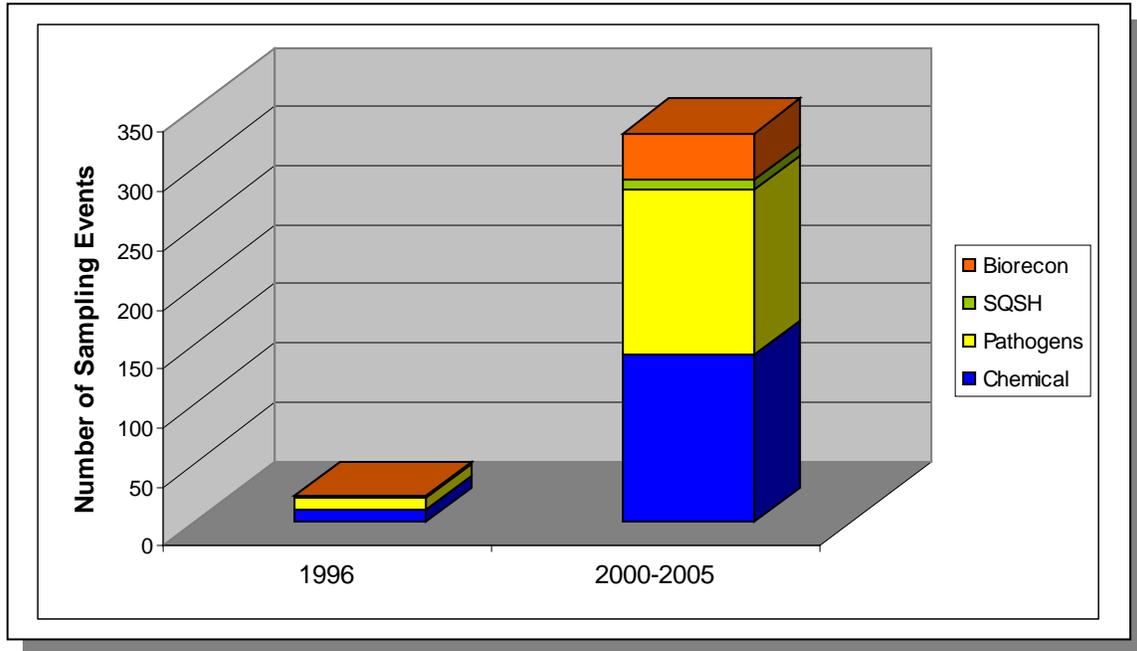
States are required to develop Total Maximum Daily Loads (TMDLs) for 303(d)-listed waterbodies. The TMDL process establishes the maximum amount of a pollutant that a waterbody can assimilate without exceeding water quality standards and allocates this load among all contributing pollutant sources. The purpose of the TMDL is to establish water quality objectives required to reduce pollution from both point and nonpoint sources and to restore and maintain the quality of water resources.

The current 303(d) List is available on the TDEC homepage at:  
<http://tennessee.gov/environment/wpc/publications/303d2008.pdf>

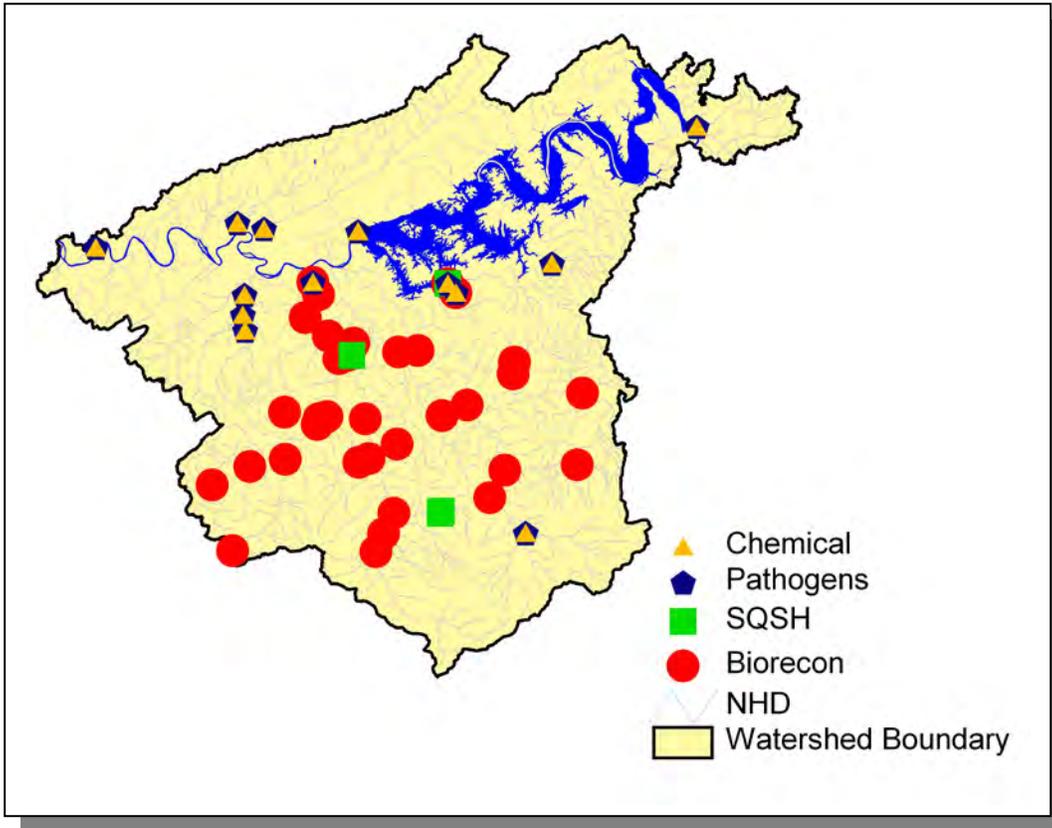
and information about Tennessee's TMDL program may be found at:  
<http://www.state.tn.us/environment/wpc/tmdl/>.

This chapter provides a summary of water quality in the Lower French Broad River Watershed, summarizes data collection and assessment results, and describes impaired waters.

**3.2. DATA COLLECTION.** The following figures and table represent data collected in the last 5-year cycle (July 1, 2000 through June 30, 2005). Water quality data are from one of four site types: (1) Ambient sites, (2) Ecoregion sites, (3) Watershed Screening sites, or (4) Tier Evaluation sites.



**Figure 3-1. Number of Sampling Events Using the Traditional Approach (1996) and Watershed Approach (July 1, 2000 through June 30, 2005) in the Lower French Broad River Watershed.**



**Figure 3-2. Location of Monitoring Sites in the Lower French Broad River Watershed (July 1, 2000 through June 30, 2005).** Pathogens include *E. coli* and fecal coliform; NHD, National Hydrography Dataset of Streams; SQSH, Semi-Quantitative Single Habitat Assessment.

	1996	2000-2005
Chemical	10	140
Pathogens	10	140
SQSH	1	9
Biorecon	0	39
<b>Total</b>	<b>21</b>	<b>328</b>

**Table 3-1. Number of Sampling Events in the Lower French Broad River Watershed in 1996 and in the last 5-Year Cycle (July 1, 2000 through June 30, 2005).**

**3.2.A. Ambient Monitoring Sites.** These fixed-station chemical monitoring sites are sampled quarterly or monthly by the Environmental Field Office-Knoxville staff (this is in addition to samples collected by water and wastewater treatment plant operators and MS4 permittees). Samples are analyzed by the Tennessee Department of Health, Division of Environmental Laboratory Services. Ambient monitoring data are used to assess water quality in major bodies of water where there are NPDES facilities and to identify trends in water quality. Water quality parameters traditionally measured at ambient sites in the Lower French Broad River Watershed are provided in Appendix IV.

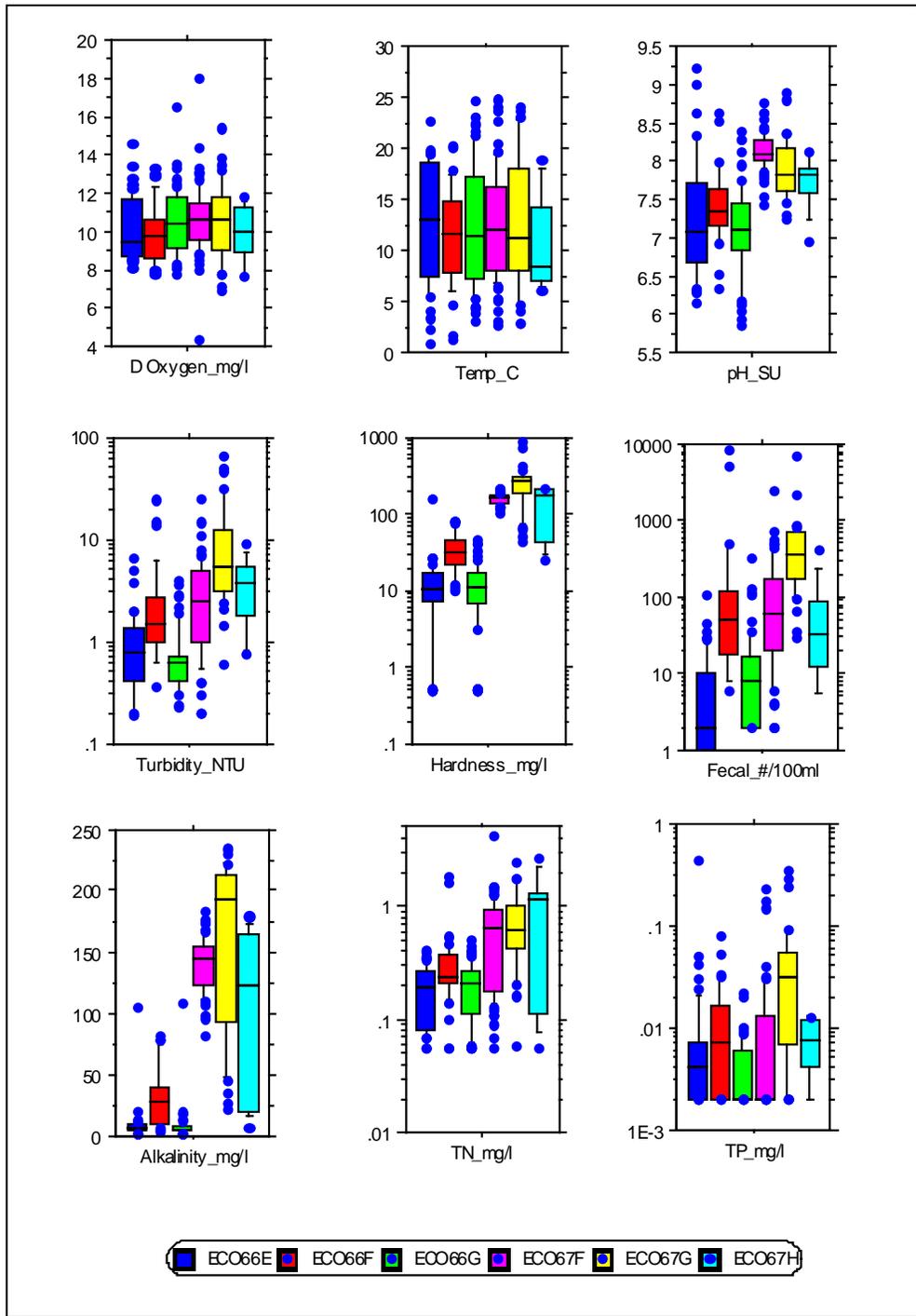
Data from ambient monitoring stations are entered into the STORET (Storage and Retrieval) system administered by EPA.

**3.2.B. Ecoregion Sites.** Ecoregions are relatively homogeneous areas of similar geography, topography, climate and soils that support similar plants and animals. The delineation phase of the Tennessee Ecoregion Project was completed in 1997 when the ecoregions and subcoregions were mapped and summarized (EPA/600/R-97/022). There are eight Level III Ecoregions and twenty-five Level IV subcoregions in Tennessee (see Chapter 2 for more details). The Lower French Broad River Watershed lies within 2 Level III ecoregions (Blue Ridge Mountains and Ridge and Valley) and contains 7 subcoregions (Level IV):

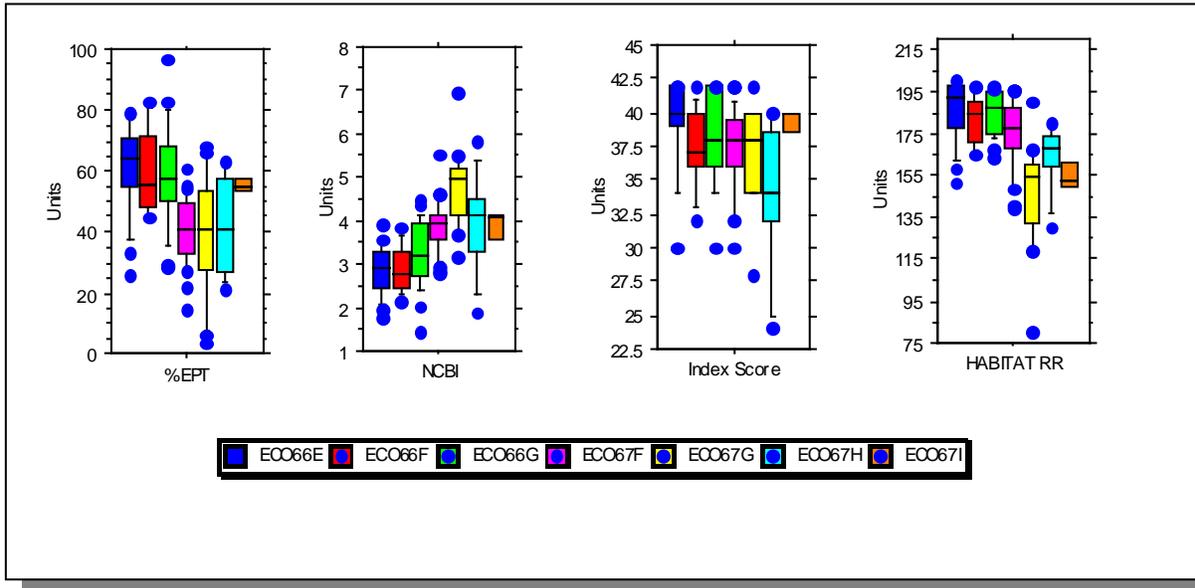
- Southern Sedimentary Ridges (66e)
- Limestone Valleys and Coves (66f)
- Southern Metasedimentary Mountains (66g)
- Southern Limestone/Dolomite Valleys and Low Rolling Hills (67f)
- Southern Shale Valleys (67g)
- Southern Sandstone Ridges (67h)
- Southern Dissected Ridges and Knobs (67i)

Ecoregion reference sites are chemically monitored using methodology outlined in the Division's Chemical Standard Operating Procedure (Standard Operating Procedure for Modified Clean Technique Sampling Protocol). Macroinvertebrate samples are collected in spring and fall. These biological sample collections follow methodology outlined in the Tennessee Biological Standard Operating Procedures Manual, Volume 1: Macroinvertebrates and EPA's Revision to Rapid Bioassessment Protocols for use in Streams and Rivers.

Ecoregion stations are scheduled to be monitored during the watershed sampling time period.



**Figure 3-3. Select Chemical Data Collected in the Lower French Broad River Watershed Ecoregion Sites.** Boxes and bars illustrate 10<sup>th</sup>, 25<sup>th</sup>, median, 75<sup>th</sup>, and 90<sup>th</sup> percentiles. Extreme values are also shown as dots. Fecal, fecal coliform bacteria; TN, Total Nitrogen; TP, Total Phosphorus.



**Figure 3-4. Benthic Macroinvertebrate and Habitat Scores for the Lower French Broad River Watershed Ecoregion Sites.** Boxes and bars illustrate 10<sup>th</sup>, 25<sup>th</sup>, median, 75<sup>th</sup>, and 90<sup>th</sup> percentiles. Extreme values are also shown as dots. NCBI, North Carolina Biotic Index. Index Score and Habitat Riffle/Run scoring system are described in TDEC's Quality System Standard Operating Procedure for Macroinvertebrate Surveys (2002).

**3.2.C. Watershed Screening Sites.** Activities that take place at watershed sites are benthic macroinvertebrate stream surveys, physical habitat determinations and/or chemical monitoring. Following review of existing data, watershed sites are selected in Year 1 of the watershed approach when preliminary monitoring strategies are developed. Additional sites may be added in Year 2 when additional monitoring strategies are implemented.

A Biological Reconnaissance (BioRecon) is used as a screening tool to describe the condition of water quality, in general, by determining the absence or presence of clean water indicator organisms, such as EPT (Ephemeroptera [mayfly], Plecoptera [stonefly], Trichoptera [caddisfly]). Factors and resources used for selecting BioRecon sites are:

- The current 303(d) list,
- HUC-12 maps (every HUC-12 is considered for a BioRecon)
- Land Use/Land Cover maps
- Topographic maps
- Locations of NPDES facilities
- Sites of recent ARAP activities.

An intensive multiple or single habitat assessment involves the regular monitoring of a station over a fixed period of time. Intensive surveys (Rapid Bioassessment Protocols) are performed when BioRecon results warrant it.

**3.2.D. Special Surveys.** These investigations are performed when needed and include:

- ARAP in-stream investigation
- Time-of-travel dye study
- Sediment oxygen demand study
- Lake eutrophication study

**3.3. STATUS OF WATER QUALITY.** Use support determinations, which can be classified as monitored or evaluated, are based on:

- Data less than 5 years old (monitored)
- Data more than 5 years old (evaluated)
- Knowledge and experience of the area by technical staff (evaluated)
- Complaint investigation (monitored, if samples are collected)
- Other readily available Agencies' data (monitored)
- Readily available Volunteer Monitoring data (monitored, if certain quality assurance standards are met)

All readily available data are considered, including data from TDEC Environmental Field Offices, Tennessee Department of Health (Aquatic Biology Section of Laboratory Services), Tennessee Wildlife Resources Agency, National Park Service, Tennessee Valley Authority, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Geological Survey, U.S. Forest Service, universities and colleges, the regulated community, and the private sector.

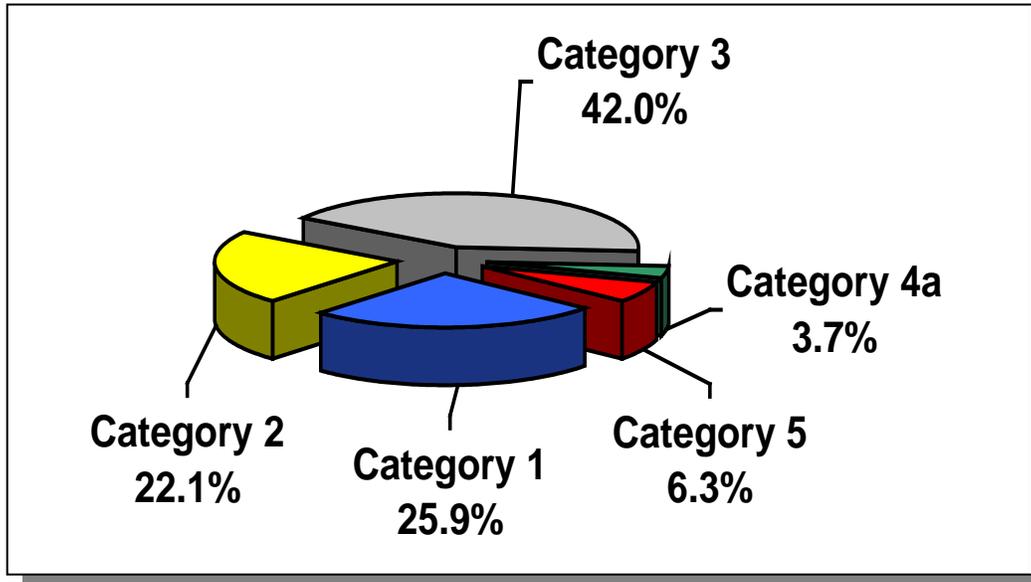
Waterbodies are assessed by comparing monitored water conditions to water quality standards for the stream, river, or reservoir's designated uses. Data that meet quality control standards and collection techniques are used to generate assessments. After use support is determined, waterbodies are placed in one of the following five categories recommended by EPA.

<b>Category Assessment</b>	<b>Stream Miles</b>	<b>Reservoir Acres</b>
Total	1,210.1	30,400
Assessed	702.4	30,400
Category 1	313.4	30,400
Category 2	268.0	0
Category 3	507.7	0
Category 4a	44.8	0
Category 5	76.2	0

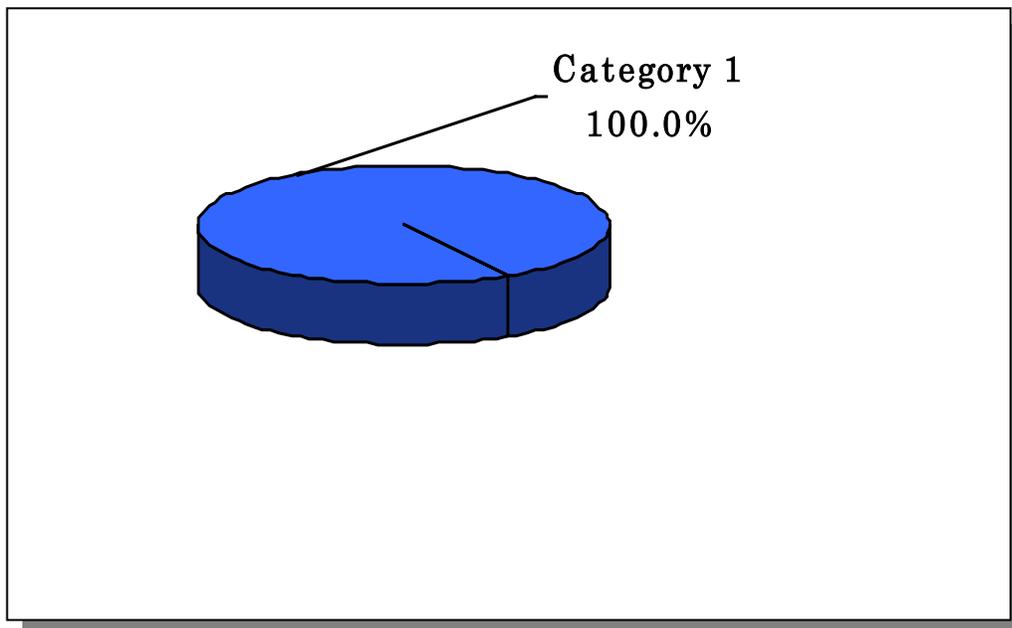
**Table 3.2. Use Support Categories (Stream Miles and/or Reservoir Acres) in the Lower French Broad River Watershed.**

**Use Support Categories:** (from 2008 305(b) Report)

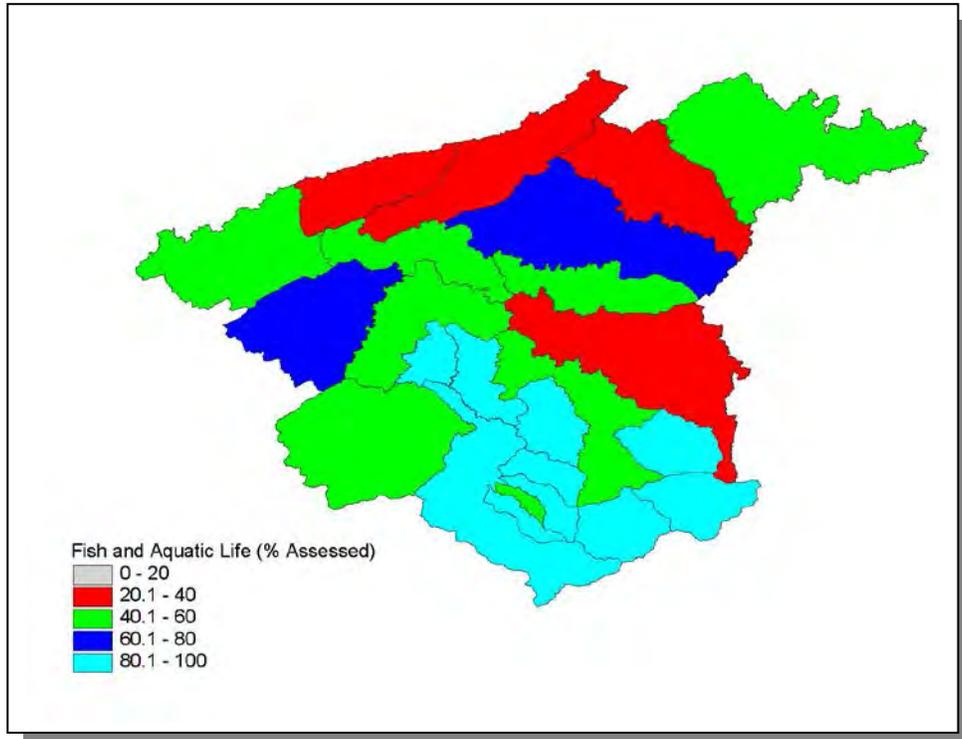
- Category 1** waters are **fully supporting** of all designated uses. These streams, rivers, and reservoirs have been monitored and meet the most stringent water quality criteria for all designated uses for which they are classified. The biological integrity of Category 1 waters is comparable with reference streams in the same subcoregion and pathogen concentrations are at acceptable levels.
- Category 2** waters are **fully supporting** of some designated uses, but have not been assessed for all uses. In many cases, these waterbodies have been monitored and are fully supporting of fish and aquatic life, but have not been assessed for recreational use.
- Category 3** waters are **not assessed** due to insufficient or outdated data.
- Category 4** waters are **impaired**, but a TMDL is not required. Category 4 has been further subdivided into three subcategories.
- Category 4a** impaired waters that have already had all necessary TMDLs approved by EPA.
- Category 4b** impaired waters do not require TMDL development since “other pollution control requirements required by local, State or Federal authority are expected to address all water-quality pollutants” (EPA, 2003). An example of a 4b stream might be where a discharge point will be moved in the near future to another waterbody with more assimilative capacity.
- Category 4c** impaired waters in which the impacts are not caused by a pollutant (e.g., certain habitat or flow alterations).
- Category 5** waters have been monitored and found to not meet one or more water quality standards. These waters have been identified as **not supporting** their designated uses. Category 5 waterbodies are moderately to highly impaired by pollution and need to have TMDLs developed for the known impairments. These waters are included in the 303(d) List of impaired waters in Tennessee.



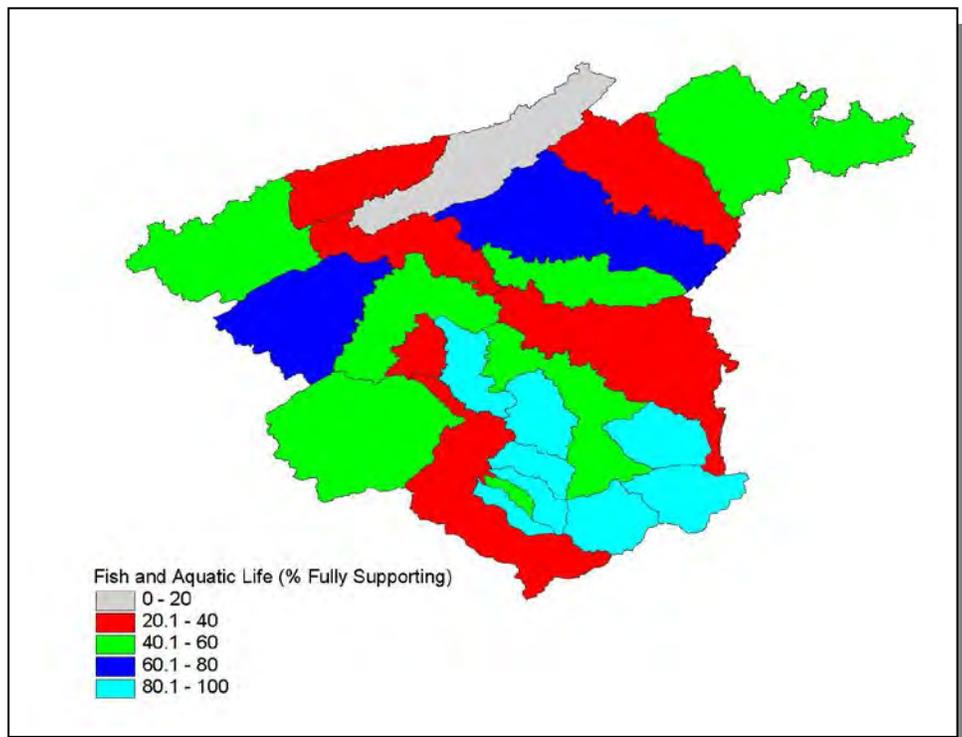
**Figure 3-5. Water Quality Assessment of Streams in the Lower French Broad River Watershed.** Assessment data are based on the 2006 Water Quality Assessment of 1,205.6 stream miles in the watershed.



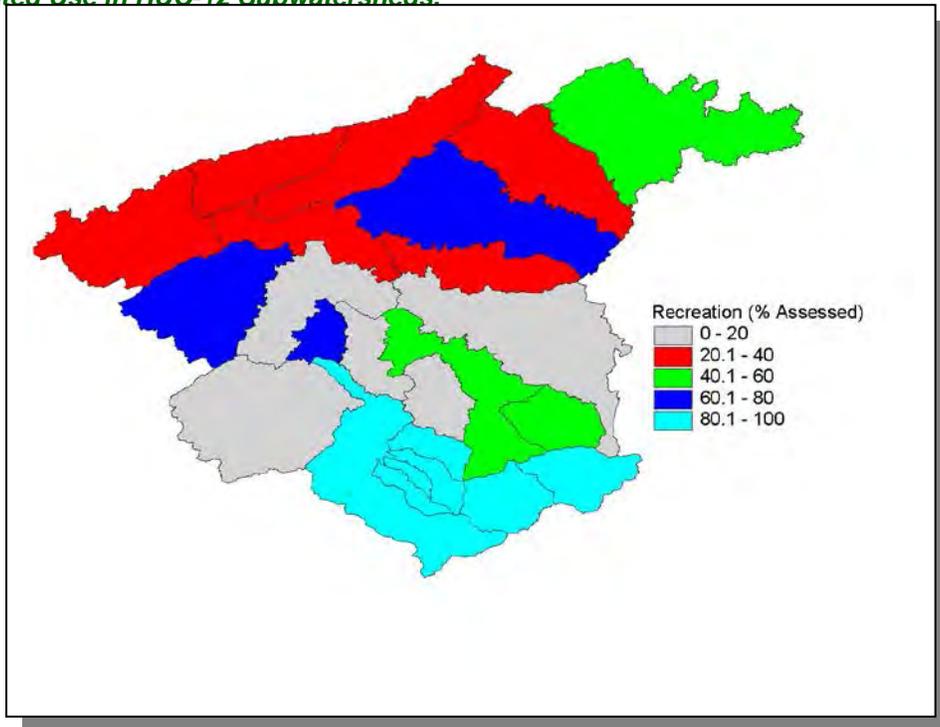
**Figure 3-6. Water Quality Assessment of Lakes in the Lower French Broad River Watershed.** Assessment data are based on the 2006 Water Quality Assessment of 30,400 lake acres in the watershed.



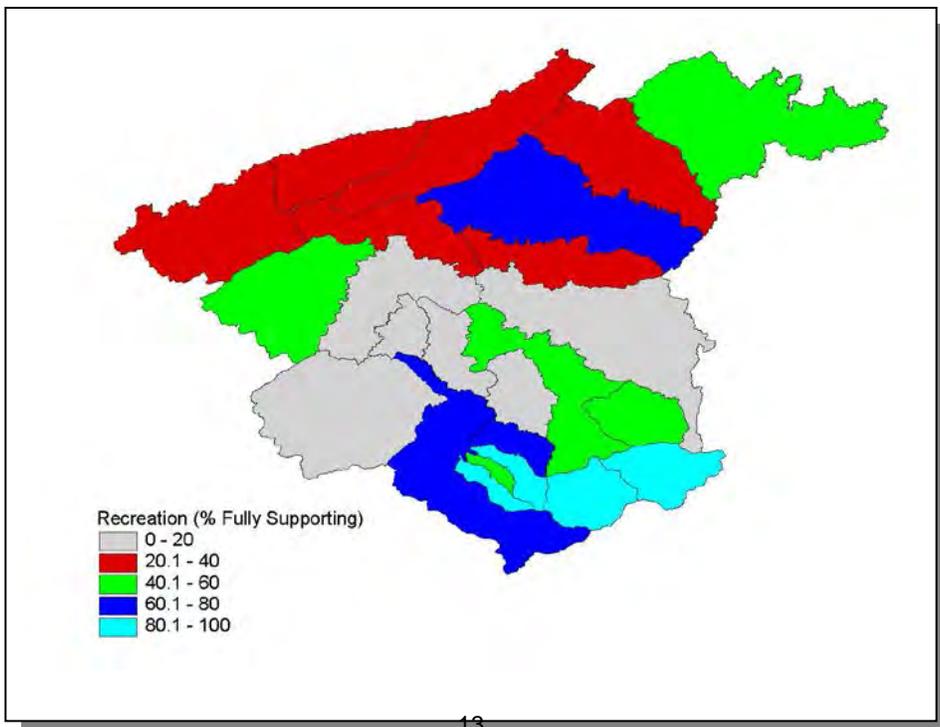
**Figure 3-7. Percentage of Stream Miles Assessed for Support of Fish and Aquatic Life Designated Use in HUC-12 Subwatersheds.**



**Figure 3-8. Percentage of Stream Miles Fully Supporting for Fish and Aquatic Life Designated Use in HUC-12 Subwatersheds.**

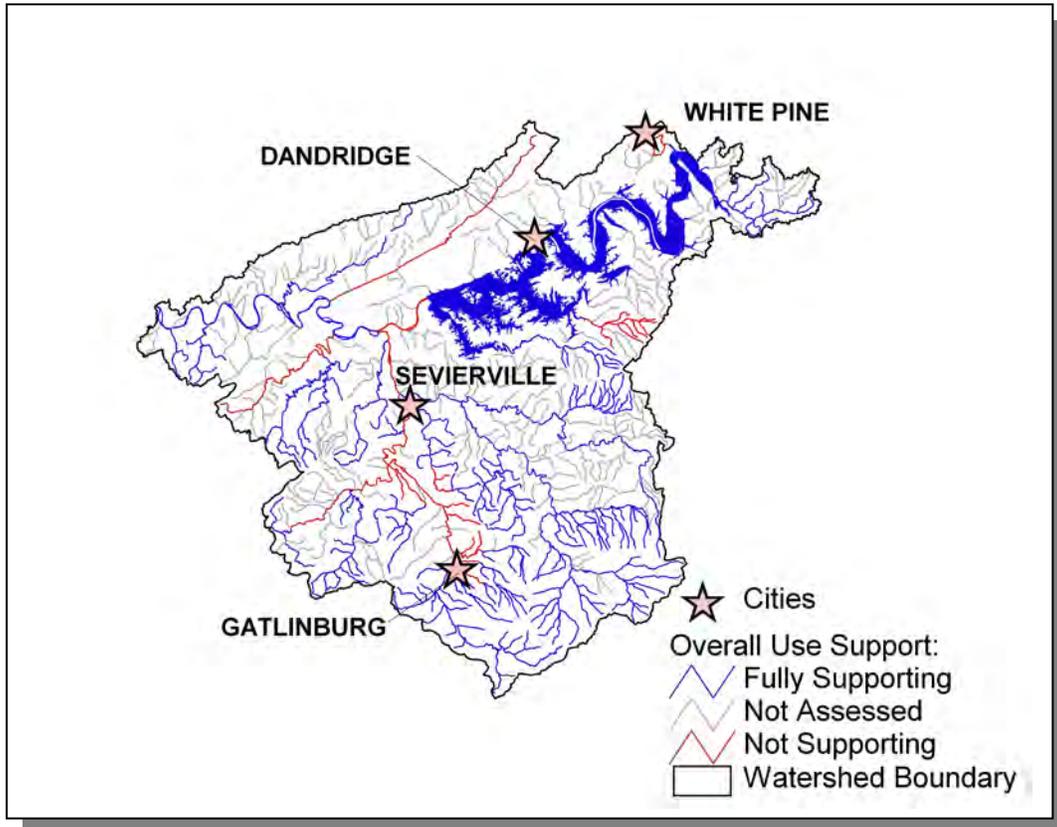


**Figure 3-9. Percentage of Stream Miles Assessed for Support of Recreation Designated Use in HUC-12 Subwatersheds.**

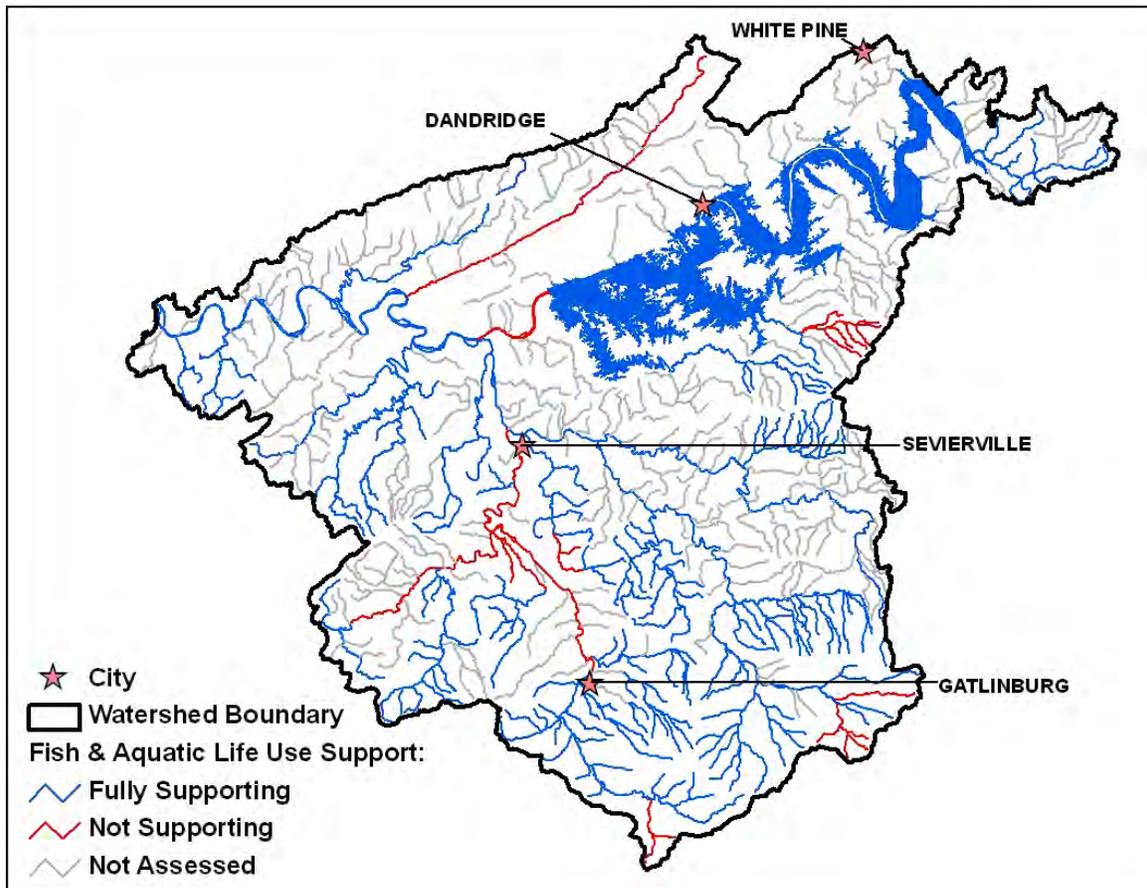


**Figure 3-10. Percentage of Stream Miles Fully Supporting for Recreation Designated Use in HUC-12 Subwatersheds.**

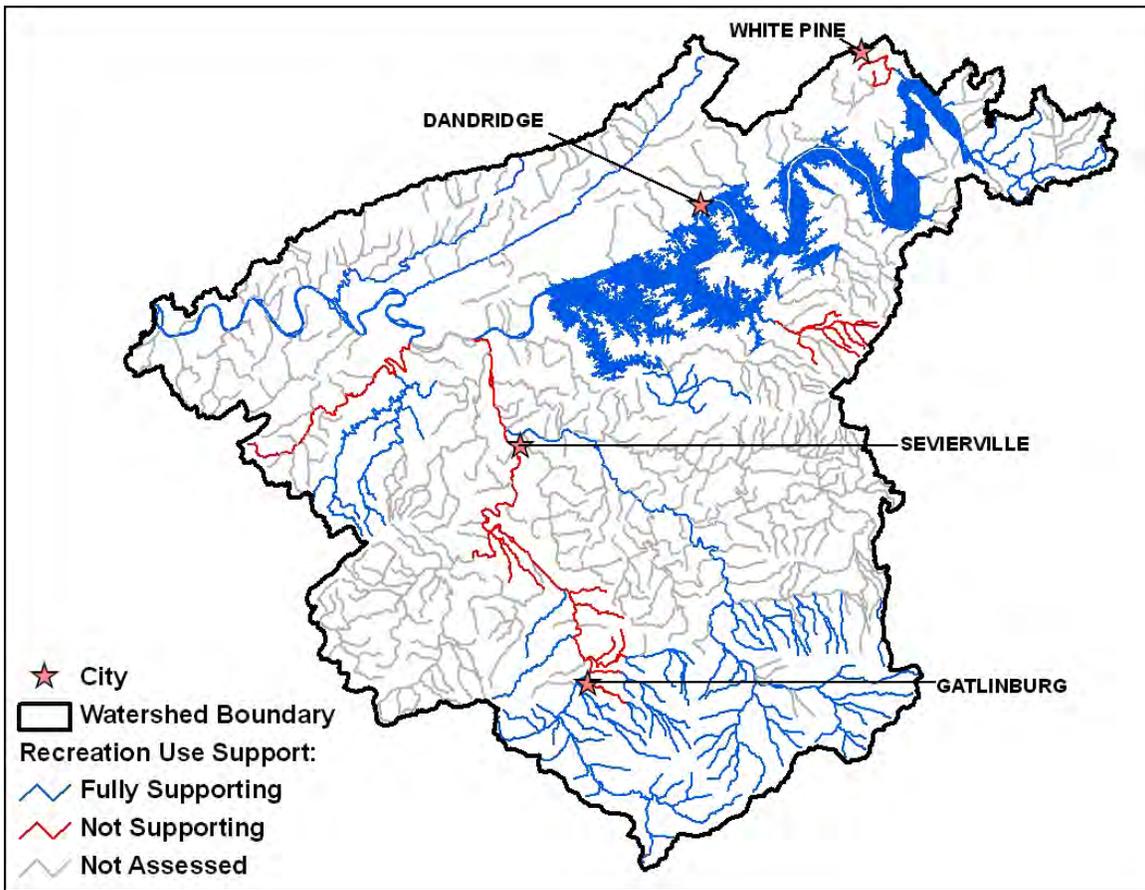
**3.3.A. Assessment Summary.**



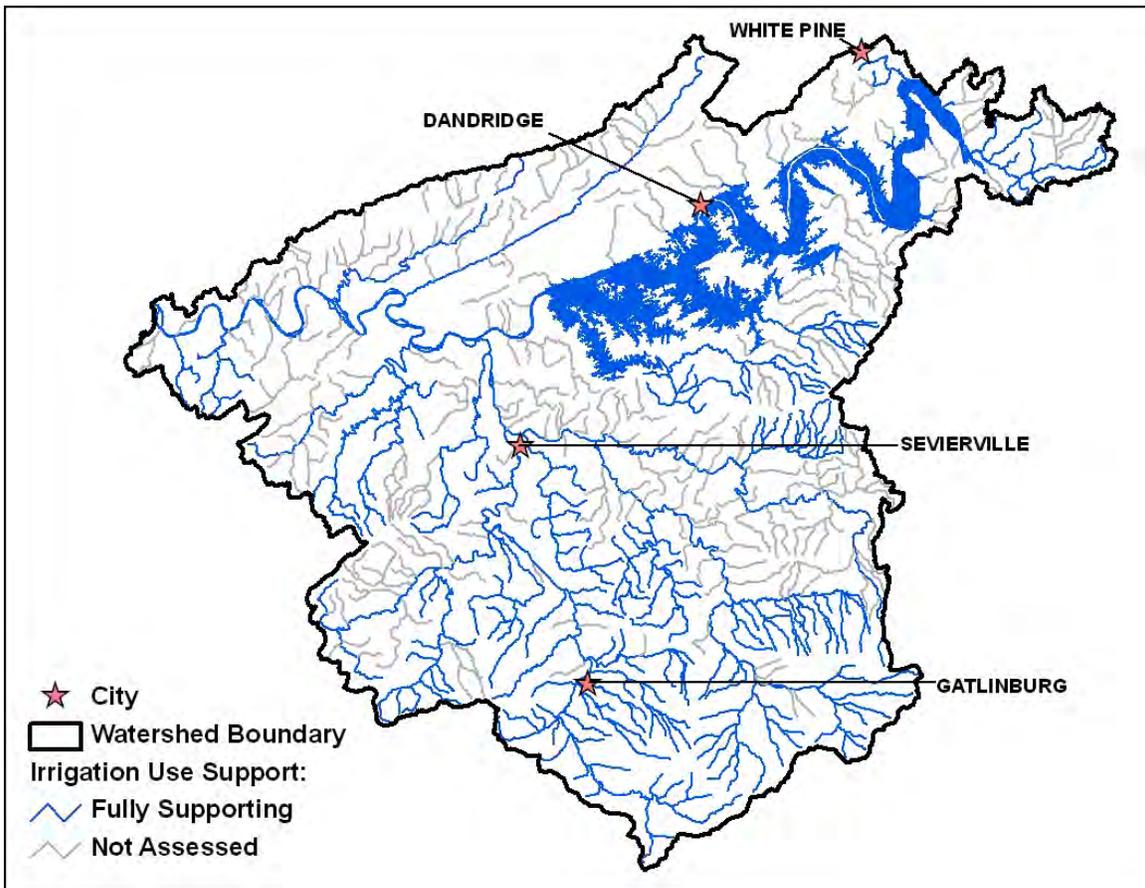
**Figure 3-11. Overall Use Support Attainment in the Lower French Broad River Watershed.** Assessment data are based on the 2006 Water Quality Assessment. Water Quality Standards are described at <http://www.state.tn.us/sos/rules/1200/1200-04/1200-04.htm>. Locations of Dandridge, Gatlinburg, Sevierville, and White Pine are shown for reference. More information is provided in Appendix III.



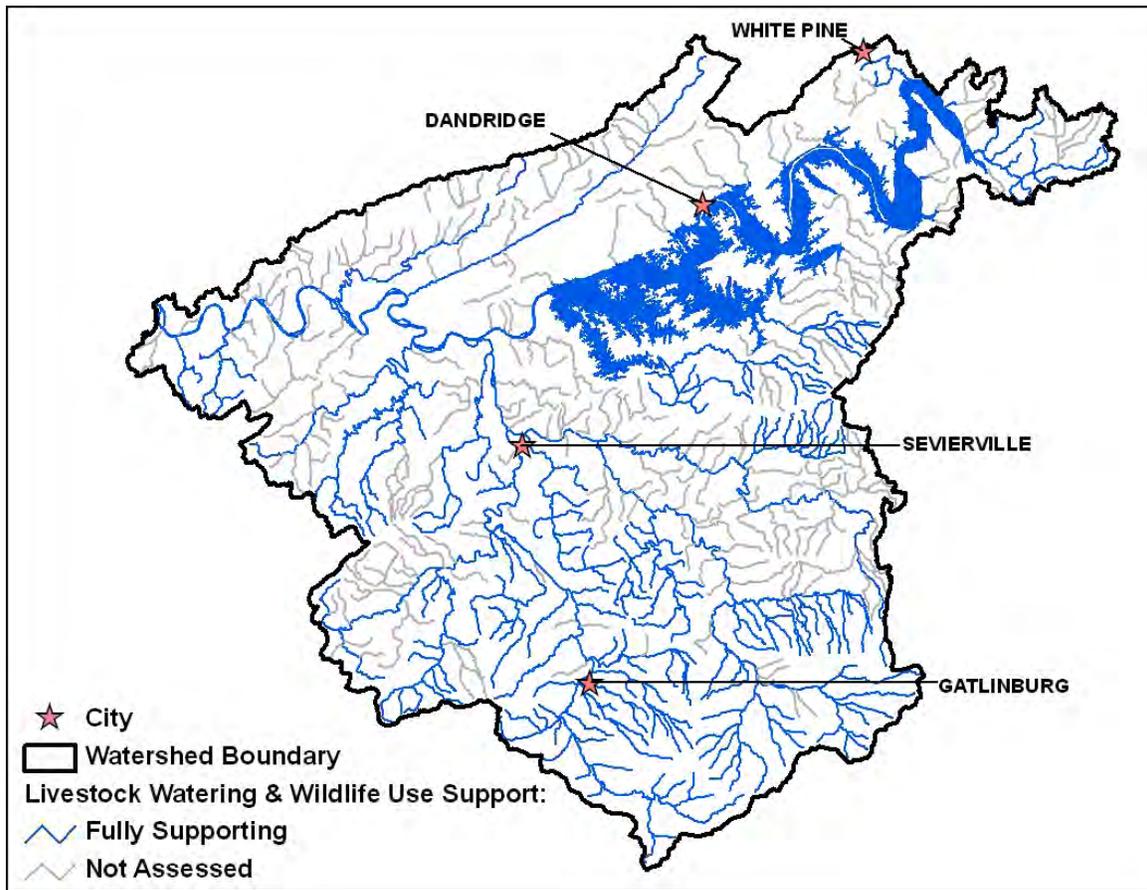
**Figure 3-12. Fish and Aquatic Life Use Support Attainment in the Lower French Broad River Watershed.** Assessment data are based on the 2006 Water Quality Assessment. Water Quality Standards are described at <http://www.state.tn.us/sos/rules/1200/1200-04/1200-04.htm>. Locations of Dandridge, Gatlinburg, Sevierville, and White Pine are shown for reference. More information is provided in Appendix III.



**Figure 3-13. Recreation Use Support Attainment in the Lower French Broad River Watershed.** Assessment data are based on the 2006 Water Quality Assessment. Water Quality Standards are described at <http://www.state.tn.us/sos/rules/1200/1200-04/1200-04.htm>. Locations of Dandridge, Gatlinburg, Sevierville, and White Pine are shown for reference. More information is provided in Appendix III.

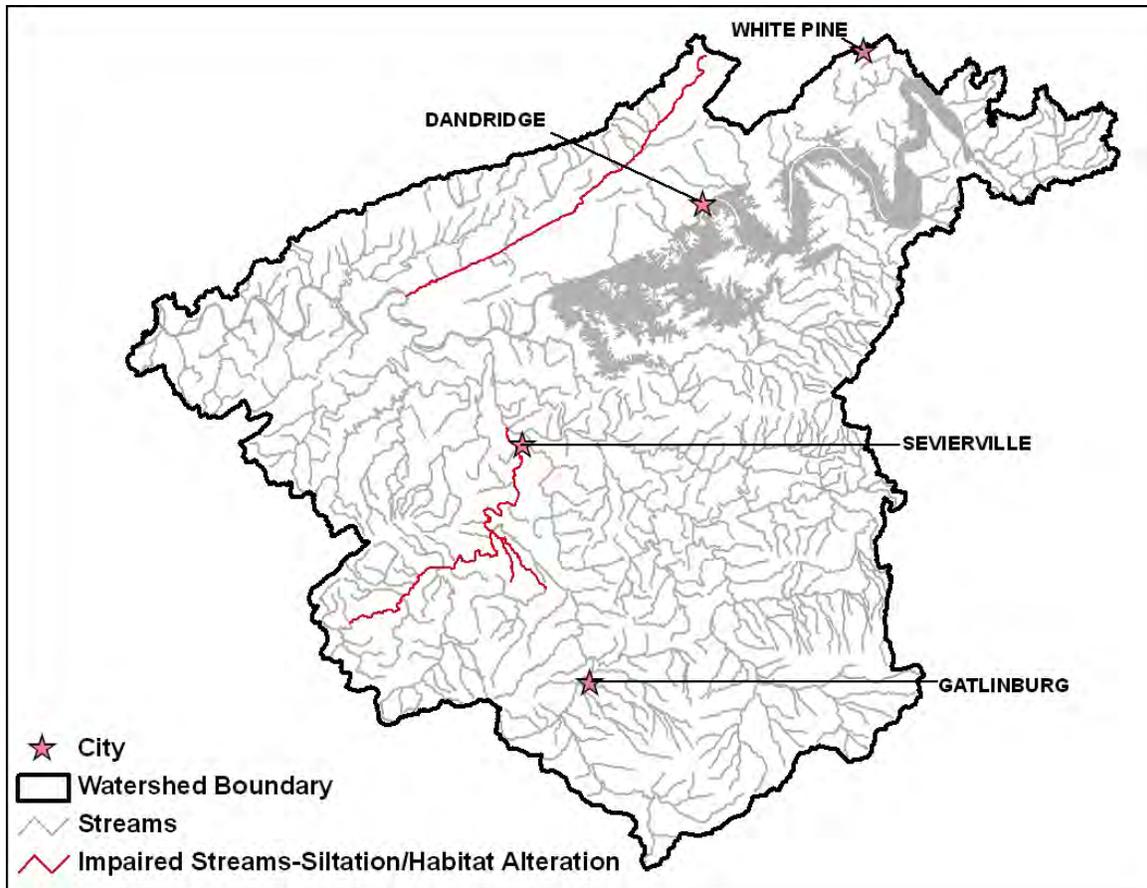


**Figure 3-14. Irrigation Use Support Attainment in the Lower French Broad River Watershed.** Assessment data are based on the 2006 Water Quality Assessment. Water Quality Standards are described at <http://www.state.tn.us/sos/rules/1200/1200-04/1200-04.htm>. Locations of Dandridge, Gatlinburg, Sevierville, and White Pine are shown for reference. More information is provided in Appendix III.

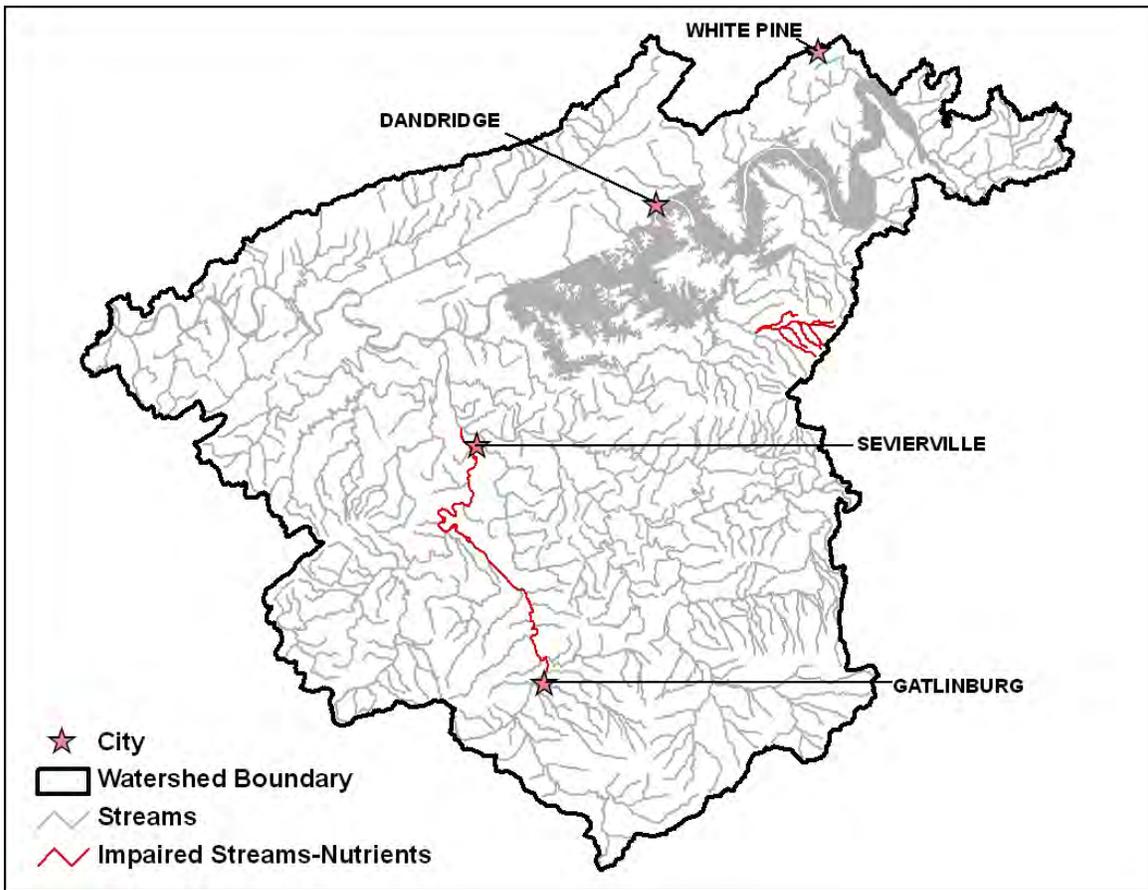


**Figure 3-15. Livestock Watering and Wildlife Use Support Attainment in the Lower French Broad River Watershed.** Assessment data are based on the 2006 Water Quality Assessment. Water Quality Standards are described at <http://www.state.tn.us/sos/rules/1200/1200-04/1200-04.htm>. Locations of Dandridge, Gatlinburg, Sevierville, and White Pine are shown for reference. More information is provided in Appendix III.

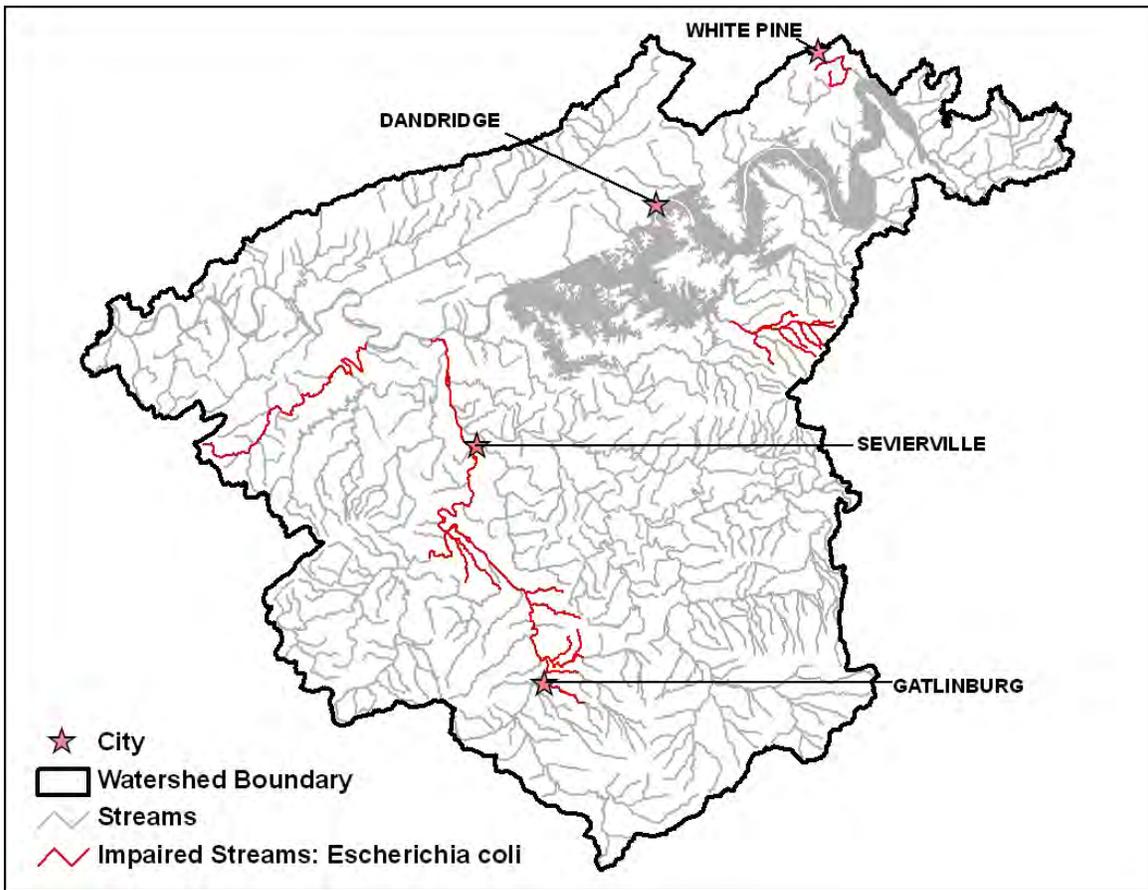
**3.3.B. Use Impairment Summary.**



**Figure 3-16. Impaired Streams Due to Siltation in the Lower French Broad River Watershed.** Assessment data are based on the 2006 Water Quality Assessment. Locations of Dandridge, Gatlinburg, Sevierville, and White Pine are shown for reference. More information is provided in Appendix III.



**Figure 3-17. Impaired Streams Due to Nutrients in the Lower French Broad River Watershed.** Assessment data are based on the 2006 Water Quality Assessment. Locations of Dandridge, Gatlinburg, Sevierville, and White Pine are shown for reference. More information is provided in Appendix III.

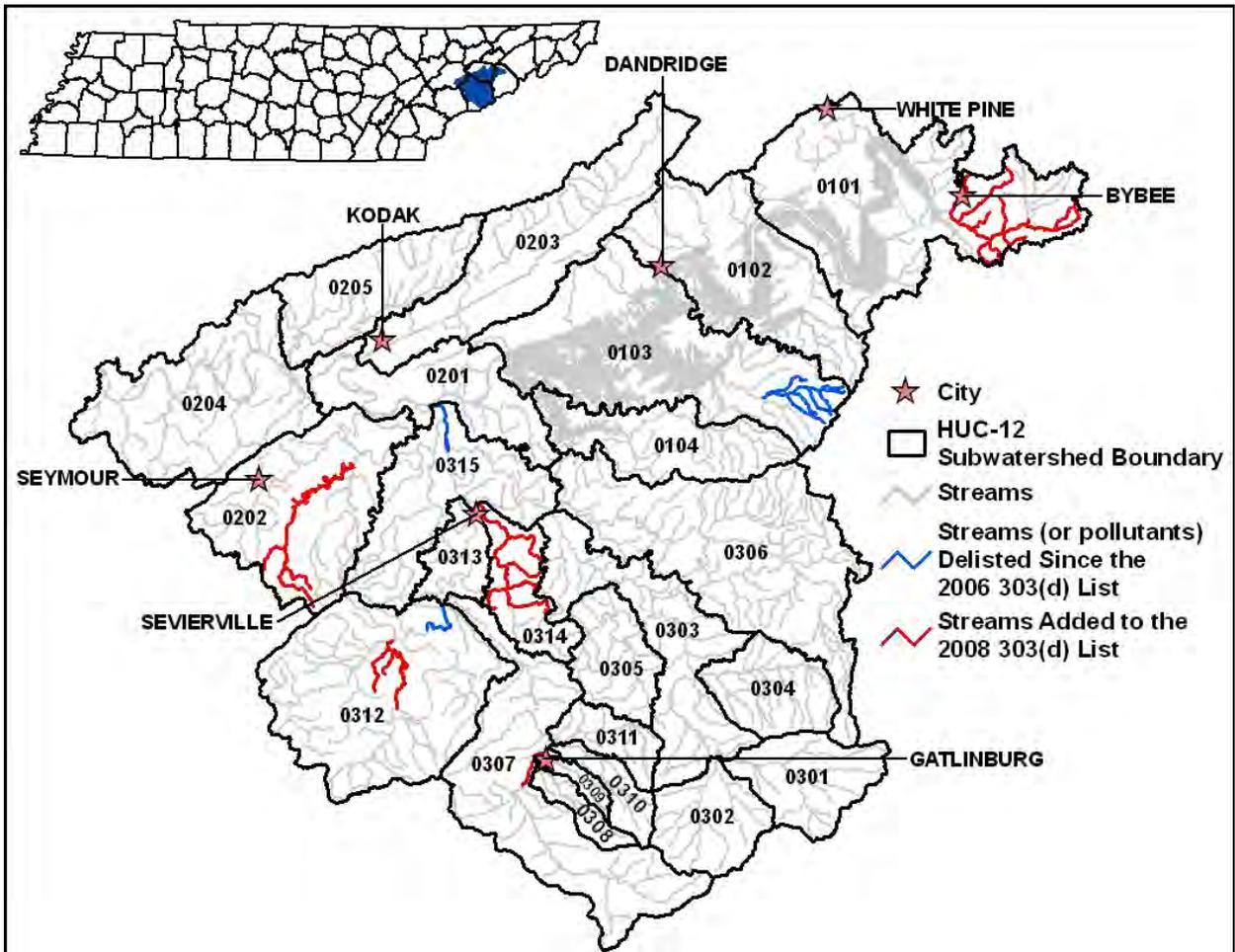


**Figure 3-18. Impaired Streams Due to Escherichia coli in the Lower French Broad River Watershed.** Assessment data are based on the 2006 Water Quality Assessment. Locations of Dandridge, Gatlinburg, Sevierville, and White Pine are shown for reference. More information is provided in Appendix III.

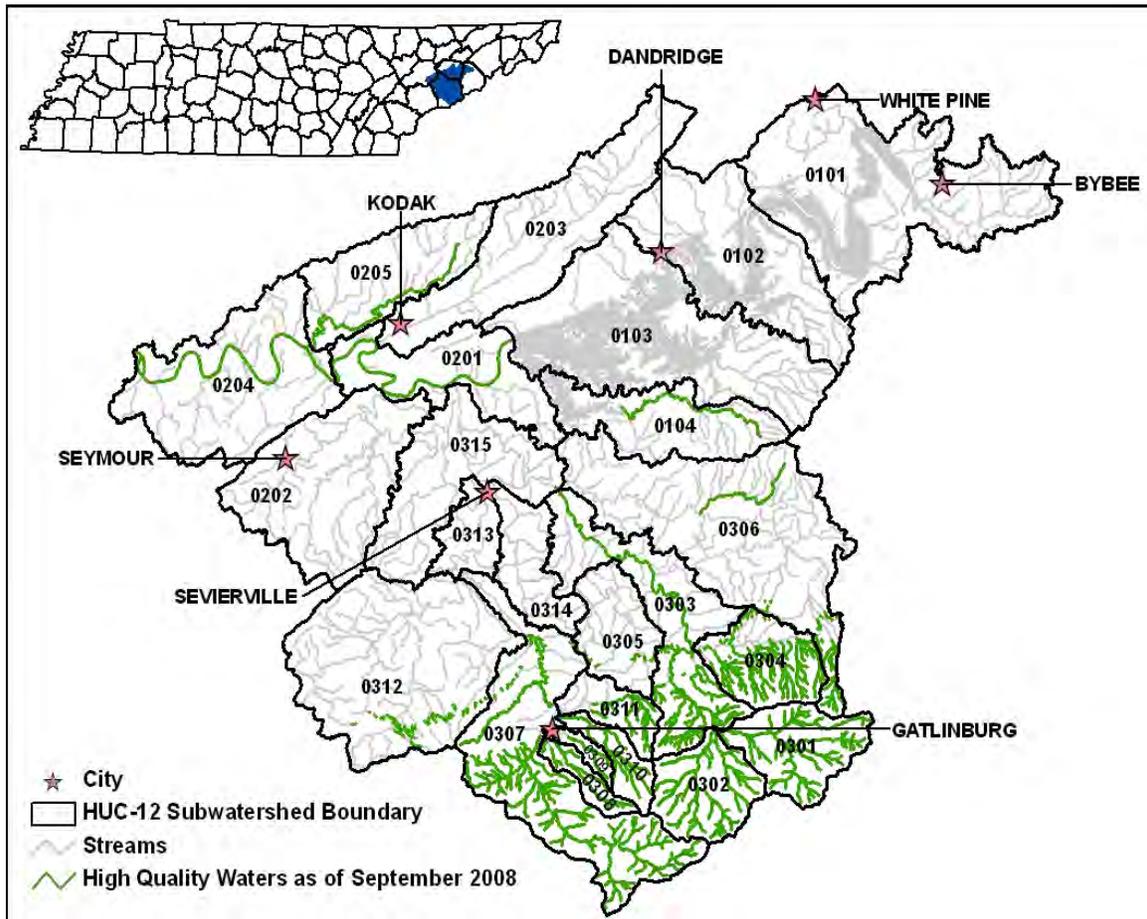
The listing of impaired waters that do not support designated uses (the 303(d) list) is traditionally submitted to EPA every two years. A copy of the most recent 303(d) list may be downloaded from <http://www.state.tn.us/environment/wpc/publications/>.

Since the year 2002, the 303(d) list is compiled by using EPA's ADB (Assessment Database) software developed by RTI (Research Triangle Institute). The ADB allows for a more detailed segmentation of waterbodies. While this results in a more accurate description of the status of water quality, it makes it difficult when comparing water quality assessments with and without using this tool. A more meaningful comparison will be between assessments completed in Year 3 of each succeeding five-year cycle.

The ADB was used to create maps that illustrate water quality. These maps may be viewed at <http://gis3.memphis.edu/wpc/>.



**Figure 3-19. Changes to the 303(d) List of Impaired Waters in the Lower French Broad River Watershed Since Approval of the 2006 List by EPA. More information is provided in Appendix III.**



**Figure 3-20. High Quality Waters Identified in the Lower French Broad River Watershed.**  
More information is provided in Appendix III.

## **CHAPTER 4**

### **POINT AND NONPOINT SOURCE CHARACTERIZATION OF THE LOWER FRENCH BROAD RIVER WATERSHED**

- 4.1. Background.**
- 4.2. Characterization of HUC-12 Subwatersheds**
  - 4.2.A. 060101070101 (Douglas Lake, Upper)**
  - 4.2.B. 060101070102 (Douglas Lake, Middle)**
  - 4.2.C. 060101070103 (Douglas Lake, Lower)**
  - 4.2.D. 060101070104 (Mud Creek)**
  - 4.2.E. 060101070201 (French Broad River)**
  - 4.2.F. 060101070202 (Boyds Creek)**
  - 4.2.G. 060101070203 (Dumplin Creek)**
  - 4.2.H. 060101070204 (French Broad River)**
  - 4.2.I. 060101070205 (Tuckahoe Creek)**
  - 4.2.J. 060101070301 (Middle Prong Little Pigeon River)**
  - 4.2.K. 060101070302 (Porters Creek)**
  - 4.2.L. 060101070303 (East Prong Little Pigeon River)**
  - 4.2.M. 060101070304 (Webb Creek)**
  - 4.2.N. 060101070305 (Bird Creek)**
  - 4.2.O. 060101070306 (East Fork Dunn Creek)**
  - 4.2.P. 060101070307 (West Prong Little Pigeon River)**
  - 4.2.Q. 060101070308 (Le Conte Creek)**
  - 4.2.R. 060101070309 (Baskins Creek)**
  - 4.2.S. 060101070310 (Roaring Fork)**
  - 4.2.T. 060101070311 (Dudley Creek)**
  - 4.2.U. 060101070312 (Waldon Creek)**
  - 4.2.V. 060101070313 (West Prong Little Pigeon River, Lower)**
  - 4.2.W. 060101070314 (Middle Creek)**
  - 4.2.X. 060101070315 (Little Pigeon River, Lower)**

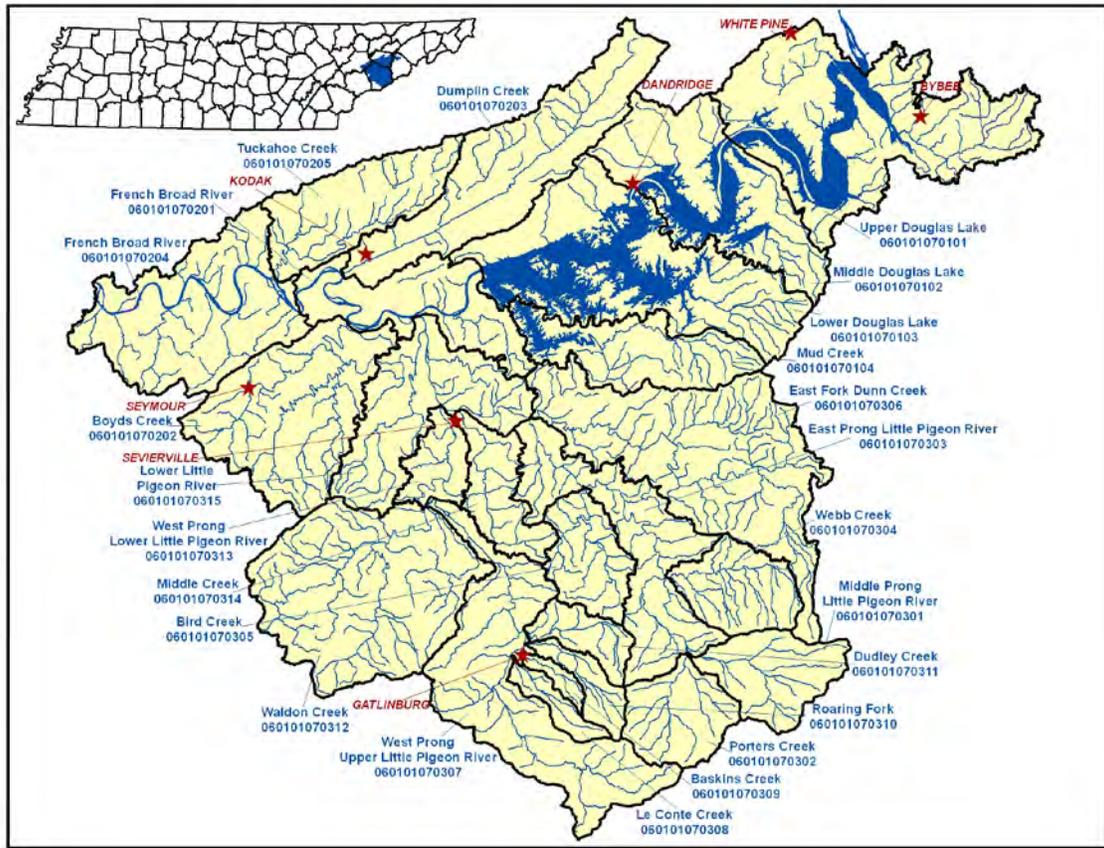
**4.1. BACKGROUND.** This chapter is organized by HUC-12 subwatershed, and the description of each subwatershed is divided into four parts:

- i. General description of the subwatershed
- ii. USGS (United States Geological Survey) gaging stations and STORET sites
- iii. Location of permitted activities
- iv. Description of nonpoint source contributions

The HUC can range from 2 to 16 digits long, more digits indicating a smaller and smaller portion of the watershed is represented. The Lower French Broad River Watershed (HUC 06010107X) has been delineated into twenty-four HUC-12 subwatersheds.

Information for this chapter was obtained from databases maintained by the Division of Water Pollution Control or provided in the WCS (Watershed Characterization System) data set. The WCS used was version 2.0 (developed by Tetra Tech, Inc for EPA Region 4) released in 2003.

WCS integrates with ArcView<sup>®</sup> v3.x and Spatial Analyst<sup>®</sup> v1.1 to analyze user-delineated (sub)watersheds based on hydrologically connected water bodies. Reports are generated by integrating WCS with Microsoft<sup>®</sup> Word. Land Use/Land Cover information from 2001 MRLC (Multi-Resolution Land Cover) data are calculated based on the proportion of county-based land use/land cover in user-delineated (sub)watersheds. Nonpoint source data in WCS are based on agricultural census data collected 1992–1998; nonpoint source data were reviewed by Tennessee NRCS staff.



**Figure 4-1. The Lower French Broad River Watershed is Composed of Twenty-Four USGS-Delineated Subwatersheds (12-Digit Subwatersheds).**

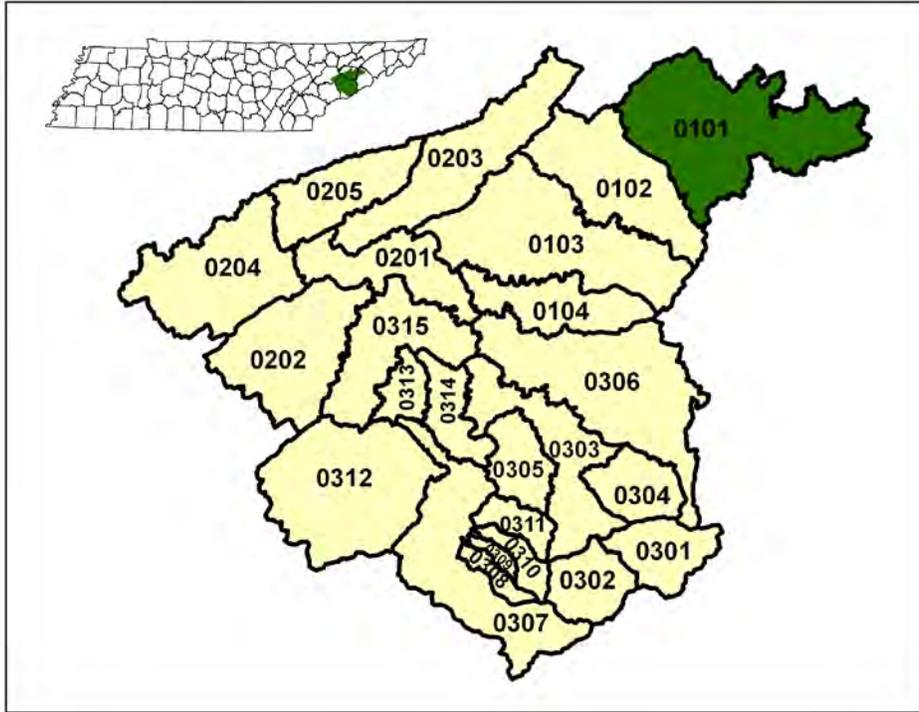
**4.2. CHARACTERIZATION OF HUC-12 SUBWATERSHEDS.** The Watershed Characterization System (WCS) software and data sets provided by EPA Region IV were used to characterize each subwatershed in the Lower French Broad River Watershed.

HUC-8	HUC-10	HUC-12
06010107	0601010701	060101070101 (Douglas Lake, Upper)
		060101070102 (Douglas Lake, Middle)
		060101070103 (Douglas Lake, Lower)
		060101070104 (Mud Creek)
	0601010702	060101070201 (French Broad River)
		060101070202 (Boyds Creek)
		060101070203 (Dumplin Creek)
		060101070204 (French Broad River)
	0601010703	060101070205 (Tuckahoe Creek)
		060101070301 (Middle Prong Little Pigeon River)
		060101070302 (Porters Creek)
		060101070303 (East Prong Little Pigeon River)
		060101070304 (Webb Creek)
		060101070305 (Bird Creek)
		060101070306 (East Fork Dunn Creek)
060101070307 (West Prong Little Pigeon River)		
060101070308 (Le Conte Creek)		
060101070309 (Baskins Creek)		
060101070310 (Roaring Fork)		
060101070311 (Dudley Creek)		
060101070312 (Waldon Creek)		
060101070313 (West Prong Little Pigeon River, Lower)		
060101070314 (Middle Creek)		
060101070315 (Little Pigeon River, Lower)		

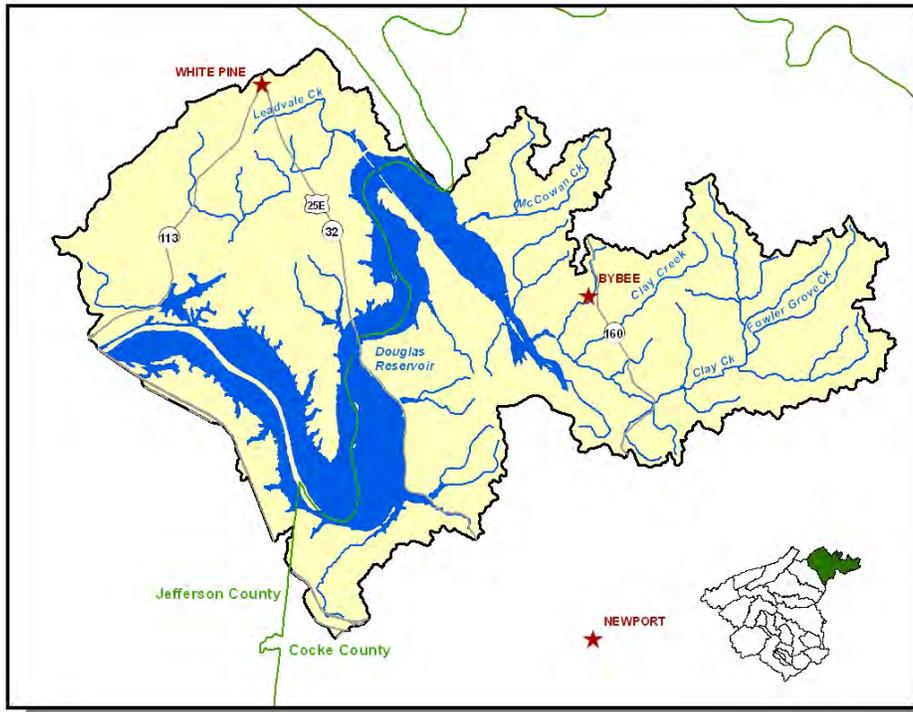
**Table 4-1. HUC-12 Drainage Areas are Nested Within HUC-10 Drainages.** NRCS worked with USGS to delineate the HUC-10 and HUC-12 drainage boundaries.

**4.2.A 060101070101 (Douglas Lake, Upper).**

**4.2.A.i. General Description**



**Figure 4-2. Location of Subwatershed 060101070101.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



**Figure 4-3. Locational Details of Subwatershed 060101070101.**

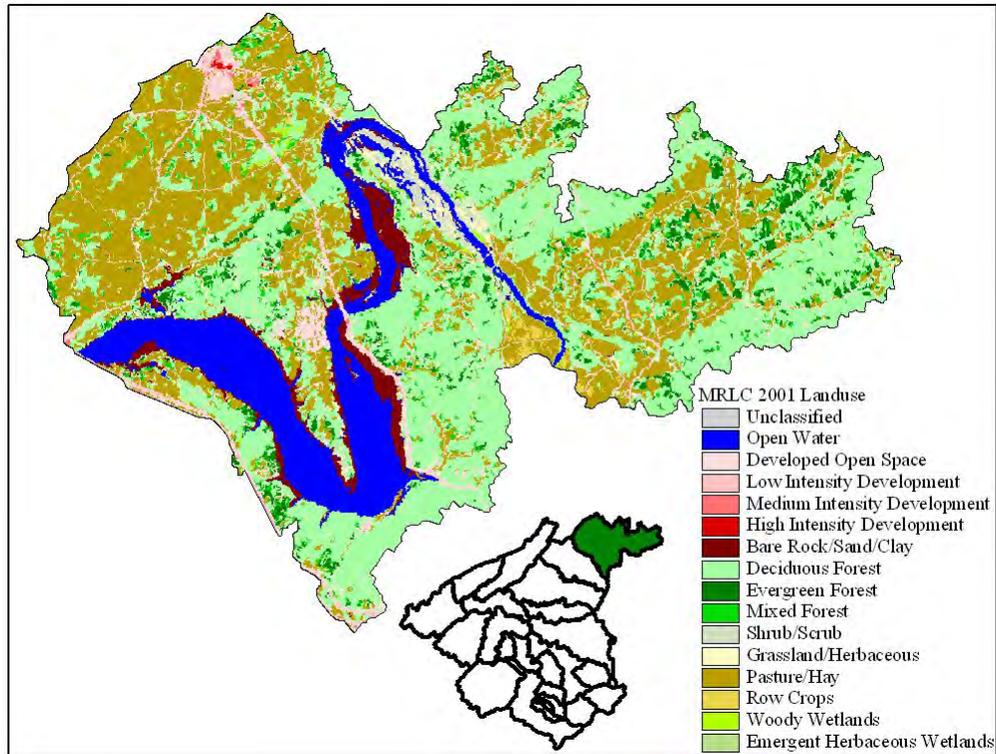


Figure 4-4. Illustration of Land Use Distribution in Subwatershed 060101070101.

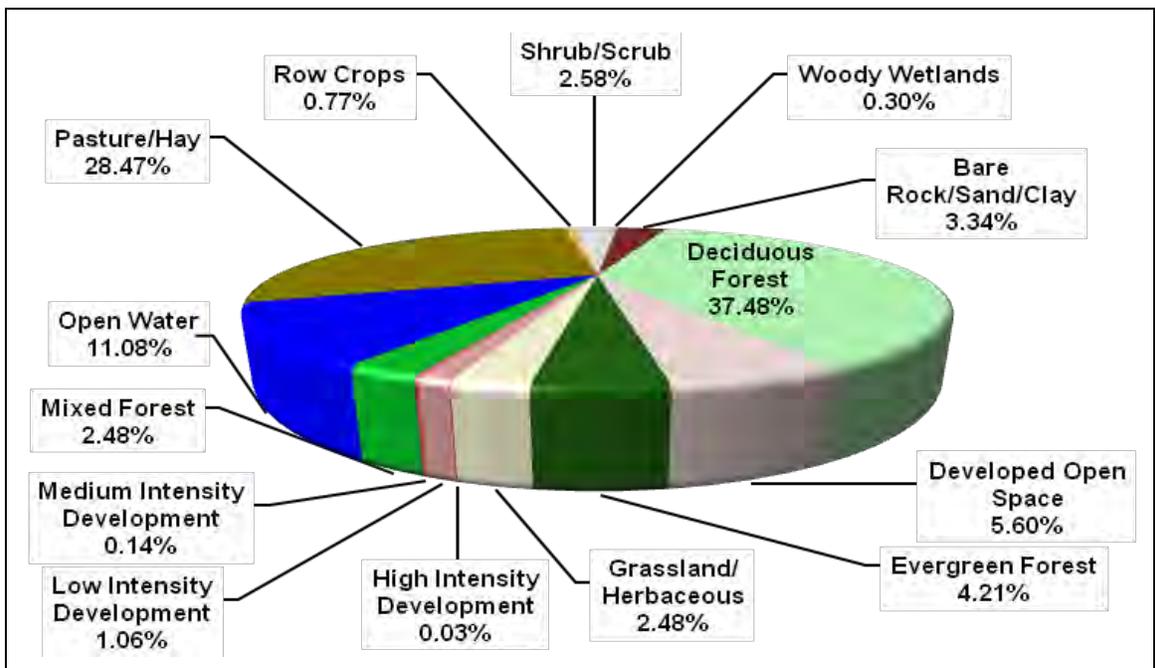
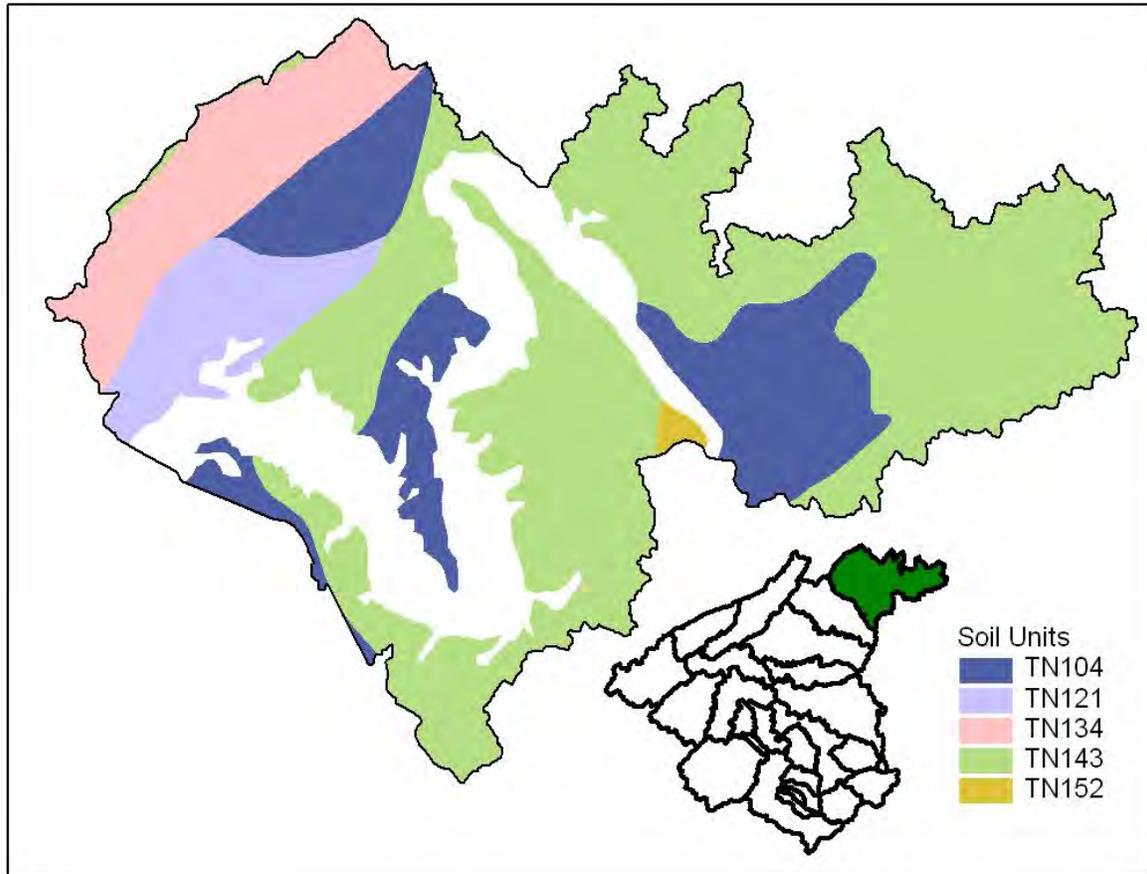


Figure 4-5. Land Use Distribution in Subwatershed 060101070101. More information is provided in Appendix IV.



**Figure 4-6. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070101.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN104	1.00	C	1.20	5.23	Silty Loam	0.38
TN121	0.00	B	1.30	5.21	Loam	0.33
TN134	0.00	B	1.38	5.18	Loam	0.31
TN143	0.00	C	1.22	6.44	Loam	0.32
TN152	0.00	B	2.11	5.26	Loam	0.31

**Table 4-2. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070101.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Cocke	29,141	31,657	33,565	9.23	2,690	2,922	3,099	15.20
Jefferson	33,016	42,168	44,294	10.21	3,371	4,305	4,523	34.20
<b>Totals</b>	<b>62,157</b>	<b>73,825</b>	<b>77,859</b>		<b>6,061</b>	<b>7,227</b>	<b>7,622</b>	<b>25.80</b>

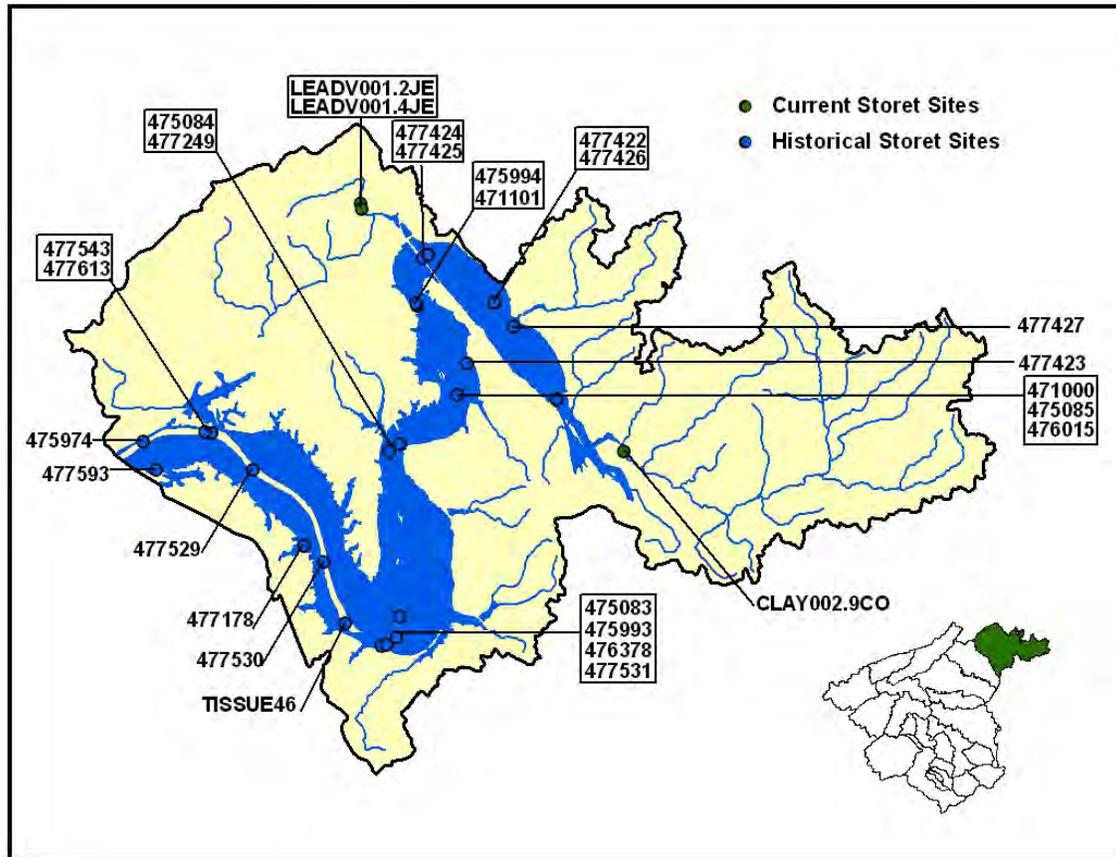
*Table 4-3. Population Estimates in Subwatershed 060101070101.*

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Baneberry	Jefferson	189	120	8	112	0
White Pine	Jefferson	1,771	768	638	127	3
<b>Total</b>		<b>1,960</b>	<b>888</b>	<b>646</b>	<b>239</b>	<b>3</b>

*Table 4-4. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070101.*

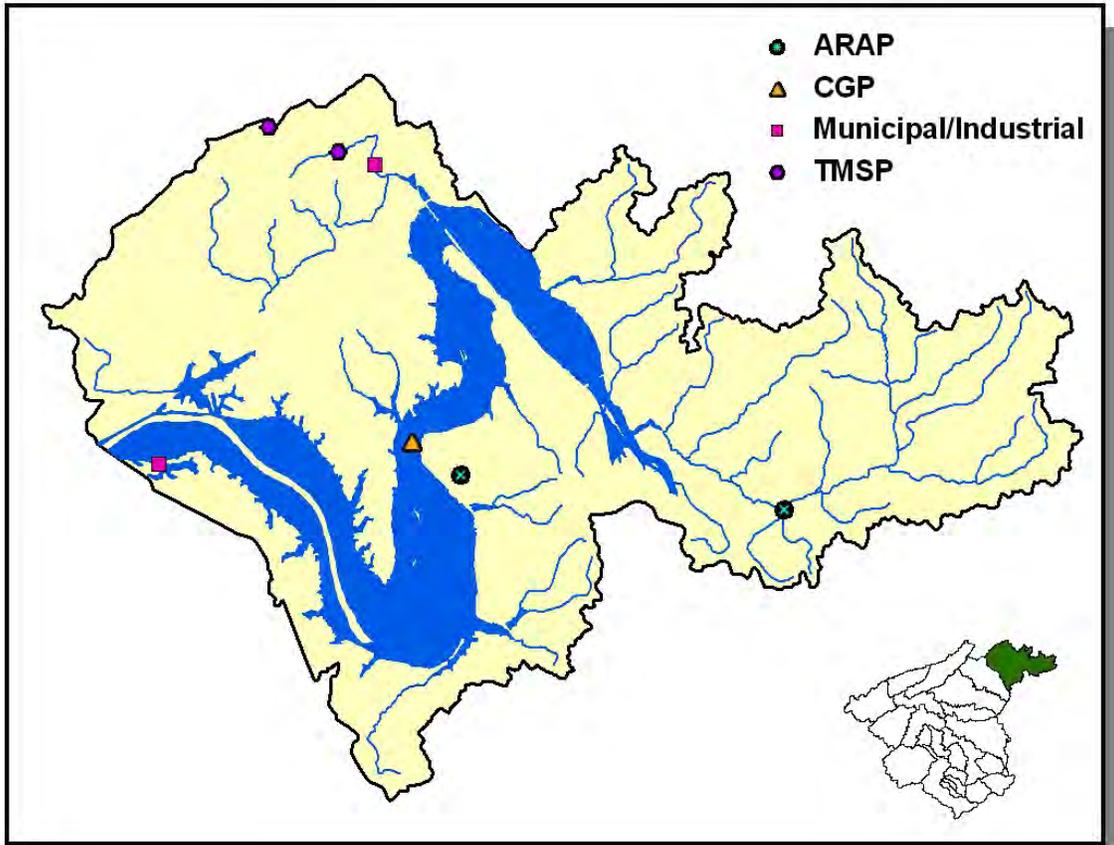
#### 4.2.A.ii STORET Sites

There are no USGS continuous records gaging stations located in subwatershed 060101070101.

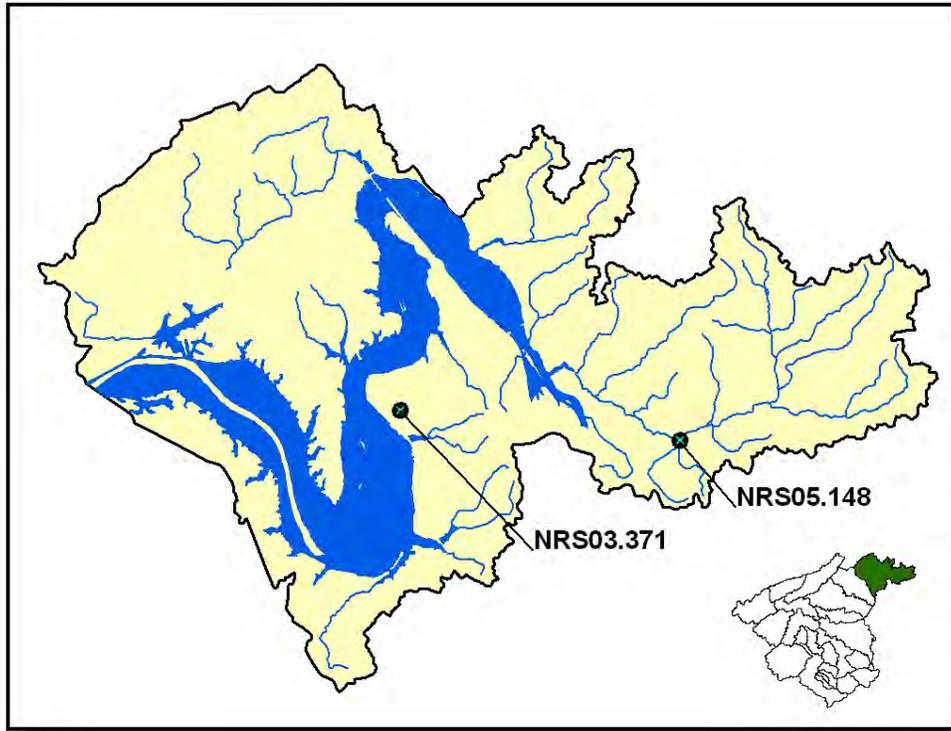


**Figure 4-7. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070101.** More information, including site names and locations, is provided in Appendix IV.

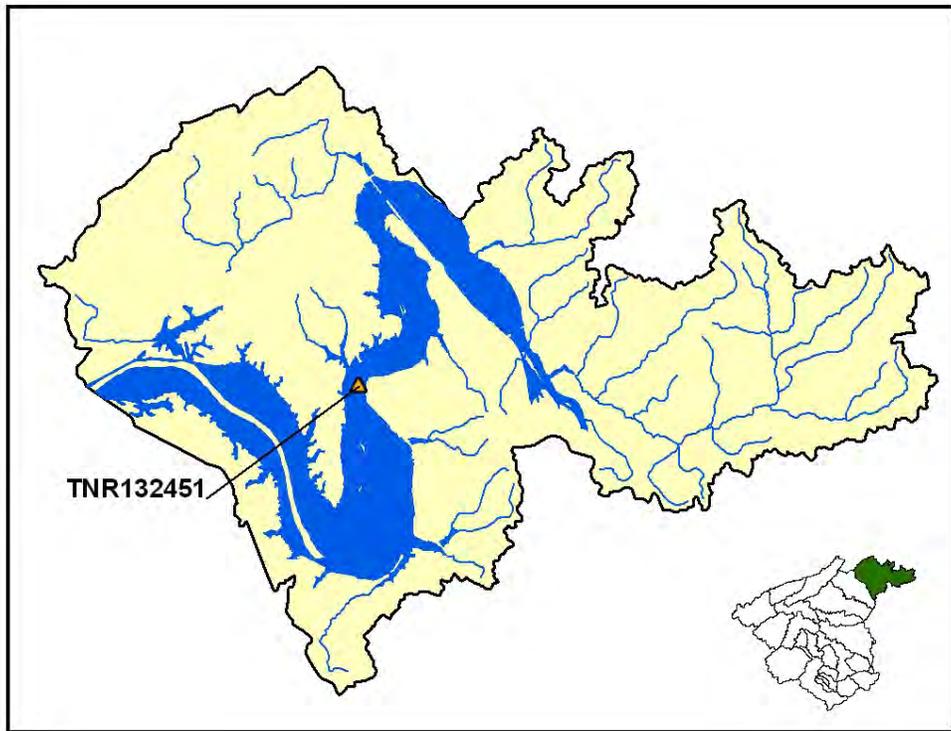
**4.2.A.iii. Permitted Activities**



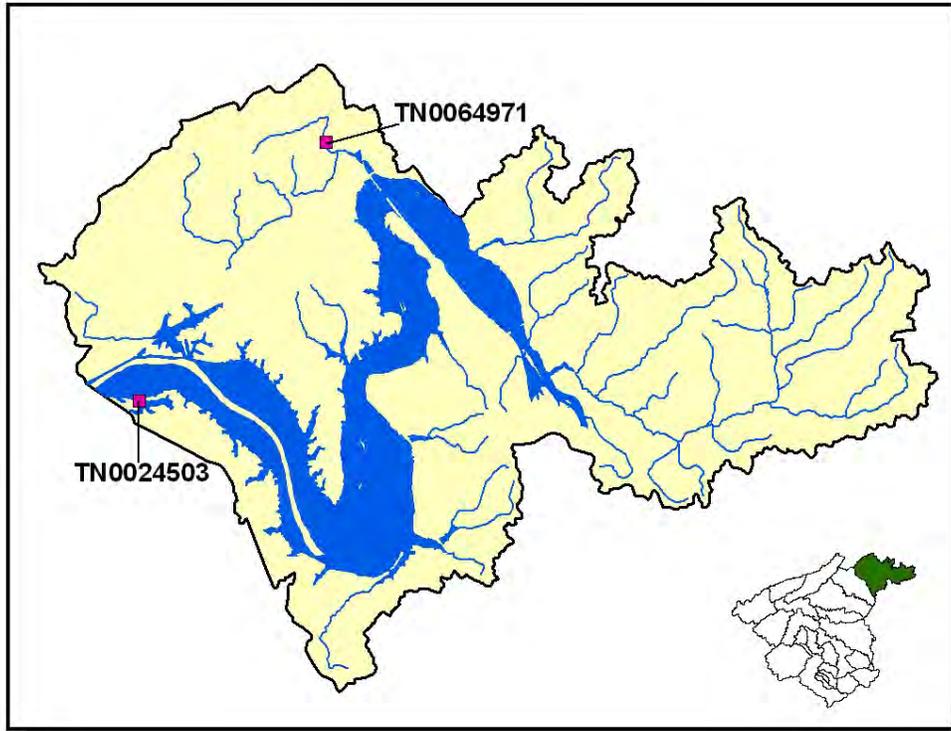
**Figure 4-8. Location of Permits Issued in Subwatershed 060101070101.** More information, including the names of facilities, is provided in Appendix IV.



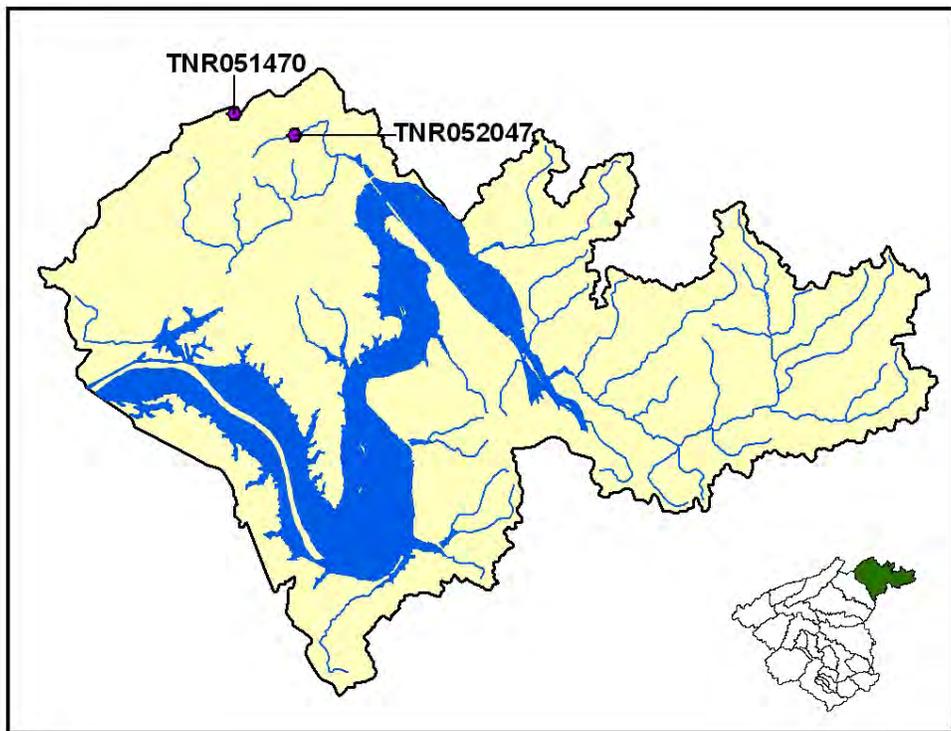
**Figure 4-9. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 060101070101. More information is provided in Appendix IV.**



**Figure 4-10. Location of CGP (Construction General Permit) Sites in Subwatershed 060101070101. More information is provided in Appendix IV.**



**Figure 4-11. Location of Permitted Municipal and Industrial Facilities in Subwatershed 060101070101.** More information, including the name of the facility is provided in Appendix IV.



**Figure 4-12. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 060101070101.** More information is provided in Appendix IV.

**4.2.A.iv. Nonpoint Source Contributions.**

<b>LIVESTOCK COUNTS</b>						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Cocke	8,169	16,971	1,224	361	269	90
Jefferson	16,126	35,718	1,878	1,633	183	567

**Table 4-5. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	<b>INVENTORY</b>		<b>REMOVAL RATE</b>	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cocke	182.0	163.4	3.7	17.4
Jefferson	62.2	62.2	0.6	1.8

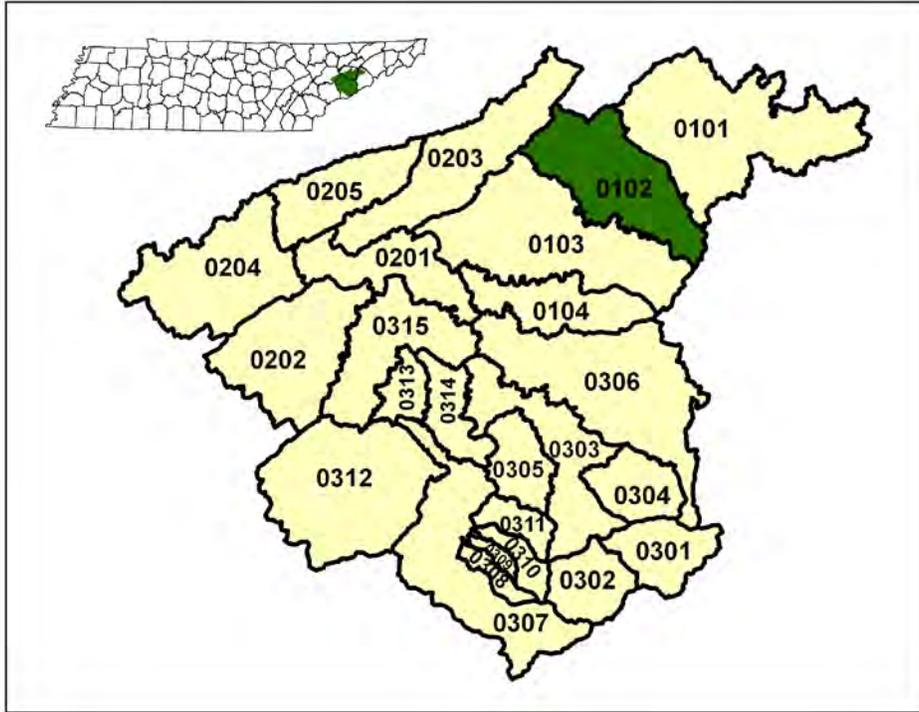
**Table 4-6. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

<b>CROPS</b>	<b>TONS/ACRE/YEAR</b>
Corn (Row Crops)	13.60
Oats (Close Grown Cropland)	13.51
Tobacco (Row Crops)	10.26
Wheat (Close Grown Cropland)	5.30
Grass Forbs Legumes Mixed (Pastureland)	0.67
Grass (Pastureland)	0.44
Grass (Hayland)	0.38
Farmsteads and Ranch Headquarters	0.29
Legume Grass (Hayland)	0.21

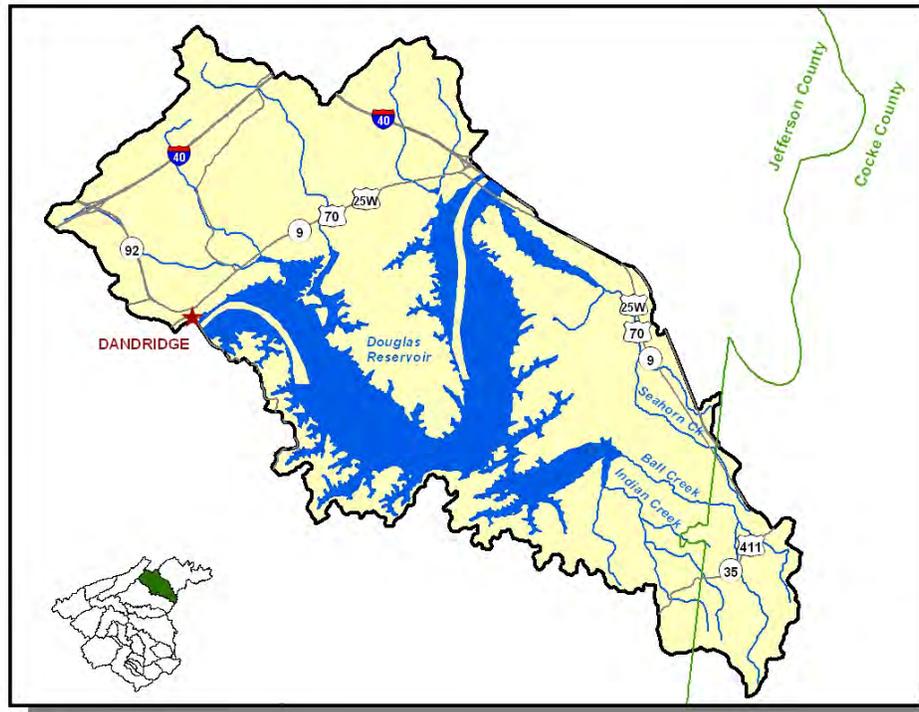
**Table 4-7. Annual Estimated Total Soil Loss in Subwatershed 060101070101.**

**4.2.B. 060101070102 (Douglas Lake, Middle).**

**4.2.Bi. General Description**



**Figure 4-13. Location of Subwatershed 060101070102.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



**Figure 4-14. Locational Details of Subwatershed 060101070102.**

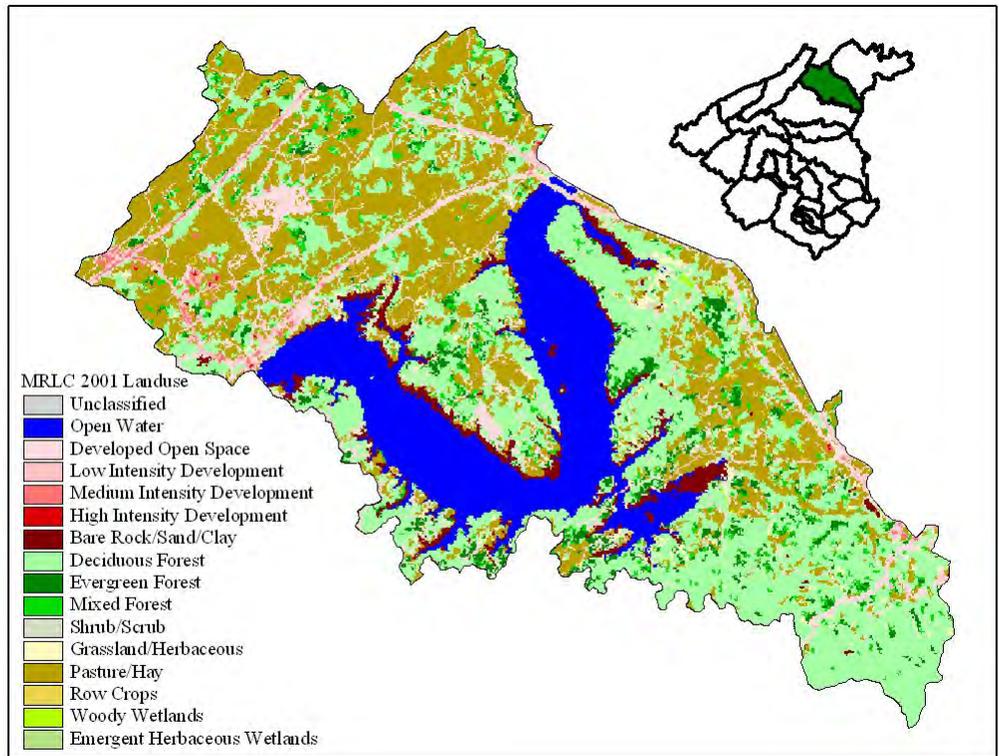


Figure 4-15. Illustration of Land Use Distribution in Subwatershed 060101070102.

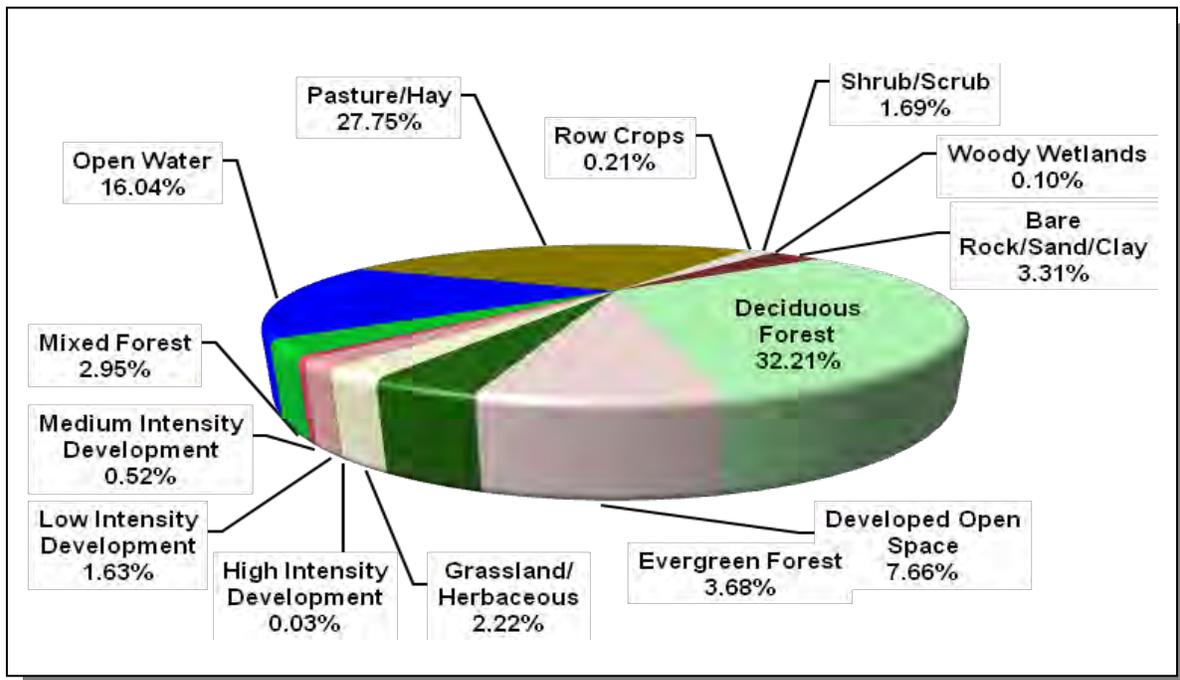
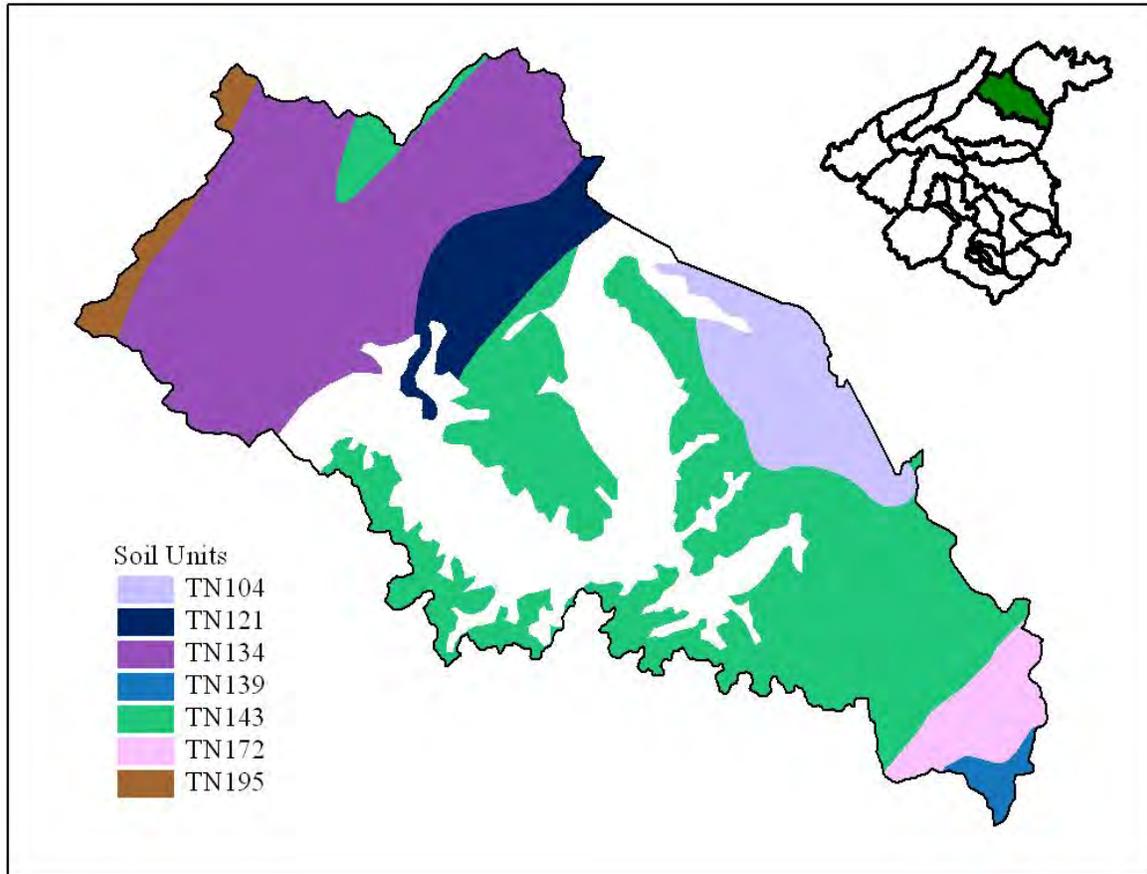


Figure 4-16. Land Use Distribution in Subwatershed 060101070102. More information is provided in Appendix IV.



**Figure 4-17. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070102.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN104	1.00	C	1.20	5.23	Silty Loam	0.38
TN121	0.00	B	1.30	5.21	Loam	0.33
TN134	0.00	B	1.38	5.18	Loam	0.31
TN139	0.00	C	11.84	4.82	Loam	0.20
TN143	0.00	C	1.22	6.44	Loam	0.32
TN172	0.00	B	3.87	5.13	Loam	0.26
TN195	0.00	C	1.93	5.19	Silty Loam	0.34

**Table 4-8. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070102.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Cocke	29,141	31,657	33,565	0.68	198	215	228	15.20
Jefferson	33,016	42,168	44,294	13.85	4,572	5,839	6,134	34.20
<b>Totals</b>	<b>62,157</b>	<b>73,825</b>	<b>77,859</b>		<b>4,770</b>	<b>6,054</b>	<b>6,362</b>	<b>33.40</b>

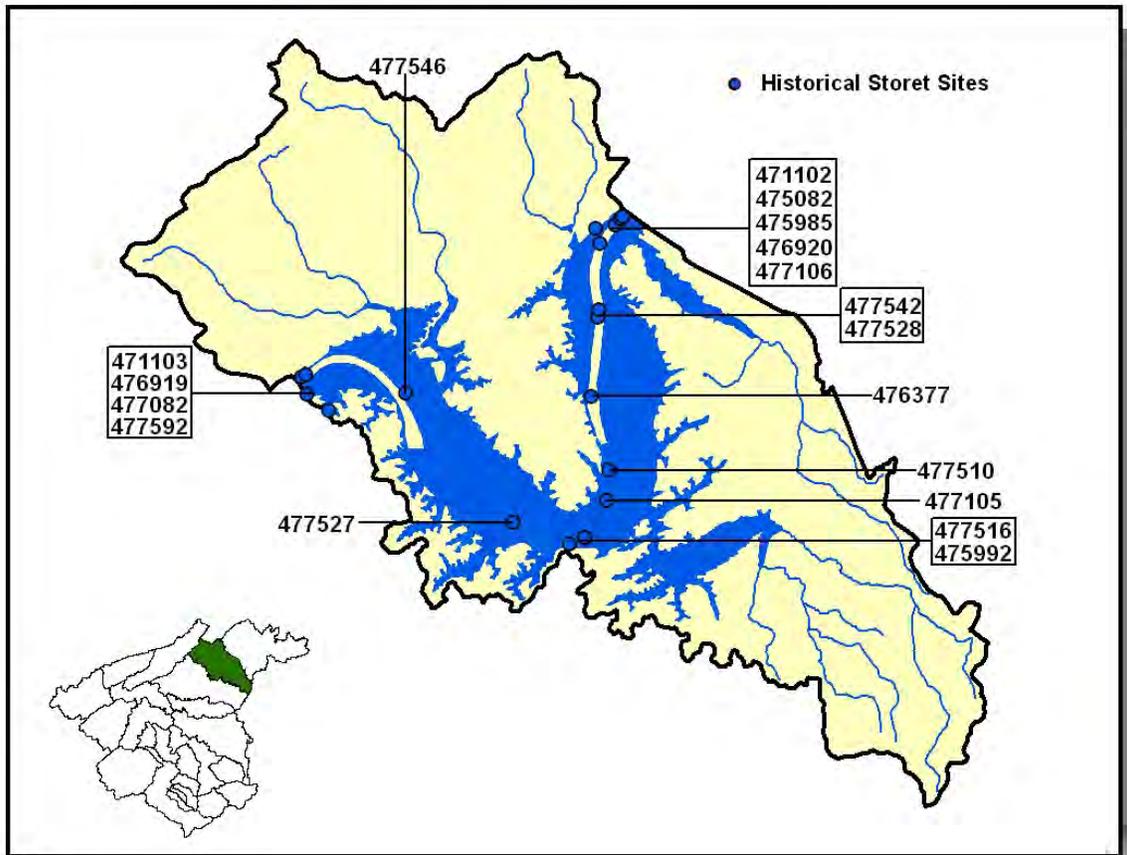
*Table 4-9. Population Estimates in Subwatershed 060101070102.*

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Dandridge	Jefferson	1,540	625	376	247	2

*Table 4-10. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070102.*

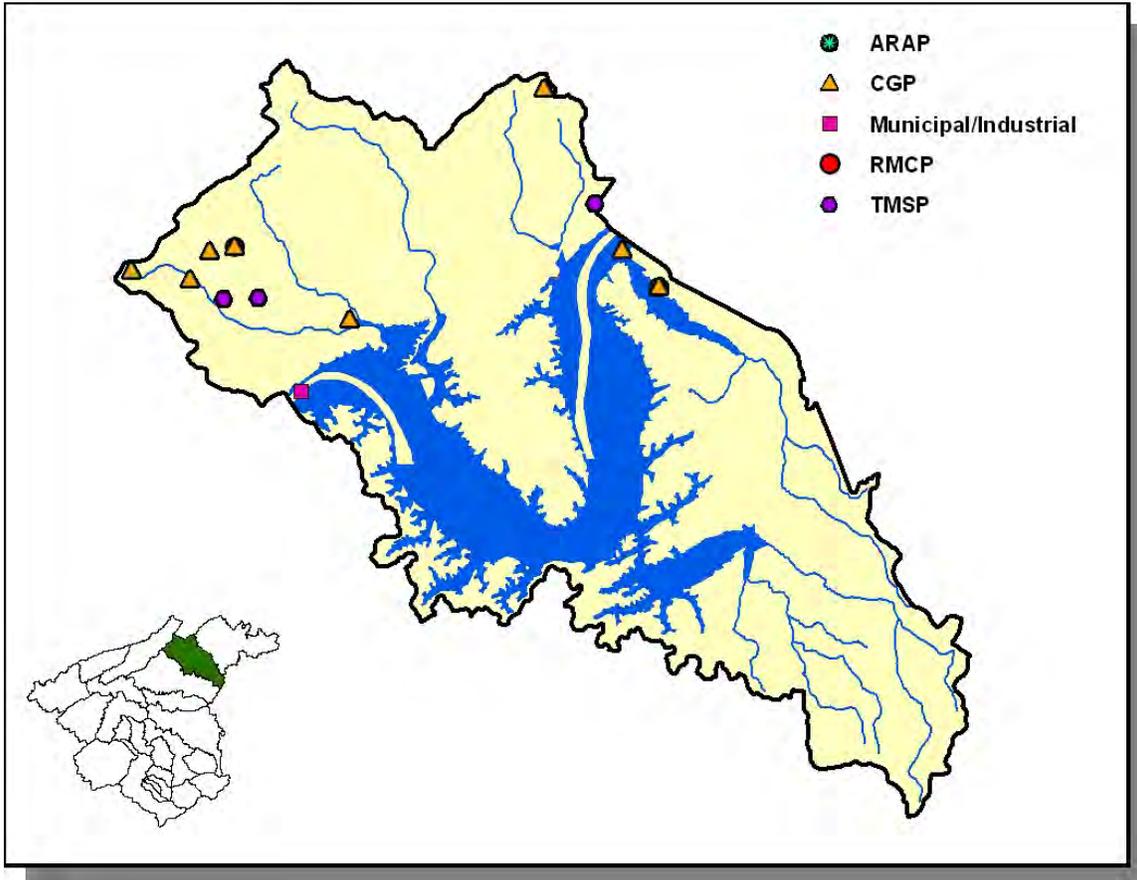
#### 4.2.B.ii STORET Sites

There are no USGS continuous records gaging stations located in subwatershed 060101070102.

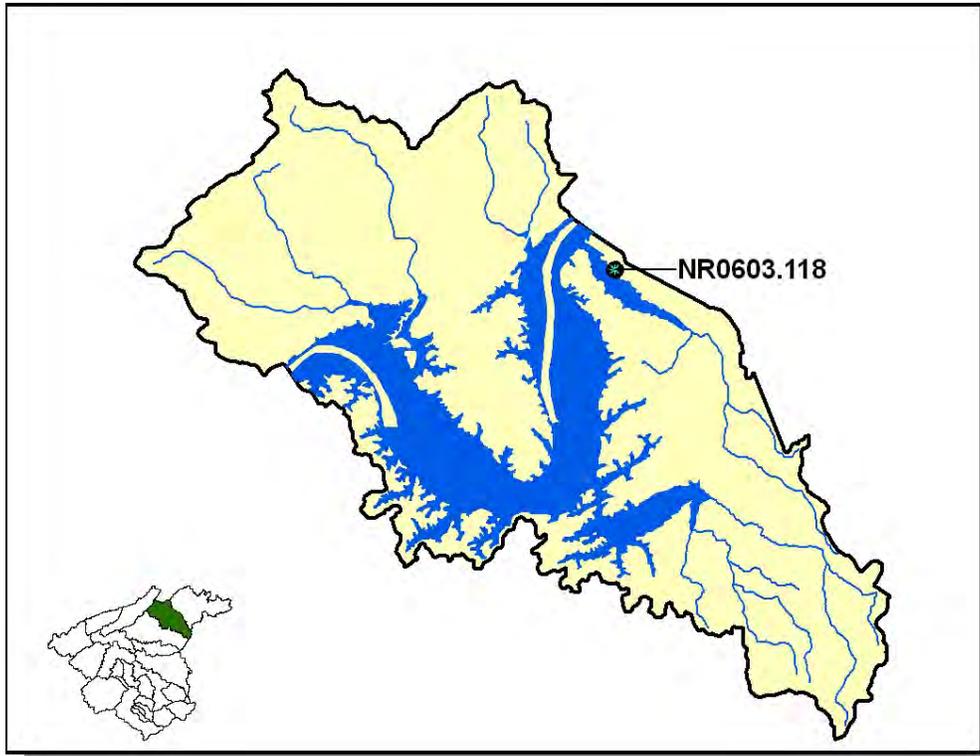


**Figure 4-18. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070102.** More information, including site names and locations, is provided in Appendix IV.

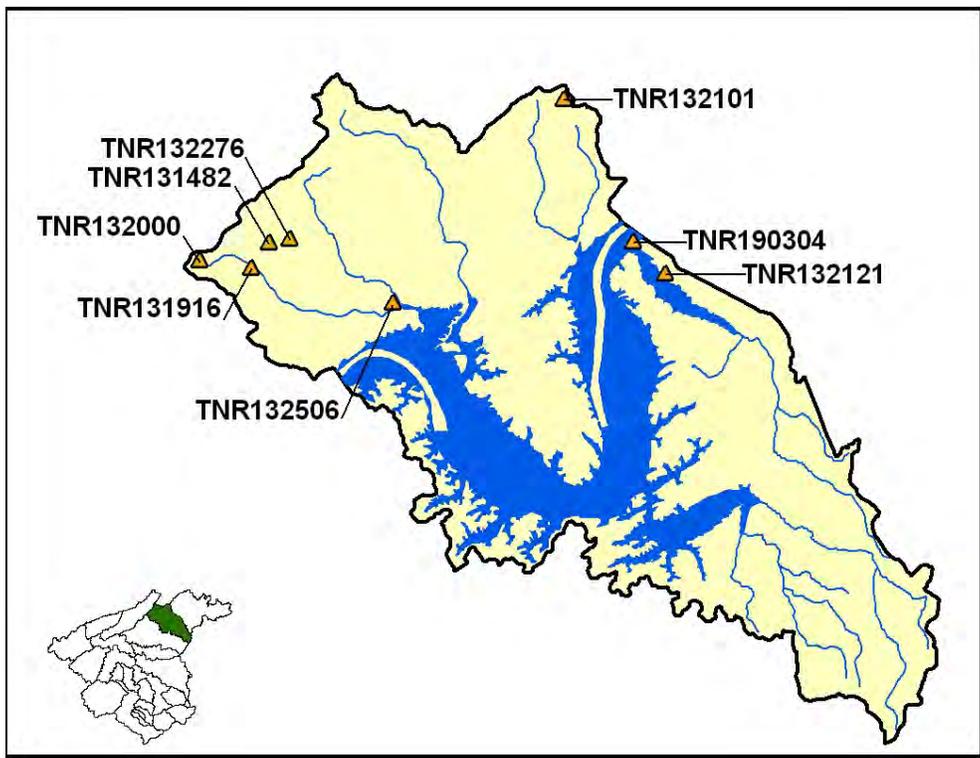
**4.2.B.iii. Permitted Activities.**



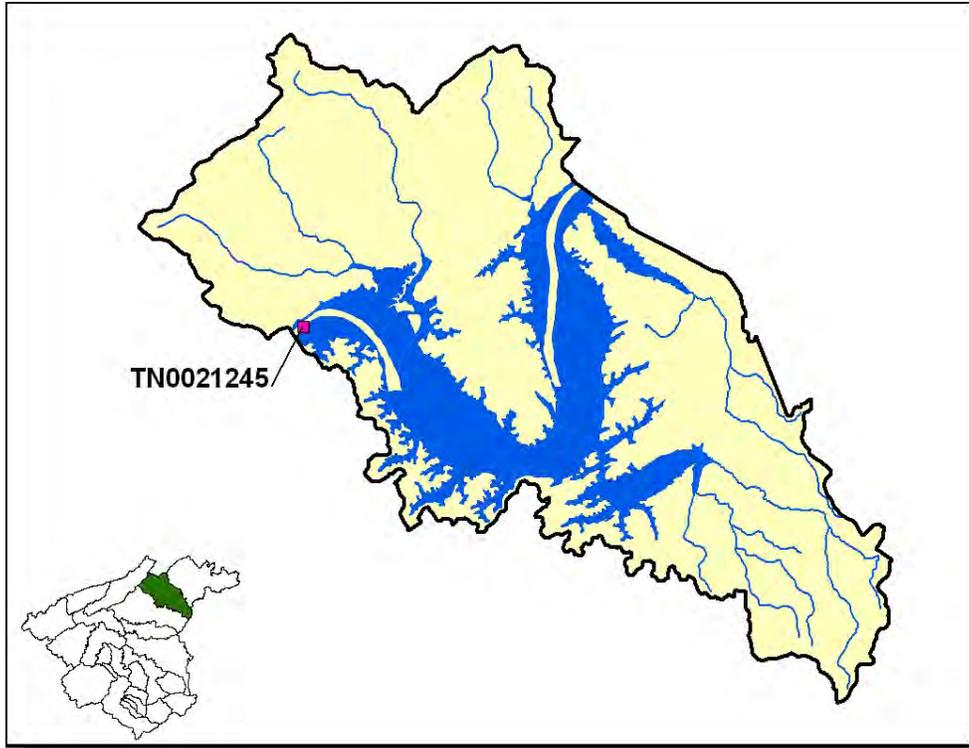
**Figure 4-19. Location of Permits Issued in Subwatershed 060101070102.** More information, including the names of facilities, is provided in Appendix IV.



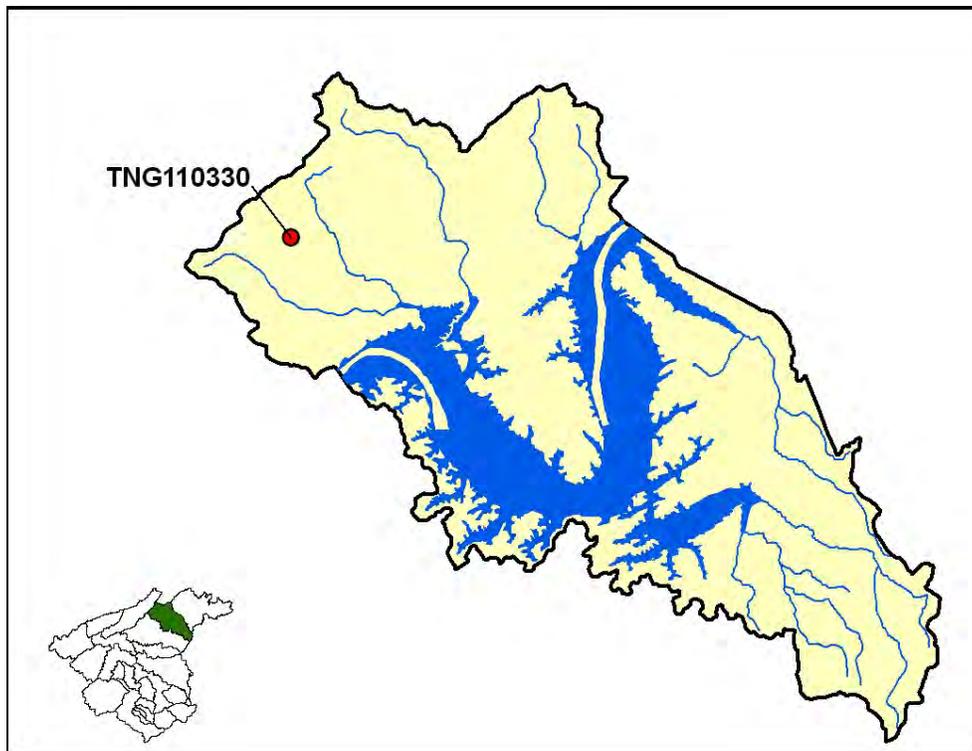
**Figure 4-20. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 060101070102. More information is provided in Appendix IV.**



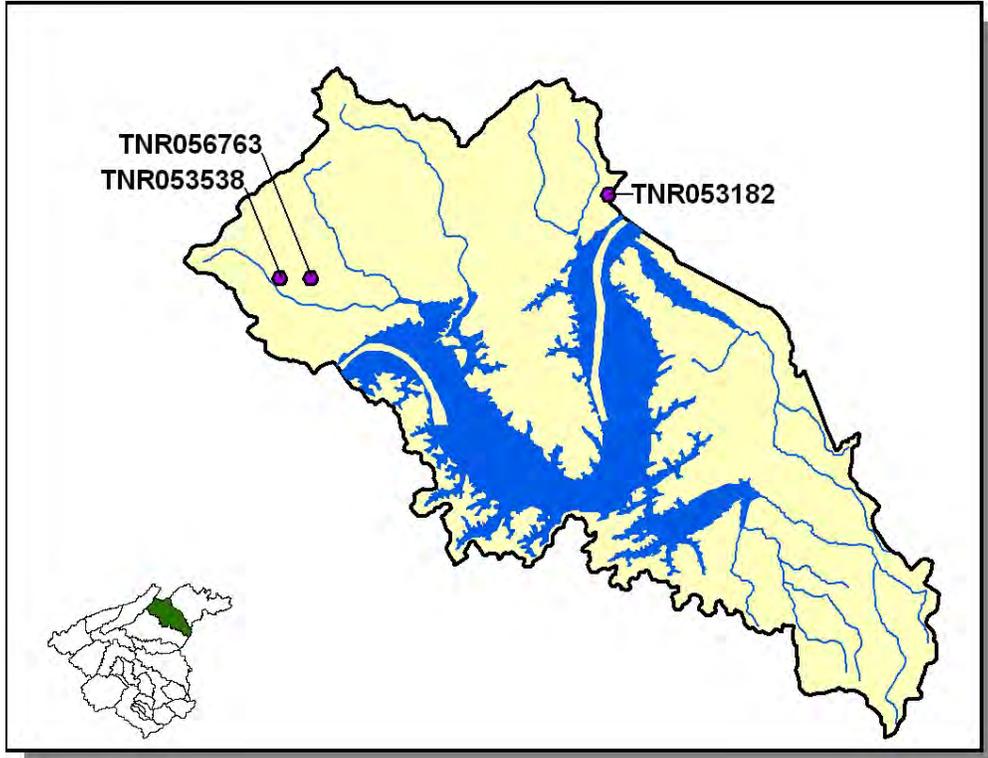
**Figure 4-21. Location of CGP (Construction General Permit) Sites in Subwatershed 060101070102. More information is provided in Appendix IV.**



**Figure 4-22. Location of Permitted Municipal and Industrial Facilities in Subwatershed 060101070102.** More information, including the name of the facility is provided in Appendix IV.



**Figure 4-23. Location of RMCP (Ready Mix Concrete Plant) Facilities in Subwatershed 060101070102.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-24. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 060101070102. More information is provided in Appendix IV.**

**4.2.B.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Cocke	8,169	16,971	1,224	361	269	90
Jefferson	16,126	35,718	1,878	1,633	183	567

**Table 4-11. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cocke	182.0	163.4	3.7	17.4
Jefferson	62.2	62.2	0.6	1.8

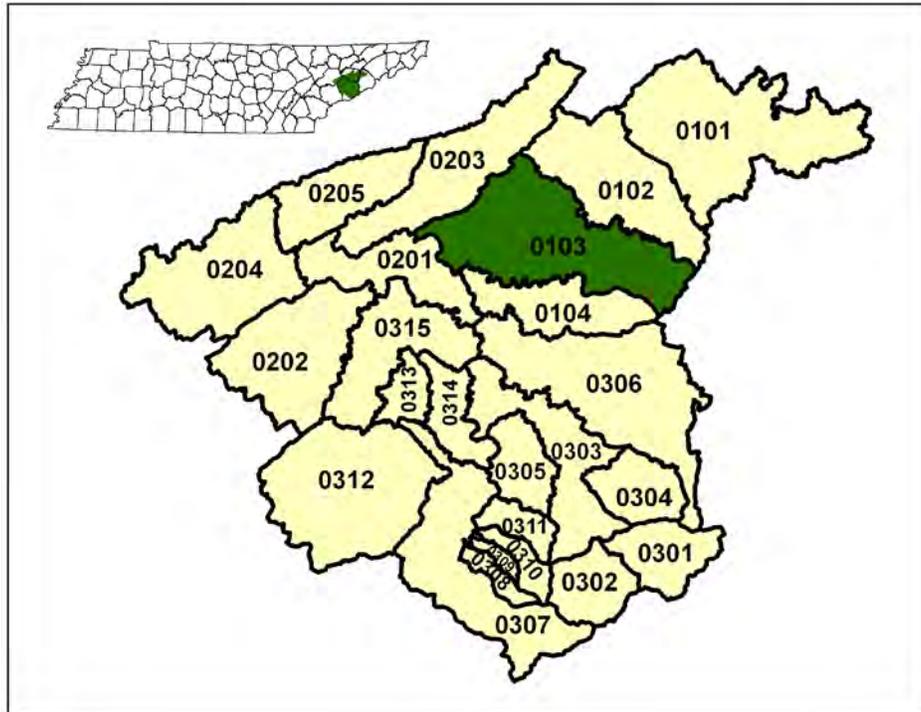
**Table 4-12. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Corn (Row Crops)	21.73
Oats (Close Grown Cropland)	13.51
Wheat (Close Grown Cropland)	5.30
Tobacco (Row Crops)	3.84
Grass (Pastureland)	0.54
Grass Forbs Legumes Mixed (Pastureland)	0.46
Legume Grass (Hayland)	0.36
Grass (Hayland)	0.25
Farmsteads and Ranch Headquarters	0.03

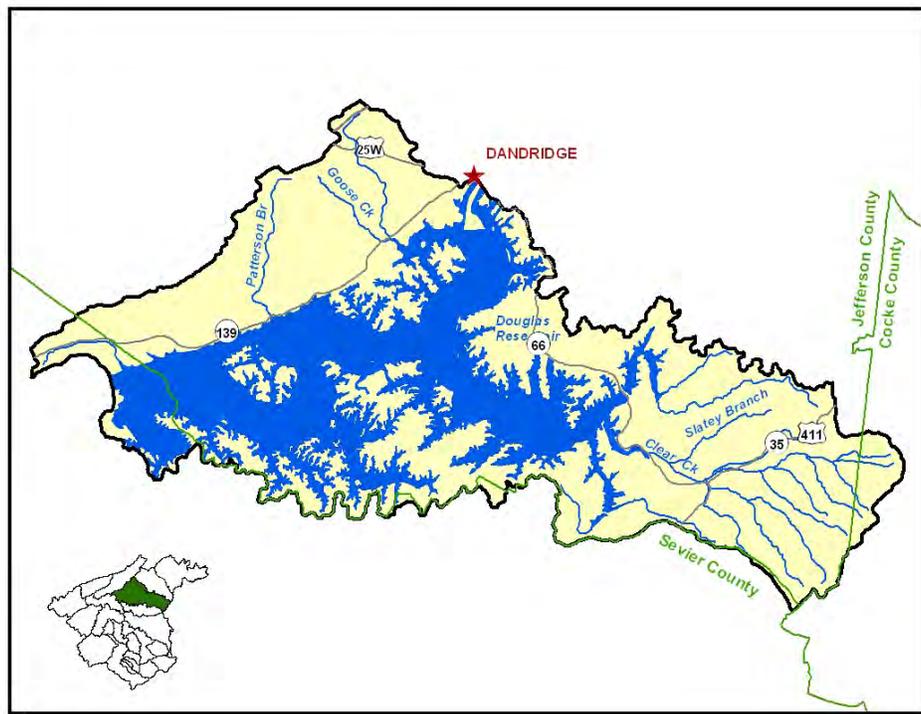
**Table 4-13. Annual Estimated Total Soil Loss in Subwatershed 060101070102.**

**4.2.C. 060101070103 (Douglas Lake, Lower)**

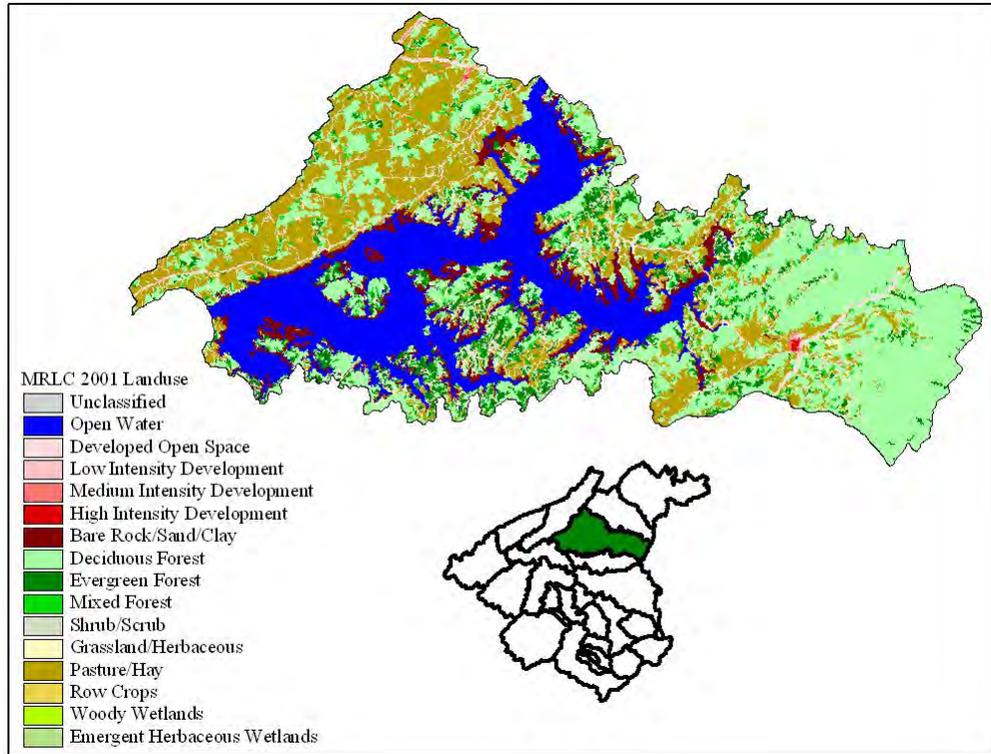
**4.2.C.i. General Description**



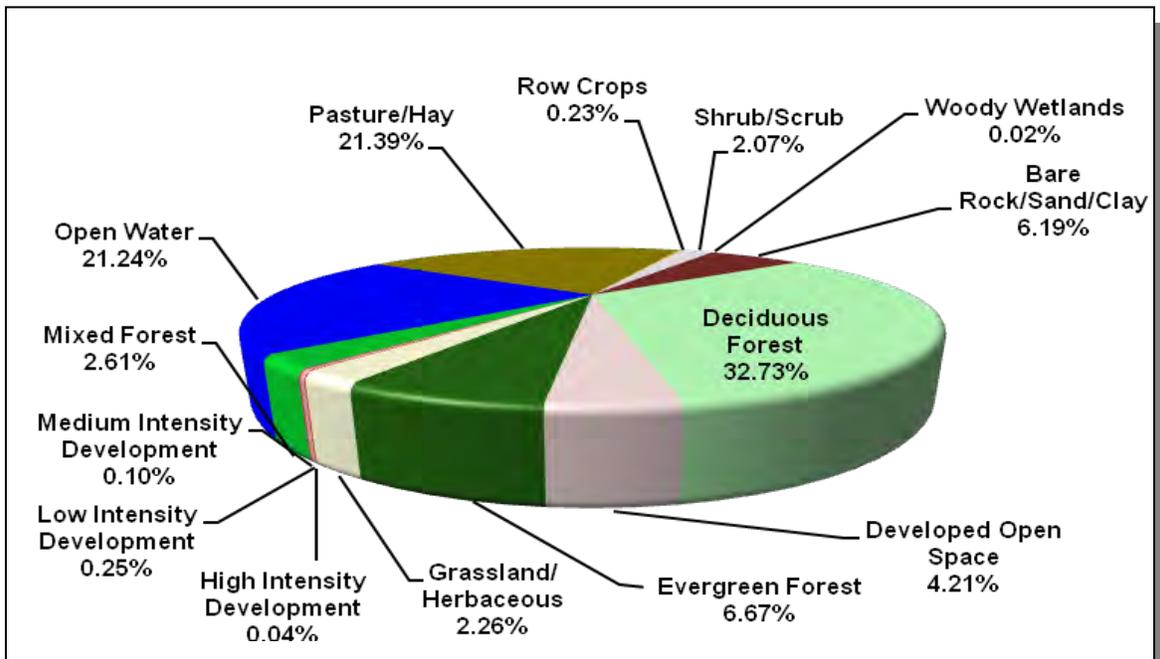
**Figure 4-25. Location of Subwatershed 060101070103.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



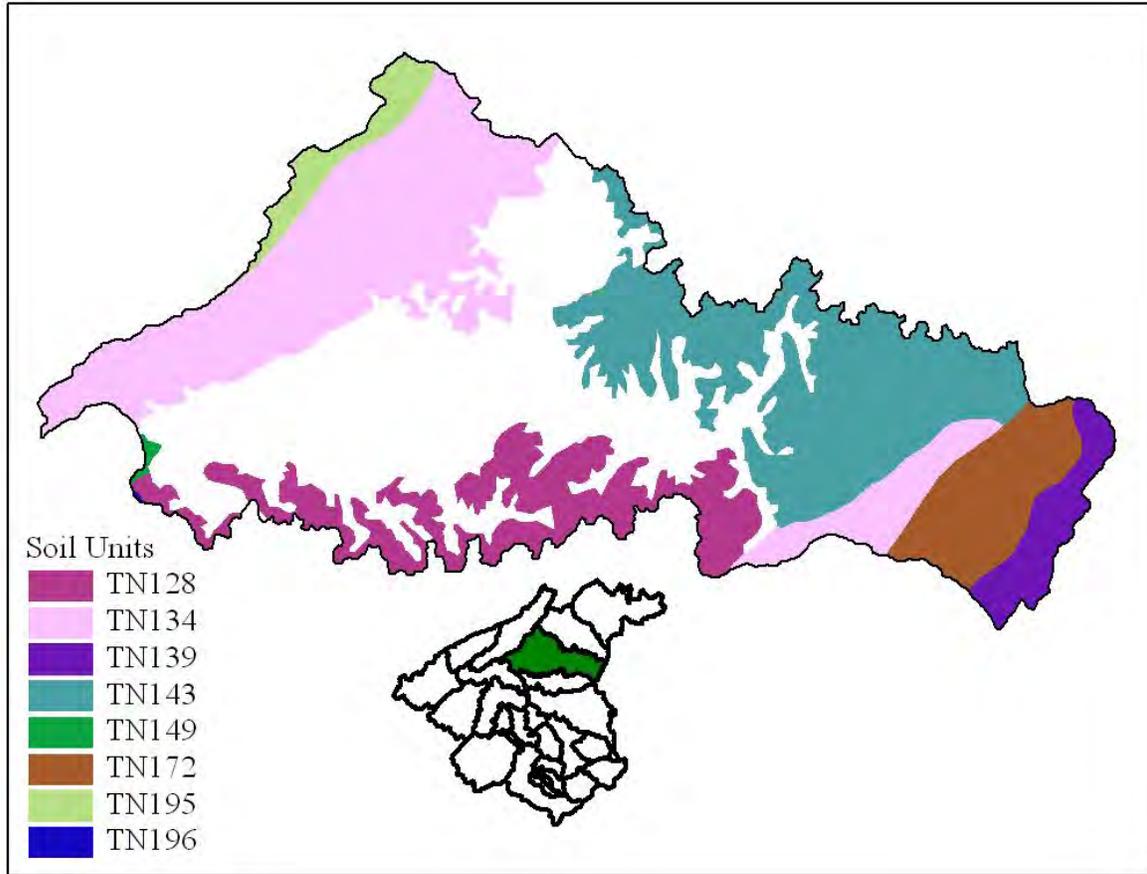
**Figure 4-26. Locational Details of Subwatershed 060101070103.**



**Figure 4-27. Illustration of Land Use Distribution in Subwatershed 060101070103.**



**Figure 4-28. Land Use Distribution in Subwatershed 060101070103. More information is provided in Appendix IV.**



**Figure 4-29. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070103.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN128	0.00	C	1.30	6.53	Clay Loam	0.26
TN134	0.00	B	1.38	5.18	Loam	0.31
TN139	0.00	C	11.84	4.82	Loam	0.20
TN143	0.00	C	1.22	6.44	Loam	0.32
TN149	1.00	B	1.29	5.01	Loam	0.30
TN172	0.00	B	3.87	5.13	Loam	0.26
TN195	0.00	C	1.93	5.19	Silty Loam	0.34
TN196	13.00	C	1.61	5.39	Loam	0.31

**Table 4-14. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070103.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Cocke	29,141	31,657	33,565	0.22	63	69	73	15.90
Jefferson	33,016	42,168	44,294	19.22	6,346	8,105	8,514	34.20
Sevier	51,043	62,774	71,170	1.13	576	709	804	39.60
<b>Totals</b>	<b>113,200</b>	<b>136,599</b>	<b>149,029</b>		<b>6,985</b>	<b>8,883</b>	<b>9,391</b>	<b>34.40</b>

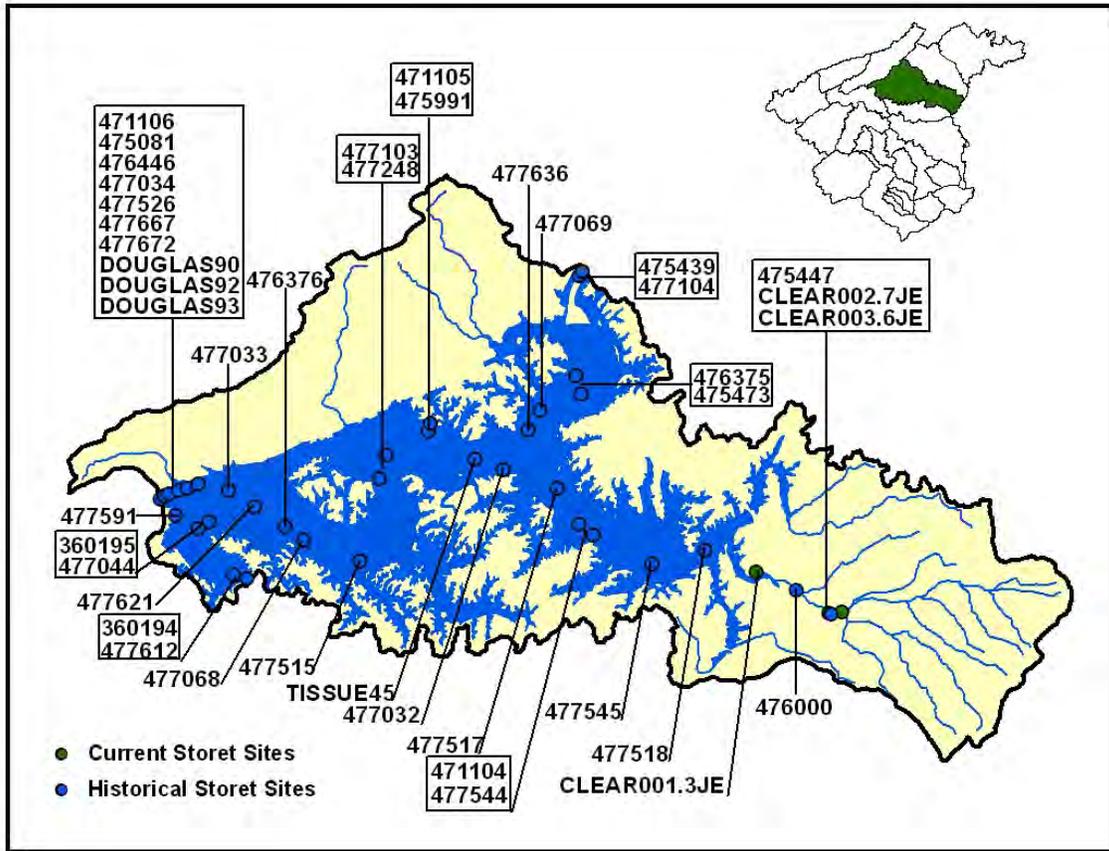
*Table 4-15. Population Estimates in Subwatershed 060101070103.*

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Dandridge	Jefferson	1,540	625	376	247	2

*Table 4-16. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070103.*

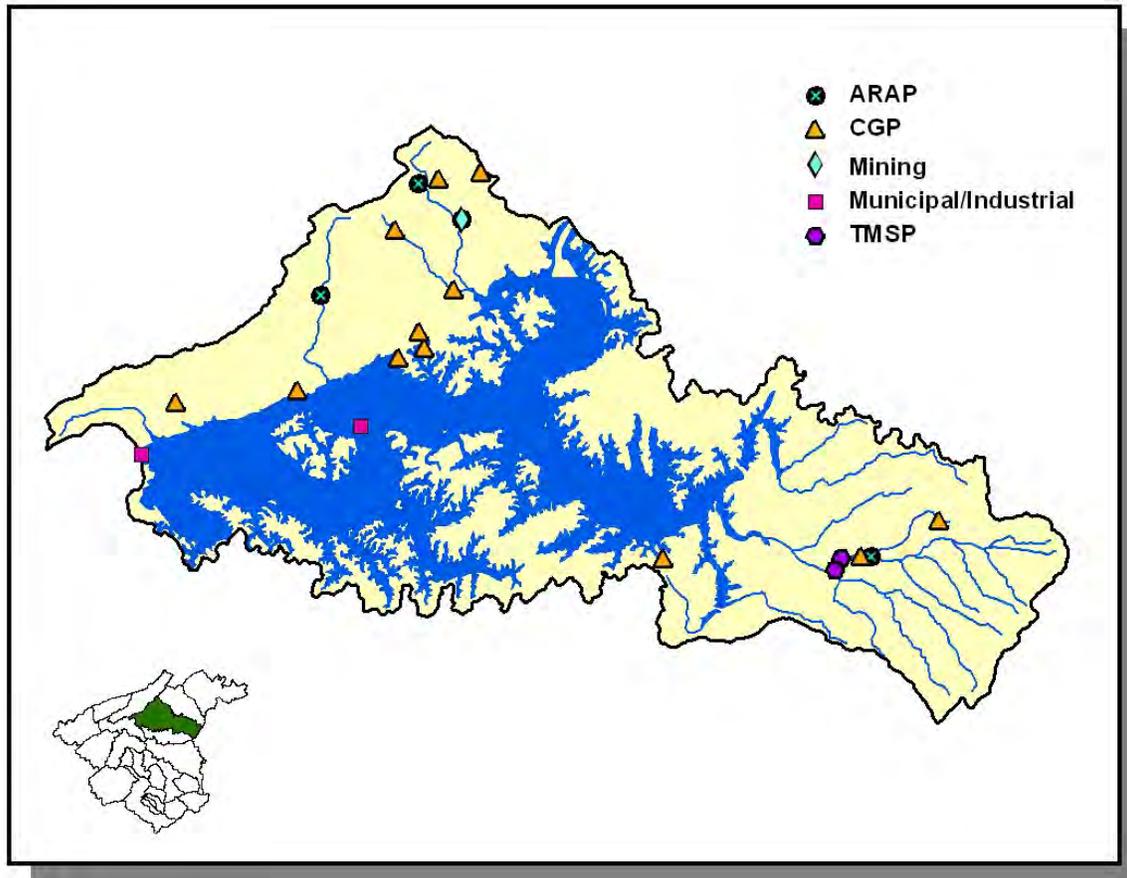
**4.2.C.ii. STORET Sites**

There are no USGS continuous record gaging stations located in subwatershed 060101070103.

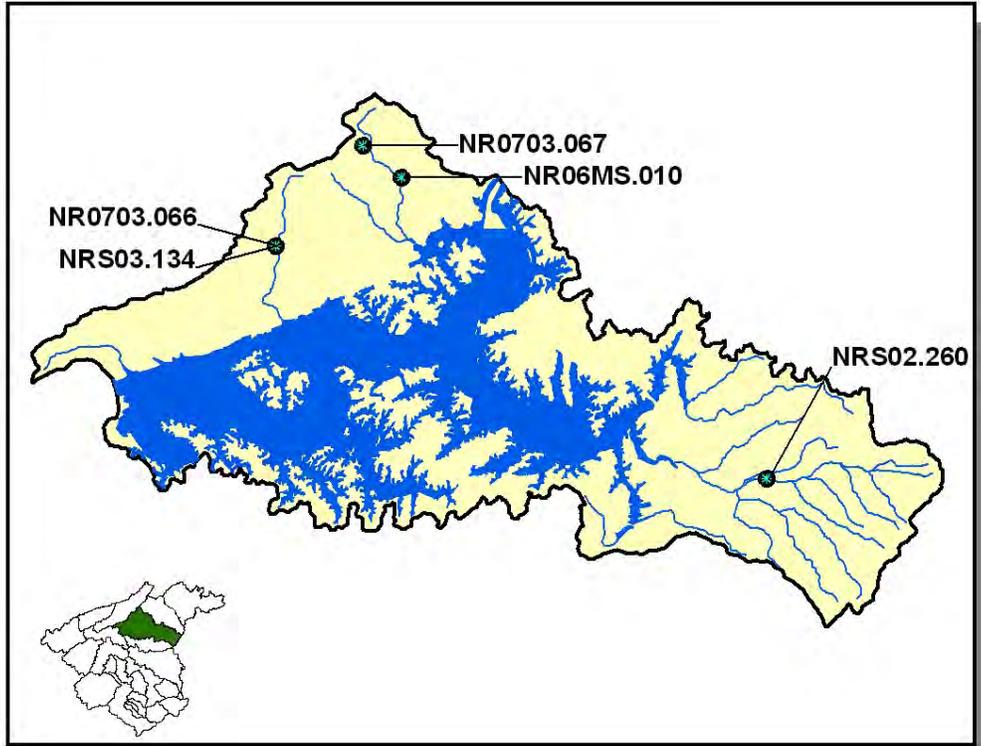


**Figure 4-30. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070103.** More information, including site names and locations, is provided in Appendix IV.

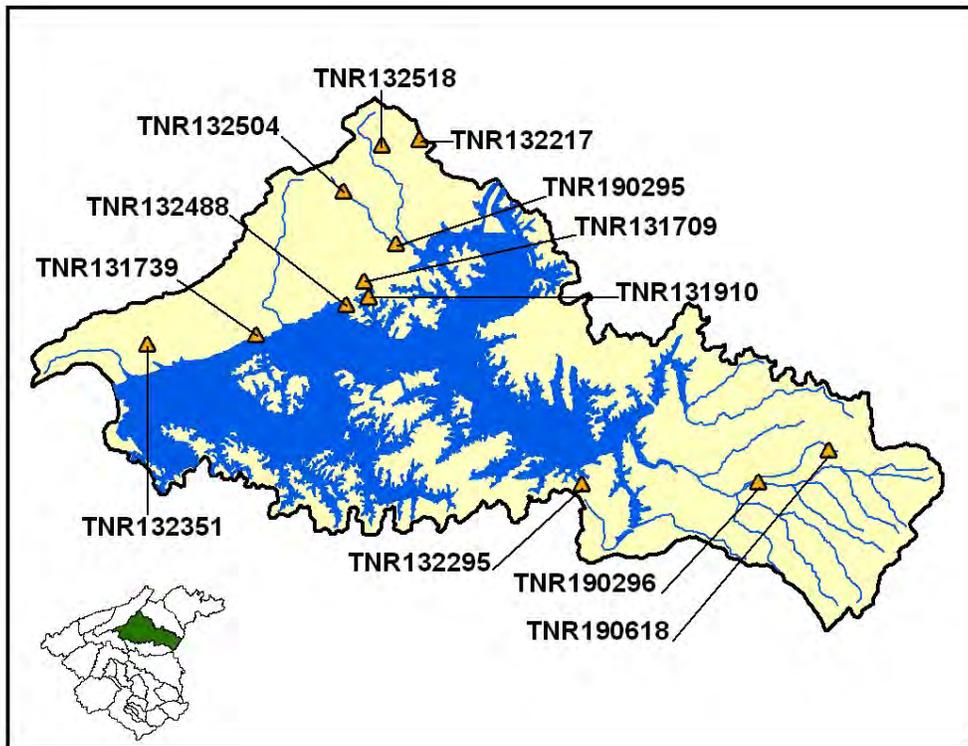
**4.2.C.iii. Permitted Activities**



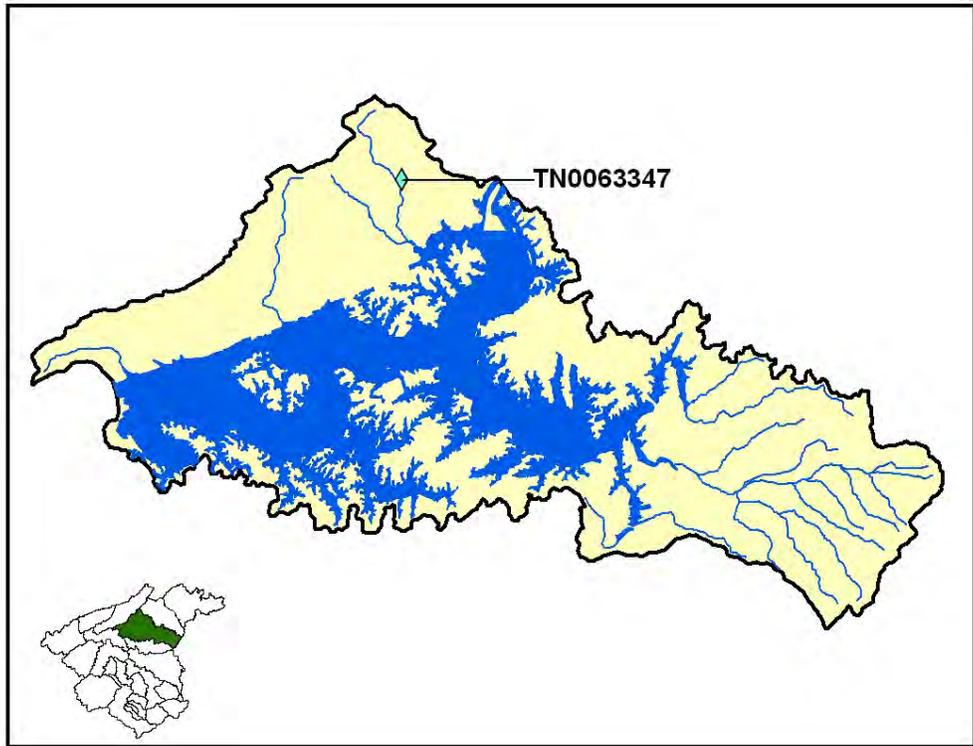
**Figure 4-31. Location of Permits Issued in Subwatershed 060101070103.** More information, including the names of facilities, is provided in Appendix IV.



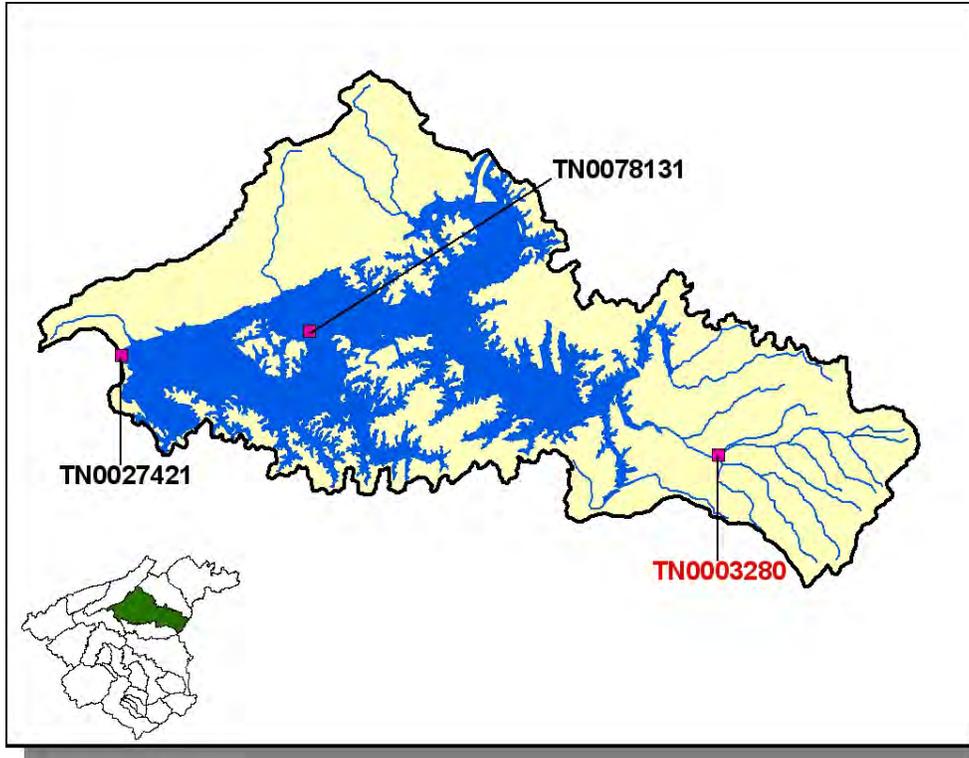
**Figure 4-32. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 060101070103. More information is provided in Appendix IV.**



**Figure 4-33. Location of CGP (Construction General Permit) Sites in Subwatershed 060101070103. More information is provided in Appendix IV.**



**Figure 4-34. Location of permitted Mining Facilities in Subwatershed 060101070103.** More information is provided in Appendix IV.



**Figure 4-35. Location of Permitted Municipal and Industrial Facilities in Subwatershed 060101070103.** Permit numbers in red indicate that the facility discharges to a stream listed on the 2006 303(d) list. More information, including the name of the facility is provided in Appendix IV.

PERMIT #	1Q10	7Q10	30Q5	DISCHARGE FLOW
TN0003280	0.07	0.12	0.16	Outfall 001: 0.0475 Outfall 002: 0.0570

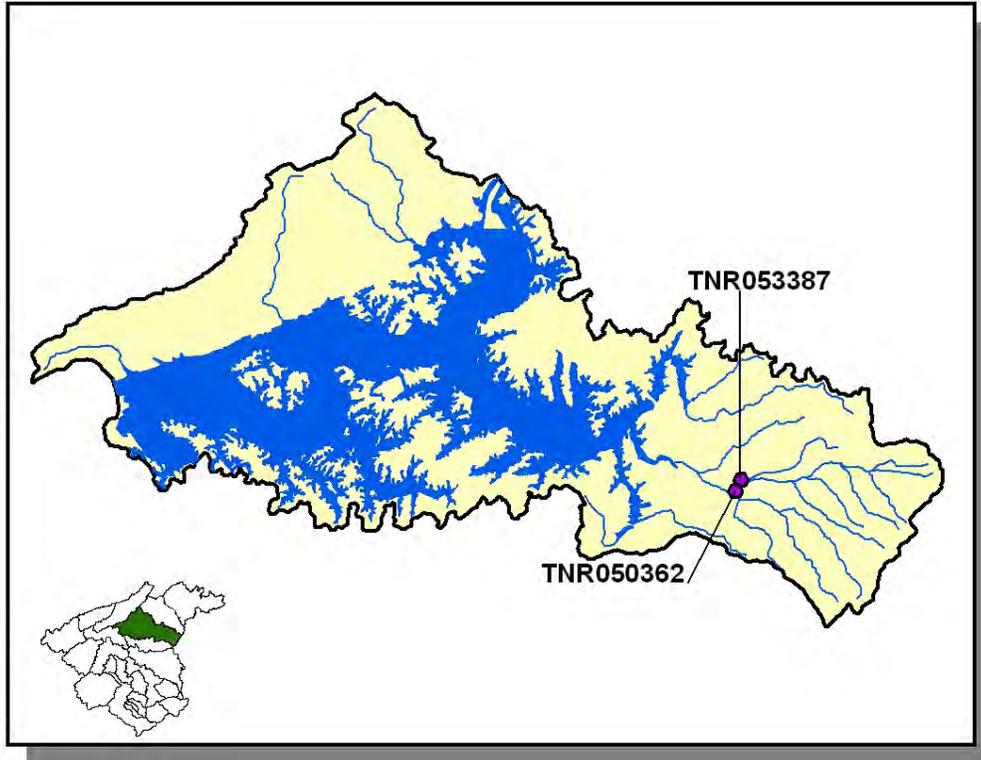
**Table 4-17. Receiving Stream Flow Information Used for Limit Calculations for NPDES Dischargers to Waterbodies Listed on the 2006 303(d) List in Subwatershed 060101070103.** Data are in million gallons per day (MGD). Data were obtained from permit files.

PERMIT #	WET	FLOW	DO	pH	TEMPERATURE
TN003280	X	X	X	X	X

**Table 4-18. Parameters Monitored for Limits for NPDES Dischargers to Waterbodies Listed on the 2006 303(d) List in Subwatershed 060101070103.** WET, Whole Effluent Toxicity; DO, Dissolved Oxygen.

PERMIT #	AMMONIA AS N (TOTAL)	TRC	CBOD <sub>5</sub>
TN003280	X	X	X

**Table 4-19. Parameters Monitored for Limits for NPDES Dischargers to Waterbodies Listed on the 2006 303(d) List in Subwatershed 060101070103.** TRC, Total Residual Chlorine; CBOD<sub>5</sub>, Carbonaceous Biochemical Oxygen Demand (5-Day).



**Figure 4-36. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 060101070103.** More information is provided in Appendix IV.

**4.2.C.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Cocke	8,169	16,971	1,224	361	269	90
Jefferson	16,126	35,718	1,878	1,633	183	567
Sevier	9,816	19,013	172	26	394	234

**Table 4-20. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cocke	182.0	163.4	3.7	17.4
Jefferson	62.2	62.2	0.6	1.8
Sevier	254.5	127.4	0.3	0.9

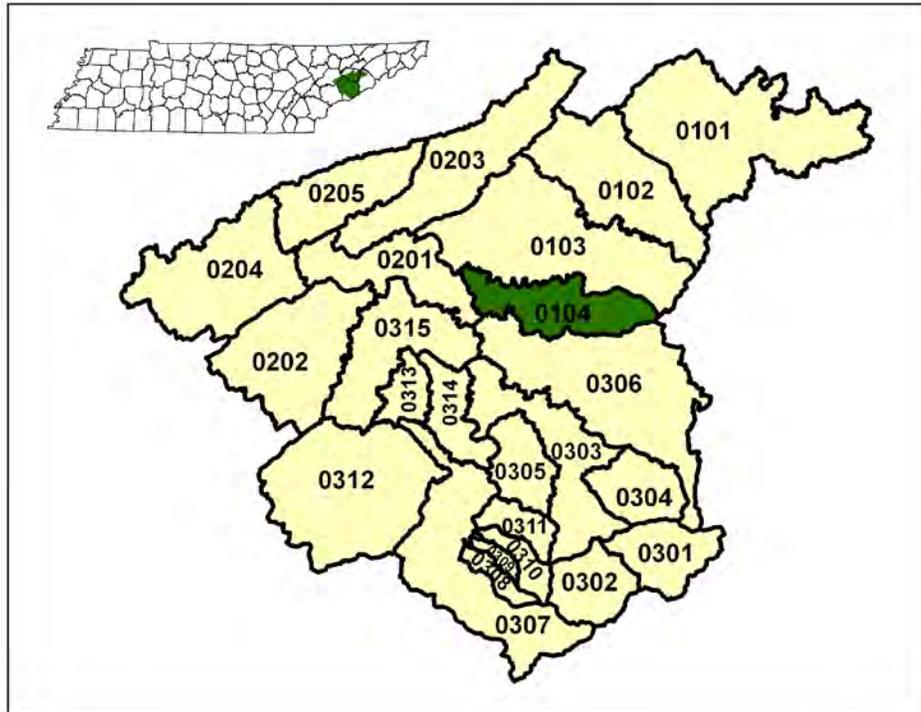
**Table 4-21. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Corn (Row Crops)	20.79
Oats (Close Grown Cropland)	13.51
Wheat (Close Grown Cropland)	9.00
Tobacco (Row Crops)	4.52
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.54
Grass Forbs Legumes Mixed (Pastureland)	0.44
Legume Grass (Hayland)	0.34
Grass (Hayland)	0.24
Farmsteads and Ranch Headquarters	0.03

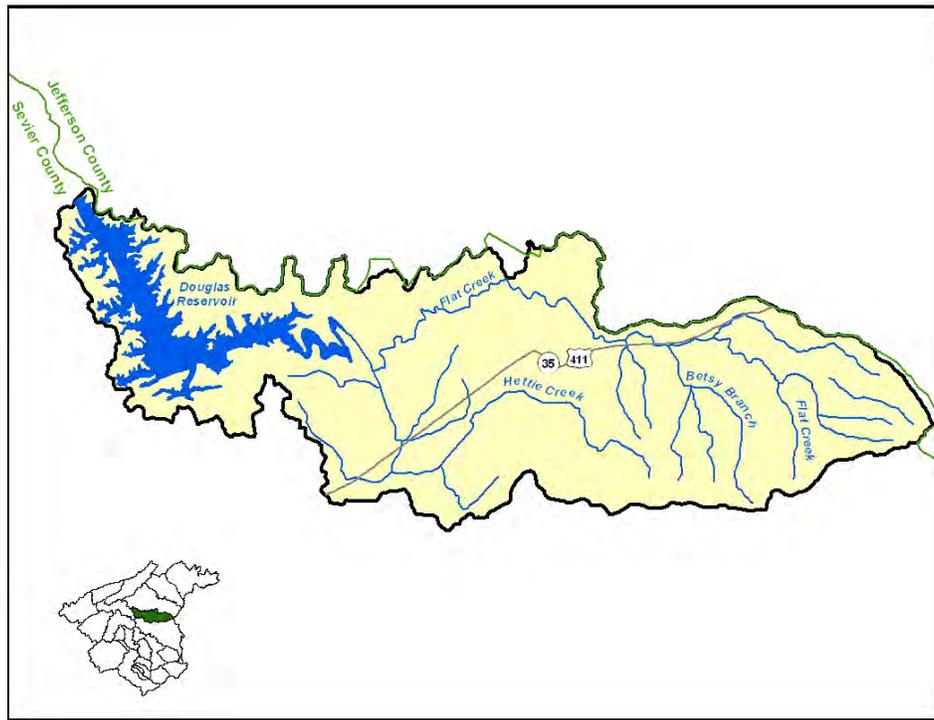
**Table 4-22. Annual Estimated Total Soil Loss in Subwatershed 060101070103.**

**4.2.D. 060101070104 (Mud Creek)**

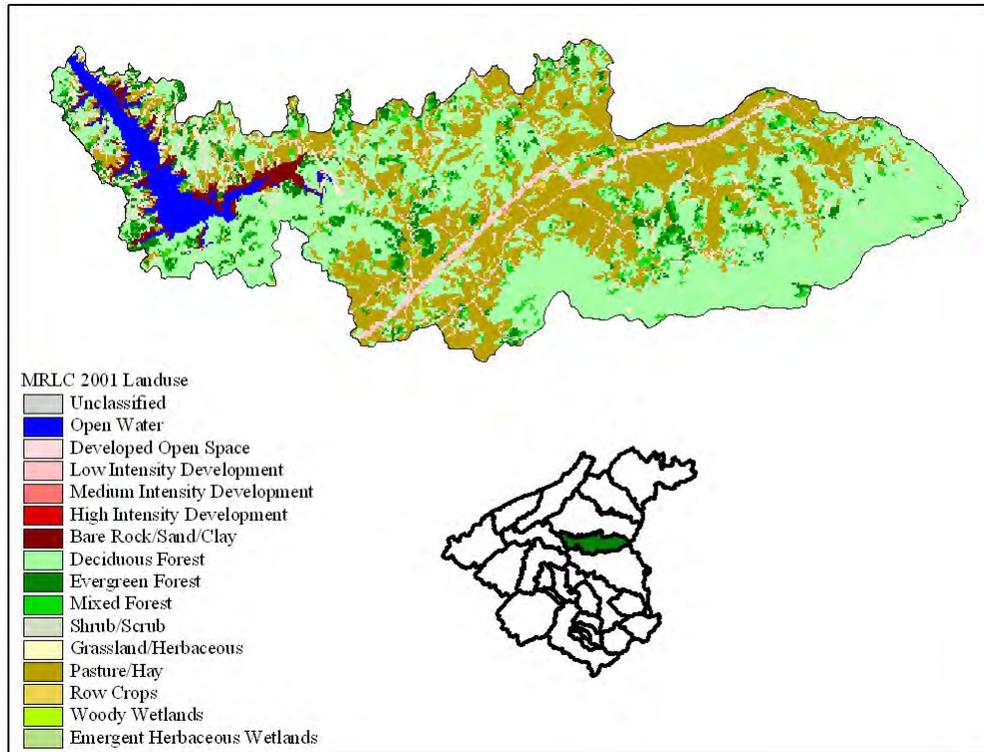
**4.2.D.i. General Description**



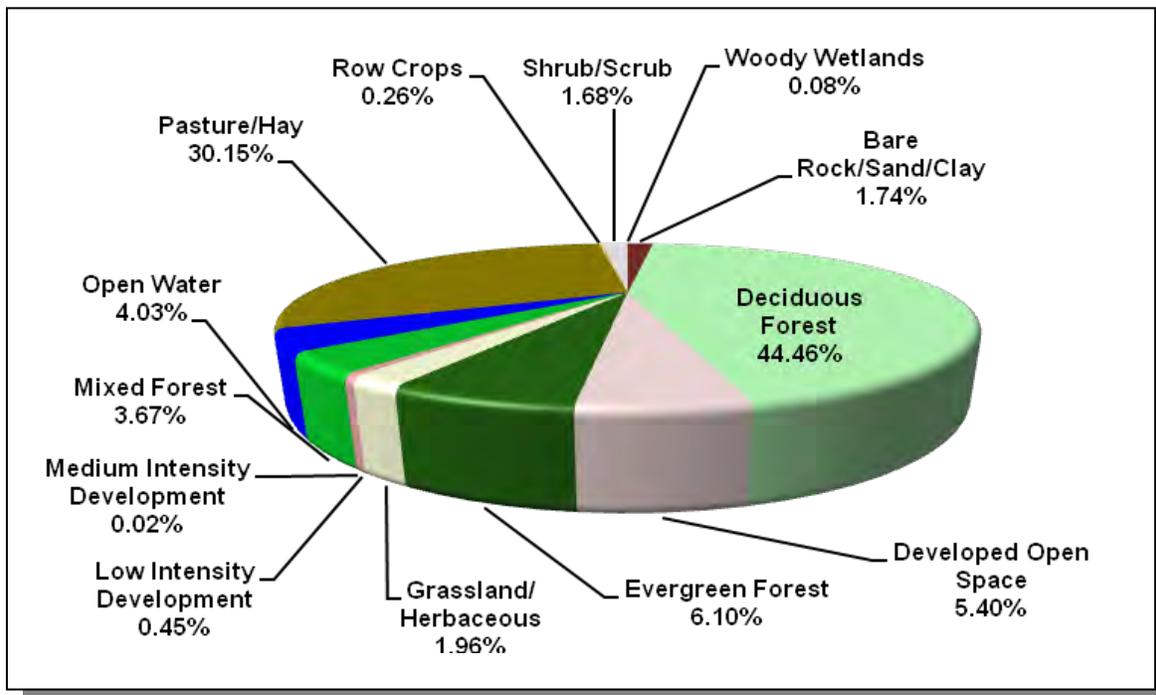
**Figure 4-37. Location of Subwatershed 060101070104.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



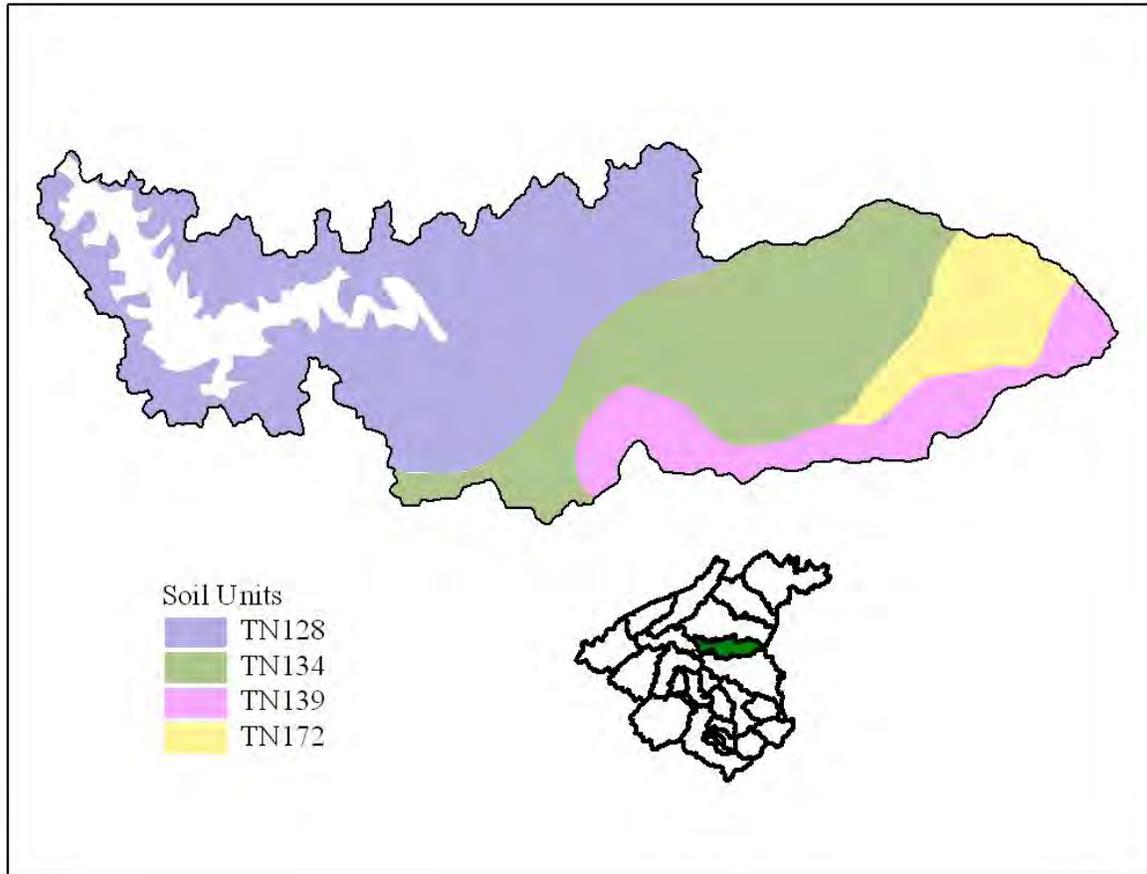
**Figure 4-38 Locational Details of Subwatershed 060101070104.**



**Figure 4-39. Illustration of Land Use Distribution in Subwatershed 060101070104.**



**Figure 4-40. Land Use Distribution in Subwatershed 060101070104. More information is provided in Appendix IV.**



**Figure 4-41. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070104.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN128	0.00	C	1.30	6.53	Clay Loam	0.26
TN134	0.00	B	1.38	5.18	Loam	0.31
TN139	0.00	C	11.84	4.82	Loam	0.20
TN172	0.00	B	3.87	5.13	Loam	0.26

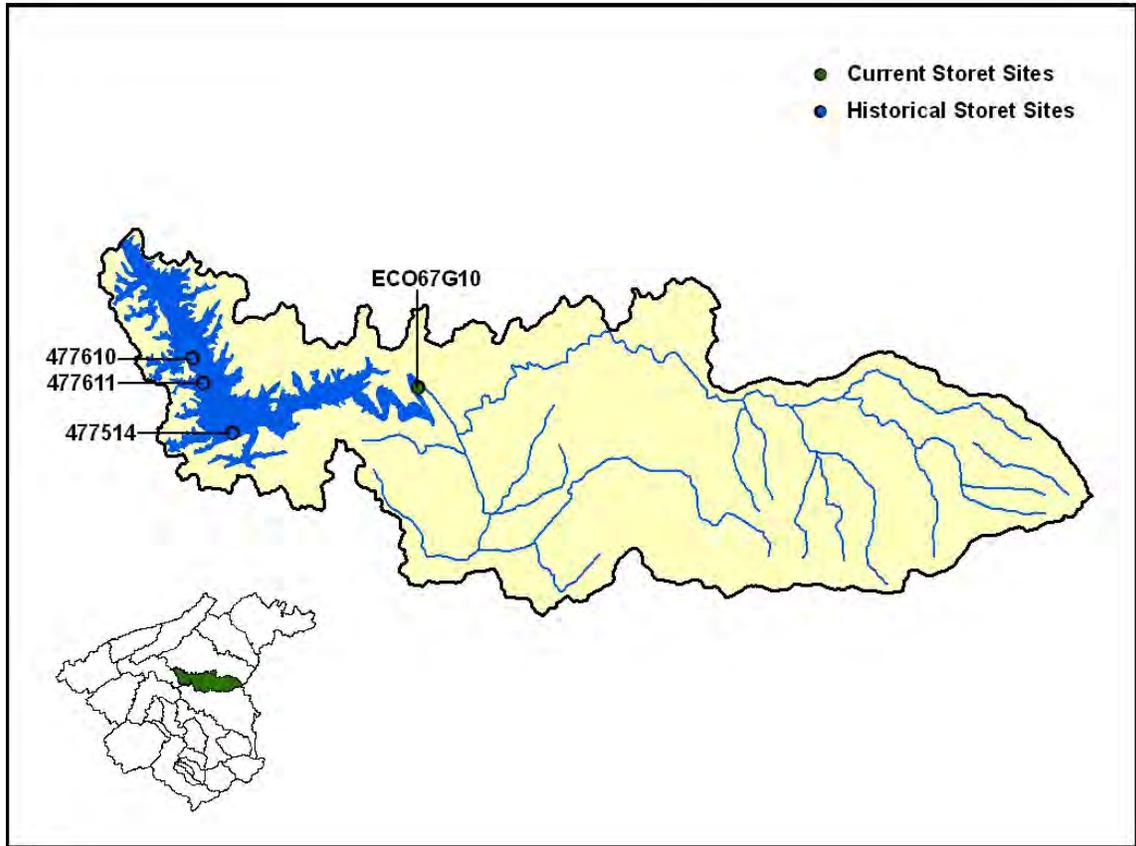
**Table 4-23. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070104.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Jefferson	33,016	42,168	44,294	0.09	30	38	40	33.30
Sevier	51,043	62,774	71,170	4.37	2,232	2,746	3,113	39.50
<b>Totals</b>	<b>84,059</b>	<b>104,942</b>	<b>115,464</b>		<b>2,262</b>	<b>2,784</b>	<b>3,153</b>	<b>39.40</b>

**Table 4-24. Population Estimates in Subwatershed 060101070104.**

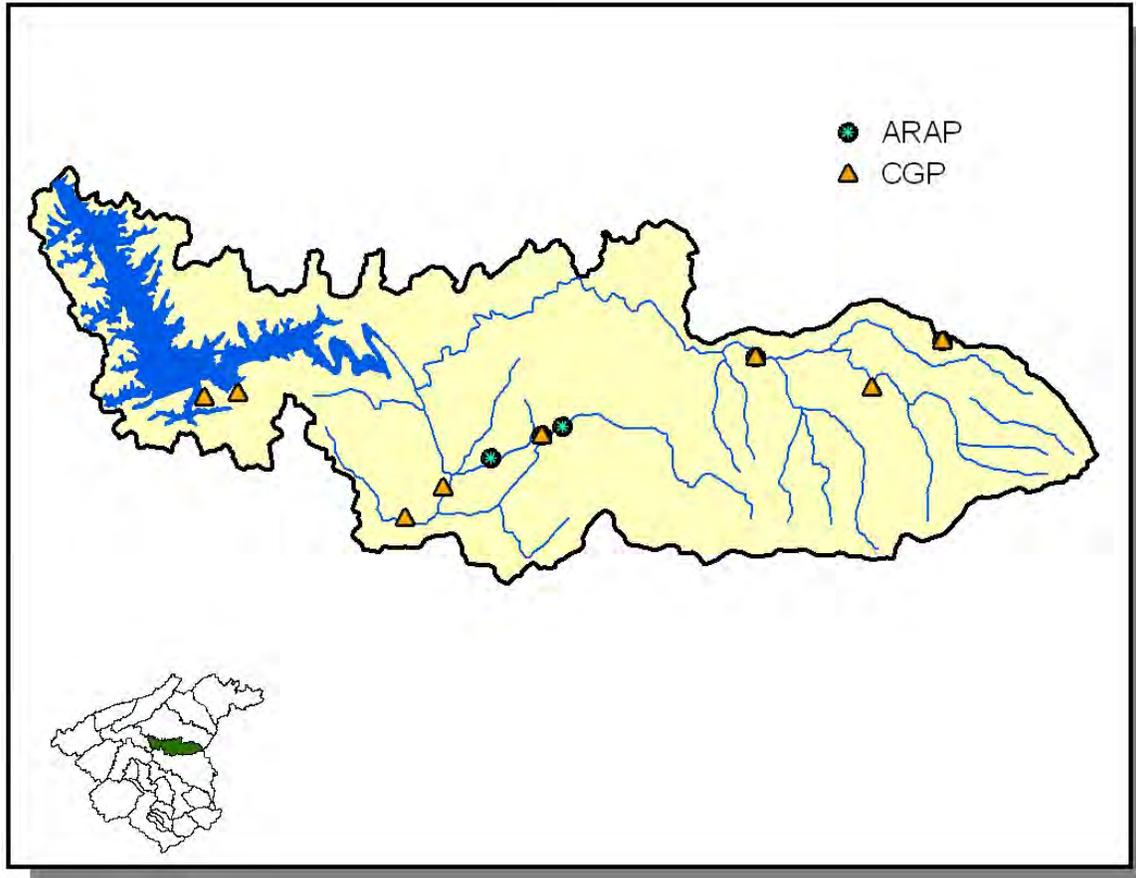
**4.2.D.ii. STORET Sites**

There are no USGS continuous record gaging stations located in subwatershed 060101070104.

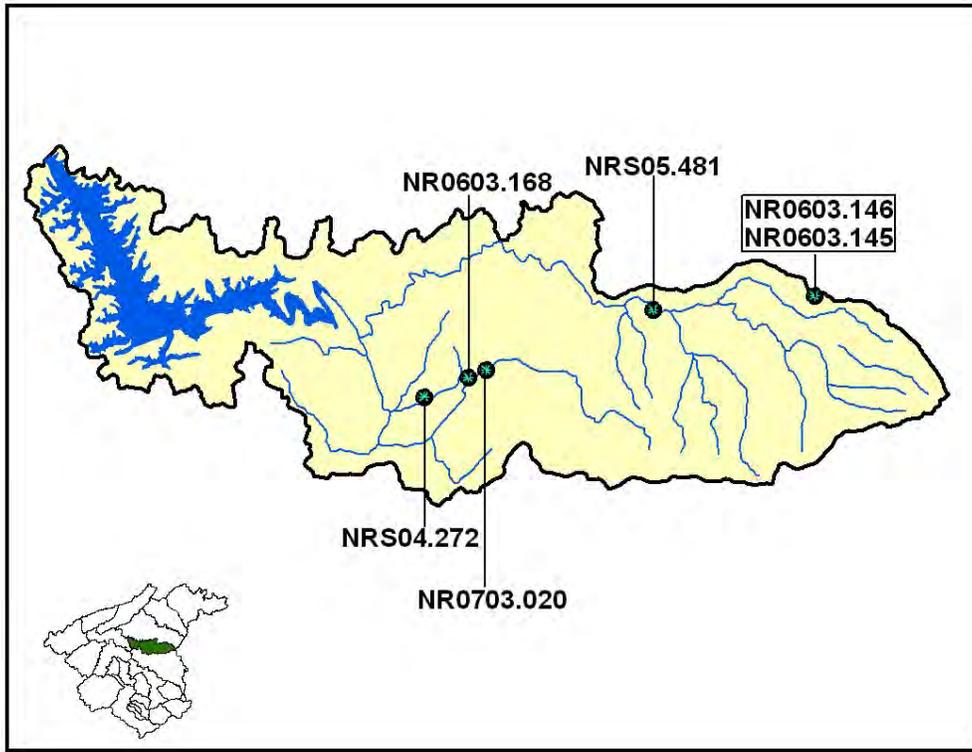


**Figure 4-42. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070104.** More information, including site names and locations, is provided in Appendix IV.

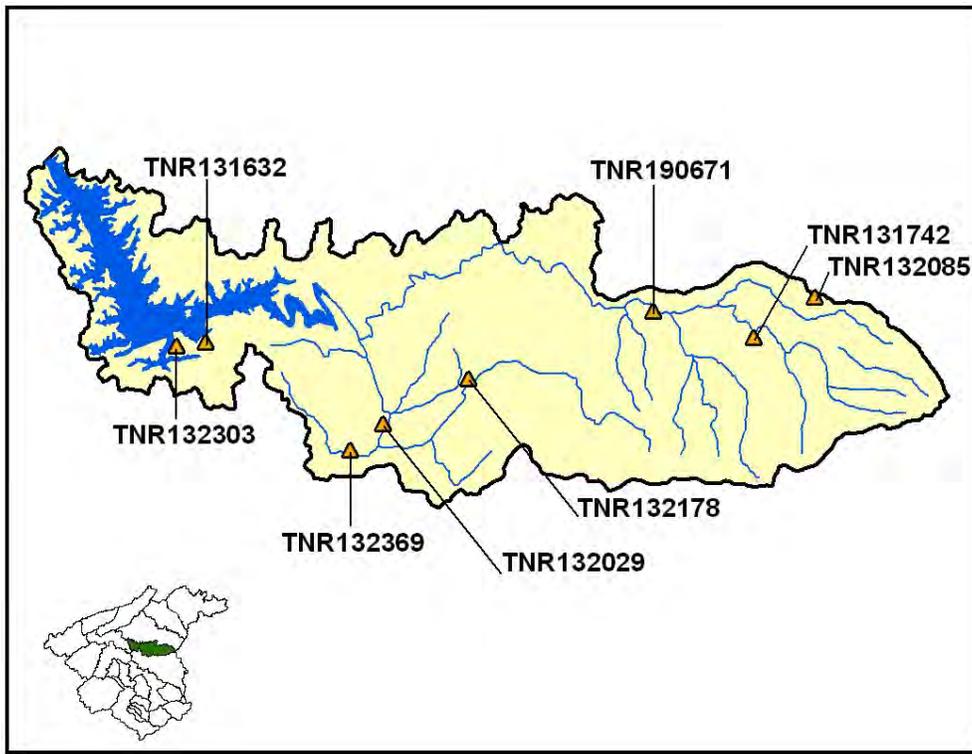
**4.2.Diii. Permitted Activities.**



**Figure 4-43. Location of Permits Issued in Subwatershed 060101070104.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-44. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 060101070104.** More information is provided in Appendix IV.



**Figure 4-45. Location of CGP (Construction General Permit) Sites in Subwatershed 060101070104.** More information is provided in Appendix IV.

**4.2.D.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Jefferson	16,126	35,718	1,878	1,633	183	567
Sevier	9,816	19,013	172	26	394	234

**Table 4-25. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Jefferson	62.2	62.2	0.6	1.8
Sevier	254.5	127.4	0.3	0.9

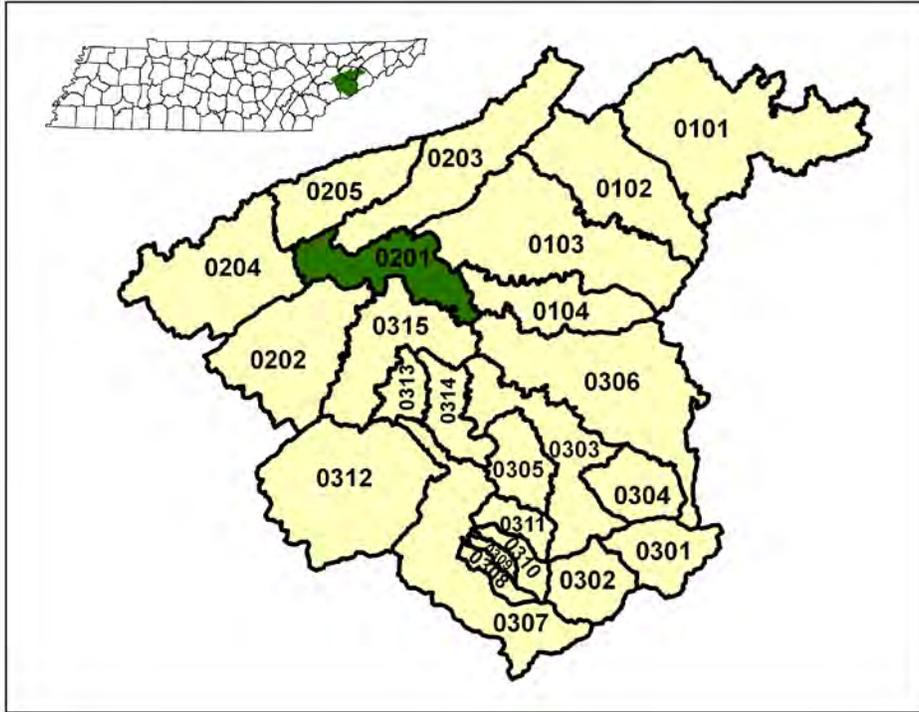
**Table 4-26. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.17
Oats (Close Grown Cropland)	13.51
Wheat (Close Grown Cropland)	9.53
Corn (Row Crops)	5.32
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.49
Grass Forbs Legumes Mixed (Pastureland)	0.47
Grass (Hayland)	0.22
Farmsteads and Ranch Headquarters	0.21
Legume Grass (Hayland)	0.06

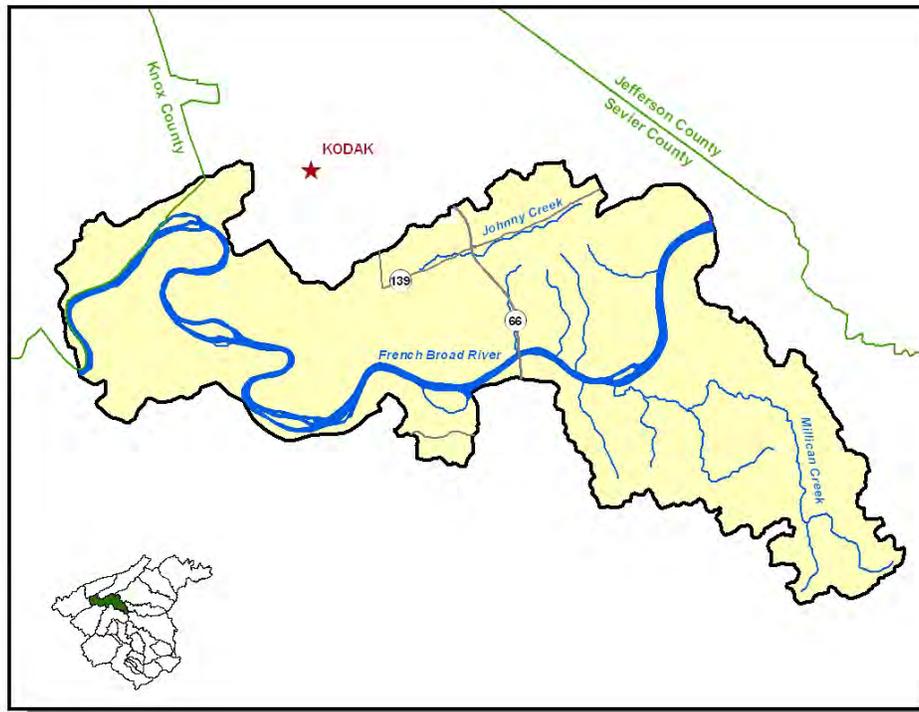
**Table 4-27. Annual Estimated Total Soil Loss in Subwatershed 060101070104.**

**4.2.E. 060101070201 (French Broad River)**

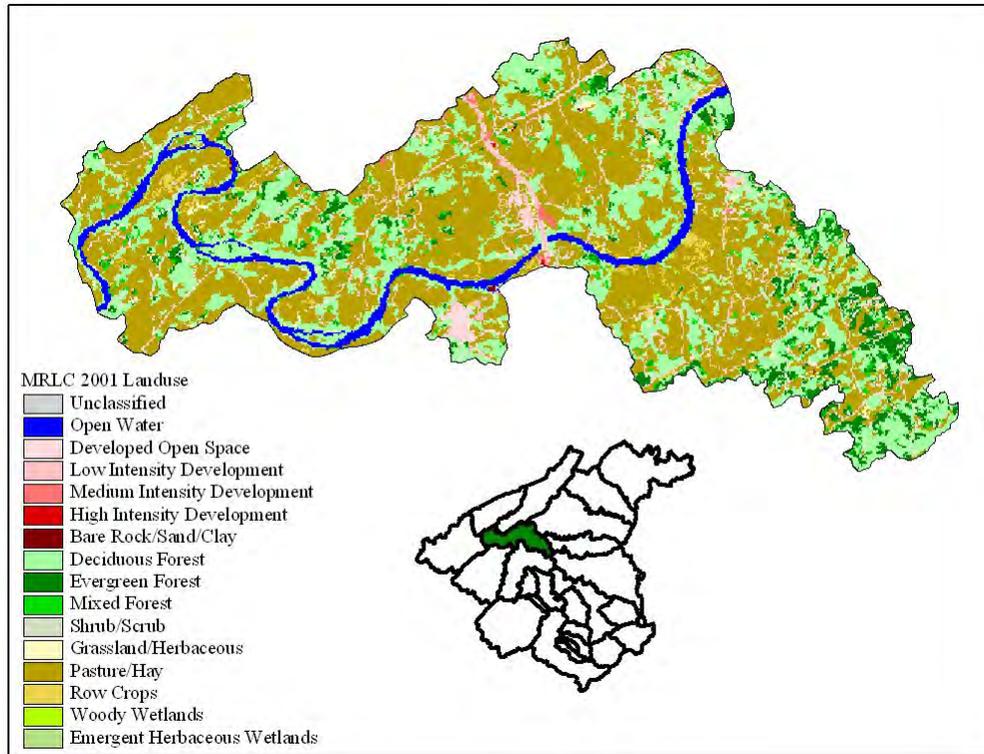
**4.2.E.i. General Description**



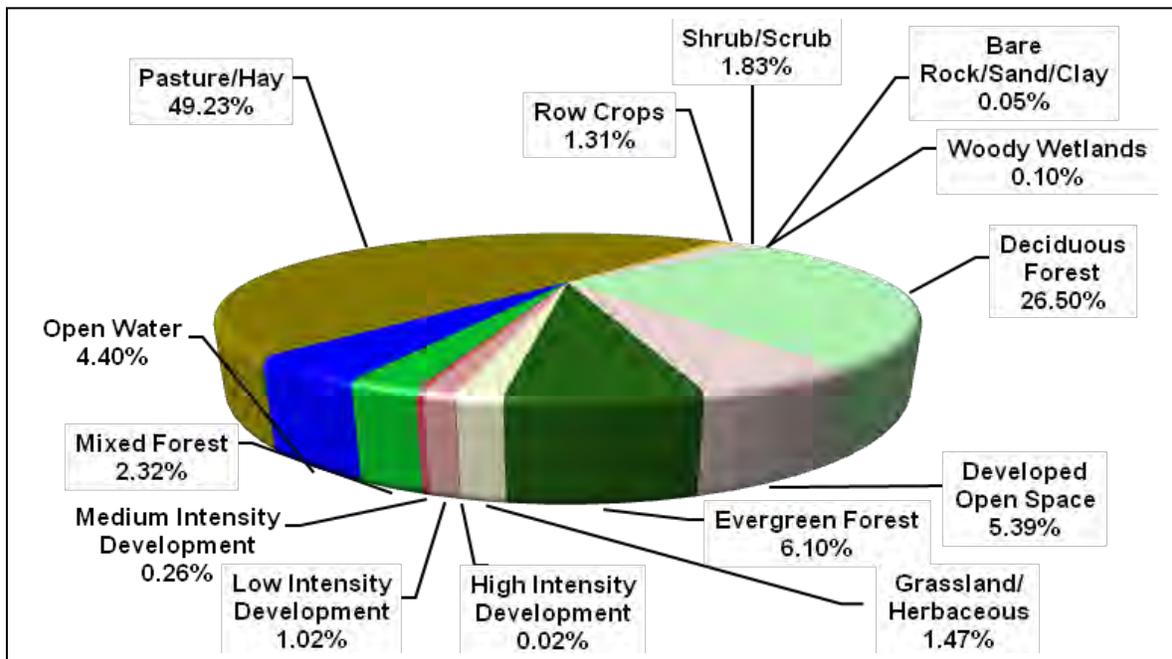
**Figure 4-46. Location of Subwatershed 060101070201.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



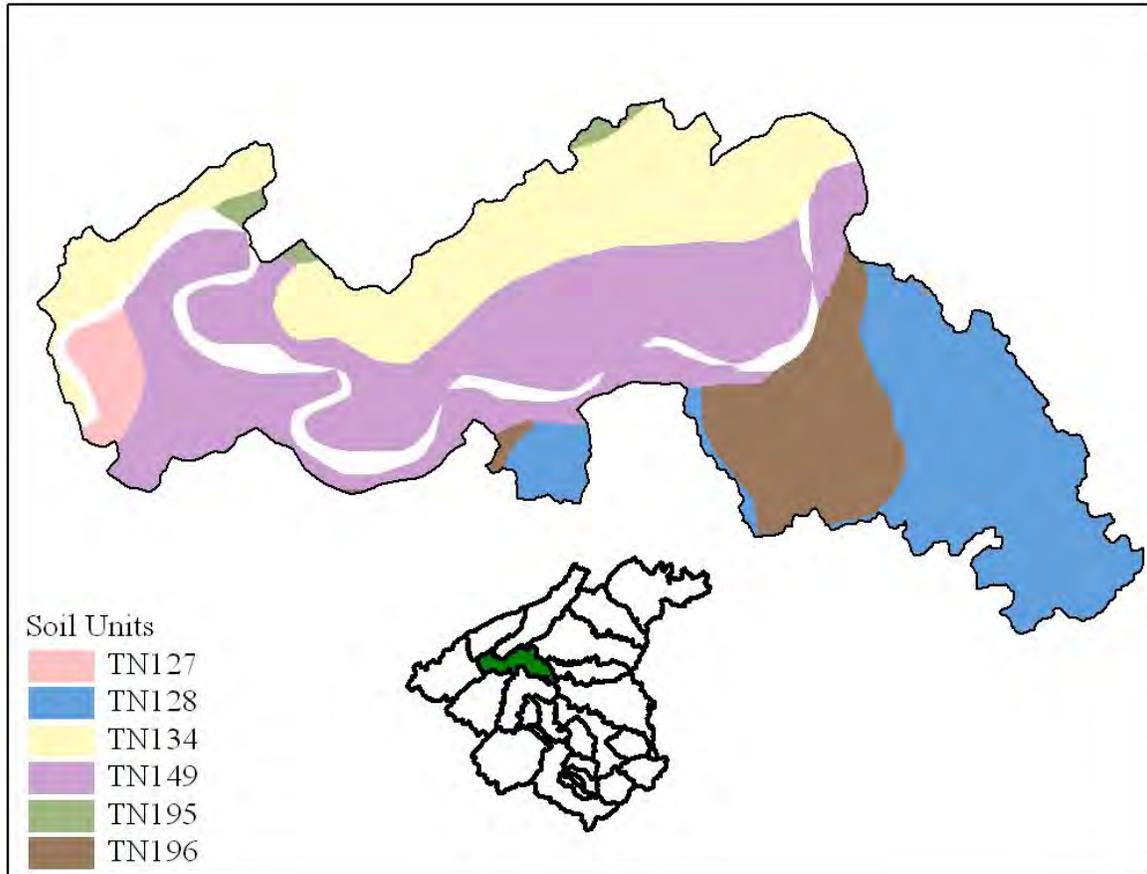
**Figure 4-47. Locational Details of Subwatershed 060101070201.**



**Figure 4-48. Illustration of Land Use Distribution in Subwatershed 060101070201.**



**Figure 4-49. Land Use Distribution in Subwatershed 060101070201.** More information is provided in Appendix IV.



**Figure 4-50. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070201.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN127	3.00	C	1.31	5.20	Loam	0.35
TN128	0.00	C	1.30	6.53	Clay Loam	0.26
TN134	0.00	B	1.38	5.18	Loam	0.31
TN149	1.00	B	1.29	5.01	Loam	0.30
TN195	0.00	C	1.93	5.19	Silty Loam	0.34
TN196	13.00	C	1.61	5.39	Loam	0.31

**Table 4-28. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070201.** The definition of "Hydrologic Group" is provided in Appendix IV.

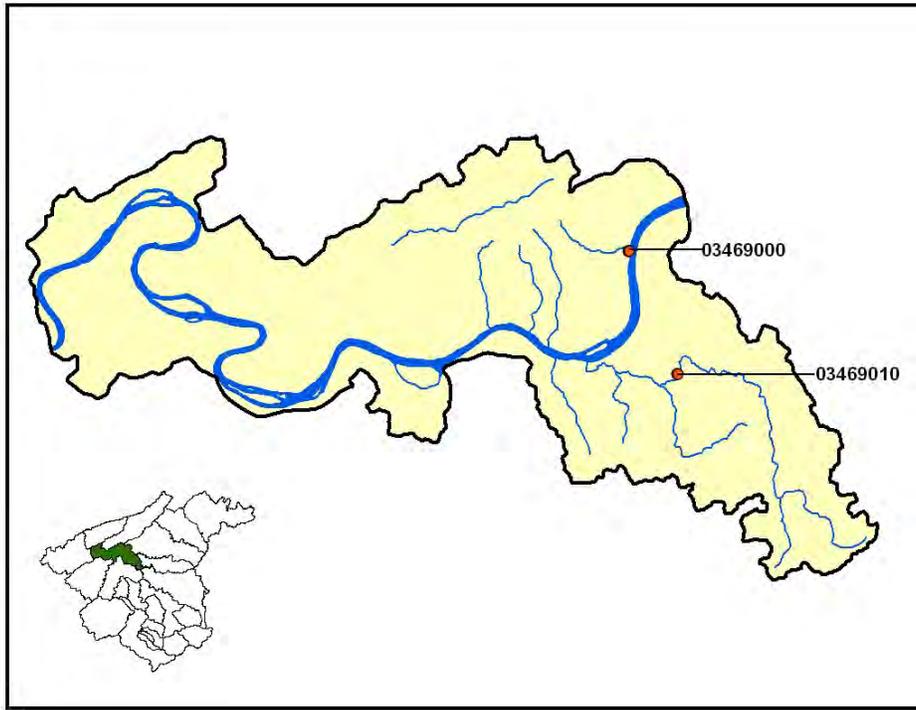
County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Knox	33,5749	365,900	382,032	0.32	1,088	1,186	1,238	13.80
Sevier	51,043	62,774	71,170	4.41	2,251	2,768	3,139	39.40
<b>Totals</b>	<b>386,792</b>	<b>428,674</b>	<b>453,202</b>		<b>3,339</b>	<b>3,954</b>	<b>4,377</b>	<b>31.10</b>

*Table 4-29. Population Estimates in Subwatershed 060101070201.*

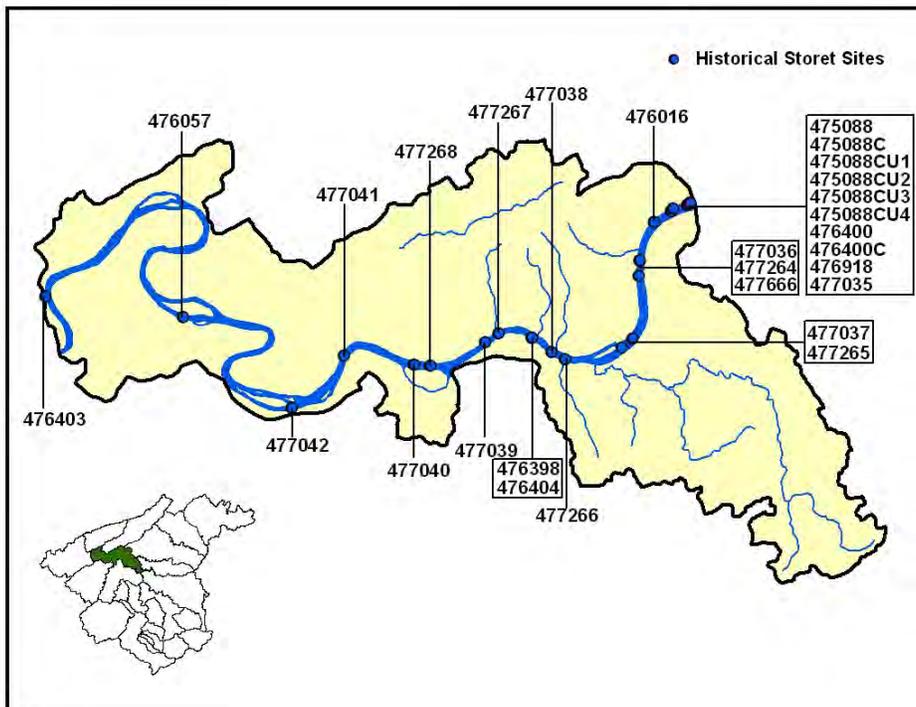
Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Sevierville	Sevier	7,178	3,321	2,632	686	3

*Table 4-30. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070201.*

**4.2.E.ii. USGS Gaging Stations and STORET Sites**

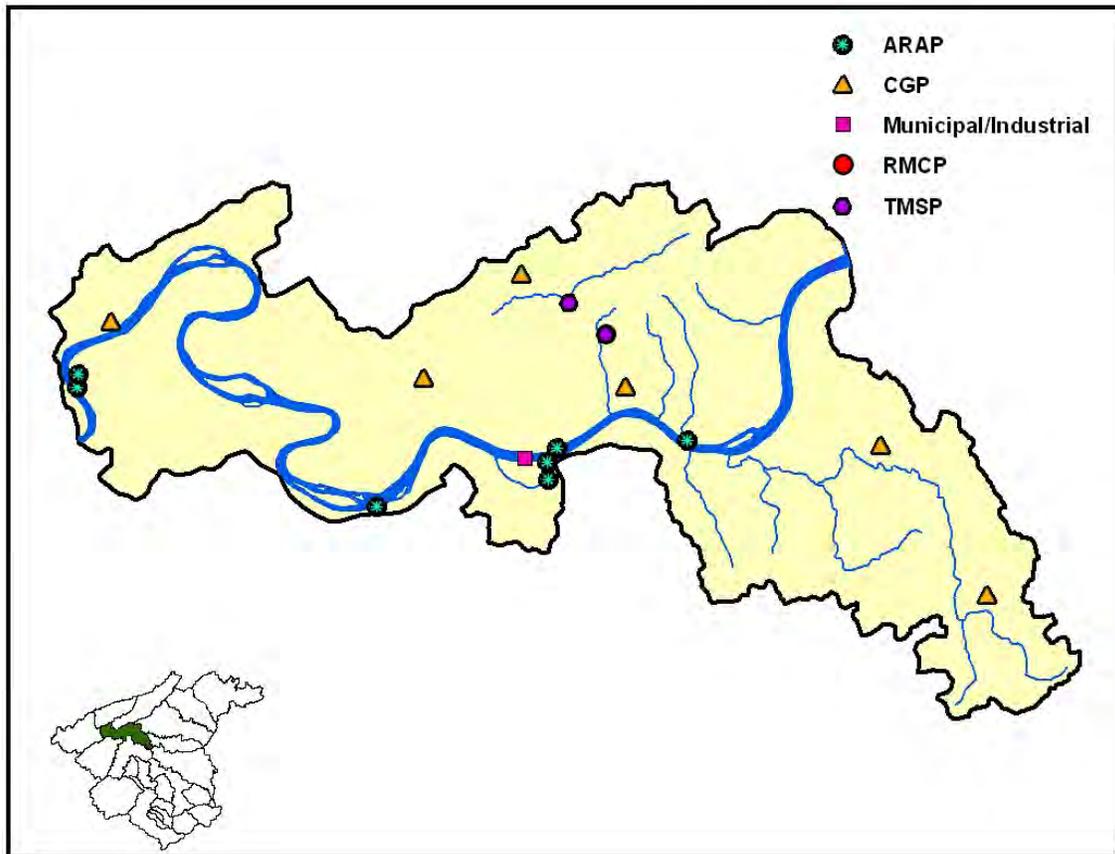


**Figure 4-51. Location of USGS Continuous Record Gaging Stations in Subwatershed 060101070201. More information is provided in Appendix IV.**

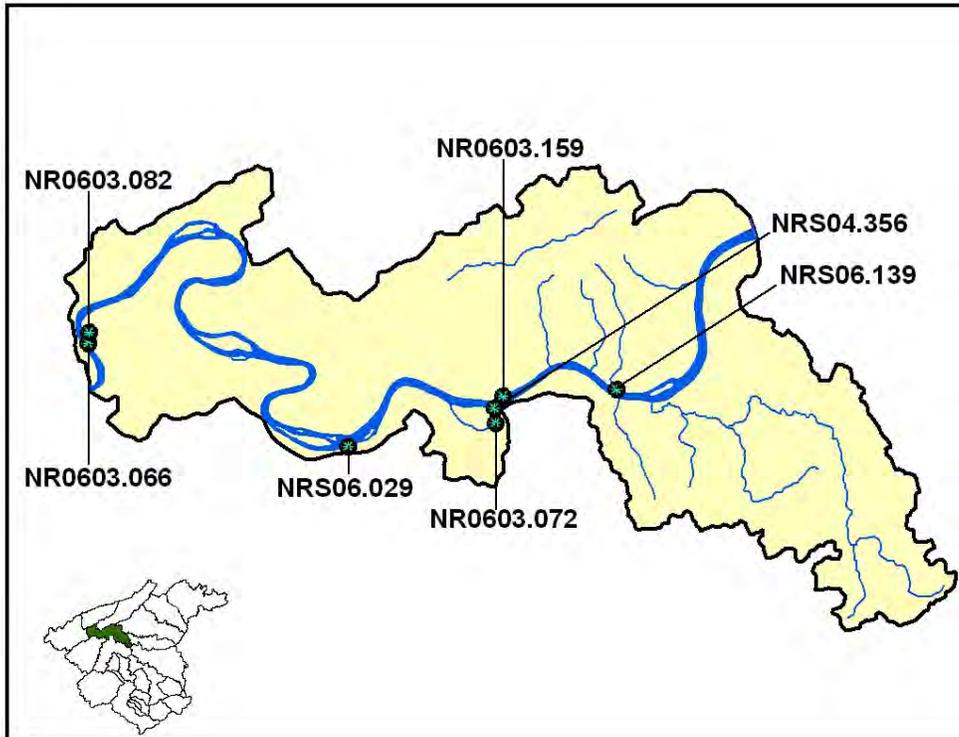


**Figure 4-52. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070201. More information, including site names and locations, is provided in Appendix IV.**

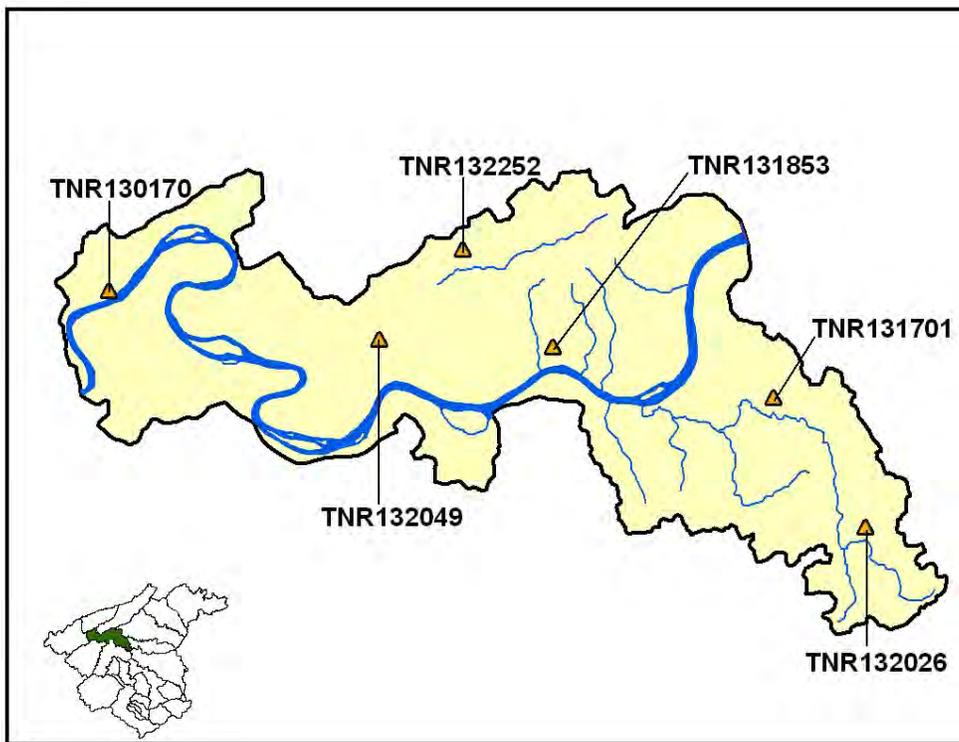
**4.2.E.iii. Permitted Activities.**



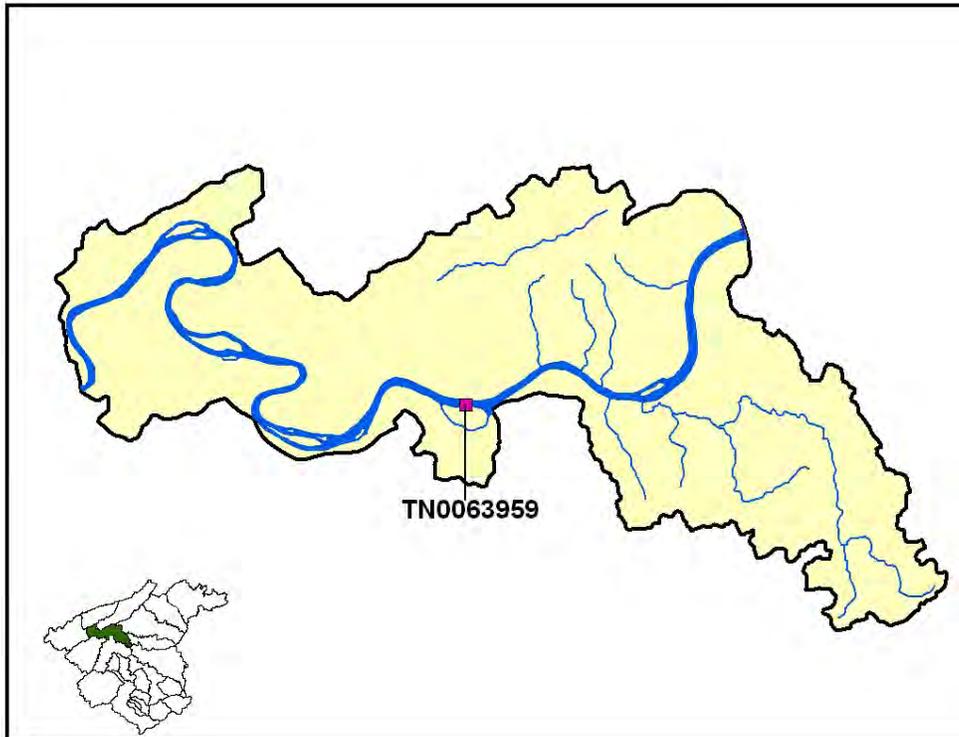
**Figure 4-53. Location of Permits Issued in Subwatershed 060101070201.** More information, including the names of facilities, is provided in Appendix IV.



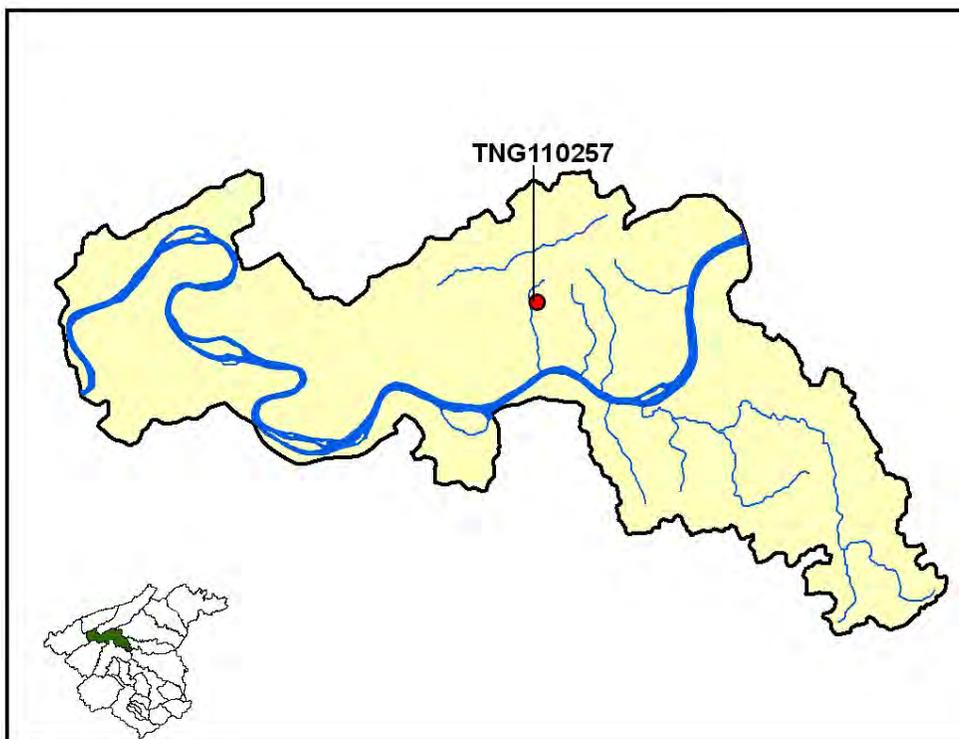
**Figure 4-54. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 060101070201. More information is provided in Appendix IV.**



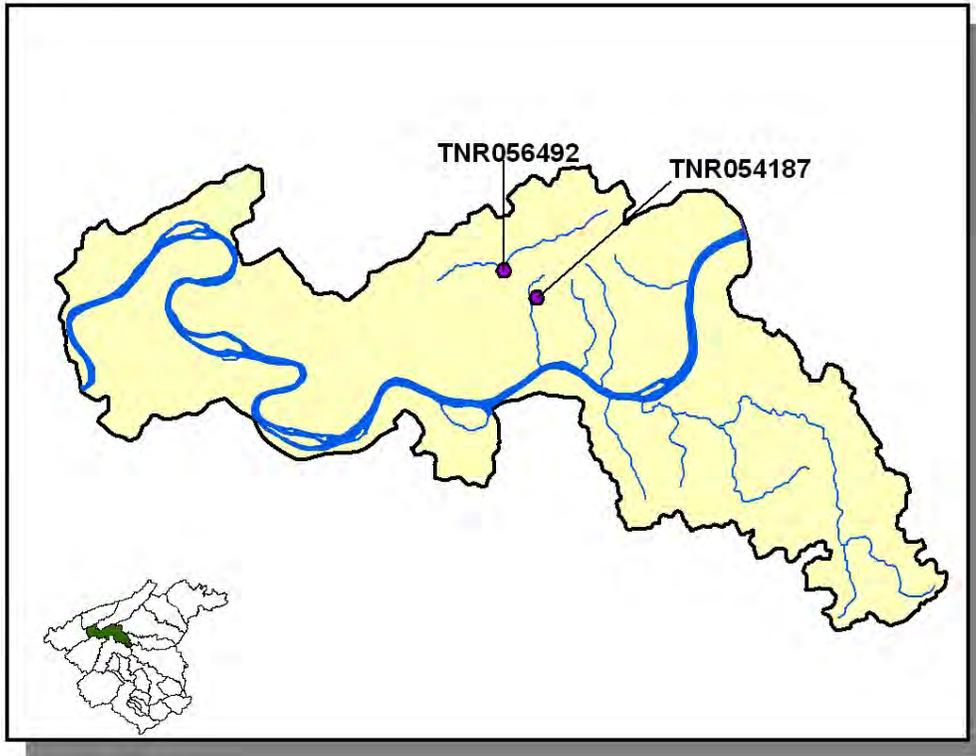
**Figure 4-55. Location of CGP (Construction General Permit) Sites in Subwatershed 060101070201. More information is provided in Appendix IV.**



**Figure 4-56. Location of Permitted Municipal and Industrial Facilities in Subwatershed 060101070201.** More information, including the name of the facility is provided in Appendix IV.



**Figure 4-57. Location of RMCP (Ready Mix Concrete Plant) Facilities in Subwatershed 060101070201.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-58. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 060101070201. More information is provided in Appendix IV.**

**4.2.E.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Knox	12,424	24,664	855	2,056	851	649
Sevier	9,816	19,013	172	26	394	234

**Table 4-31. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Knox	127.5	127.0	2.2	8.2
Sevier	254.5	127.4	0.3	0.9

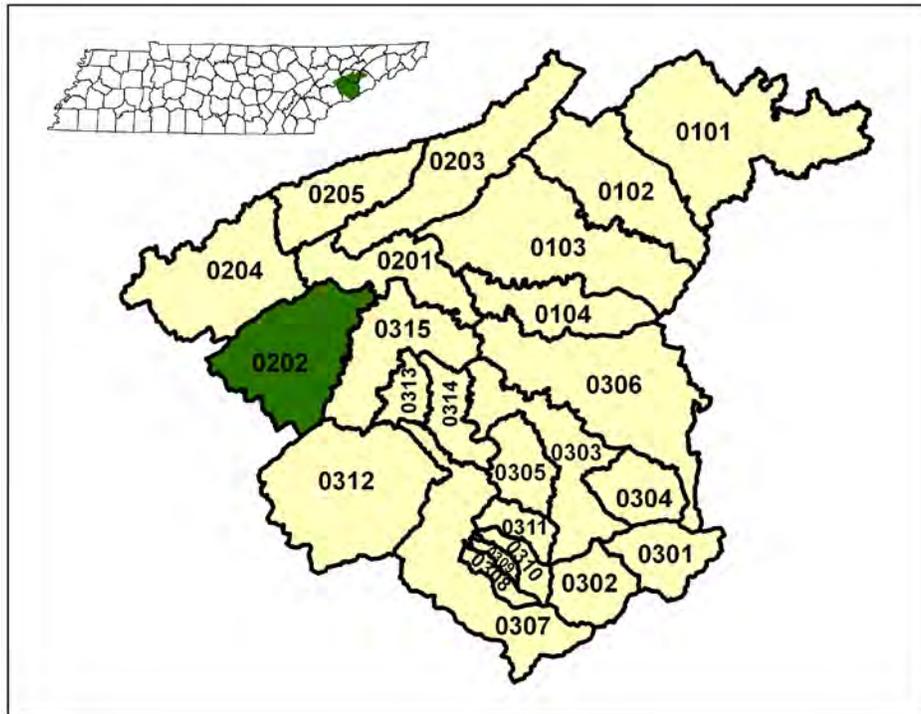
**Table 4-32. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Soybeans (Row Crops)	15.54
Wheat (Close Grown Cropland)	9.23
Corn (Row Crops)	4.89
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.51
Grass Forbs Legumes Mixed (Pastureland)	0.47
Grass (Hayland)	0.21
Farmsteads and Ranch Headquarters	0.21
Legume Grass (Hayland)	0.07

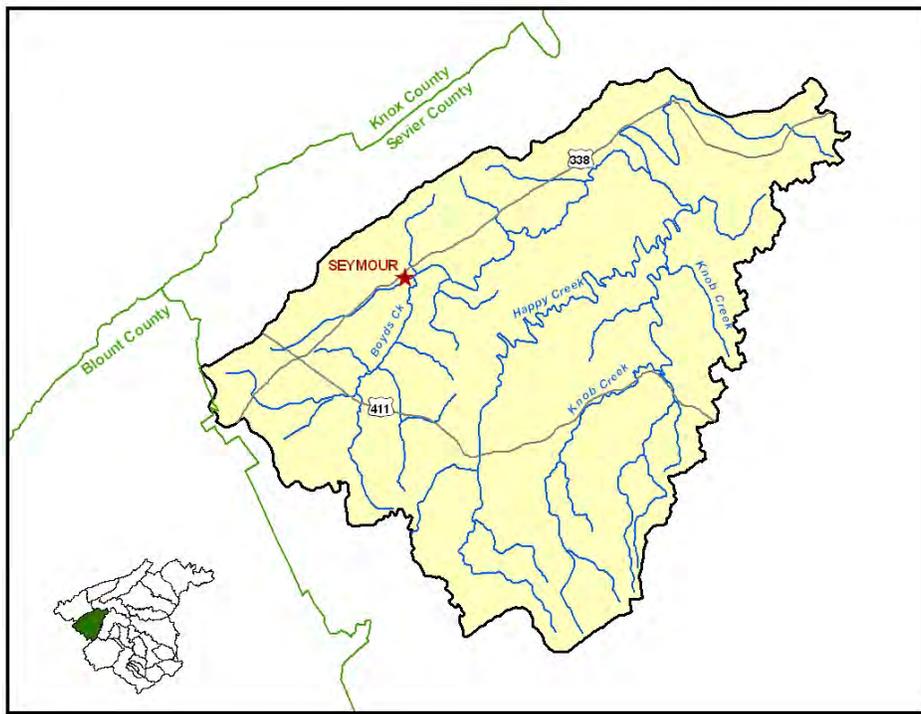
**Table 4-33. Annual Estimated Total Soil Loss in Subwatershed 060101070201.**

**4.2.F. 060101070202 (Boys Creek)**

**4.2.F.i. General Description**



**Figure 4-59. Location of Subwatershed 060101070202.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



**Figure 4-60. Locational Details of Subwatershed 060101070202.**

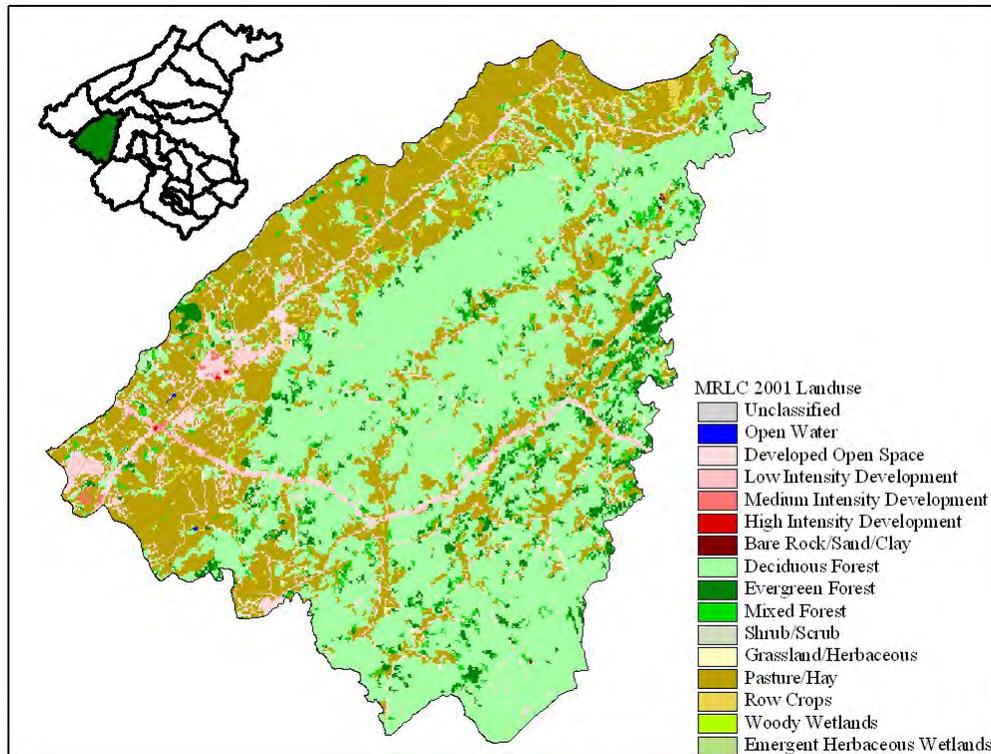


Figure 4-61. Illustration of Land Use Distribution in Subwatershed 060101070202.

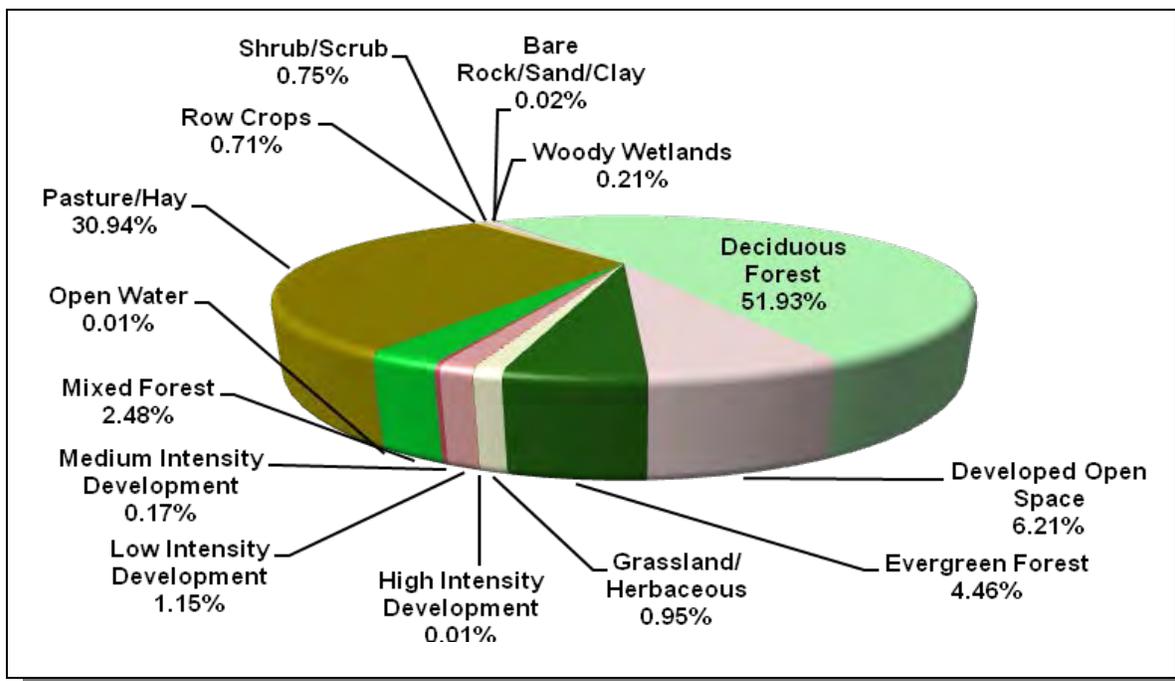
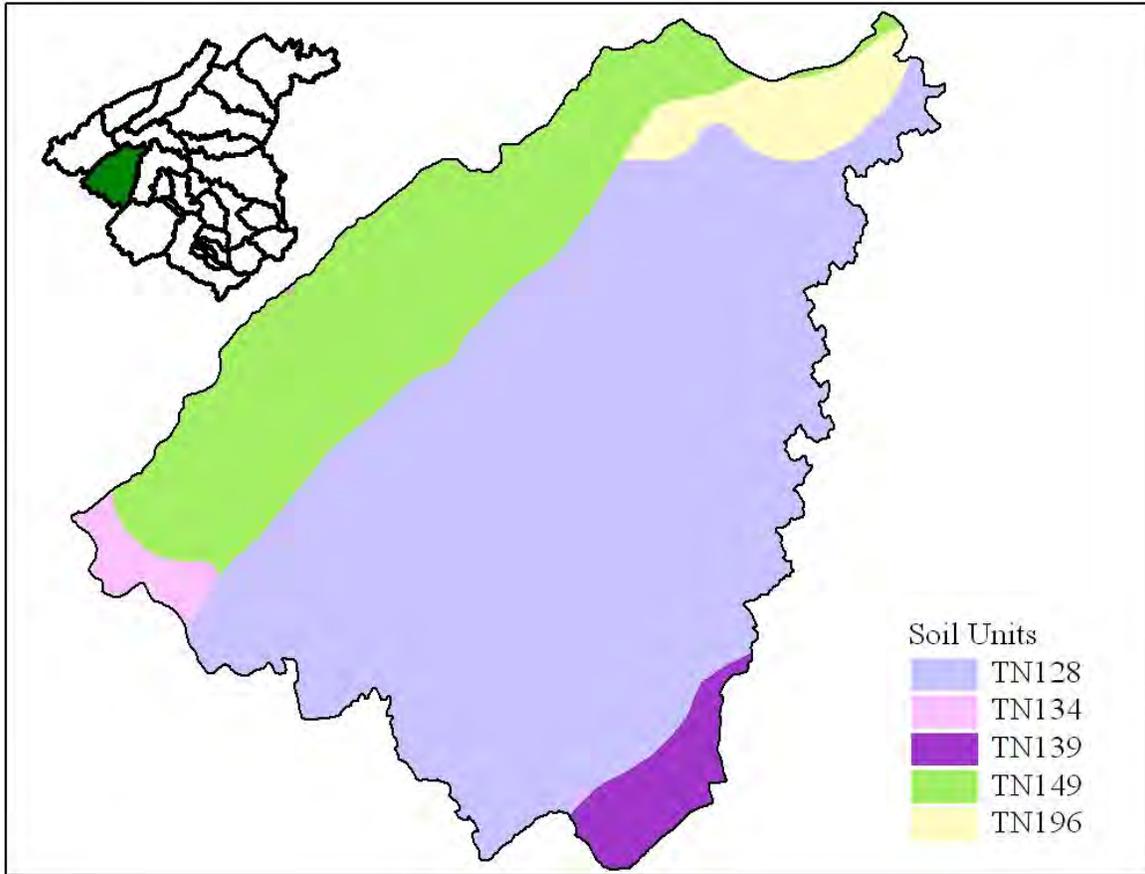


Figure 4-62. Land Use Distribution in Subwatershed 060101070202. More information is provided in Appendix IV.



**Figure 4-63. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070202.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN128	0.00	C	1.30	6.53	Clay Loam	0.26
TN134	0.00	B	1.38	5.18	Loam	0.31
TN139	0.00	C	11.84	4.82	Loam	0.20
TN149	1.00	B	1.29	5.01	Loam	0.30
TN196	13.00	C	1.61	5.39	Loam	0.31

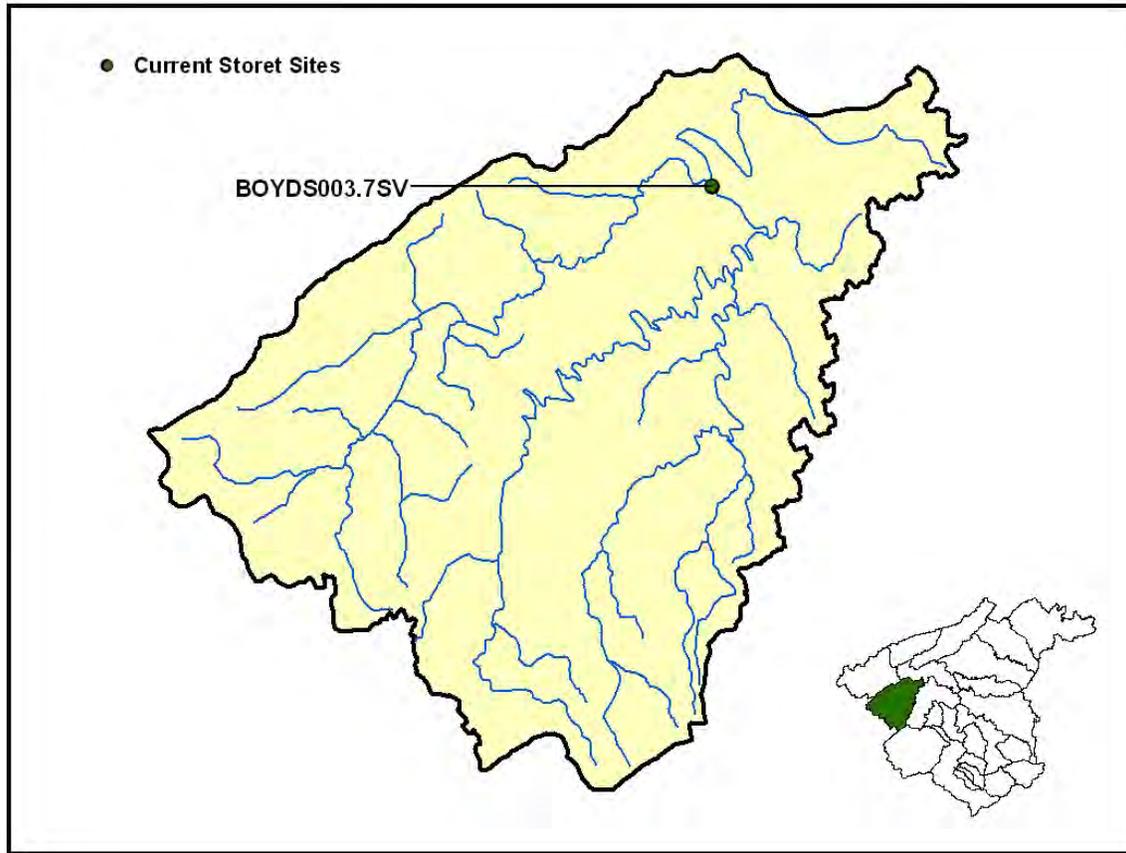
**Table 4-34. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070202.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Blount	85,969	100,218	105,823	0.04	37	43	45	21.60
Sevier	51,043	62,774	71,170	7.70	3,929	4,832	5,478	39.40
<b>Totals</b>	<b>137,012</b>	<b>162,992</b>	<b>176,993</b>		<b>3,966</b>	<b>4,875</b>	<b>5,523</b>	<b>39.30</b>

**Table 4-35. Population Estimates in Subwatershed 060101070202.**

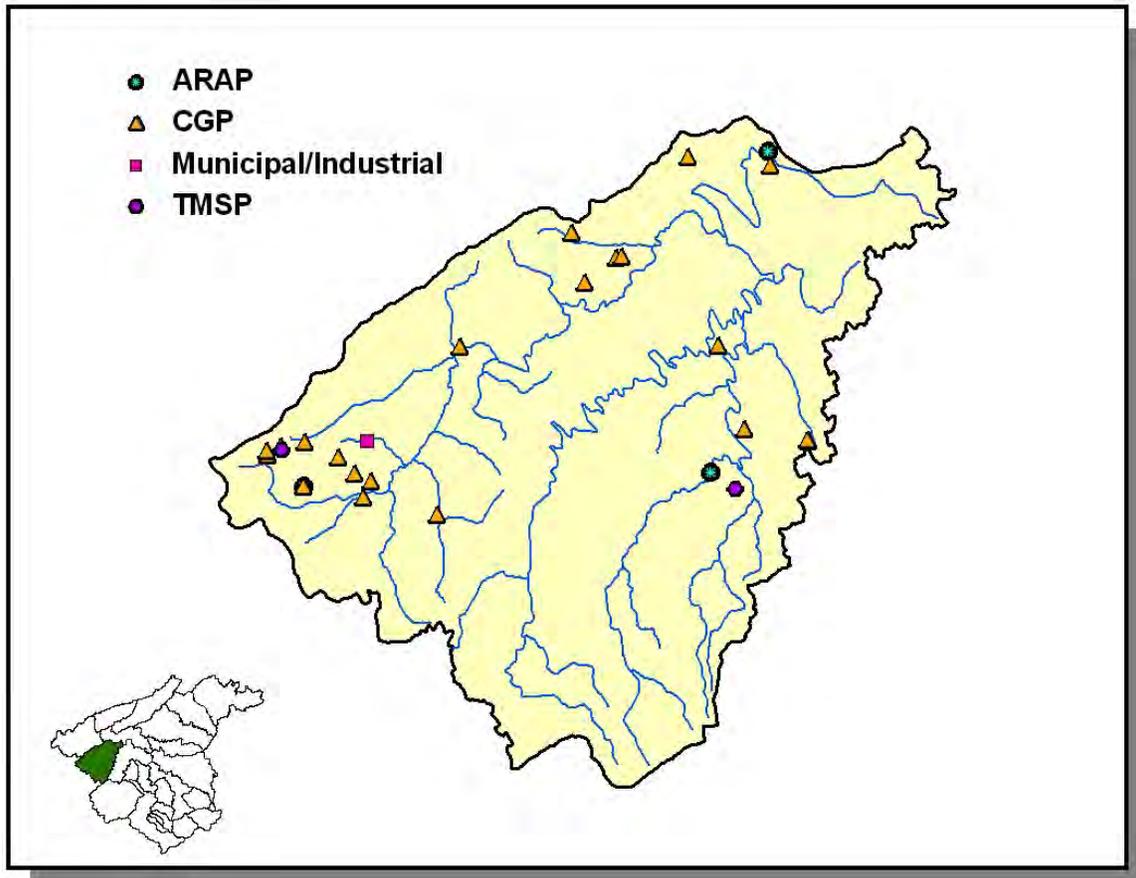
**4.2.F.ii. STORET Sites**

There are no USGS continuous record gaging stations located in subwatershed 060101070202.

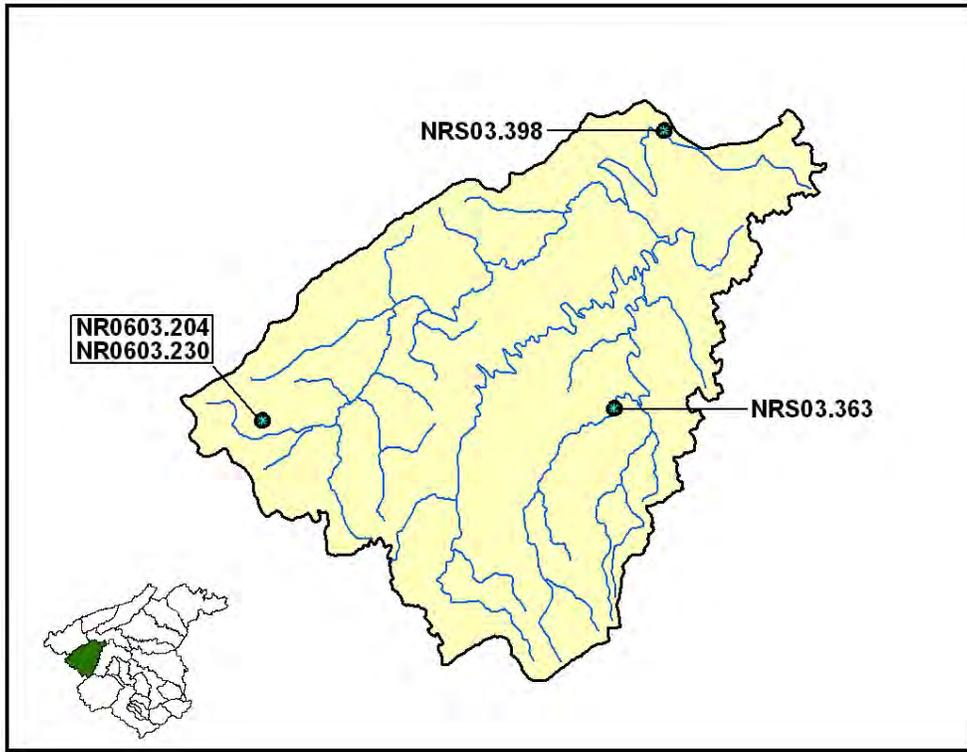


**Figure 4-64. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070202. More information, including site names and locations, is provided in Appendix IV.**

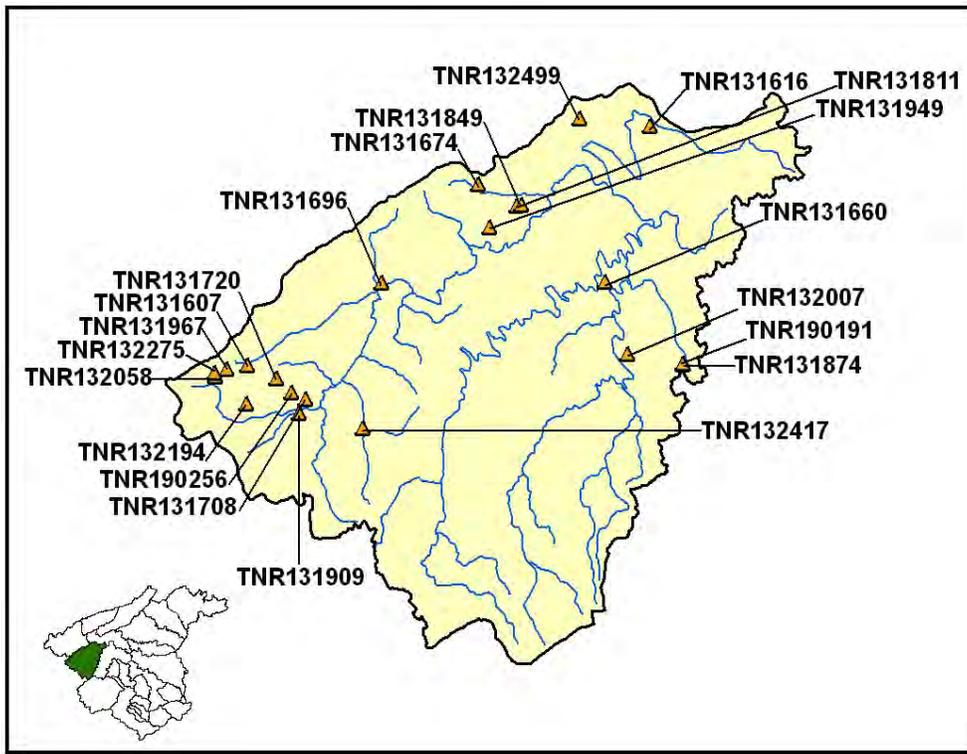
**4.2.F.iii. Permitted Activities.**



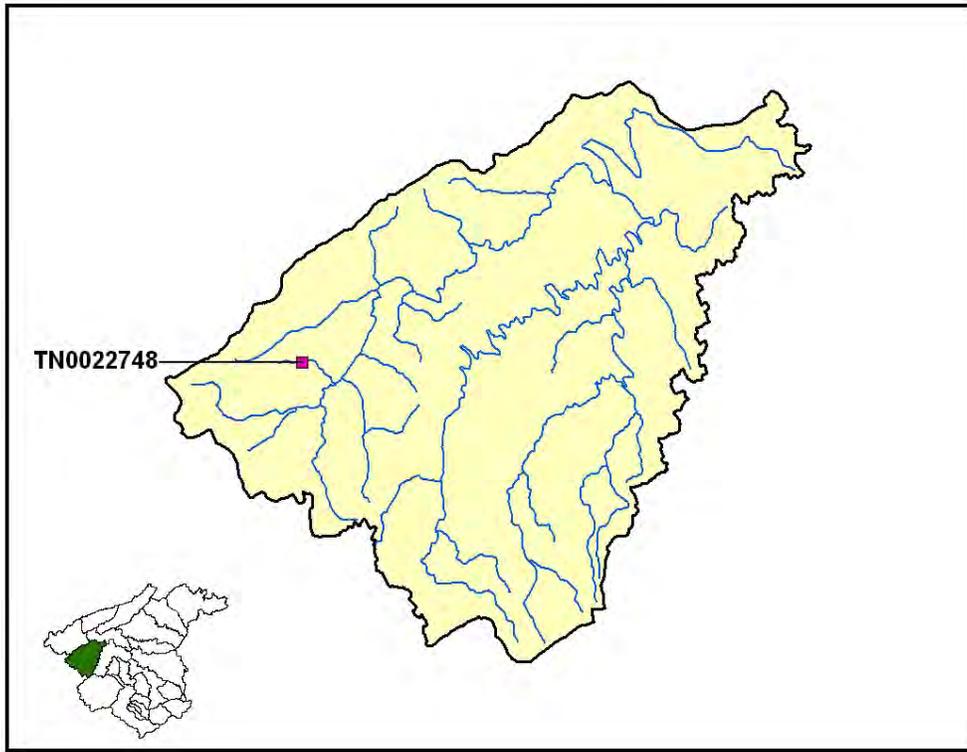
**Figure 4-65. Location of Permits Issued in Subwatershed 060101070202.** More information, including the names of facilities, is provided in Appendix IV.



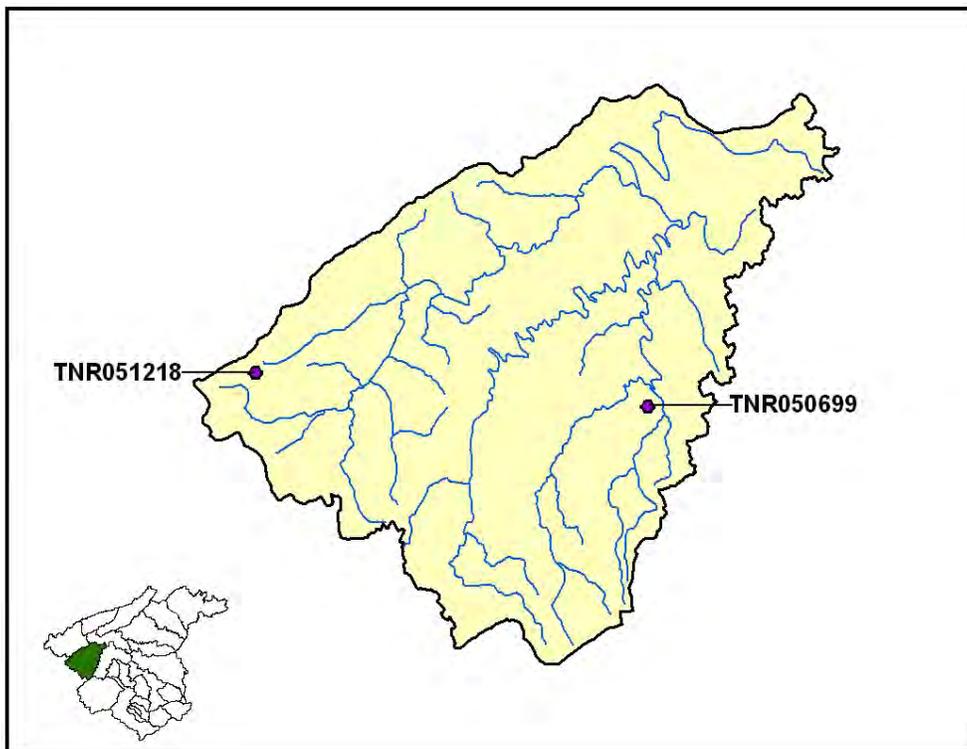
**Figure 4-66. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 060101070202. More information is provided in Appendix IV.**



**Figure 4-67. Location of CGP (Construction General Permit) Sites in Subwatershed 060101070202. More information is provided in Appendix IV.**



**Figure 4-68. Location of Permitted Municipal and Industrial Facilities in Subwatershed 060101070202.** More information, including the name of the facility is provided in Appendix IV.



**Figure 4-69. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 060101070202.** More information is provided in Appendix IV.

**4.2.F.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Blount	15,468	32,061	1,769	664	658	455
Sevier	9,816	19,013	172	26	394	234

**Table 4-36. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Blount	165.5	69.9	1.8	9.3
Sevier	254.5	127.4	0.3	0.9

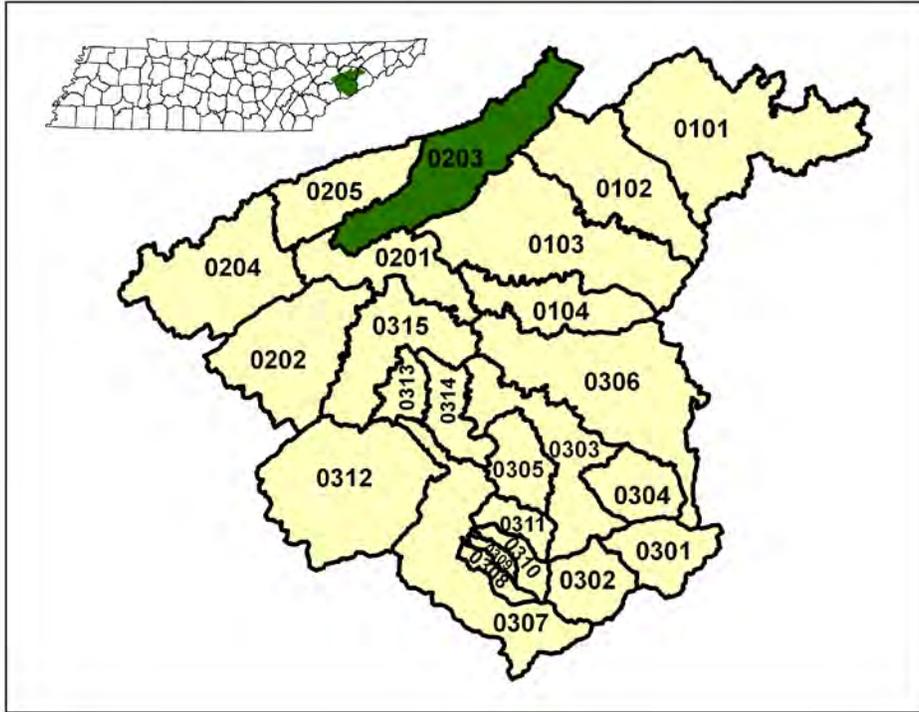
**Table 4-37. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Wheat (Close Grown Cropland)	9.51
Corn (Row Crops)	5.18
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.48
Grass Forbs Legumes Mixed (Pastureland)	0.47
Oats (Close Grown Cropland)	0.32
Farmsteads and Ranch Headquarters	0.22
Grass (Hayland)	0.21
Other Land in Farms (Other Far	0.14
Legume Grass (Hayland)	0.06

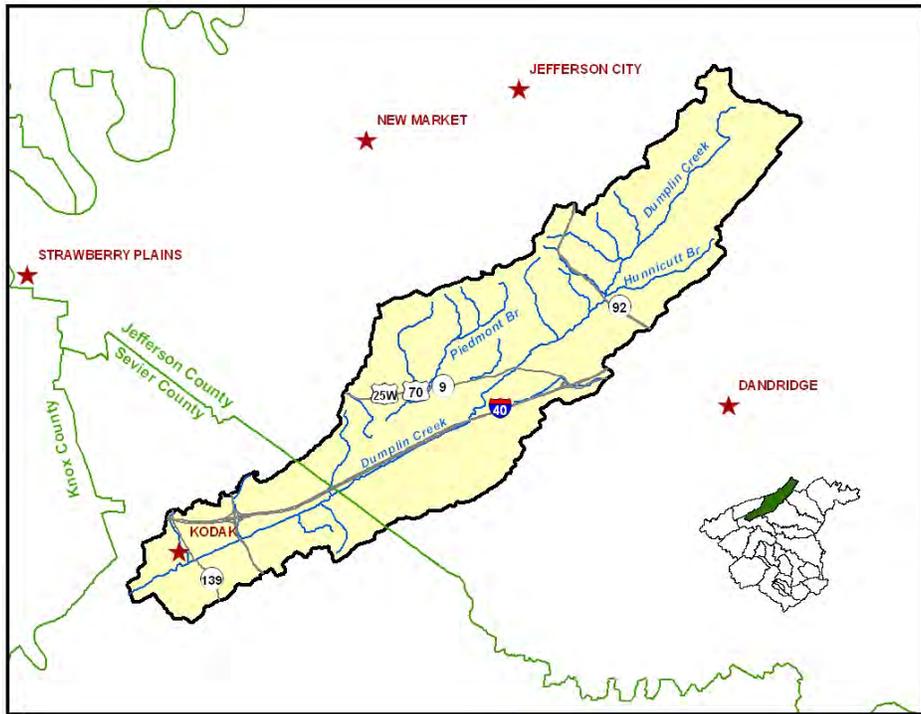
**Table 4-38. Annual Estimated Total Soil Loss in Subwatershed 060101070202.**

**4.2.G. 060101070203 (Dumplin Creek)**

**4.2.G.i. General Description**



**Figure 4-70. Location of Subwatershed 060101070203.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



**Figure 4-71. Locational Details of Subwatershed 060101070203.**

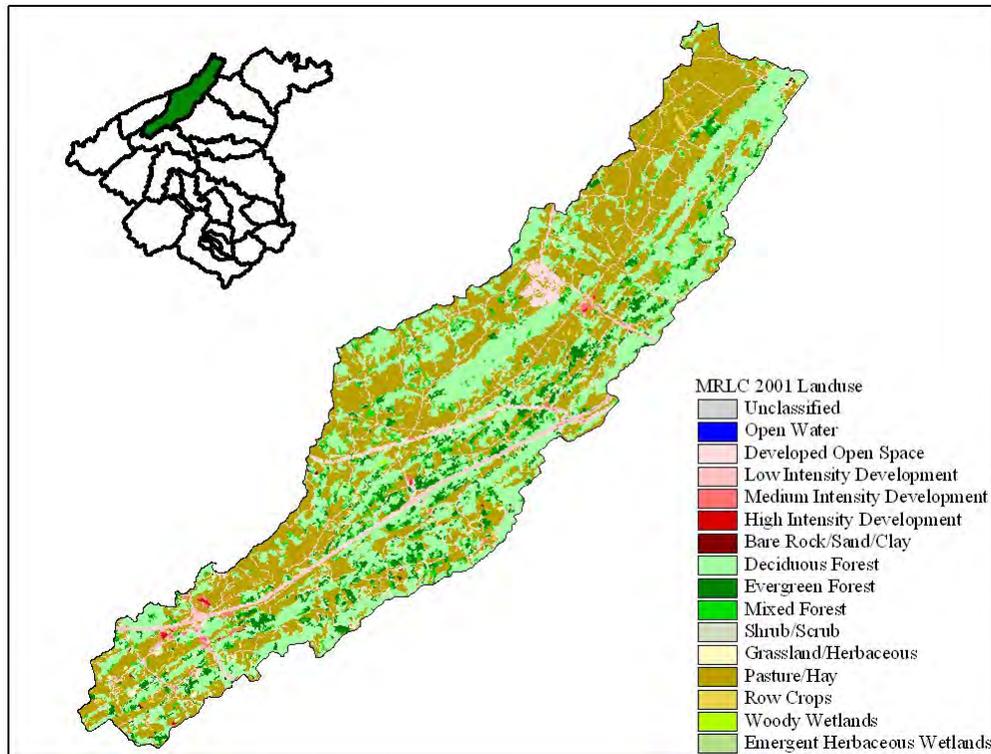


Figure 4-72. Illustration of Land Use Distribution in Subwatershed 060101070203.

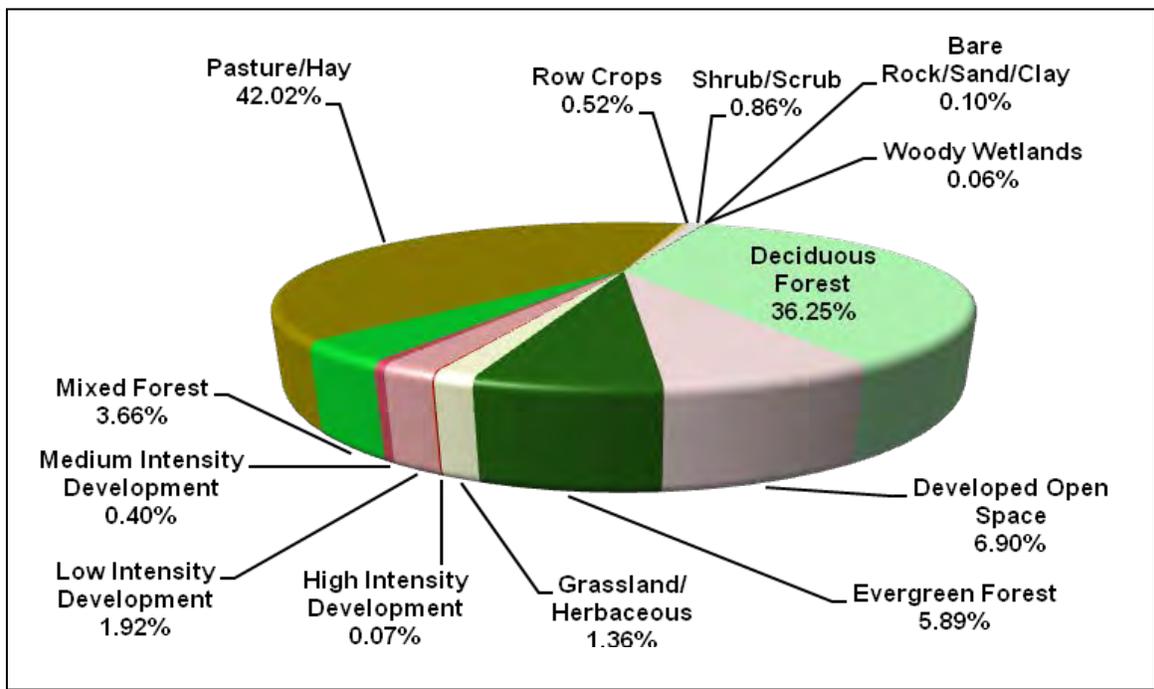
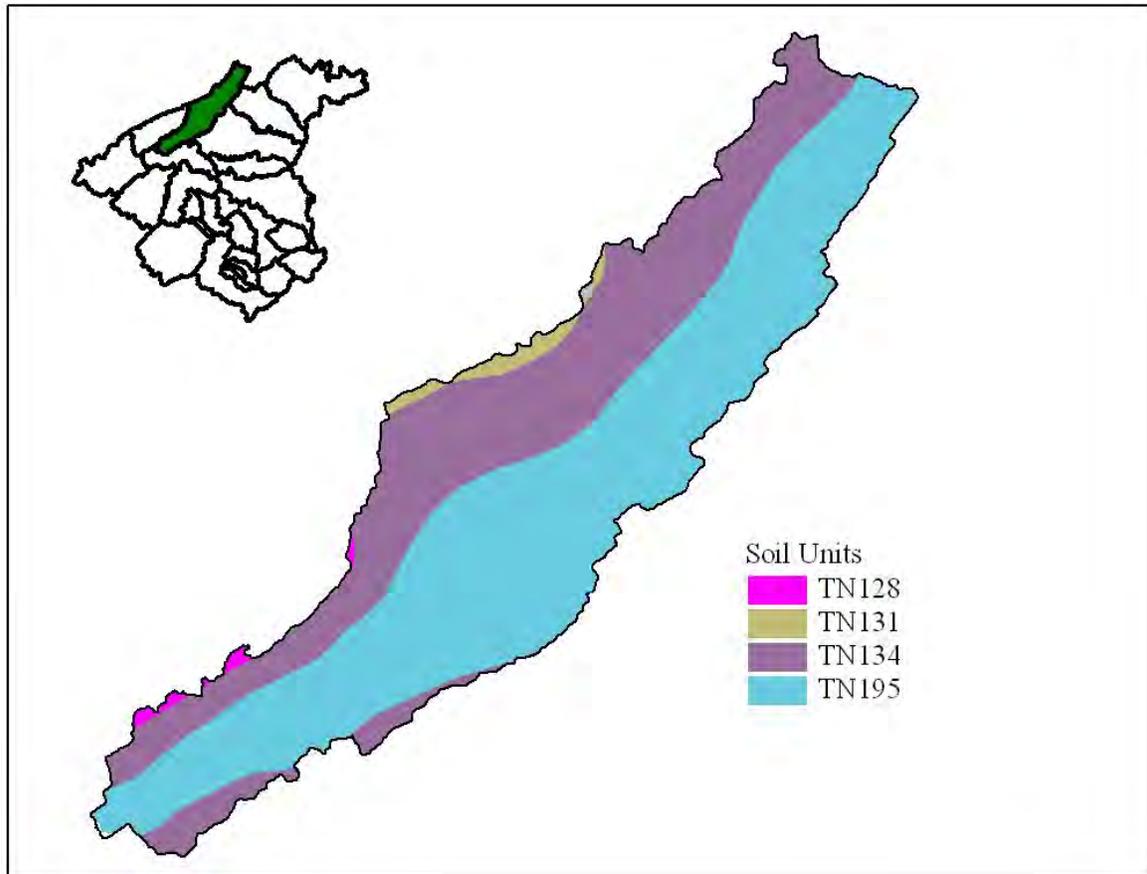


Figure 4-73. Land Use Distribution in Subwatershed 060101070203. More information is provided in Appendix IV.



**Figure 4-74. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070203.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN128	0.00	C	1.30	6.53	Clay Loam	0.26
TN131	0.00	C	1.17	4.95	Silty Loam	0.33
TN134	0.00	B	1.38	5.18	Loam	0.31
TN195	0.00	C	1.93	5.19	Silty Loam	0.34

**Table 4-39. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070203.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Jefferson	33,016	42,168	44,294	12.12	4,000	5,109	5,366	34.20
Sevier	51,043	62,774	71,170	1.610	822	1,011	1,146	39.40
<b>Totals</b>	<b>84,059</b>	<b>104,942</b>	<b>115,464</b>		<b>4,822</b>	<b>6,120</b>	<b>6,512</b>	<b>35.00</b>

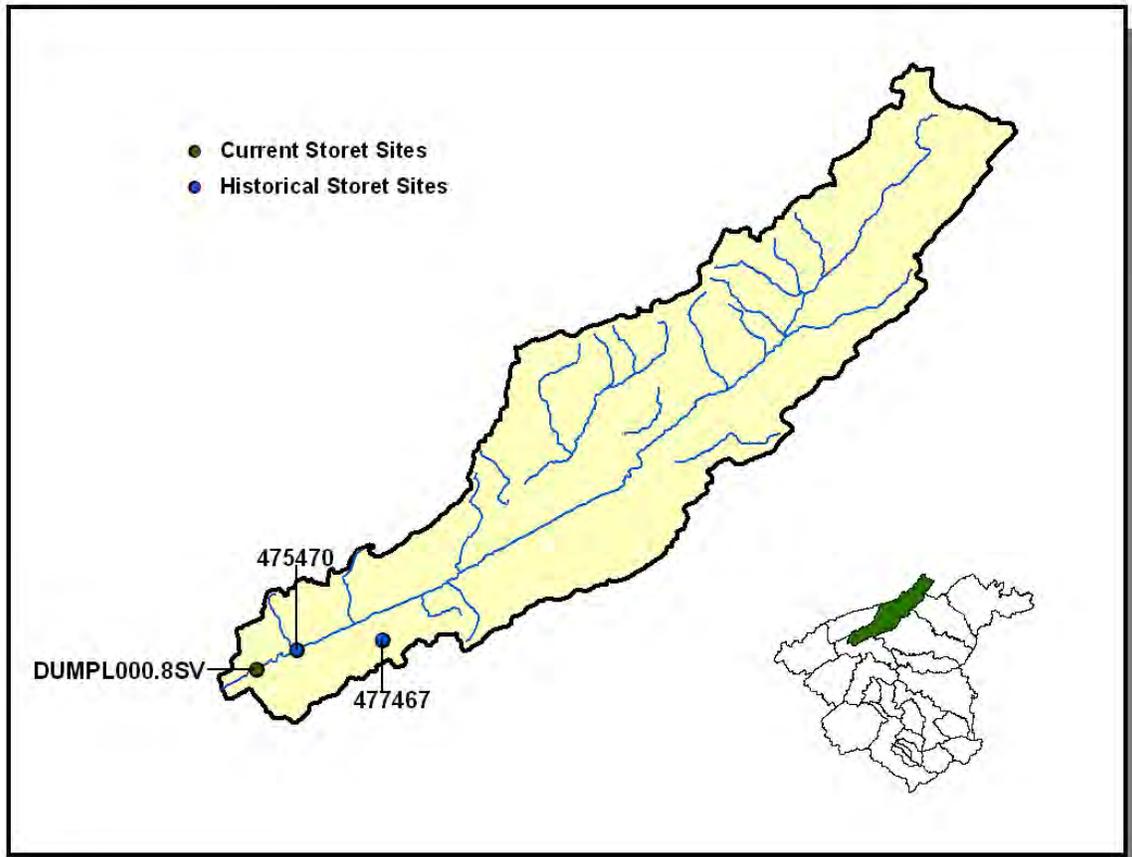
*Table 4-40. Population Estimates in Subwatershed 060101070203.*

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Sevierville	Sevier	7,178	3,321	2,632	686	3

*Table 4-41. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070203.*

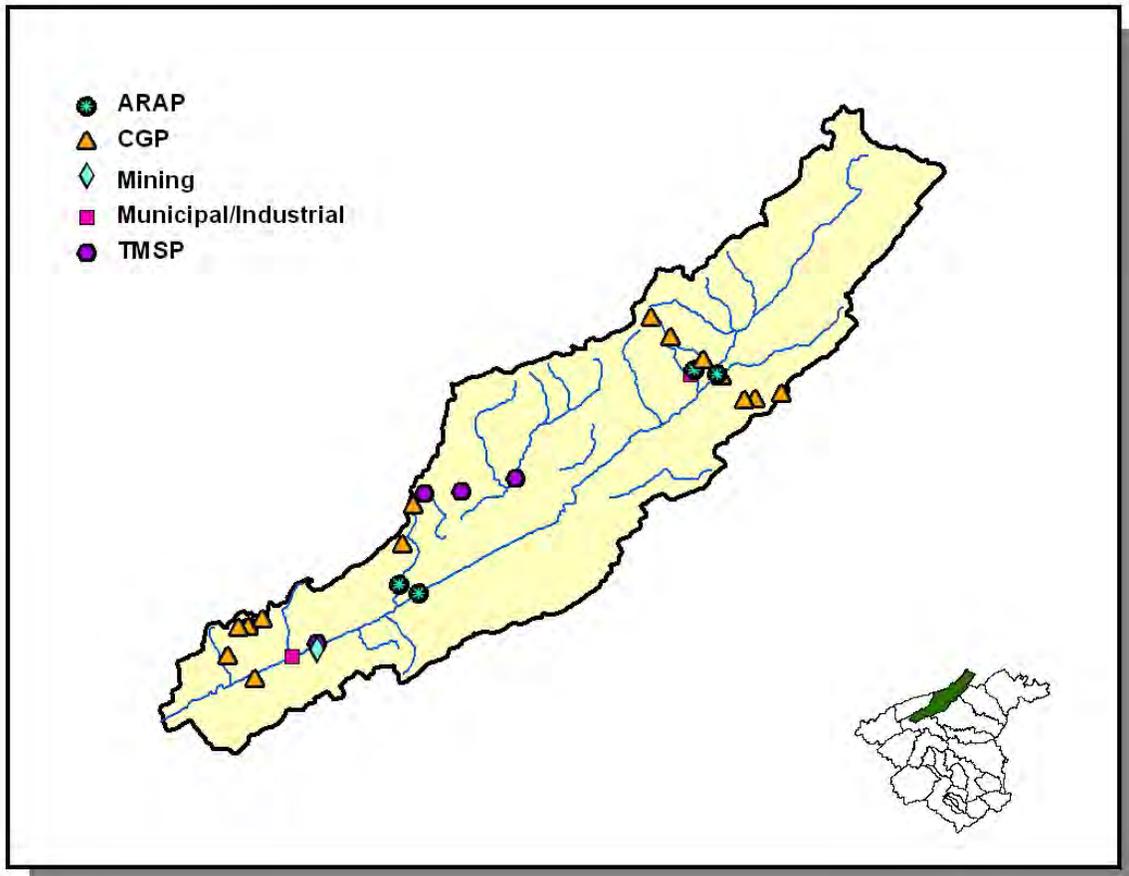
**4.2.G.ii. STORET Sites**

There are no USGS continuous record gaging stations in subwatershed 060101070203.

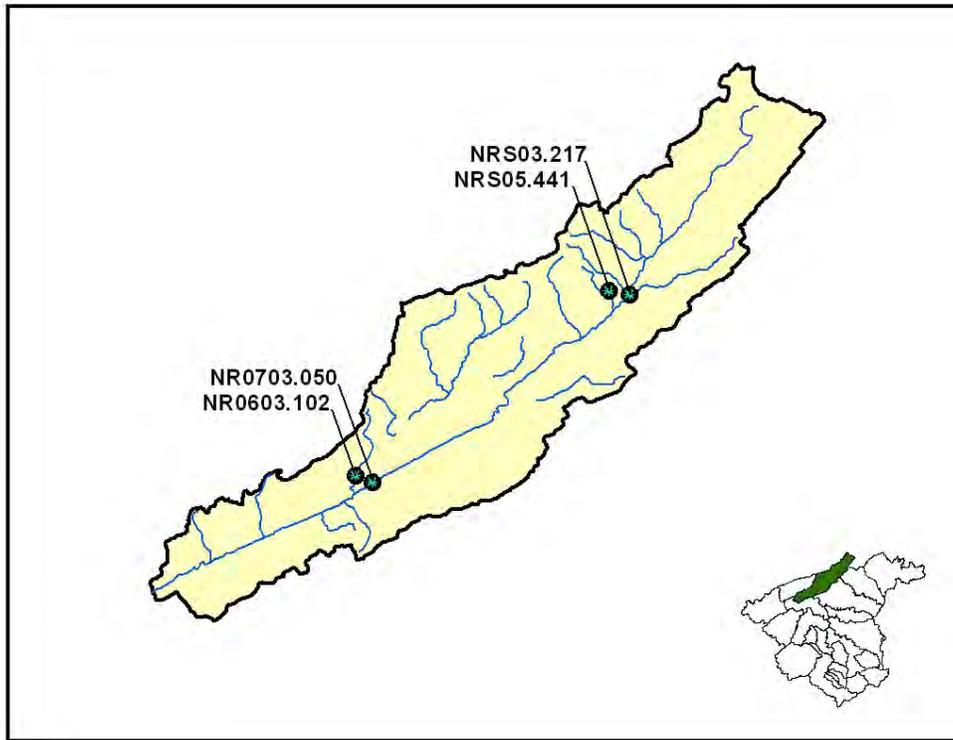


**Figure 4-75. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070203.** More information, including site names and locations, is provided in Appendix IV.

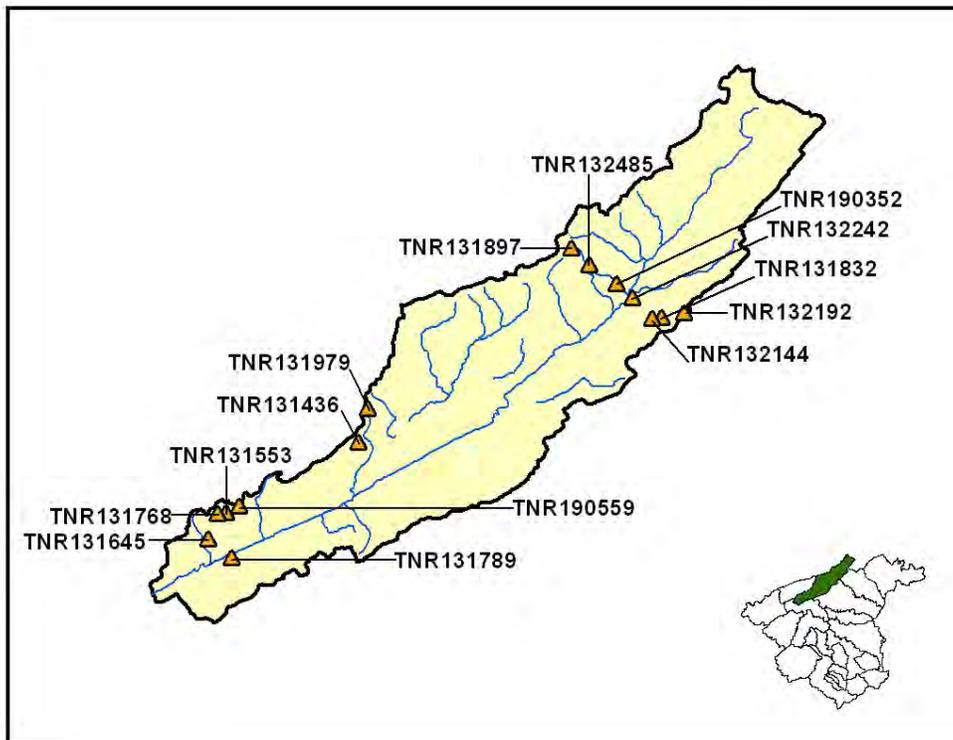
**4.2.G.iii. Permitted Activities.**



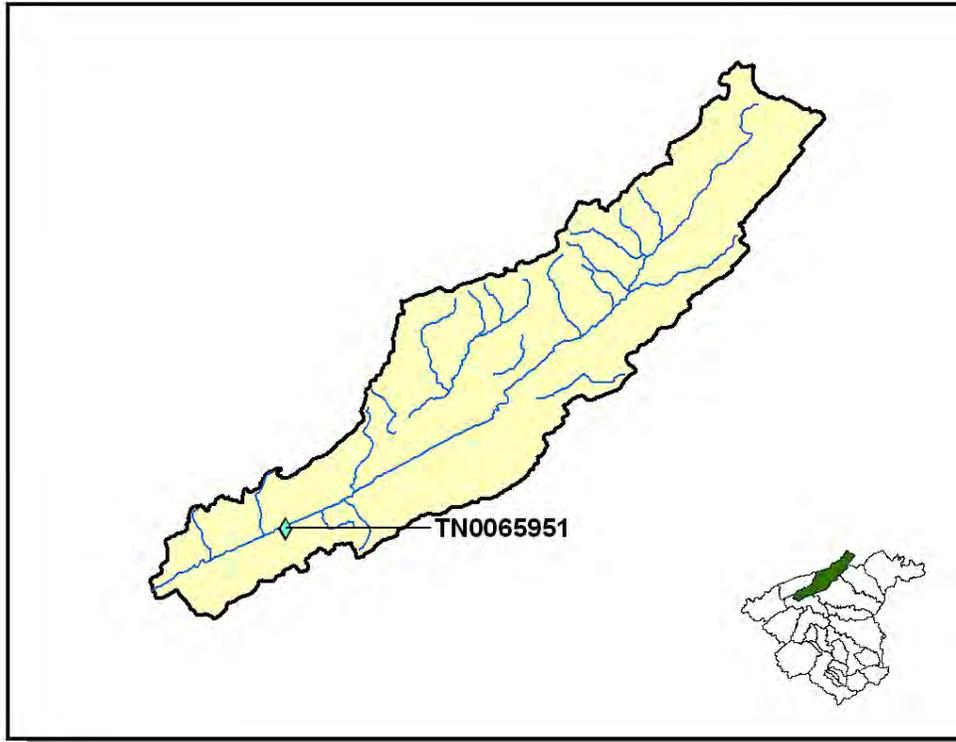
**Figure 4-76. Location of Permits Issued in Subwatershed 060101070203.** More information, including the names of facilities, is provided in Appendix IV.



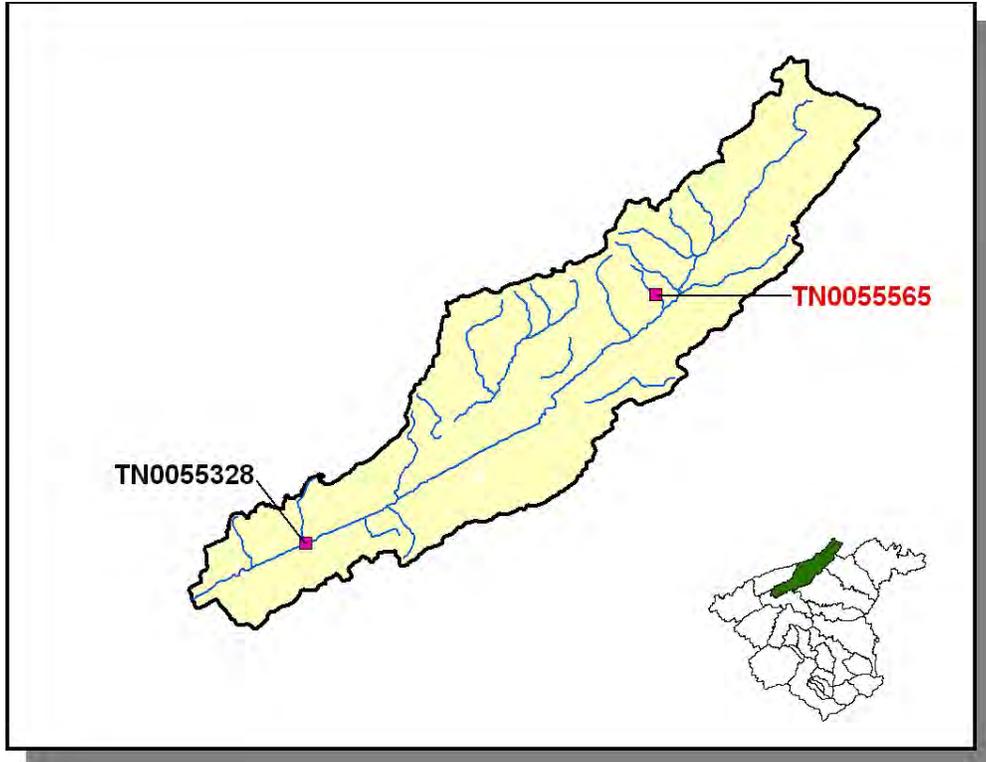
**Figure 4-77. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 060101070203.** More information is provided in Appendix IV.



**Figure 4-78. Location of CGP (Construction General Permit) Sites in Subwatershed 060101070203.** More information is provided in Appendix IV.



**Figure 4-79. Location of permitted Mining Facilities in Subwatershed 060101070203.** More information is provided in Appendix IV.



**Figure 4-80. Location of Permitted Municipal and Industrial Facilities in Subwatershed 060101070203.** Permit numbers in red indicate that the facility discharges to a stream listed on the 2006 303(d) list. More information, including the name of the facility is provided in Appendix IV.

PERMIT #	7Q10	DISCHARGE FLOW
TN0055565	0.0	0.075

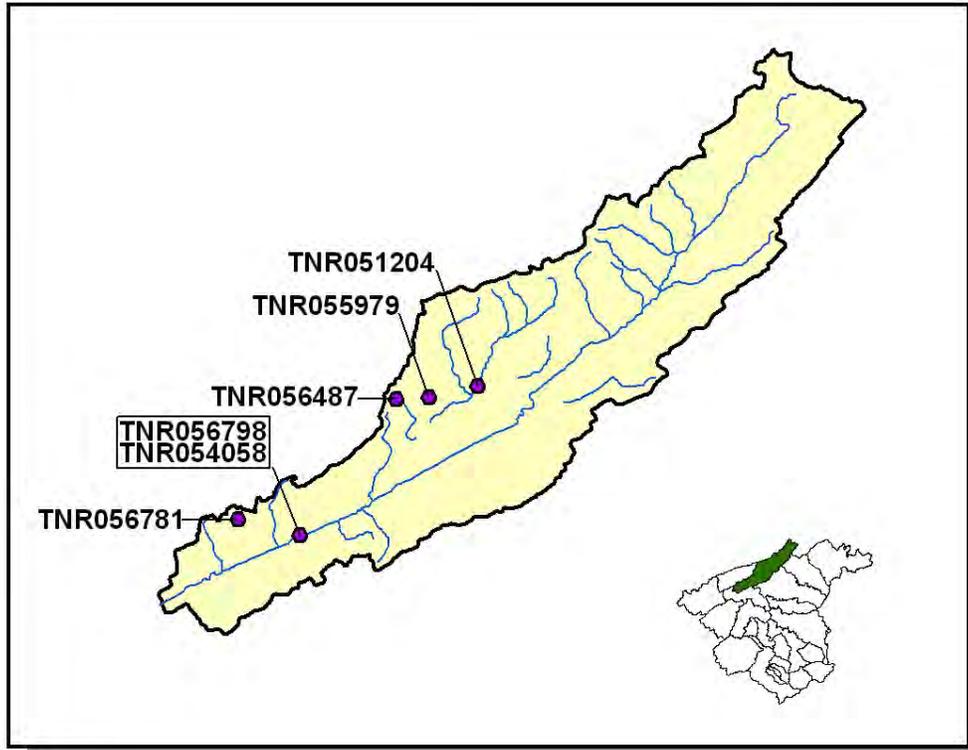
**Table 4-42. Receiving Stream Flow Information Used for Limit Calculations for NPDES Dischargers to Waterbodies Listed on the 2006 303(d) List in Subwatershed 060101070203.** Data are in million gallons per day (MGD). Data were obtained from permit files.

PERMIT #	FLOW	DO	pH	TSS	SS
TN0055565	X	X	X	X	X

**Table 4-43. Parameters Monitored for Limits for NPDES Dischargers to Waterbodies Listed on the 2006 303(d) List in Subwatershed 060101070203.** DO, Dissolved Oxygen; TSS, Total Suspended Solids; SS, Settleable Solids.

PERMIT #	AMMONIA AS N (TOTAL)	TRC	CBOD <sub>5</sub>	E. coli
TN0055565	X	X	X	X

**Table 4-44. Parameters Monitored for Limits for NPDES Dischargers to Waterbodies Listed on the 2006 303(d) List in Subwatershed 060101070203.** TRC, Total Residual Chlorine; CBOD<sub>5</sub>, Carbonaceous Biochemical Oxygen Demand (5-Day).



**Figure 4-81. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 060101070203. More information is provided in Appendix IV.**

**4.2.G.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Jefferson	16,126	35,718	1,878	1,633	183	567
Sevier	9,816	19,013	172	26	394	234

**Table 4-45. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Jefferson	62.2	62.2	0.6	1.8
Sevier	254.5	127.4	0.3	0.9

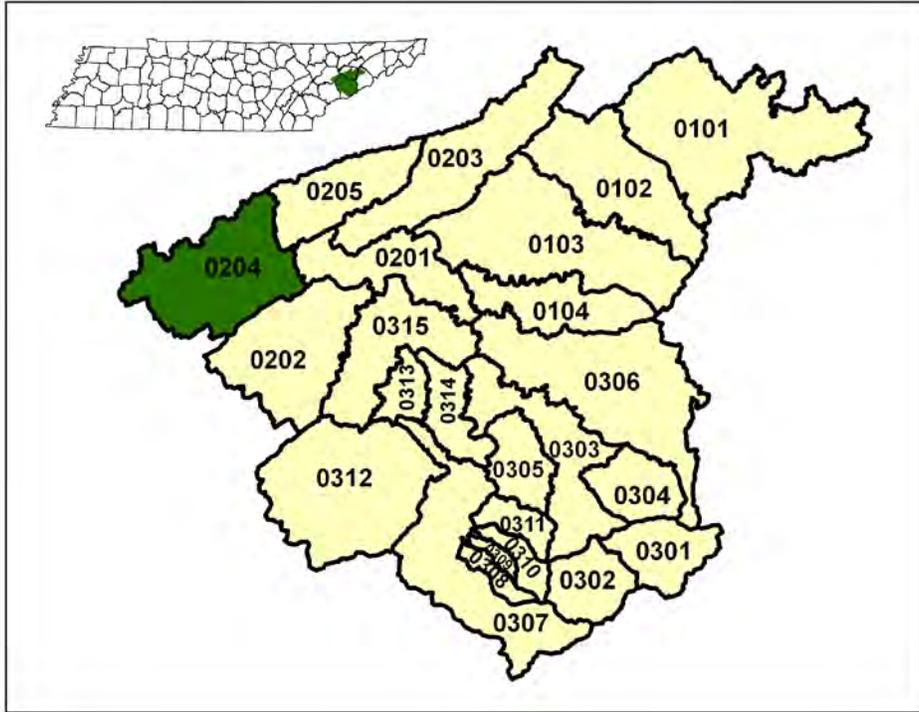
**Table 4-46. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Corn (Row Crops)	19.18
Oats (Close Grown Cropland)	13.51
Wheat (Close Grown Cropland)	9.53
Tobacco (Row Crops)	5.72
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.54
Grass Forbs Legumes Mixed (Pastureland)	0.44
Legume Grass (Hayland)	0.31
Grass (Hayland)	0.23
Farmsteads and Ranch Headquarters	0.04

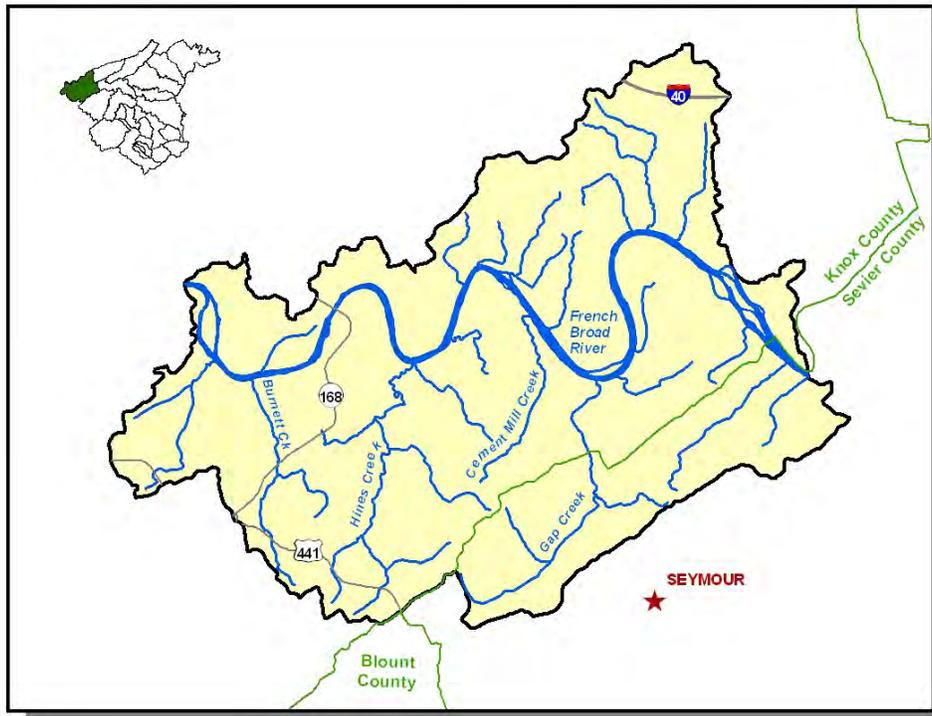
**Table 4-47. Annual Estimated Total Soil Loss in Subwatershed 060101070203.**

**4.2.H. 060101070204 (French Broad River)**

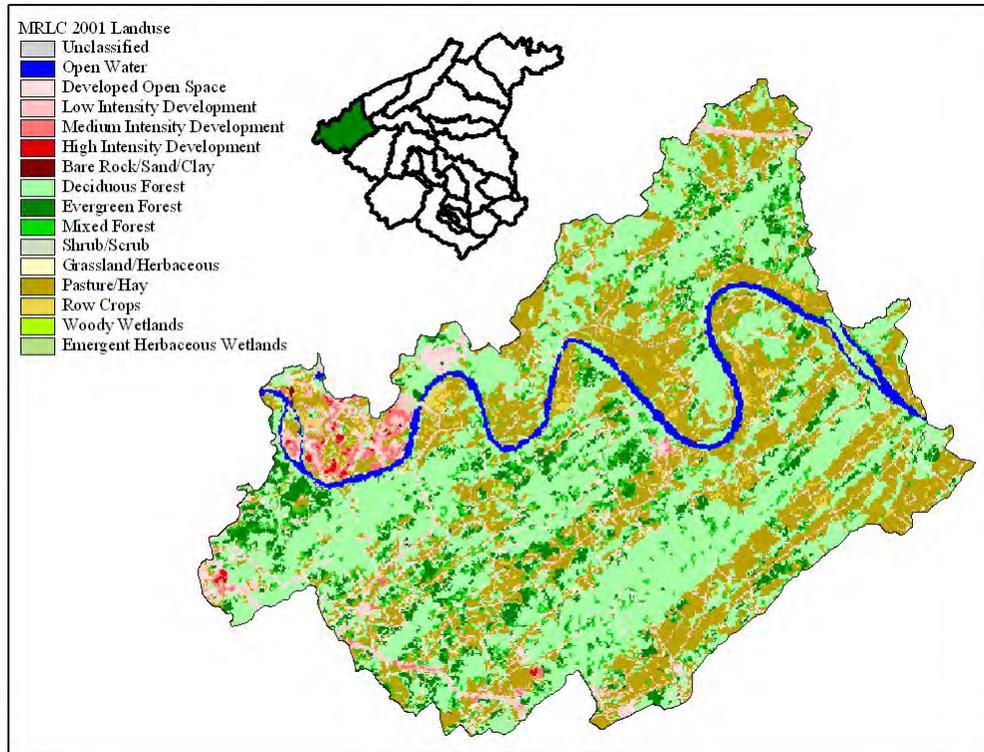
**4.2.H.i General Description**



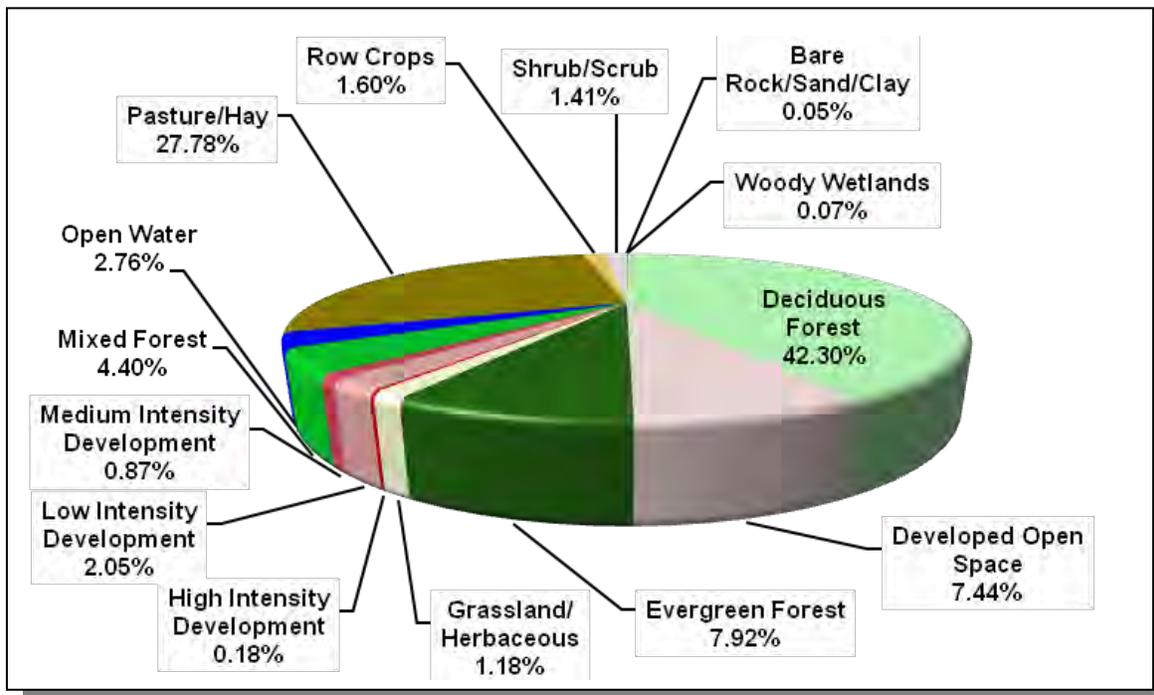
**Figure 4-82. Location of Subwatershed 060101070204.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



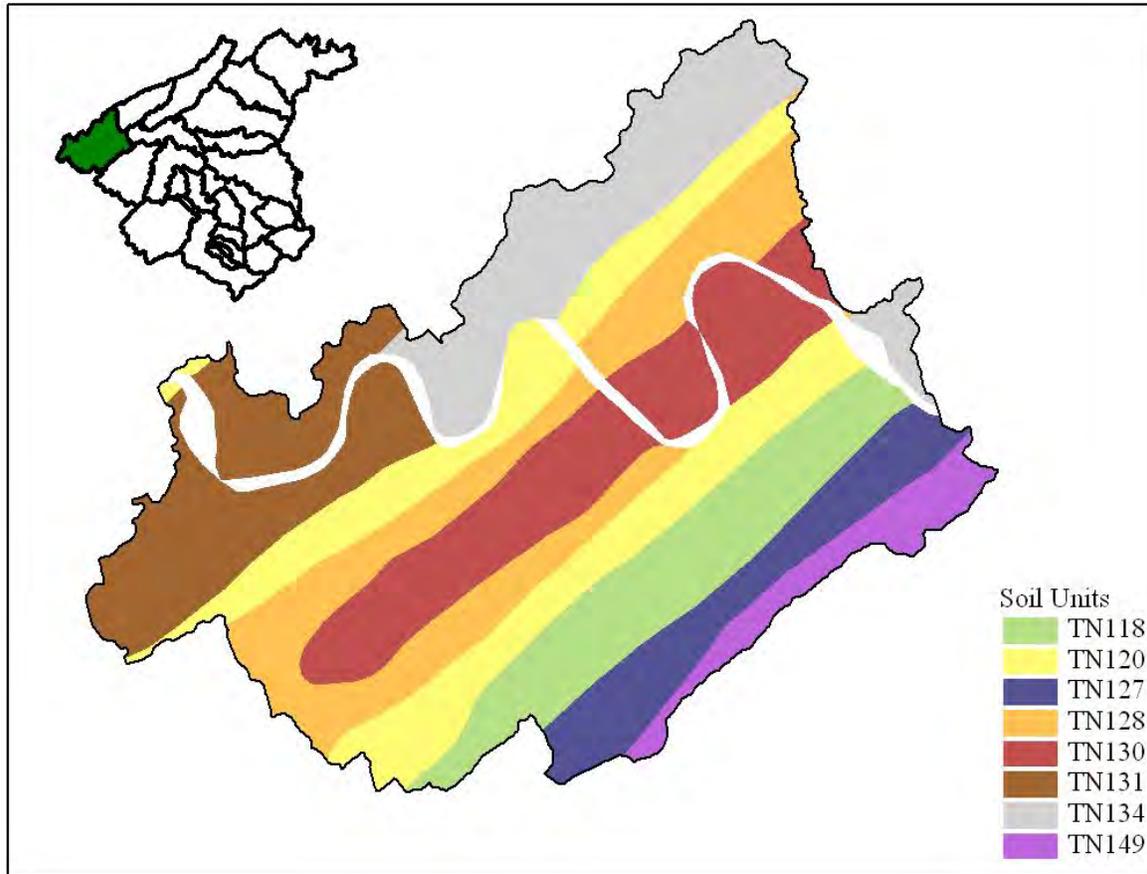
**Figure 4-83. Locational Details of Subwatershed 060101070204.**



**Figure 4-84. Illustration of Land Use Distribution in Subwatershed 060101070204.**



**Figure 4-85. Land Use Distribution in Subwatershed 060101070204. More information is provided in Appendix IV.**



**Figure 4-86. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070204.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN118	0.00	C	6.52	5.12	Loam	0.29
TN120	0.00	B	1.68	5.11	Loam	0.27
TN127	3.00	C	1.31	5.20	Loam	0.35
TN128	0.00	C	1.30	6.53	Clay Loam	0.26
TN130	0.00	C	1.34	6.09	Silty Loam	0.42
TN131	0.00	C	1.17	4.95	Silty Loam	0.33
TN134	0.00	B	1.38	5.18	Loam	0.31
TN149	1.00	B	1.29	5.01	Loam	0.3

**Table 4-48. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070204.** The definition of "Hydrologic Group" is provided in Appendix IV.

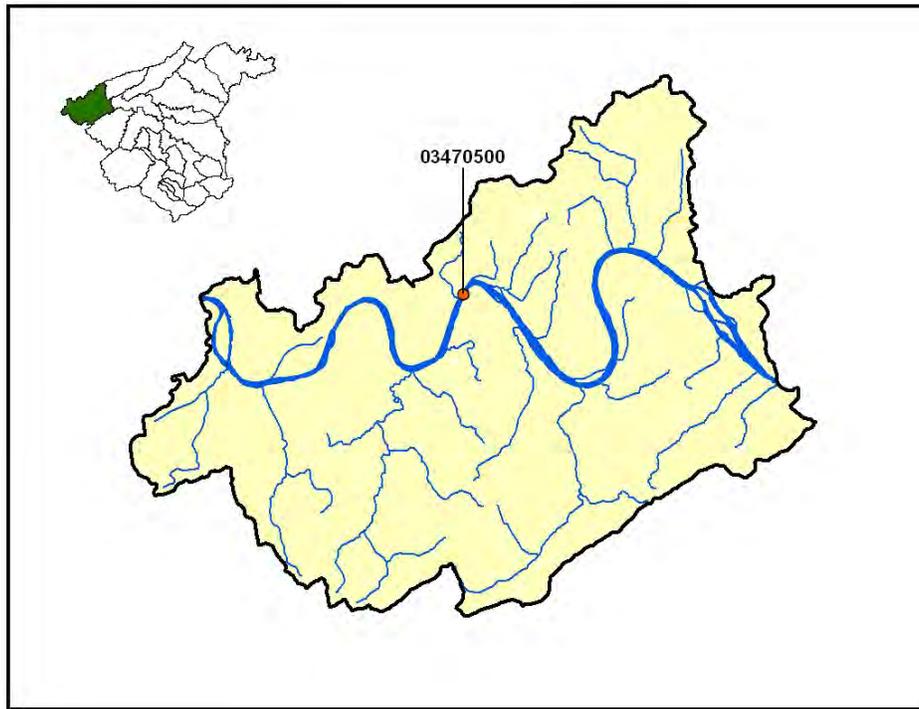
County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Knox	33,5749	365,900	382,032	7.68	25,784	28,099	29,338	13.80
Sevier	51,043	62,774	71,170	1.58	805	990	1122	39.40
<b>Totals</b>	<b>386,792</b>	<b>428,674</b>	<b>453,202</b>		<b>26,589</b>	<b>29,089</b>	<b>30,460</b>	<b>14.60</b>

*Table 4-49. Population Estimates in Subwatershed 060101070204.*

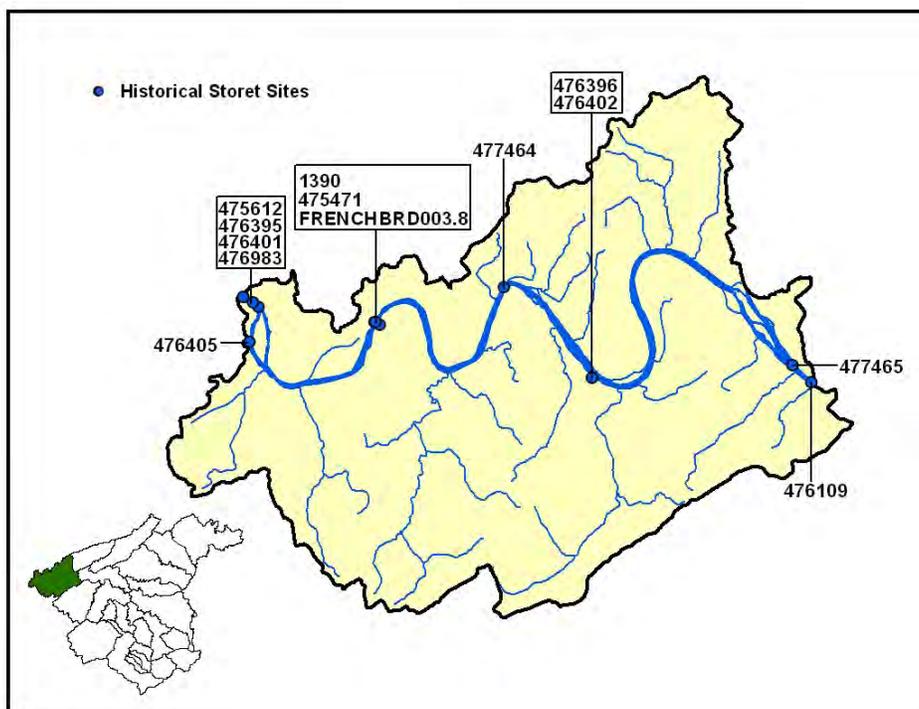
Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Knoxville	Knox	165,121	76,453	74,884	1,521	48

*Table 4-50. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070204.*

**4.2.H.ii. USGS Gaging Stations and STORET Sites**

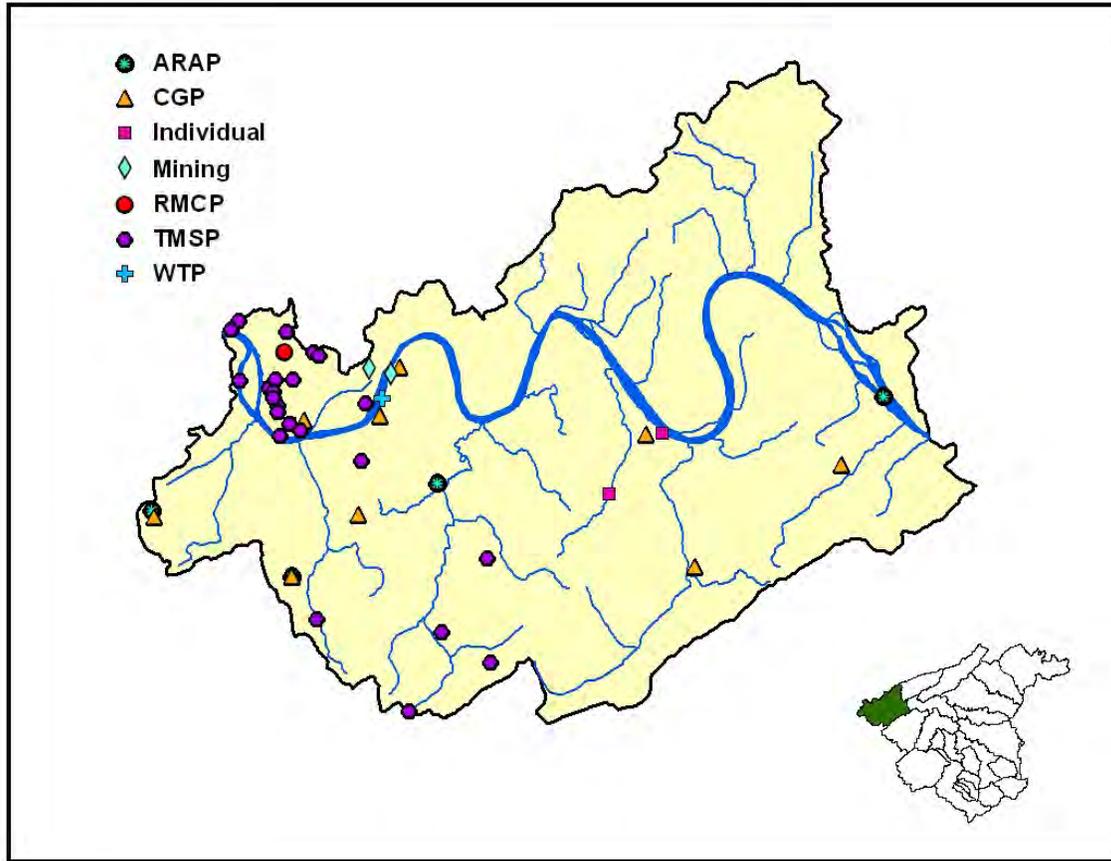


**Figure 4-87. Location of USGS Continuous Record Gaging Stations in Subwatershed 060101070204. More information is provided in Appendix IV.**

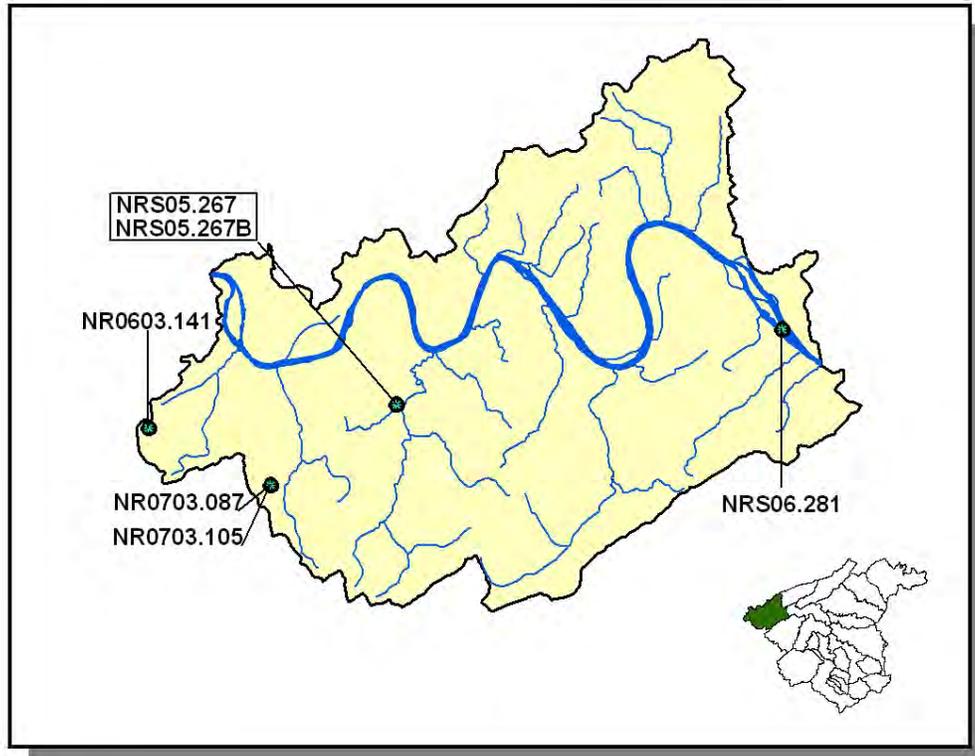


**Figure 4-88. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070204. More information, including site names and locations, is provided in Appendix IV.**

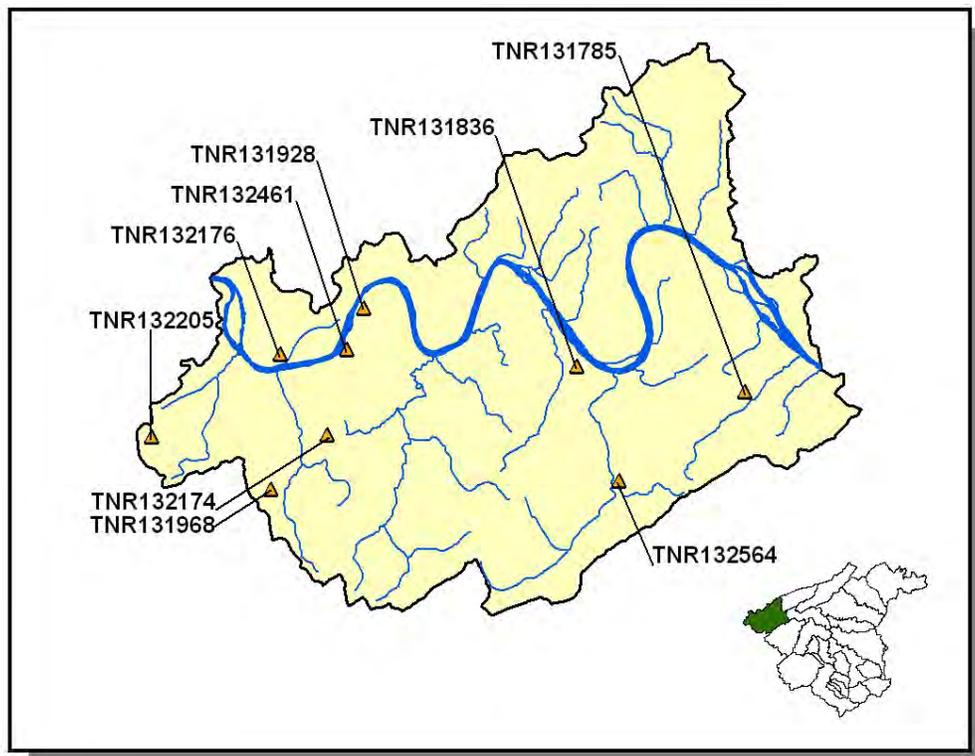
**4.2.H.iii. Permitted Activities.**



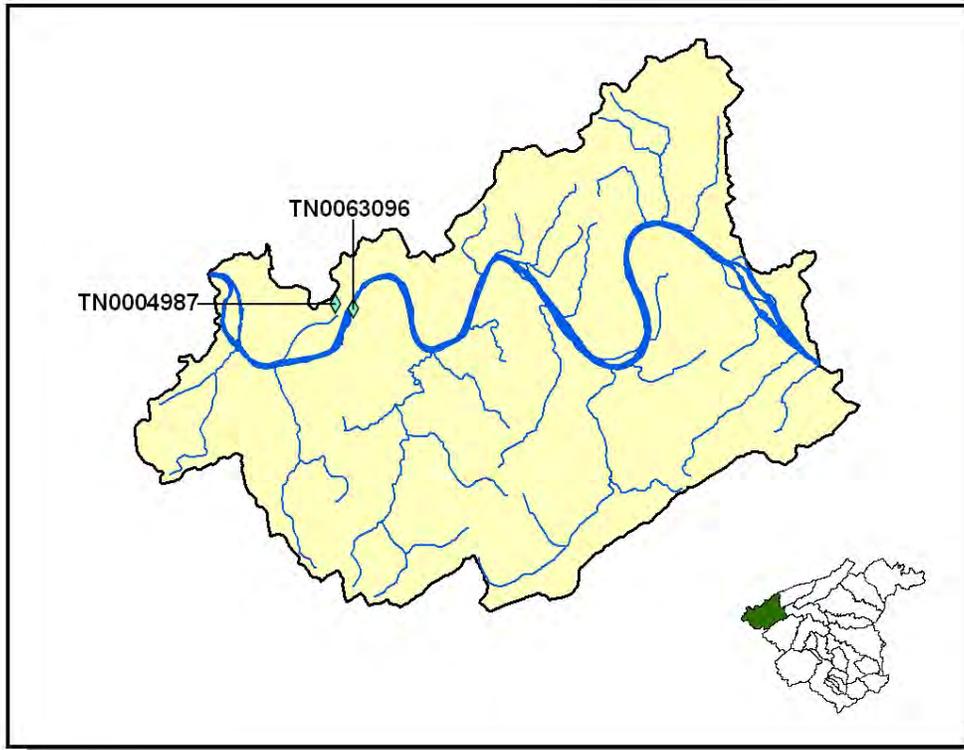
**Figure 4-89. Location of Permits Issued in Subwatershed 060101070204.** More information, including the names of facilities, is provided in Appendix IV.



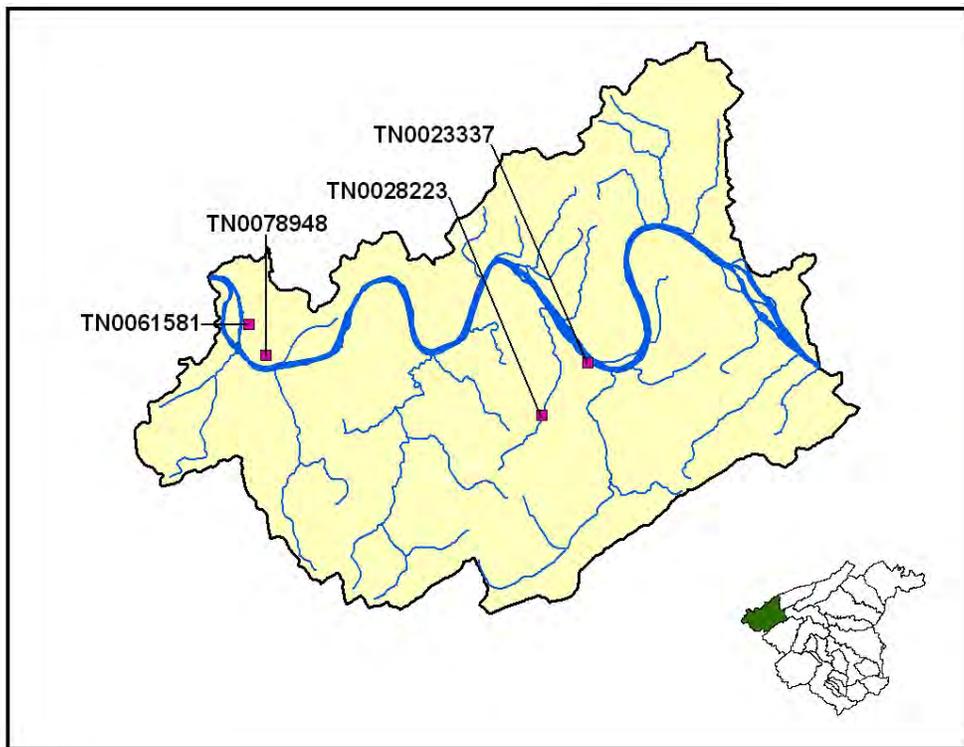
**Figure 4-90. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 060101070204. More information is provided in Appendix IV.**



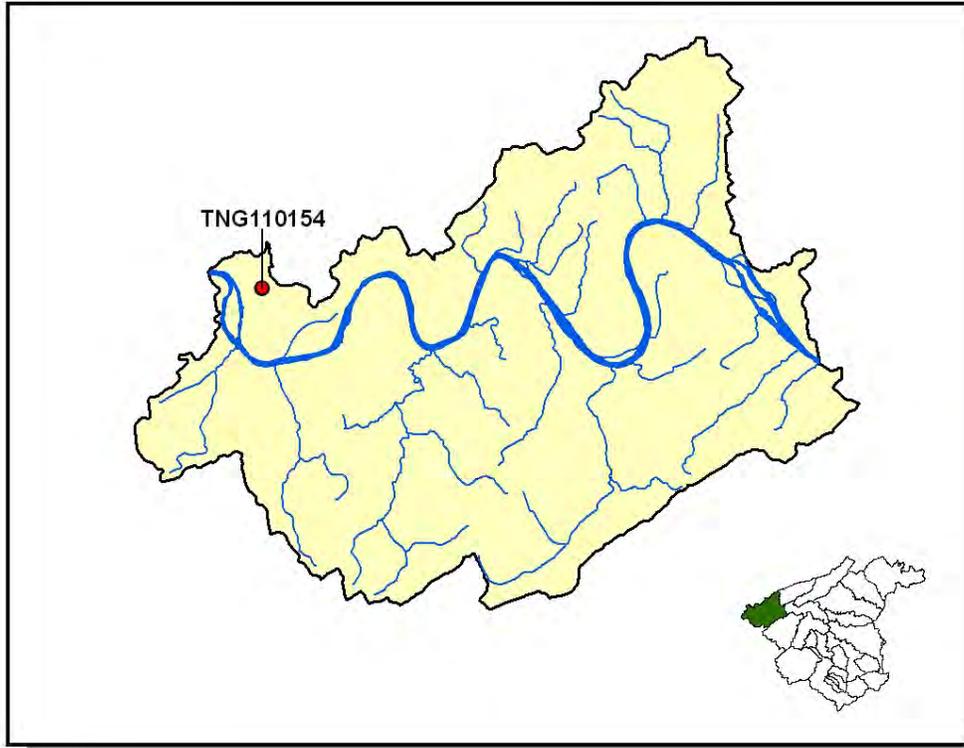
**Figure 4-91. Location of CGP (Construction General Permit) Sites in Subwatershed 060101070204. More information is provided in Appendix IV.**



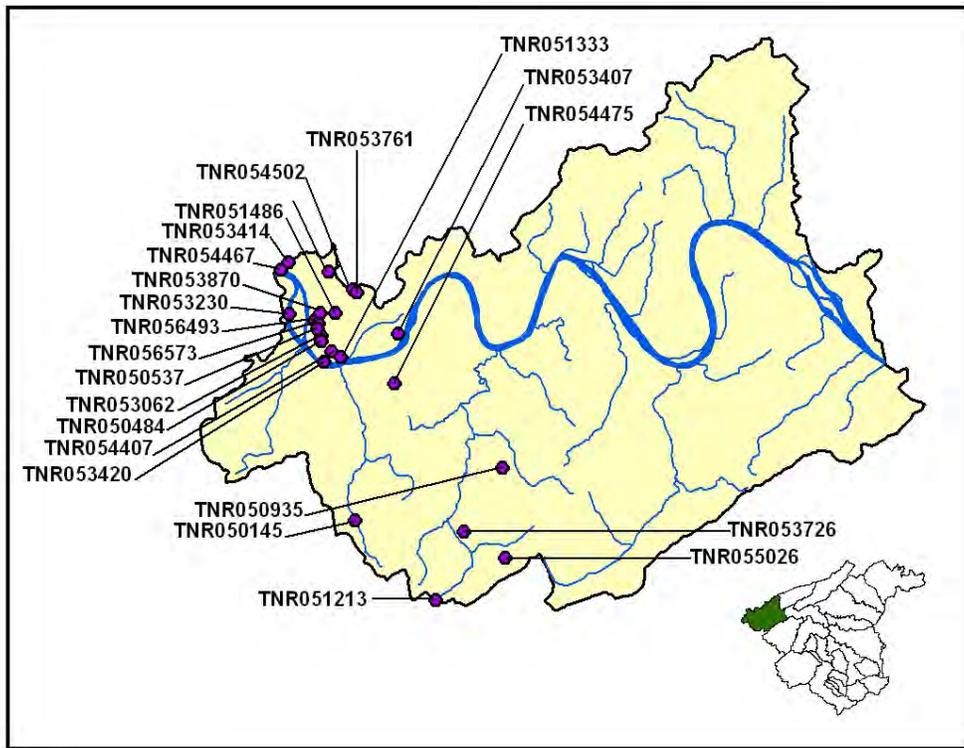
**Figure 4-92. Location of permitted Mining Facilities in Subwatershed 060101070204.** More information is provided in Appendix IV.



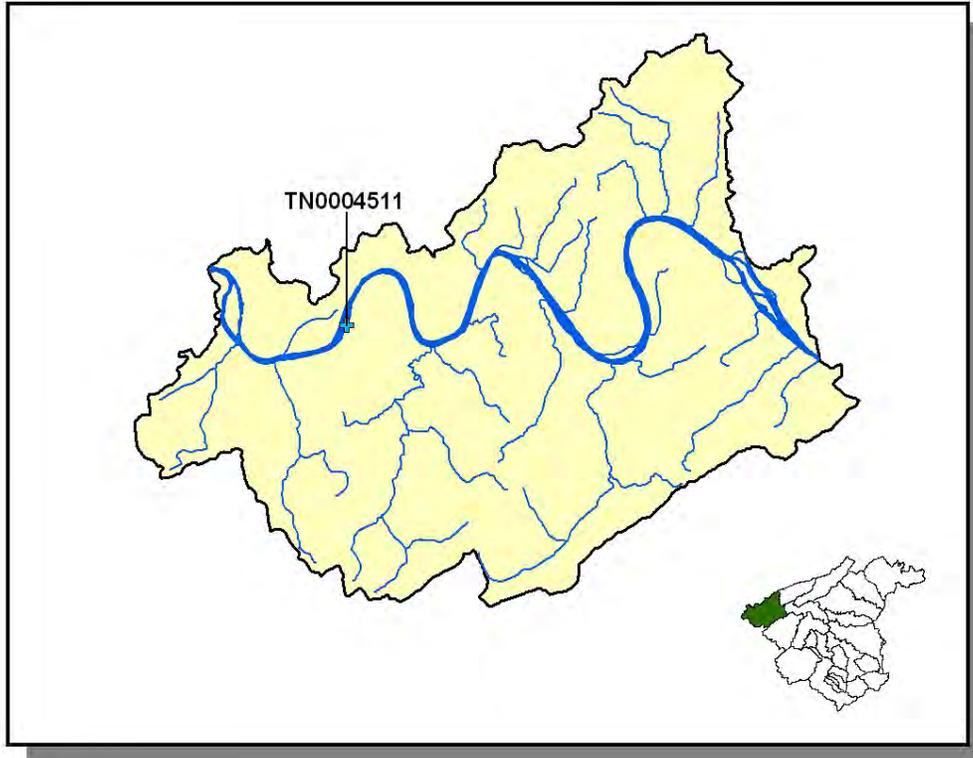
**Figure 4-93. Location of Permitted Municipal and Industrial Facilities in Subwatershed 060101070204.** More information, including the name of the facility is provided in Appendix IV.



**Figure 4-94. Location of RMCP (Ready Mix Concrete Plant) Facilities in Subwatershed 060101070204.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-95. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 060101070204.** More information is provided in Appendix IV.



**Figure 4-96. Location of Active Water Treatment Plant Facilities in Subwatershed 060101070204.** More information, including the names of facilities, is provided in Appendix IV.

**4.2.H.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Knox	12,424	24,664	855	2,056	851	649
Sevier	9,816	19,013	172	26	394	234

**Table 4-51. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Knox	127.5	127.0	2.2	8.2
Sevier	254.5	127.4	0.3	0.9

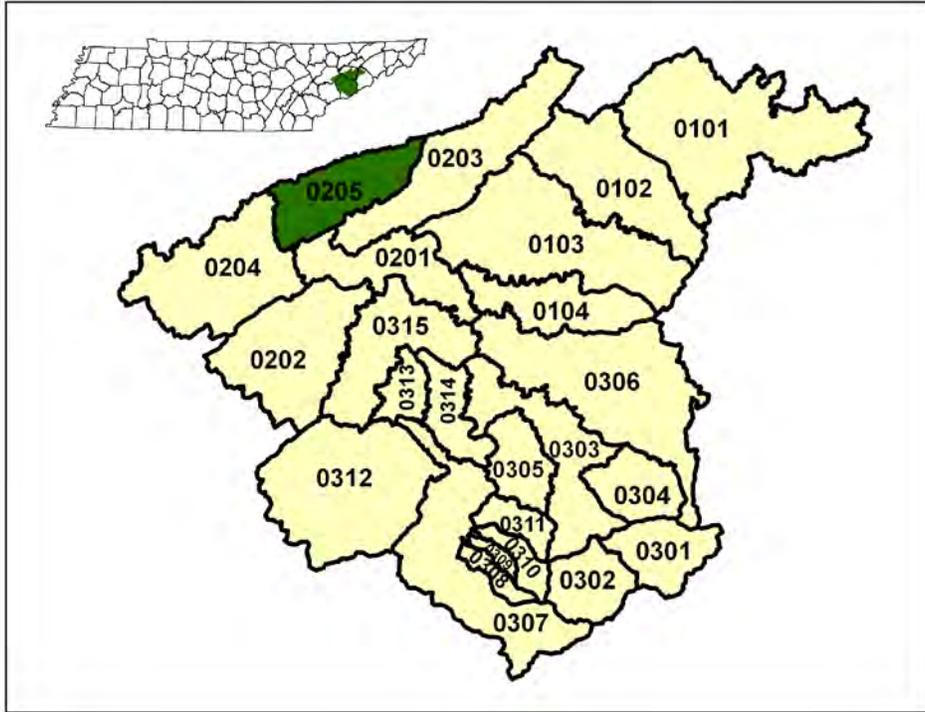
**Table 4-52. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Soybeans (Row Crops)	15.54
Wheat (Close Grown Cropland)	5.42
Summer Fallow (Other Cropland)	3.31
Corn (Row Crops)	1.87
Grass (Pastureland)	0.82
Grass Forbs Legumes Mixed (Pastureland)	0.47
Legume Grass (Hayland)	0.21
Farmsteads and Ranch Headquarters	0.18
Grass (Hayland)	0.14

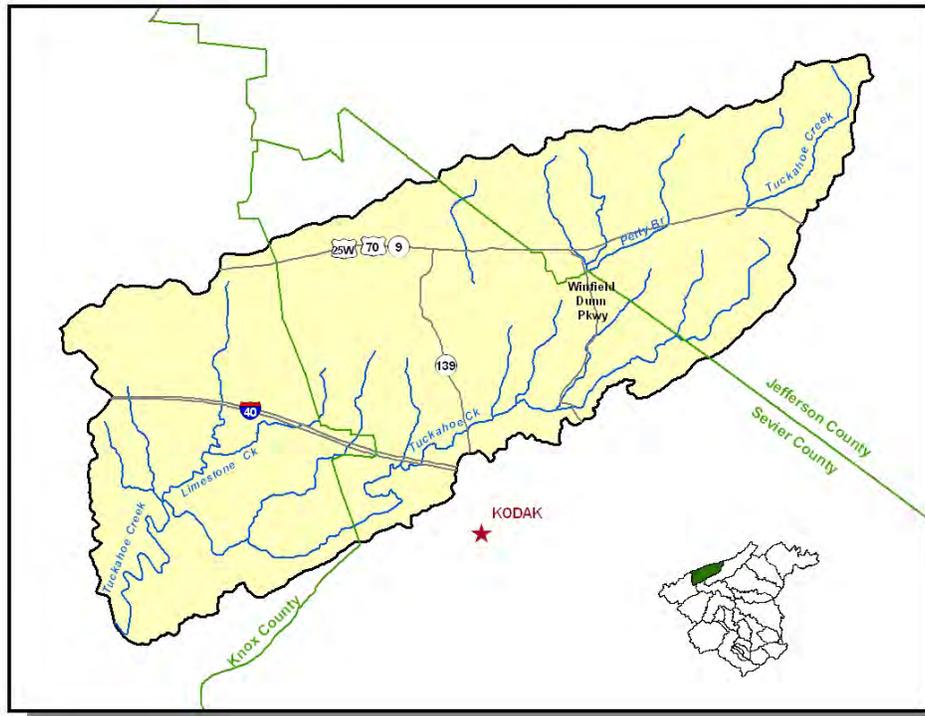
**Table 4-53. Annual Estimated Total Soil Loss in Subwatershed 060101070204.**

**4.2.I. 060101070205 (Tuckahoe Creek)**

**4.2.I.i. General Description**



**Figure 4-97. Location of Subwatershed 060101070205.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



**Figure 4-98. Locational Details of Subwatershed 060101070205.**

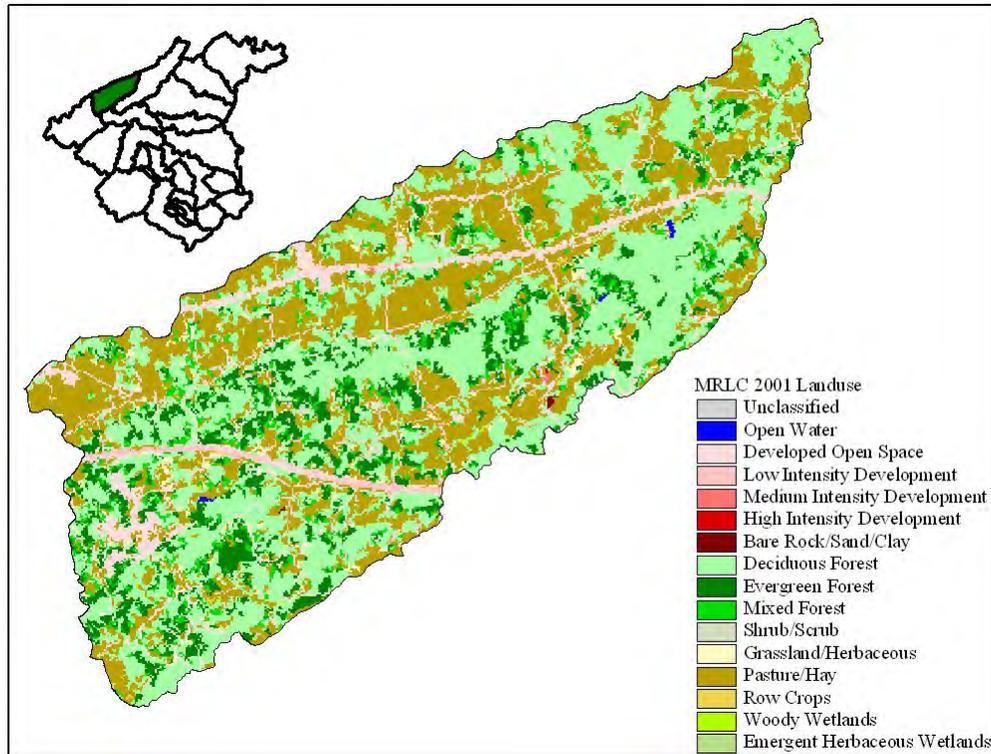


Figure 4-99. Illustration of Land Use Distribution in Subwatershed 060101070205.

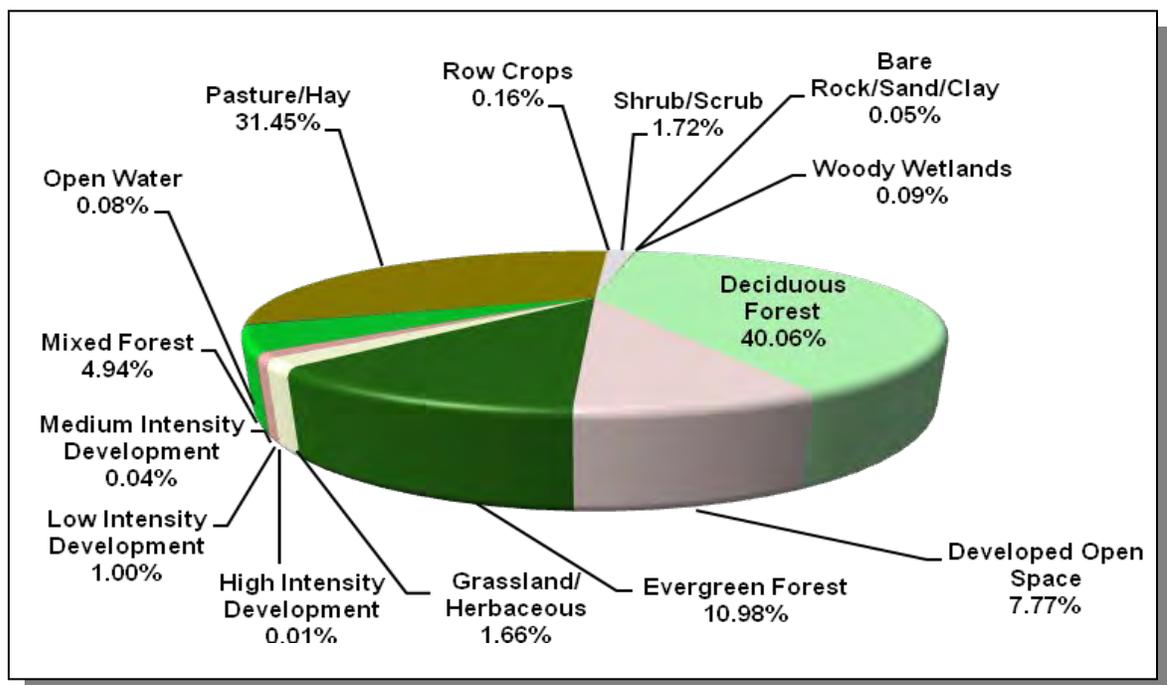
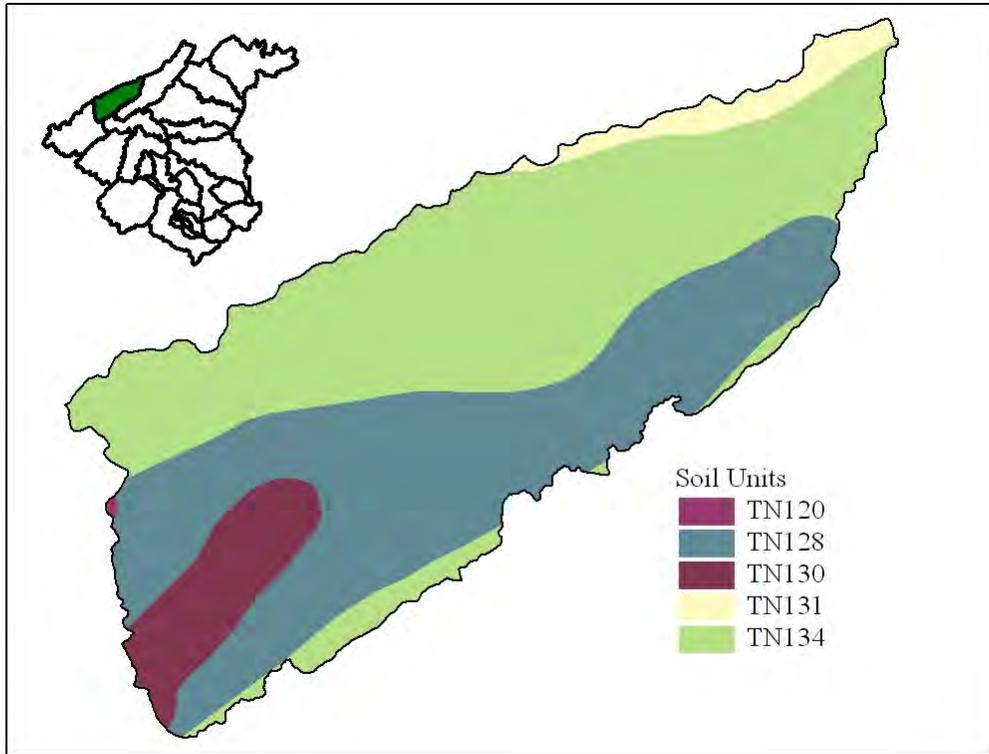


Figure 4-100. Land Use Distribution in Subwatershed 060101070205. More information is provided in Appendix IV.



**Figure 4-101. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070205.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN120	0.00	B	1.68	5.11	Loam	0.27
TN128	0.00	C	1.30	6.53	Clay Loam	0.26
TN130	0.00	C	1.34	6.09	Silty Loam	0.42
TN131	0.00	C	1.17	4.95	Silty Loam	0.33
TN134	0.00	B	1.38	5.18	Loam	0.31

**Table 4-54. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070205.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Jefferson	33,016	42,168	44,294	2.68	886	1132	1,189	34.20
Knox	335,749	365,900	382,032	2.16	7,238	7,888	8,236	13.80
Sevier	51,043	62,774	71,170	1.38	705	867	983	39.40
<b>Total</b>	<b>419,808</b>	<b>470,842</b>	<b>497,496</b>		<b>8,829</b>	<b>9,887</b>	<b>10,408</b>	<b>17.90</b>

*Table 4-55. Population Estimates in Subwatershed 060101070205.*

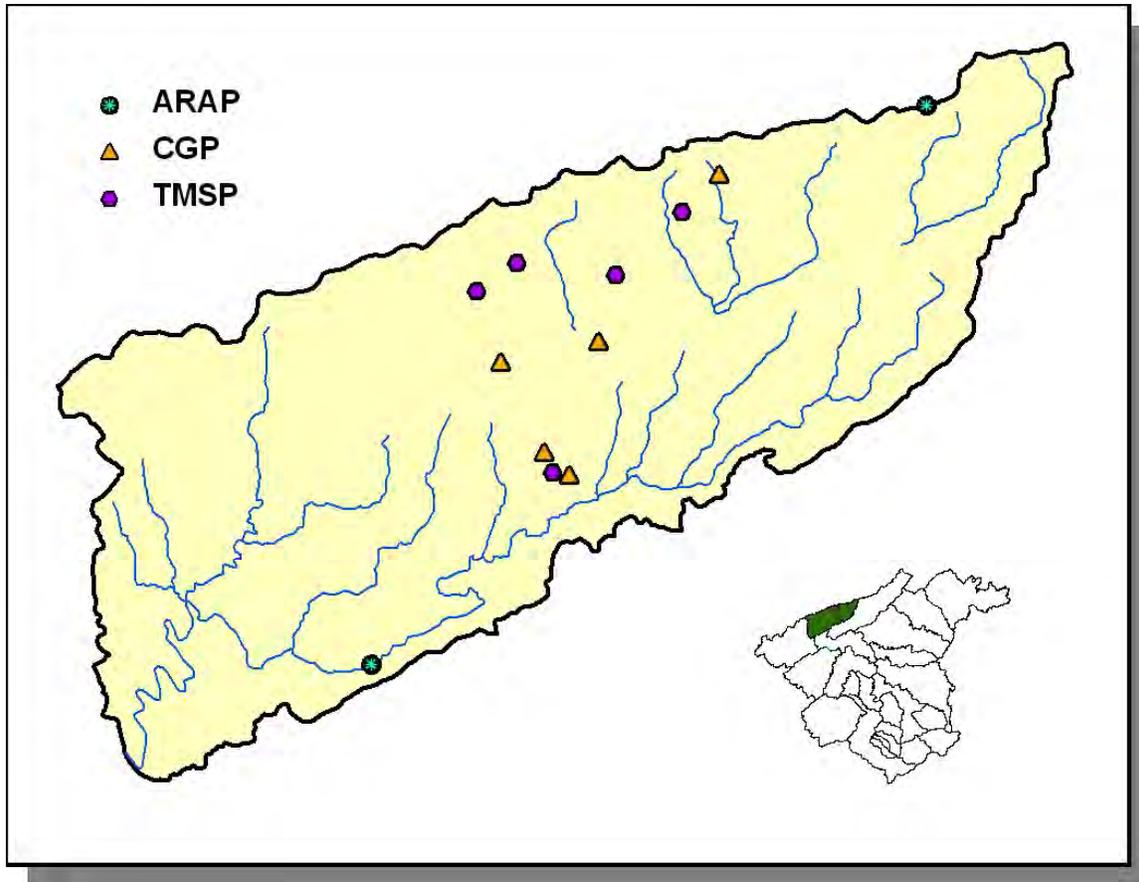
Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Sevierville	Sevier	7,178	3,321	2,632	686	3

*Table 4-56. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070205.*

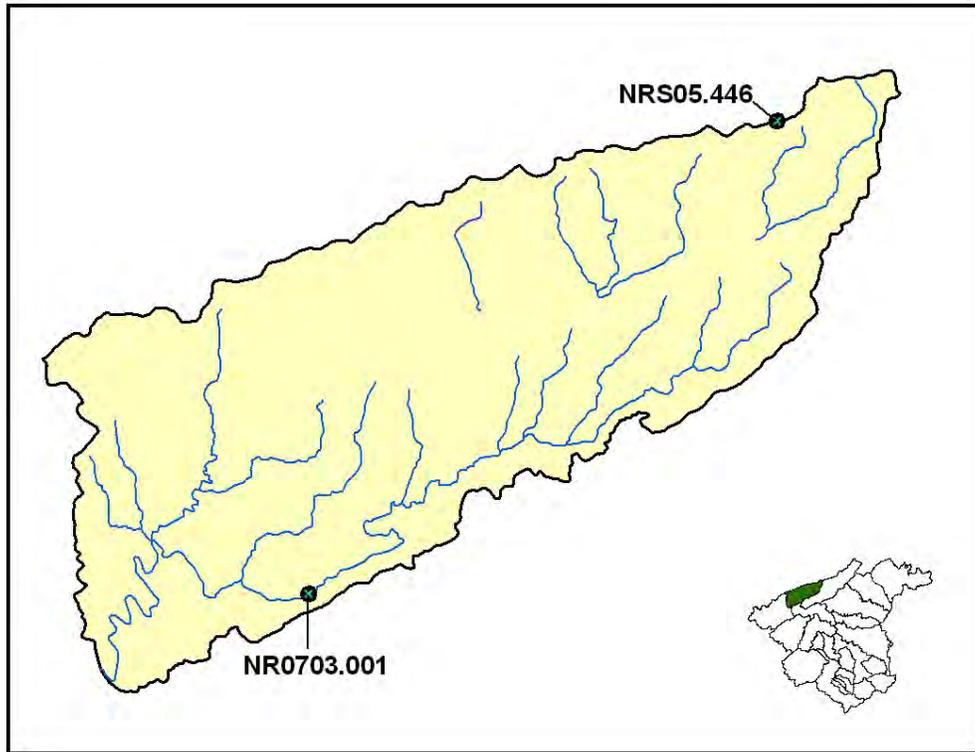
**4.2.1.ii** USGS Gaging Stations and STORET Sites

There are no USGS Gaging Stations or STORET Sites located in Subwatershed 060101070205.

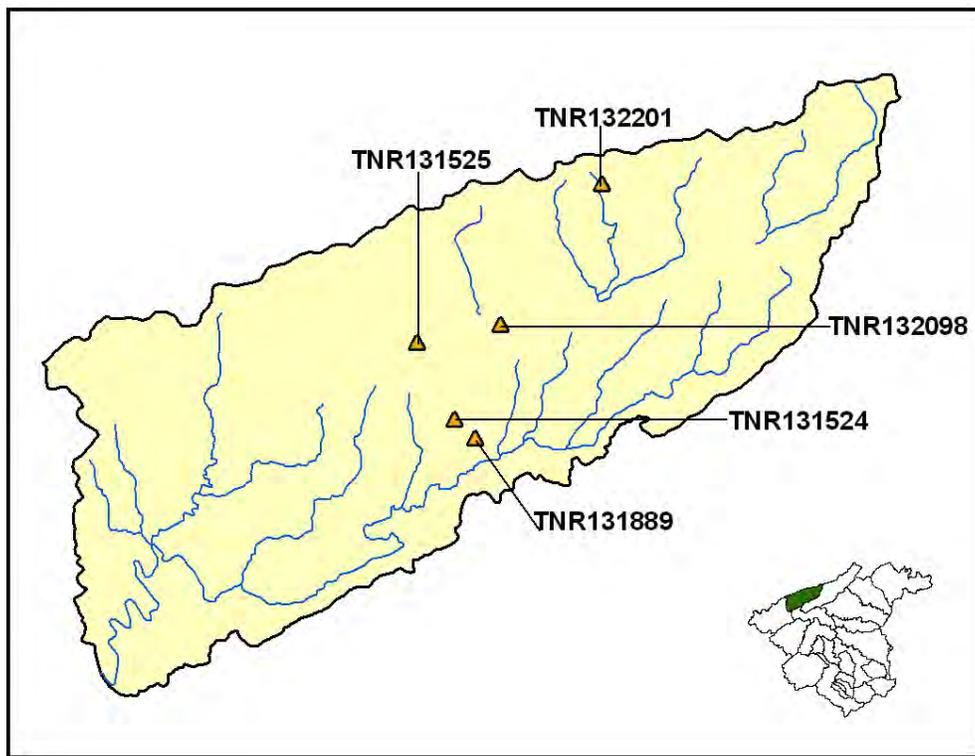
**4.2.1.iii** Permitted Activities.



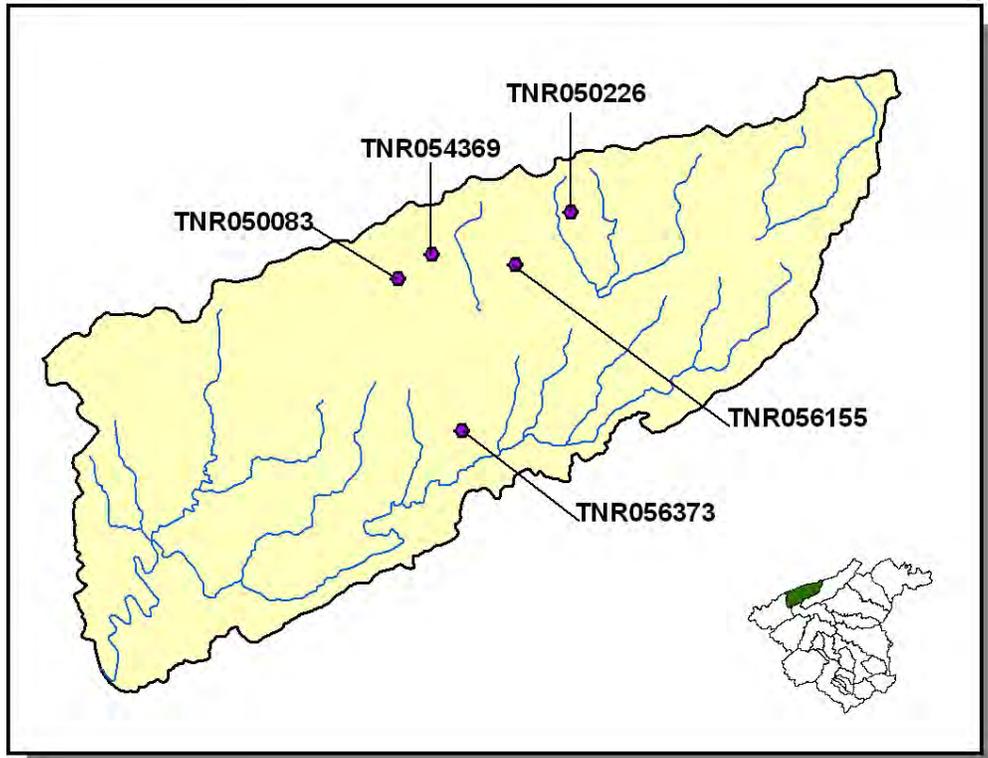
**Figure 4-102. Location of Permits Issued in Subwatershed 060101070205.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-103. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 060101070205. More information is provided in Appendix IV.**



**Figure 4-104. Location of CGP (Construction General Permit) Sites in Subwatershed 060101070205. More information is provided in Appendix IV.**



**Figure 4-105. Location of TMSP (Tennessee Multi Sector Permit) Sites in Subwatershed 060101070205. More information is provided in Appendix IV.**

**4.2.I.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Jefferson	16,126	35,718	1,878	1,633	183	567
Knox	12,424	24,664	855	2,056	851	649
Sevier	9,816	19,013	172	26	394	234

**Table 4-57. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Jefferson	62.2	62.2	0.6	1.8
Knox	127.5	127.0	2.2	8.2
Sevier	254.5	127.4	0.3	0.9

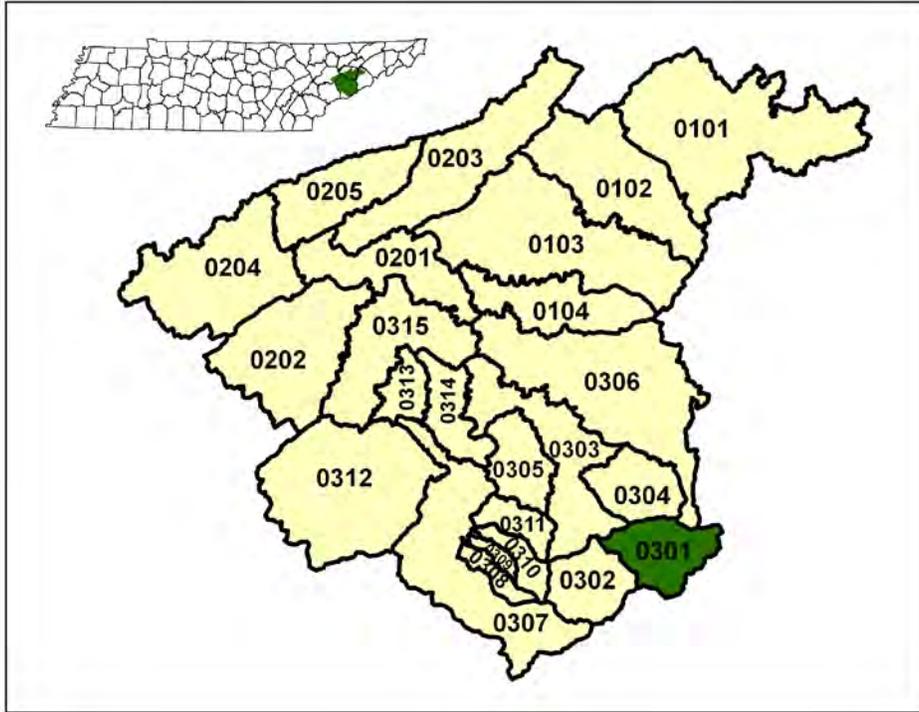
**Table 4-58. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Soybeans (Row Crops)	15.54
Oats (Close Grown Cropland)	13.51
Tobacco (Row Crops)	9.64
Corn (Row Crops)	8.79
Wheat (Close Grown Cropland)	6.61
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.67
Grass Forbs Legumes Mixed (Pastureland)	0.46
Legume Grass (Hayland)	0.23
Grass (Hayland)	0.18
Farmsteads and Ranch Headquarters	0.13

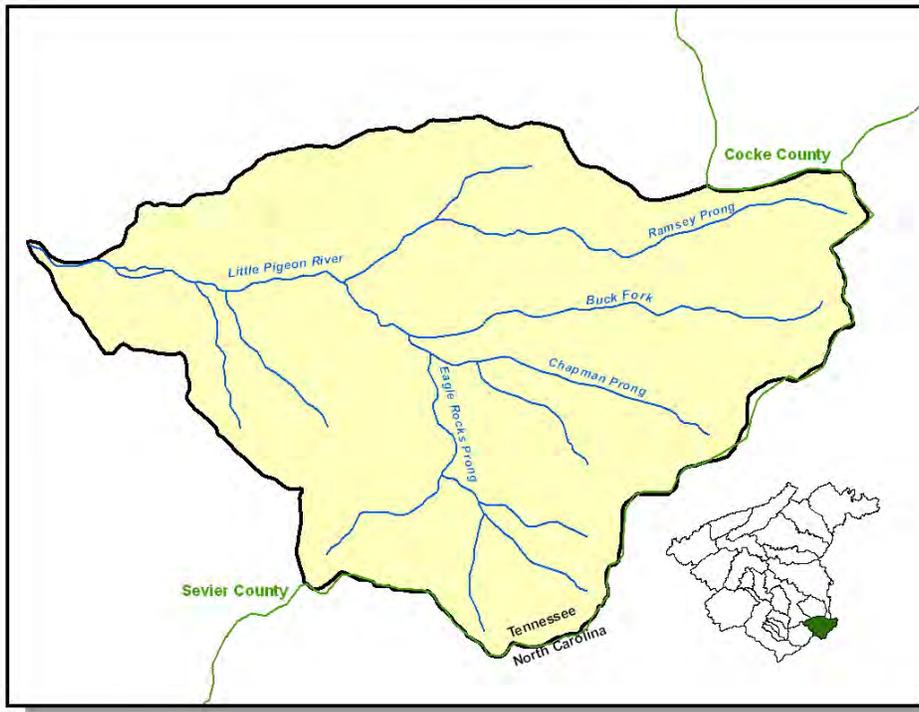
**Table 4-59. Annual Estimated Total Soil Loss in Subwatershed 060101070205.**

**4.2.J. 060101070301 (Middle Prong Little Pigeon River)**

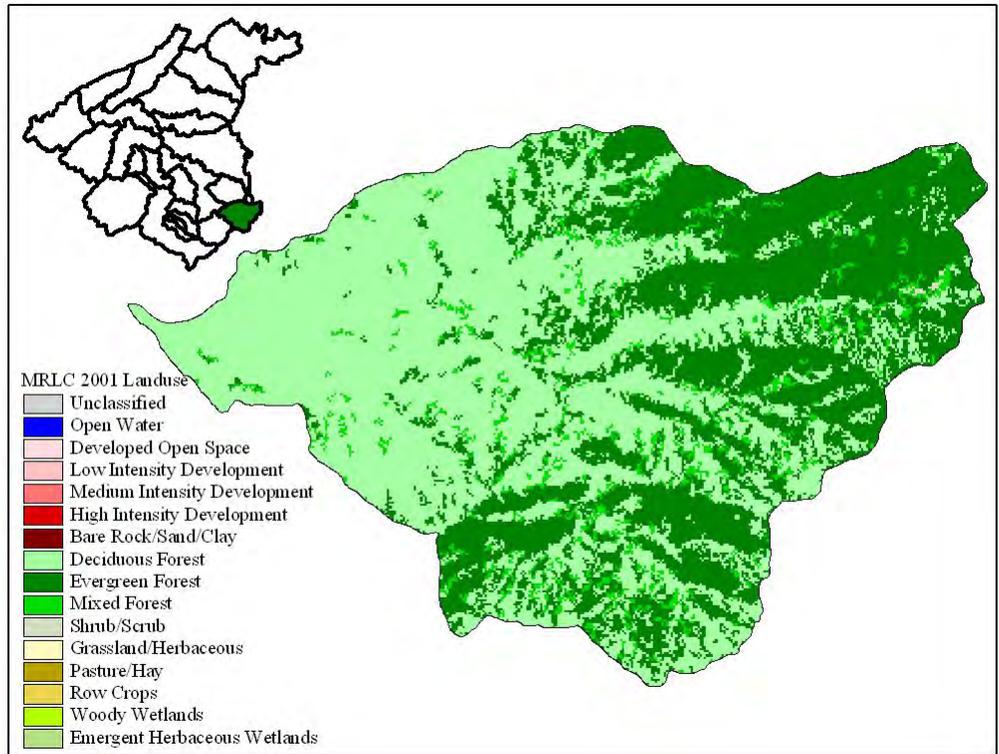
**4.2.J.i. General Description**



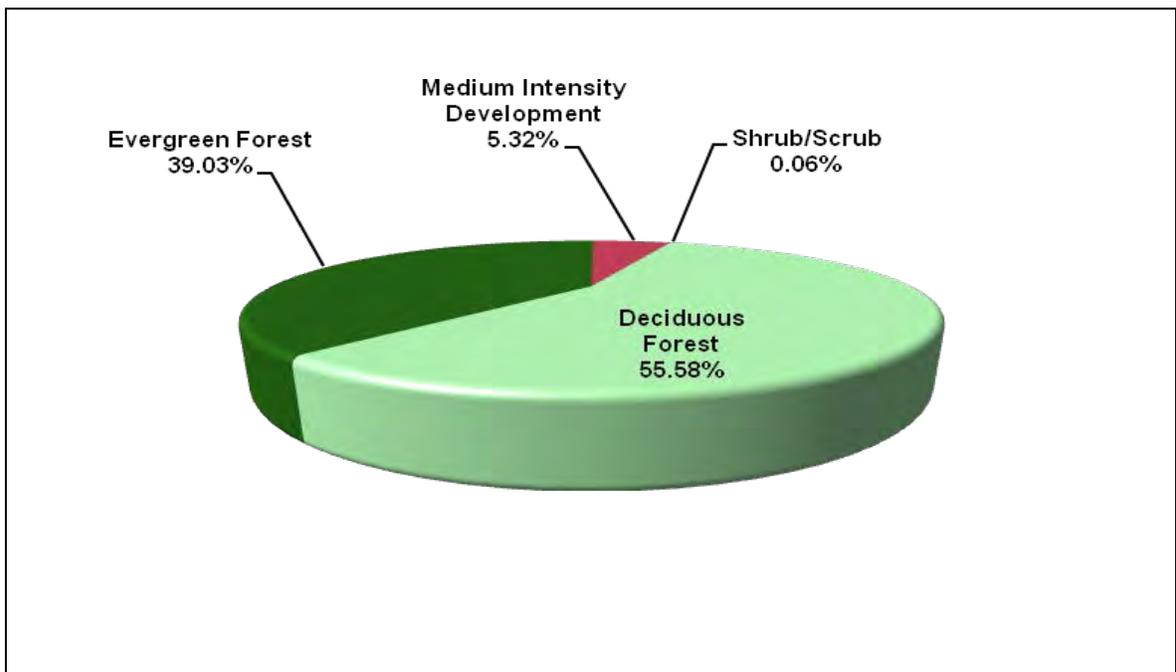
**Figure 4-106. Location of Subwatershed 060101070301.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



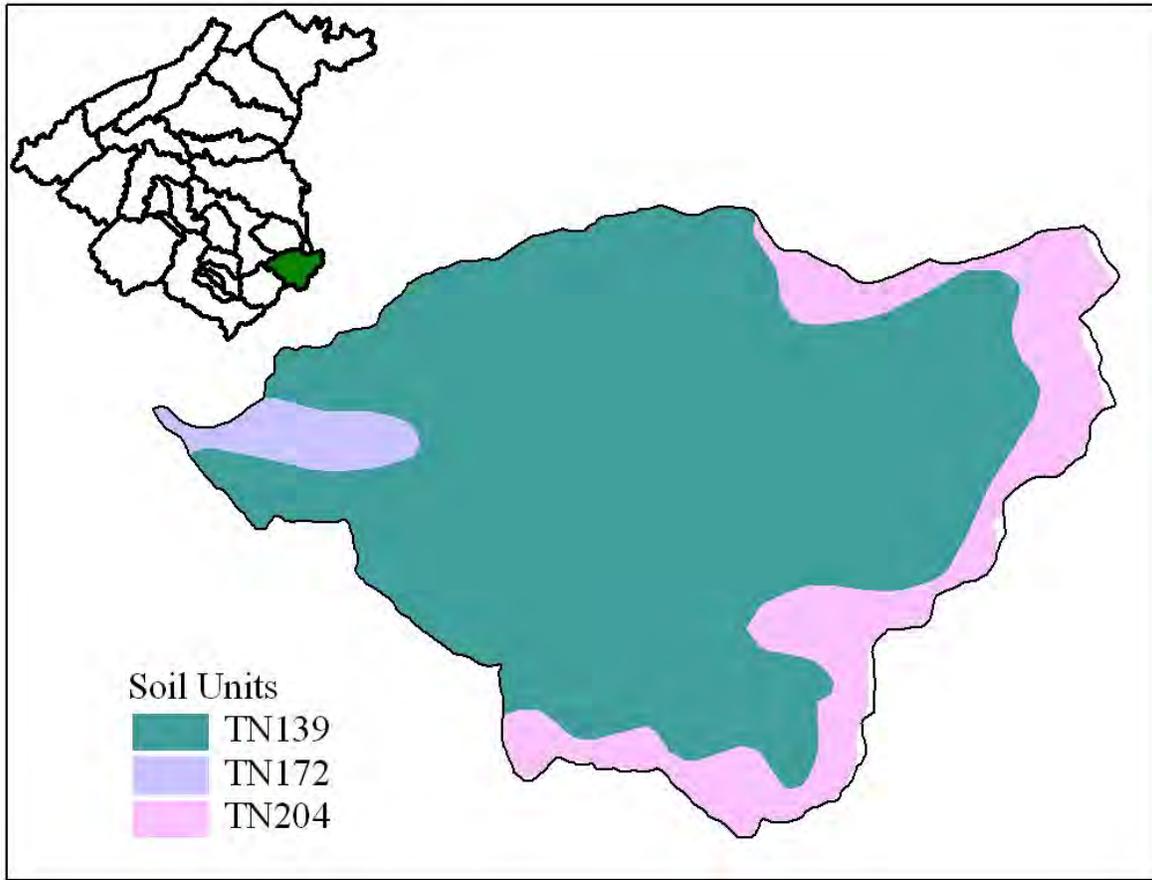
**Figure 4-107. Locational Details of Subwatershed 060101070301.**



**Figure 4-108. Illustration of Land Use Distribution in Subwatershed 060101070301.**



**Figure 4-109. Land Use Distribution in Subwatershed 060101070301.** More information is provided in Appendix IV.



**Figure 4-110. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070301.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN139	0.00	C	11.84	4.82	Loam	0.20
TN172	0.00	B	3.87	5.13	Loam	0.26
TN204	0.00	B	3.95	4.80	Sandy Loam	0.19

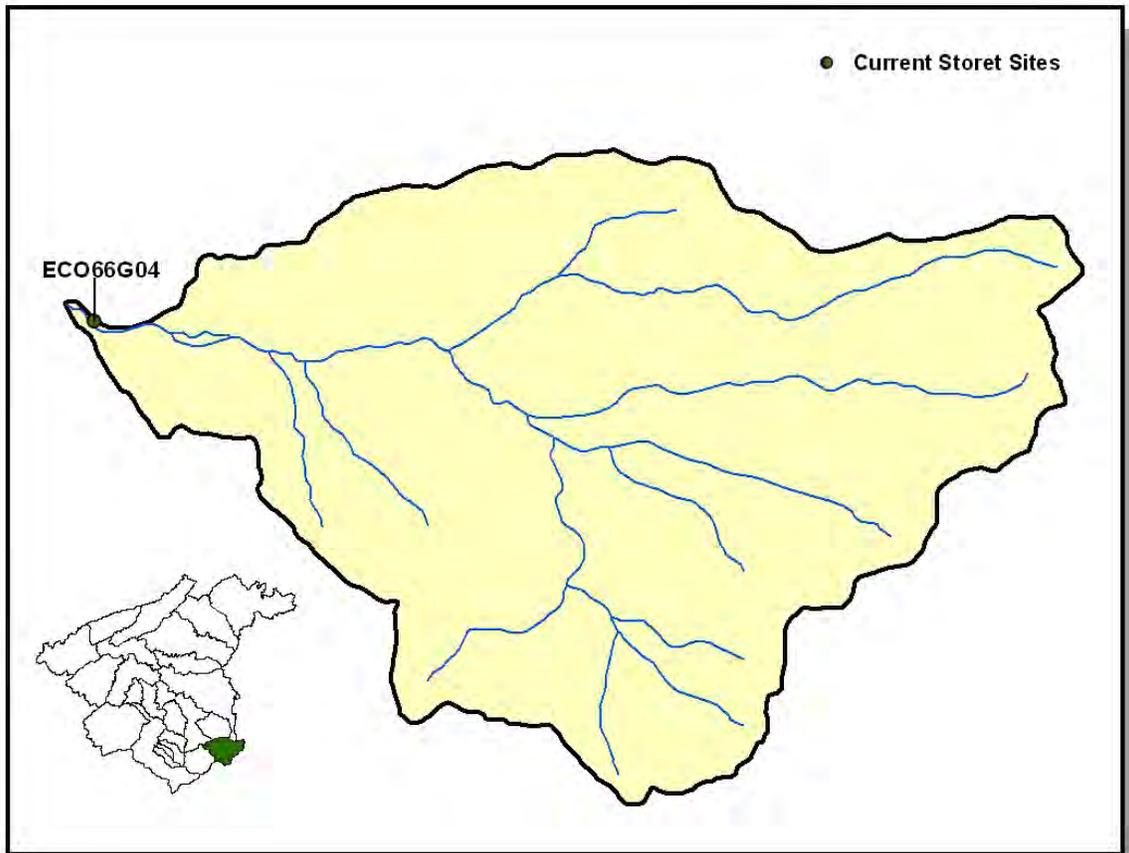
**Table 4-60. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070301.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Sevier	51,043	62,774	71,170	3.21	1,640	2,017	2,286	39.40

**Table 4-61. Population Estimates in Subwatershed 060101070301.**

**4.2.J.ii** USGS Gaging Stations and STORET Sites

There are no USGS gaging stations located in subwatershed 060101070301.



**Figure 4-111. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070301.** More information, including site names and locations, is provided in Appendix IV.

**4.2.J.iii. Permitted Activities.**

There are no permitted activities located in subwatershed 060101070205 as of June 30<sup>th</sup>, 2007.

**4.2.J.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Sevier	9,816	19,013	172	26	394	234

**Table 4-62. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Sevier	254.5	127.4	0.3	0.9

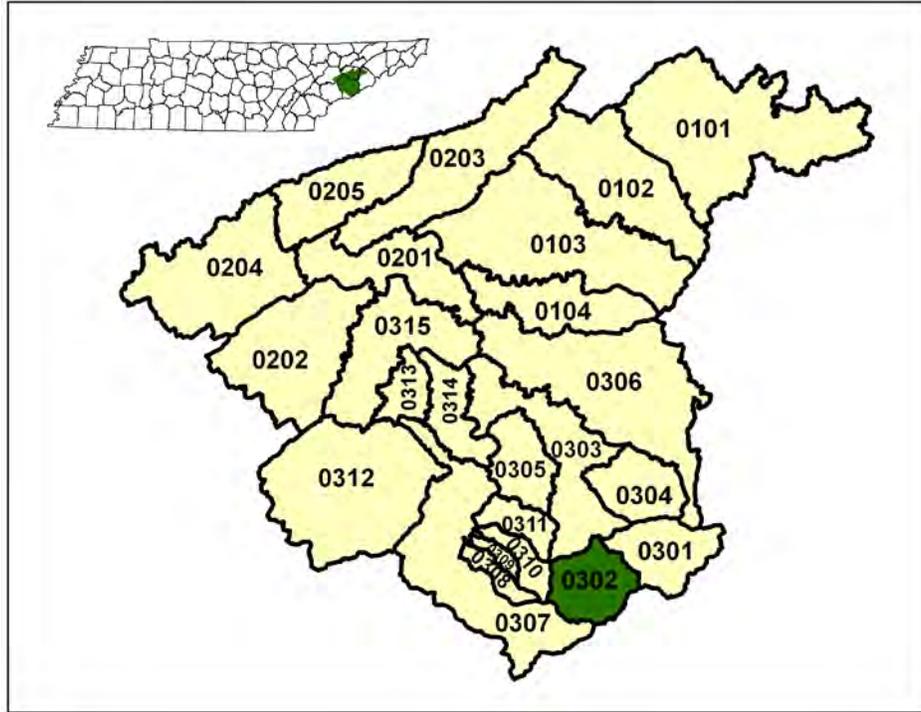
**Table 4-63. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Wheat (Close Grown Cropland)	9.53
Corn (Row Crops)	5.13
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.49
Grass Forbs Legumes Mixed (Pastureland)	0.47
Grass (Hayland)	0.22
Farmsteads and Ranch Headquarters	0.22
Legume Grass (Hayland)	0.06

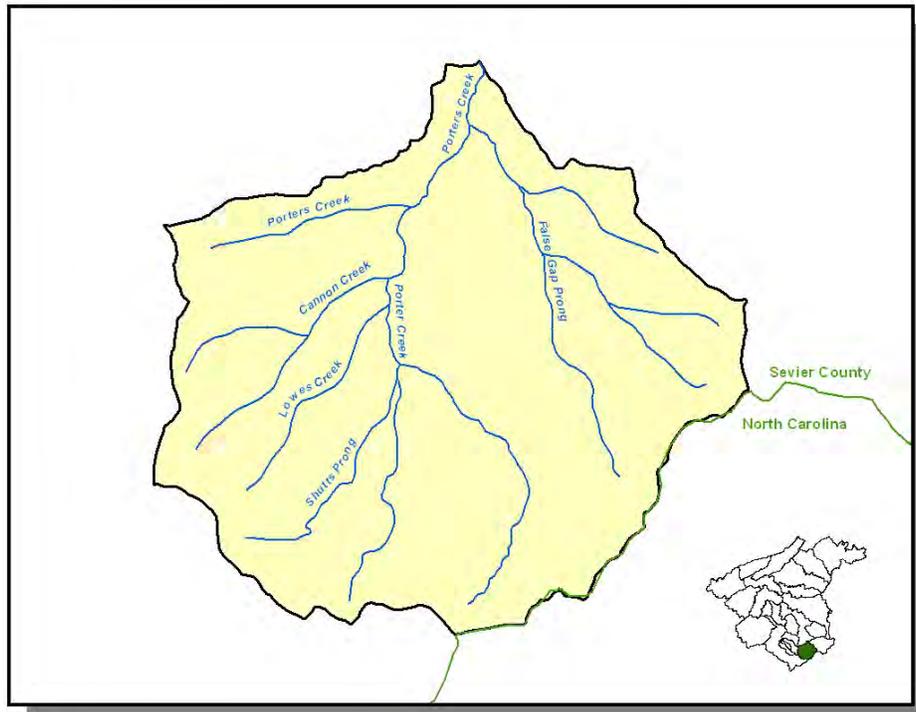
**Table 4-64. Annual Estimated Total Soil Loss in Subwatershed 060101070301.**

**4.2.K. 060101070302 (Porters Creek)**

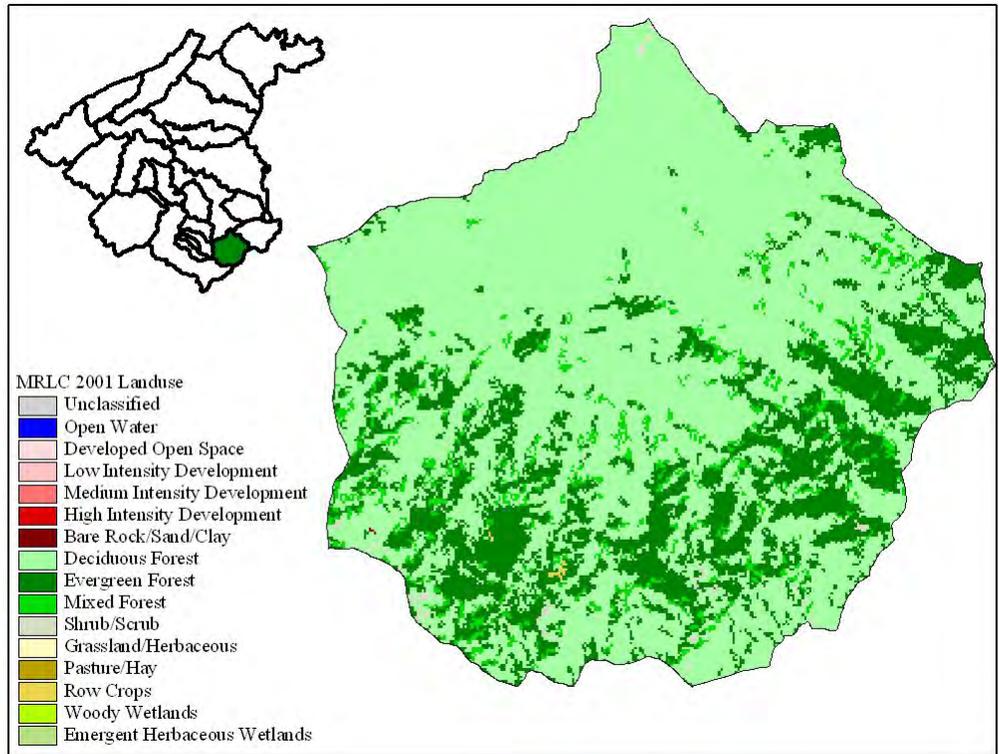
**4.2.K.i. General Description**



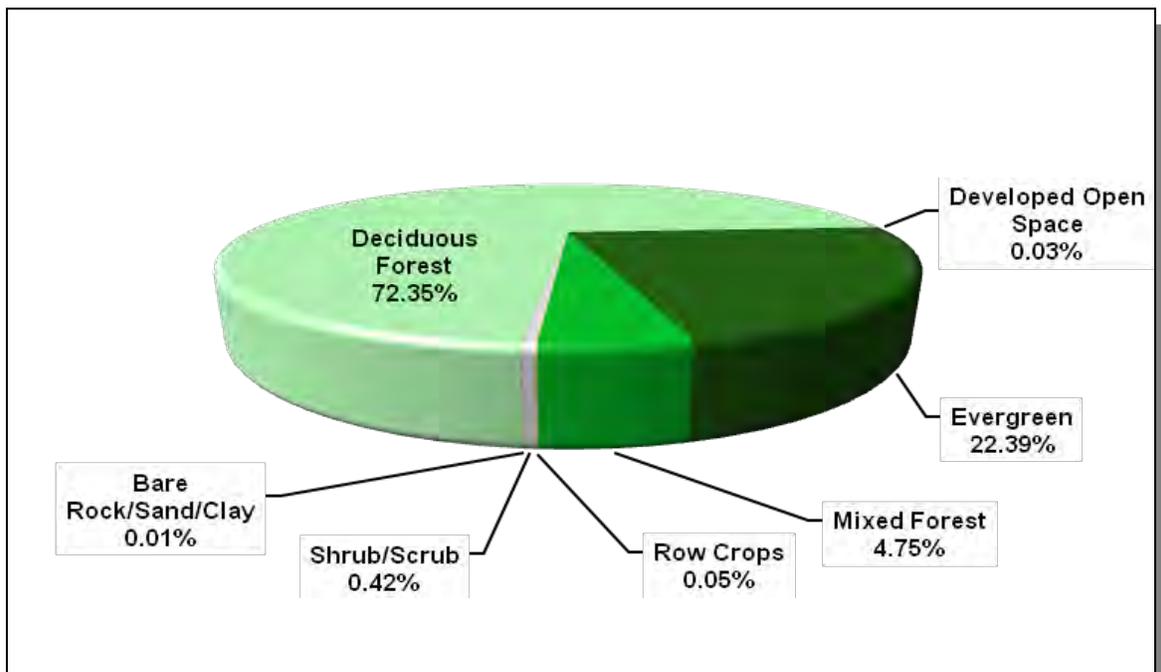
**Figure 4-112. Location of Subwatershed 060101070302.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



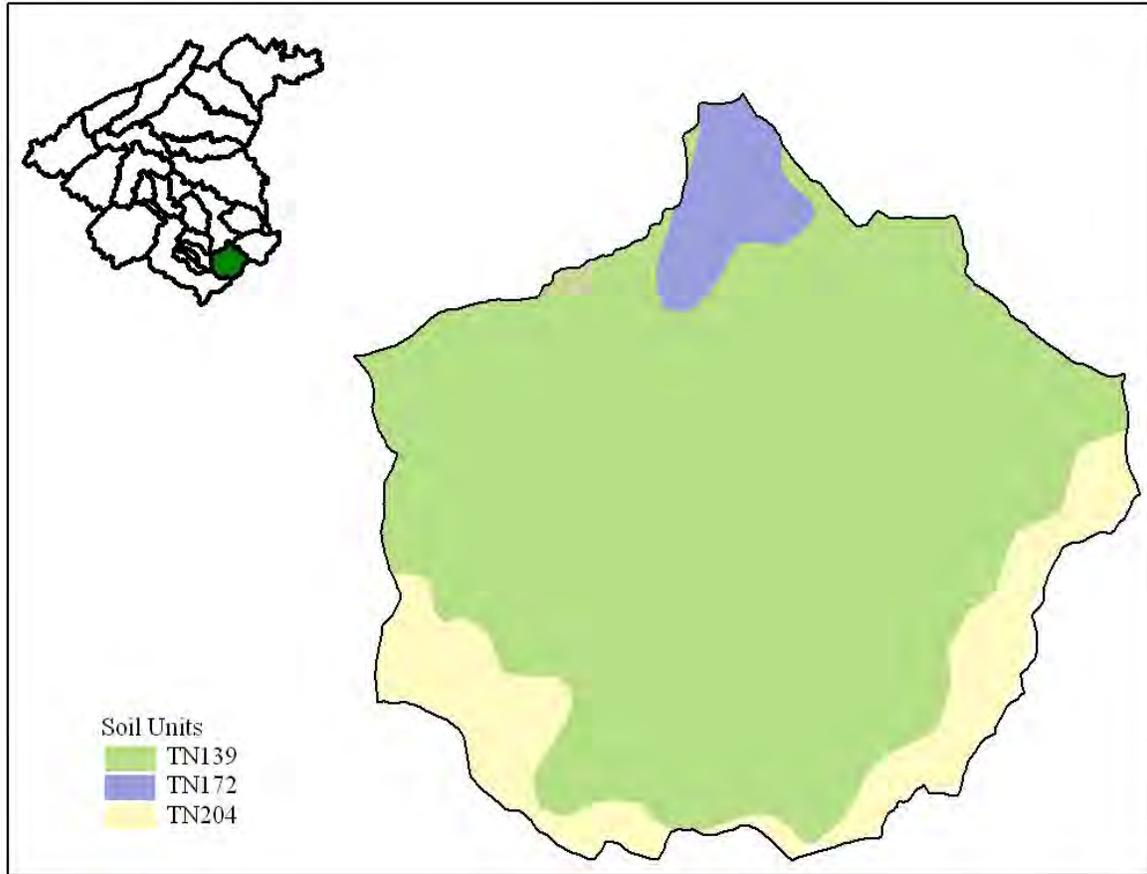
**Figure 4-113. Locational Details of Subwatershed 060101070302.**



**Figure 4-114. Illustration of Land Use Distribution in Subwatershed 060101070302.**



**Figure 4-115. Land Use Distribution in Subwatershed 060101070302.** More information is provided in Appendix IV.



**Figure 4-116. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070302.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN139	0.00	C	11.84	4.82	Loam	0.20
TN172	0.00	B	3.87	5.13	Loam	0.26
TN204	0.00	B	3.95	4.80	Sandy Loam	0.19

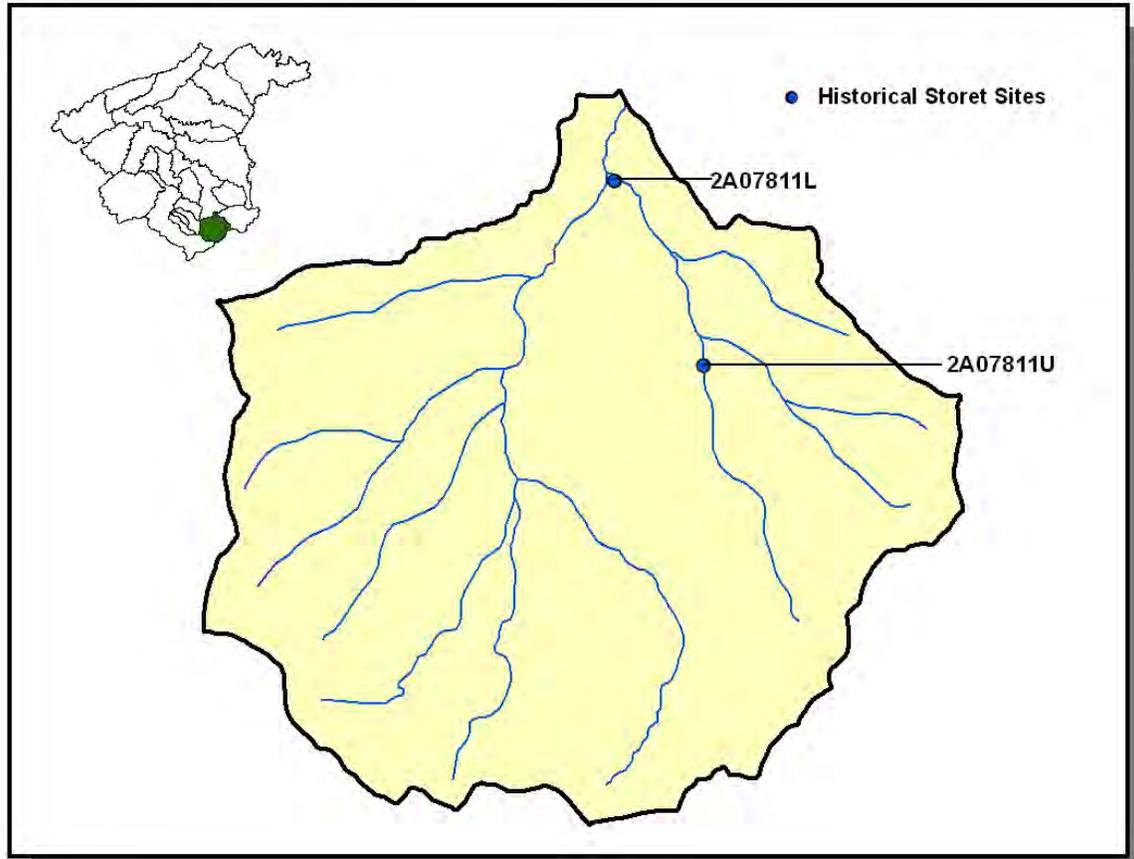
**Table 4-65. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070302.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Sevier	51,043	62,774	71,170	2.96	1,513	1,861	2,109	39.40

**Table 4-66. Population Estimates in Subwatershed 060101070302.**

**4.2.K.ii USGS Gaging Stations and STORET Sites**

There are no USGS continuous record gaging stations located in subwatershed 060101070302.



**Figure 4-117. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070302. More information, including site names and locations, is provided in Appendix IV.**

**4.2.K.iii. Permitted Activities.**

There are no permitted activities located in subwatershed 060101070302 as of June 30<sup>th</sup>, 2007.

**4.2.K.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Sevier	9,816	19,013	172	26	394	234

**Table 4-67. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Sevier	254.5	127.4	0.3	0.9

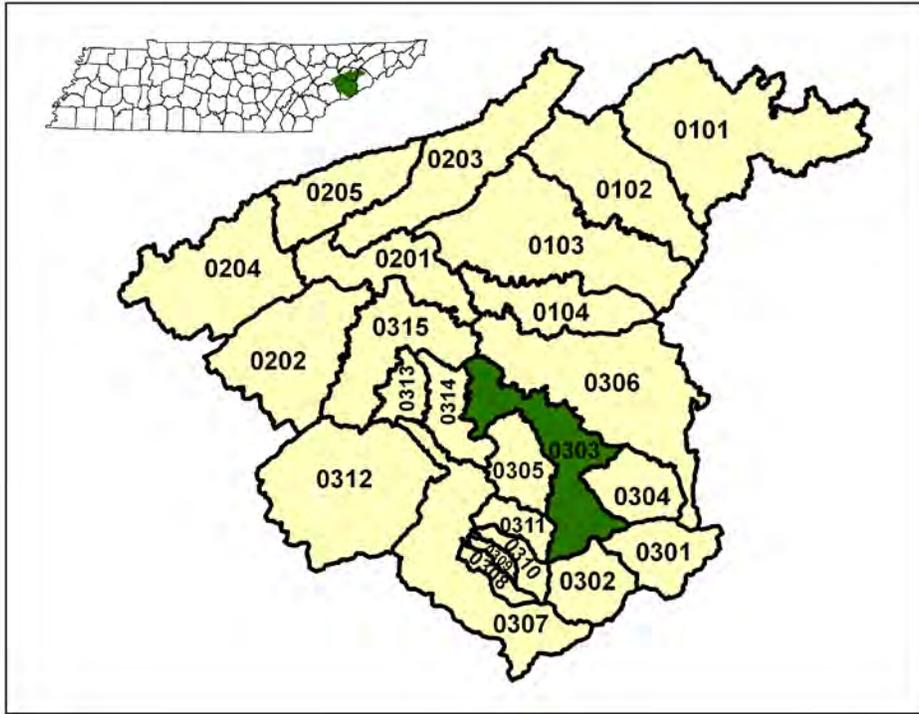
**Table 4-68. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Wheat (Close Grown Cropland)	9.53
Corn (Row Crops)	5.13
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.49
Grass Forbs Legumes Mixed (Pastureland)	0.47
Grass (Hayland)	0.22
Farmsteads and Ranch Headquarters	0.21
Legume Grass (Hayland)	0.06

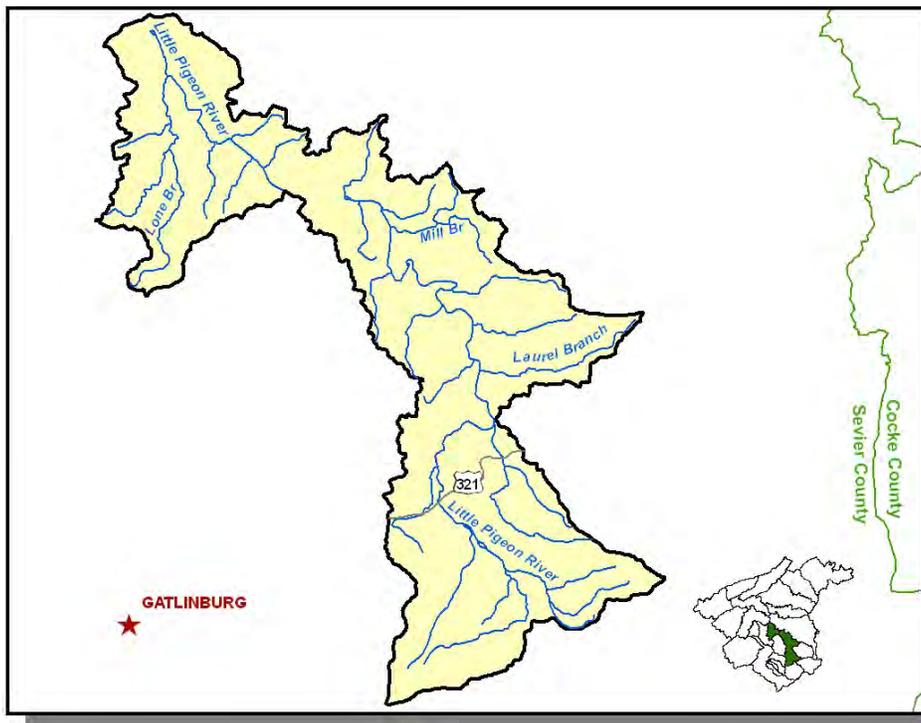
**Table 4-69. Annual Estimated Total Soil Loss in Subwatershed 060101070302.**

**4.2.L. 060101070303 (East Prong Little Pigeon River)**

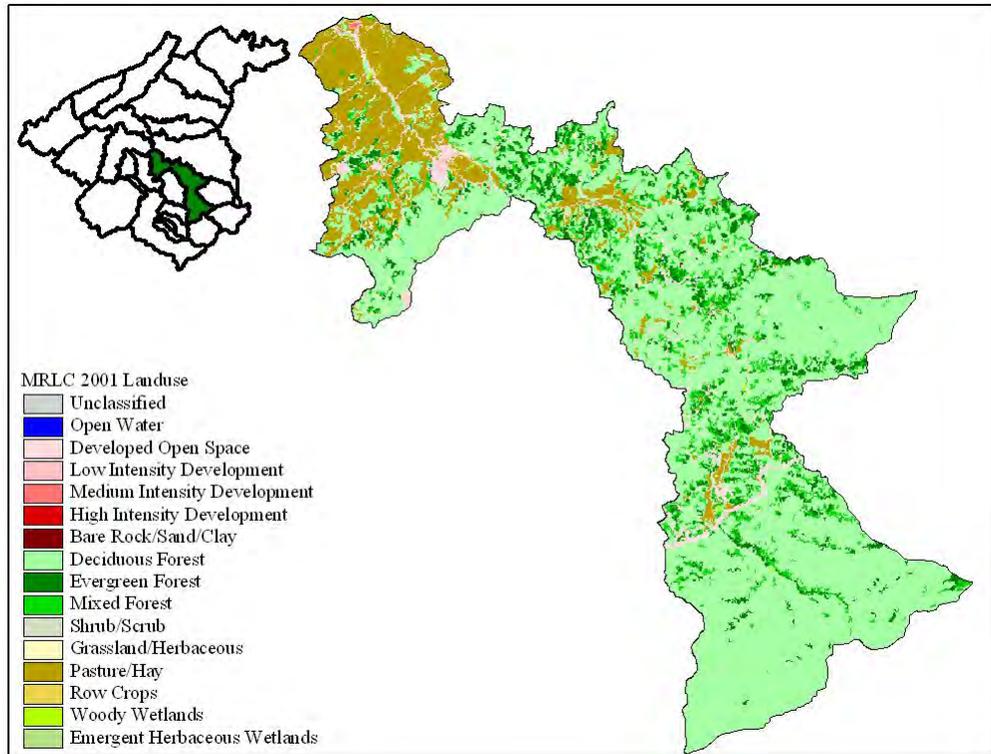
**4.2.L.i. General Description**



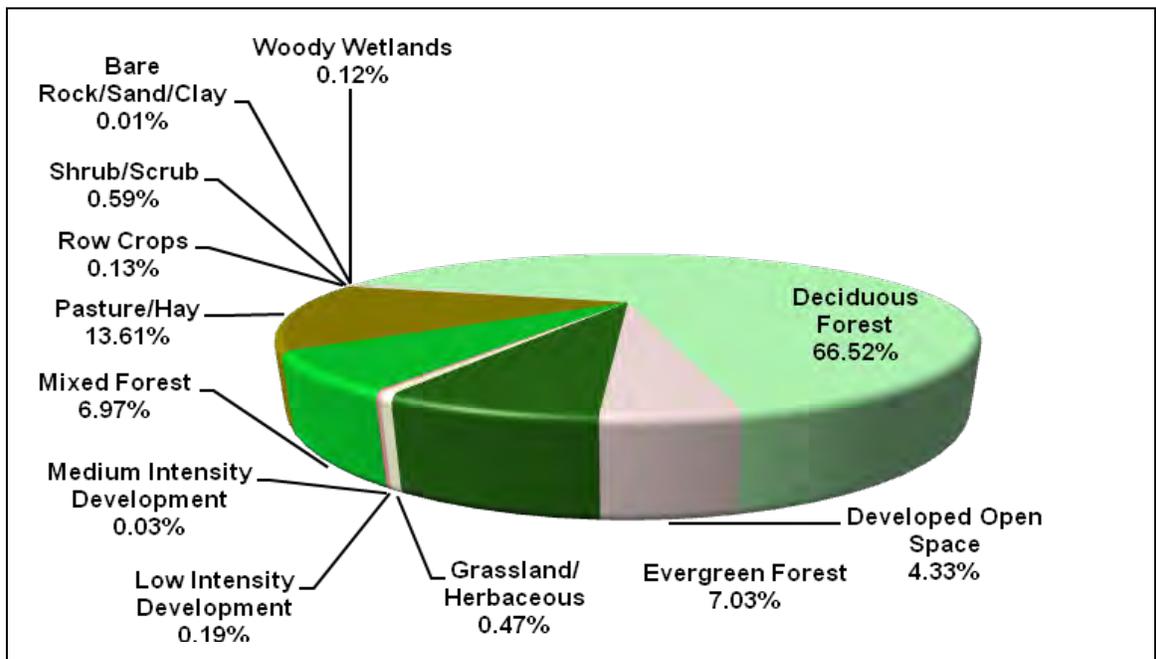
**Figure 4-118. Location of Subwatershed 060101070303.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



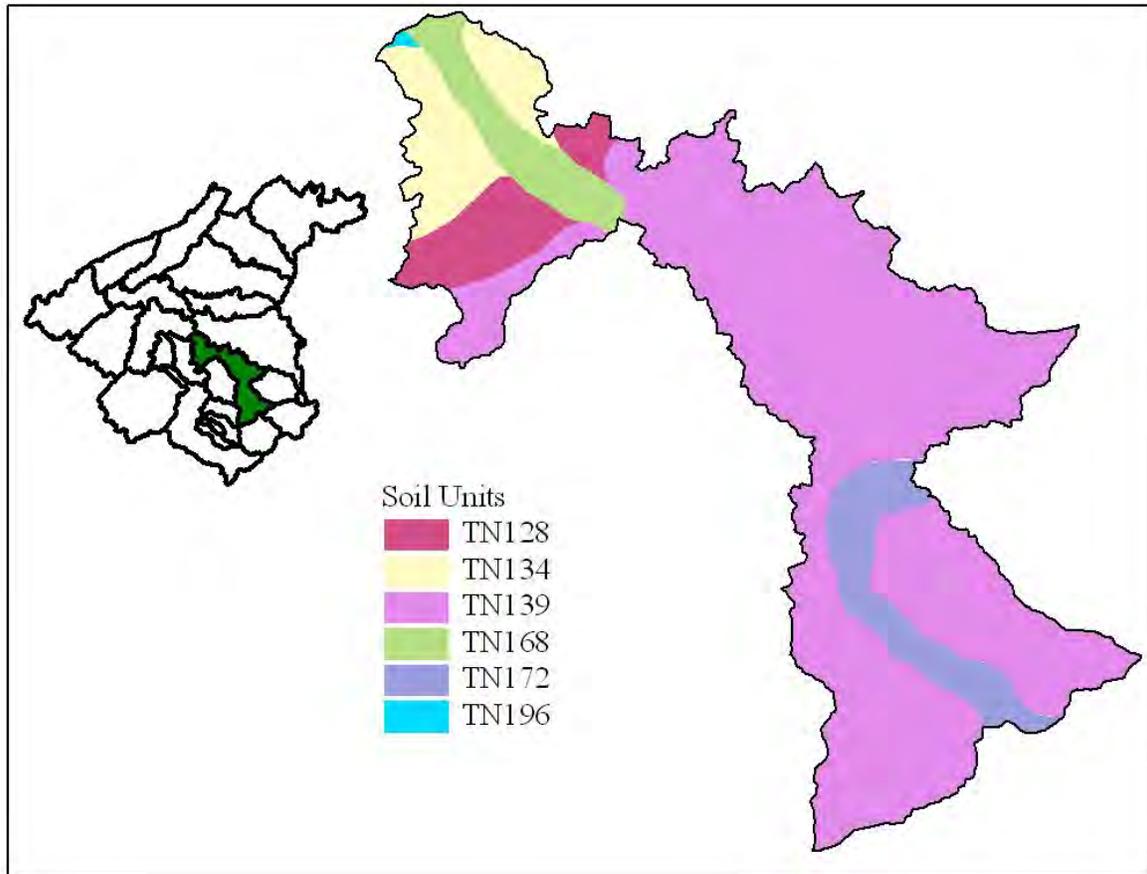
**Figure 4-119. Locational Details of Subwatershed 060101070303.**



**Figure 4-120. Illustration of Land Use Distribution in Subwatershed 060101070303.**



**Figure 4-121. Land Use Distribution in Subwatershed 060101070303.** More information is provided in Appendix IV.



**Figure 4-122. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070303.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN128	0.00	C	1.30	6.53	Clay Loam	0.26
TN134	0.00	B	1.38	5.18	Loam	0.31
TN139	0.00	C	11.84	4.82	Loam	0.20
TN168	0.00	C	1.28	5.65	Loam	0.34
TN172	0.00	B	3.87	5.13	Loam	0.26
TN196	13.00	C	1.61	5.39	Loam	0.31

**Table 4-70. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070303.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Sevier	51,043	62,774	71,170	6.24	3,185	3,917	4,441	39.4

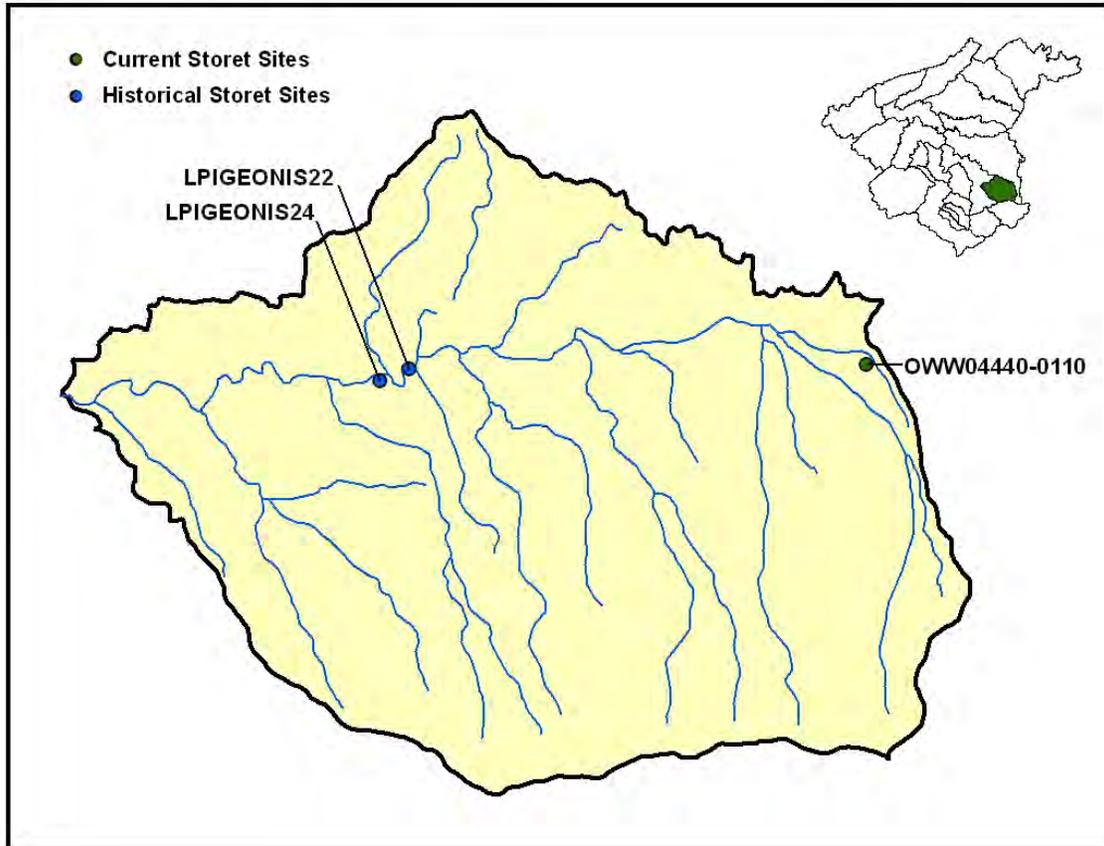
**Table 4-71. Population Estimates in Subwatershed 060101070303.**

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Gatlinburg	Sevier	3,355	2,931	1,942	989	0
Pittman Center	Sevier	404	316	21	287	8
Sevierville	Sevier	7,178	3,321	2,632	686	3

**Table 4-72. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070303.**

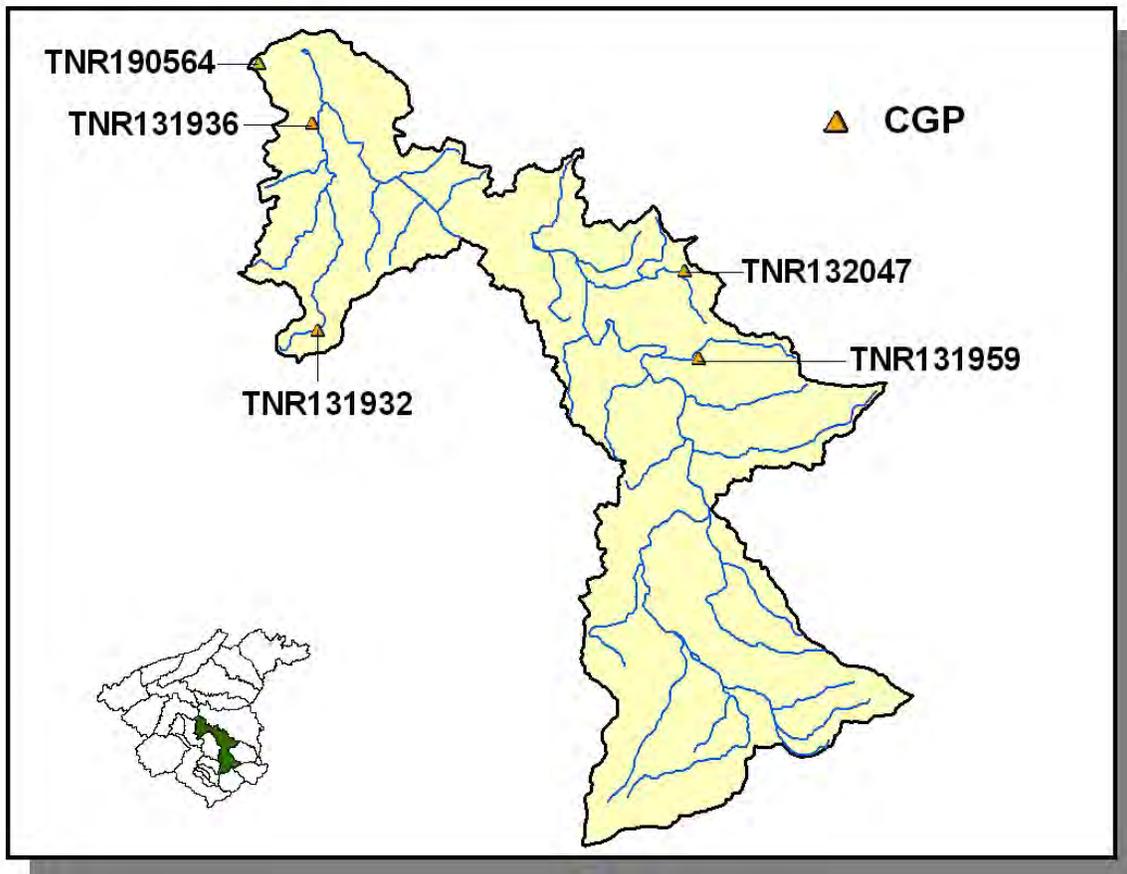
**4.2.L.ii. USGS Gaging Stations and STORET Sites**

There are no USGS continuous record gaging stations located in subwatershed 060101070303.



**Figure 4-123. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070303. More information, including site names and locations, is provided in Appendix IV.**

**4.2.L.iii. Permitted Activities.**



**Figure 4-124. Location of Permits Issued in Subwatershed 060101070303.** More information, including the names of facilities, is provided in Appendix IV.

**4.2.L.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Sevier	9,816	19,013	172	26	394	234

**Table 4-73. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Sevier	254.5	127.4	0.3	0.9

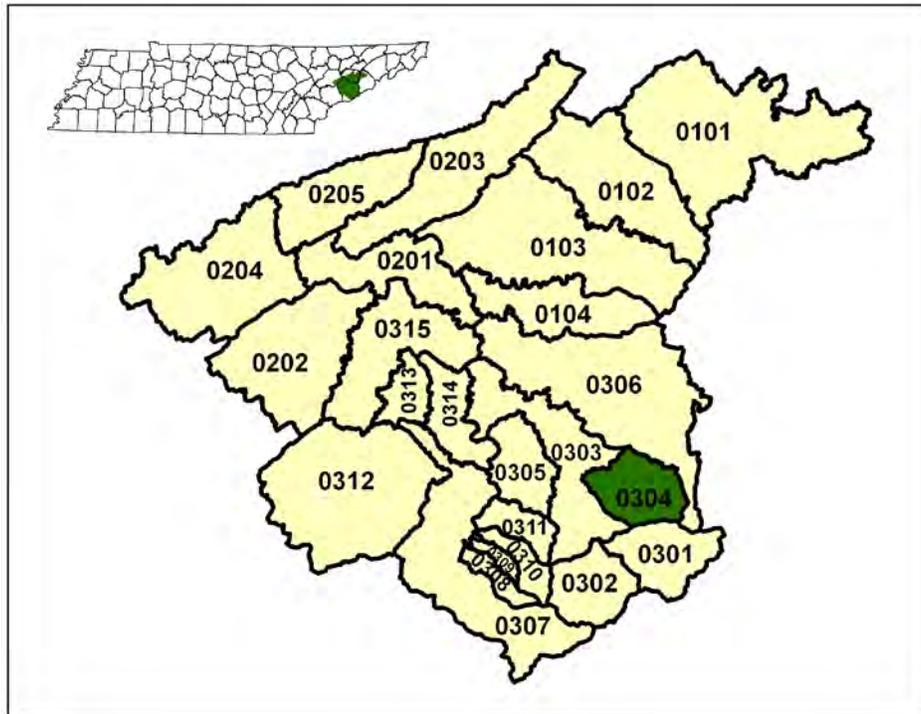
**Table 4-74. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Wheat (Close Grown Cropland)	9.53
Corn (Row Crops)	5.13
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.48
Grass Forbs Legumes Mixed (Pastureland)	0.47
Grass (Hayland)	0.22
Farmsteads and Ranch Headquarters	0.22
Legume Grass (Hayland)	0.06

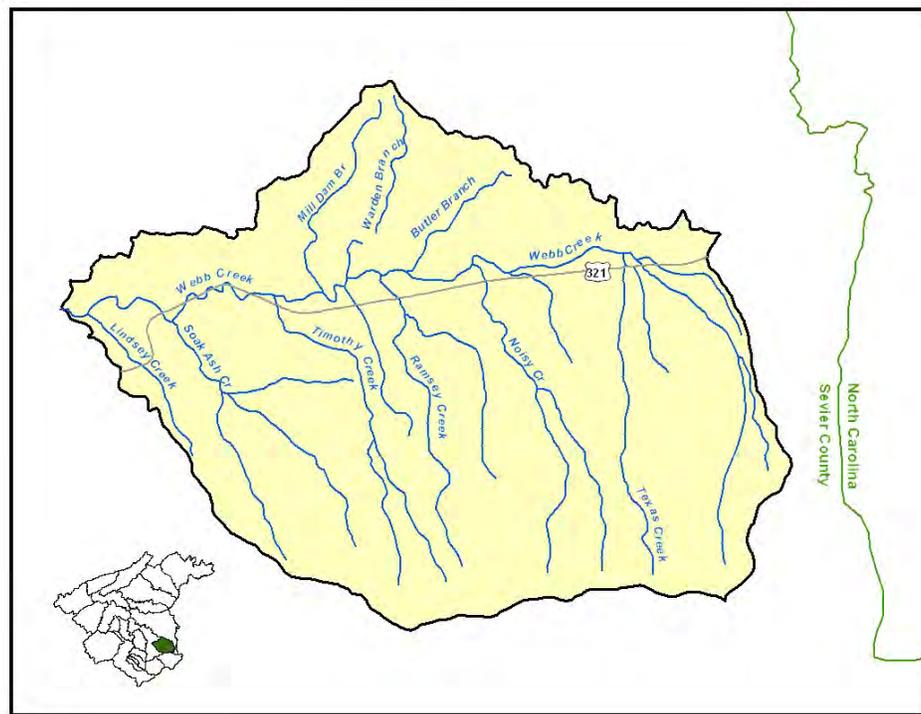
**Table 4-75. Annual Estimated Total Soil Loss in Subwatershed 060101070303.**

**4.2.M. 060101070304 (Webb Creek)**

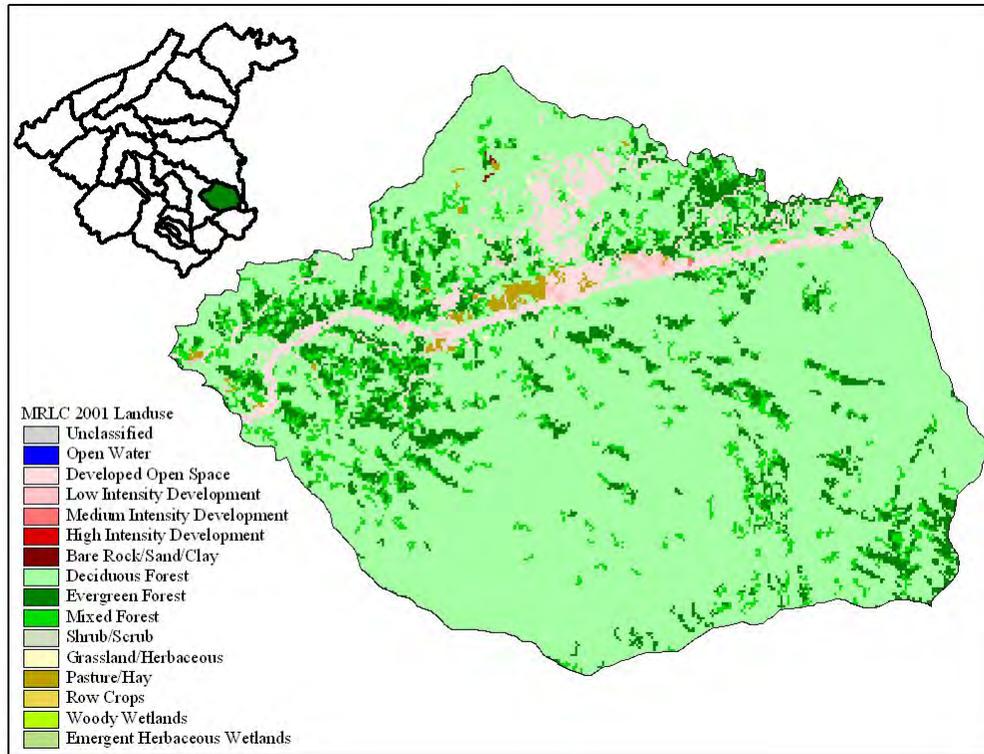
**4.2.M.i. General Description**



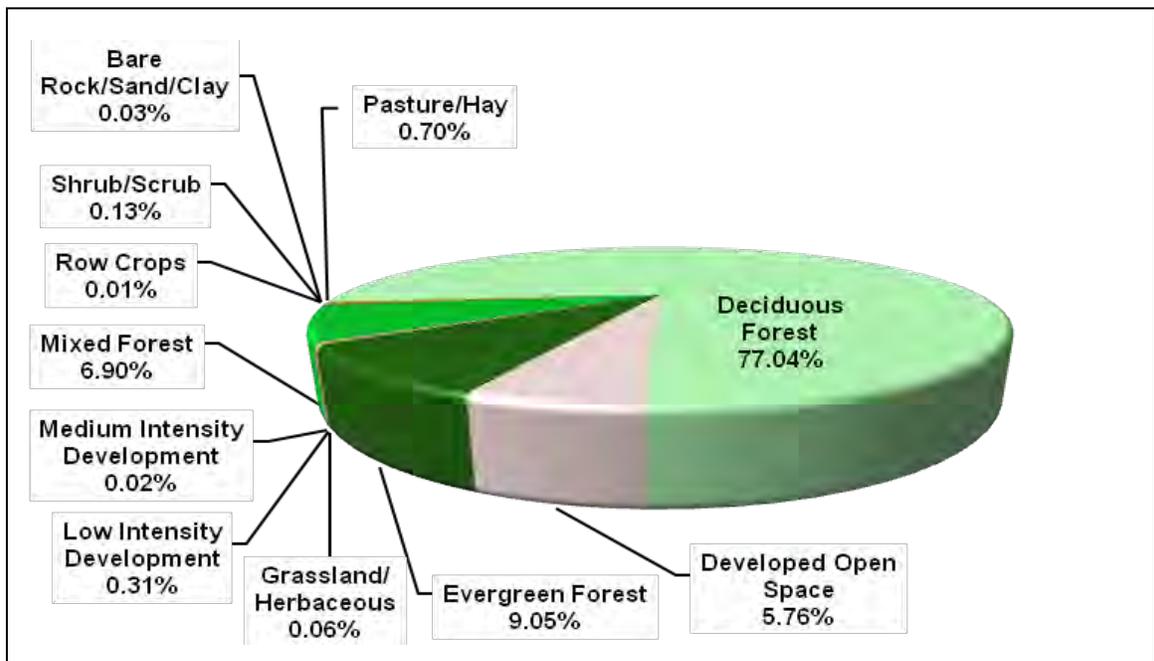
**Figure 4-125. Location of Subwatershed 060101070304.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



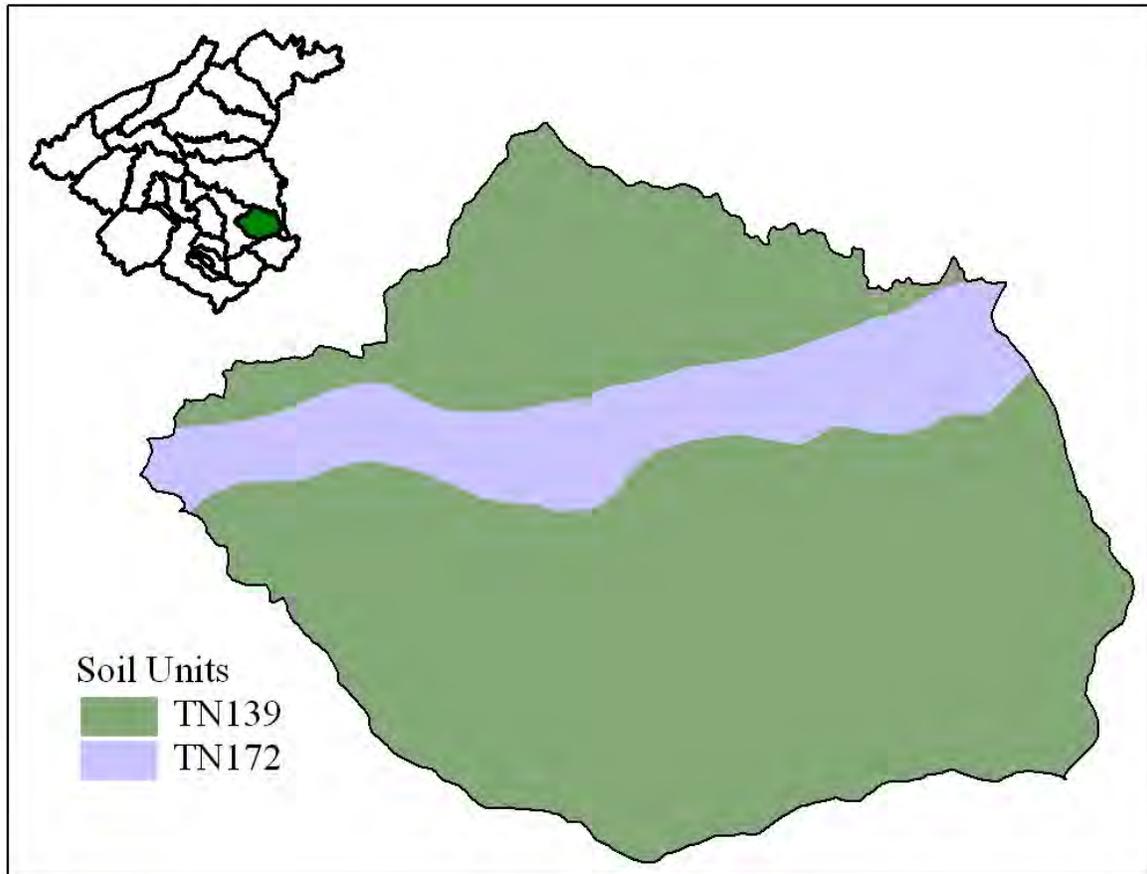
**Figure 4-126. Locational Details of Subwatershed 060101070304.**



**Figure 4-127. Illustration of Land Use Distribution in Subwatershed 060101070304.**



**Figure 4-128. Land Use Distribution in Subwatershed 060101070304.** More information is provided in Appendix IV.



**Figure 4-129. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070304.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN139	0.00	C	11.84	4.82	Loam	0.20
TN172	0.00	B	3.87	5.13	Loam	0.26

**Table 4-76. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070304.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Sevier	51,043	62,774	71,170	2.95	1,503	1,849	2,096	39.50

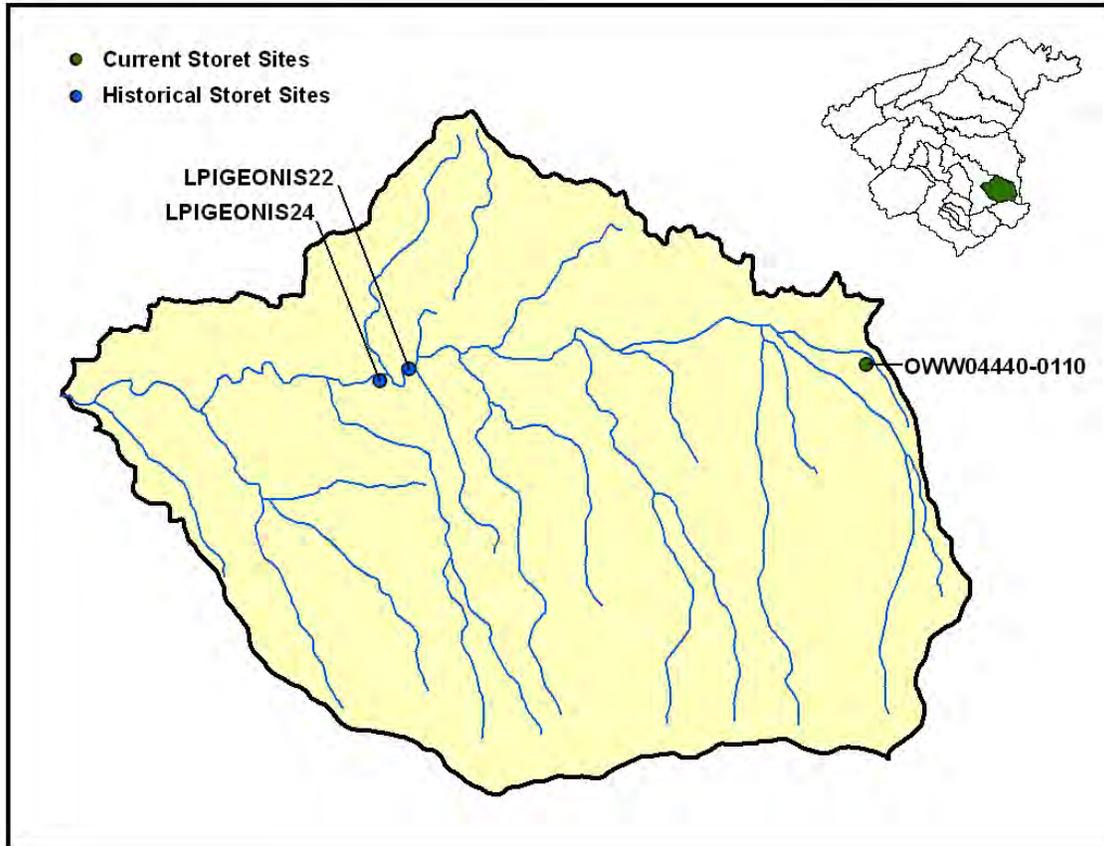
**Table 4-77. Population Estimates in Subwatershed 060101070304.**

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Pittman Center	Sevier	404	316	21	287	8

**Table 4-78. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070304.**

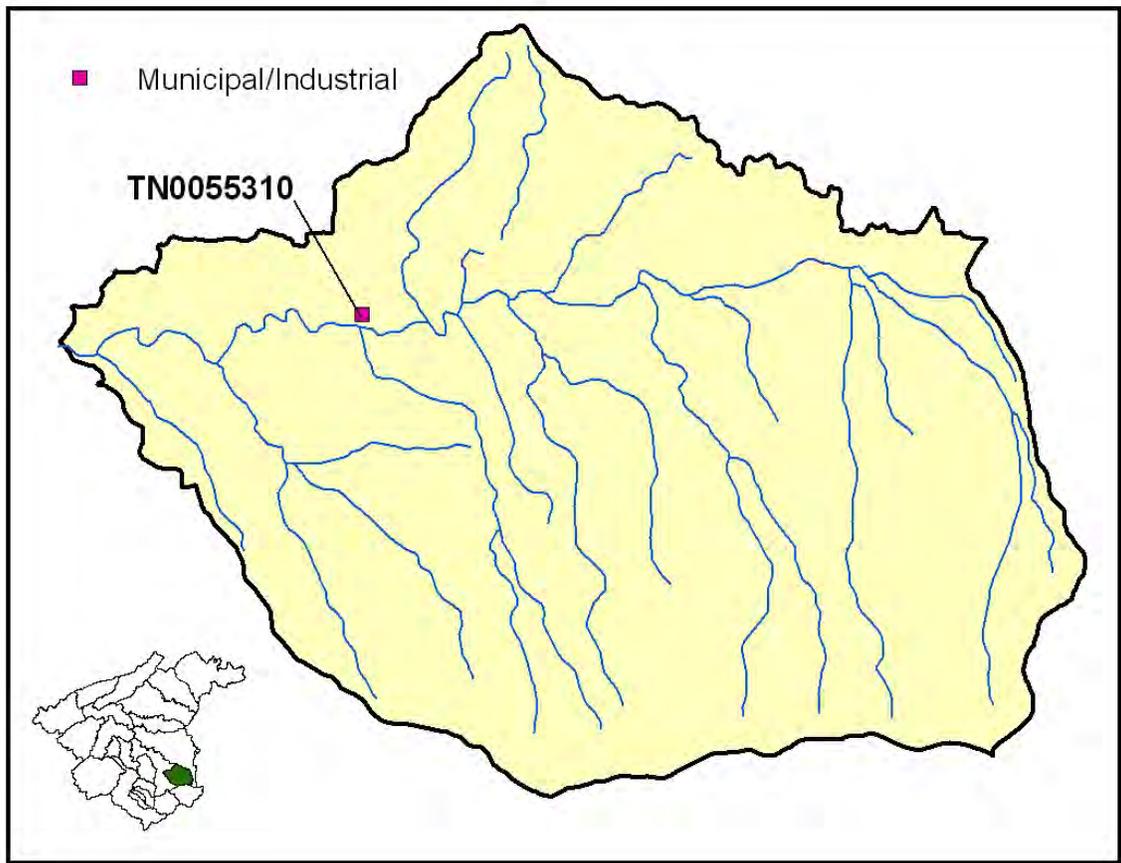
**4.2.M.ii. USGS Gaging Stations and STORET Sites**

There are no USGS continuous record gaging stations located in subwatershed 060101070304.



**Figure 4-130. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070304.** More information, including site names and locations, is provided in Appendix IV.

**4.2.M.iii. Permitted Activities.**



**Figure 4-131. Location of Permits Issued in Subwatershed 060101070304.** More information, including the names of facilities, is provided in Appendix IV.

**4.2.M.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Sevier	9,816	19,013	172	26	394	234

**Table 4-79. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Sevier	254.5	127.4	0.3	0.9

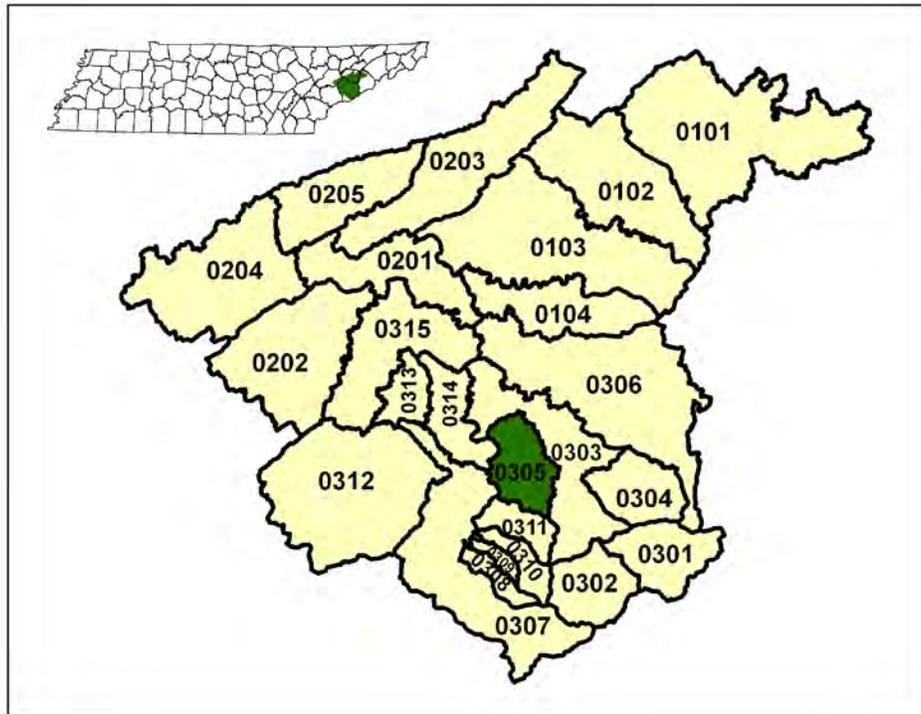
**Table 4-80. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Wheat (Close Grown Cropland)	9.53
Corn (Row Crops)	5.13
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.48
Grass Forbs Legumes Mixed (Pastureland)	0.47
Grass (Hayland)	0.22
Farmsteads and Ranch Headquarters	0.22
Legume Grass (Hayland)	0.06

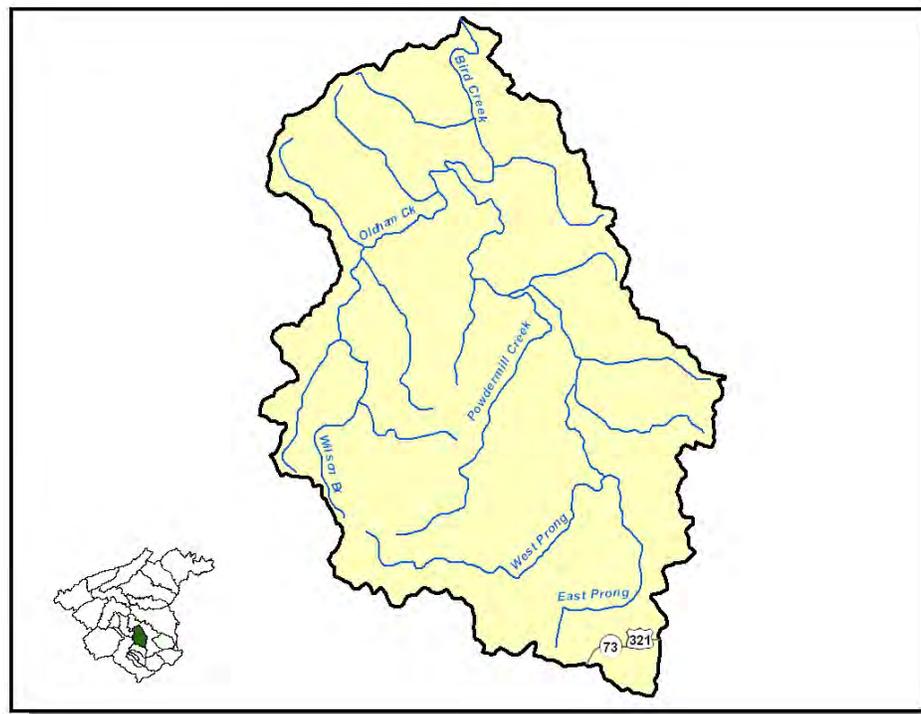
**Table 4-81. Annual Estimated Total Soil Loss in Subwatershed 060101070304.**

**4.2.N. 060101070305 (Bird Creek)**

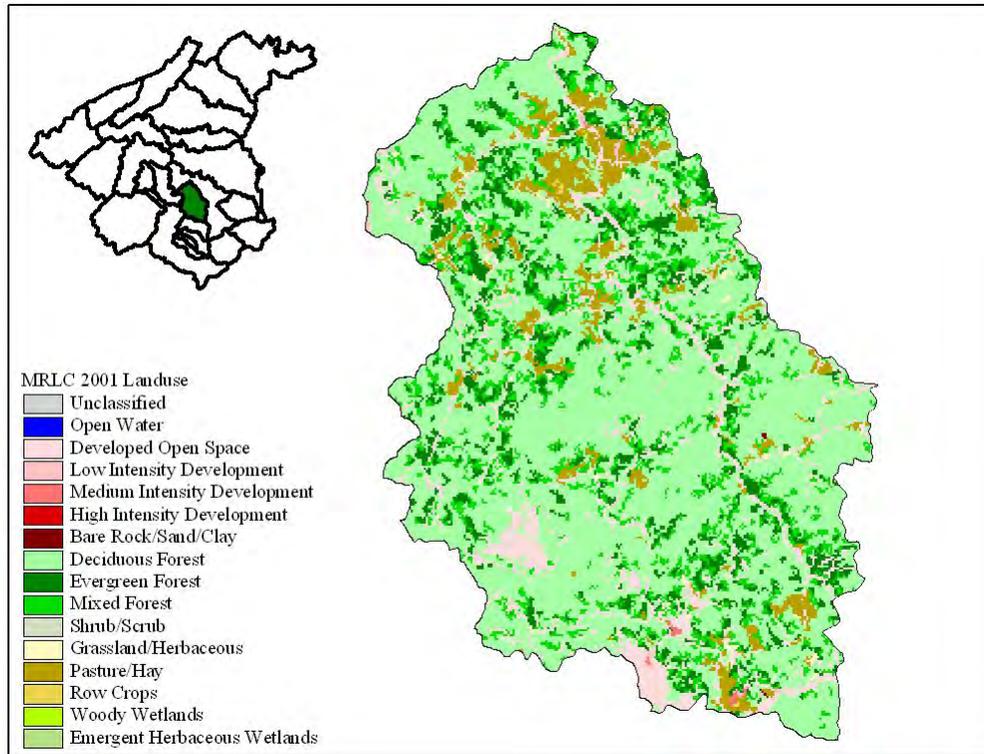
**4.2.N.i. General Description**



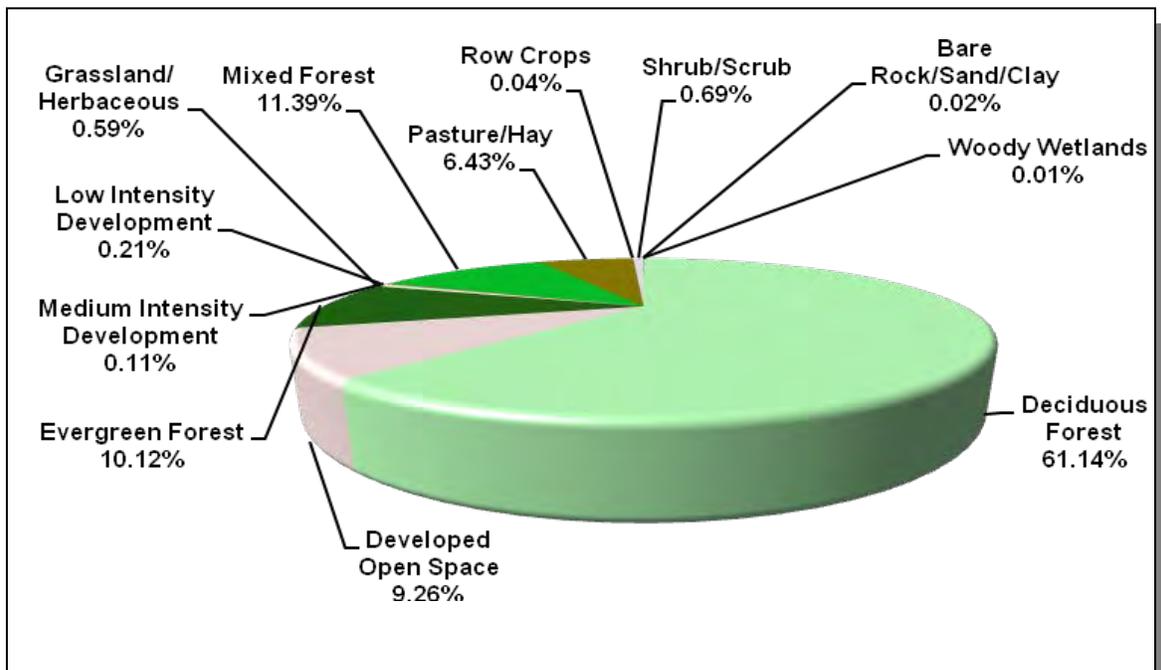
**Figure 4-132. Location of Subwatershed 060101070305.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



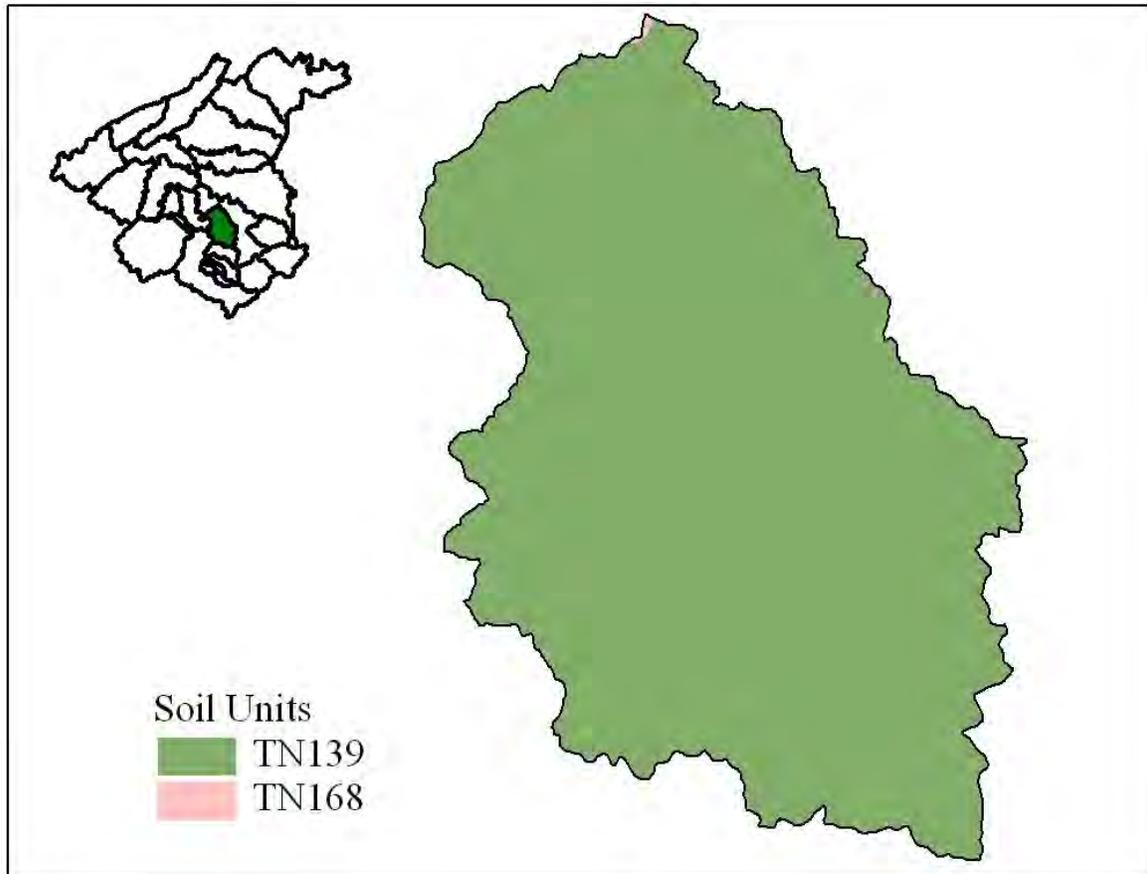
**Figure 4-133. Locational Details of Subwatershed 060101070305.**



**Figure 4-134. Illustration of Land Use Distribution in Subwatershed 060101070305.**



**Figure 4-135. Land Use Distribution in Subwatershed 060101070305.** More information is provided in Appendix IV.



**Figure 4-136. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070305.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN139	0.00	C	11.84	4.82	Loam	0.20
TN168	0.00	C	1.28	5.65	Loam	0.34

**Table 4-82. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070305.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Sevier	51,043	62,774	71,170	2.69	1,372	1,688	1,914	39.50

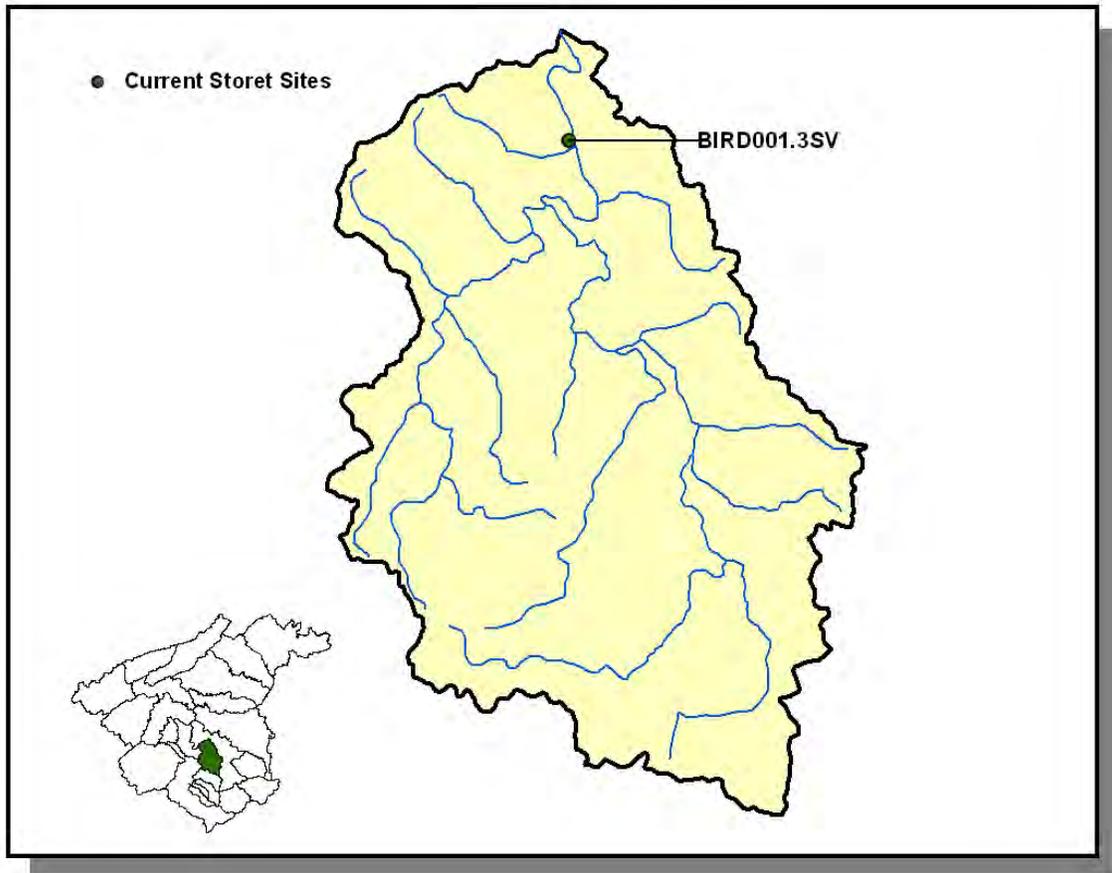
**Table 4-83. Population Estimates in Subwatershed 060101070305.**

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Gatlinburg	Sevier	3,355	2,931	1,942	989	0
Pittman Center	Sevier	404	316	21	287	8
<b>Total</b>		<b>3,759</b>	<b>3,247</b>	<b>1963</b>	<b>1276</b>	<b>8</b>

**Table 4-84. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070305.**

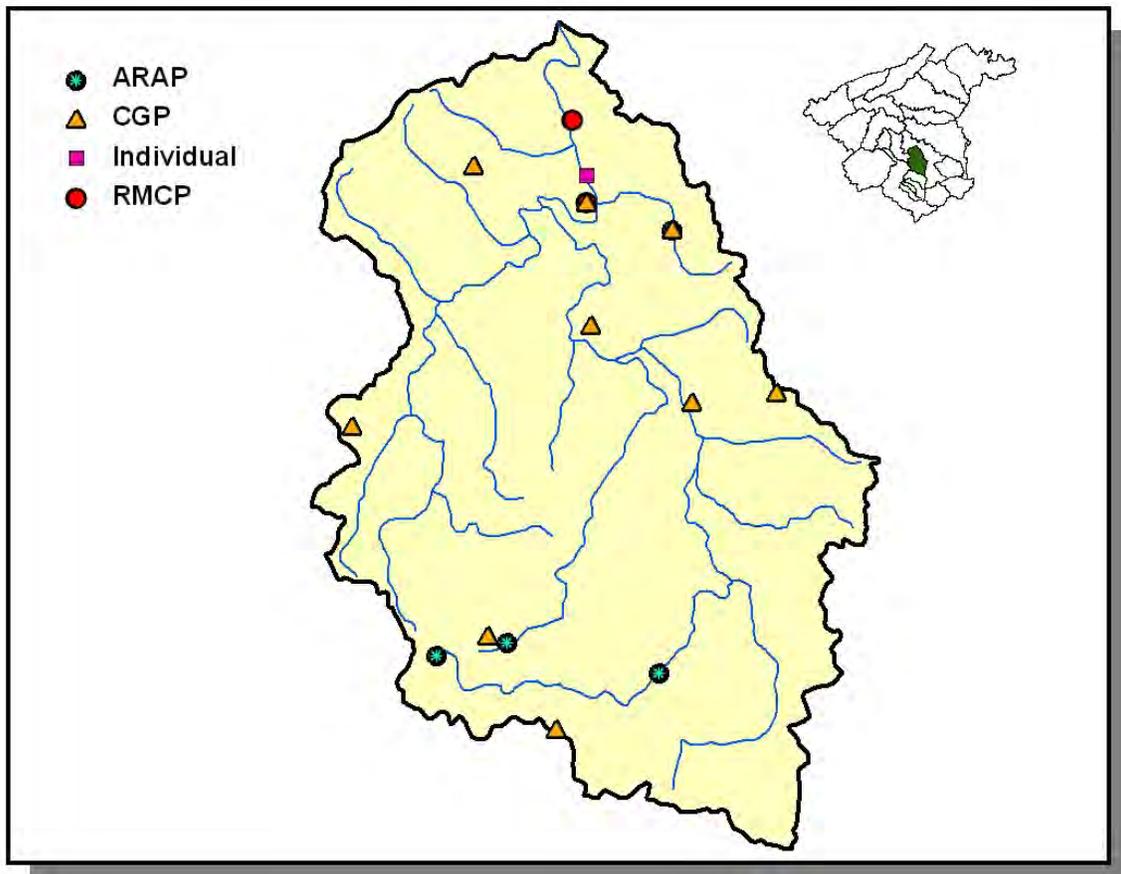
**4.2.N.ii. USGS Gaging Stations and STORET Sites**

There are no continuous record gaging stations located in subwatershed 060101070305.

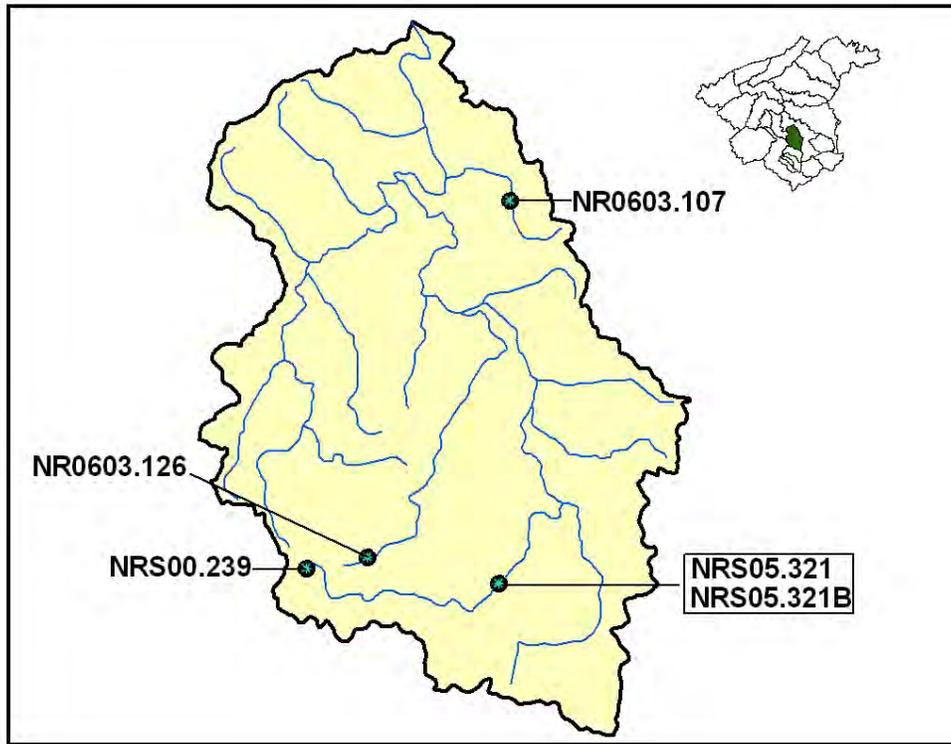


**Figure 4-137. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070305. More information, including site names and locations, is provided in Appendix IV.**

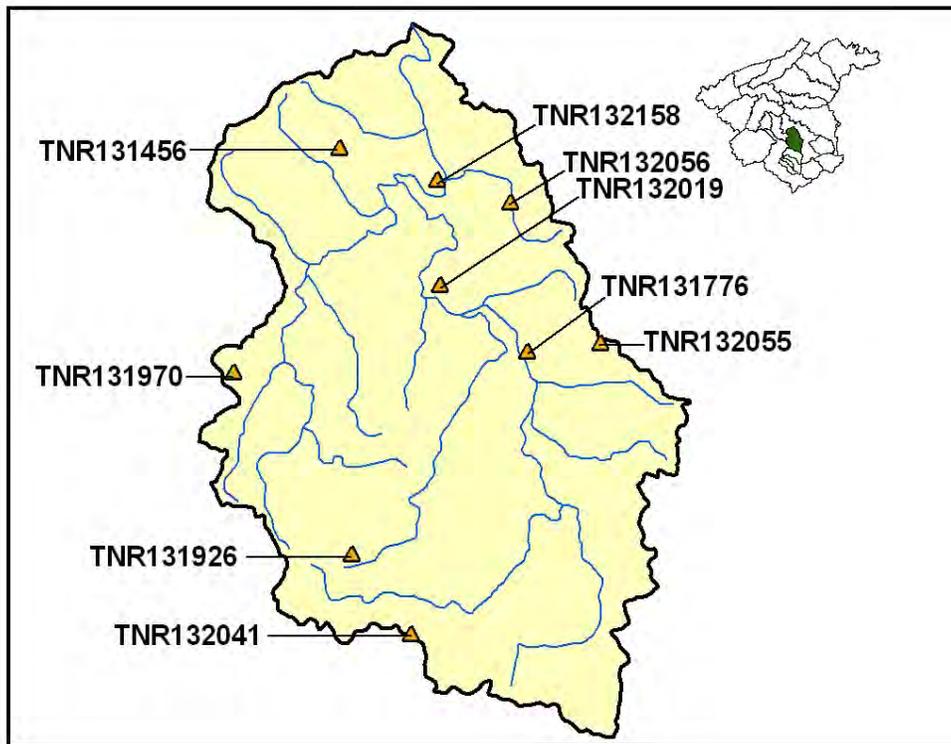
**4.2.N.iii. Permitted Activities.**



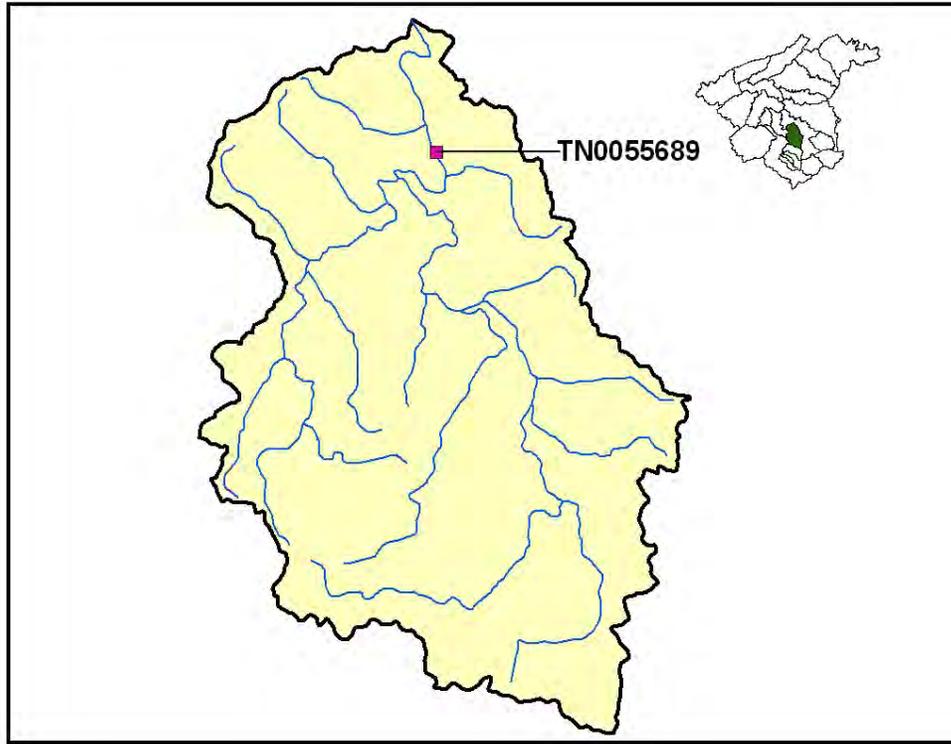
**Figure 4-138. Location of Permits Issued in Subwatershed 060101070305.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-139. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 060101070305. More information is provided in Appendix IV.**



**Figure 4-140. Location of CGP (Construction General Permit) Sites in Subwatershed 060101070305. More information is provided in Appendix IV.**



**Figure 4-141. Location of Permitted Municipal and Industrial Facilities in Subwatershed 060101070305.** More information, including the name of the facility is provided in Appendix IV.



**Figure 4-142. Location of RMCP (Ready Mix Concrete Plant) Facilities in Subwatershed 060101070305.** More information, including the names of facilities, is provided in Appendix IV.

**4.2.N.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Sevier	9,816	19,013	172	26	394	234

**Table 4-85. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Sevier	254.5	127.4	0.3	0.9

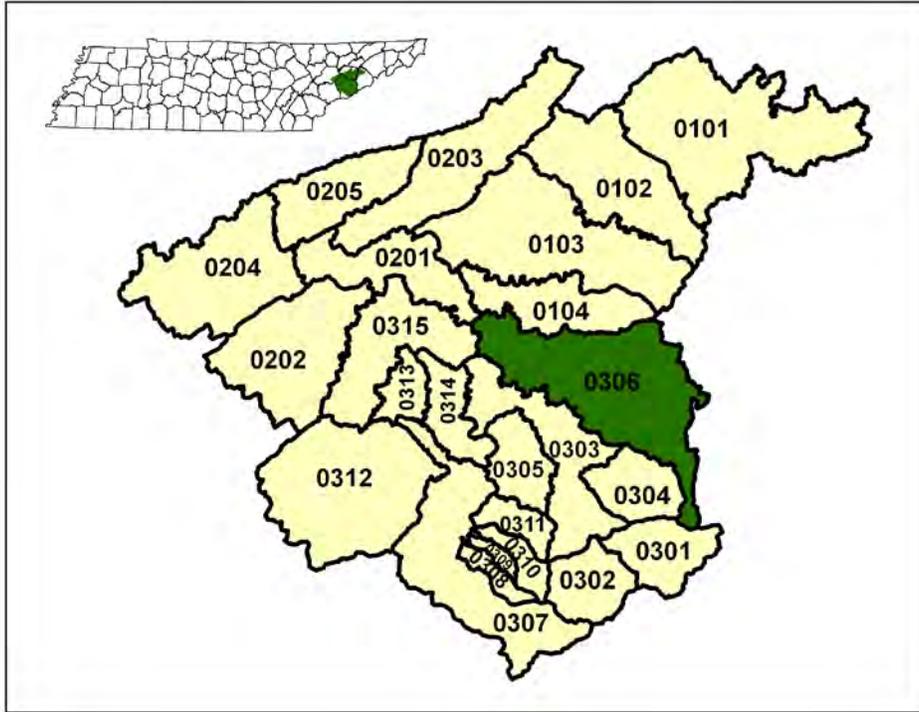
**Table 4-86. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Wheat (Close Grown Cropland)	9.53
Corn (Row Crops)	5.13
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.48
Grass Forbs Legumes Mixed (Pastureland)	0.47
Grass (Hayland)	0.22
Farmsteads and Ranch Headquarters	0.22
Legume Grass (Hayland)	0.06

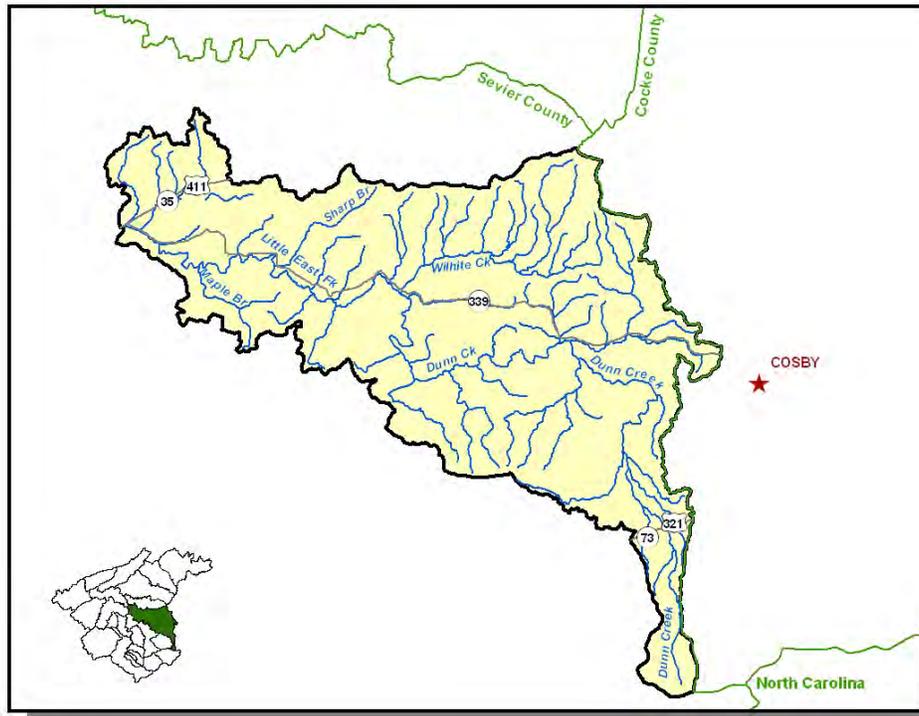
**Table 4-87. Annual Estimated Total Soil Loss in Subwatershed 060101070305.**

**4.2.O. 060101070306 (East Fork Dunn Creek)**

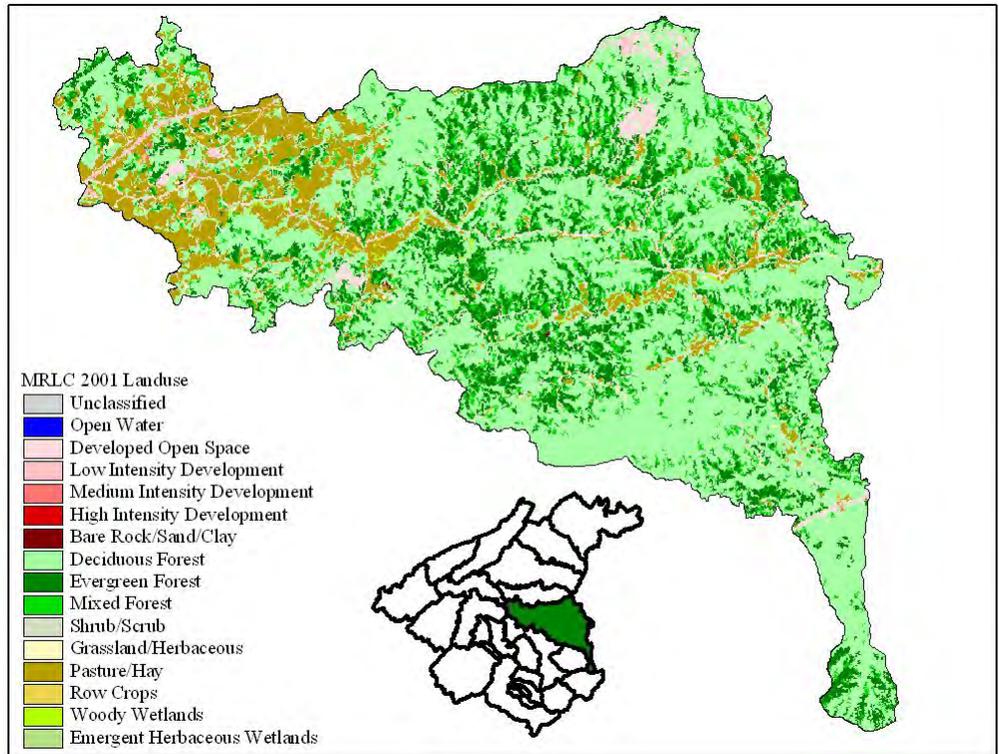
**4.2.O.i. General Description**



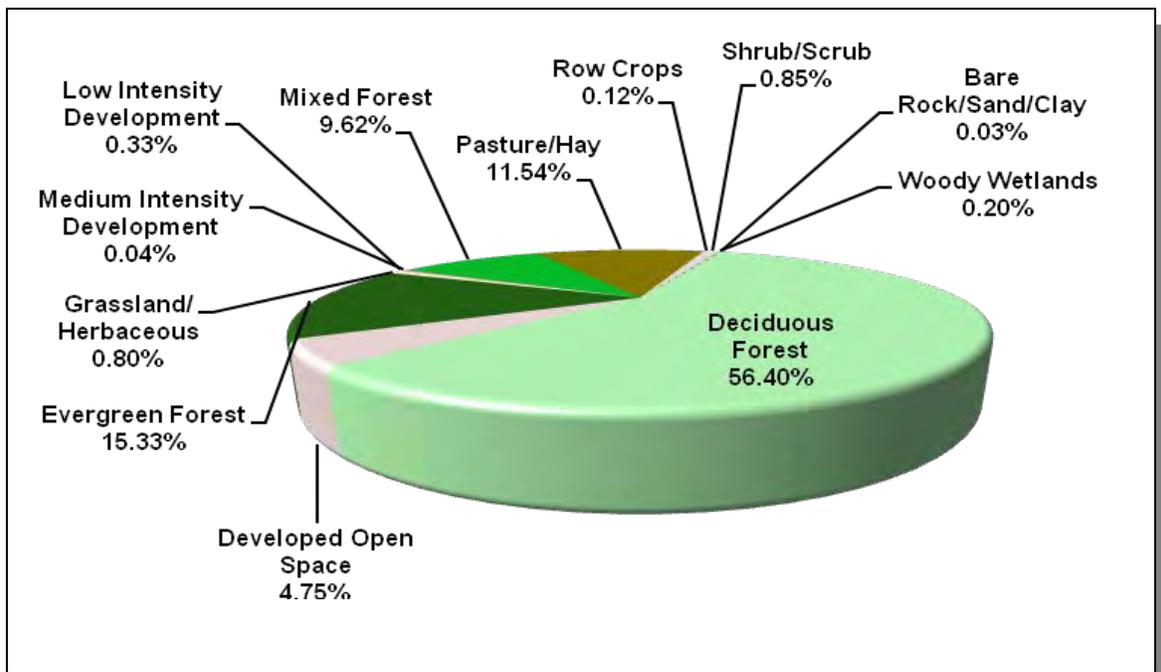
**Figure 4-143. Location of Subwatershed 060101070306.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



**Figure 4-144. Locational Details of Subwatershed 060101070306.**



**Figure 4-145. Illustration of Land Use Distribution in Subwatershed 060101070306.**



**Figure 4-146. Land Use Distribution in Subwatershed 060101070306.** More information is provided in Appendix IV.

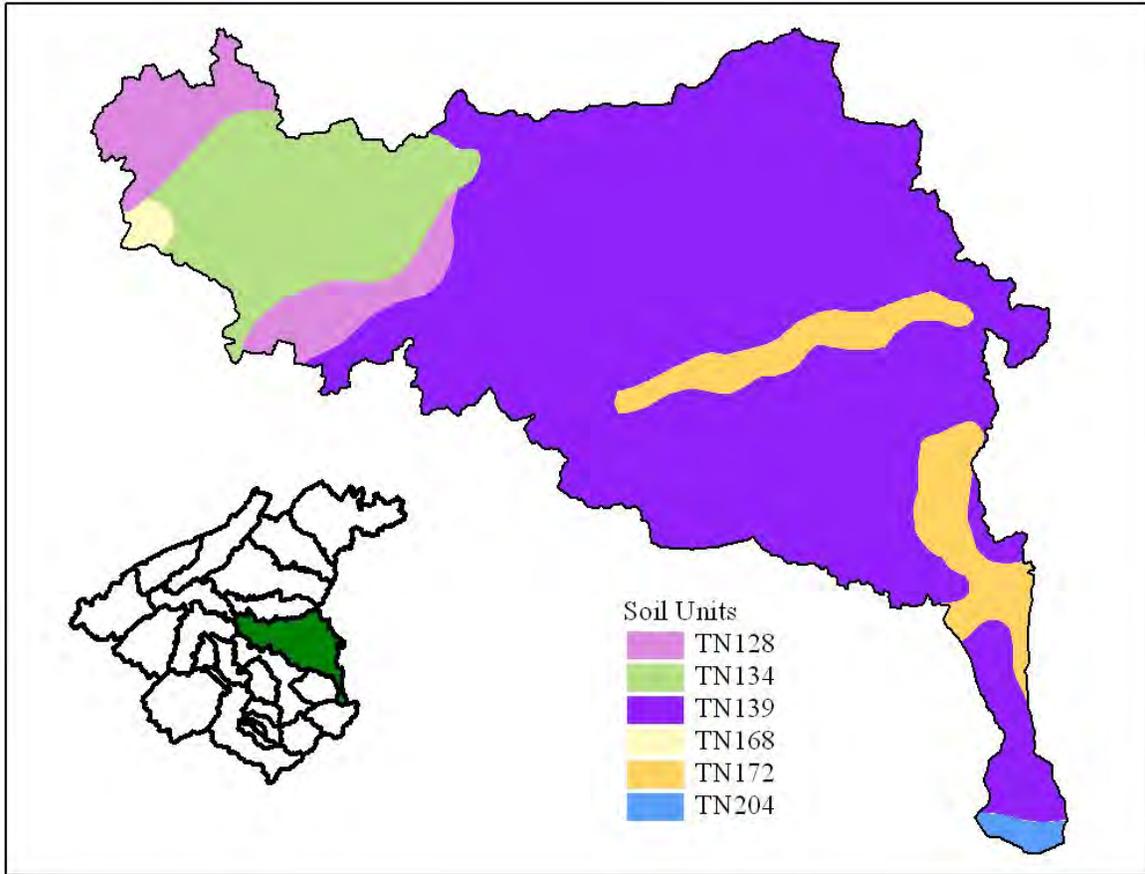


Figure 4-147. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070306.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN128	0.00	C	1.30	6.53	Clay Loam	0.26
TN134	0.00	B	1.38	5.18	Loam	0.31
TN139	0.00	C	11.84	4.82	Loam	0.20
TN168	0.00	C	1.28	5.65	Loam	0.34
TN172	0.00	B	3.87	5.13	Loam	0.26
TN204	0.00	B	3.95	4.80	Sandy Loam	0.19

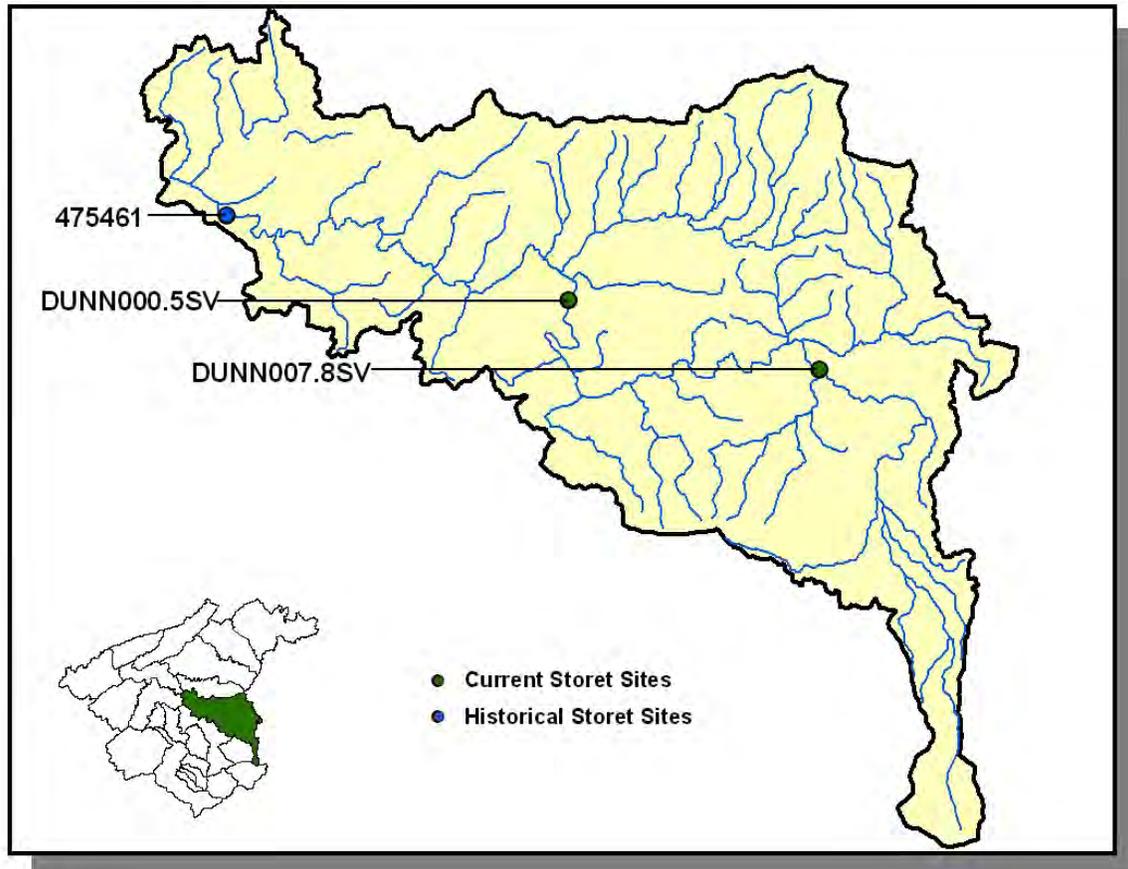
Table 4-88. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070306. The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Cocke	29,141	31,657	33,565	0.08	23	25	27	17.4
Sevier	51,043	62,774	71,170	11.42	5,829	7,169	8,128	39.4
<b>Totals</b>	<b>80,184</b>	<b>94,431</b>	<b>104,735</b>		<b>5,852</b>	<b>7,194</b>	<b>8,155</b>	<b>39.4</b>

Table 4-89. Population Estimates in Subwatershed 060101070306.

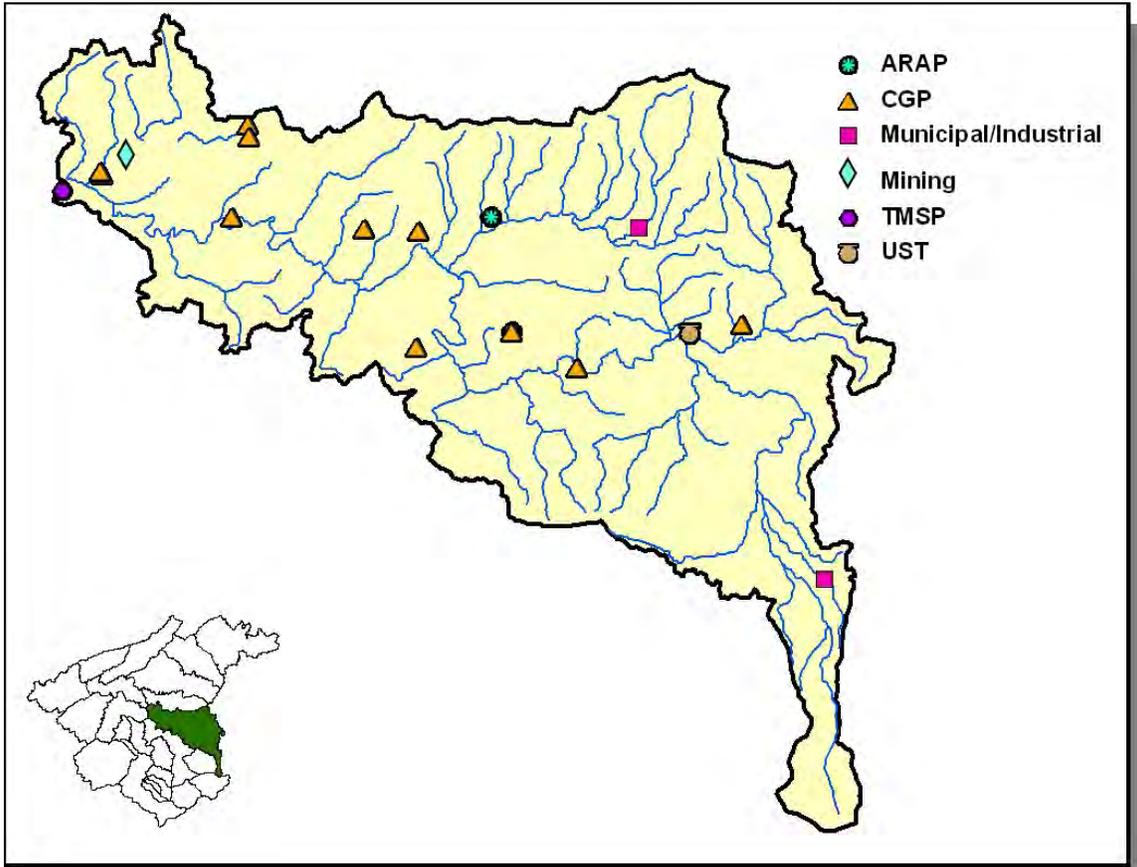
**4.2.O.ii. USGS Gaging Stations and STORET Sites**

There are no USGS continuous record gaging stations in subwatershed 060101070306.

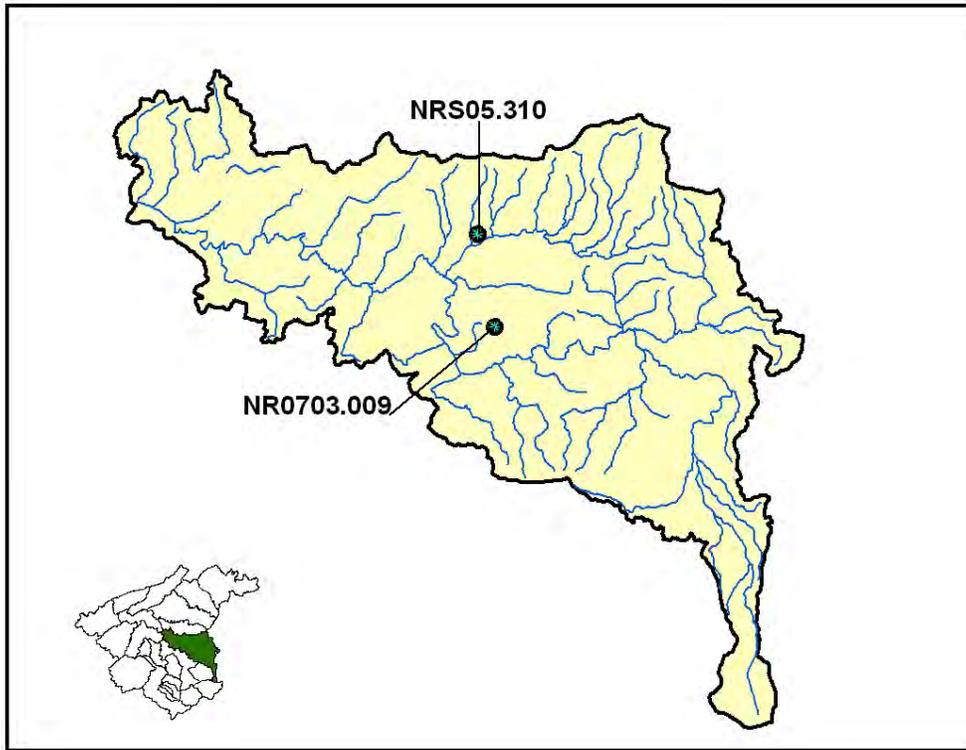


**Figure 4-148. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070306.** More information, including site names and locations, is provided in Appendix IV.

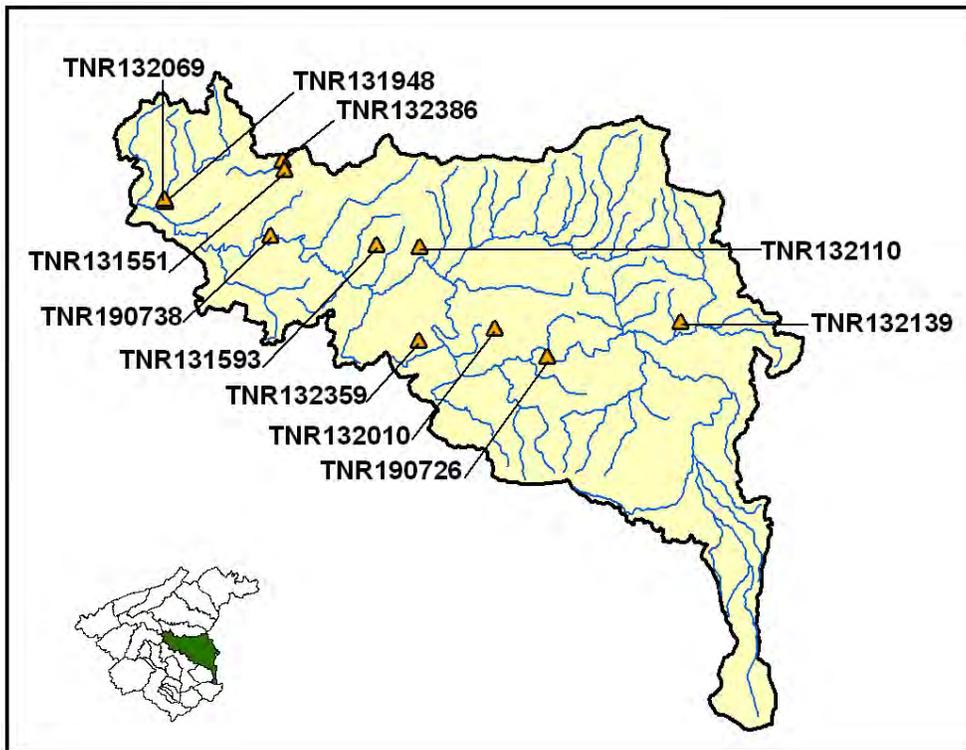
**4.2.O.iii. Permitted Activities.**



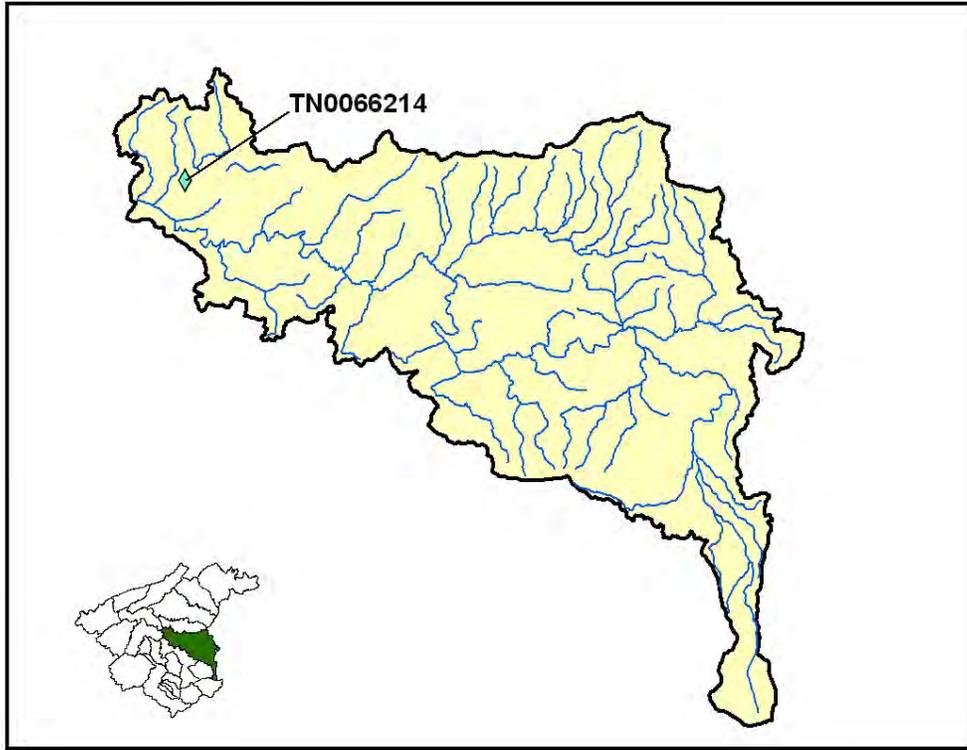
**Figure 4-149. Location of Permits Issued in Subwatershed 060101070306.** More information, including the names of facilities, is provided in Appendix IV.



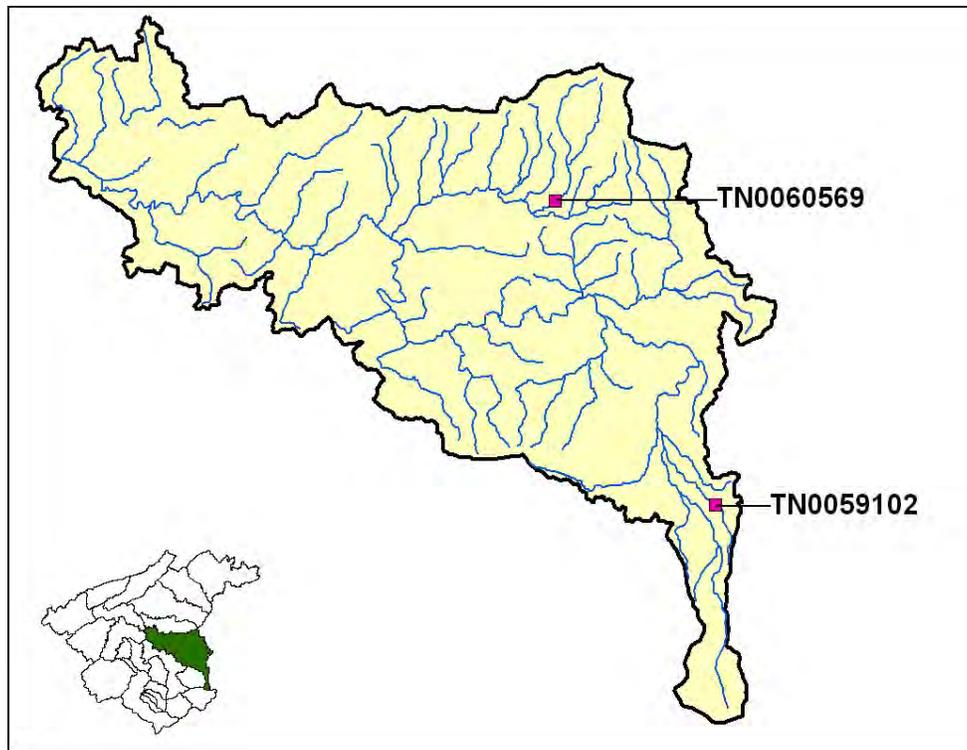
**Figure 4-150. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 060101070306. More information is provided in Appendix IV.**



**Figure 4-151. Location of CGP (Construction General Permit) Sites in Subwatershed 060101070306. More information is provided in Appendix IV.**



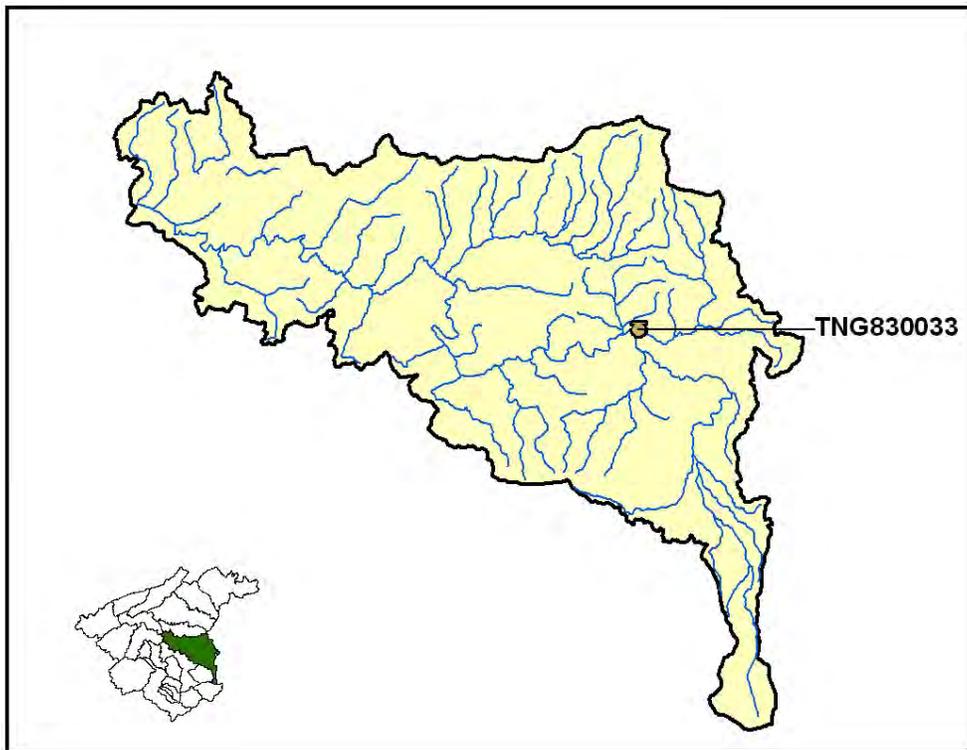
**Figure 4-152. Location of permitted Mining Facilities in Subwatershed 060101070306.** More information is provided in Appendix IV.



**Figure 4-153. Location of Permitted Municipal and Industrial Facilities in Subwatershed 060101070306.** More information, including the name of the facility is provided in Appendix IV.



**Figure 4-154. Location of TMSP (Tennessee Multi-Sector Permit) Sites in Subwatershed 060101070306. More information is provided in Appendix IV.**



**Figure 4-155. Location of Active UST (Underground Storage Tanks) Sites in Subwatershed 060101070306. More information is provided in Appendix IV.**

**4.2.O.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Cocke	8,169	16,971	1,224	361	269	90
Sevier	9,816	19,013	172	26	394	234

**Table 4-90. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cocke	182.0	163.4	3.7	17.4
Sevier	254.5	127.4	0.3	0.9

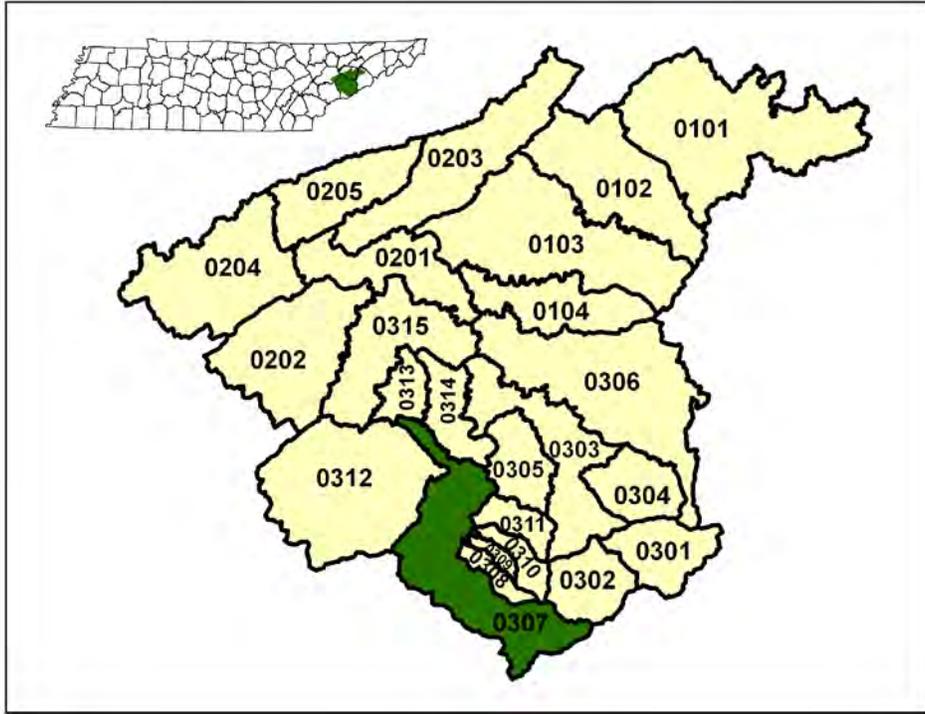
**Table 4-91. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Wheat (Close Grown Cropland)	9.51
Corn (Row Crops)	5.14
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.48
Grass Forbs Legumes Mixed (Pastureland)	0.47
Grass (Hayland)	0.22
Farmsteads and Ranch Headquarters	0.22
Legume Grass (Hayland)	0.06

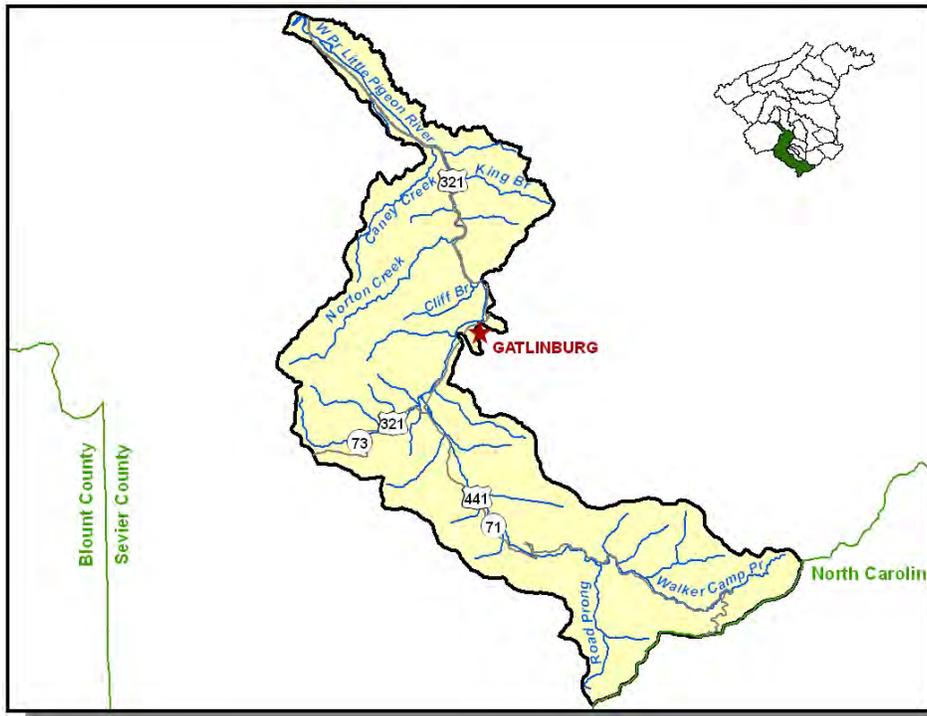
**Table 4-92. Annual Estimated Total Soil Loss in Subwatershed 060101070306.**

**4.2.P. 060101070307 (West Prong Little Pigeon River)**

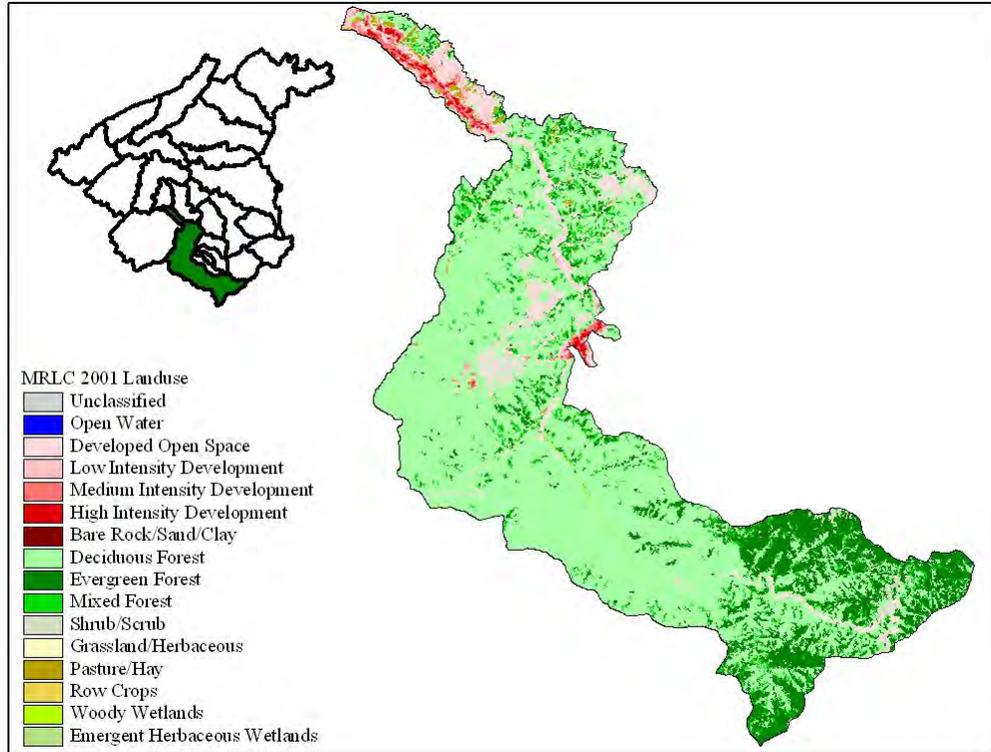
**4.2.P.i. General Description**



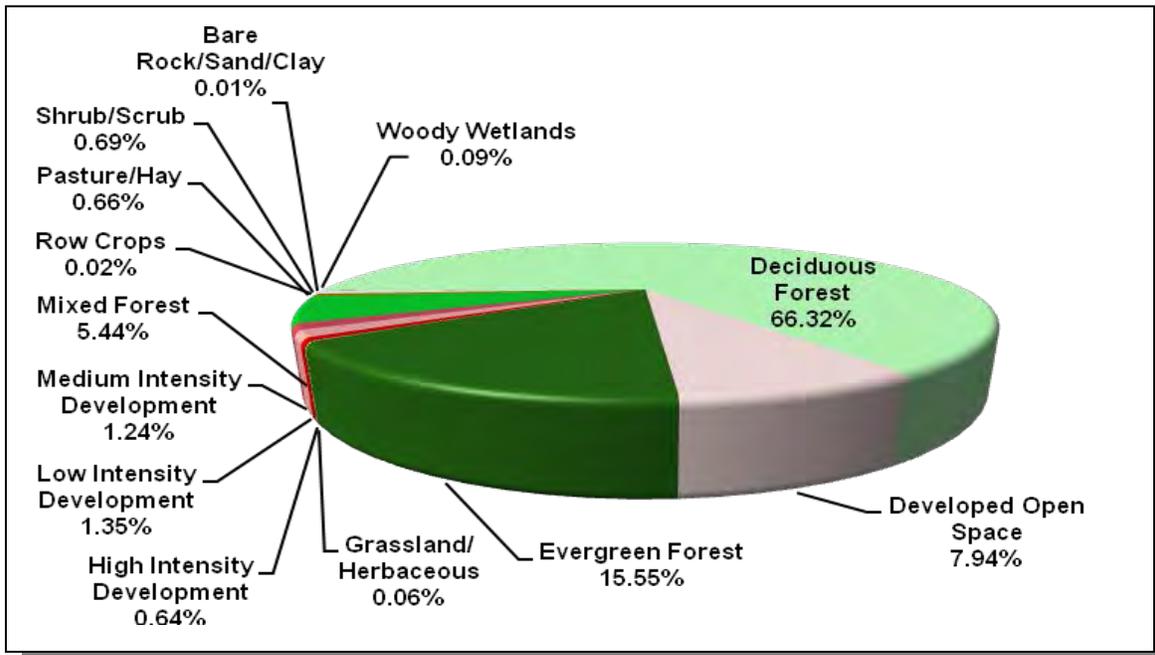
**Figure 4-156. Location of Subwatershed 060101070307.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



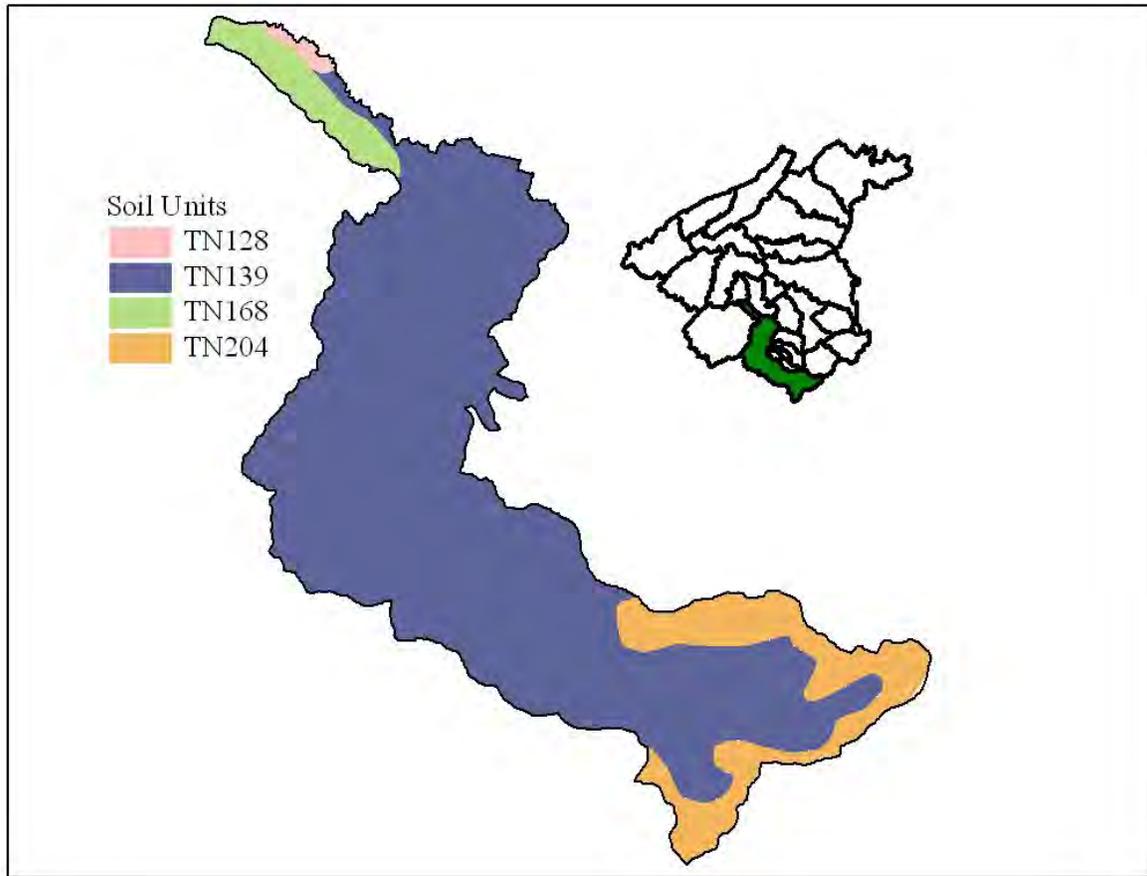
**Figure 4-157. Locational Details of Subwatershed 060101070307.**



**Figure 4-158. Illustration of Land Use Distribution in Subwatershed 060101070307.**



**Figure 4-159. Land Use Distribution in Subwatershed 060101070307.** More information is provided in Appendix IV.



**Figure 4-160. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070307.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN128	0.00	C	1.30	6.53	Clay Loam	0.26
TN139	0.00	C	11.84	4.82	Loam	0.20
TN168	0.00	C	1.28	5.65	Loam	0.34
TN204	0.00	B	3.95	4.80	Sandy Loam	0.19

**Table 4-93. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070307.** The definition of "Hydrologic Group" is provided in Appendix IV.

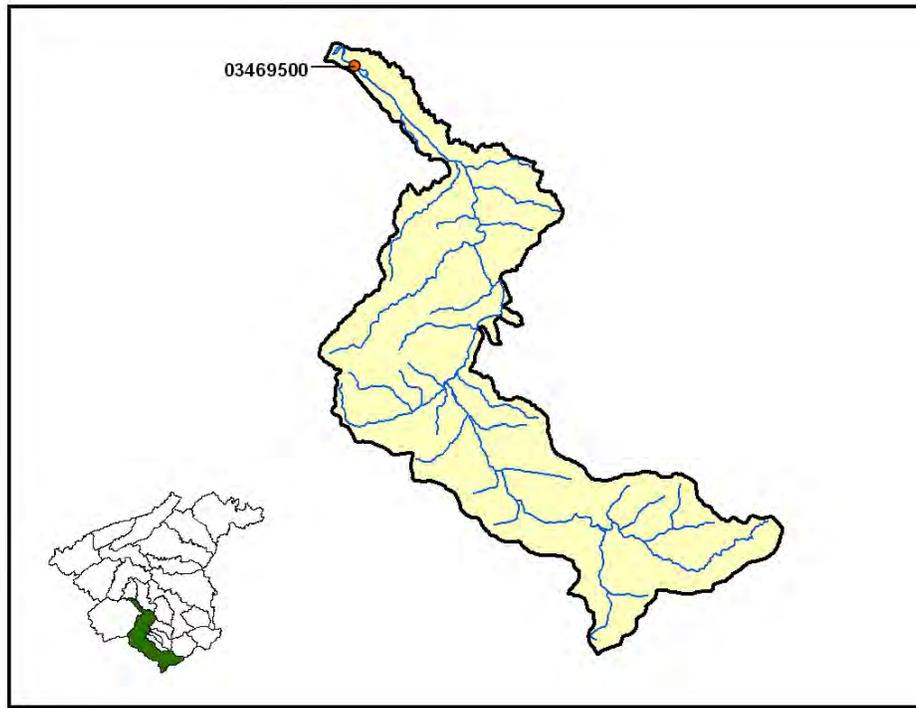
County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Sevier	51,043	62,774	71,170	8.75	4,465	5,491	6,225	39.40

*Table 4-94. Population Estimates in Subwatershed 060101070307.*

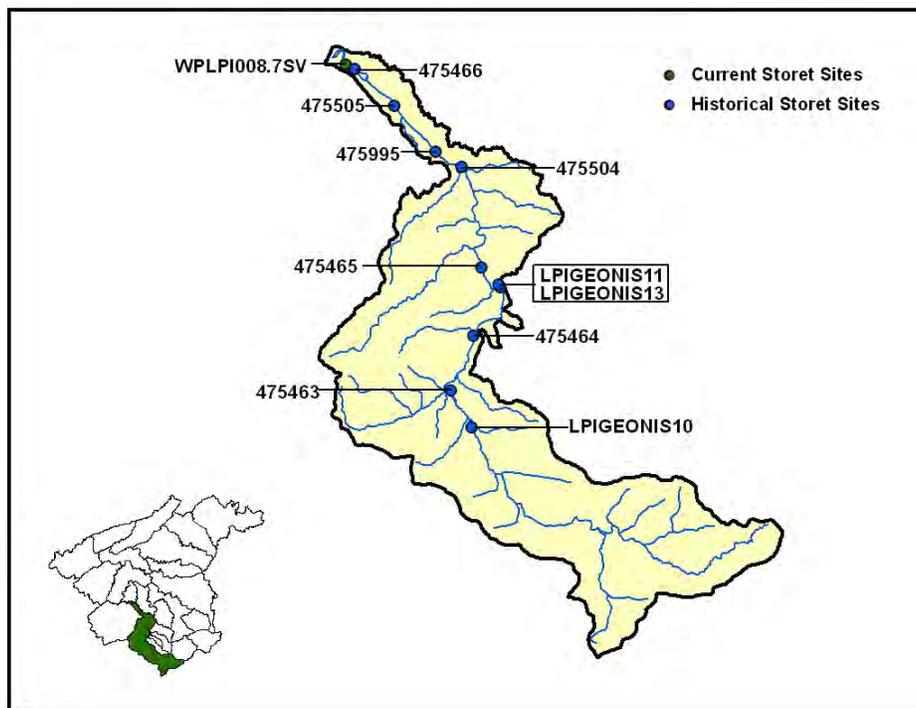
Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Gatlinburg	Sevier	3,355	2,931	1,942	989	0
Pigeon Forge	Sevier	3,168	1,353	1,000	347	6
<b>Total</b>		<b>6,523</b>	<b>4,284</b>	<b>2,942</b>	<b>1,336</b>	<b>6</b>

*Table 4-95. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070307.*

**4.2.P.ii. USGS Gaging Stations and STORET Sites**

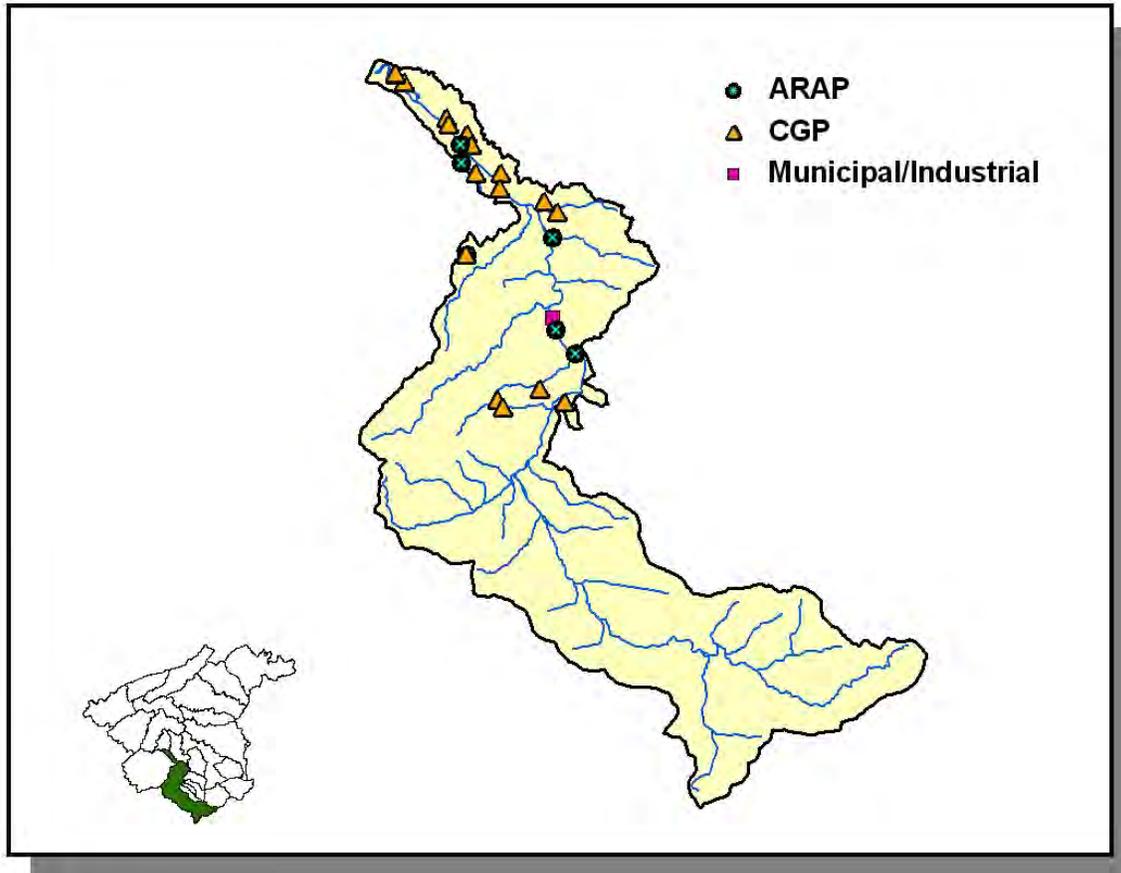


**Figure 4-161. Location of USGS Continuous Record Gaging Stations in Subwatershed 060101070307. More information is provided in Appendix IV.**

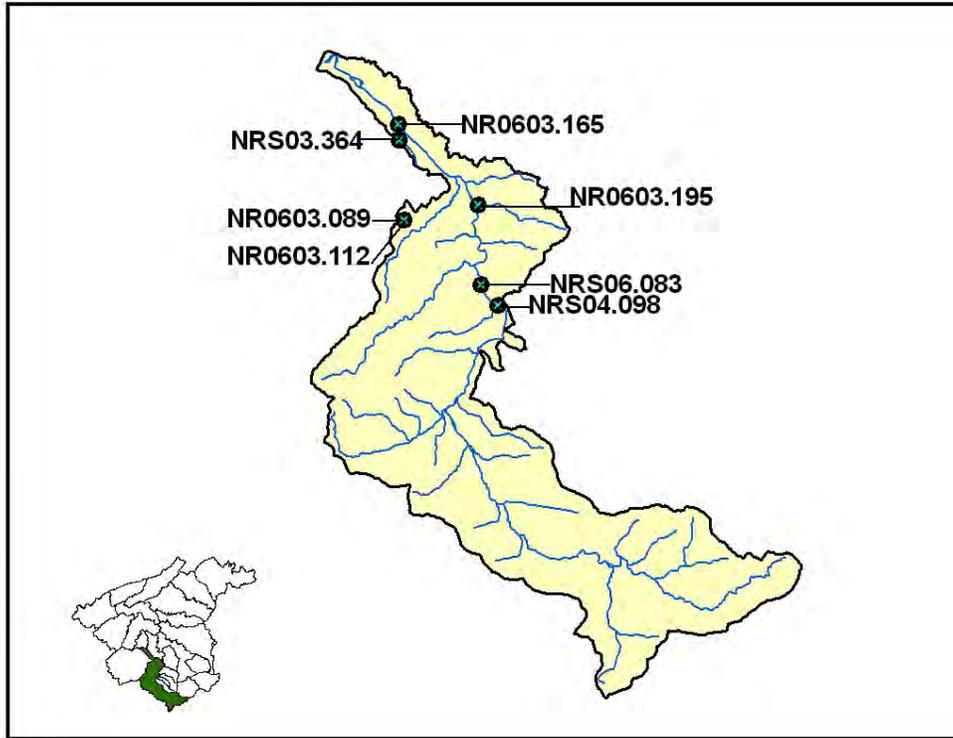


**Figure 4-162. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070307. More information, including site names and locations, is provided in Appendix IV.**

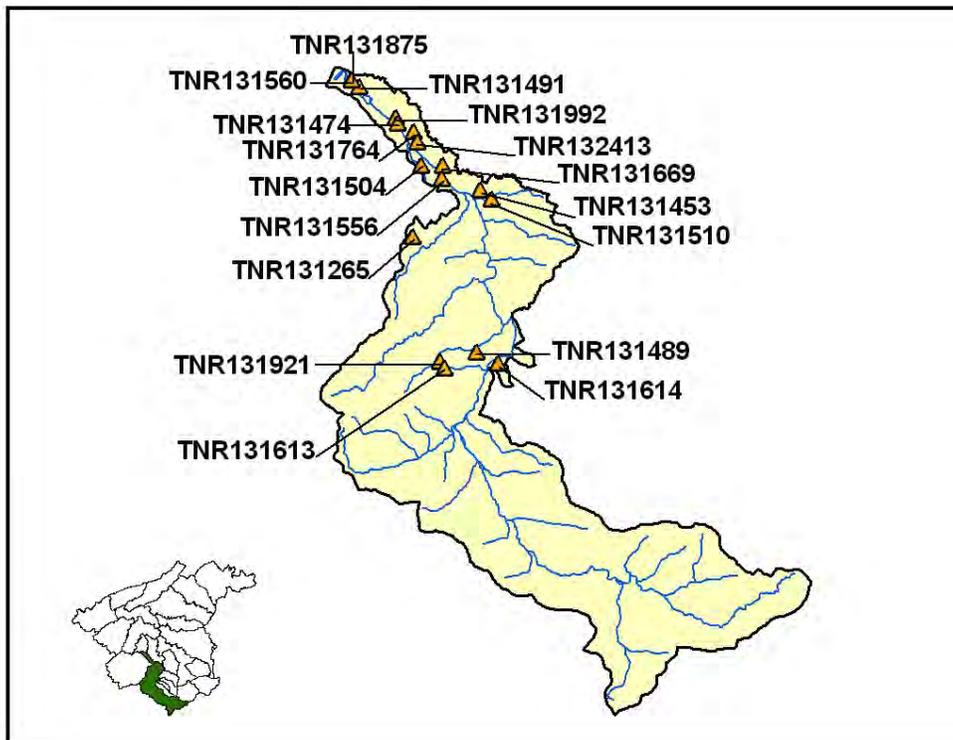
**4.2.P.iii. Permitted Activities.**



**Figure 4-163. Location of Permits Issued in Subwatershed 060101070307.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-164. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 060101070307. More information is provided in Appendix IV.**



**Figure 4-165. Location of CGP (Construction General Permit) Sites in Subwatershed 060101070307. More information is provided in Appendix IV.**



**Figure 4-166. Location of Permitted Municipal and Industrial Facilities in Subwatershed 060101070307.** Permit numbers in red indicate that the facility discharges to a stream listed on the 2006 303(d) list. More information, including the name of the facility is provided in Appendix IV.

PERMIT #	7Q10	DISCHARGE FLOW
TN0020117	5.5	3.0

**Table 4-96. Receiving Stream Flow Information Used for Limit Calculations for NPDES Dischargers to Waterbodies Listed on the 2006 303(d) List in Subwatershed 060101070307.** Data are in million gallons per day (MGD). Data were obtained from permit files.

PERMIT #	WET	FLOW	DO	TSS	TSS % REMOVAL	pH	E. coli
TN0020117	X	X	X	X	X	X	X

**Table 4-97. Parameters Monitored for Limits for NPDES Dischargers to Waterbodies Listed on the 2006 303(d) List in Subwatershed 060101070307.** WET, Whole Effluent Toxicity; DO, Dissolved Oxygen; TSS, Total Suspended Solids.

PERMIT #	AMMONIA AS N (TOTAL)	TRC	CBOD <sub>5</sub>	CBOD % REMOVAL
TN0020117	X	X	X	X

**Table 4-98. Parameters Monitored for Limits for NPDES Dischargers to Waterbodies Listed on the 2006 303(d) List in Subwatershed 060101070307.** TRC, Total Residual Chlorine; CBOD<sub>5</sub>, Carbonaceous Biochemical Oxygen Demand (5-Day).

**4.2.P.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Sevier	9,816	19,013	172	26	394	234

**Table 4-99. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Sevier	254.5	127.4	0.3	0.9

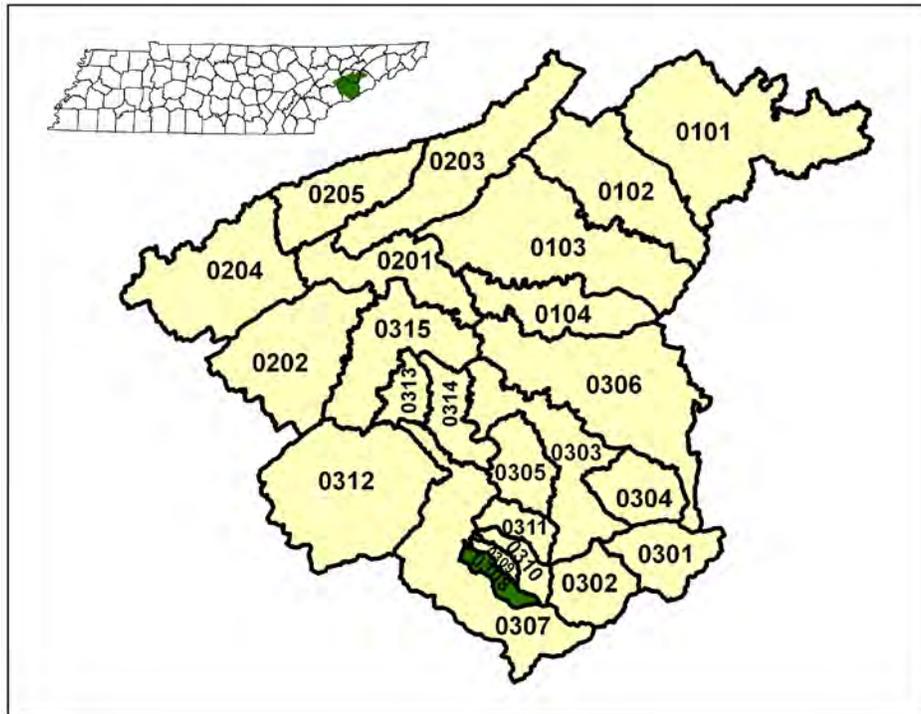
**Table 4-100. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Wheat (Close Grown Cropland)	9.53
Corn (Row Crops)	5.13
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.49
Grass Forbs Legumes Mixed (Pastureland)	0.47
Grass (Hayland)	0.22
Farmsteads and Ranch Headquarters	0.21
Legume Grass (Hayland)	0.06

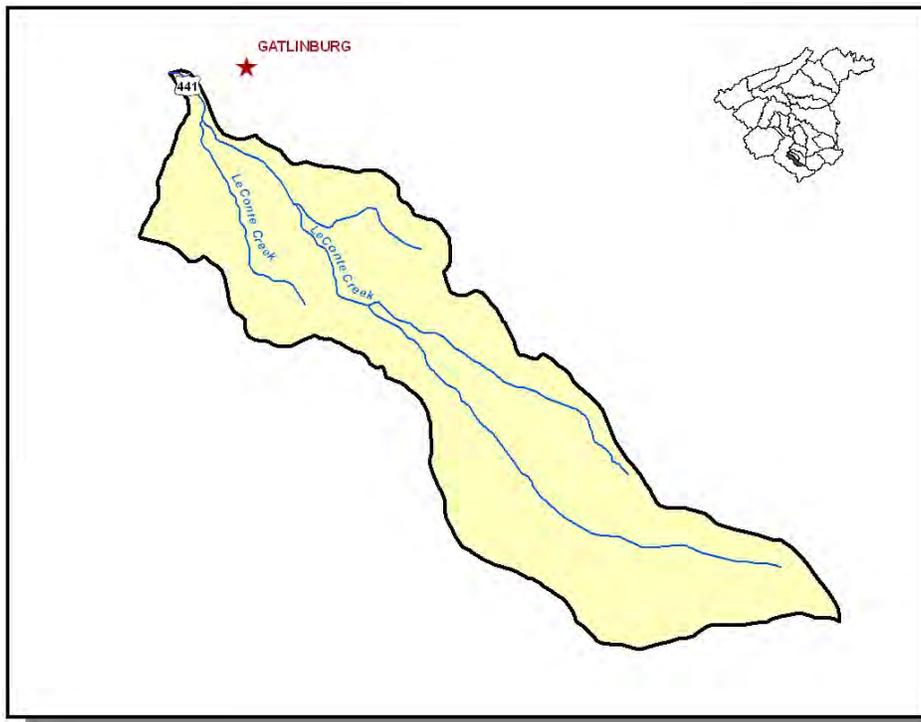
**Table 4-101. Annual Estimated Total Soil Loss in Subwatershed 060101070307.**

**4.2.Q. 060101070308 (Le Conte Creek)**

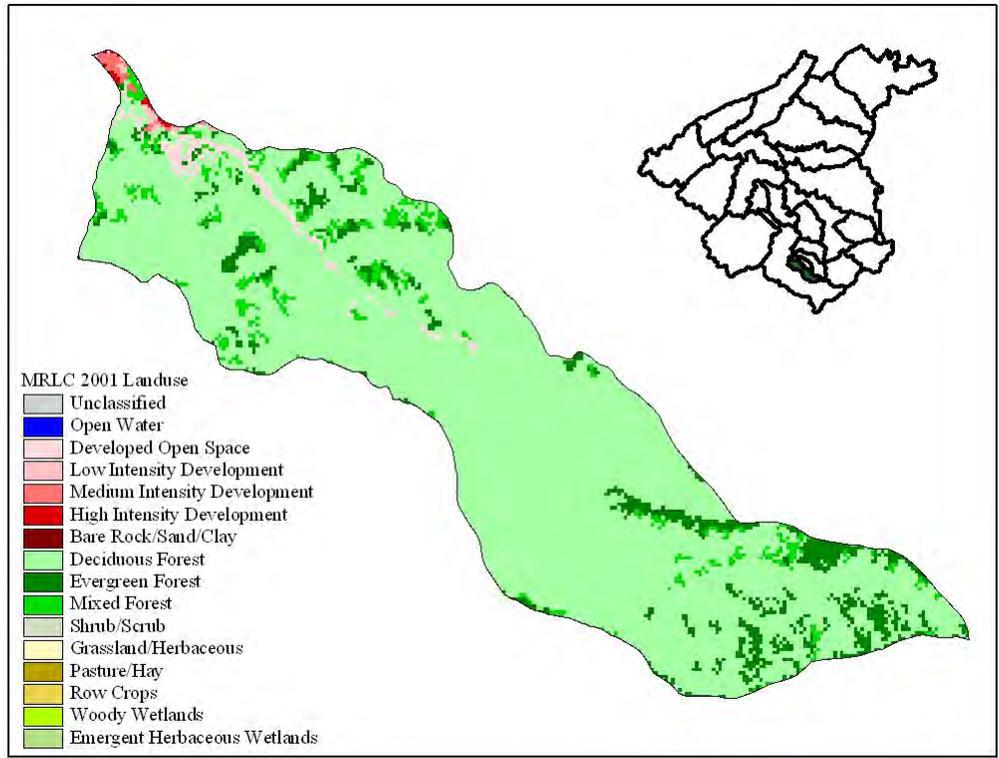
**4.2.Q.i. General Description**



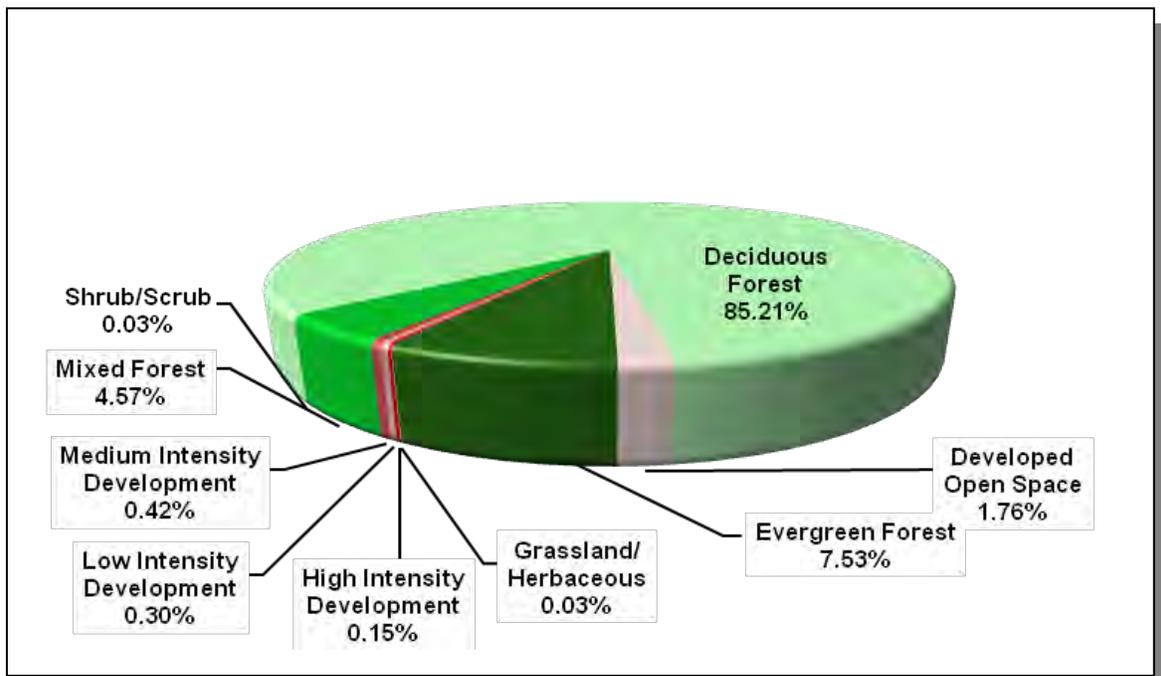
**Figure 4-167. Location of Subwatershed 060101070308.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



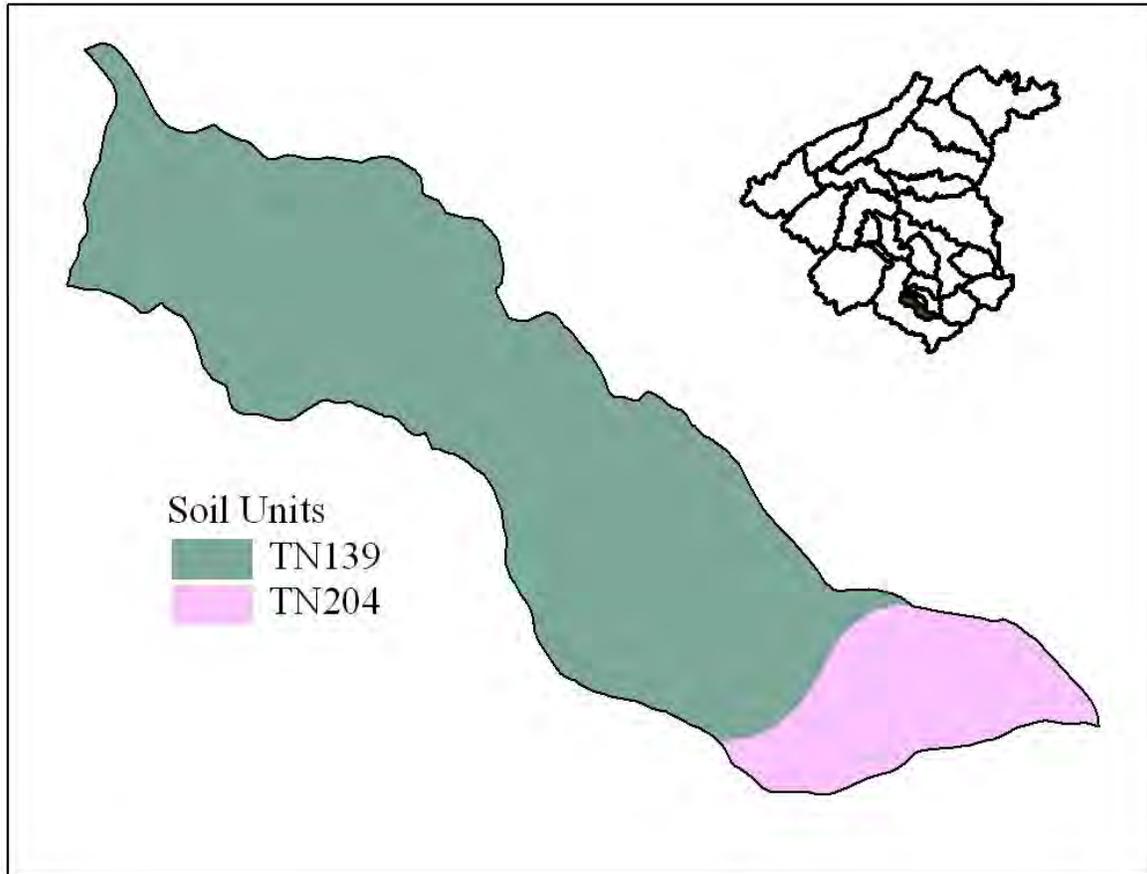
**Figure 4-168. Locational Details of Subwatershed 060101070308.**



**Figure 4-169. Illustration of Land Use Distribution in Subwatershed 060101070308.**



**Figure 4-170. Land Use Distribution in Subwatershed 060101070308.** More information is provided in Appendix IV.



**Figure 4-171. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070308.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN139	0.00	C	11.84	4.82	Loam	0.20
TN204	0.00	B	3.95	4.80	Sandy Loam	0.19

**Table 4-102. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070308.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Sevier	51,043	62,774	71,170	0.86	440	541	613	39.3

**Table 4-103. Population Estimates in Subwatershed 060101070308.**

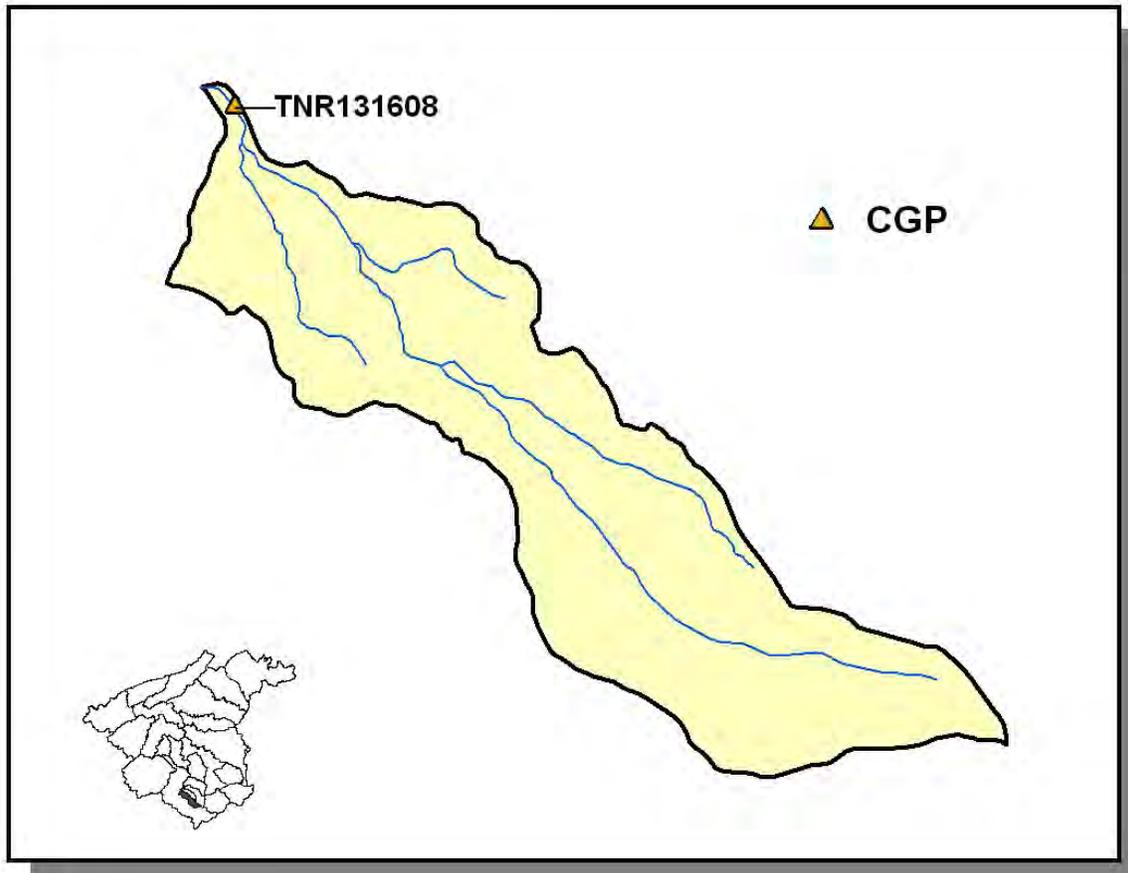
Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Gatlinburg	Sevier	3,355	2,931	1,942	989	0

**Table 4-104. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070308.**

**4.2.Q.ii. USGS Gaging Stations and STORET Sites**

There are no USGS continuous record gaging stations or STORET sites in subwatershed 060101070308.

**4.2.Q.iii. Permitted Activities.**



**Figure 4-172. Location of Permits Issued in Subwatershed 060101070308.** More information, including the names of facilities, is provided in Appendix IV.

**4.2.Q.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Sevier	9,816	19,013	172	26	394	234

**Table 4-105. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Sevier	254.5	127.4	0.3	0.9

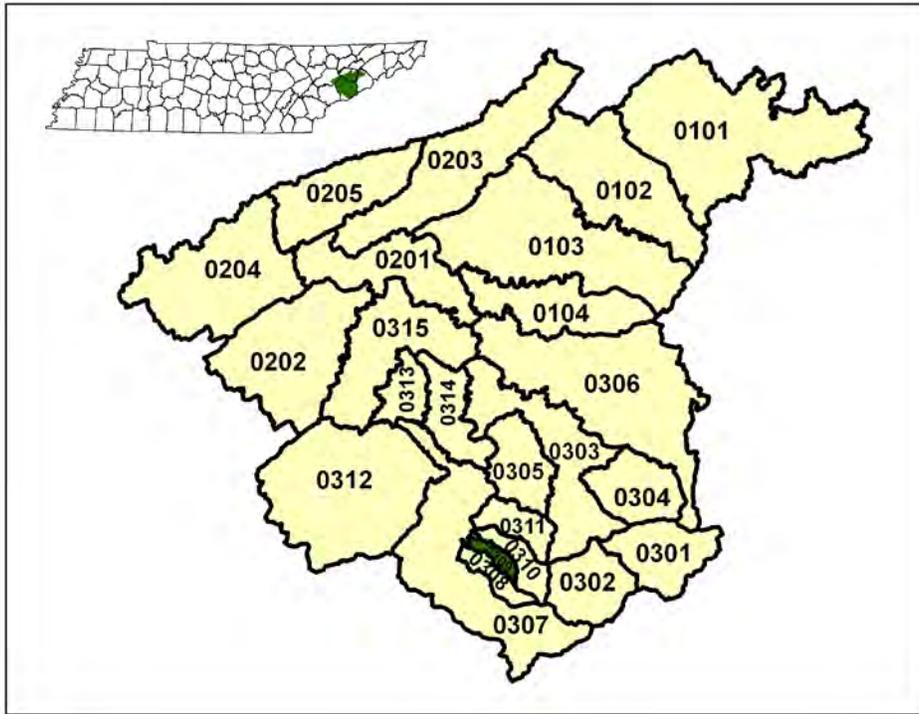
**Table 4-106. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Wheat (Close Grown Cropland)	9.53
Corn (Row Crops)	5.13
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.48
Grass Forbs Legumes Mixed (Pastureland)	0.47
Grass (Hayland)	0.22
Farmsteads and Ranch Headquarters	0.22
Legume Grass (Hayland)	0.06

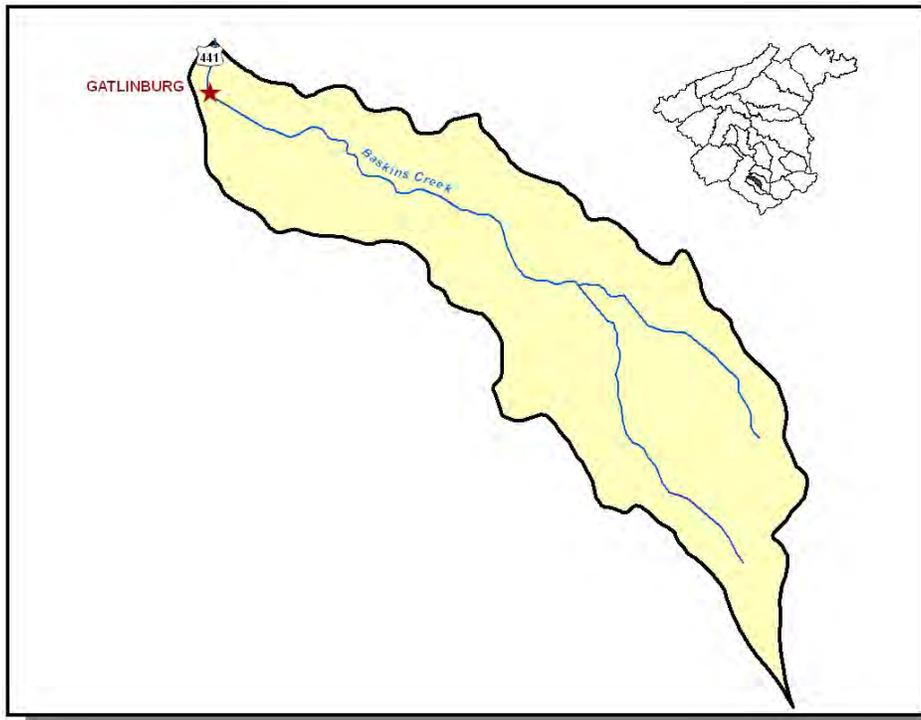
**Table 4-107. Annual Estimated Total Soil Loss in Subwatershed 060101070308.**

**4.2.R. 060101070309 (Baskins Creek)**

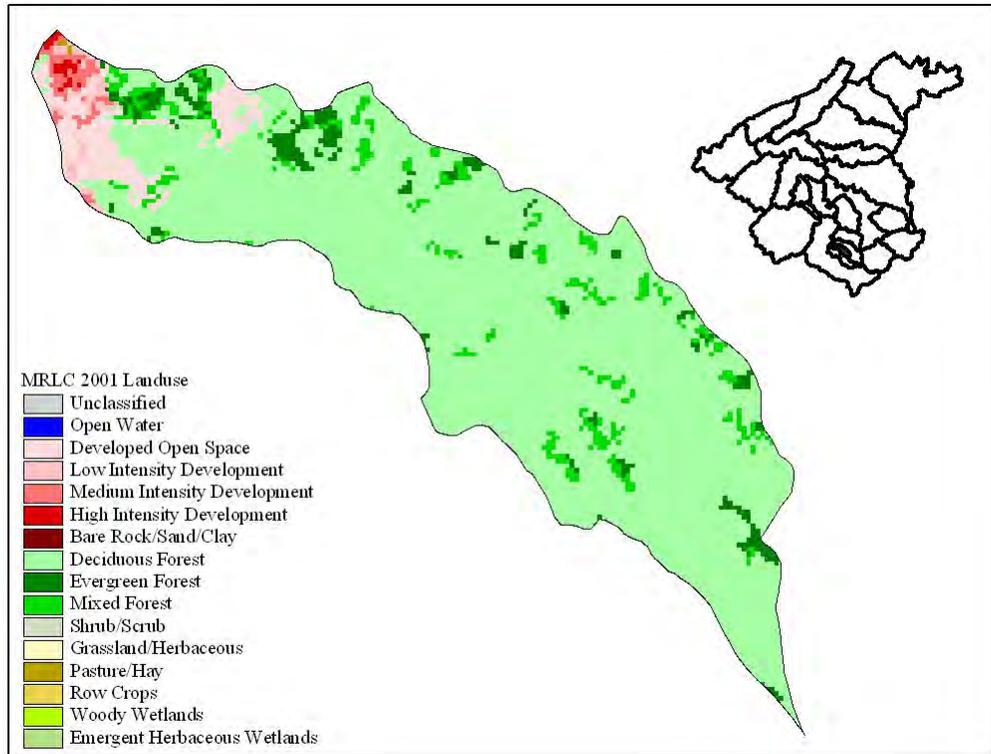
**4.2.R.i. General Description**



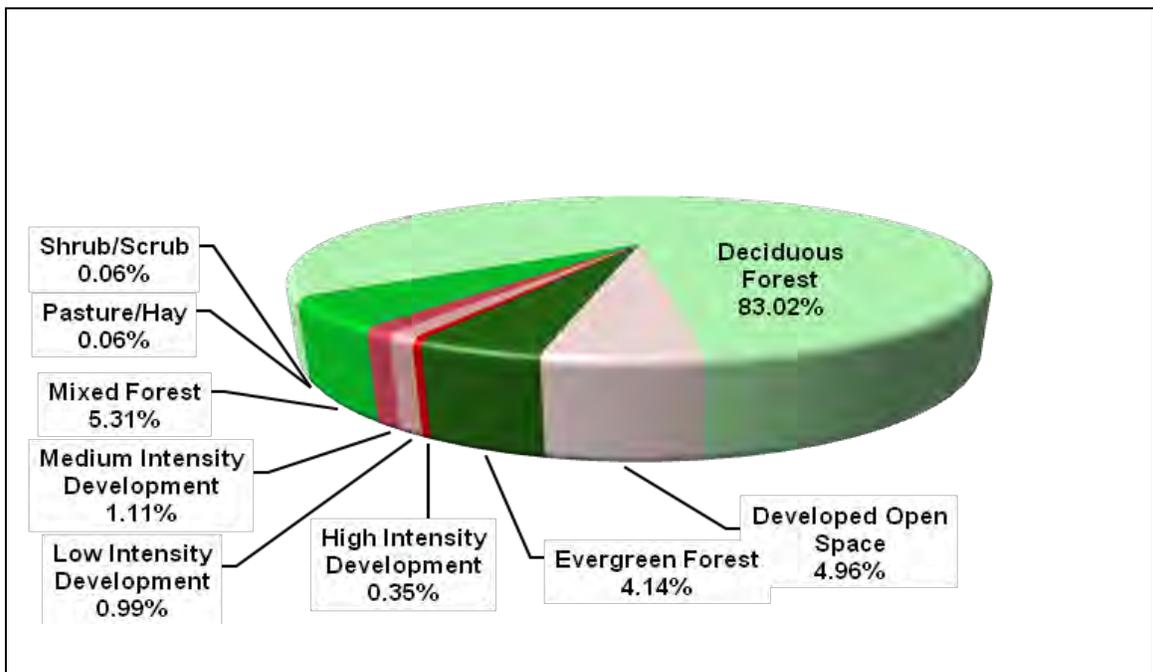
**Figure 4-173. Location of Subwatershed 060101070309.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



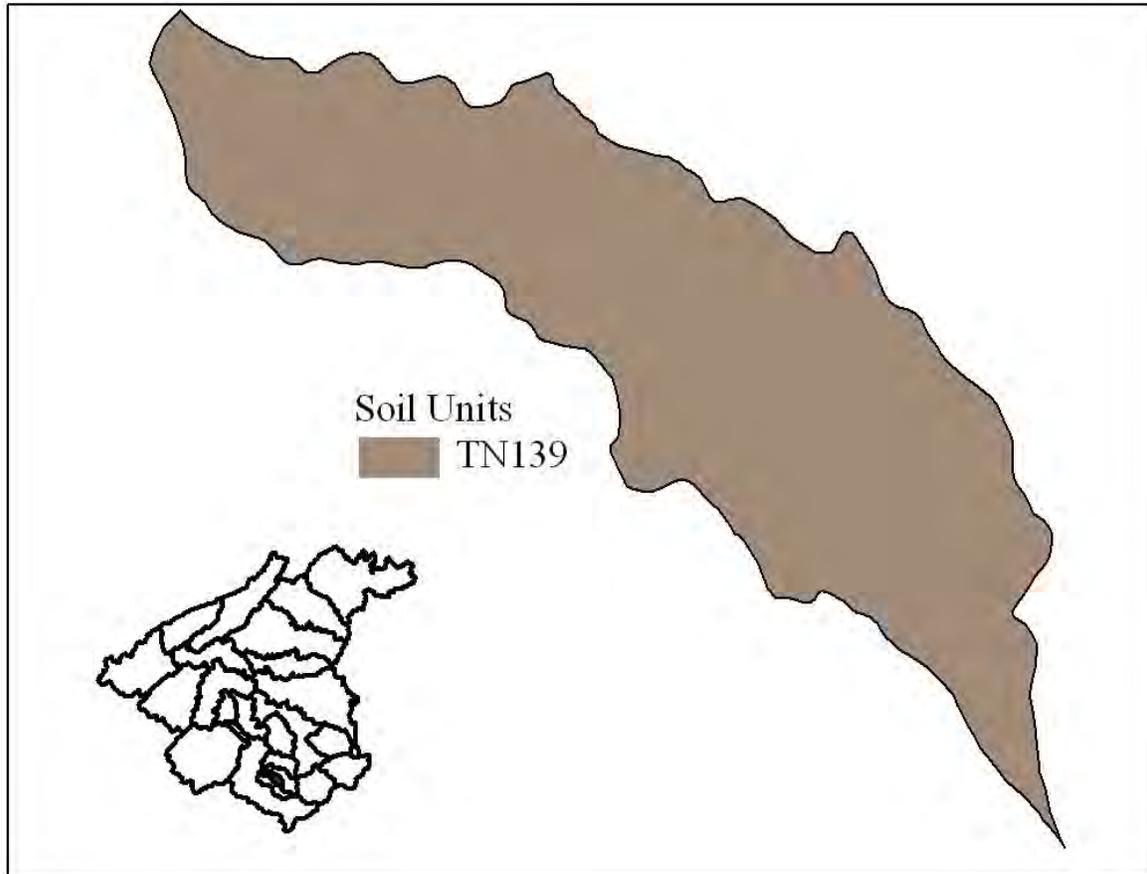
**Figure 4-174. Locational Details of Subwatershed 060101070309.**



**Figure 4-175. Illustration of Land Use Distribution in Subwatershed 060101070309.**



**Figure 4-176. Land Use Distribution in Subwatershed 060101070309.** More information is provided in Appendix IV.



**Figure 4-177. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070309.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN139	0.00	C	11.84	4.82	Loam	0.20

**Table 4-108. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070309.** The definition of “Hydrologic Group” is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Sevier	51,043	62,774	71,170	0.44	225	277	314	39.60

**Table 4-109. Population Estimates in Subwatershed 060101070309.**

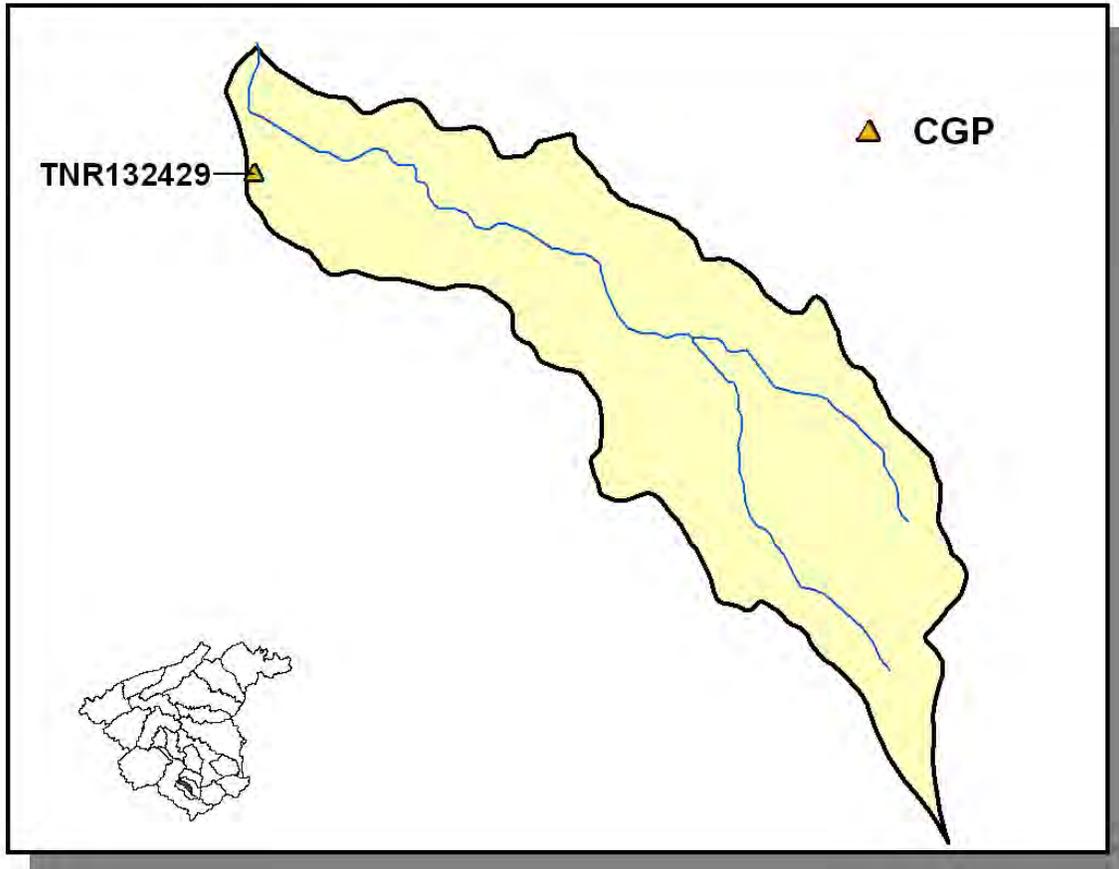
Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Gatlinburg	Sevier	3,355	2,931	1942	989	0

**Table 4-110. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070309.**

**4.2.R.ii. USGS Gaging Stations and STORET Sites**

There are no USGS continuous record gaging stations or STORET sites located in subwatershed 060101070309.

**4.2.R.iii. Permitted Activities.**



**Figure 4-178. Location of Permits Issued in Subwatershed 060101070309.** More information, including the names of facilities, is provided in Appendix IV.

**4.2.R.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Sevier	9,816	19,013	172	26	394	234

**Table 4-111. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Sevier	254.5	127.4	0.3	0.9

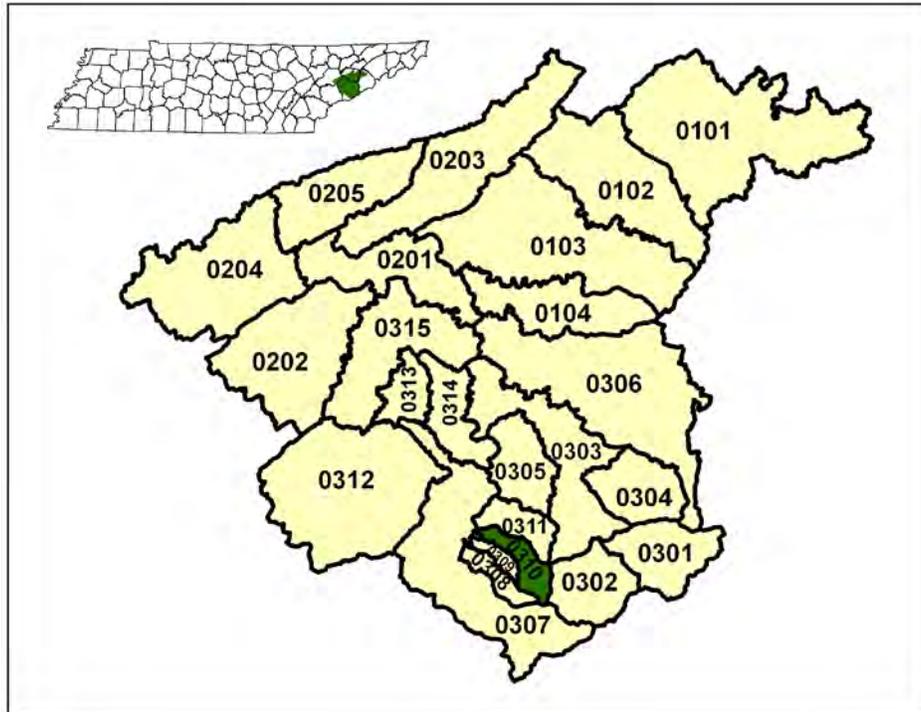
**Table 4-112. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Wheat (Close Grown Cropland)	9.53
Corn (Row Crops)	5.13
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.48
Grass Forbs Legumes Mixed (Pastureland)	0.47
Grass (Hayland)	0.22
Farmsteads and Ranch Headquarters	0.22

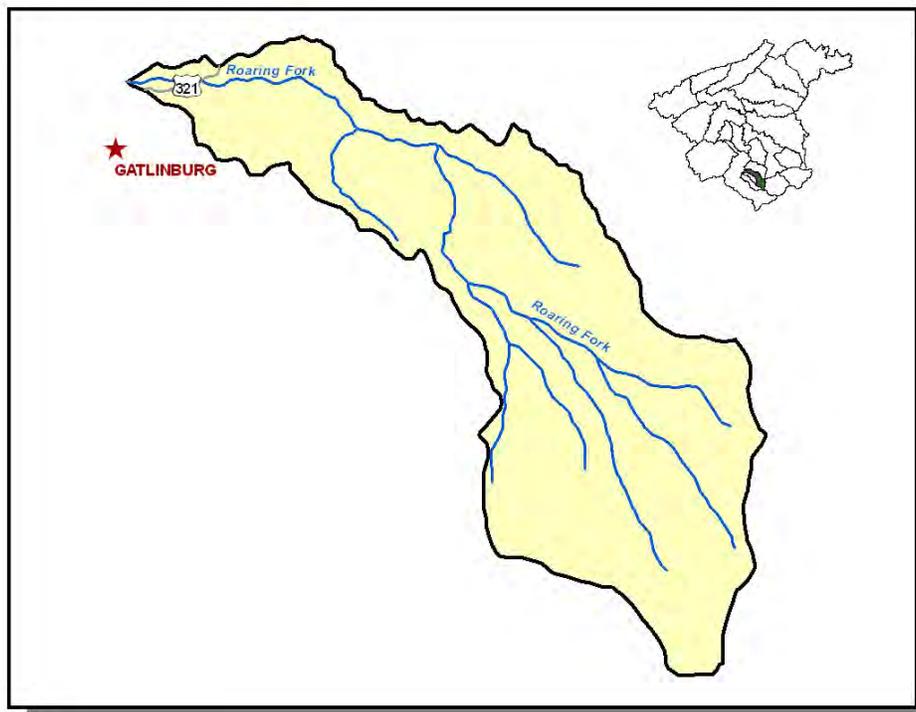
**Table 4-113. Annual Estimated Total Soil Loss in Subwatershed 060101070309.**

**4.2.S. 060101070310 (Roaring Fork)**

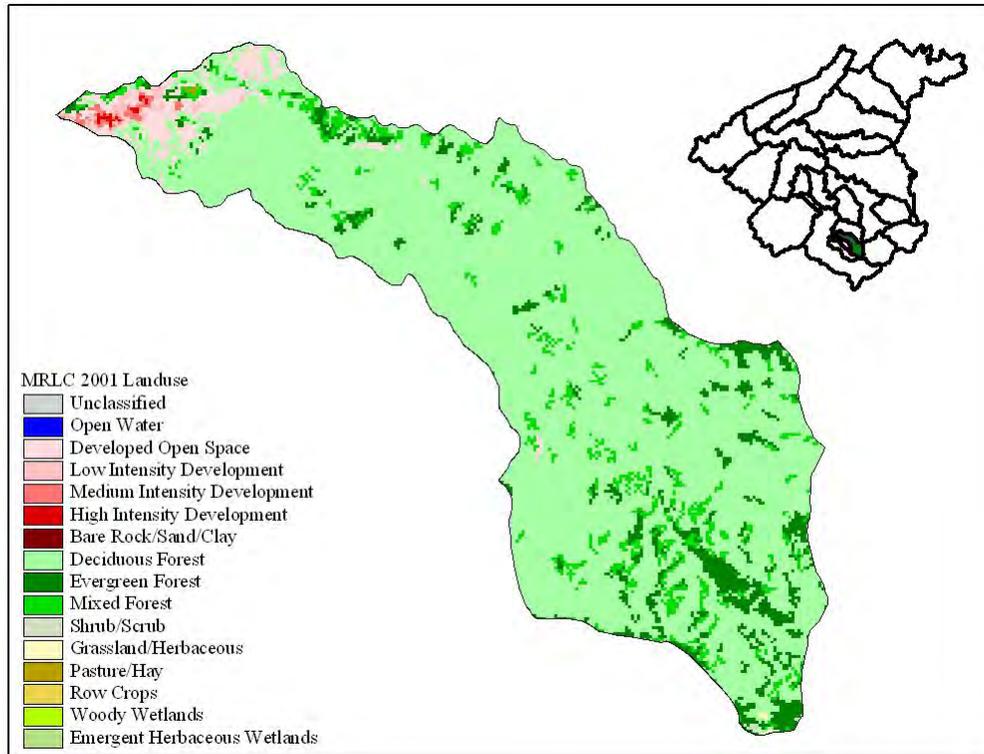
**4.2.S.i. General Description**



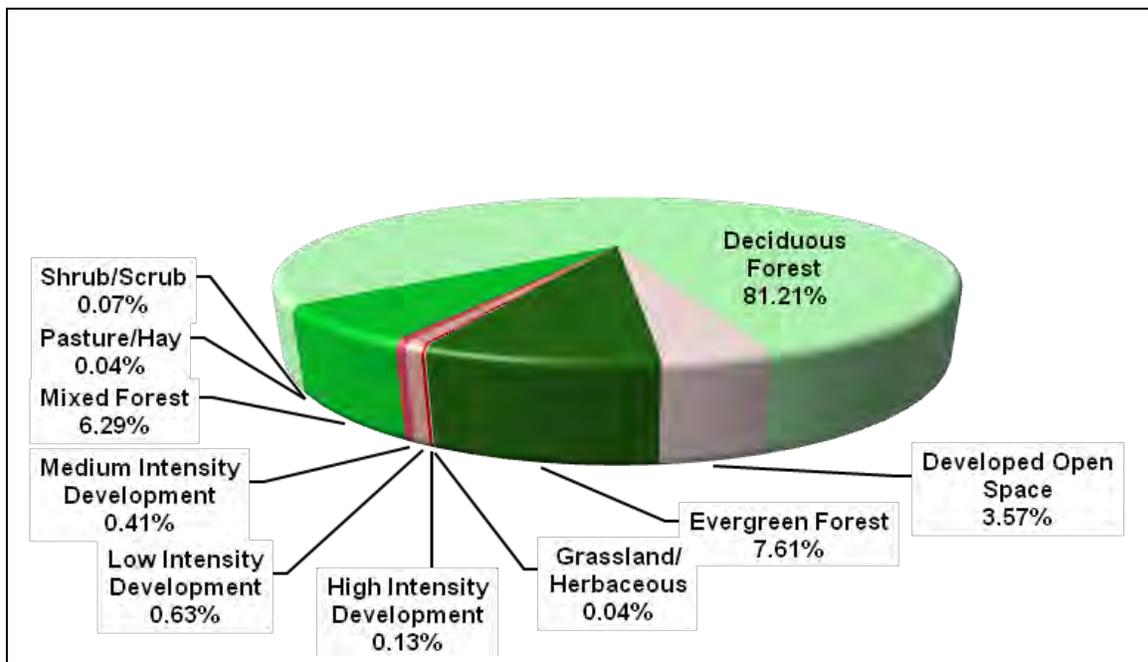
**Figure 4-179. Location of Subwatershed 060101070310.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



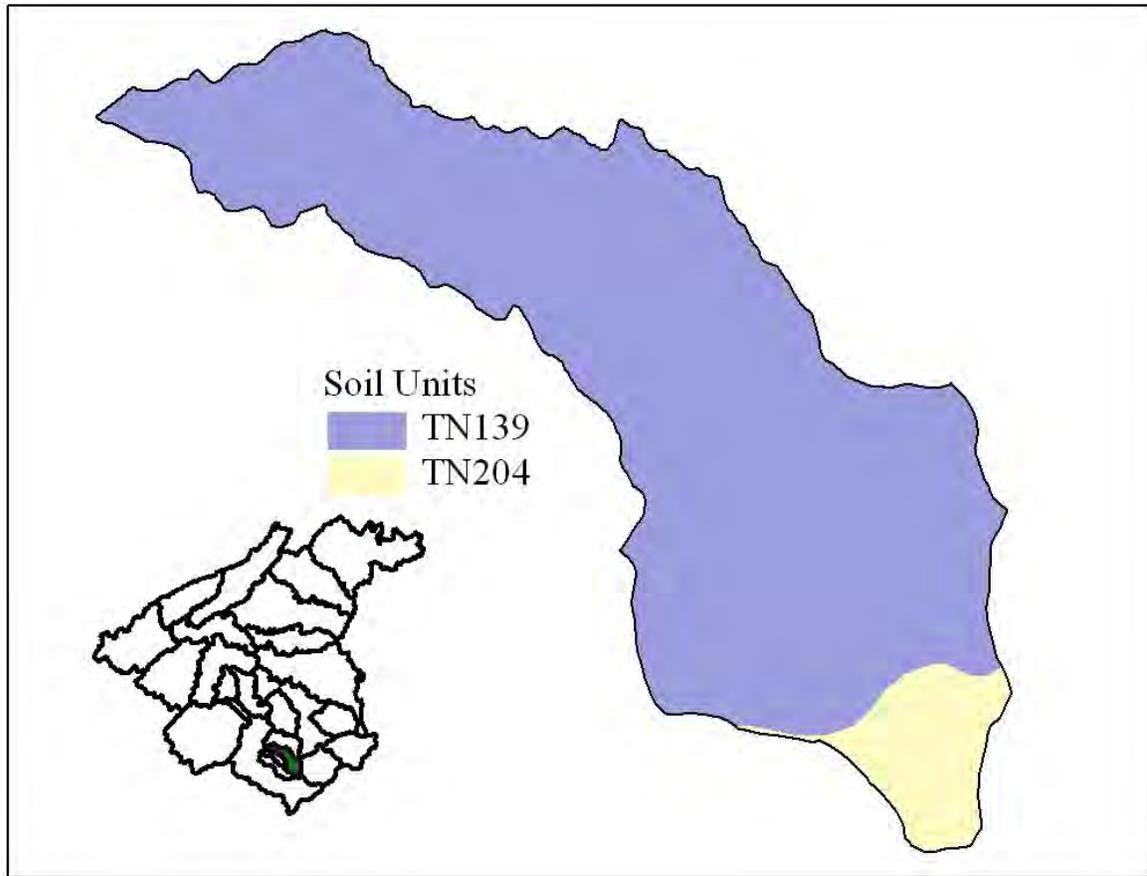
**Figure 4-180. Locational Details of Subwatershed 060101070310.**



**Figure 4-181. Illustration of Land Use Distribution in Subwatershed 060101070310.**



**Figure 4-182. Land Use Distribution in Subwatershed 060101070310.** More information is provided in Appendix IV.



**Figure 4-183. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070310.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN139	0.00	C	11.84	4.82	Loam	0.20
TN204	0.00	B	3.95	4.80	Sandy Loam	0.19

**Table 4-114. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070310.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Sevier	51,043	62,774	71,170	1.18	604	743	842	39.4

**Table 4-115. Population Estimates in Subwatershed 060101070310.**

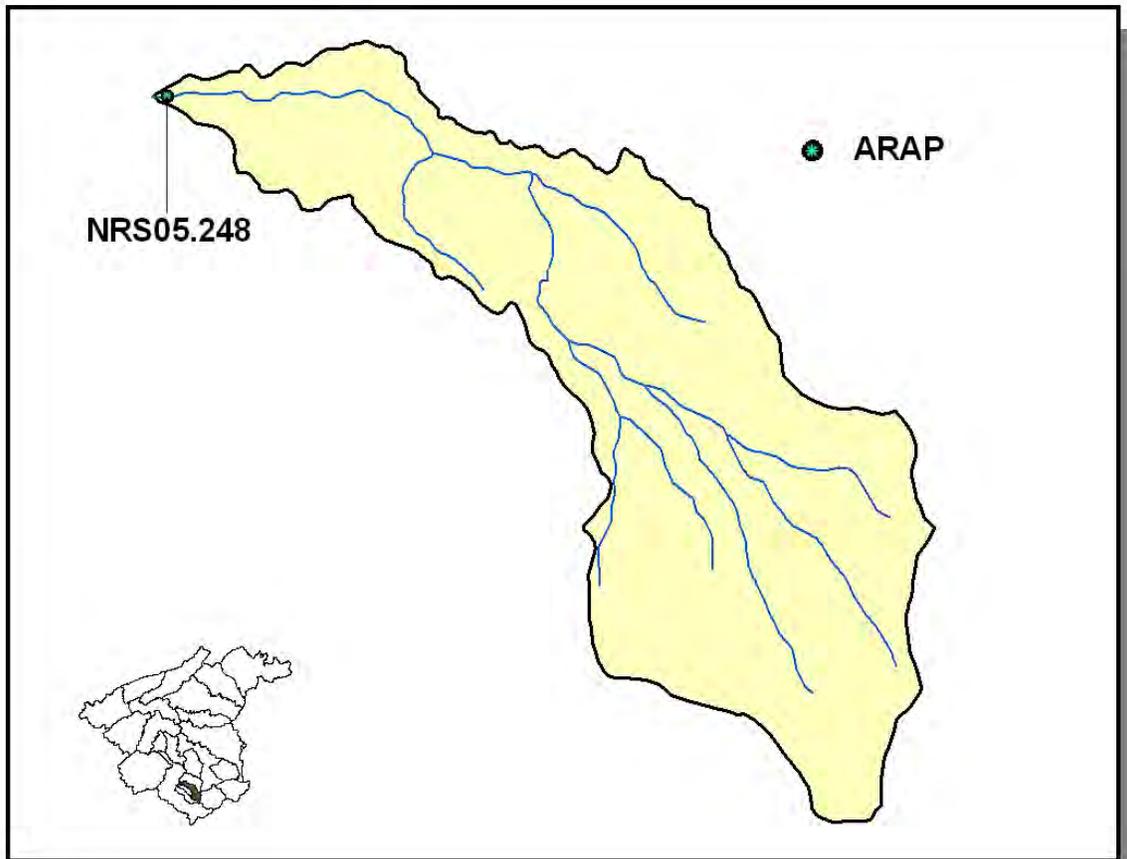
Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Gatlinburg	Sevier	3,355	2,931	1,942	989	0

**Table 4-116. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070310.**

**4.2.S.ii. USGS Gaging Stations and STORET Sites**

There are no USGS continuous record gaging stations or STORET sites located in subwatershed 060101070310.

**4.2.S.iii. Permitted Activities.**



**Figure 4-184. Location of Permits Issued in Subwatershed 060101070310.** More information, including the names of facilities, is provided in Appendix IV.

**4.2.S.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Sevier	9,816	19,013	172	26	394	234

**Table 4-117. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Sevier	254.5	127.4	0.3	0.9

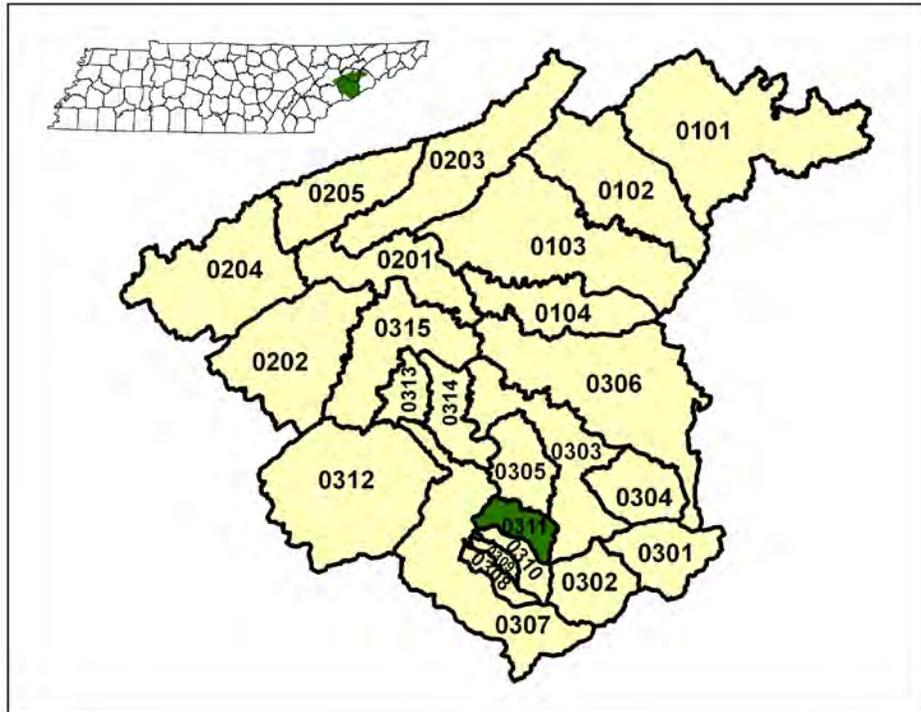
**Table 4-118. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Wheat (Close Grown Cropland)	9.53
Corn (Row Crops)	5.13
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.48
Grass Forbs Legumes Mixed (Pastureland)	0.47
Grass (Hayland)	0.22
Farmsteads and Ranch Headquarters	0.22
Legume Grass (Hayland)	0.06

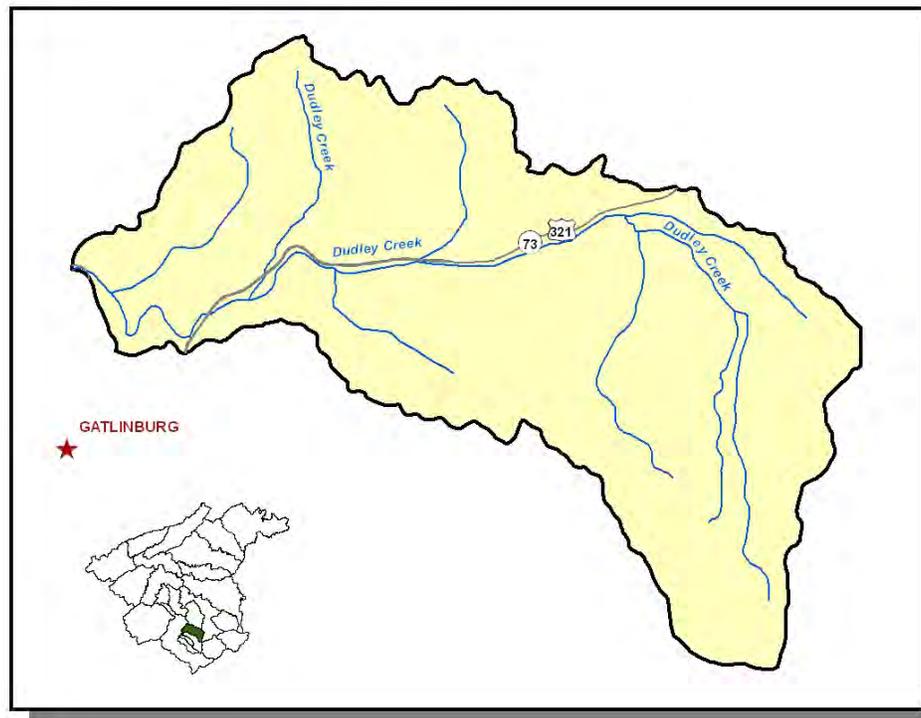
**Table 4-119. Annual Estimated Total Soil Loss in Subwatershed 060101070310.**

**4.2.T. 060101070311 (Dudley Creek).**

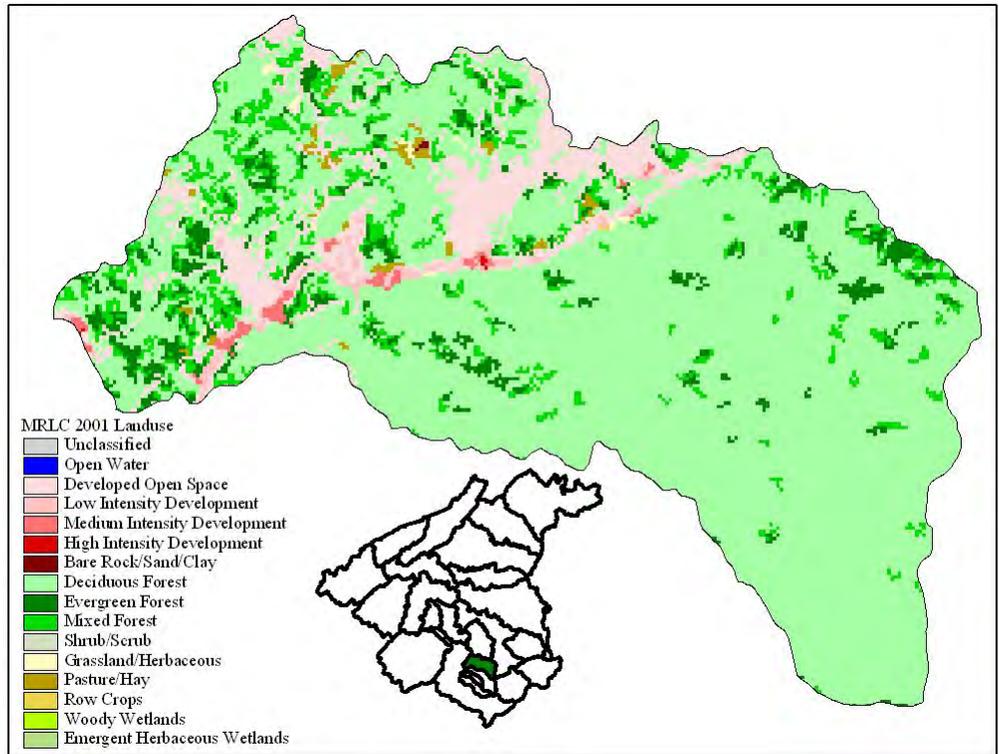
**4.2.T.i. General Description**



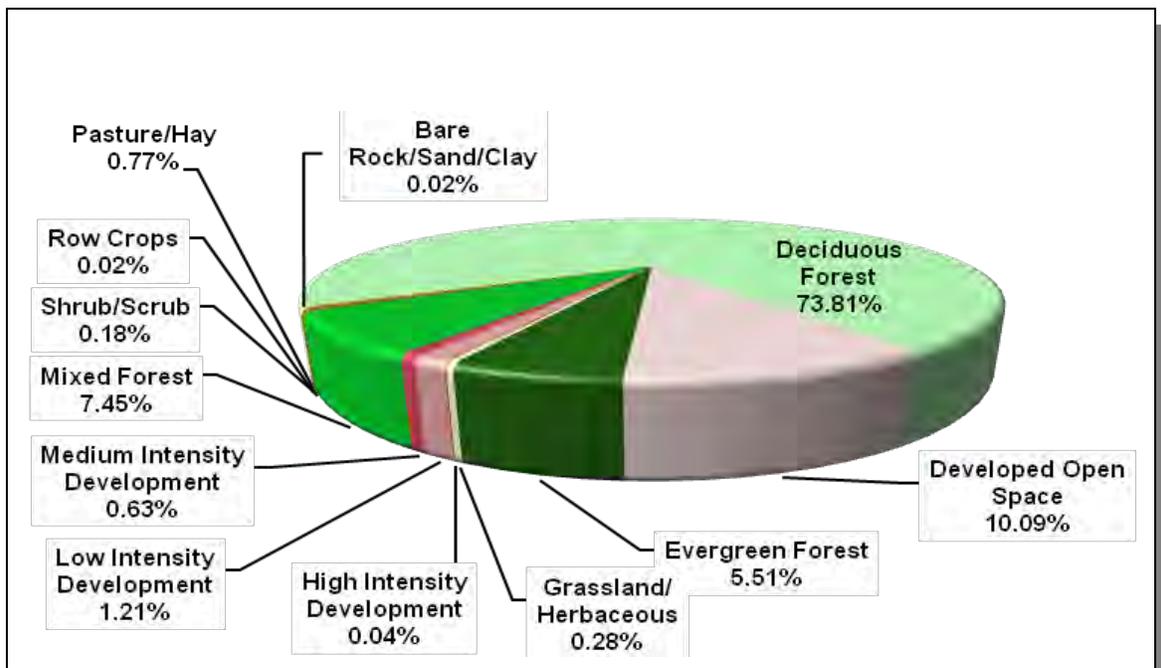
**Figure 4-185. Location of Subwatershed 060101070311.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



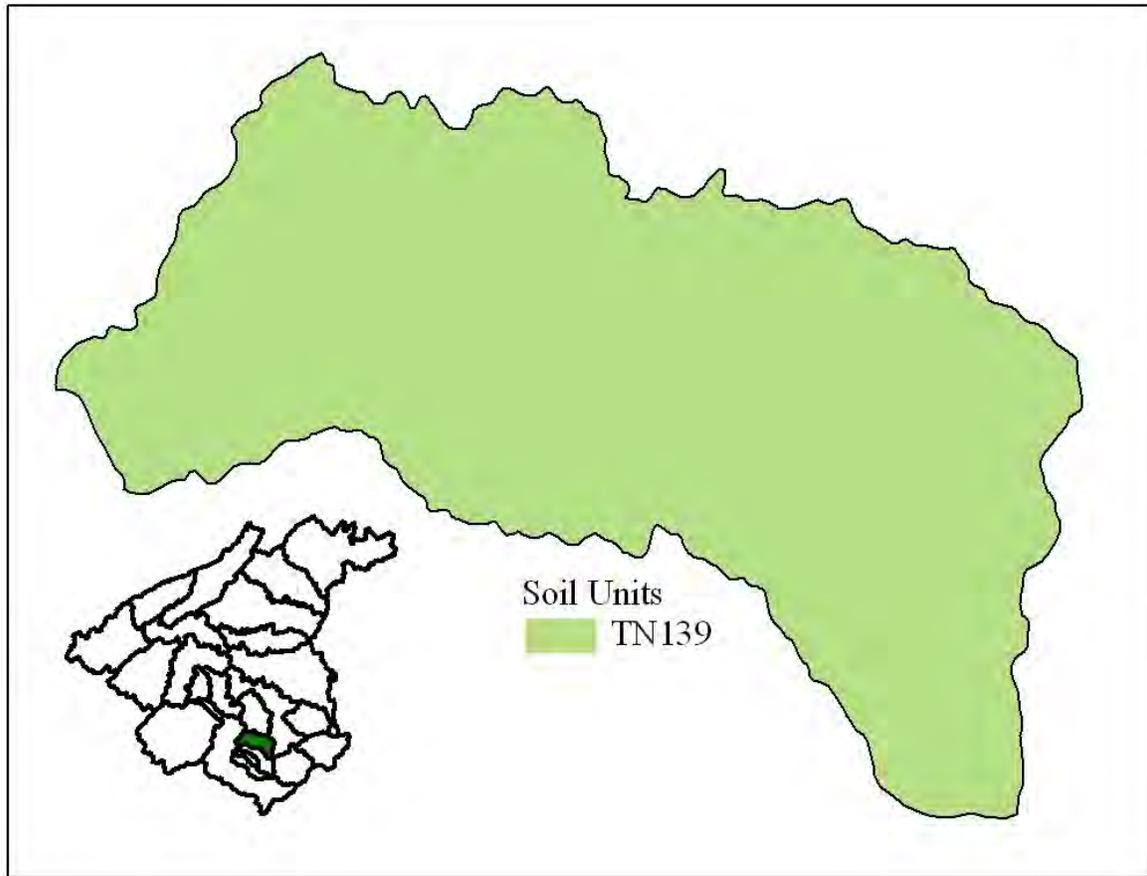
**Figure 4-186. Locational Details of Subwatershed 060101070311.**



**Figure 4-187. Illustration of Land Use Distribution in Subwatershed 060101070311.**



**Figure 4-188. Land Use Distribution in Subwatershed 060101070311. More information is provided in Appendix IV.**



**Figure 4-189. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070311.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN139	0.00	C	11.84	4.82	Loam	0.20

**Table 4-120. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070311.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Sevier	51,043	62,774	71,170	1.47	749	921	1,044	39.40

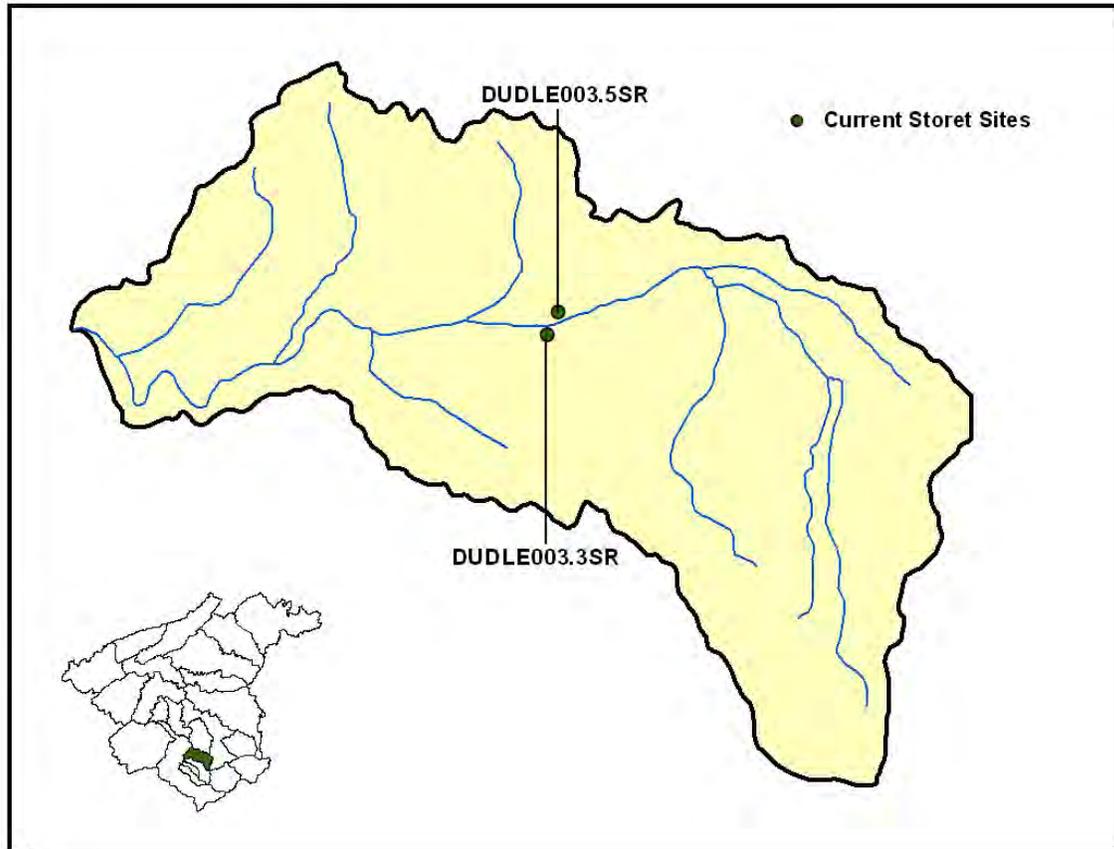
**Table 4-121. Population Estimates in Subwatershed 060101070311.**

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Gatlinburg	Sevier	3,355	2,931	1,942	989	0

**Table 4-122. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070311.**

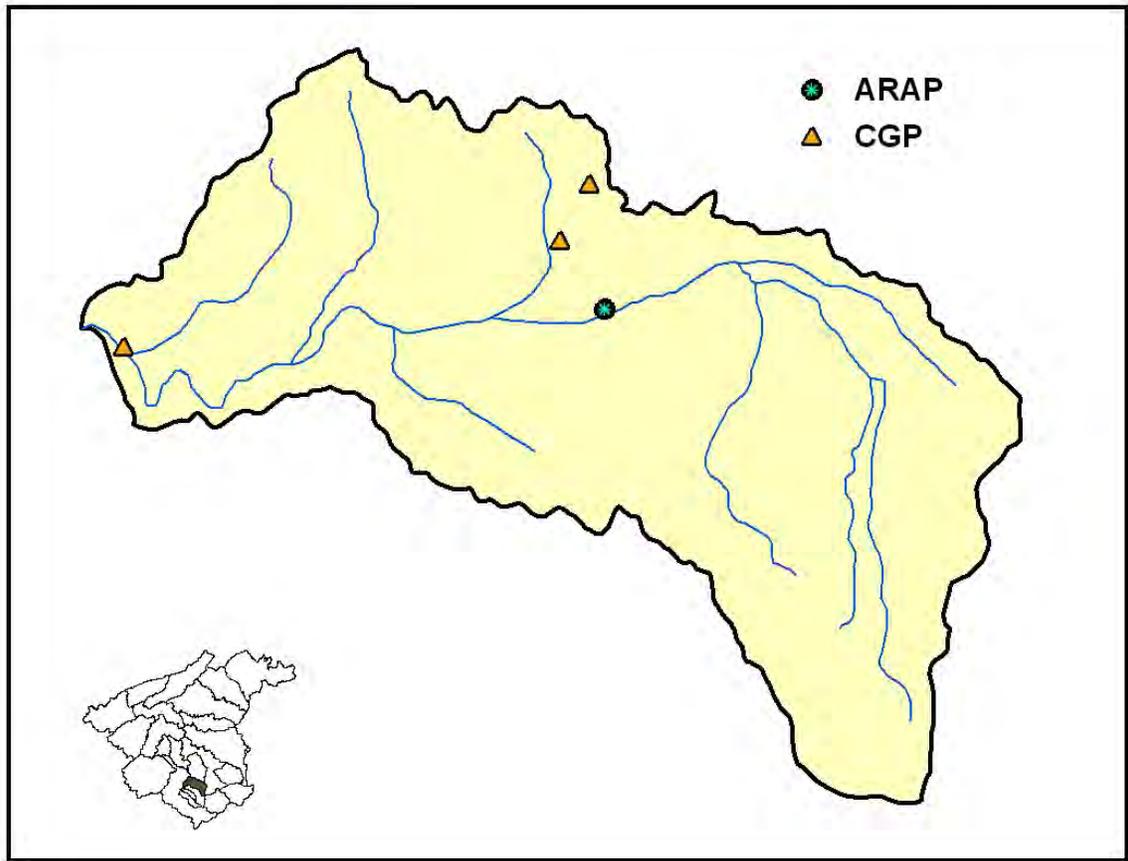
**4.2.T.ii. USGS Gaging Stations and STORET Sites**

There are no USGS continuous record gaging stations located in subwatershed 060101070311.

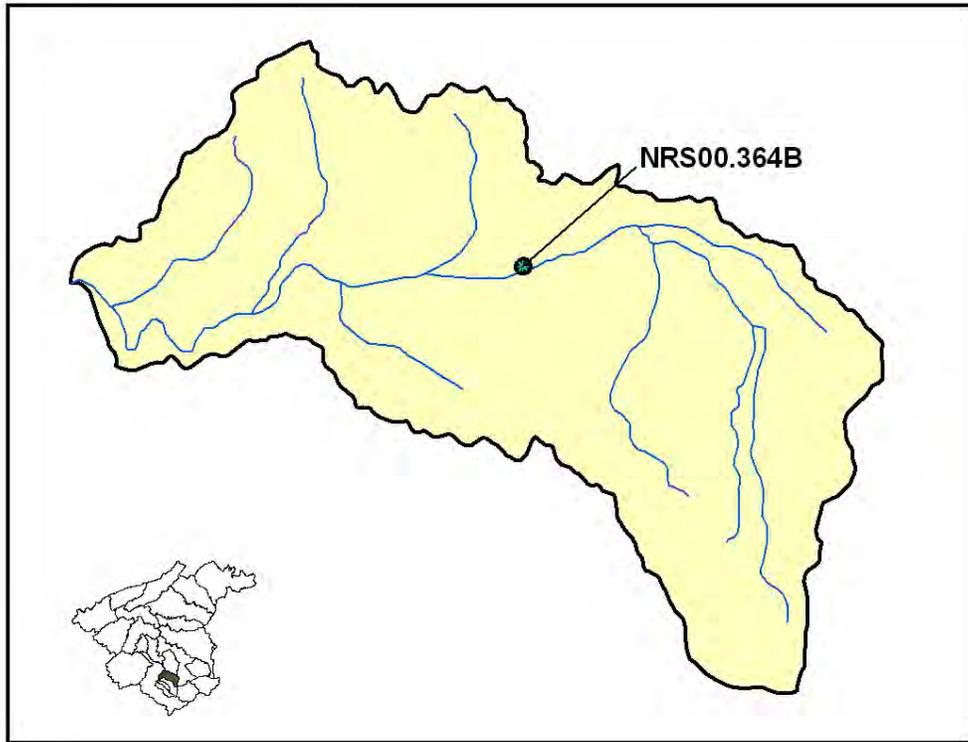


**Figure 4-190. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070311. More information, including site names and locations, is provided in Appendix IV.**

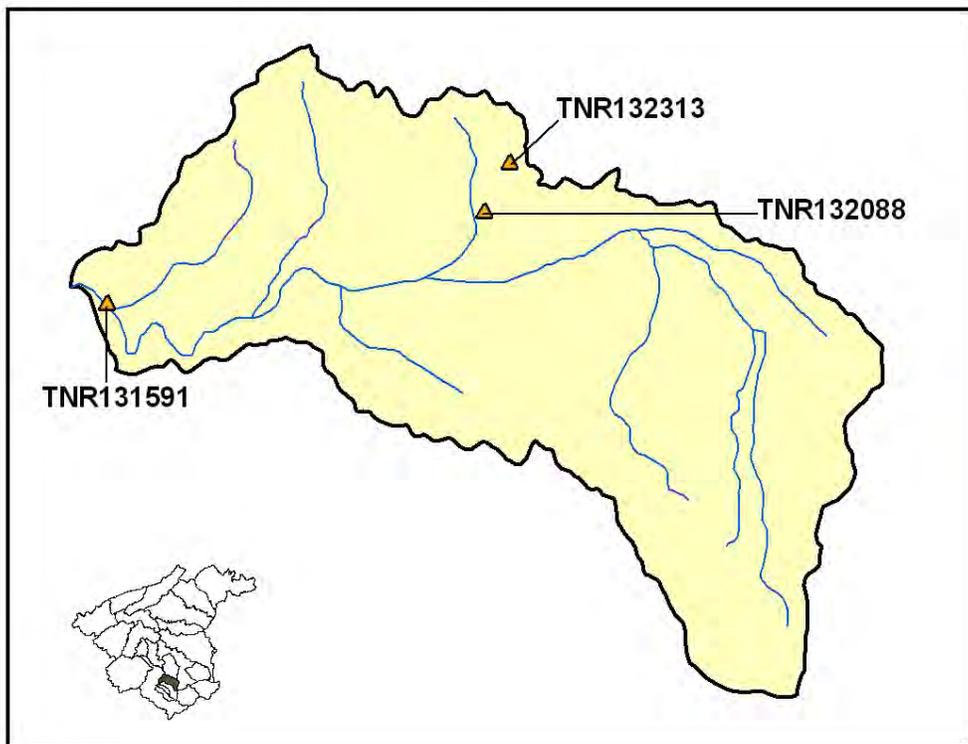
**4.2.T.iii. Permitted Activities.**



**Figure 4-191. Location of Permits Issued in Subwatershed 060101070311.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-192. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 060101070311. More information is provided in Appendix IV.**



**Figure 4-193. Location of CGP (Construction General Permit) Sites in Subwatershed 060101070311. More information is provided in Appendix IV.**

**4.2.T.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Sevier	9,816	19,013	172	26	394	234

**Table 4-123. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Sevier	254.5	127.4	0.3	0.9

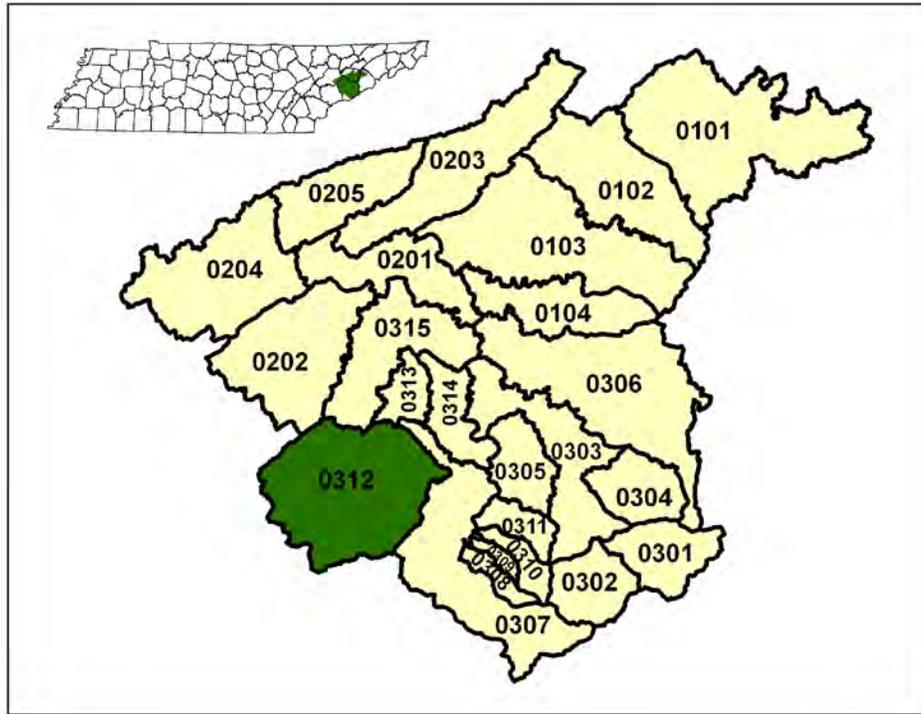
**Table 4-124. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Wheat (Close Grown Cropland)	9.53
Corn (Row Crops)	5.13
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.48
Grass Forbs Legumes Mixed (Pastureland)	0.47
Grass (Hayland)	0.22
Farmsteads and Ranch Headquarters	0.22
Legume Grass (Hayland)	0.06

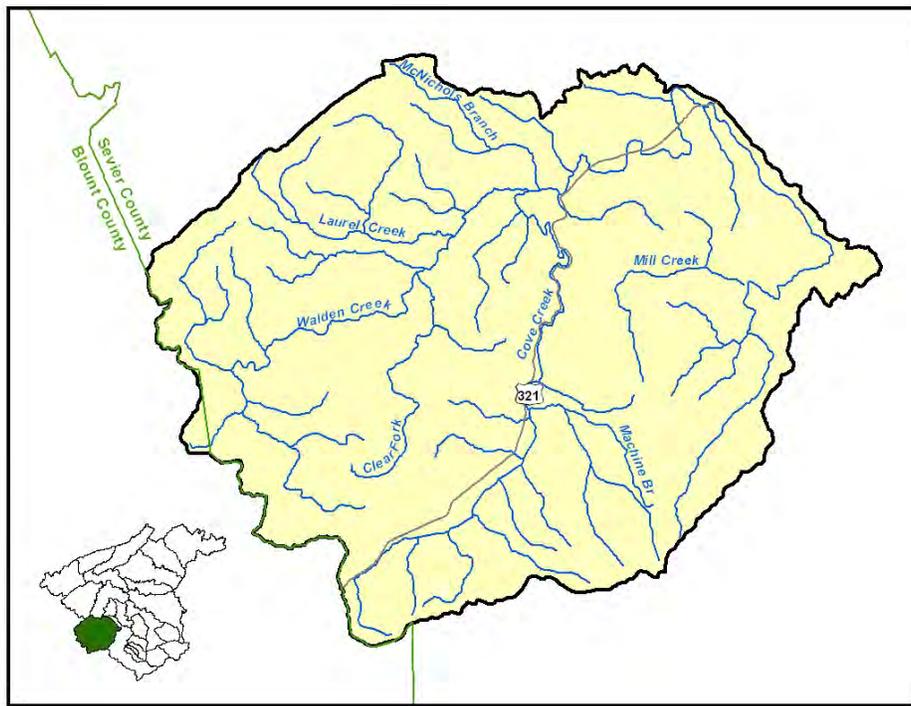
**Table 4-125. Annual Estimated Total Soil Loss in Subwatershed 060101070311.**

**4.2.U. 060101070312 (Waldon Creek)**

**4.2.U.i. General Description**



**Figure 4-194. Location of Subwatershed 060101070312.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



**Figure 4-195. Locational Details of Subwatershed 060101070312.**

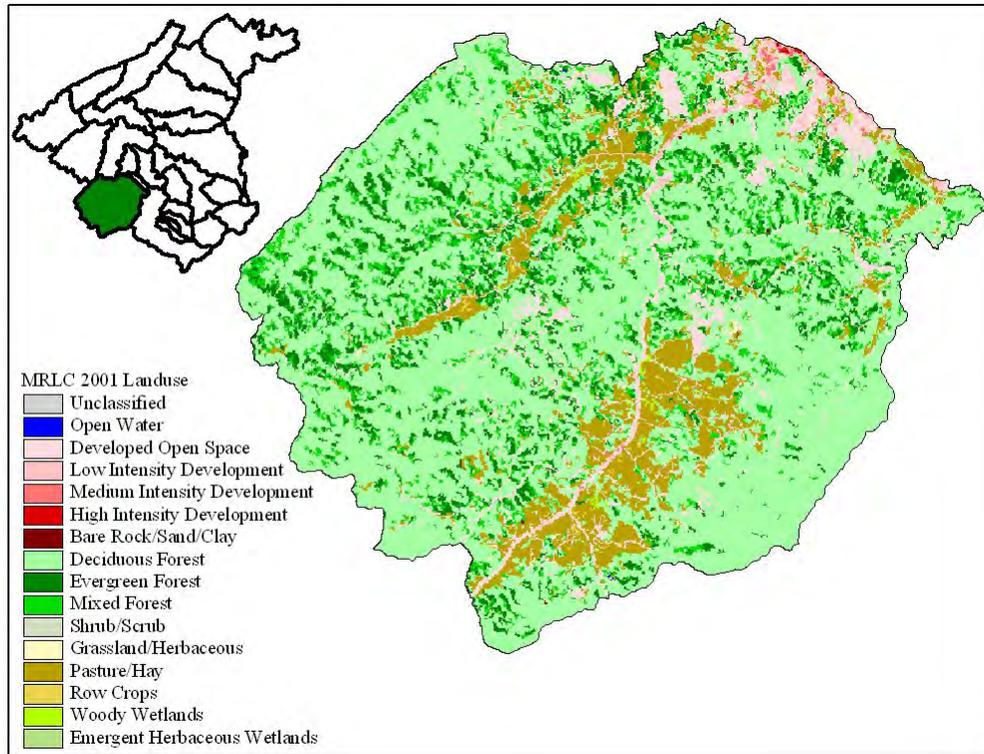


Figure 4-196. Illustration of Land Use Distribution in Subwatershed 060101070312.

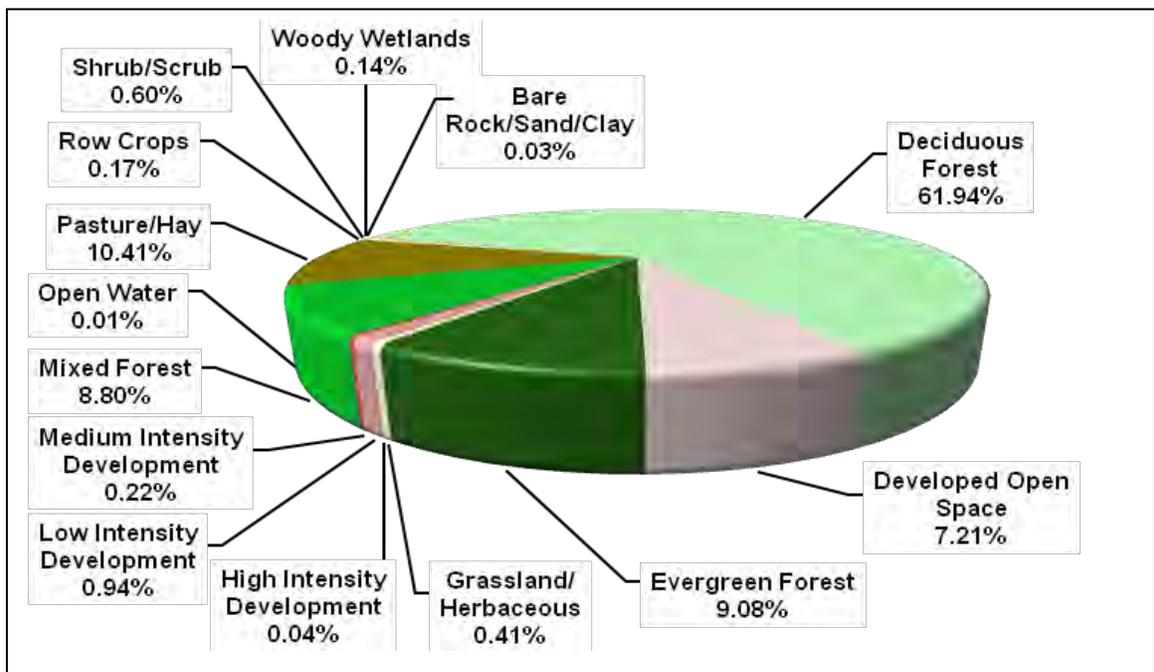
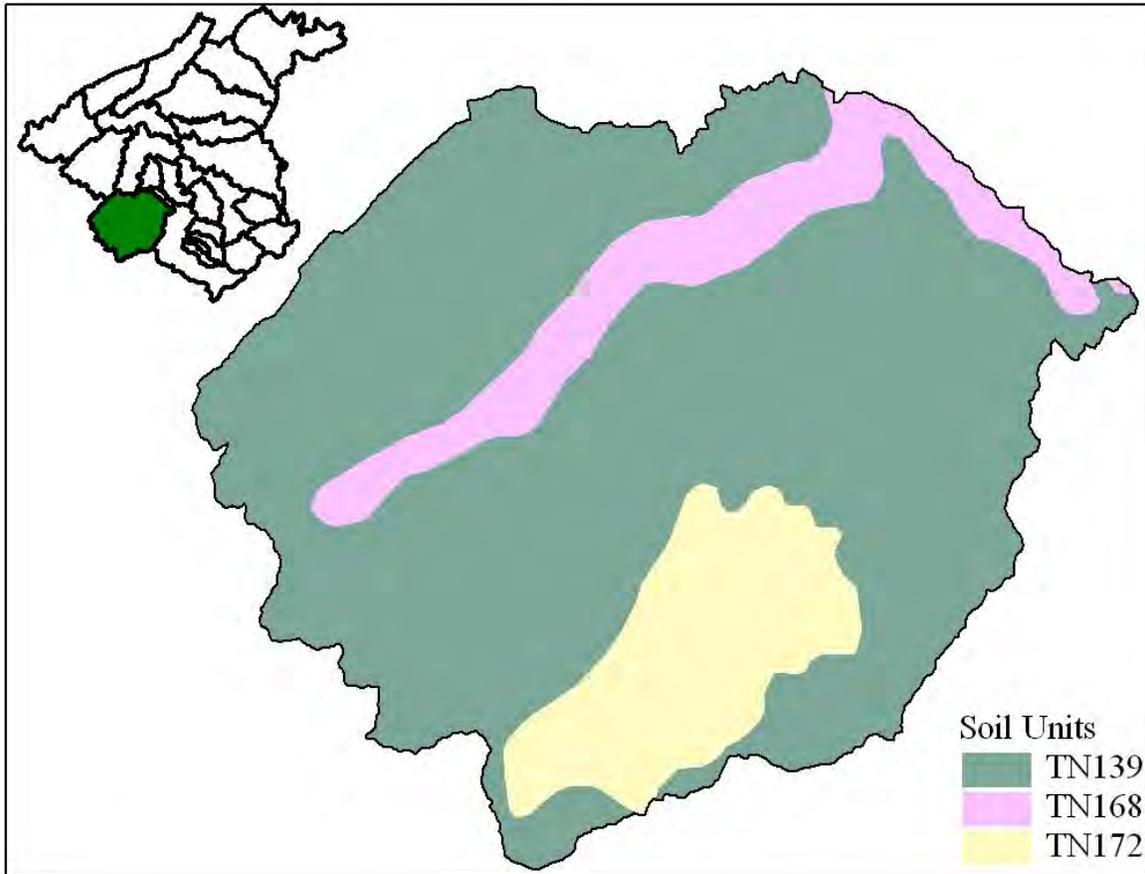


Figure 4-197. Land Use Distribution in Subwatershed 060101070312. More information is provided in Appendix IV.



**Figure 4-198. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070312.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN139	0.00	C	11.84	4.82	Loam	0.20
TN168	0.00	C	1.28	5.65	Loam	0.34
TN172	0.00	B	3.87	5.13	Loam	0.26

**Table 4-126. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070312.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Blount	85,969	100,218	105,823	0.4	344	401	424	23.3
Sevier	51,043	62,774	71,170	10.21	5,211	6,409	7,266	39.4
<b>Totals</b>	<b>137,012</b>	<b>162,992</b>	<b>176,993</b>		<b>5,555</b>	<b>6,810</b>	<b>7,690</b>	<b>38.4</b>

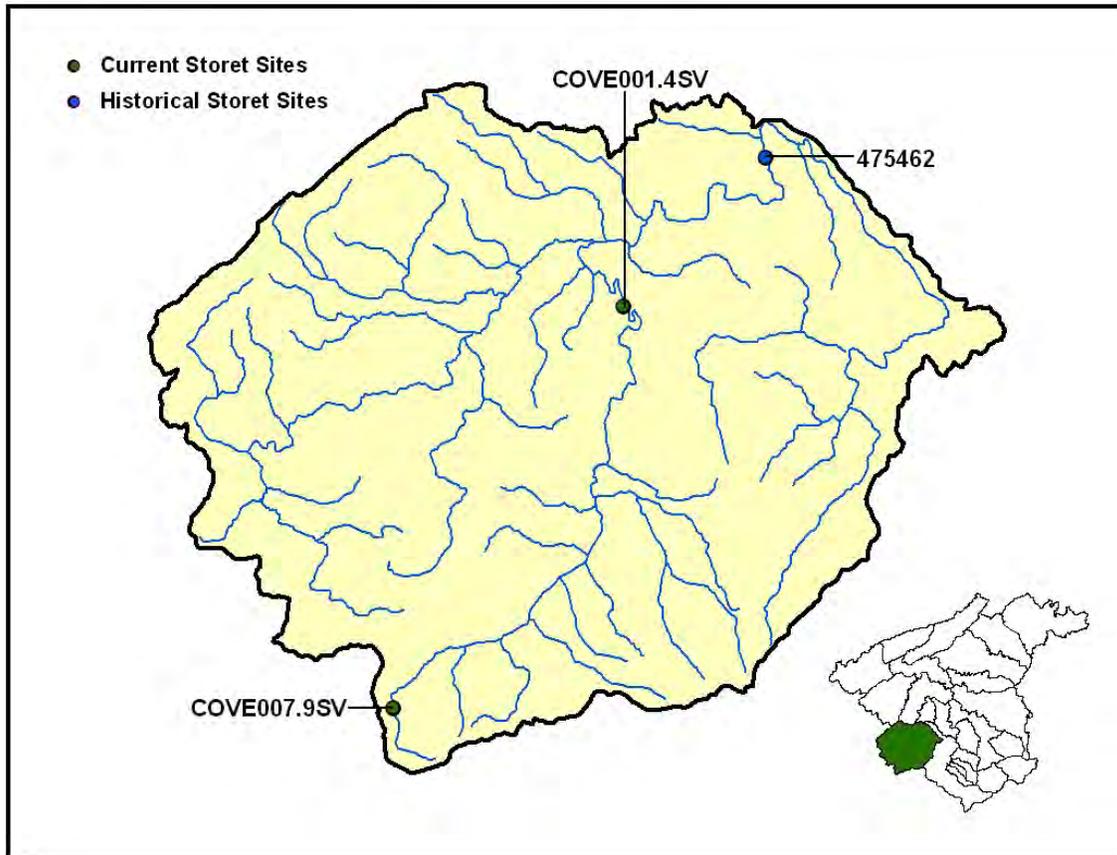
*Table 4-127. Population Estimates in Subwatershed 060101070312.*

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Pigeon Forge	Sevier	3,168	1,353	1,000	347	6

*Table 4-128. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070312.*

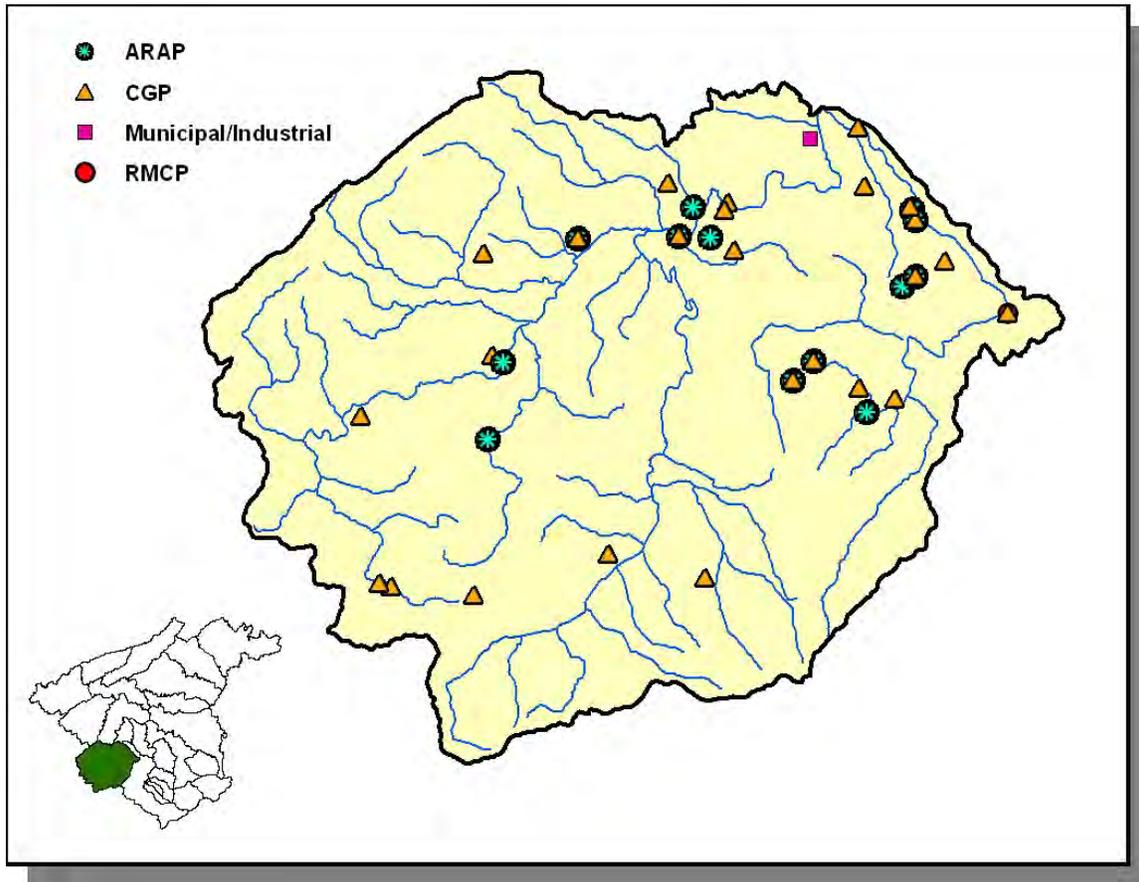
**4.2.U.ii. USGS Gaging Stations and STORET Sites**

There are no USGS continuous record gaging stations located in subwatershed 060101070312.

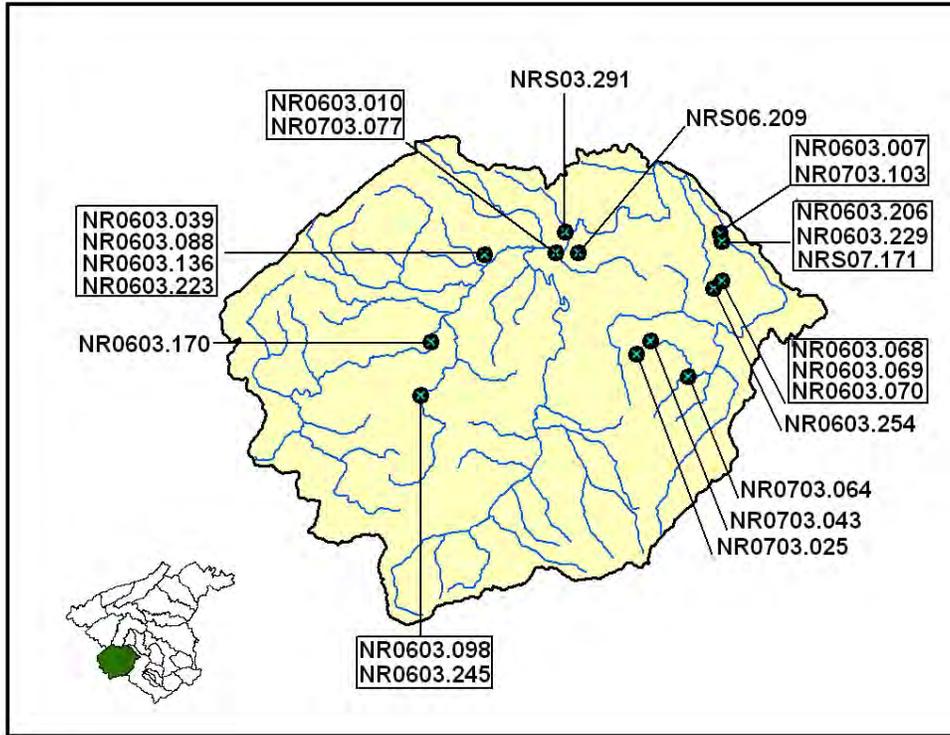


**Figure 4-199. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070312. More information, including site names and locations, is provided in Appendix IV.**

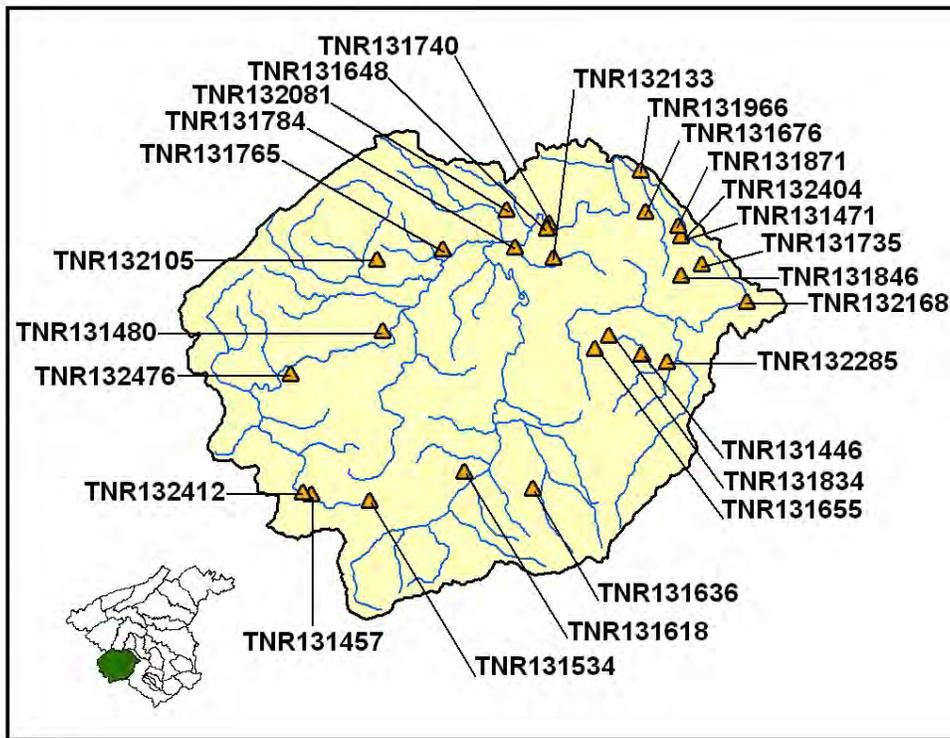
**4.2.U.iii. Permitted Activities.**



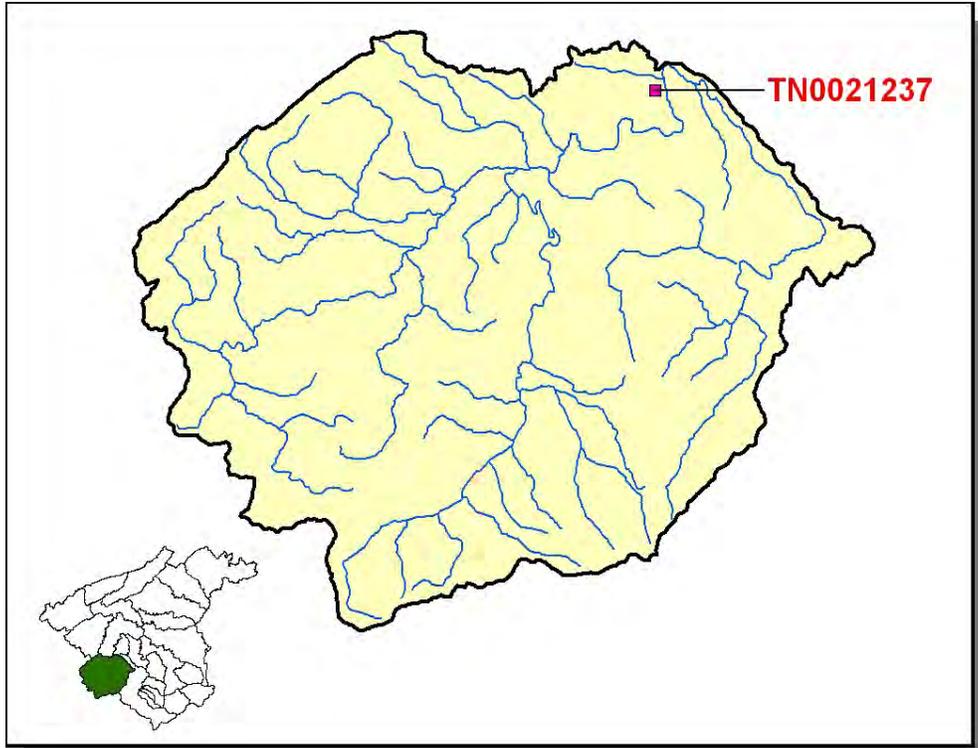
**Figure 4-200. Location of Permits Issued in Subwatershed 060101070312.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-201. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 060101070312. More information is provided in Appendix IV.**



**Figure 4-202. Location of CGP (Construction General Permit) Sites in Subwatershed 060101070312. More information is provided in Appendix IV.**



**Figure 4-203. Location of Permitted Municipal and Industrial Facilities in Subwatershed 060101070312.** Permit numbers in red indicate that the facility discharges to a stream listed on the 2006 303(d) list. More information, including the name of the facility is provided in Appendix IV.

PERMIT #	7Q10	DISCHARGE FLOW
TN0021237	11.0	4.0

**Table 4-129. Receiving Stream Flow Information Used for Limit Calculations for NPDES Dischargers to Waterbodies Listed on the 2006 303(d) List in Subwatershed 060101070312.** Data are in million gallons per day (MGD). Data were obtained from permit files.

PERMIT #	SS	TSS	TSS % REMOVAL	PHOSPHORUS TOTAL	TRC	pH
TN0021237	X	X	X	X	X	X

**Table 4-130. Parameters Monitored for Limits for NPDES Dischargers to Waterbodies Listed on the 2006 303(d) List in Subwatershed 060101070312.** SS, Settleable Solids; TSS, Total Suspended Solids; TRC, Total Residual Chlorine.



**Figure 4-204. Location of RMCP (Ready Mix Concrete Plant) Facilities in Subwatershed 060101070312.** More information, including the names of facilities, is provided in Appendix IV.

**4.2.U.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Blount	15,468	32,061	1,769	664	658	455
Sevier	9,816	19,013	172	26	394	234

**Table 4-131. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Blount	165.5	69.9	1.8	9.3
Sevier	254.5	127.4	0.3	0.9

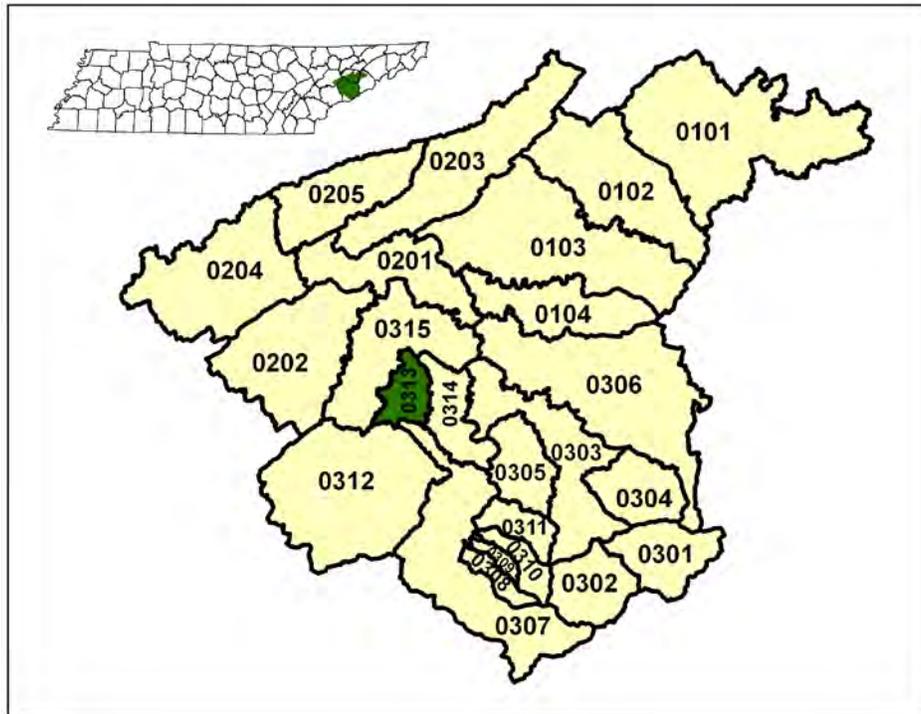
**Table 4-132. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Wheat (Close Grown Cropland)	9.39
Corn (Row Crops)	5.50
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.48
Grass Forbs Legumes Mixed (Pastureland)	0.46
Oats (Close Grown Cropland)	0.32
Farmsteads and Ranch Headquarters	0.22
Grass (Hayland)	0.21
Other Land in Farms (Other Far	0.14
Legume Grass (Hayland)	0.06
Tobacco (Row Crops)	16.31
Farmsteads and Ranch Headquarters	0.45

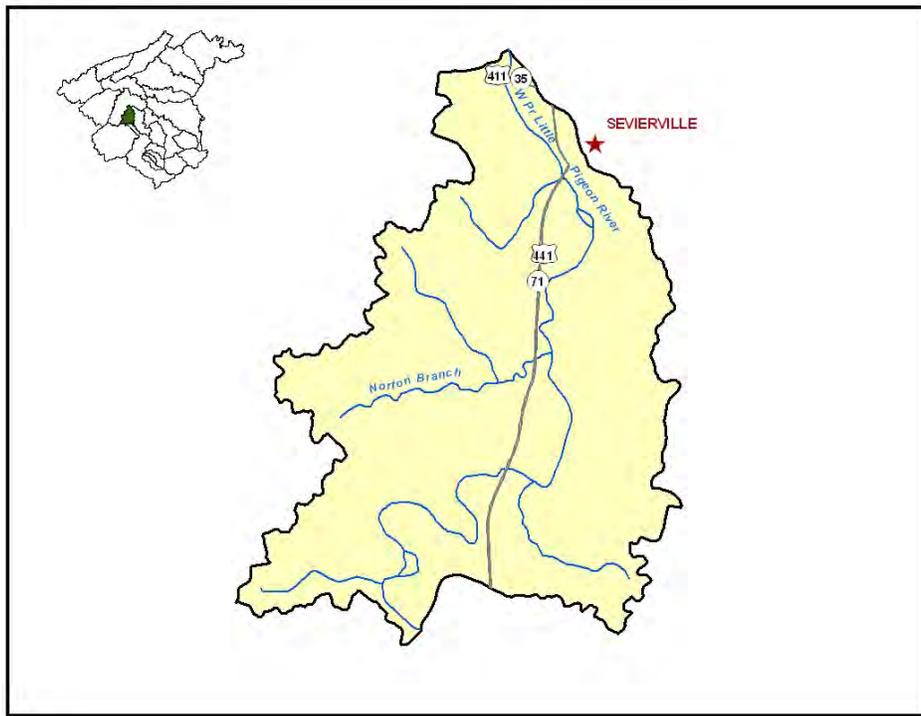
**Table 4-133. Annual Estimated Total Soil Loss in Subwatershed 060101070312.**

**4.2.V. 060101070313 (West Prong Little Pigeon River)**

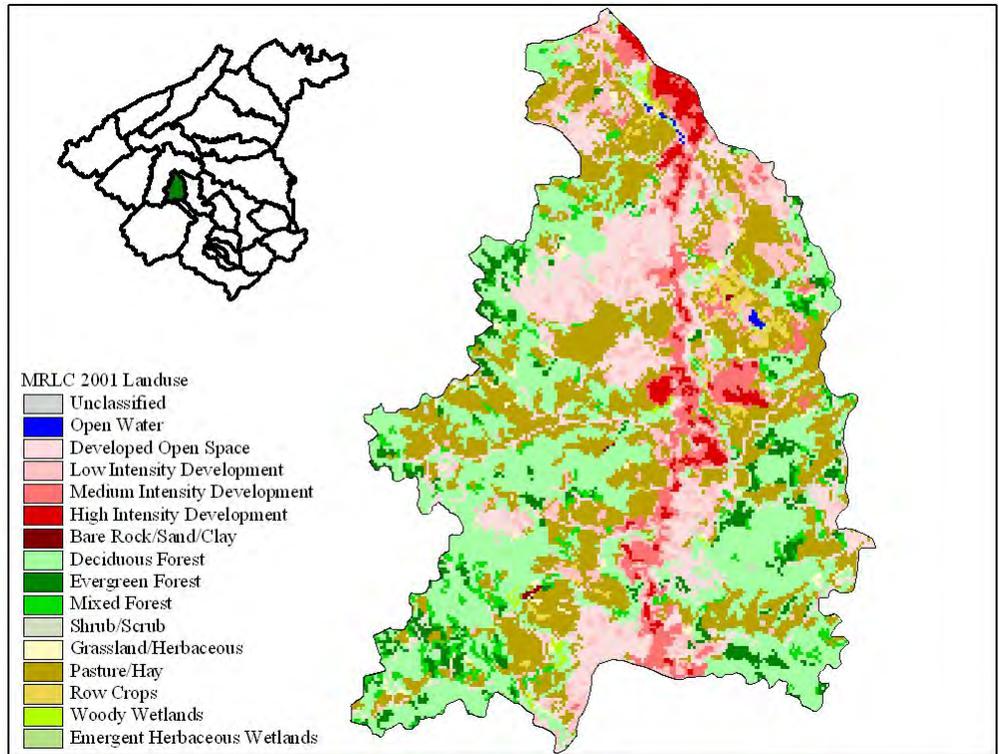
**4.2.V.i. General Description**



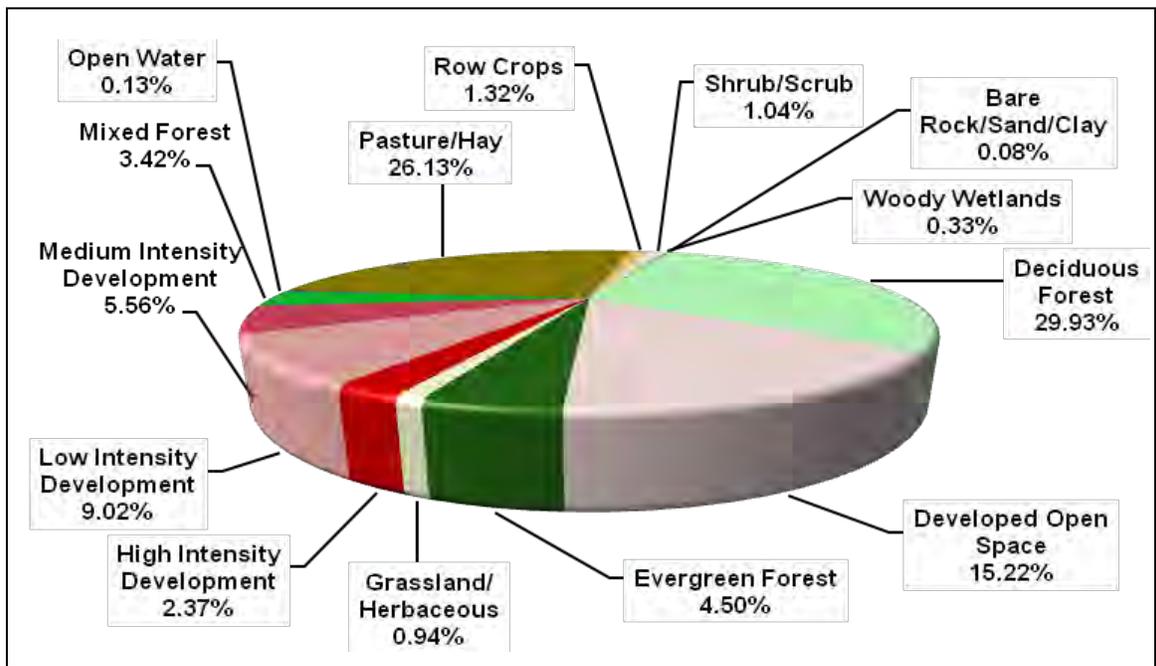
**Figure 4-205. Location of Subwatershed 060101070313.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



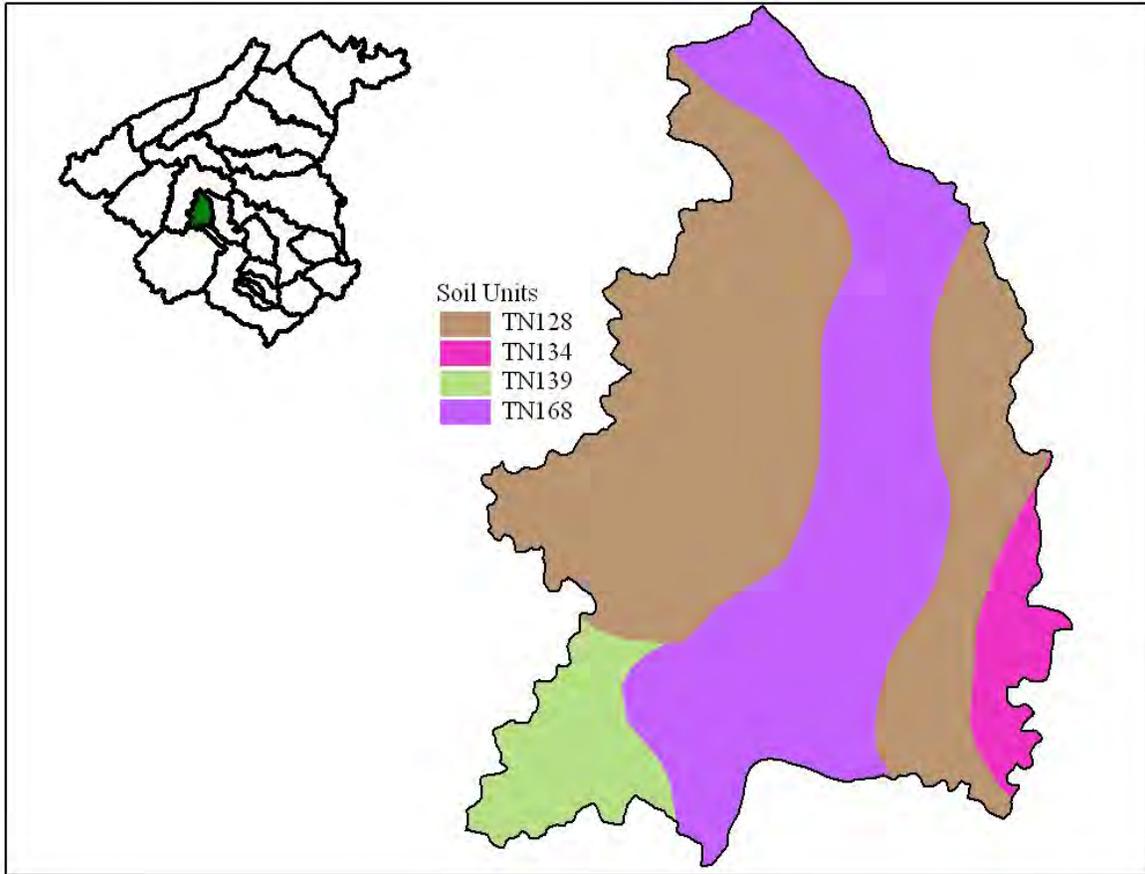
**Figure 4-206. Locational Details of Subwatershed 060101070313.**



**Figure 4-207. Illustration of Land Use Distribution in Subwatershed 060101070313.**



**Figure 4-208. Land Use Distribution in Subwatershed 060101070313.** More information is provided in Appendix IV.



**Figure 4-209. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070313.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN128	0.00	C	1.30	6.53	Clay Loam	0.26
TN134	0.00	B	1.38	5.18	Loam	0.31
TN139	0.00	C	11.84	4.82	Loam	0.20
TN168	0.00	C	1.28	5.65	Loam	0.34

**Table 4-134. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070313.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Sevier	51,043	62,774	71,170	1.56	794	976	1,107	39.40

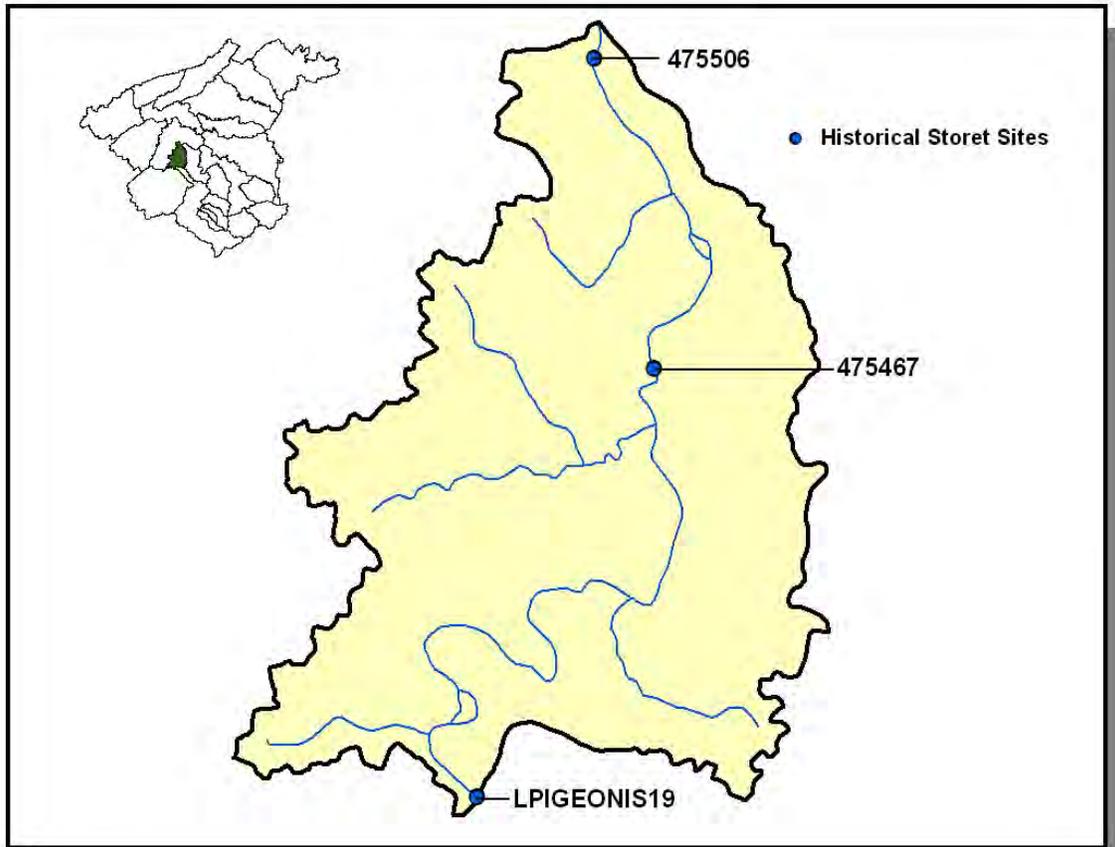
**Table 4-135. Population Estimates in Subwatershed 060101070313.**

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Pigeon Forge	Sevier	3,168	1,353	1,000	347	6
Sevierville	Sevier	7,178	3,321	2,632	686	3
<b>Total</b>		<b>10,346</b>	<b>4,674</b>	<b>3,632</b>	<b>1,033</b>	<b>9</b>

**Table 4-136. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070313.**

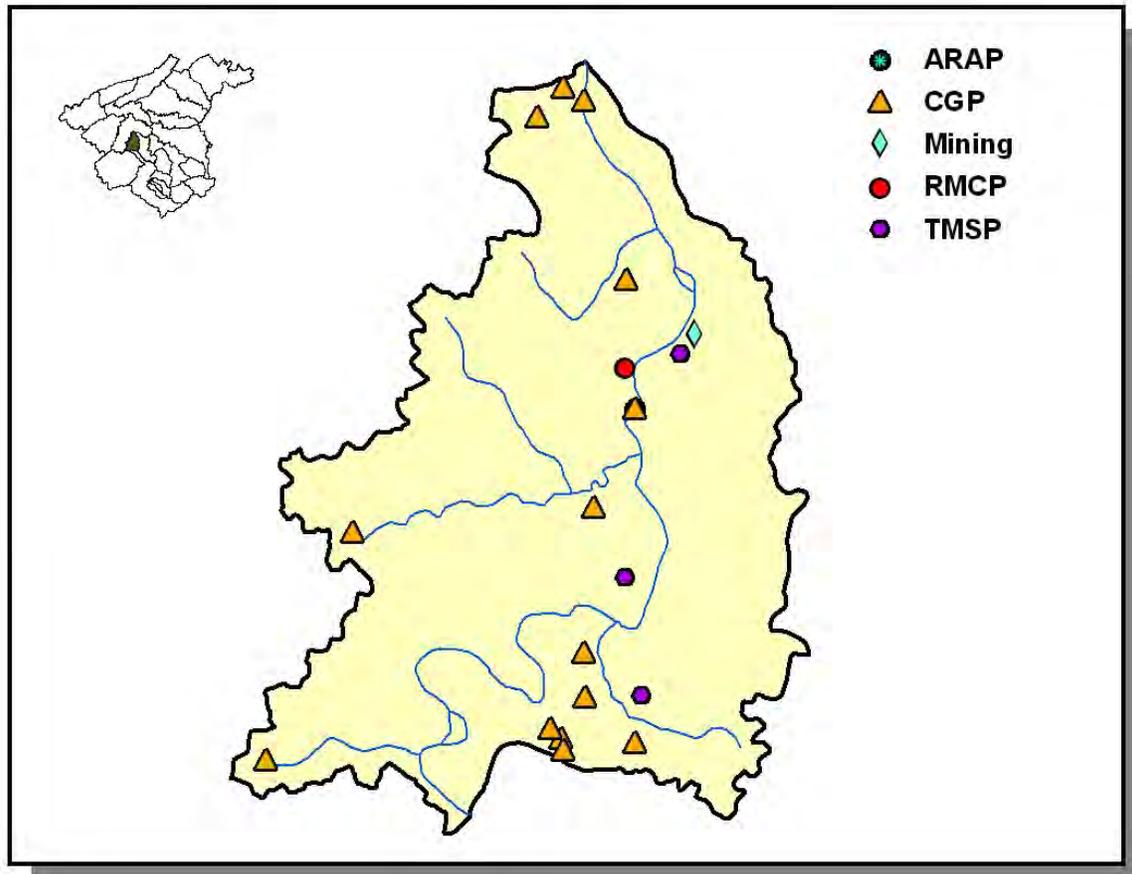
**4.2.V.ii. USGS Gaging Stations and STORET Sites**

There are no USGS continuous record gaging stations located in subwatershed 060101070313.

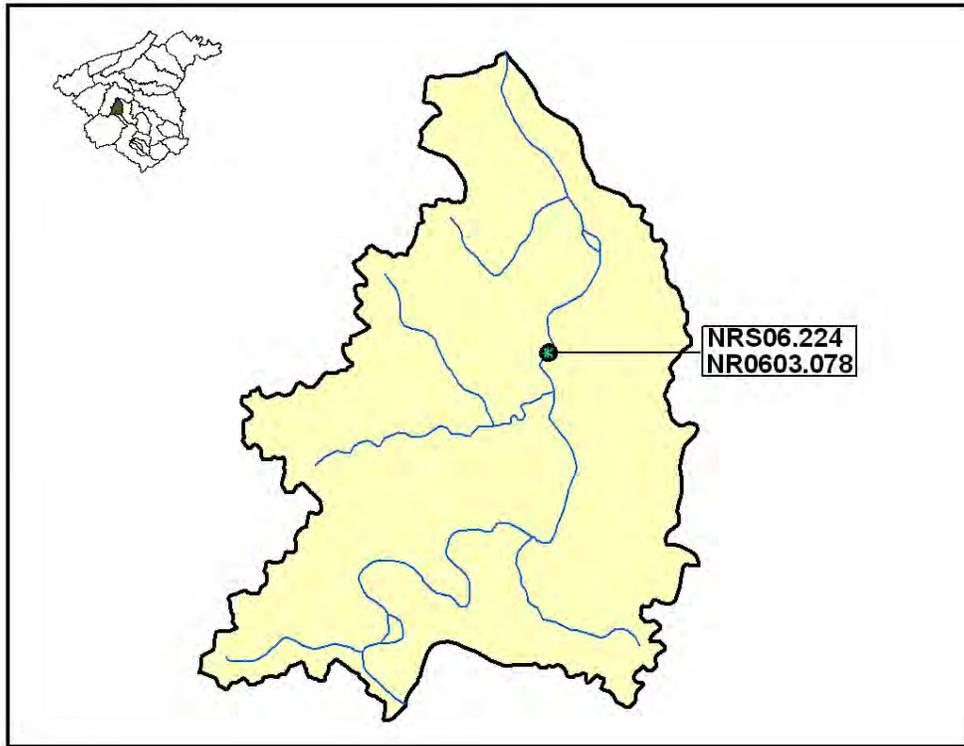


**Figure 4-210. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070313.** More information, including site names and locations, is provided in Appendix IV.

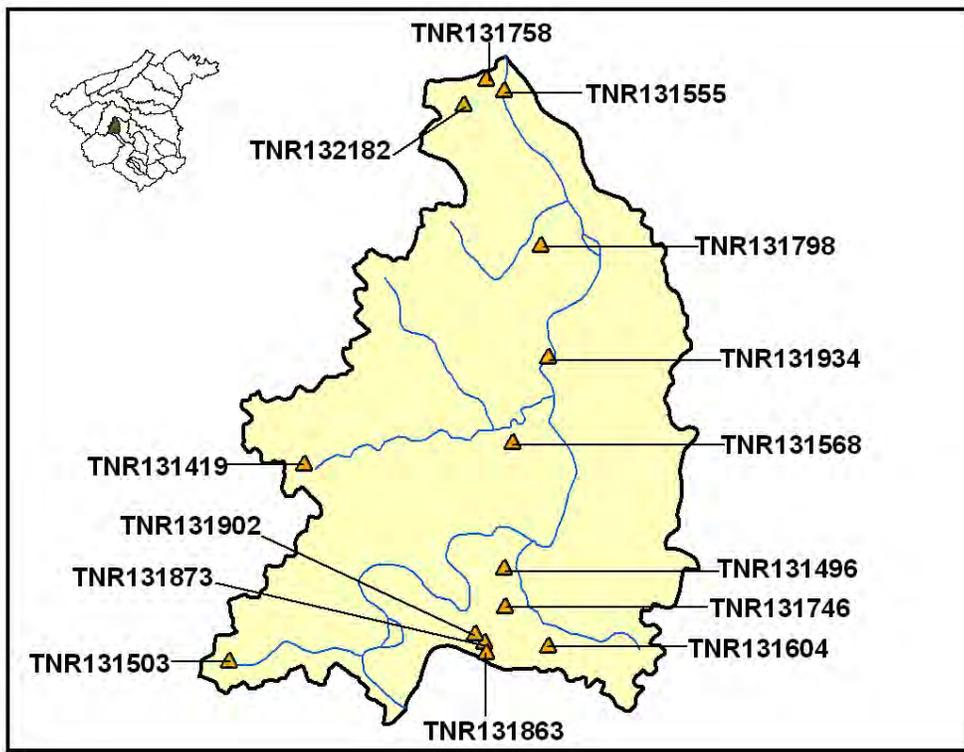
**4.2.V.iii. Permitted Activities.**



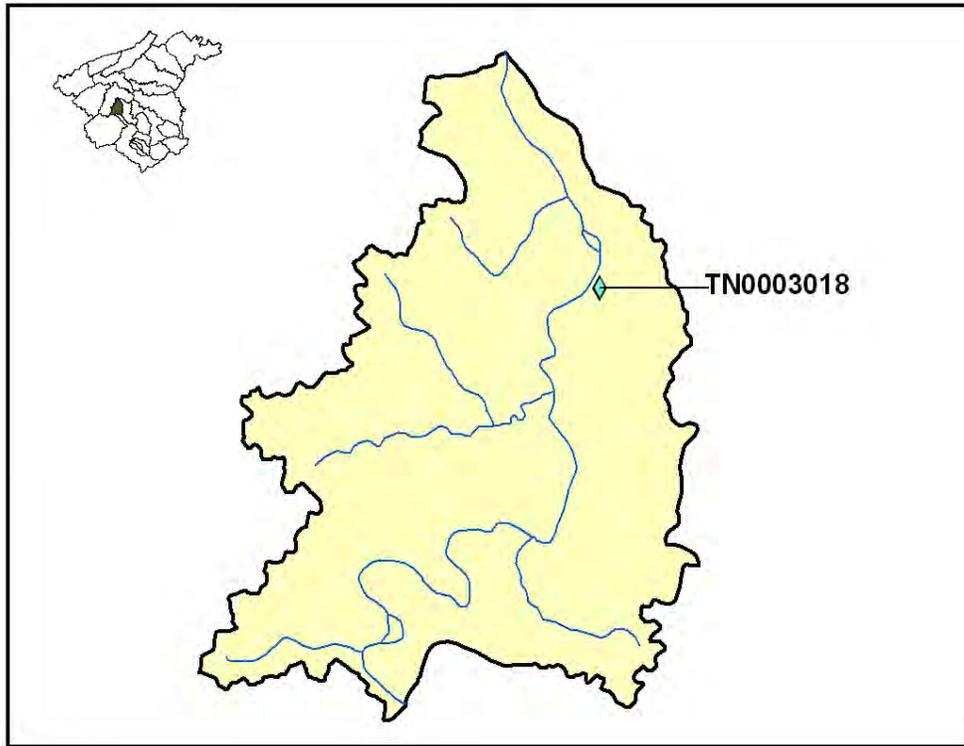
**Figure 4-211. Location of Permits Issued in Subwatershed 060101070313.** More information, including the names of facilities, is provided in Appendix IV.



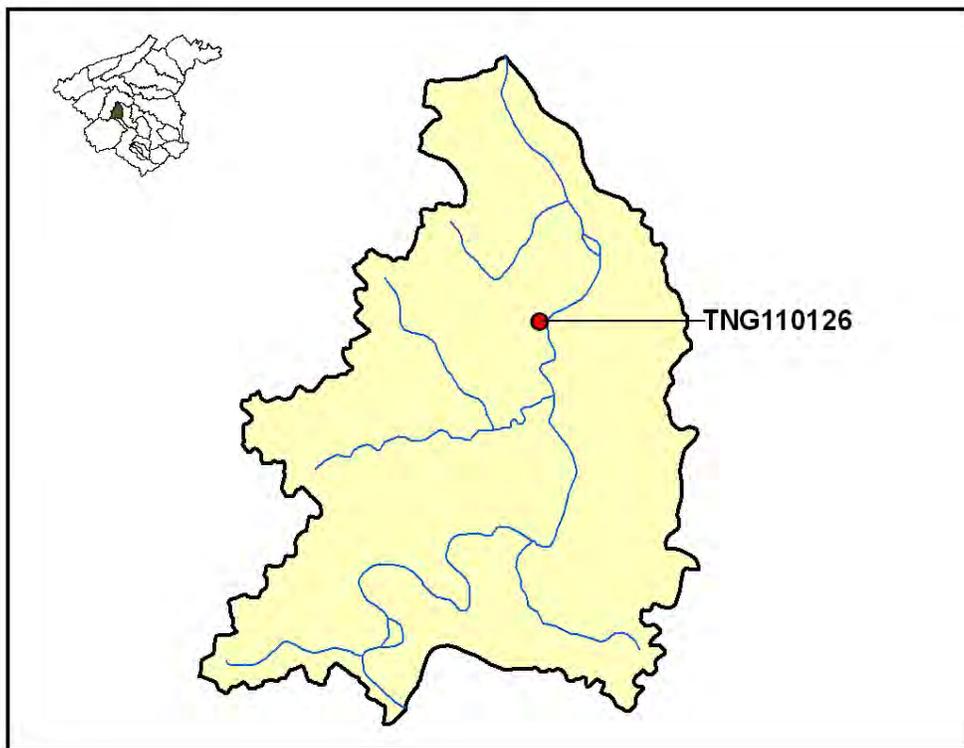
**Figure 4-212. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 060101070313. More information is provided in Appendix IV.**



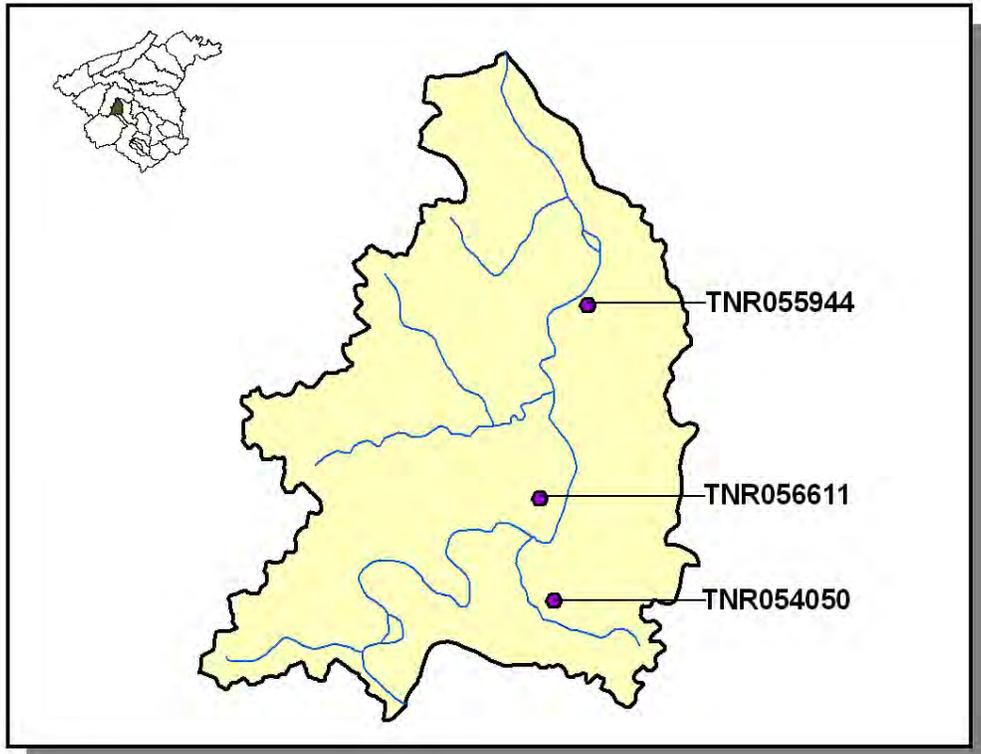
**Figure 4-213. Location of CGP (Construction General Permit) Sites in Subwatershed 060101070313. More information is provided in Appendix IV.**



**Figure 4-214. Location of permitted Mining Facilities in Subwatershed 060101070313.** More information is provided in Appendix IV.



**Figure 4-215. Location of RMCP (Ready Mix Concrete Plant) Facilities in Subwatershed 060101070313.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-216. Location of TMSM (Tennessee Multi Sector Permit) Sites in Subwatershed 060101070313. More information is provided in Appendix IV.**

**4.2.V.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Sevier	9,816	19,013	172	26	394	234

**Table 4-137. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Sevier	254.5	127.4	0.3	0.9

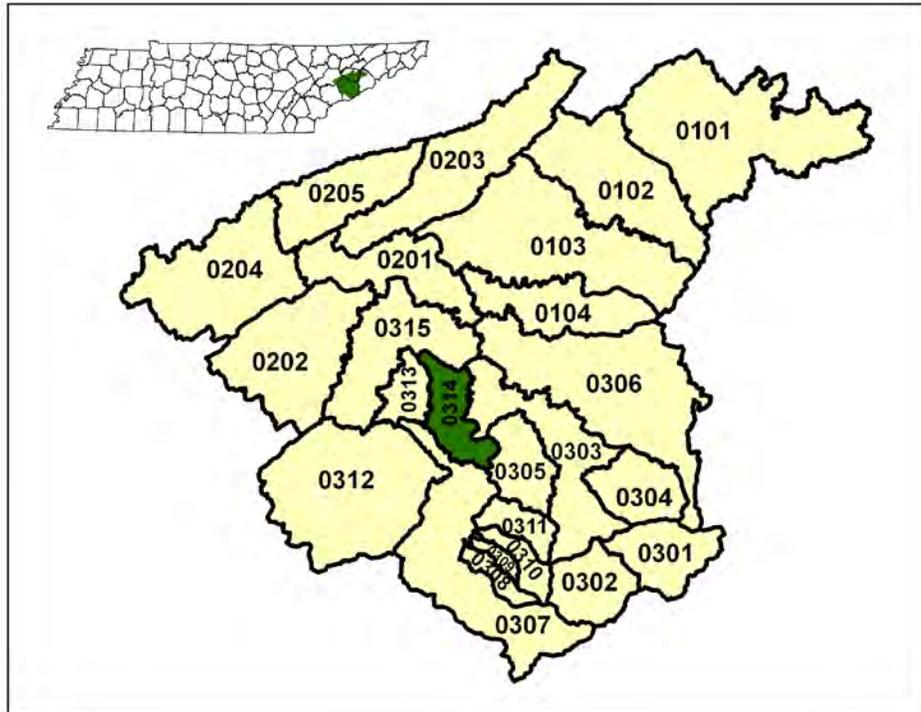
**Table 4-138. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Wheat (Close Grown Cropland)	9.53
Corn (Row Crops)	5.13
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.48
Grass Forbs Legumes Mixed (Pastureland)	0.47
Grass (Hayland)	0.22
Farmsteads and Ranch Headquarters	0.22
Legume Grass (Hayland)	0.06

**Table 4-139. Annual Estimated Total Soil Loss in Subwatershed 060101070313.**

**4.2.W. 060101070314 (Middle Creek)**

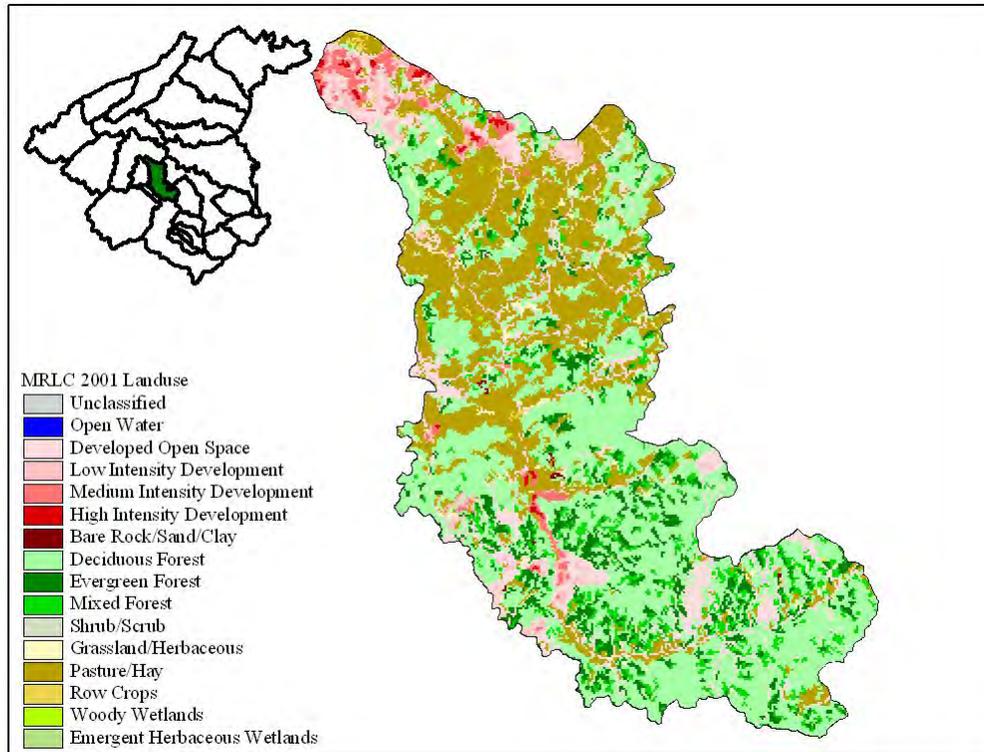
**4.2.W.i. General Description**



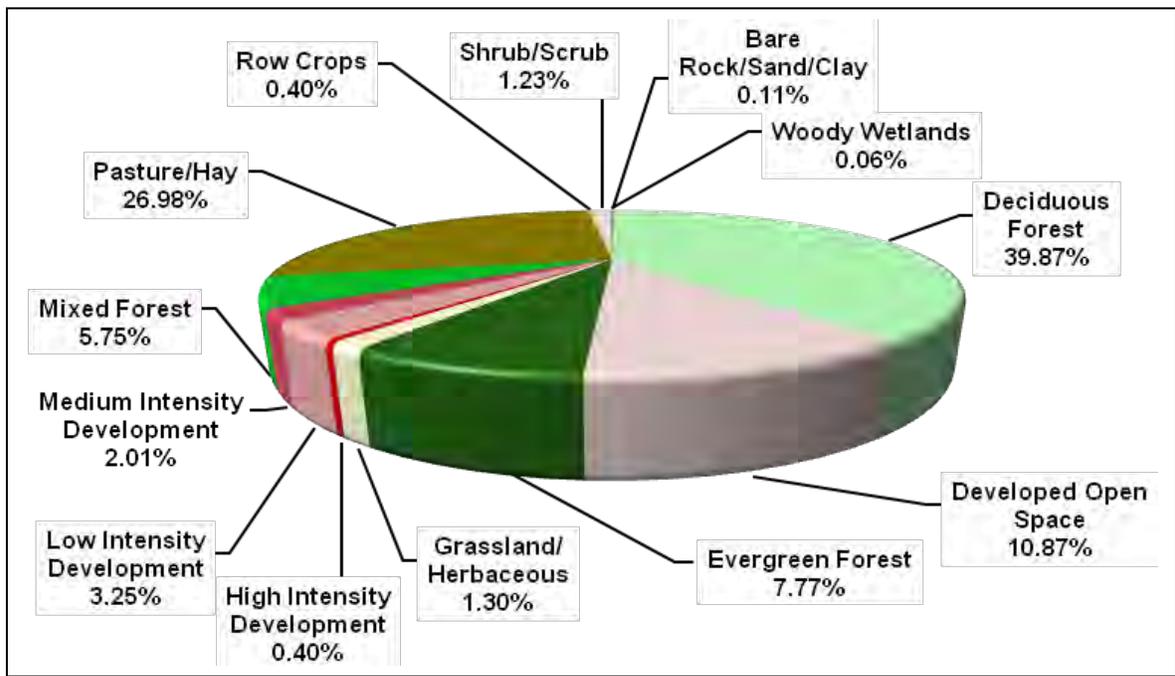
**Figure 4-217. Location of Subwatershed 060101070314.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



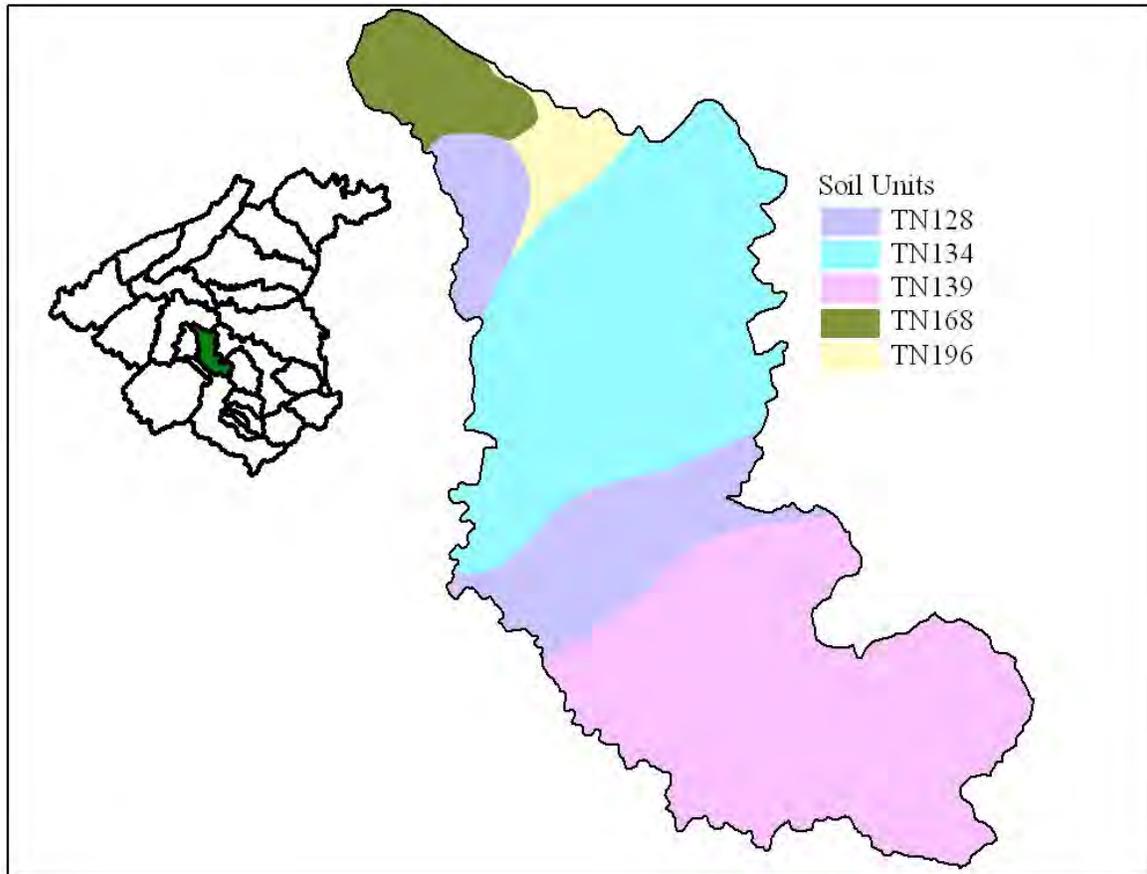
**Figure 4-218. Locational Details of Subwatershed 060101070314.**



**Figure 4-219. Illustration of Land Use Distribution in Subwatershed 060101070314.**



**Figure 4-220. Land Use Distribution in Subwatershed 060101070314.** More information is provided in Appendix IV.



**Figure 4-221. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070314.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN128	0.00	C	1.30	6.53	Clay Loam	0.26
TN134	0.00	B	1.38	5.18	Loam	0.31
TN139	0.00	C	11.84	4.82	Loam	0.20
TN168	0.00	C	1.28	5.65	Loam	0.34
TN196	13.00	C	1.61	5.39	Loam	0.31

**Table 4-140. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070314.** The definition of "Hydrologic Group" is provided in Appendix IV.

County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Sevier	51,043	62,774	71,170	2.51	1,281	1,576	1,787	39.5

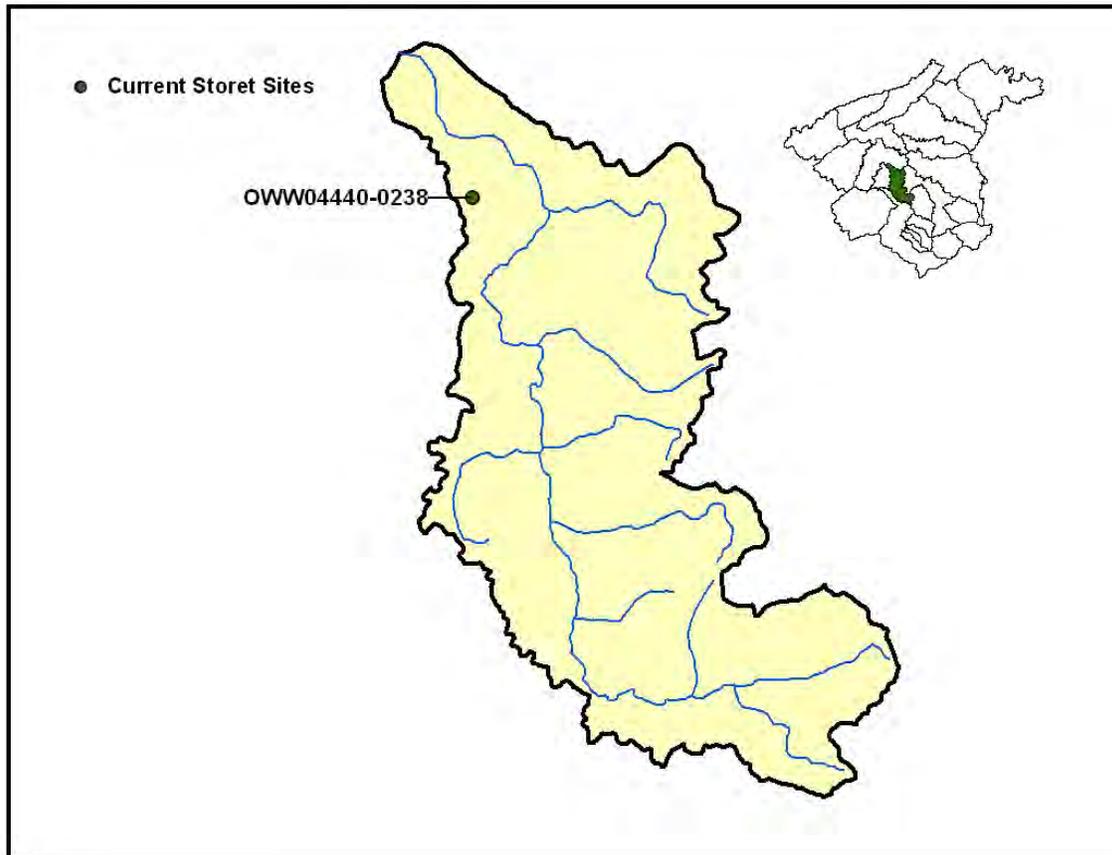
*Table 4-141. Population Estimates in Subwatershed 060101070314.*

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Pigeon Forge	Sevier	3,168	1,353	1,000	347	6
Sevierville	Sevier	7,178	3,321	2,632	686	3
<b>Total</b>		<b>10,346</b>	<b>4,674</b>	<b>3,632</b>	<b>1,033</b>	<b>9</b>

*Table 4-142. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070314.*

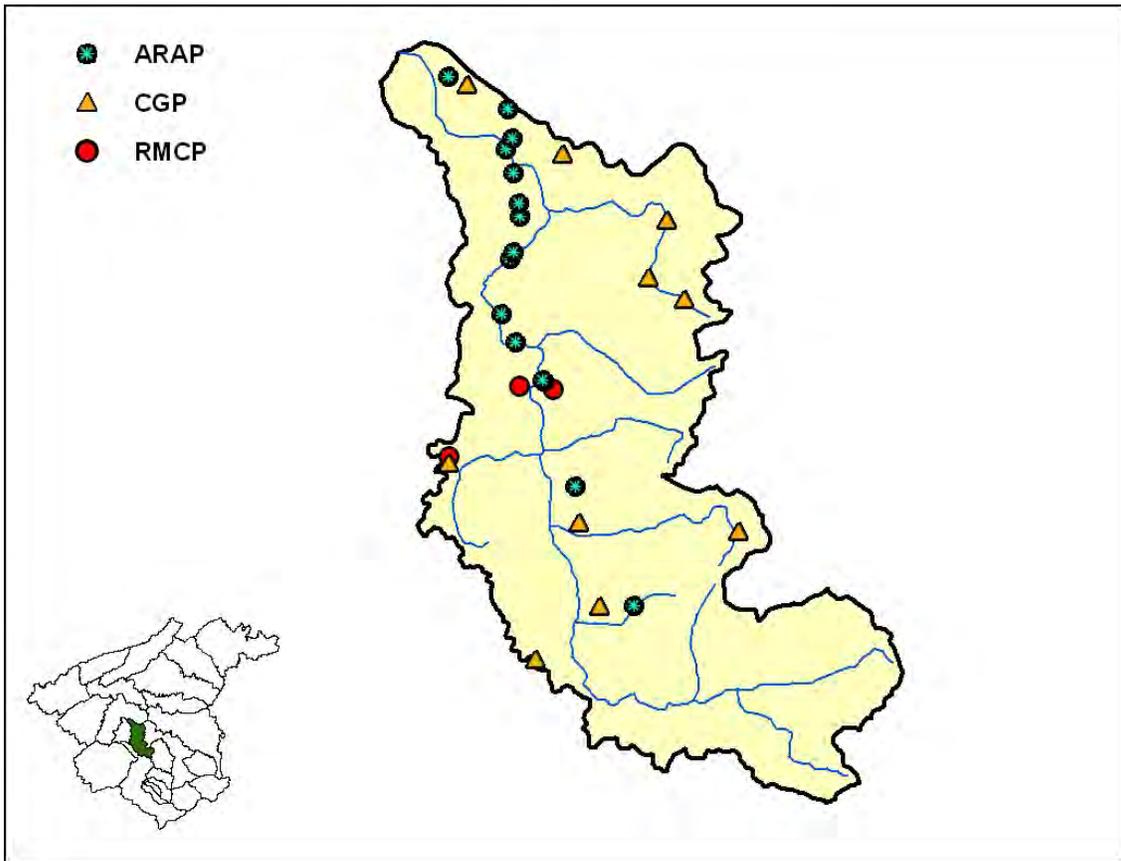
**4.2.W.ii. USGS Gaging Stations and STORET Sites**

There are no USGS continuous record gaging stations located in subwatershed 060101070314.

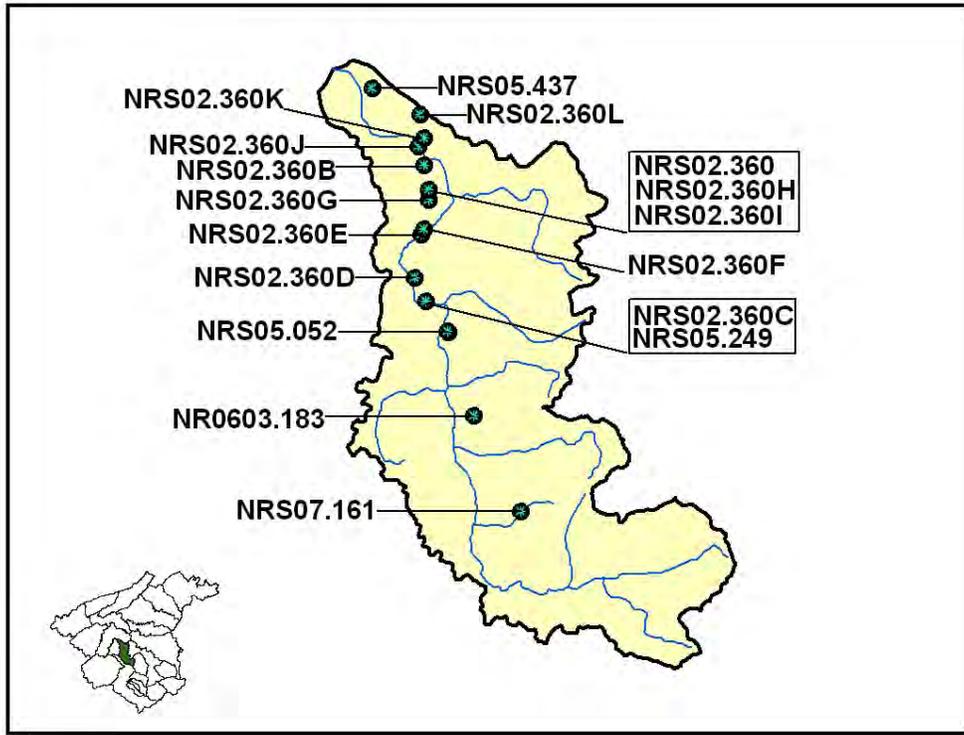


**Figure 4-222. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070314.** More information, including site names and locations, is provided in Appendix IV.

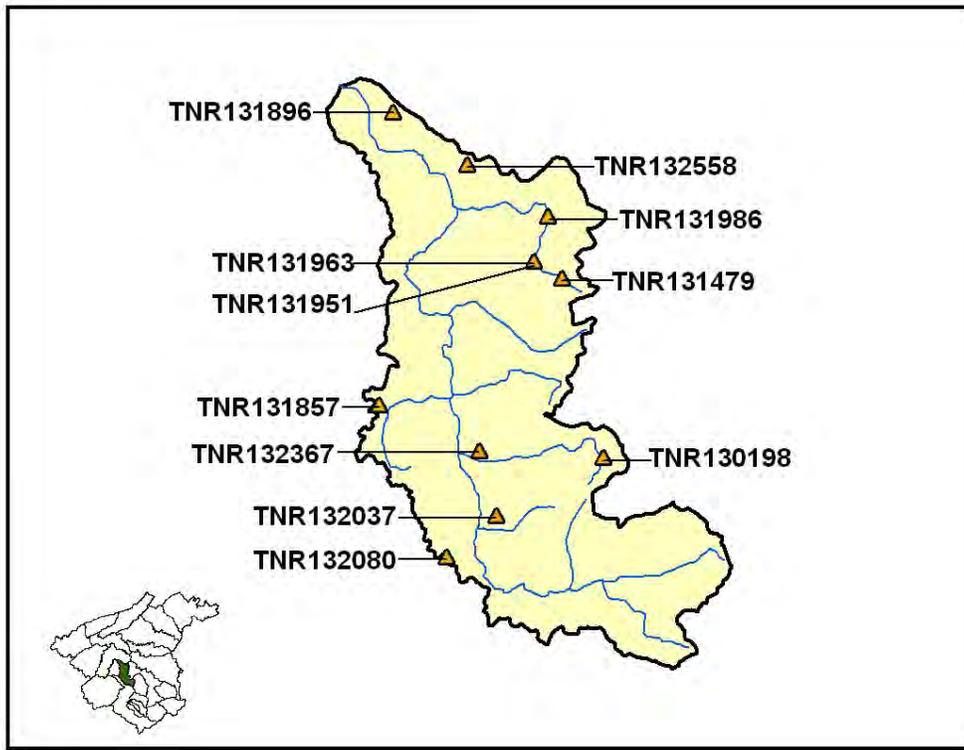
**4.2.W.iii. Permitted Activities.**



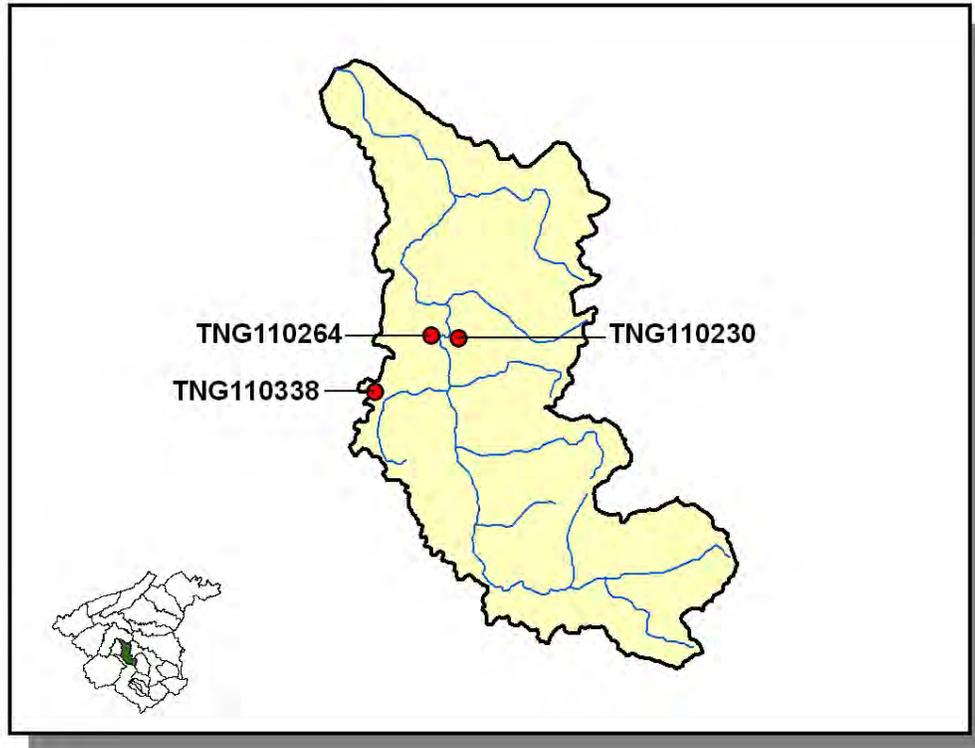
**Figure 4-223. Location of Permits Issued in Subwatershed 060101070314.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-224. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 060101070314.** More information is provided in Appendix IV.



**Figure 4-225. Location of CGP (Construction General Permit) Sites in Subwatershed 060101070314.** More information is provided in Appendix IV.



**Figure 4-226. Location of RMCP (Ready Mix Concrete Plant) Facilities in Subwatershed 060101070314.** More information, including the names of facilities, is provided in Appendix IV.

**4.2.W.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Sevier	9,816	19,013	172	26	394	234

**Table 4-143. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Sevier	254.5	127.4	0.3	0.9

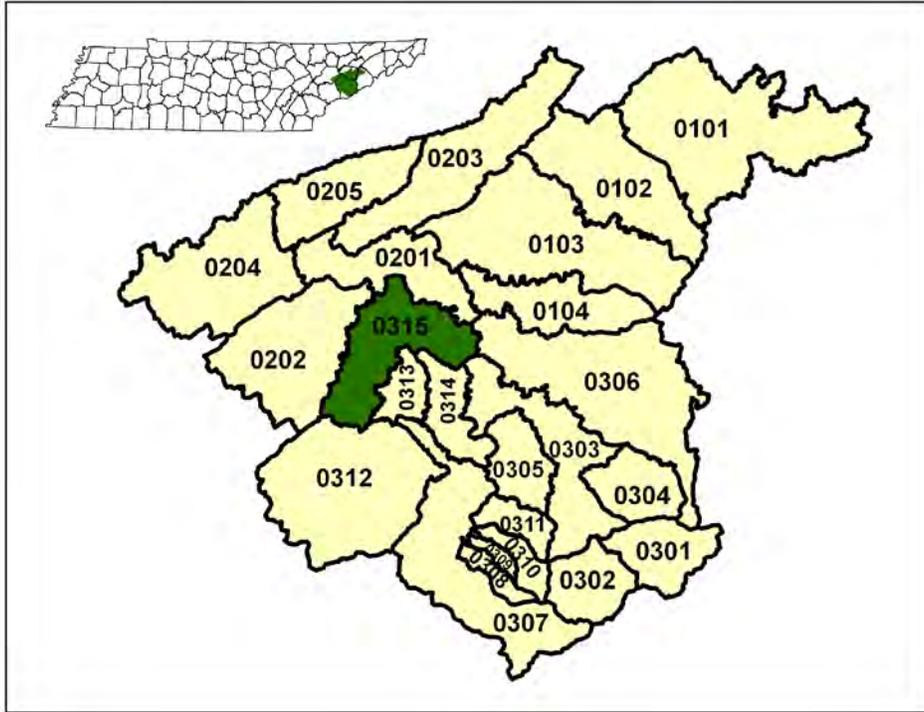
**Table 4-144. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Wheat (Close Grown Cropland)	9.53
Corn (Row Crops)	5.13
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.48
Grass Forbs Legumes Mixed (Pastureland)	0.47
Grass (Hayland)	0.22
Farmsteads and Ranch Headquarters	0.22
Legume Grass (Hayland)	0.06

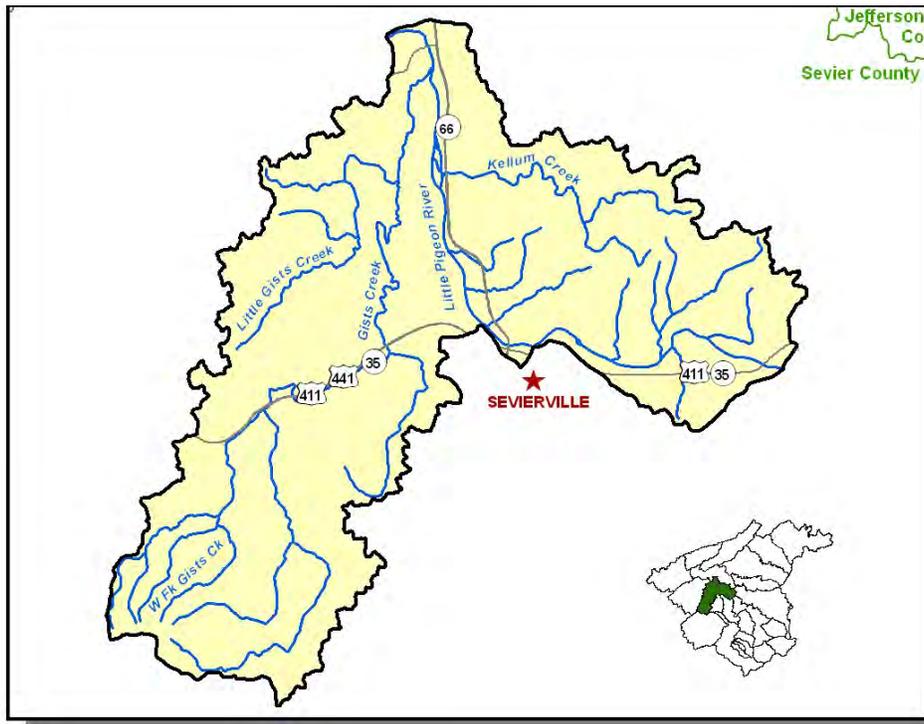
**Table 4-145. Annual Estimated Total Soil Loss in Subwatershed 060101070314.**

**4.2.X. 060101070315 (Little Pigeon River, Lower)**

**4.2.X.i. General Description**



**Figure 4-227. Location of Subwatershed 060101070315.** All Lower French Broad River HUC-12 subwatershed boundaries are shown for reference.



**Figure 4-228. Locational Details of Subwatershed 060101070315.**

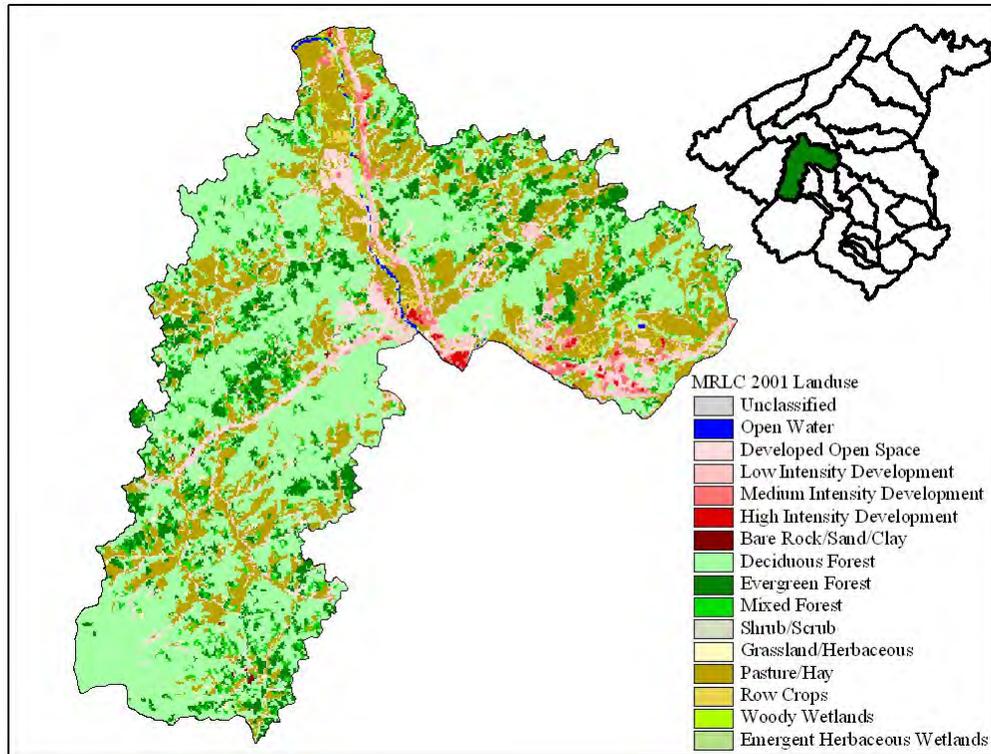


Figure 4-229. Illustration of Land Use Distribution in Subwatershed 060101070315.

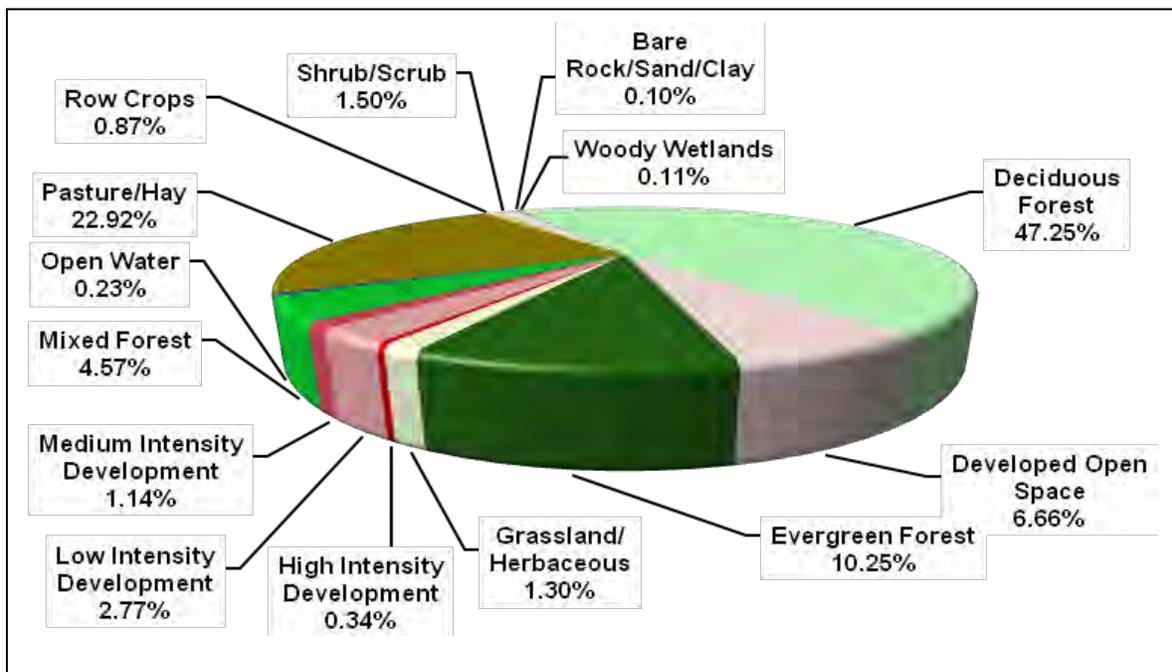
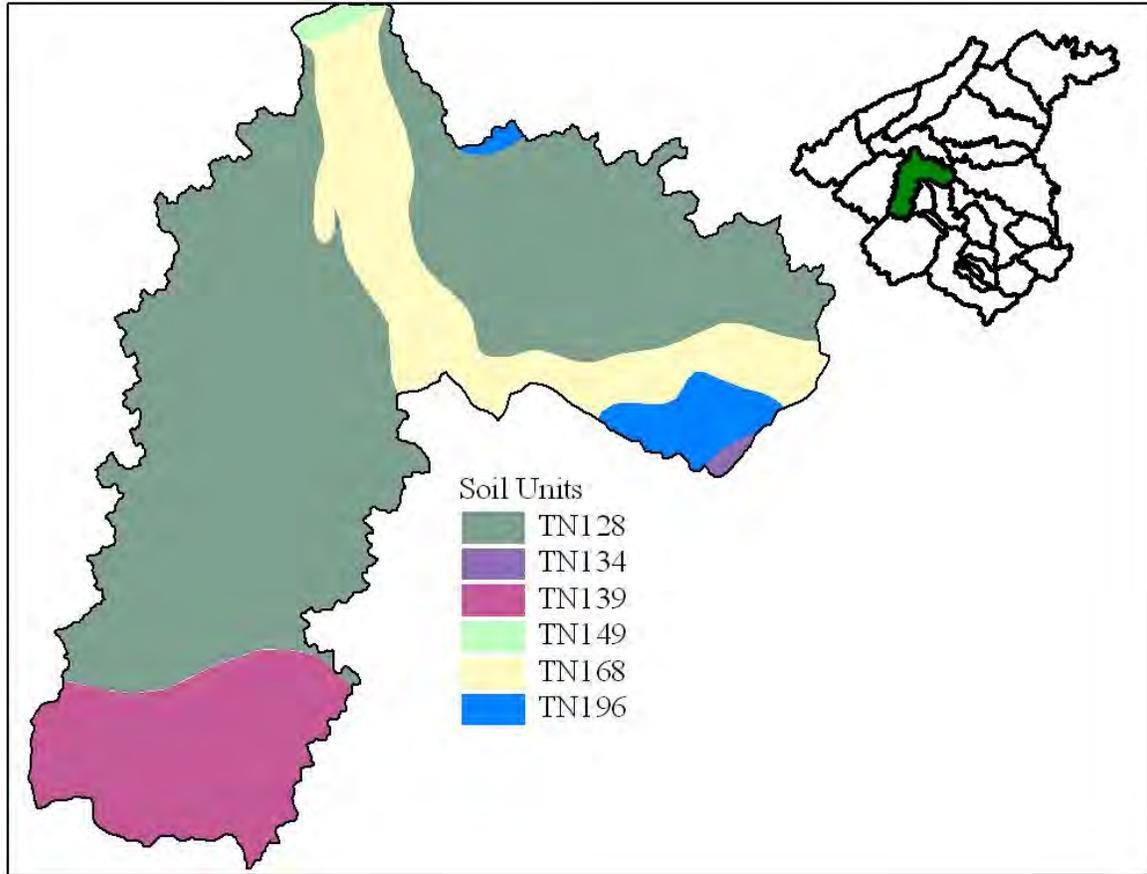


Figure 4-230. Land Use Distribution in Subwatershed 060101070315. More information is provided in Appendix IV.



**Figure 4-231. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070315.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN128	0.00	C	1.30	6.53	Clay Loam	0.26
TN134	0.00	B	1.38	5.18	Loam	0.31
TN139	0.00	C	11.84	4.82	Loam	0.20
TN149	1.00	B	1.29	5.01	Loam	0.30
TN168	0.00	C	1.28	5.65	Loam	0.34
TN196	13.00	C	1.61	5.39	Loam	0.31

**Table 4-146. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101070315.** The definition of “Hydrologic Group” is provided in Appendix IV.

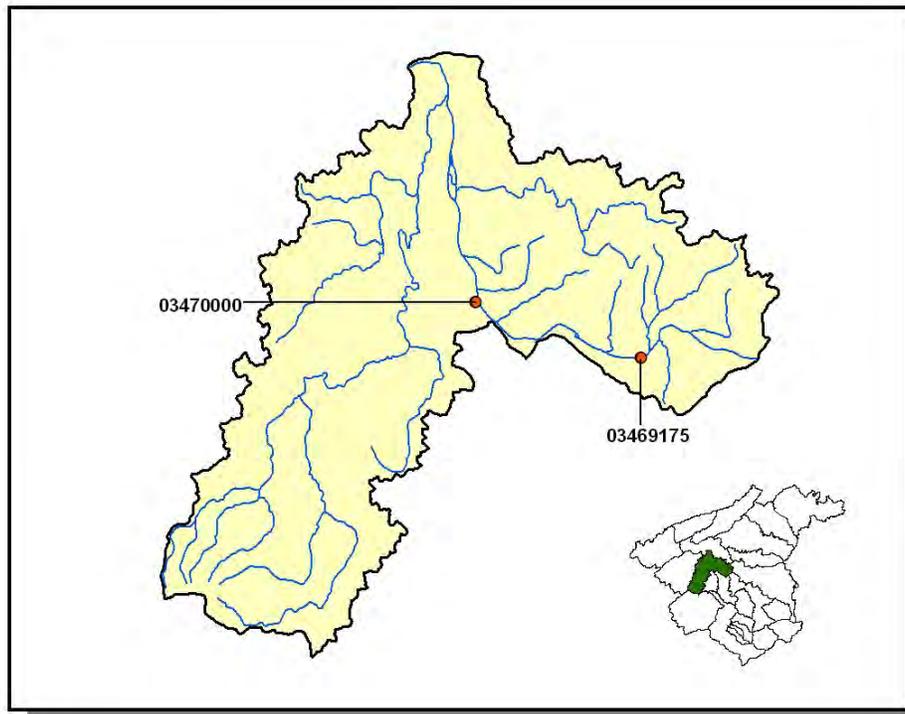
County	COUNTY POPULATION			% of County in Watershed	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Sevier	51,043	62,774	71,170	5.82	2,968	3,650	4,139	39.50

**Table 4-147. Population Estimates in Subwatershed 060101070315.**

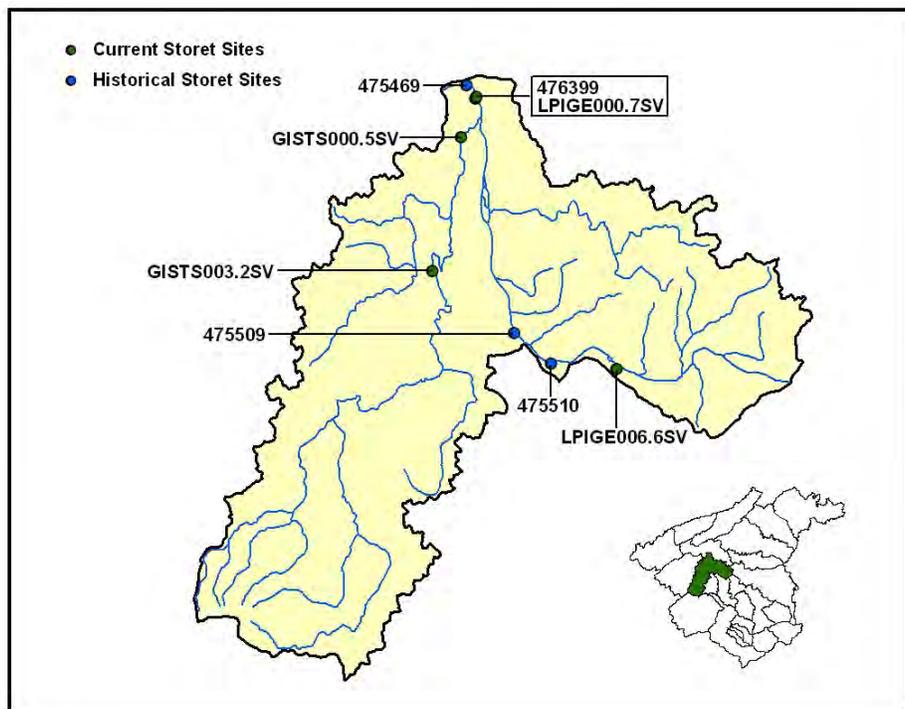
Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Sevierville	Sevier	7,178	3,321	2,632	686	3

**Table 4-148. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101070315.**

**4.2.X.ii. USGS Gaging Stations and STORET Sites**

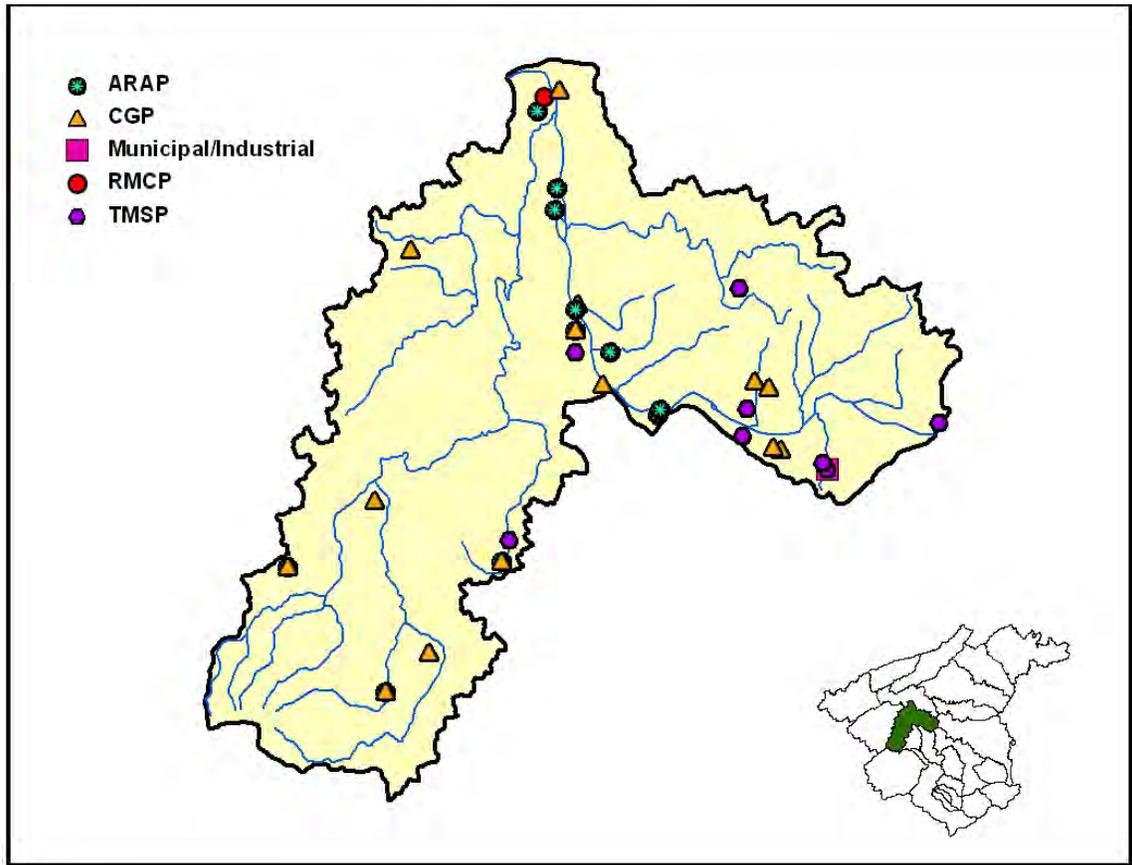


**Figure 4-232. Location of USGS Continuous Record Gaging Stations in Subwatershed 060101070315. More information is provided in Appendix IV.**

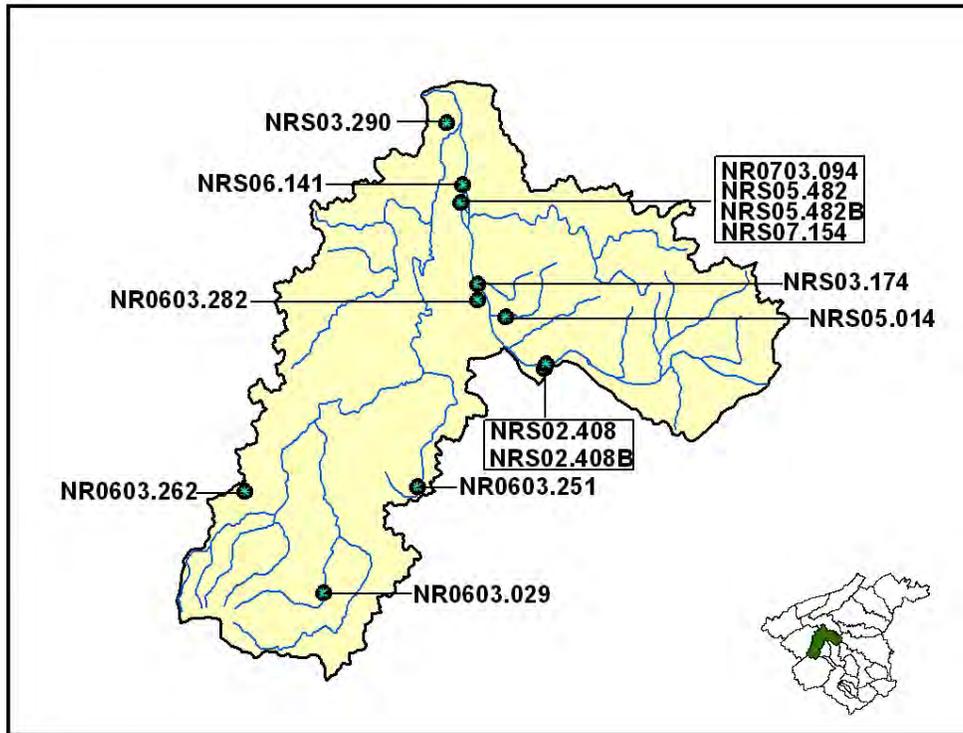


**Figure 4-233. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101070315. More information, including site names and locations, is provided in Appendix IV.**

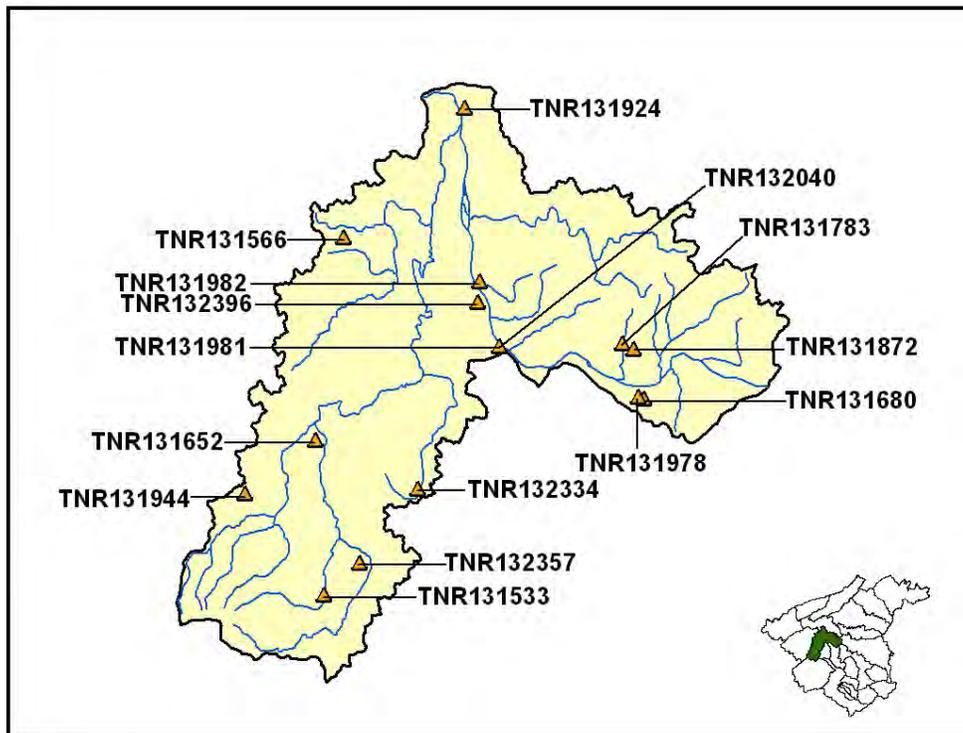
**4.2.X.iii. Permitted Activities.**



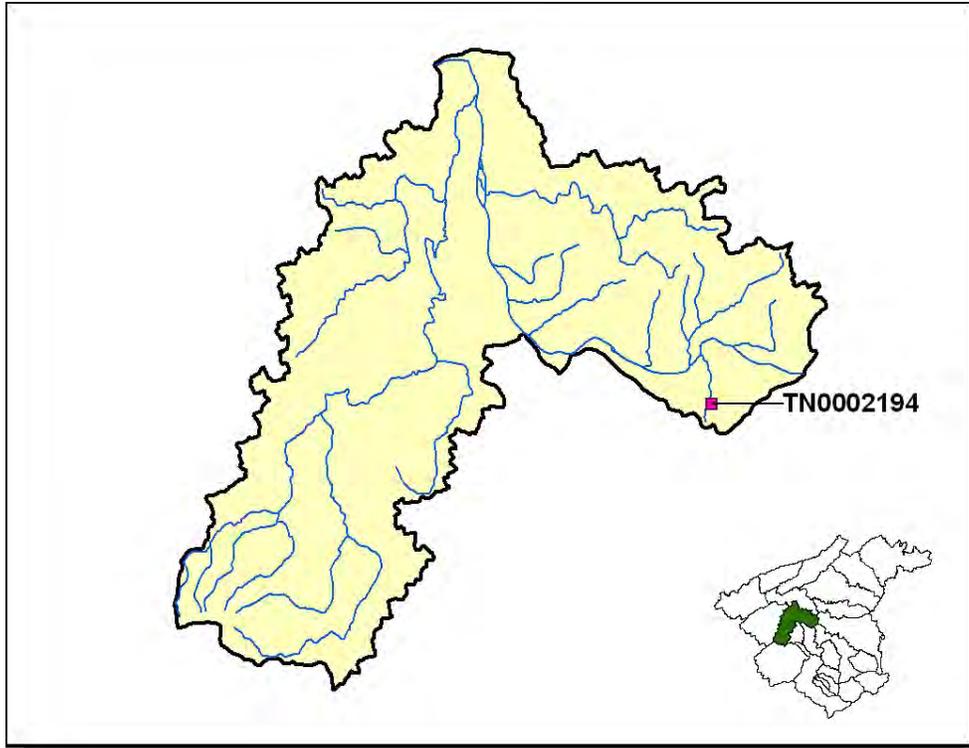
**Figure 4-234. Location of Permits Issued in Subwatershed 060101070315.** More information, including the names of facilities, is provided in Appendix IV.



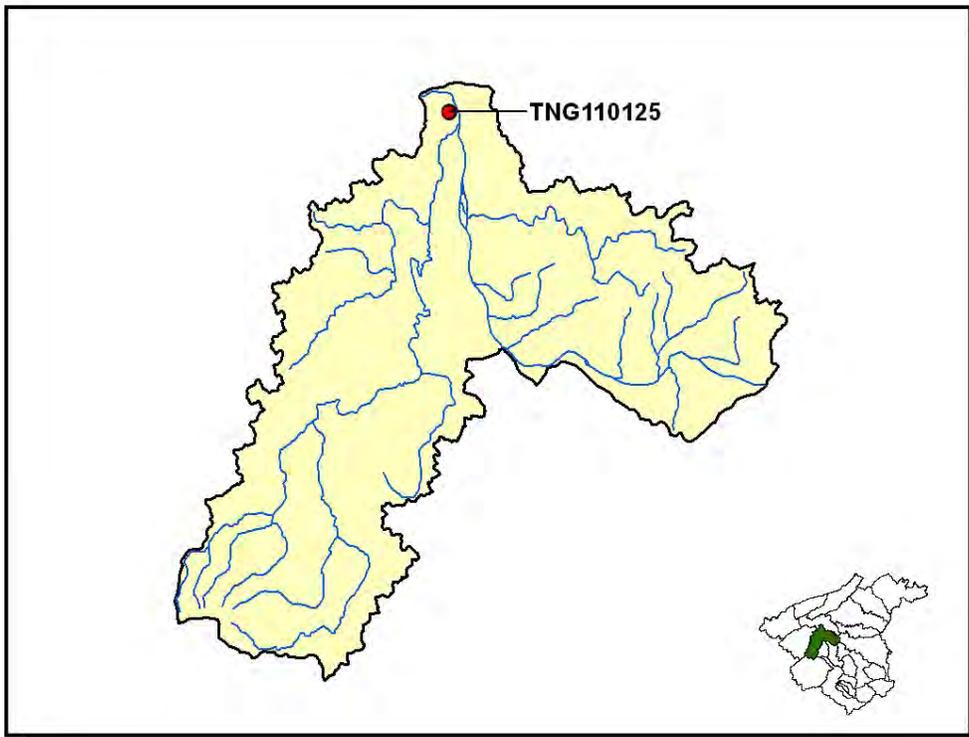
**Figure 4-235. Location of ARAP (Aquatic Resource Alteration Permit) Sites in Subwatershed 060101070315. More information is provided in Appendix IV.**



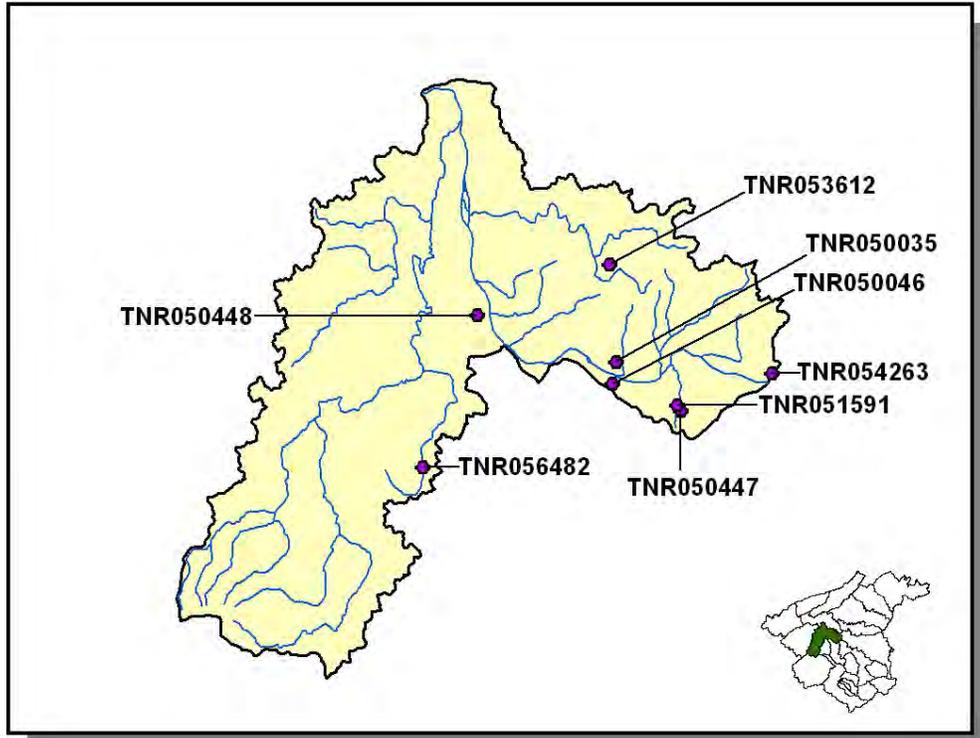
**Figure 4-236. Location of CGP (Construction General Permit) Sites in Subwatershed 060101070315. More information is provided in Appendix IV.**



**Figure 4-237. Location of Permitted Municipal and Industrial Facilities in Subwatershed 060101070315.** More information, including the name of the facility is provided in Appendix IV.



**Figure 4-238. Location of RMCP (Ready Mix Concrete Plant) Facilities in Subwatershed 060101070315.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-239. Location of TMS (Tennessee Multi Sector Permit) Sites in Subwatershed 060101070315. More information is provided in Appendix IV.**

**4.2.X.iv. Nonpoint Source Contributions.**

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Sevier	9,816	19,013	172	26	394	234

**Table 4-149. Summary of Livestock Count Estimates by County.** According to the 1997 Census of Agriculture (<http://www.agcensus.usda.gov/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Sevier	254.5	127.4	0.3	0.9

**Table 4-150. Forest Acreage and Annual Removal Rates (1987-1994) by County.**

CROPS	TONS/ACRE/YEAR
Tobacco (Row Crops)	16.31
Wheat (Close Grown Cropland)	9.53
Corn (Row Crops)	5.13
Summer Fallow (Other Cropland)	3.31
Grass (Pastureland)	0.48
Grass Forbs Legumes Mixed (Pas	0.47
Grass (Hayland)	0.22
Farmsteads and Ranch Headquart	0.22
Legume Grass (Hayland)	0.06

**Table 4-151. Annual Estimated Total Soil Loss in Subwatershed 060101070315.**

## **CHAPTER 5**

### **WATER QUALITY PARTNERSHIPS IN THE LOWER FRENCH BROAD RIVER WATERSHED**

- 5.1. Background**
- 5.2. Federal Partnerships**
  - 5.2.A. Natural Resources Conservation Service**
  - 5.2.B. United States Geological Survey**
  - 5.2.C. United States Fish and Wildlife Service**
  - 5.2.D. National Park Service**
  - 5.2.E. Tennessee Valley Authority**
- 5.3. State Partnerships**
  - 5.3.A. TDEC Division of Water Supply**
  - 5.3.B. TDEC Clean Water State Revolving Fund Program**
  - 5.3.C. Tennessee Department of Agriculture**
  - 5.3.D. Tennessee Wildlife Resources Agency**
- 5.4. Local Initiatives**
  - 5.4.A. French Broad Preservation Association**
  - 5.4.B. Smoky Mountain RC&D Council**

**5.1. BACKGROUND.** The Watershed Approach relies on participation at the federal, state, local and nongovernmental levels to be successful. Two types of partnerships are critical to ensure success:

- Partnerships between agencies
- Partnerships between agencies and landowners

This chapter describes both types of partnerships in the Lower French Broad River Watershed. The information presented is provided by the agencies and organizations described.

## 5.2. FEDERAL PARTNERSHIPS.

**5.2.A. Natural Resources Conservation Service.** The Natural Resources Conservation Service (NRCS), an agency of the U.S. Department of Agriculture, provides technical assistance, information, and advice to citizens in their efforts to conserve soil, water, plant, animal, and air resources on private lands.

Performance Results System (PRS) is a Web-based database application providing USDA Natural Resources Conservation Service, conservation partners, and the public fast and easy access to accomplishments and progress toward strategies and performance. The PRS may be viewed at <http://prms.nrcs.usda.gov/prs>. From the opening menu, select “Reports” in the top tool bar. You will select the time period that you are interested in and the conservation treatment of interest on the page that comes up. Depending on the time period of interest, you will have various report options to choose from, such as location, reporting period and program involved in the reporting. You may be required to “refresh” the page in order to get the current report to come up.

The data can be used to determine broad distribution trends in service provided to customers by NRCS conservation partnerships. These data do not show sufficient detail to enable evaluation of site-specific conditions (e.g., privately-owned farms and ranches) and are intended to reflect general trends.

Conservation Practice	Feet	Acres	Number
Conservation Buffers	73,807	701	
Erosion Control		999	
Nutrient Management		7,368	
Pest Management		5,978	
Grazing / Forages	24,540	5,694	
Tree and Shrub Practices		1,624	
Tillage and Cropping		2,341	
Waste Management Systems			2
Wildlife Habitat Management		3437	
Wetlands			11
Water Supply	2,170		57

**Table 5-1. Landowner Conservation Practices in Partnership with NRCS in the Lower French Broad River Watershed.** Data are from PRMS for October 1, 2002 through September 30, 2006 reporting period. More information is provided in Appendix V.

**5.2.B. United States Geological Survey – Tennessee Water Science Center Programs.**

The United States Geological Survey (USGS) provides relevant and objective scientific information and data for public use in evaluation of the quantity, quality, and use of the Nation's water resources. National USGS water resource assessments include the National Streamflow Information Program (<http://water.usgs.gov/nsip/>), National Atmospheric Deposition Network (<http://bqs.usgs.gov/acidrain/>), the National Stream Quality Accounting Network (<http://water.usgs.gov/nasqan/>), and the National Water-Quality Assessment Program (<http://water.usgs.gov/nawqa/>). For a national overview of USGS water resources programs, please visit <http://water.usgs.gov>.

In addition to national assessments, the USGS also conducts hydrologic investigations and data collection in cooperation with numerous federal, state, and local agencies to address issues of national, regional, and local concern. Hydrologic investigations conducted by the USGS Tennessee Water Science Center address scientific questions pertaining to five general thematic topics:

1. Water Use and Availability,
2. Landforms and Ecology,
3. Watersheds and Land Use,
4. Occurrence, Fate, and Transport of Contaminants, and
5. Floods and Droughts.

In support of these investigations, the USGS Tennessee Water Science Center records streamflow continuously at more than 100 gaging stations, makes instantaneous measurements of streamflow at numerous other locations as needed or requested, monitors ground-water levels Statewide, and analyzes the physical, chemical, and biologic characteristics of surface and ground waters. In addition, the Water Science Center compiles annual water-use records for the State of Tennessee and collects a variety of data in support of National USGS baseline and other networks. More information pertaining to USGS activities in Tennessee can be accessed at <http://tn.water.usgs.gov>.

*USGS Water Resources Information on the Internet.* Real-time and historical streamflow, water-level, and water-quality data at sites operated by the USGS Tennessee Water Science Center can be accessed on-line at <http://waterdata.usgs.gov/tn/nwis/nwis>. Data can be retrieved by county, hydrologic unit code, or major river basin using drop-down menus on the web page. For specific information or questions about USGS streamflow data, contact Donna Flohr at (615)837-4730 or [dfflohr@usgs.gov](mailto:dfflohr@usgs.gov). Recent USGS Tennessee Water Science Center publications can be accessed by visiting <http://tn.water.usgs.gov/pubpgp.html>. A searchable bibliographic database is also provided for locating other USGS reports and products addressing specific scientific topics.

### **5.2.C. U.S. Fish and Wildlife Service.**

The mission of the U.S. Fish and Wildlife Service is working with partners to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. Sustaining our nation's fish and wildlife resources is a task that can be accomplished only through the combined efforts of governments, businesses, and private citizens. The U.S. Fish and Wildlife Service (Service) works with state and federal agencies and tribal governments, helps corporate and private landowners conserve habitat, and cooperates with other nations to halt illegal wildlife trade. The Service also administers a Federal Aid program that distributes funds annually to States for fish and wildlife restoration, boating access, hunter education, and related projects across America. The funds come from federal excise taxes on fishing, hunting, and boating equipment.

### **Endangered Species Program**

Through the Endangered Species Program, the Service consults with other federal agencies concerning their program activities and their effects on endangered and threatened species. Other Service activities under the Endangered Species Program include the listing of rare species under the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended: 16 U.S.C. 1531 et seq.) and the recovery of listed species. Once listed, a species is afforded the full range of protections available under the ESA, including prohibitions on killing, harming, or otherwise taking a species.

Recovery is the process by which the decline of an endangered or threatened species is stopped and reversed, and threats to the species' survival are eliminated, so that long-term survival in nature can be ensured. The goal of the recovery process is to restore listed species to a point where they are secure and self-sustaining in the wild and can be removed from the endangered species list. Under the ESA, the Service and National Marine Fisheries Service were delegated the responsibility of carrying out the recovery program for all listed species. One tool used by the Service to promote recovery of listed species, while minimizing regulatory burden on state and local governments and private landowners, is the designation of non-essential experimental populations.

The Service published a proposed Draft Rule on June 13, 2006, to establish non-essential experimental population status for 21 aquatic species, including 15 mussels, one snail, and five fishes, in the Lower French Broad and Lower Holston Rivers (FR 71-113, 34195-34230). The final rule is expected to be published in 2007. The following federally listed mussels are included in this proposal: Appalachian monkeyface (*Quadrula sparsa*); birdwing pearlymussel (*Conradilla caelata*); cracking pearlymussel (*Hemistena lata*); Cumberland bean (*Villosa trabalis*); Cumberland monkeyface (*Quadrula intermedia*); Cumberlandian combshell (*Epioblasma brevidens*); dromedary pearlymussel (*Dromus dromas*); fanshell (*Cyprogenia stegaria*); fine-rayed pigtoe (*Fusconaia cuneolus*); orangefoot pimpleback (*Plethobasus cooperianus*); oyster mussel (*Epioblasma capsaeformis*); ring pink (*Obovaria retusa*); rough pigtoe (*Pleurobema plenum*); shiny pigtoe (*Fusconaia edgariana*); and white wartyback (*Plethobasus cicatricosus*). Other aquatic species included in the proposal are Anthony's river snail (*Athearnia anthonyi*); duskytail darter (*Etheostoma percnum*); pygmy madtom (*Noturus stanauli*); slender chub (*Erimystax cahni*); spotfin chub (*Erimonax monachus*); and yellowfin madtom (*Noturus flavipinnis*).

In an effort to preclude the listing of a rare species, the Service engages in proactive conservation efforts for unlisted species. The program covers not only formal candidates but also other rare species that are under threat. Early intervention preserves management options and minimizes the cost of recovery. In some instances, species listing can be avoided by the development of Candidate Conservation Agreements, which may remove threats facing the candidate species, and funding efforts such as the Private Stewardship Grant Program.

In a partnership with The Nature Conservancy (TNC), Tennessee Wildlife Resources Agency (TWRA), and Tennessee Department of Environment and Conservation (TDEC) Division of Natural Areas, the Service developed a State Conservation Agreement for Cave Dependent Species in Tennessee (SCA). The SCA targets unlisted but rare species and protects these species through a suite of proactive conservation agreements. The goal is to preclude the need to list these species under the ESA. This agreement covers middle and eastern Tennessee and will benefit water quality in many watersheds within the State.

This is the eighth year of a 20-year effort to release lake sturgeon (*Acipenser fulvescens*) into the lower French Broad and Holston Rivers. Over 51,000 have been released to date. The key partners in this effort are the Service, Tennessee Wildlife Resources Agency, Tennessee Valley Authority, Tennessee Aquarium, World Wildlife Fund, and Wisconsin Department of Natural Resources.

The following federally endangered (E), threatened (T), and candidate (C) species occur in the Lower French Broad River watershed: Carolina northern flying squirrel (*Glaucomys sabrinus coloratus*) (E); gray bat (*Myotis grisescens*) (E); Indiana bat (*Myotis sodalis*) (E); bald eagle (*Haliaeetus leucocephalus*) (T); spruce-fir moss spider (*Microhexura montivaga*) (E); snail darter (*Percina tanasi*) (T); spreading avens (*Geum radiatum*) (E); pink mucket (*Lampsilis abrupta*) (E); and sheepsnose (*Plethobasus cyphus*) (C). For a complete listing of endangered and threatened species in Tennessee, please visit the Service's website at <http://www.fws.gov/cookeville/>

### **Partners for Fish and Wildlife Program**

The U.S. Fish and Wildlife Service established the Partners for Fish and Wildlife Program to restore historic habitat types, which benefit native fishes and wildlife. The program adheres to the concept that restoring or enhancing habitats such as wetlands or other unique habitat types will substantially benefit federal trust species on private lands by providing food and cover or other essential needs. Federal trust species include threatened and endangered species, as well as migratory birds (e.g. waterfowl, wading birds, shorebirds, neotropical migratory songbirds).

Participation is voluntary and various types of projects are available. Projects include livestock exclusion fencing, alternate water supply construction, streambank stabilization, restoration of native vegetation, wetland restoration/enhancement, riparian zone reforestation, and restoration of in-stream aquatic habitats.

## HOW TO PARTICIPATE...

- Interested landowners contact a Partners for Fish and Wildlife Biologist to discuss the proposed project and establish a site visit.
- A visit to the site is then used to determine which activities the landowner desires and how those activities will enhance habitat for trust resources. Technical advice on proposed activities is provided by the Service, as appropriate.
- Proposed cost estimates are discussed by the Service and landowner.
- A detailed proposal which describes the proposed activities is developed by the Service biologist and the landowner. Funds are competitive; therefore the proposal is submitted to the Service's Ecosystem team for ranking and then to the Regional Office for funding.
- After funding is approved, the landowner and the Service co-sign a Wildlife Extension Agreement (minimum 10-year duration).
- Project installation begins.
- When the project is completed, the Service reimburses the landowner after receipts and other documentation are submitted according to the Wildlife Extension Agreement.

For more information regarding the Endangered Species and Partners for Fish and Wildlife programs, please contact the Cookeville Ecological Services Field Office at 931/528-6481 or visit their website at <http://www.fws.gov/cookeville/>

**5.2.D. Tennessee Valley Authority (TVA).** Tennessee Valley Authority's (TVA) goals for the 21st century are to generate prosperity for the Tennessee Valley by promoting economic development, supplying low-cost, reliable power, and supporting a thriving river system. TVA is committed to the sustainable development of the region and is engaged in a wide range of watershed protection activities to improve or protect water quality conditions.

TVA's watershed activities are conducted by 7 multidisciplinary Watershed Teams located throughout the Valley. These Watershed Teams help communities develop and implement protection and restoration activities in their local watersheds. In addition to water quality efforts, Watershed Teams carry out varied resource stewardship functions including management of TVA lands and shorelines, recreation, and resource management. These teams work in partnership with business, industry, government agencies, and community groups to manage, protect, and improve the quality of the Tennessee River and its tributaries. TVA also operates a comprehensive monitoring program to provide real-time information to the Watershed Teams and other entities about the conditions of these resources. TVA is also involved in outreach efforts in many watersheds in Tennessee, including the Upper French Broad River Watershed:

### **Transylvania County, NC- Tennessee Growth Readiness Workshop Series**

The Tennessee Growth Readiness Initiative (TGRI) is an educational program that focuses on teaching local officials, and other decision makers about the sources and impacts of nonpoint source pollution, how different land uses affect water quality, and what communities can do to protect water quality.

#### **Kids In the Creek**

This annual event is done in conjunction with NC State Extension and the Mud Creek Restoration Council, for Henderson County Middle School students. The Kids in the Creek program provides students with a glimpse of how Aquatic Biologists monitor the health of a stream. The students spend time at four stations: aquatic insects, fish community, water quality, and watershed education. Each station focuses on the importance of a healthy stream both for the ecosystem and human health.

Details about Outreach Activities can be obtained by writing the Holston-Cherokee-Douglas Watershed Team, 3726 E. Morristown Blvd., Morristown, TN, 37813 or calling Ms. Dana Ball at 423-585-2128, or E-mail her at [dmball@tva.gov](mailto:dmball@tva.gov).

**5.2.E. National Park Service.** Great Smoky Mountains National Park (GSMNP) is rich with nearly 3,400 kilometers (2,100 miles) of cool and cold-water stream habitats. Of this total, 1,280 km (800 miles) support a diverse fish community. Large stream systems (4<sup>th</sup>-5<sup>th</sup> order) support the greatest diversity of fishes in GSMNP, including 12 families and over 60 species. Many of the fish species found in these large stream systems are excellent indicators of natural and anthropogenic environmental impacts. Large stream systems in GSMNP are sampled each fall in an attempt to provide a snapshot of the diversity of habitat and fish species found in the Park's larger stream systems. Backpack electrofishing gear and three-pass depletion estimates are used to evaluate year-class strength, reproductive success, density (# fish/100m<sup>2</sup>), biomass (kg/ha), and other trend information.

The University of Tennessee in cooperation with the Park has conducted water quality monitoring in the Little Pigeon River watershed since 1992. These data have revealed that four streams in this area are impacted by acidic deposition and that they do not meet the pH standard for this area. As a result, these streams were included in the states 303(d) list in 2007. Park staff and staff from EPA and TDEC will have a conference call the first week of May 2007 to determine when and how TMDL's can be completed for these streams. At this point in time, impacts of this nature seem to be limited to this watershed.

One research project conducted in this watershed by the Department of Civil and Environmental Engineering at the University of Tennessee has produced additional disturbing results. Data from streams in the watershed show that storm events result in stream pH drops of up to two units for up to forty hours. Another project demonstrated that during a storm event, that native brook trout lose a significant amount of whole body sodium. The death of adult brook trout was not observed and chemical balance for the fish returned in about two days after the event. The impact this type of event could have on young of the year fish is unknown and future research will focus on this life history stage.

Brook trout monitoring has been conducted annually in Cosby and Rock Creeks. Data from these streams indicated that the populations are healthy and not suffering from acidic episodes. Annual changes in density and biomass indicate annual variation in these populations is mainly due to abiotic events such as droughts and floods.

For more information on biological monitoring, contact the Great Smoky Mountains National Park at [grsm\\_smokies\\_information@nps.gov](mailto:grsm_smokies_information@nps.gov).

### **5.3. STATE PARTNERSHIPS.**

**5.3.A. TDEC Division of Water Supply.** The Source Water Protection Program, authorized by the 1996 Amendments to the Safe Drinking Water Act, outline a comprehensive plan to achieve maximum public health protection. According to the plan, it is essential that every community take these six steps:

- 1) Delineate the drinking water source protection area
- 2) Inventory known and potential sources of contamination within these areas
- 3) Determine the susceptibility of the water supply system to these contaminants
- 4) Notify and involve the public about threats identified in the contaminant source inventory and what they mean to their public water system
- 5) Implement management measures to prevent, reduce or eliminate threats
- 6) Develop contingency planning strategies to deal with water supply contamination or service interruption emergencies (including natural disaster or terrorist activities).

Source water protection has a simple objective: to prevent the pollution of the lakes, rivers, streams, and ground water (wells and springs) that serve as sources of drinking water before they become contaminated. This objective requires locating and addressing potential sources of contamination to these water supplies. There is a growing recognition that effective drinking water system management includes addressing the quality and protection of the water sources.

Source Water Protection has a significant link with the Watershed Management Program goals, objectives and management strategies. Watershed Management looks at the health of the watershed as a whole in areas of discharge permitting, monitoring and protection. That same protection is important to protecting drinking water as well. Communication and coordination with a multitude of agencies is the most critical factor in the success of both Watershed Management and Source Water Protection.

Watershed management plays a role in the protection of both ground water and surface water systems. Watershed Management is particularly important in areas with karst (limestone characterized by solution features such as caves and sinkholes as well as disappearing streams and springs), since the differentiation between ground water and surface water is sometimes nearly impossible. What is surface water can become ground water in the distance of a few feet and vice versa.

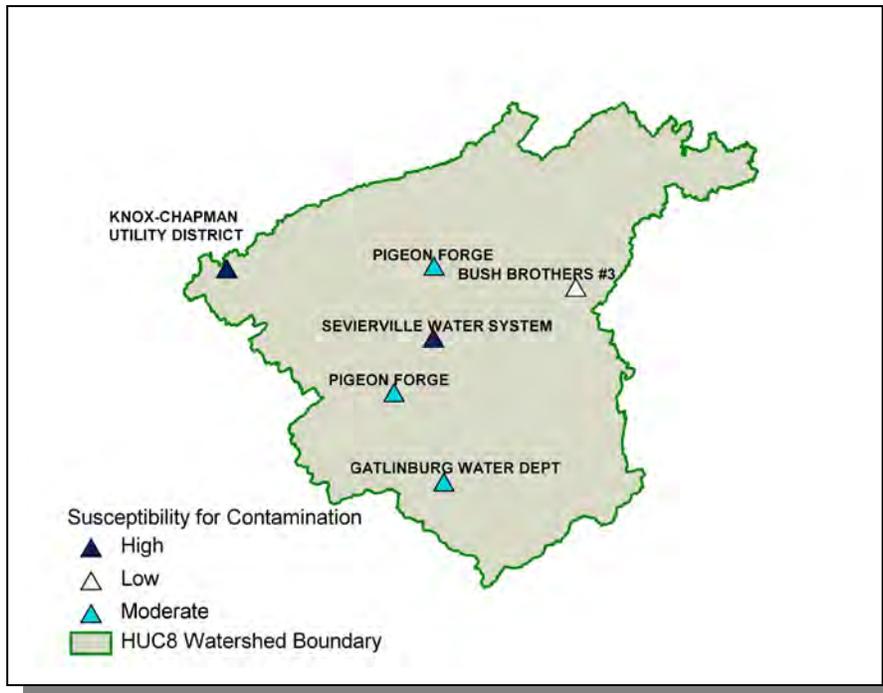
Source water protection is not a new concept, but an expansion of existing wellhead protection measures for public water systems relying on ground water to now include surface water. This approach became a national priority, backed by federal funding, when the Safe Drinking Water Act amendments (SDWA) of 1996 were enacted. Under this Act, every public drinking water system in the country is scheduled to receive an assessment of both the sources of potential contamination to its water source of the threat these sources may pose by the year 2003 (extensions were available until 2004). The assessments are intended to enhance the protection of drinking water supplies within existing programs at the federal, state and local levels. Source water assessments were mandated and funded by Congress. Source water protection will be

left up to the individual states and local governments without additional authority from Congress for that progression.

Tennessee's Wellhead Protection Rules were revised as of October 29, 2005 to include requirements for similar protection for public water systems using surface water sources under the heading of Drinking Water Source Protection Rule (1200-5-1-.34) in addition to the previous requirements for wellhead protection for public water systems using ground water sources. The rule addresses surface or ground water withdrawals in the vicinity of public water sources as well as potential contaminant sources threatening public water sources to reflect the amended prohibitions in the 2002 Amendments to the Tennessee Safe Drinking Water Act, TCA 68-221-771. There are additional reporting requirements of potential contaminant source inventories and emergency response for the public water systems as well. The Division of Water Supply will be able to use the Drinking Water Source Protection Rule to work in complimentary fashion with the Division of Water Pollution Control and other Departmental agencies in activities to protect public water sources.

As a part of the Source Water Assessment Program, public water systems are evaluated for their susceptibility to contamination. These individual source water assessments with susceptibility analyses are available to the public at:

<http://www.state.tn.us/environment/dws> as well as other information regarding the Source Water Assessment Program and public water systems.



**Figure 5-1. Public Water Systems Susceptible to Contamination in the Lower French Broad River Watershed.**

For further discussion on ground water issues in Tennessee, the reader is referred to the Ground Water Section of the 305(b) Water Quality Report at:

<http://state.tn.us/environment/dws/pdf/2006gw305b.pdf>

**5.3.B. TDEC Clean Water State Revolving Fund Program.** The Division of Water Pollution Control and the Division of Water Supply jointly administer the state's Clean Water State Revolving Fund Program. Amendment of the Federal Clean Water Act in 1987 created the Clean Water State Revolving Fund (SRF) Program to provide low-interest loans to cities, counties, and utility districts for the planning, design, and construction of wastewater facilities. The U.S. Environmental Protection Agency awards annual capitalization grants to fund the program and the State of Tennessee provides a twenty-percent funding match. TDEC has awarded loans totaling over \$675 million since the creation of the SRF Program. SRF loan repayments are returned to the program and used to fund future SRF loans.

SRF loans are available for planning, design, and construction of wastewater facilities, or any combination thereof. Eligible projects include new construction or upgrading/expansion of existing facilities, including wastewater treatment plants, pump stations, force mains, collector sewers, interceptors, elimination of combined sewer overflows, and nonpoint source pollution remedies.

SRF loan applicants must pledge security for loan repayment, agree to adjust user rates as needed to cover debt service and fund depreciation, and maintain financial records that follow governmental accounting standards. SRF loan interest rates range from zero percent to market rate, depending on the community's per-capita income, taxable sales, and taxable property values. Most SRF loan recipients qualify for interest rates between 2 and 4 percent. Interest rates are fixed for the life of the term of the loan. The maximum loan term is 20 years or the design life of the proposed wastewater facility - whichever is shorter.

The SRF Program maintains a Priority Ranking System and Priority List for funding the planning, design, and construction of wastewater facilities. The Priority Ranking List forms the basis for funding eligibility determinations and allocation of Clean Water SRF loans. Each project's priority rank is generated from specific priority ranking criteria and the proposed project is then placed on the Project Priority List. Only projects identified on the Project Priority List may be eligible for SRF loans. The process of being placed on the Project Priority List must be initiated by a written request from the potential SRF loan recipient or their engineering consultant. SRF loans are awarded to the highest priority projects that have met SRF technical, financial, and administrative requirements and are ready to proceed.

Since SRF loans include federal funds, each project requires development of a Facilities Plan, an environmental review, opportunities for minority and women business participation, a State-approved sewer use ordinance and Plan of Operation, and interim construction inspections.

For further information about Tennessee's Clean Water SRF Loan Program, contact the Clean Water SRF Loan Program by telephone at (615) 532-0445 or visit their Web site at <http://tennessee.gov/environment/srf>.

**5.3.C. Tennessee Department of Agriculture.** The Tennessee Department of Agriculture's Water Resources Section administers the federal Section 319 Nonpoint Source Program and the Agricultural Resources Conservation Fund Program. Both of these are grant programs which award funds to various agencies, non-profit organizations, and universities that undertake projects to improve the quality of Tennessee's waters and/or educate citizens about the many problems and solutions to water pollution. Both programs fund projects associated with what is commonly known as "nonpoint source pollution."

The Tennessee Department of Agriculture's Nonpoint Source Program (TDA-NPS) has the responsibility for management of the federal Nonpoint Source Program, funded by the US Environmental Protection Agency through the authority of Section 319 of the Clean Water Act. This program was created in 1987 as part of the reauthorization of the Clean Water Act, and it established funding for states, territories and Indian tribes to address NPS pollution. Nonpoint source funding is used for installing Best Management Practices (BMPs) to stop known sources of NPS pollution, training, education, demonstrations, and water quality monitoring. The TDA-NPS Program is a non-regulatory program, promoting voluntary, incentive-based solutions to NPS problems. The TDA-NPS Program funds three types of programs:

- **BMP Implementation Projects.** These projects aid in the improvement of an impaired waterbody, or prevent a non-impaired water from becoming listed on the 303(d) List.
- **Monitoring Projects.** Up to 20% of the available grant funds are used to assist the water quality monitoring efforts in Tennessee streams, both in the state's 5-year watershed monitoring program, and also in performing before-and-after BMP installation, so that water quality improvements can be verified. Some monitoring in the Lower French Broad River Watershed was funded under an agreement with the Tennessee Department of Agriculture, Nonpoint Source Program (U.S. Environmental Protection Agency Assistance Agreement C99944674-04-0 and C99944674-05-0).
- **Educational Projects.** The intent of educational projects funded through TDA-NPS is to raise the awareness of landowners and other citizens about practical actions that can be taken to eliminate nonpoint sources of pollution to the waters of Tennessee.

The Tennessee Department of Agriculture Agricultural Resources Conservation Fund Program (TDA-ARCF) provides cost-share assistance to landowners across Tennessee to install BMPs that eliminate agricultural nonpoint source pollution. This assistance is provided through Soil Conservation Districts, Resource Conservation and Development Districts, Watershed Districts, universities, and other groups. Additionally, a portion of the TDA-ARCF is used to implement information and education projects statewide, with the focus on landowners, producers, and managers of Tennessee farms and forests.

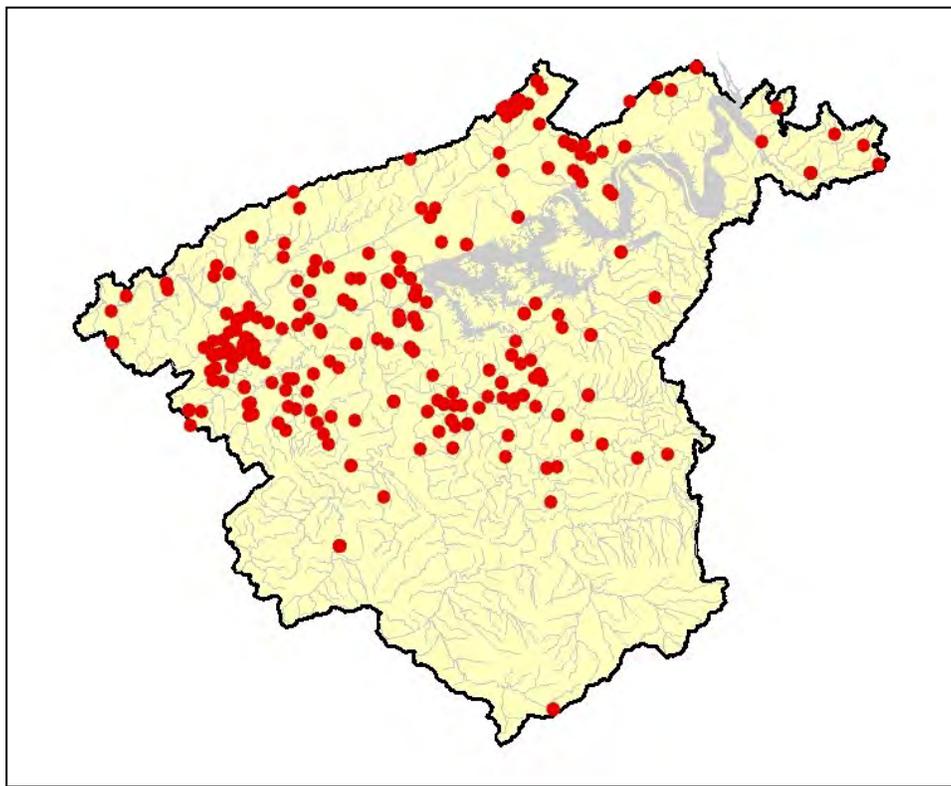
Participating contractors in the program are encouraged to develop a watershed emphasis for their individual areas of responsibility, focusing on waters listed on the Tennessee 303(d) List as being impaired by agriculture. Current guidelines for the TDA-ARCF are available. Landowners can receive up to 75% of the cost of the BMP as a reimbursement.

Since January of 1999, the Department of Agriculture and the Department of Environment and Conservation have had a Memorandum of Agreement whereby complaints received by TDEC concerning agriculture or silviculture projects would be forwarded to TDA for investigation and possible correction. Should TDA be unable to obtain correction, they would assist TDEC in the enforcement against the violator. More information forestry BMPs is available at:

<http://www.state.tn.us/agriculture/forestry/bmpmanual.html>

The complaint form is available at:

[http://www.state.tn.us/environment/wpc/forms/wqlogging\\_cn1274.doc](http://www.state.tn.us/environment/wpc/forms/wqlogging_cn1274.doc)



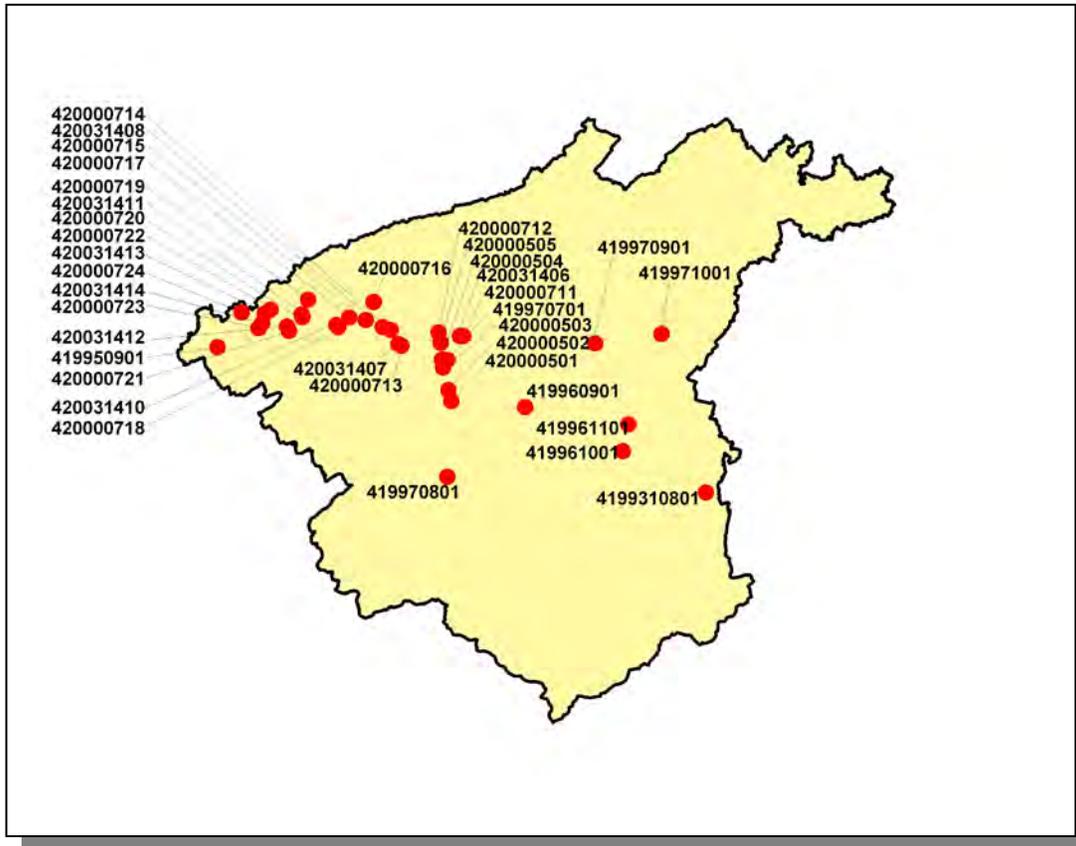
**Figure 5-2. Location of BMPs installed from 2002 through 2006 in the Lower French Broad River Watershed with Financial Assistance from the Tennessee Department of Agriculture's Nonpoint Source and Agricultural Resources Conservation Fund Grant Programs. More information is provided in Appendix V.**

**5.3.D. Tennessee Wildlife Resources Agency.** The Tennessee Wildlife Resources Agency (TWRA) conducts a variety of activities related to watershed conservation and management. Fish management activities include documentation of fish and aquatic life through stream sampling and stocking of both warm water and cold-water sport fish. Fish data are managed in the Geographic Information System (GIS) project called Tennessee Aquatic Database System (TADS). TWRA nongame and endangered species projects include restoration of special status fish, aquatic life, and riparian wildlife. The Agency conducts a variety of freshwater mussel management, conservation, and restoration projects including the propagation and reintroduction of species once common in Tennessee streams. TWRA has been involved in riparian conservation projects since 1991 in partnership with state and federal agencies and conservation groups.

### **The Tennessee Aquatic Database System (TADS)**

The Tennessee Aquatic Database System (TADS) originated in the mid-1980's as a geographically referenced fisheries database maintained on ESRI's GIS Arc/Info software. It consists of mapping coverages of streams, rivers and reservoirs along with reliable fisheries data files. These database files include stream and river fish distributions, sample site data, and Index of Biotic Integrity (IBI) data. The fish inventory data file contains over 15,000 records of fish occurrences from over 3,600 sample sites across the state. Fish data is referenced by river reach and a point coverage generated by latitude and longitude. Physical and chemical data and habitat evaluations from most of the sample sites have been entered into a database.

TWRA Fisheries stream survey data were consolidated, updated and entered into a Microsoft Access database to create the Tennessee Aquatic Database System 07 (TADS07), an updated version of the TADS. TADS07 contains fisheries stream survey data from 1987 to 2005.



**Figure 5-3. Location of TWRA TADS Sampling Sites in the Lower French Broad Watershed from 1987-2005.** More information is provided in Appendix V.

### **Tennessee State Wildlife Action Plan (SWAP)**

The Tennessee State Wildlife Action Plan (SWAP), formerly known as the Comprehensive Wildlife Conservation Strategy (CWCS), was developed by the Tennessee Wildlife Resources Agency with assistance from The Nature Conservancy in 2005. Congress mandated that each state and territory in the United States develop a SWAP as a requirement for continued receipt of federal State Wildlife Grant funding. These plans require the completion of 8 key elements of wildlife planning: 1) a list of animal species of greatest conservation need, 2) information about the distribution and abundance of species targets, 3) locations and relative conditions of key habitats, 4) descriptions of problems affecting target species and their habitats, 5) descriptions of conservation actions and priorities for conserving target species and habitats, 6) details for monitoring target species, conservation actions, and adaptive management, 7) discussion of plans to review the SWAP at specific intervals, and 8) information about coordination and implementation of the SWAP with major stakeholders. In Tennessee, the SWAP was integrated into a spatial model using Geographic Information Systems (GIS) and other database technology. Priority aquatic, terrestrial, and subterranean areas for conservation were identified across the state. Priorities were determined in the GIS model based upon relative differences in species rarity, population viability, and potential mobility of species across habitat units.

Priority problems affecting species and needed conservation actions are detailed across each region of the state. For complete information about the Tennessee SWAP, please visit: <http://www.state.tn.us/twra/cwcs/cwcsindex.html> to read or download the full report.

For information on these and other water resources related activities, please contact your Regional TWRA office at the following phone numbers:

West Tennessee ( Region I )	1-800-372-3928
Middle Tennessee ( Region II )	1-800-624-7406
Cumberland Plateau ( Region III )	1-800-262-6704
East Tennessee ( Region IV)	1-800-332-0900

TDD services are available at 615-781-6691.  
TWRA's website is <http://www.state.tn.us/twra>.

## **5.4. LOCAL INITIATIVES.**

**5.4.A. French Broad Preservation Association** The Mission of the French Broad Preservation Association is: "To preserve and enhance the environmental quality, scenic beauty, rural heritage and historic resources of the French Broad River communities."

The FBPA is a 501(c)(3) non-profit organization that has regular monthly meetings the second Monday of every month at the Historic Riverdale School located at 7009 Thorn Grove Pike in Knoxville. The meetings begin at 7 p.m. and members as well as non-members are invited to attend. Individuals or groups can obtain memberships at any time.

The French Broad corridor is one of the best-preserved cultural landscapes in Knox County and East Tennessee. It is an area that truly recognizes itself as a special community in the stewardship of landowners who are conserving their lands for future generations. With Seven Islands Wildlife Refuge at one end of this part of the corridor to Ijams Nature Center at the other end, it is a stretch of river that highlights the true beauty of our rural and agricultural heritage.

The FBPA is working with Knox county on building another put-in/take-out ramp along Kodak Road that will have picnic and bathroom facilities. The Cruze Family has donated the property and FBPA is in the process of getting final deeds changed to Knox County Parks and Recreation so FBPA can begin construction.

The FBPA hosts river floats on the French Broad River and also hosts river cleanup days.

The FBPA is presently developing a website.

If you are interested in getting involved, please call or email Elaine Clark for further details. Ms. Clark may be reached at 865.599.2473 or [eclark@nxs.net](mailto:eclark@nxs.net).

## **5.4.B. The Smoky Mountain Resource Conservation and Development Council.**

### COUNCIL OVERVIEW

The Smoky Mountain Resource Conservation and Development (RC&D) Area encompasses both the Smoky Mountains of East Tennessee, as well as parts of the French Broad, Nolichucky, Little Tennessee, and Lower French Broad River basins. The counties included in this RC&D area are as follows: Blount, Cocke, Hamblen, Jefferson, Knox, and Sevier. The area includes approximately 1,629,440 acres – including parts of the Great Smoky Mountains National Park and the Cherokee National Forest. The area is bordered by the mountains of North Carolina along the southeast, by Greene County (TN) on the northeast, by the Lower French Broad River to the north, and by Anderson, Roane, and Loudon counties to the west. The area has a very diverse land use and geology. This is a rugged, rural landscape that is dominated by the Appalachian Mountains. The severely dissected ridges and narrow valleys that formed the western

frontier of early America continue to influence transportation, commerce, agriculture, and land use.

The population of the six county region is approximately 712,171 according to an estimated figure obtained by the US Census Bureau in 2002. Farming enterprises include beef cattle, tobacco, dairy, poultry, and specialty crops. The vast majority of farmers are part-time within this region. Most jobs are in a variety of service trades (16.7%) and manufacturing facilities (21.3%). The average per capita income for the area in 1999 was \$17,970, with the median household income calculated to be \$33,460 per year. Unemployment across the area was calculated at a rate of 5.7%.

The Smoky Mountain RC&D Area received its charter in June 1997, as well as successfully obtained its 501(c)(3) tax status with the Internal Revenue Service. At this point, the Council consisted of only five counties (Blount, Cocke, Hamblen, Jefferson, and Sevier). The Council's borders were expanded to include Knox County in late 2004.

In addition, the Smoky Mountain RC&D Council has received grants from the USDA Forest Service, Tennessee Department of Agriculture, Tennessee Valley Authority, US Fish & Wildlife Service, Tennessee Arts Commission, and the USDA – Rural Development. The funds generated from these grantors have been (and will be) used to initiate and complete projects that will help to meet the goals and objectives of our council.

### MISSION STATEMENT

The mission of the Smoky Mountain RC&D Council and its programs is to empower residents to improve their quality of life through economic and community development while sustaining the natural resources of the area.

### COUNCIL GOALS

Goal A: Expand sustainable economic development while conserving the area's natural resources.

Goal B: Promote new and innovative entrepreneurial opportunities to individuals within the RC&D Area.

Goal C: Educate individuals within the area on the importance of clean drinking water, as well as on the value of teaching water quality – in general terms.

Goal D: Reach 25% of the RC&D Area population with educational programs by 2010, which will empower them with the knowledge and desire to improve their quality of life.

### RECENT PROJECTS in the Lower French Broad River Watershed:

- Installed a critical area treatment and stream channel stabilization for Sevier County in order to enhance water quality.
- Installed livestock watering system with trough and tank on Malcolm Smith farm to enhance water quality.

- Installed a heavy use area protection pad on Marshall Dykes to enhance water quality and to reduce erosion.
- Installed bank restoration project with riprap and geotextile fabric with steep bank vegetation at the city park to enhance water quality and control erosion from bank eroding away.
- Installed a steep bank stabilization project at Pine Mountain to stop erosion.
- Installed a lined waterway at the Hodson Hicks Industrial Park to enhance water quality.
- Installed a bioengineering and stream bank stabilization project at Markhill Village Retirement Center to enhance water quality and reduce erosion.

Contact:

Eston Williams

Smoky Mountain RC&D Council

1715 Garden Village Drive

White Pine, Tennessee 37890-3148

Phone: 865-674-8890

Email: [eston.williams@tn.usda.gov](mailto:eston.williams@tn.usda.gov)

## **CHAPTER 6**

### **RESTORATION STRATEGIES IN THE LOWER FRENCH BROAD RIVER WATERSHED**

- 6.1. Background**
- 6.2. Comments from Public Meetings**
  - 6.2.A. Year 1 Public Meeting**
  - 6.2.B. Year 2 Public Meeting**
  - 6.2.C. Year 5 Public Meeting**
- 6.3. Approaches Used**
  - 6.3.A. Point Sources**
  - 6.3.B. Nonpoint Sources**
- 6.4. Permit Reissuance Planning**
  - 6.4.A. Municipal Permits**
  - 6.4.B. Industrial Permits**
  - 6.4.C. Water Treatment Plant Permits**

#### **6.1. BACKGROUND.**

The Watershed Water Quality Management Plan serves as a comprehensive inventory of resources and stressors in the watershed, a recommendation for control measures, and a guide for planning activities in the next five-year watershed cycle and beyond. Water quality improvement will be a result of implementing both regulatory and nonregulatory programs.

In addition to the NPDES program, some state and federal regulations, such as the TMDL and ARAP programs, address point and nonpoint issues. Construction and MS4 storm water rules (implemented under the NPDES program) have transitioned from Phase 1 to Phase 2. More information on storm water rules may be found at: <http://www.state.tn.us/environment/wpc/stormh2o/>.

This Chapter addresses point and nonpoint source approaches to water quality problems in the Lower French Broad River Watershed as well as specific NPDES permittee information.

**6.2. COMMENTS FROM PUBLIC MEETINGS.** Watershed meetings are open to the public, and most meetings were represented by citizens who live in the watershed, NPDES permittees, business people, farmers, and local river conservation interests. Locations for meetings were chosen after consulting with people who live and work in the watershed. Everyone with an interest in clean water is encouraged to be a part of the public meeting process. The times and locations of watershed meetings are posted at: <http://www.state.tn.us/environment/wpc/watershed/public.shtml>.

**6.2.A. Year 1 Public Meeting.** The Lower French Broad River Watershed public meeting was held on December 7, 2000, at the Sevier County Courthouse in Sevierville, Tennessee. The goals of the meeting were to: (1) present, and review the objectives of, the Watershed Approach, (2) introduce local, state, and federal agency and nongovernmental organization partners, (3) review water quality monitoring strategies, and (4) solicit input from the public. Twenty-seven people attended the meeting.

#### Major Concerns/Comments Voiced at Public Meeting

- Does monitoring take into account seasonal or tourism effects?
- Bank erosion on French Broad River due to releases at Douglas Dam
- TDEC does not require newest treatment technologies
- Upstream soil erosion and siltation of river bed
- Upstream pollution from human, animal, and chemical wastes
- Ineffectiveness of government agencies to resolve critical ongoing problems (like flooding).

**6.2.B. Year 3 Public Meeting.** Not scheduled.

**6.2.C. Year 5 Public Meeting.** Not scheduled.

### 6.3. APPROACHES USED.

**6.3.A.** Point Sources. Point source contributions to stream impairment are primarily addressed by NPDES and ARAP permit requirements and compliance with the terms of the permits. Notices of NPDES and ARAP draft permits available for public comment can be viewed at <http://www.state.tn.us/environment/wpc/wpcppo/>. Discharge monitoring data submitted by NPDES-permitted facilities may be viewed at [http://www.epa.gov/enviro/html/pes/pes\\_query\\_java.html](http://www.epa.gov/enviro/html/pes/pes_query_java.html).

The purpose of the TMDL program is to identify remaining sources of pollution and allocate pollution control needs in places where water quality goals are still not being achieved. TMDL studies are tools that allow for a better understanding of load reductions necessary for impaired streams to return to compliance with water quality standards. More information about Tennessee's TMDL program may be found at: <http://www.state.tn.us/environment/wpc/tmdl/>.

Approved TMDLs:

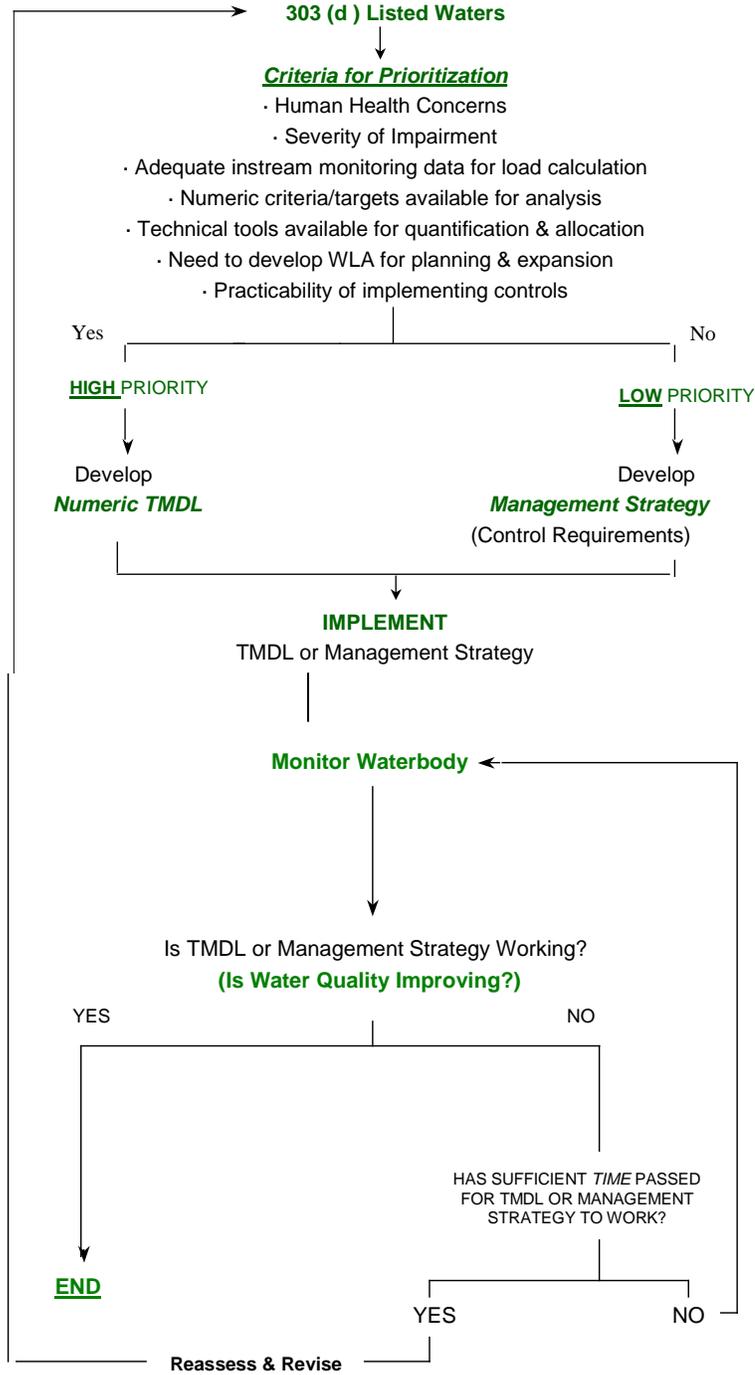
**Lower French Broad Watershed** - Total Maximum Daily Load for Pathogens in the Lower French Broad Watershed in Cocke, Jefferson and Sevier Counties. Approved 12/20/2005

<http://www.state.tn.us/environment/wpc/tmdl/approvedtmdl/LowerFrenchPath.pdf>

**Lower French Broad River** - Total Maximum Daily Load for Siltation and Habitat Alteration in the Lower French Broad River Watershed in Blount, Cocke, Jefferson, Knox, and Sevier Counties. Approved 08/17/2007.

<http://state.tn.us/environment/wpc/tmdl/approvedtmdl/LowerFrenchBroadSed.pdf>

TMDLs are prioritized for development based on many factors.



**Figure 6-1. Prioritization Scheme for TMDL Development.**

### 6.3.B. Nonpoint Sources

Common nonpoint sources of pollution in the Lower French Broad River Watershed include urban runoff, riparian vegetation removal, and inappropriate land development, agricultural, and road construction practices. Since nonpoint pollution exists essentially everywhere rain falls, existing point source regulations can have only a limited effect. Other measures are, therefore, necessary.

There are several state and federal regulations that address some of the contaminants impacting waters in the Lower French Broad River Watershed. Most of these are limited to only point sources: a pipe or ditch. Often, controls of point sources are not sufficient to protect waters, so other measures are necessary. Some measures include efforts by landowners and volunteer groups and the possible implementation of new regulations. Many agencies, such as the Tennessee Department of Agriculture (TDA) and the Natural Resources Conservation Service (NRCS), offer financial assistance to landowners for corrective actions (like Best Management Practices) that may be sufficient for recovery of impacted streams. Many nonpoint problems will require an active civic involvement at the local level geared towards establishment of improved zoning guidelines, building codes, streamside buffer zones and greenways, and general landowner education.

The following text describes types of impairments, possible causes, and suggested improvement measures. Restoration efforts should not be limited to only those streams and measures suggested below.

#### 6.3.B.i. Sedimentation.

6.3.B.i.a. From Construction Sites. Construction activities have historically been considered “nonpoint sources.” In the late 1980’s, EPA designated them as being subject to NPDES regulation if more than 5 acres were being disturbed. In the spring of 2003, that threshold became 1 acre or less than 1 acre if it’s part of a larger development. The general permit issued for such construction sites establishes conditions for maintenance of the sites to minimize pollution from storm water runoff, including requirements for installation and inspection of erosion prevention and sediment controls. Also, the general permit imposes more stringent inspection, design criteria and sediment control measures on sites in the watershed of streams that are already impaired due to siltation or are considered high quality. Regardless of the size, no construction site is allowed to cause a condition of pollution.

Construction sites within a sediment-impaired watershed may also have higher priority for inspections by WPC personnel, and are likely to have enforcement actions for failure to control erosion.

**6.3.B.i.b.** From Channel and/or Bank Erosion. Some streams within the Lower French Broad River Watershed suffer from varying degrees of streambank erosion. When stream channels are altered, or large tracts of land are cleared, storm water runoff will cause banks to become unstable and highly erodable. Heavy livestock traffic can also severely disturb banks. Destabilized banks contribute to sediment load and to the loss of beneficial riparian vegetation to the stream. Some inappropriate agricultural practices have impacted the hydrology and morphology of stream channels in this watershed.

Several agencies such as the NRCS and TDA, as well as watershed citizen groups, are working to stabilize portions of stream banks using bioengineering and other techniques. Affected streams, like Clear Creek and Dumplin Creek, could benefit from these types of projects. Other methods or controls that might be necessary to address common problems are:

*Voluntary activities*

- Re-establish bank vegetation (Clear Creek, Walden Creek).
- Establish off-channel watering areas for livestock by moving watering troughs and feeders back from stream banks (Clear Creek).
- Limit cattle access to streams and bank vegetation (Clear Creek and Dumplin Creek).

*Regulatory Strategies*

- Increase efforts in the Master Logger program to recognize impaired streams and require more effective management practices.
- Require post-construction run-off rates to be no greater than pre-construction rates in order to avoid in-channel erosion.
- Implement additional restrictions on logging in streamside management zones.
- Limit road and utility crossings of streams through better site design.
- Restrict the use of off-highway vehicles on stream banks and in stream channels.
- Limit clearing of stream and roadside ditch banks or other alterations. *Note: Permits may be required for any work along streams.*
- Encourage or require strong local buffer ordinances.
- Restrict rock harvesting and sand removal to permitted sites.

*Additional strategies*

- Better community planning and MS4 oversight for the impacts of development on small streams, especially development in growing areas such as Sevierville and Gatlinburg.

**6.3.B.i.c.** From Agriculture and Silviculture. The Water Quality Control Act exempts normal agricultural and silvicultural practices that do not result in a point source discharge. Nevertheless, efforts are being made to address impacts due to these exempted practices.

The Master Logger Program has been in place for several years to train loggers how to install Best Management Practices that lessen the impact of logging activities on streams. Recently, laws and regulations established the authority for the Commissioners of the Departments of Environment and Conservation and of Agriculture to stop the logging operation that, upon failing to install these BMPs, is causing impacts to streams.

Since the Dust Bowl era, the agriculture community has strived to protect the soil from wind and water erosion. Agencies such as the Natural resources Conservation Service (NRCS), the University of Tennessee Agricultural Extension Service, and the Tennessee Department of Agriculture are striving to identify better ways of farming, to educate the farmers, and to install the methods that address the sources of some of the impacts due to agriculture. Cost sharing is available for many of these measures.

Many sediment problems traceable to agricultural practices also involve riparian loss due to close row cropping or pasture clearing for grazing. Lack of any type of vegetated buffer along stream corridors is sometimes a problem in the Lower French Broad River Watershed. Impacted streams that could benefit from the establishment of riparian buffer zones include Clear Creek, Walden Creek and its tributaries, and Dumplin Creek.

### **6.3.B.ii. Pathogen Contamination.**

Possible sources of pathogens are inadequate or failing septic tank systems, overflows or breaks in public sewer collection systems, poorly disinfected discharges from sewage treatment plants, and fecal matter from pets, livestock, and wildlife washed into streams and storm drains. Permits issued by the Division of Water Pollution Control regulate discharges from point sources and require adequate control for these sources. Individual homes are required to have subsurface, on-site treatment (i.e., septic tank and field lines) if public sewers are not available. The Division of Ground Water Protection within the Knoxville Field Office and delegated county health departments regulate septic tanks and field lines. In addition to discharges to surface waters, businesses may employ either subsurface or surface disposal of wastewater. The Division of Water Pollution Control regulates surface water disposal.

Currently, 14 stream systems in the Lower French Broad River Watershed are known to have excessive pathogen contamination. King Branch, Gnatty Branch and Beech Branch Creek in the West Prong Little Pigeon River system are examples of streams impacted by bacterial contamination coming from septic drainfields. The West Prong of the Little Pigeon River, Dudley Creek, Mill Creek, and Roaring Fork are included in those streams impacted by bacterial contamination from collection system leaks and overflows and/or urban runoff. In agricultural watersheds, Clear Creek, Boyds Creek, and Waldens Creek shows elevated bacterial levels from pasture grazing and cattle access to streams.

Other measures that may be necessary to control pathogens are:

#### *Voluntary activities*

- Establish off-channel watering of livestock
- Limit livestock access to streams and restrict stream crossings.
- Improve and educate on the proper management of animal waste from feeding operations.

#### *Enforcement strategies*

- Strengthen enforcement of regulations governing on-site wastewater treatment.
- Determine timely and appropriate enforcement for non-complying sewage treatment plants, large and small, and their collection systems.
- Identify Concentrated Animal Feeding Operations not currently permitted.

### *Additional strategies*

- Develop intensive planning in areas where sewer is not available and treatment by subsurface disposal is not an option due to poor soils, floodplains, or high water tables.
- Develop and enforce leash laws and controls on pet fecal material.
- Greater efforts by sewer utilities to identify leaking lines or overflowing manholes.

### **6.3.B.iii. Excessive Nutrients and/or Dissolved Oxygen Depletion.**

These two impacts are usually listed together because high nutrients often contribute to low dissolved oxygen within a stream. Since nutrients often have the same source as pathogens, the measures previously listed can also address many of these problems. Elevated nutrient loadings are also often associated with urban runoff from impervious surfaces, from fertilized lawns and croplands, and faulty sewage disposal processes. Nutrients are often transported with sediment, so many of the measures designed to reduce sediment runoff will also aid in preventing organic enrichment of streams and lakes.

Other sources of nutrients can be addressed by:

#### *Voluntary activities*

- Educate homeowners and lawn care companies in the proper application of fertilizers.
- Encourage landowners, developers, and builders to leave stream buffer zones. Streamside vegetation can filter out many nutrients and other pollutants before they reach the stream. These riparian buffers are also vital along livestock pastures. Examples of streams that could benefit are Waldens Creek and its tributaries and Clear Creek.
- Use grassed drainage ways that can remove fertilizer before it enters streams.
- Use native plants for landscaping since they don't require as much fertilizer and water.

Physical changes to streams can prevent them from providing enough oxygen to biodegrade the materials that are naturally present. A few additional actions can address this problem:

- Maintain shade over a stream. Cooler water can hold more oxygen and retard the growth of algae. As a general rule, all stream channels suffer from some canopy removal. An intact riparian zone also acts as a buffer to filter out nutrient loads before they enter the water.
- Discourage impoundments. Ponds and lakes do not aerate water. *Note: Permits may be required for any work on a stream, including impoundments.*

### *Regulatory strategies*

- Strengthen enforcement of regulations governing on-site wastewater treatment.
- Impose more stringent permit limits for nutrients discharged from sewage treatment plants.
- Impose timely and appropriate enforcement for noncomplying sewage treatment plants, large and small, and their collection system.
- Identify Concentrated Animal Feeding Operations not currently permitted.
- Support and train local MS4 programs within municipalities to deal with storm water pollution issues.

### **6.3.B.iv. Toxins and Other Materials.**

Although some toxic substances are discharged directly into waters of the state from a point source, much of these materials are washed in during rainfalls from an upland location, or via improper waste disposal that contaminates groundwater. The West Prong of the Little Pigeon River is the best example of a stream currently listed as impaired from these kinds of sources in the Lower French Broad River Watershed. More stringent inspection and regulation of permitted industrial facilities, and local storm water quality initiatives and regulations, could help reduce the amount of contaminated runoff reaching state waters.

Many materials enter our streams due to apathy, or lack of civility or knowledge by the public. Litter in roadside ditches, garbage bags tossed over bridge railings, paint brushes washed off over storm drains, and oil drained into ditches are all blatant examples of pollution in streams.

Some of these problems can be addressed by:

### *Voluntary activities*

- Provide public education.
- Paint warnings on storm drains that connect to a stream.
- Sponsor community clean-up days.
- Landscape public areas.
- Encourage public surveillance of their streams and reporting of dumping activities to their local authorities.

### *Enforcement strategies*

- Prohibit illicit discharges to storm drains.
- Strengthen litter law enforcement at the local level.

### 6.3.B.v. Habitat Alteration.

The alteration of the habitat within a stream can have severe consequences. Whether it is the removal of the vegetation providing a root system network for holding soil particles together, the release of sediment, which increases the bed load and covers benthic life and fish eggs, the removal of gravel bars, “cleaning out” creeks with heavy equipment, or the impounding of the water in ponds and lakes, many alterations impair the use of the stream for designated uses. Habitat alteration also includes the draining or filling of wetlands.

The section of the Lower French Broad River immediately downstream of Douglas Dam is listed as impaired due to power generation and flow regulation activities, which sometimes result in low dissolved oxygen levels and thermal and physical alterations. However, individual landowners and developers are responsible for the vast majority of stream alterations. Some measures that can help address these problems are:

#### *Voluntary activities*

- Sponsor litter pickup days to remove litter that might enter streams.
- Organize stream cleanups removing trash, limbs and debris before they cause blockage.
- Avoid use of heavy equipment to “clean out” streams.
- Plant native vegetation along streams to stabilize banks and provide habitat.
- Encourage developers to avoid extensive use of culverts in streams.

#### *Current regulations*

- Restrict modification of streams by such means as culverting, lining, or impounding. Mill Creek, for example, has had significant reaches impacted by channelization activities.
- Require mitigation for impacts to streams and wetlands when modifications are allowed.

#### *Additional Enforcement*

- Increased enforcement may be needed when violations of current regulations occur.

### 6.3.B.vi. Storm Water.

MS4 discharges are regulated through the Phase I or II NPDES-MS4 permits. These permits require the development and implementation of a Storm Water Management Program (SWMP) that will reduce the discharge of pollutants to the maximum extent practicable and not cause or contribute to violations of state water quality standards. The NPDES General Permit for Discharges from Phase I and II MSF facilities can be found at:

<http://www.state.tn.us/environment/wpc/stormh2o/>.

For discharges into impaired waters, the MS4 General Permit requires that SWMPs include a section describing how discharges of pollutants of concern will be controlled to ensure that they do not cause or contribute to instream exceedances of water quality

standards. Specific measurements and BMPs to control pollutants of concern must also be identified. In addition, MS4s must implement the proposed waste load allocation provisions of an applicable TMDL (i.e., siltation/habitat alteration, pathogens) and describe methods to evaluate whether storm water controls are adequate to meet the waste load allocation. In order to evaluate SWMP effectiveness and demonstrate compliance with specified waste load allocations, MS4s are encouraged to develop and implement appropriate monitoring programs by the designated date.

Some storm sewer discharges are not regulated through the NPDES MS4 program. Strategies to address runoff from these urban areas include adapting Tennessee Growth Readiness Program (TGRP) educational materials to the watershed. TGRP is a statewide program built on existing best management practices from the Nonpoint Education for Municipal Officials program and the Center for Watershed Protection. TGRP developed the program to provide communities and counties with tools to design economically viable and watershed friendly developments. The program assists community leaders in reviewing current land use practices, determining impacts of imperviousness on watershed functions, and allowing them to understand the economics of good watershed management and site design.

#### **6.4. PERMIT REISSUANCE PLANNING**

Under the *Tennessee Water Quality Control Act*, municipal, industrial and other dischargers of wastewater must obtain a permit from the Division. Approximately 1,700 permits have been issued in Tennessee under the federally delegated National Pollutant Discharge Elimination System (NPDES). These permits establish pollution control and monitoring requirements based on protection of designated uses through implementation of water quality standards and other applicable state and federal rules.

The following three sections provide specific information on municipal, industrial, and water treatment plant active permit holders in the Lower French Broad River Watershed. Compliance information was obtained from EPA's Permit Compliance System (PCS). All data was queried for a five-year period between May 1, 2002, and May 31, 2007. PCS can be accessed publicly through EPA's Envirofacts website. This website provides access to several EPA databases to provide the public with information about environmental activities that may affect air, water, and land anywhere in the United States:

[http://www.epa.gov/enviro/html/ef\\_overview.html](http://www.epa.gov/enviro/html/ef_overview.html)

Stream Segment information, including designated uses and impairments, are described in detail in Chapter 3, *Water Quality Assessment of the Lower French Broad River Watershed*.

**6.4.A. Municipal Permits**

**TN0021245 Dandridge STP**

**Discharger rating:** Minor  
**City:** Dandridge  
**County:** Jefferson  
**EFO Name:** Knoxville  
**Issuance Date:** 8/31/05  
**Expiration Date:** 8/31/10  
**Receiving Stream(s):** Douglas Lake at French Broad River mile 45.5  
**HUC-12:** 060101070102  
**Effluent Summary:** Treated municipal wastewater from Outfall 001  
**Treatment system:** Flow equalization, contact stabilization, aerobic digestion, chlorination, sludge drying beds.

SEGMENT	TN06010107029_1000
<b>Name</b>	Douglas Reservoir
<b>Size</b>	30400
<b>Unit</b>	Acres
<b>First Year on 303(d) List</b>	-
<b>Designated Uses</b>	Domestic Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
<b>Causes</b>	N/A
<b>Sources</b>	N/A

*Table 6-1. Stream Segment Information for Dandridge STP.*

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD % removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
BOD % removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
BOD5	All Year		mg/L	DMax Conc	Continuous	Composite	Influent (Raw Sewage)
BOD5	All Year	45	mg/L	DMax Conc	3/Week	Composite	Effluent
BOD5	All Year	133	lb/day	DMax Load	3/Week	Composite	Effluent
BOD5	All Year	40	mg/L	WAvg Conc	3/Week	Composite	Effluent
BOD5	All Year	100	lb/day	MAvg Load	3/Week	Composite	Effluent
BOD5	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
BOD5	All Year	30	mg/L	MAvg Conc	3/Week	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		Occurences/ Month	MAvg Load	Continuous	Visual	Wet Weather
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	487	#/100mL	DMax Conc	3/Week	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
Overflow Use Occurences	All Year		Occurences/ Month	MAvg Load	Continuous	Visual	Non Wet Weather
Overflow Use Occurences	All Year		Occurences/ Month	MAvg Load	Continuous	Visual	Wet Weather
Settleable Solids	All Year	1	mL/L	DMax Conc	Weekdays	Composite	Effluent
TRC	All Year	2	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	133	lb/day	WAvg Load	3/Week	Composite	Effluent
TSS	All Year	40	mg/L	WAvg Conc	3/Week	Composite	Effluent
TSS	All Year	30	mg/L	MAvg Conc	3/Week	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	100	lb/day	MAvg Load	3/Week	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

**Table 6-2. Permit Limits for Dandridge STP.**

***Compliance History:***

The following numbers of exceedences were noted in PCS:

- 26 Biological Oxygen Demand (BOD)
- 14 Total Suspended Solids (TSS)
- 15 Settleable Solids
- 6 Suspended Solids % Removal
- 3 Total Chlorine
- 8 Escherichia coli
- 2 Dissolved Oxygen
- 1 pH
- 30 Overflows
- 7 Bypasses

***Enforcement:***

Directors Order #07-068 STP continues to exceed permit limits due to hydraulic and organic overload, and aging technology. Enforcement necessary to upgrade existing treatment facility.

***Comments:***

5/25/06: application for design expansion from 0.4 to 0.9 MGD. Dandridge STP is organically and hydraulically overloaded. The city is working with Gary McGill Engineering on a treatment plant expansion.

**TN0024503 TN DOT I-40 R.A. Jefferson W.B**

**Discharger rating:** Minor  
**City:** Dandridge  
**County:** Jefferson  
**EFO Name:** Knoxville  
**Issuance Date:** 8/31/06  
**Expiration Date:** 8/31/10  
**Receiving Stream(s):** Davy Crockett Reservoir at Nolichucky River mile 47.5  
**HUC-12:** 060101070101  
**Effluent Summary:** Treated municipal wastewater from Outfall 001  
**Treatment system:** WAS to aerobic digester to hauler to KUB WWTP.

SEGMENT	TN06010107029_1000
<b>Name</b>	Douglas Reservoir
<b>Size</b>	30400
<b>Unit</b>	Acres
<b>First Year on 303(d) List</b>	-
<b>Designated Uses</b>	Domestic Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
<b>Causes</b>	N/A
<b>Sources</b>	N/A

*Table 6-3. Stream Segment Information for TN DOT I-40 R.A. Jefferson W.B.*

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	30	mg/L	DMax Conc	2/Month	Grab	Effluent
BOD5	All Year	20	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	6	mg/L	DMin Conc	2/Week	Grab	Effluent
E. coli	All Year	487	#/100mL	DMax Conc	2/Month	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	2	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

*Table 6-4. Permit Limits for TN DOT I-40 R.A. Jefferson W.B.*

**Comments:**

None

**TN0055565 Jefferson County High School**

**Discharger rating:** Minor  
**City:** Dandridge  
**County:** Jefferson  
**EFO Name:** Knoxville  
**Issuance Date:** 2/28/05  
**Expiration Date:** 2/28/10  
**Receiving Stream(s):** Mile 0.4 of an unnamed tributary which enters Dumplin Creek at mile 12.3  
**HUC-12:** 060101070203  
**Effluent Summary:** Treated domestic wastewater from Outfall 001  
**Treatment system:** Activated sludge

<b>SEGMENT</b>	<b>TN06010107038_1000</b>
<b>Name</b>	Dumplin Creek
<b>Size</b>	19.1
<b>Unit</b>	Miles
<b>First Year on 303(d) List</b>	2004
<b>Designated Uses</b>	Recreation (Supporting), Irrigation (Supporting), Fish and Aquatic Life (Non-Supporting), Livestock Watering and Wildlife (Supporting)
<b>Causes</b>	Physical substrate habitat alterations, Sedimentation/Siltation
<b>Sources</b>	Channelization, Grazing in Riparian or Shoreline Zones, Site Clearance (Land Development or Redevelopment)

*Table 6-5. Stream Segment Information for Jefferson County High School.*

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	All Year	10	mg/L	DMax Conc	Weekly	Grab	Effluent
Ammonia as N (Total)	All Year	5	mg/L	MAvg Conc	Weekly	Grab	Effluent
CBOD5	All Year	40	mg/L	DMax Conc	Weekly	Grab	Effluent
CBOD5	All Year	30	mg/L	MAvg Conc	Weekly	Grab	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	941	#/100mL	MAvg Ari Mean	Weekly	Grab	Effluent
E. coli	All Year	123	#/100mL	MAvg Geo Mean	Weekly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Continuous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	Weekdays	Grab	Effluent
TRC	All Year	0.5	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	Weekly	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Weekly	Grab	Effluent
pH	All Year	8.5	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	Weekdays	Grab	Effluent

**Table 6-6. Permit Limits for Jefferson County High School.**

**Comments:**

The plant is old and the City of Dandridge is going to provide sewer to the school eventually. The plant is still operational, but is getting close to needing an upgrade, if Dandridge doesn't provide sewer service soon.

**TN0064971 White Pine STP**

**Discharger rating:** Minor  
**City:** White Pine  
**County:** Jefferson  
**EFO Name:** Knoxville  
**Issuance Date:** 7/01/05  
**Expiration Date:** 5/31/10  
**Receiving Stream(s):** French Broad River at mile 67.9 (Douglas Reservoir)  
**HUC-12:** 060101070101  
**Effluent Summary:** Treated municipal wastewater from Outfall 001  
**Treatment system:** Activated sludge, chlorination/dechlorination, aerobic digestion, sludge dewatering (filter press).

SEGMENT	TN06010107029_1000
<b>Name</b>	Douglas Reservoir
<b>Size</b>	30400
<b>Unit</b>	Acres
<b>First Year on 303(d) List</b>	-
<b>Designated Uses</b>	Domestic Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
<b>Causes</b>	N/A
<b>Sources</b>	N/A

*Table 6-7. Stream Segment Information for White Pine STP.*

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD % removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
BOD % removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
BOD5	All Year	45	mg/L	DMax Conc	3/Week	Composite	Effluent
BOD5	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
BOD5	All Year	30	mg/L	MAvg Conc	3/Week	Composite	Effluent
BOD5	All Year	82	lb/day	MAvg Load	3/Week	Composite	Effluent
BOD5	All Year	109	lb/day	WAvg Load	3/Week	Composite	Effluent
BOD5	All Year	40	mg/L	WAvg Conc	3/Week	Composite	Effluent
BOD5	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	487	#/100mL	DMax Conc	3/Week	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
Settleable Solids	All Year	1	mL/L	DMax Conc	Weekdays	Grab	Effluent
TRC	All Year	0.1	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year	109	lb/day	WAvg Load	3/Week	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	30	mg/L	MAvg Conc	3/Week	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	40	mg/L	WAvg Conc	3/Week	Composite	Effluent
TSS	All Year	82	lb/day	MAvg Load	3/Week	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

**Table 6-8. Permit Limits for White Pine STP.**

**Compliance History:**

The following numbers of exceedences were noted in PCS:

- 4 Overflows

**Comments:**

None

**TN0078131 Harbor Crest Condominium Association**

**Discharger rating:** Minor  
**City:** Dandridge  
**County:** Jefferson  
**EFO Name:** Knoxville  
**Issuance Date:** 6/30/06  
**Expiration Date:** 6/30/10  
**Receiving Stream(s):** French Broad River 38.01  
**HUC-12:** 060101070103  
**Effluent Summary:** Treated domestic wastewater from Outfall 001  
**Treatment system:** Septic tank and recirculating sand filter.

SEGMENT	TN06010107029_1000
<b>Name</b>	Douglas Reservoir
<b>Size</b>	30400
<b>Unit</b>	Acres
<b>First Year on 303(d) List</b>	-
<b>Designated Uses</b>	Domestic Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
<b>Causes</b>	N/A
<b>Sources</b>	N/A

*Table 6-9. Stream Segment Information for Harbor Crest Condominium Association.*

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
BOD5	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
E. coli	All Year	941	#/100mL	MAvg Ari Mean	2/Month	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	2	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent

*Table 6-10. Permit Limits for Harbor Crest Condominium Association.*

**Enforcement:**

NOV on 2/21/06 for late permit application.

**Comments:**

None

**TN0028223 Gap Creek Elementary School**

**Discharger rating:** Minor  
**City:** Knoxville  
**County:** Knox  
**EFO Name:** Knoxville  
**Issuance Date:** 9/01/02  
**Expiration Date:** 7/31/07  
**Receiving Stream(s):** Cement Mill Creek at mile 2.0  
**HUC-12:** 060101070204  
**Effluent Summary:** Treated domestic wastewater from Outfall 001  
**Treatment system:** Septic tank sand filter

SEGMENT	TN06010107001_0300
<b>Name</b>	Cement Mill Creek
<b>Size</b>	3.2
<b>Unit</b>	Miles
<b>First Year on 303(d) List</b>	-
<b>Designated Uses</b>	Industrial Water Supply (Not Assessed), Fish and Aquatic Life (Not Assessed), Recreation (Not Assessed), Irrigation (Not Assessed), Livestock Watering and Wildlife (Not Assessed)
<b>Causes</b>	N/A
<b>Sources</b>	N/A

*Table 6-11. Stream Segment Information for Gap Creek Elementary School.*

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent

*Table 6-12. Permit Limits for Gap Creek Elementary School.*

**Comments:**  
 None

**TN0023337 Johnson Bible College-Knoxville**

**Discharger rating:** Minor  
**City:** Knoxville  
**County:** Knox  
**EFO Name:** Knoxville  
**Issuance Date:** 2/28/05  
**Expiration Date:** 2/28/10  
**Receiving Stream(s):** French Broad River at mile 9.9  
**HUC-12:** 060101070204  
**Effluent Summary:** Treated domestic wastewater from Outfall 001  
**Treatment system:** Extended aeration

<b>SEGMENT</b>	<b>TN06010107001_1000</b>
<b>Name</b>	French Broad River
<b>Size</b>	25.1
<b>Unit</b>	Miles
<b>First Year on 303(d) List</b>	-
<b>Designated Uses</b>	Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
<b>Causes</b>	N/A
<b>Sources</b>	N/A

*Table 6-13. Stream Segment Information for Johnson Bible College.*

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD % removal	All Year	85	Percent	MAvg % Removal	Weekly	Calculated	% Removal
BOD5	All Year	45	mg/L	DMax Conc	Weekly	Composite	Effluent
BOD5	All Year	53	lb/day	DMax Load	Weekly	Composite	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	Weekly	Composite	Effluent
BOD5	All Year	40	mg/L	WAvg Conc	Weekly	Composite	Effluent
BOD5	All Year	47	lb/day	WAvg Load	Weekly	Composite	Effluent
BOD5	All Year	35	lb/day	MAvg Load	Weekly	Composite	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	941	#/100mL	MAvg Ari Mean	Weekly	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	Weekly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
Settleable Solids	All Year	1	mL/L	DMax Conc	Weekly	Composite	Effluent
TRC	All Year	2	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	Weekly	Composite	Effluent
TSS	All Year	47	lb/day	WAvg Load	Weekly	Composite	Effluent
TSS	All Year	53	lb/day	DMax Load	Weekly	Composite	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Weekly	Composite	Effluent
TSS	All Year	35	lb/day	MAvg Load	Weekly	Composite	Effluent
TSS	All Year	40	mg/L	WAvg Conc	Weekly	Composite	Effluent
TSS % Removal	All Year	85	Percent	MAvg % Removal	Weekly	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekly	Grab	Effluent

**Table 6-14. Permit Limits for Johnson Bible College.**

**Comments:**

None

**TN0022748 Harrison Chilhowee Baptist Academy**

**Discharger rating:** Minor  
**City:** Seymour  
**County:** Sevier  
**EFO Name:** Knoxville  
**Issuance Date:** 7/29/05  
**Expiration Date:** 7/29/10  
**Receiving Stream(s):** Unnamed tributary at mile 0.4 to Boyd's Creek at mile 11.3  
**HUC-12:** 060101070202  
**Effluent Summary:** Treated domestic wastewater from Outfall 001  
**Treatment system:** Extended aeration

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	Summer	2.4	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Summer	1.2	mg/L	MAvg Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Winter	3.6	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Winter	1.8	mg/L	MAvg Conc	2/Month	Grab	Effluent
CBOD5	Summer	25	mg/L	DMax Conc	2/Month	Grab	Effluent
CBOD5	Summer	15	mg/L	MAvg Conc	2/Month	Grab	Effluent
CBOD5	Winter	40	mg/L	DMax Conc	2/Month	Grab	Effluent
CBOD5	Winter	25	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	2/Month	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	0.02	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	Weekdays	Grab	Effluent

**Table 6-15. Permit Limits for Harrison Chilhowee Baptist Academy.**

**Comments:**  
 None

**TN0020117 Gatlinburg STP**

**Discharger rating:** Major  
**City:** Gatlinburg  
**County:** Sevier  
**EFO Name:** Knoxville  
**Issuance Date:** 4/30/07  
**Expiration Date:** 8/31/10  
**Receiving Stream(s):** West Prong of the Little Pigeon River Mile 16.4  
**HUC-12:** 060101070307  
**Effluent Summary:** Treated municipal wastewater from Outfall 001  
**Treatment system:** WAS to 2 stage anaerobic dig to centrifuge to composting

SEGMENT	TN06010107010_3000
<b>Name</b>	West Prong Little Pigeon River
<b>Size</b>	5.4
<b>Unit</b>	Miles
<b>First Year on 303(d) List</b>	-
<b>Designated Uses</b>	Livestock Watering and Wildlife (Supporting), Irrigation (Supporting), Recreation (Non-Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting)
<b>Causes</b>	Phosphate, Escherichia coli
<b>Sources</b>	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems), Sanitary Sewer Overflows (Collection System Failures), Discharges from Municipal Separate Storm Sewer Systems (MS4), Municipal Point Source Discharges

**Table 6-16. Stream Segment Information for Gatlinburg STP.**

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	Summer	4	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	75	lb/day	WAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	3	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	2	mg/L	MAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	50	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	10	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	7.5	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	125	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	5	mg/L	MAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	188	lb/day	DMax Load	3/Week	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Wet Weather
CBOD % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
CBOD % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
CBOD5	All Year	20	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	All Year	375	lb/day	WAvg Load	3/Week	Composite	Effluent
CBOD5	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
CBOD5	All Year	10	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD5	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
CBOD5	All Year	250	lb/day	MAvg Load	3/Week	Composite	Effluent
CBOD5	All Year	15	mg/L	WAvg Conc	3/Week	Composite	Effluent
D.O.	All Year	5	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	487	#/100mL	DMax Conc	3/Week	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
IC25 7day Ceriodaphnia Dubia	All Year	55	Percent	DMin Conc	Quarterly	Composite	Effluent
IC25 7day Fathead Minnows	All Year	55	Percent	DMin Conc	Quarterly	Composite	Effluent
Overflow Use Occurences	All Year		Occurences/ Month	MAvg Load	Continuous	Visual	Wet Weather
Overflow Use Occurences	All Year		Occurences/ Month	MAvg Load	Continuous	Visual	Non Wet Weather
Settleable Solids	All Year	1	mL/L	DMax Conc	Weekdays	Grab	Effluent
TRC	All Year	0.05	mg/L	DMax Conc	Weekdays	Grab	Effluent

**Table 6-17a.**

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS	All Year	25	mg/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	500	lb/day	WAvg Load	3/Week	Composite	Effluent
TSS	All Year	20	mg/L	WAvg Conc	3/Week	Composite	Effluent
TSS	All Year	375	lb/day	MAvg Load	3/Week	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	15	mg/L	MAvg Conc	3/Week	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

**Table 6-17b.**

**Tables 6-17a-b. Permit Limits for Gatlinburg STP.**

**Compliance History:**

The following numbers of exceedences were noted in PCS:

**Enforcement:**

Commissioners Order #05-0353: Gatlinburg is on EPA's Watch List for effluent violations. This Order requires a Corrective Action Plan (CAP) and Management Operations & Maintenance (MOMs) program.

**Comments:**

Gatlinburg is under an Agreed Order and is working on operation and maintenance solutions to alleviate treatment plant effluent violations. The Agreed Order also requires extensive work in the collection system and developing a comprehensive MOM program. Long-term goals are to abandon the discharge into the West Prong of Little Pigeon and combine with Pigeon Forge with a discharge to the French Broad River.

**TN0021237 Pigeon Forge STP**

**Discharger rating:** Major  
**City:** Pigeon Gorge  
**County:** Sevier  
**EFO Name:** Knoxville  
**Issuance Date:** 8/30/00  
**Expiration Date:** 8/31/05  
**Receiving Stream(s):** West Prong Little Pigeon River Mile 16.4  
**HUC-12:** 060101070312  
**Effluent Summary:** Treated municipal wastewater from Outfall 001  
**Treatment system:** Waste activated sludge to dissolved air flotation to anaerobic digester to filter press to composting

SEGMENT	TN06010107010_2000
<b>Name</b>	West Prong Little Pigeon River
<b>Size</b>	5.7
<b>Unit</b>	Miles
<b>First Year on 303(d) List</b>	1996
<b>Designated Uses</b>	Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
<b>Causes</b>	Phosphate, Impairment Unknown, Escherichia coli
<b>Sources</b>	Discharges from Municipal Separate Storm Sewer Systems (MS4), On-site Treatment Systems (Septic Systems and Similar Decentralized Systems), Sanitary Sewer Overflows (Collection System Failures), Municipal Point Source Discharges

**Table 6-18. Stream Segment Information for Pigeon Forge STP.**

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
48hr LC50: Ceriodaphnia Dubia	All Year	100	Percent	DMin Conc	Continuous	Grab	Effluent
48hr LC50: Fathead Minnows	All Year	100	Percent	DMin Conc	Continuous	Grab	Effluent
Ammonia as N (Total)	All Year	2	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	All Year	50	lb/day	DMax Load	3/Week	Composite	Effluent
Ammonia as N (Total)	All Year	1	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	All Year	33	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	All Year	1.5	mg/L	MAvg Conc	3/Week	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Wet Weather
CBOD % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
CBOD % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
CBOD5	All Year	20	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	All Year	10	mg/L	DMin Conc	3/Week	Composite	Effluent
CBOD5	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
CBOD5	All Year	334	lb/day	MAvg Load	3/Week	Composite	Effluent
CBOD5	All Year	15	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD5	All Year	500	lb/day	DMax Load	3/Week	Composite	Effluent
CBOD5	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	3/Week	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
Nitrogen Total (as N)	Summer		mg/L	DMax Conc	Weekly	Composite	Effluent
Nitrogen Total (as N)	Summer		mg/L	MAvg Conc	Weekly	Composite	Effluent
Overflow Use Occurrences	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Wet Weather
Overflow Use Occurrences	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Non Wet Weather
Phosphorus, Total	Summer		mg/L	DMax Conc	Weekly	Composite	Effluent
Phosphorus, Total	Summer		mg/L	MAvg Conc	Weekly	Composite	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	3/Week	Composite	Effluent
TRC	All Year	0.07	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	1334	lb/day	DMax Load	3/Week	Composite	Effluent
TSS	All Year	40	mg/L	MAvg Conc	3/Week	Composite	Effluent
TSS	All Year	1001	lb/day	MAvg Load	3/Week	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	30	mg/L	WAvg Conc	3/Week	Composite	Effluent

**Table 6-19a.**

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

**Table 6-19b.**

**Tables 6-19a-b. Permit Limits for Pigeon Forge STP.**

**Compliance History:**

The following numbers of exceedences were noted in PCS:

- 5 Total Suspended Solids (TSS)
- 3 Settleable Solids
- 3 Ammonia
- 2 Suspended Solids % Removal
- 2 Fecal coliform
- 3 Total Chlorine
- 1 Carbonaceous Biological Demand (CBOD)
- 39 Overflows
- 260 Bypasses

**Comments:**

Pigeon Forge is looking for an expansion from 4MGD to 8MGD. Status of the West Prong of the Little Pigeon's impairment has Pigeon Forge exploring a combined discharge with Gatlinburg on the French Broad River.

**TN0055689 Caton's Chapel Elementary School**

**Discharger rating:** Minor  
**City:** Sevierville  
**County:** Sevier  
**EFO Name:** Knoxville  
**Issuance Date:** 10/31/05  
**Expiration Date:** 10/31/10  
**Receiving Stream(s):** Bird Creek at mile 1.7  
**HUC-12:** 060101070305  
**Effluent Summary:** Treated domestic wastewater from Outfall 001  
**Treatment system:** Extended aeration

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
BOD5	All Year	30	mg/L	WAvg Conc	Monthly	Grab	Effluent
D.O.	All Year	6	mg/L	DMin Conc	2/Week	Grab	Effluent
E. coli	All Year	941	#/100mL	DMax Conc	Monthly	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	Monthly	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	0.5	mg/L	DMax Conc	2/Week	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	30	mg/L	WAvg Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent

**Table 6-20. Permit Limits for Caton's Chapel Elementary School.**

**Comments:**  
 None

### TN0055328 Dumplin Valley Associates

**Discharger rating:** Minor  
**City:** Kodak  
**County:** Sevier  
**EFO Name:** Knoxville  
**Issuance Date:** 8/01/05  
**Expiration Date:** 6/30/10  
**Receiving Stream(s):** Dumplin Creek at mile 2.8  
**HUC-12:** 060101070203  
**Effluent Summary:** Treated domestic wastewater from Outfall 001  
**Treatment system:** Extended aeration

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	941	#/100mL	MAvg Ari Mean	2/Month	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	0.5	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent

**Table 6-21. Permit Limits for Dumplin Valley Associates.**

**Comments:**  
 None

**TN0055310 Webb Creek Utility District**

**Discharger rating:** Minor  
**City:** Gatlinburg  
**County:** Sevier  
**EFO Name:** Knoxville  
**Issuance Date:** 7/31/06  
**Expiration Date:** 7/31/10  
**Receiving Stream(s):** Webb Creek at mile 2.8  
**HUC-12:** 060101070304  
**Effluent Summary:** Treated domestic wastewater from Outfall 001  
**Treatment system:** Extended aeration

<b>SEGMENT</b>	<b>TN06010107007_0400</b>
<b>Name</b>	Webb Creek
<b>Size</b>	15.4
<b>Unit</b>	Miles
<b>First Year on 303(d) List</b>	-
<b>Designated Uses</b>	Recreation (Not Assessed), Irrigation (Supporting), Fish and Aquatic Life (Supporting), Livestock Watering and Wildlife (Supporting)
<b>Causes</b>	N/A
<b>Sources</b>	N/A

*Table 6-22. Stream Segment Information for Webb Creek U.D.*

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	Summer	2	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	1.7	lb/day	WAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	0.5	mg/L	MAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	1	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	0.8	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	5	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	4.2	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	6.3	lb/day	WAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	3.8	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	2.5	mg/L	MAvg Conc	3/Week	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		MGD	MAvg Load	Continuous	Visual	
CBOD % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
CBOD % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
CBOD5	Summer	10	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	Summer	13	lb/day	WAvg Load	3/Week	Composite	Effluent
CBOD5	Summer	8	lb/day	MAvg Load	3/Week	Composite	Effluent
CBOD5	Summer	5	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD5	Summer	7.5	mg/L	WAvg Conc	3/Week	Composite	Effluent
CBOD5	Winter	20	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	Winter	25	lb/day	WAvg Load	3/Week	Composite	Effluent
CBOD5	Winter	10	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD5	Winter	17	lb/day	MAvg Load	3/Week	Composite	Effluent
CBOD5	Winter	15	mg/L	WAvg Conc	3/Week	Composite	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	487	#/100mL	DMax Conc	3/Week	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekly	Continuous	Intake
Flow	All Year		MGD	DMax Load	Weekly	Continuous	Intake
Flow	All Year		MGD	DMax Load	Weekly	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Weekly	Continuous	Effluent
Overflow Use Occurences	All Year		MGD	MAvg Load	Continuous	Visual	Non Wet Weather
Overflow Use Occurences	All Year		MGD	MAvg Load	Continuous	Visual	Wet Weather
Settleable Solids	All Year	1	mL/L	DMax Conc	3/Week	Composite	Effluent
TRC	All Year	0.02	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	20	mg/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year	25	lb/day	DMax Load	3/Week	Composite	Effluent
TSS	All Year	10	mg/L	WAvg Conc	3/Week	Composite	Effluent
TSS	All Year	17	lb/day	MAvg Load	3/Week	Composite	Effluent
TSS	All Year	15	mg/L	MAvg Conc	3/Week	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
pH	All Year	8.5	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	Weekdays	Grab	Effluent

**Table 6-23. Permit Limits for Webb Creek U.D.**

***Compliance History:***

The following numbers of exceedences were noted in PCS:

- 11 Total Chlorine
- 4 Ammonia
- 3 Carbonaceous Biological Oxygen Demand (CBOD)
- 1 Suspended Solids % Removal
- 1 Dissolved Oxygen
- 1 Total Suspended Solids (TSS)

***Comments***

Webb Creek has completed their plant expansion and is up and running.

### TN0059102 Venture Out at Gatlinburg

**Discharger rating:** Minor  
**City:** Gatlinburg  
**County:** Sevier  
**EFO Name:** Knoxville  
**Issuance Date:** 4/29/05  
**Expiration Date:** 4/29/10  
**Receiving Stream(s):** Ogle Springs Branch at mile 1.6  
**HUC-12:** 060101070306  
**Effluent Summary:** Treated domestic wastewater from Outfall 001  
**Treatment system:** Extended aeration

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	Summer	4	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Summer	2	mg/L	MAvg Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Winter	10	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Winter	5	mg/L	MAvg Conc	2/Month	Grab	Effluent
CBOD5	All Year	15	mg/L	DMax Conc	2/Month	Grab	Effluent
CBOD5	All Year	10	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	941	#/100mL	MAvg Ari Mean	2/Month		Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
Flow	All Year		MGD	DMax Load	Weekly	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	0.5	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	2/Week	Grab	Effluent

**Table 6-24. Permit Limits for Venture Out Gatlinburg.**

**Comments:**

None

**TN0063959 Sevierville (McCroskey Island) STP**

**Discharger rating:** Major  
**City:** Sevierville  
**County:** Sevier  
**EFO Name:** Knoxville  
**Issuance Date:** 9/30/00  
**Expiration Date:** 9/30/05  
**Receiving Stream(s):** French Broad River Mile 27.3  
**HUC-12:** 060101070201  
**Effluent Summary:** Treated municipal wastewater from Outfall 001  
**Treatment system:** Waste Activated Sludge to aerobic digester to centrifuge to compost

SEGMENT	TN06010107006_1000
<b>Name</b>	French Broad River
<b>Size</b>	3.3
<b>Unit</b>	Miles
<b>First Year on 303(d) List</b>	-
<b>Designated Uses</b>	Domestic Water Supply (Supporting), Livestock Watering and Wildlife (Supporting), Irrigation (Supporting), Recreation (Not Assessed), Industrial Water Supply (Supporting), Fish and Aquatic Life (Supporting)
<b>Causes</b>	N/A
<b>Sources</b>	N/A

*Table 6-25. Stream Segment Information for Sevierville (McCroskey Island) STP*

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	Summer	10	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	250	lb/day	DMax Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	7.5	mg/L	MAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	167	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	5	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	20	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	10	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	334	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	15	mg/L	MAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	500	lb/day	DMax Load	3/Week	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		Occurences/Month	MAvg Load	Continuous	Visual	Wet Weather
CBOD % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
CBOD % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
CBOD5	All Year	40	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	All Year	25	mg/L	DMin Conc	3/Week	Composite	Effluent
CBOD5	All Year	35	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD5	All Year	1168	lb/day	DMax Load	3/Week	Composite	Effluent
CBOD5	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
CBOD5	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
CBOD5	All Year	834	lb/day	MAvg Load	3/Week	Composite	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	3/Week	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
IC25 7day Ceriodaphnia Dubia	All Year	3.8	Percent	DMin Conc	Continuous	Composite	Effluent
IC25 7day Fathead Minnows	All Year	3.8	Percent	DMin Conc	Continuous	Composite	Effluent
Nitrogen Total (as N)	Summer		mg/L	MAvg Conc	2/Month	Composite	Effluent
Overflow Use Occurences	All Year		Occurences/Month	MAvg Load	Continuous	Visual	Wet Weather
Overflow Use Occurences	All Year		Occurences/Month	MAvg Load	Continuous	Visual	Non Wet Weather
Phosphorus, Total	Summer		mg/L	MAvg Conc	2/Month	Composite	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	Weekdays	Composite	Effluent
TRC	All Year	0.5	mg/L	DMax Conc	Weekdays	Grab	Effluent

Table 6-26a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS	All Year	45	mg/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	1334	lb/day	DMax Load	3/Week	Composite	Effluent
TSS	All Year	40	mg/L	MAvg Conc	3/Week	Composite	Effluent
TSS	All Year	1001	lb/day	MAvg Load	3/Week	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	30	mg/L	WAvg Conc	3/Week	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

**Table 6-26b.**

**Tables 6-26a-b. Permit Limits for Sevierville (McCroskey Island) STP.**

**Compliance History:**

The following numbers of exceedences were noted in PCS:

- 1 Total Chlorine
- 1 Ammonia
- 1 Carbonaceous Biological Oxygen Demand (CBOD)
- 3 Suspended Solids % Removal
- 1 Fecal coliform
- 3 Total Suspended Solids (TSS)
- 6 Settleable Solids
- 196 Overflows

**Comments:**

None

**TN0060569 East Sevier County Utility District STP**

**Discharger rating:** Minor  
**City:** Sevierville  
**County:** Sevier  
**EFO Name:** Knoxville  
**Issuance Date:** 6/01/05  
**Expiration Date:** 4/29/10  
**Receiving Stream(s):** Wilhite Creek Mile 4.05  
**HUC-12:** 060101070306  
**Effluent Summary:** Treated municipal wastewater from Outfall 001  
**Treatment system:** Activated sludge

<b>SEGMENT</b>	<b>TN06010107025_0300</b>
<b>Name</b>	Wilhite Creek
<b>Size</b>	26.3
<b>Unit</b>	Miles
<b>First Year on 303(d) List</b>	-
<b>Designated Uses</b>	Fish and Aquatic Life (Supporting), Recreation (Not Assessed), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
<b>Causes</b>	N/A
<b>Sources</b>	N/A

*Table 6-27. Stream Segment Information for East Sevier County Utility District STP.*

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	Summer	2.2	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Summer	1.1	mg/L	MAvg Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Winter	10	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Winter	5	mg/L	MAvg Conc	2/Month	Grab	Effluent
CBOD % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
CBOD % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
CBOD5	Summer	20	mg/L	DMax Conc	2/Month	Grab	Effluent
CBOD5	Summer	10	mg/L	MAvg Conc	2/Month	Grab	Effluent
CBOD5	Winter	40	mg/L	DMax Conc	2/Month	Grab	Effluent
CBOD5	Winter	25	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	941	#/100mL	MAvg Ari Mean	2/Month	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Influent (Raw Sewage)
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Influent (Raw Sewage)
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	0.02	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	2/Week	Grab	Effluent

**Table 6-28. Permit Limits for East Sevier County Utility District STP.**

**Compliance History:**

The following numbers of exceedences were noted in PCS:

- 4 Suspended Solids % Removal
- 5 Carbonaceous Oxygen Demand (COD)
- 3 Carbonaceous Biological Oxygen Demand (CBOD)
- 1 Ammonia
- 1 Total Suspended Solids (TSS)
- 1 pH
- 3 Overflows

**Comments**

Tier Designation: This stream designated as Tier 2 stream on 2/09/06 by Knoxville Field Office.

**6.4.B. Industrial Permits**

**TN0003280 Bush Brothers and Company, Inc.**

**Discharger rating:** Minor  
**City:** Dandridge  
**County:** Jefferson  
**EFO Name:** Knoxville  
**Issuance Date:** 10/31/05  
**Expiration Date:** 10/31/10  
**Receiving Stream(s):** Clear Creek at mile 2.8 to Muddy Creek embayment at mile 5.3 of Douglas Reservoir  
**HUC-12:** 060101070103  
**Effluent Summary:** Non-contact cooling water through Outfall 001, and collected spring and well water overflow through Outfall 002  
**Treatment system:** None

SEGMENT	TN06010107029T_1150
<b>Name</b>	Clear Creek
<b>Size</b>	13.6
<b>Unit</b>	Miles
<b>First Year on 303(d) List</b>	2004
<b>Designated Uses</b>	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
<b>Causes</b>	Nutrient/Eutrophication Biological Indicators, Escherichia coli
<b>Sources</b>	Grazing in Riparian or Shoreline Zones

*Table 6-29. Stream Segment Information for Bush Brothers and Company, Inc.*

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
48hr LC50: Ceriodaphnia Dubia	All Year	94	Percent	MAvg Min	Annually	Grab	Effluent
48hr LC50: Fathead Minnows	All Year	94	Percent	MAvg Min	Annually	Grab	Effluent
Ammonia as N (Total)	All Year	2.5	mg/L	DMax Conc	Quarterly	Grab	Effluent
CBOD5	All Year	15	mg/L	DMax Conc	Quarterly	Grab	Effluent
D.O.	All Year	3	mg/L	DMin Conc	Quarterly	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Quarterly	Estimate	Effluent
Flow	All Year		MGD	DMax Load	Quarterly	Estimate	Effluent
TRC	All Year	0.043	mg/L	DMax Conc	Quarterly	Grab	Effluent
Temperature (°C)	All Year		°C	DMax Conc	Quarterly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Quarterly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Quarterly	Grab	Effluent

*Table 6-30. Stream Segment Information for Bush Brothers and Company, Inc.*

**Comments:** None

**TN0001368 Rocore Knoxville, LLC**

**Discharger rating:** Minor  
**City:** Knoxville  
**County:** Knox  
**EFO Name:** Knoxville  
**Issuance Date:** 1/31/01  
**Expiration Date:** 2/28/5  
**Receiving Stream(s):** French Broad River at mile 1.8  
**HUC-12:** 060101070204  
**Effluent Summary:** Combined process and non-process wastewater and storm water runoff from Outfall 001

**Treatment system:**

SEGMENT	TN06010107001_1000
<b>Name</b>	French Broad River
<b>Size</b>	25.1
<b>Unit</b>	Miles
<b>First Year on 303(d) List</b>	-
<b>Designated Uses</b>	Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
<b>Causes</b>	N/A
<b>Sources</b>	N/A

*Table 6-31. Stream Segment Information for Rocore Knoxville, LLC.*

**Enforcement:**

12/28/06 NOV for discharging without a permit.  
 1/3/07 NOV for failure to reapply for a permit.

**Comments**

Manufacture of aluminum heat exchangers.

**TN0061581 Pepsi Bottling Group**

**Discharger rating:** Minor  
**City:** Knoxville  
**County:** Knox  
**EFO Name:** Knoxville  
**Issuance Date:** 9/30/05  
**Expiration Date:** 9/30/10  
**Receiving Stream(s):** French Broad River at mile 0.9  
**HUC-12:** 060101070204  
**Effluent Summary:** Non-contact cooling water from Outfall 001  
**Treatment system:**

SEGMENT	TN06010107001_1000
<b>Name</b>	French Broad River
<b>Size</b>	25.1
<b>Unit</b>	Miles
<b>First Year on 303(d) List</b>	-
<b>Designated Uses</b>	Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
<b>Causes</b>	N/A
<b>Sources</b>	N/A

*Table 6-32. Stream Segment Information for Pepsi Bottling Group.*

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	DMax Load	Monthly	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Monthly	Instantaneous	Effluent
TRC	All Year	2	mg/L	DMax Conc	Monthly	Grab	Effluent
Temperature (°C)	All Year		°C	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Monthly	Grab	Effluent

*Table 6-33. Permit Limits for Pepsi Bottling Group.*

**Comments:**

Bottled and Canned Soft Drinks and Carbonated Waters

## TN0078948 Panasonic Electronic Devices Corporation of America

**Discharger rating:** Minor  
**City:** Knoxville  
**County:** Knox  
**EFO Name:** Knoxville  
**Issuance Date:** New  
**Expiration Date:** New  
**Receiving Stream(s):** French Broad River, Mile 1.9  
**HUC-12:** 060101070204  
**Effluent Summary:** Non-contact cooling water.  
**Treatment system:** Propose to use sand filter followed by activated carbon filter.

### ***Compliance History:***

New Discharge

### ***Enforcement:***

N/A

### ***Comments***

This is a new discharge to the French Broad River. The facility previously discharged its cooling water to the KUB sewer.

**TN0027421 TVA Douglas Hydro Plant**

**Discharger rating:** Minor  
**City:** Dandridge  
**County:** Sevier  
**EFO Name:** Knoxville  
**Issuance Date:** 6/30/05  
**Expiration Date:** 6/29/10  
**Receiving Stream(s):** French Broad River  
**HUC-12:** 060101070103  
**Effluent Summary:** Cooling water from Outfall 001  
**Treatment system:** -

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	MAvg Conc	Monthly	Grab	Effluent

*Table 6-34. Permit Limits for TVA Douglas Hydro Plant.*

**Comments:**

None

**TN0002194 Johnson Matthey Catalysts**

**Discharger rating:** Minor  
**City:** Sevierville  
**County:** Sevier  
**EFO Name:** Knoxville  
**Issuance Date:** 1/01/05  
**Expiration Date:** 11/30/10  
**Receiving Stream(s):** Little Pigeon River at mile 7.4  
**HUC-12:** 060101070315  
**Effluent Summary:** Non-contact cooling water from Outfall 001  
**Treatment system:** -

SEGMENT	TN06010107007_0999
<b>Name</b>	Misc Tribs to Little Pigeon River
<b>Size</b>	40.4
<b>Unit</b>	Miles
<b>First Year on 303(d) List</b>	-
<b>Designated Uses</b>	Livestock Watering and Wildlife (Not Assessed), Fish and Aquatic Life (Not Assessed), Recreation (Not Assessed), Irrigation (Not Assessed)
<b>Causes</b>	N/A
<b>Sources</b>	N/A

*Table 6-35. Stream Segment Information for Johnson Matthey Catalysts.*

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	MAvg Load	Monthly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Monthly	Grab	Effluent
Temperature (°C)	All Year		°C	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Monthly	Grab	Effluent

*Table 6-36. Permit Limits for Johnson Matthey Catalysts.*

**Comments:**

Manufacturer of sponge nickel catalysts by treatment of nickel aluminum alloy with caustic soda.

**6.4.C. Water Treatment Permits**

**TN0004511 Knox Chapman Utility Knoxville WTP**

**Discharger rating:** Minor  
**City:** Knoxville  
**County:** Knox  
**EFO Name:** Knoxville  
**Issuance Date:** 10/01/04  
**Expiration Date:** 9/29/09  
**Receiving Stream(s):** French Broad River at mile 3.4  
**HUC-12:** 060101070204  
**Effluent Summary:** Filter backwash and/or sedimentation basin washdown from Outfall 001  
**Treatment system:** Alum, caustic, chlorine

SEGMENT	TN06010107001_1000
<b>Name</b>	French Broad River
<b>Size</b>	25.1
<b>Unit</b>	Miles
<b>First Year on 303(d) List</b>	-
<b>Designated Uses</b>	Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
<b>Causes</b>	N/A
<b>Sources</b>	N/A

*Table 6-37. Stream Segment Information for Knox Chapman Utility Knoxville WTP.*

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Al (T)	All Year	10	mg/L	DMax Conc	Monthly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Monthly	Instantaneous	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TRC	All Year	1	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	Monthly	Grab	Effluent

**Table 6-38. Permit Limits for Knox Chapman Utility Knoxville WTP.**

**Compliance History:**

The following numbers of exceedences were noted in PCS:

- 5 Settleable Solids
- Total Suspended Solids
- 1 pH

**Comments:**

Turbidity removal WTP

**APPENDIX II**

ID	NAME	HAZARD
787001	BRUSHY MOUNTAIN	1
457001	AFG LAKE	L
457002	RUCKER	0
457003	BUSH BROTHERS	3
457004	DALTON	L
787002	WISE DAIRY	H
787004	WATERS	2
787005	CLARK	H
787006	HOOPER	X
787003	B & W LAKE	B

**Table A2-1. Inventoried Dams in the Lower French Broad River Watershed.** Hazard Codes: (H, 1), High; (S, 2), Significant; (L, 3), Low. TDEC only regulates dams indicated by a numeric hazard score.

LAND COVER/LAND USE	ACRES	% OF WATERSHED
Deciduous Forest	249632	49%
Pasture/Hay	104898	20.60%
Evergreen Forest	47197	9.30%
Low Intensity Residential	31225	6.10%
Mixed Forest	25777	5.10%
Open Water	21691	4.30%
Evergreen Shrubland	6169	1.20%
Grassland/Herbaceous	6022	1.20%
High Intensity Residential	5832	1.10%
Bare Rock/Sand/Clay	5699	1.10%
High Intensity Commercial/Industrial/Transportation	2834	0.60%
Row Crops	2209	0.40%
Wetlands	582	0.10%
Total	509767	100%

**Table A2-2. Land Use Distribution in the Lower French Broad River Watershed.** Data are from Multi-Resolution Land Characterization (MRLC) derived by applying a generalized Anderson level II system to mosaics of Landsat thematic mapper images collected every five years.

ECOREGION	REFERENCE STREAM	WATERSHED (HUC)	
Southern Sedimentary Ridges (66e)	Gentry Creek (66E04)	SF Holston River	06010102
	Clark Creek (66E09)	Nolichucky River	06010108
	Lower Higgins Creek (66E11)	Nolichucky River	06010108
	Double Branch (66E17)	Watts Bar/Fort Loudoun Lake	06010201
	Gee Creek (66E18)	Hiwassee	06020002
Limestone Valleys and Coves (66f)	Abrams Creek (66f06)	Little Tennessee River	06010204
	Beaverdam Creek (66F07)	SF Holston River	06010102
	Stony Creek (66F08)	Watauga River	06010103
Southern Metasedimentary Mountains (66g)	Middle Prong Little River (66g04)	Lower French Broad	06010107
	Little River (66g05)	Watts Bar/Fort Loudoun Lake	06010201
	Citico Creek (66g07)	Little Tennessee River	06010204
	North River (66g09)	Little Tennessee River	06010204
	Sheeds Creek (66g12)	Conasauga River	03150101
Southern Limestone/Dolomite Valleys and Low Rolling Hills (67f)	Clear Creek (67F06)	Lower Clinch River	06010207
	White Creek (67F13)	Upper Clinch River	06010205
	Powell River (67F14)	Powell River	06010206
	Big War Creek (67F17)	Upper Clinch River	06010205
	Martin Creek (67F23)	Powell River	06010206
	Big Creek (67F01)	Holston River	06010104
	Fisher Creek (67F02)	Holston River	06010104
	Poosum Creek (67F07)	South Fork Holston	06010102
	Powell River (67F25)	Powell River	06010206
Southern Shale Valleys (67g)	Little Chuckey Creek (67g01)	Nolichucky River	06010108
	Bent Creek (67g05)	Nolichucky River	06010108
	Brymer Creek (67g08)	Hiwassee River	06020002
	Harris Creek (67g09)	Hiwassee River	06020002
	Flat Creek (67g10)	Lower French Broad	06010107
	North Prong Fishdam Creek (67g11)	South Fork Holston	06010102
Southern Sandstone Ridges (67h)	Blackburn Creek (67H04)	Hiwassee River	06020002
	Laurel Creek (67h06)	Little Tennessee River	06010204
	Parker Creek (67H08)	Holston River	06010104
Southern Dissected Ridges and Knobs (67i)	Mill Branch (67i12)	Lower Clinch River	06010207

**Table A2-3. Ecoregion Monitoring Sites in Ecoregions 66e, 66f, 66g, 67f, 67g, 67h and 67i).**

CODE	NAME	AGENCY	AGENCY ID
438	TDEC/WPC BURNETT CREEK WPC MITIGATION SITE	TDEC/WPC	
439	TDEC/WPC BURNETT CREEK WPC PERMIT SITE	TDEC/WPC	
1531	USFWS ARAP 96-011/CITY OF PIGEON FORGE 93-615 SITE	USFWS	
1532	USACOE-ORN PN 96-62/SEVIER	USFWS	
2052	TWRA SITE	TWRA	
2738	USACOE WEST PRONG LITTLE PIGEON RIVER 3.8 L SITE	USACOE-NASHVILLE	970004100

**Table A2-4. Wetland Sites in Lower French Broad River Watershed in TDEC Database.** TDEC, Tennessee Department of Environment and Conservation; USACOE-Nashville, United States Army Corps of Engineers-Nashville District; TWRA, Tennessee Wildlife Resources Agency; DNH, Division of Natural Heritage. **This table represents an incomplete inventory and should not be considered a dependable indicator of the presence of wetlands in the watershed.**

**APPENDIX III**

<b>SEGMENT NAME</b>	<b>WATERBODY SEGMENT ID</b>	<b>SEGMENT SIZE (MILES)</b>
Baskins Creek	TN06010107010_0650	4.1
Buck Fork	TN06010107007_0700	3.8
Caney Creek	TN06010107010_1700	4.1
Chapman Prong	TN06010107007_0800	4.1
Clay Creek	TN06010107029T_0600	22.3
Copeland Creek	TN06010107007_0500	5.5
Dudley Creek	TN06010107010_0450	10.8
Dumplin Creek	TN06010107038_1000	19.1
Dunn Creek	TN06010107025_0450	3.32
Eagle Rocks Prong	TN06010107007_0900	6.4
Fighting Creek	TN06010107010_1200	10.1
French Broad River	TN06010107006_2000	4.9
French Broad River	TN06010107001_1000	25.1
Happy Creek	TN06010107003_0120	17.2
Hettie Creek	TN06010107029T_1220	13.9
Injun Creek	TN06010107007_1300	3.0
Knob Creek	TN06010107003_0100	20.5
LeConte Creek	TN06010107010_0700	10.7
Lindsey Creek	TN06010107007_0490	1.6
Little Pigeon River	TN06010107007_4000	9.1
Little Pigeon River	TN06010107007_3000	9.6
Little Pigeon River	TN06010107007_5000	10.5
Misc Tribs to West Prong Little Pigeon River	TN06010107010_5999	13.4
Noisy Creek	TN06010107007_0450	4.9
Norton Creek	TN06010107010_1600	5.5
Porter Creek	TN06010107007_1100	27.1
Ramsey Creek	TN06010107007_0460	4.8
Ramsey Prong	TN06010107007_0600	5.9
Rhododendron Creek	TN06010107007_1200	4.3
Road Prong	TN06010107010_1100	4.6
Roaring Fork	TN06010107010_0550	13.7
Soak Ash Creek	TN06010107007_0480	5.4
Texas Creek	TN06010107007_0440	2.8
Timothy Creek	TN06010107007_0470	4.5
Tuckahoe Creek	TN06010107039_1000	16.1
Twomile Branch	TN06010107010_0800	2.6
Walker Camp Prong	TN06010107010_0900	4.4
West Prong Little Pigeon River	TN06010107010_4000	1.3
West Prong Little Pigeon River	TN06010107010_5000	13.2

**Table A3-1. Streams Fully Supporting the Designated Use of Recreation in the Lower French Broad River Watershed.**

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (ACRES)
Douglas Reservoir	TN06010107029_1000	30,400

**Table A3-2. Lakes Fully Supporting the Designated Use of Recreation in the Lower French Broad River Watershed.**

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)
Baskins Creek	TN06010107010_0600	1.3
Beech Branch	TN06010107010_0300	1.0
Boyds Creek	TN06010107003_1000	15.4
Clear Creek	TN06010107029T_1100	3.3
Clear Creek	TN06010107029T_1150	13.6
Dudley Creek	TN06010107010_0400	5.7
Gnatty Branch	TN06010107010_0100	1.8
Holy Branch	TN06010107010_1300	1.0
King Branch	TN06010107010_0200	2.5
Leadvale Creek	TN06010107029T_0400	4.4
Little Pigeon River	TN06010107007_2000	2.4
Little Pigeon River	TN06010107007_1000	3.5
Mill Creek	TN06010107010_1800	5.9
Roaring Fork	TN06010107010_0500	1.5
Walden Creek	TN06010107010_1900	2.6
West Prong Little Pigeon River	TN06010107010_3000	5.4
West Prong Little Pigeon River	TN06010107010_2000	5.7
West Prong Little Pigeon River	TN06010107010_1000	8.1

**Table A3-3. Streams Not Supporting the Designated Use of Recreation in the Lower French Broad River Watershed.**

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)
Ball Creek	TN06010107029T_0800	6.7
Betsy Branch	TN06010107029T_1210	6.6
Bird Creek	TN06010107007_1400	36.1
Bridge Creek	TN06010107003_0110	7.8
Buckberry Branch	TN06010107010_1400	2.4
Burnett Creek	TN06010107001_0500	4.9
Butler Branch	TN06010107007_0430	1.4
Cement Mill Creek	TN06010107001_0300	3.2
Chucky Creek	TN06010107025_0430	8.7
Clear Fork	TN06010107010_1920	6.2
Cliff Branch	TN06010107010_1500	1.9
Cove Creek	TN06010107010_1910	8.5
Cove Creek	TN06010107010_1915	19.7
Dockery Branch	TN06010107025_0440	4.9
Dunn Creek	TN06010107025_0400	16.0
Eckel Branch	TN06010107029T_0300	6.2
Flat Creek	TN06010107029T_1200	19.8
Fowler Grove Creek	TN06010107029T_0610	12.8
French Broad River	TN06010107006_1000	3.3
Gap Creek	TN06010107001_0200	7.7
Gists Creek	TN06010107007_1750	6.6
Gists Creek	TN06010107007_1700	13.4
Goose Creek	TN06010107029T_0200	5.2
Hines Creek	TN06010107001_0400	11.2
Hogpen Branch	TN06010107010_0451	1.2
Hunnicutt Branch	TN06010107038_0200	2.9
Indian Creek	TN06010107029T_0900	10.1
Johnny Creek	TN06010107006_0100	2.5
Kellum Creek	TN06010107007_0100	6.6
Laurel Branch	TN06010107007_0300	3.3
Laurel Creek	TN06010107010_1940	9.9
Limestone Creek	TN06010107039_0100	5.8
Little East Fork	TN06010107025_1000	10.8
Little Gists Creek	TN06010107007_1720	7.4
Lone Branch	TN06010107007_1500	8.1
Long Branch	TN06010107025_0410	2.9
Machine Branch	TN06010107010_1911	7.6
Manifold Creek	TN06010107001_0100	4.1
Maple Branch	TN06010107025_0500	3.8
McCowan Creek	TN06010107029T_0500	5.0
McNichols Branch	TN06010107010_1960	5.2
Middle Creek	TN06010107007_1650	3.3

Table A3-4a.

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)
Middle Creek	TN06010107007_1655	5.3
Middle Creek	TN06010107007_1600	16.7
Mill Branch	TN06010107007_0200	3.8
Mill Creek	TN06010107010_1850	16.1
Mill Dam Branch	TN06010107007_0410	2.1
Millican Creek	TN06010107006_0200	10.8
Misc Tribs to Boyds Creek	TN06010107003_0999	18.3
Misc Tribs to Douglas Reservoir	TN06010107029T_0999	47.7
Misc Tribs to Dumplin Creek	TN06010107038_0999	17.8
Misc tribs to Dunn Creek	TN06010107025_0499	25.1
Misc Tribs to French Broad River	TN06010107006_0999	6.9
Misc Tribs to French Broad River	TN06010107001_0999	27.1
Misc Tribs to Little East Fork	TN06010107025_0999	19.6
Misc tribs to Little Pigeon River	TN06010107007_0999	40.4
Misc Tribs to Tuckahoe Creek	TN06010107039_0999	15.1
Misc Tribs to Walden Creek	TN06010107010_1999	15.2
Misc Tribs to West Prong Little Pigeon River	TN06010107010_3999	2.5
Misc Tribs to West Prong Little Pigeon River	TN06010107010_0999	4.9
Mize Branch	TN06010107025_0460	3.3
Norton Branch	TN06010107010_2100	3.5
Obes Branch	TN06010107025_0200	3.6
Patterson Branch	TN06010107029T_0100	3.3
Petty Branch	TN06010107039_0200	6.9
Piedmont Branch	TN06010107038_0100	14.8
Reagan Branch	TN06010107003_0200	3.3
Sandsuck Branch	TN06010107010_1930	4.5
Seahorn Creek	TN06010107029T_0700	7.3
Sharp Branch	TN06010107025_0100	3.3
Slatey Branch	TN06010107029T_1110	2.4
Unnamed Trib to Clear Creek	TN06010107029T_1120	5.4
Walden Creek	TN06010107010_1955	8.5
Walden Creek	TN06010107010_1950	8.6
Warden Branch	TN06010107007_0420	1.8
Webb Creek	TN06010107007_0400	15.4
West Fork Gists Creek	TN06010107007_1710	9.5
Wilhite Creek	TN06010107025_0300	26.3
Yellow Breeches Creek	TN06010107025_0420	12.9

**Table A3-4b.**

**Table A3-4a-b. Streams Not Assessed for the Designated Use of Recreation in the Lower French Broad River Watershed.**

<b>SEGMENT NAME</b>	<b>WATERBODY SEGMENT ID</b>	<b>SEGMENT SIZE (MILES)</b>
Baskins Creek	TN06010107010_0650	4.1
Bird Creek	TN06010107007_1400	36.1
Boyd's Creek	TN06010107003_1000	15.4
Buckberry Branch	TN06010107010_1400	2.4
Burnett Creek	TN06010107001_0500	4.9
Chapman Prong	TN06010107007_0800	4.1
Clay Creek	TN06010107029T_0600	22.3
Clear Creek	TN06010107029T_1100	3.3
Copeland Creek	TN06010107007_0500	5.5
Cove Creek	TN06010107010_1910	8.5
Cove Creek	TN06010107010_1915	19.7
Dudley Creek	TN06010107010_0400	5.7
Dudley Creek	TN06010107010_0450	10.8
Dunn Creek	TN06010107025_0450	3.32
Dunn Creek	TN06010107025_0400	16.0
Fighting Creek	TN06010107010_1200	10.1
Flat Creek	TN06010107029T_1200	19.8
French Broad River	TN06010107006_1000	3.3
French Broad River	TN06010107001_1000	25.1
Gists Creek	TN06010107007_1750	6.6
Gists Creek	TN06010107007_1700	13.4
Happy Creek	TN06010107003_0120	17.2
Hines Creek	TN06010107001_0400	11.2
Injun Creek	TN06010107007_1300	3.0
Knob Creek	TN06010107003_0100	20.5
LeConte Creek	TN06010107010_0700	10.7
Lindsey Creek	TN06010107007_0490	1.6
Little East Fork	TN06010107025_1000	10.8
Little Pigeon River	TN06010107007_2000	2.4
Little Pigeon River	TN06010107007_1000	3.5
Little Pigeon River	TN06010107007_4000	9.1
Little Pigeon River	TN06010107007_3000	9.6
Little Pigeon River	TN06010107007_5000	10.5
Middle Creek	TN06010107007_1655	5.3
Middle Creek	TN06010107007_1600	16.7
Mill Creek	TN06010107010_1850	16.1
Misc Tribs to West Prong Little Pigeon River	TN06010107010_5999	13.4
Noisy Creek	TN06010107007_0450	4.9
Norton Branch	TN06010107010_2100	3.5

**Table A3-5a.**

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)
Porter Creek	TN06010107007_1100	27.1
Ramsey Creek	TN06010107007_0460	4.8
Ramsey Prong	TN06010107007_0600	5.9
Rhododendron Creek	TN06010107007_1200	4.3
Roaring Fork	TN06010107010_0550	13.7
Soak Ash Creek	TN06010107007_0480	5.4
Texas Creek	TN06010107007_0440	2.8
Timothy Creek	TN06010107007_0470	4.5
Tuckahoe Creek	TN06010107039_1000	16.1
Twomile Branch	TN06010107010_0800	2.6
Walden Creek	TN06010107010_1955	8.5
Walker Camp Prong	TN06010107010_0900	4.4
Webb Creek	TN06010107007_0400	15.4
West Prong Little Pigeon River	TN06010107010_4000	1.3
West Prong Little Pigeon River	TN06010107010_3000	5.4
West Prong Little Pigeon River	TN06010107010_5000	13.2
Wilhite Creek	TN06010107025_0300	26.3

**Table A3-5b.**

**Tables A3-5a-b. Streams Fully Supporting the Designated Use of Fish & Aquatic life in the Lower French Broad River Watershed.**

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (ACRES)
Douglas Reservoir	TN06010107029_1000	30,400

**Table A3-6. Lakes Fully Supporting the Designated Use of Fish & Aquatic Life in the Lower French Broad River Watershed.**

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)
Buck Fork	TN06010107007_0700	3.8
Clear Creek	TN06010107029T_1150	13.6
Dumplin Creek	TN06010107038_1000	19.1
Eagle Rocks Prong	TN06010107007_0900	6.4
French Broad River	TN06010107006_2000	4.9
Middle Creek	TN06010107007_1650	3.3
Mill Creek	TN06010107010_1800	5.9
Road Prong	TN06010107010_1100	4.6
Walden Creek	TN06010107010_1900	2.6
Walden Creek	TN06010107010_1950	8.6
West Prong Little Pigeon River	TN06010107010_2000	5.7
West Prong Little Pigeon River	TN06010107010_1000	8.1

**Table A3-7. Streams Not Supporting for the Designated Use of Fish & Aquatic Life in the Lower French Broad River Watershed.**

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)
Ball Creek	TN06010107029T_0800	6.7
Baskins Creek	TN06010107010_0600	1.3
Beech Branch	TN06010107010_0300	1.0
Betsy Branch	TN06010107029T_1210	6.6
Bridge Creek	TN06010107003_0110	7.8
Butler Branch	TN06010107007_0430	1.4
Caney Creek	TN06010107010_1700	4.1
Cement Mill Creek	TN06010107001_0300	3.2
Chucky Creek	TN06010107025_0430	8.7
Clear Fork	TN06010107010_1920	6.2
Cliff Branch	TN06010107010_1500	1.9
Dockery Branch	TN06010107025_0440	4.9
Eckel Branch	TN06010107029T_0300	6.2
Fowler Grove Creek	TN06010107029T_0610	12.8
Gap Creek	TN06010107001_0200	7.7
Gnatty Branch	TN06010107010_0100	1.8
Goose Creek	TN06010107029T_0200	5.2
Hettie Creek	TN06010107029T_1220	13.9
Hogpen Branch	TN06010107010_0451	1.2
Holy Branch	TN06010107010_1300	1.0
Hunnicutt Branch	TN06010107038_0200	2.9
Indian Creek	TN06010107029T_0900	10.1
Johnny Creek	TN06010107006_0100	2.5
Kellum Creek	TN06010107007_0100	6.6
King Branch	TN06010107010_0200	2.5
Laurel Branch	TN06010107007_0300	3.3
Laurel Creek	TN06010107010_1940	9.9
Leadvale Creek	TN06010107029T_0400	4.4
Limestone Creek	TN06010107039_0100	5.8
Little Gists Creek	TN06010107007_1720	7.4
Lone Branch	TN06010107007_1500	8.1
Long Branch	TN06010107025_0410	2.9
Machine Branch	TN06010107010_1911	7.6
Manifold Creek	TN06010107001_0100	4.1
Maple Branch	TN06010107025_0500	3.8
McCowan Creek	TN06010107029T_0500	5.0
McNichols Branch	TN06010107010_1960	5.2
Mill Branch	TN06010107007_0200	3.8
Mill Dam Branch	TN06010107007_0410	2.1
Millican Creek	TN06010107006_0200	10.8
Misc Tribs to Boyds Creek	TN06010107003_0999	18.3
Misc Tribs to Douglas Reservoir	TN06010107029T_0999	47.7

Table A3-8a.

<b>SEGMENT NAME</b>	<b>WATERBODY SEGMENT ID</b>	<b>SEGMENT SIZE (MILES)</b>
Misc Tribs to Dumplin Creek	TN06010107038_0999	17.8
Misc tribs to Dunn Creek	TN06010107025_0499	25.1
Misc Tribs to French Broad River	TN06010107006_0999	6.9
Misc Tribs to French Broad River	TN06010107001_0999	27.1
Misc Tribs to Little East Fork	TN06010107025_0999	19.6
Misc tribs to Little Pigeon River	TN06010107007_0999	40.4
Misc Tribs to Tuckahoe Creek	TN06010107039_0999	15.1
Misc Tribs to Walden Creek	TN06010107010_1999	15.2
Misc Tribs to West Prong Little Pigeon River	TN06010107010_3999	2.53
Misc Tribs to West Prong Little Pigeon River	TN06010107010_0999	4.9
Mize Branch	TN06010107025_0460	3.3
Norton Creek	TN06010107010_1600	5.5
Obes Branch	TN06010107025_0200	3.6
Patterson Branch	TN06010107029T_0100	3.3
Petty Branch	TN06010107039_0200	6.9
Piedmont Branch	TN06010107038_0100	14.8
Reagan Branch	TN06010107003_0200	3.3
Roaring Fork	TN06010107010_0500	1.5
Sandsuck Branch	TN06010107010_1930	4.5
Seahorn Creek	TN06010107029T_0700	7.3
Sharp Branch	TN06010107025_0100	3.3
Slatey Branch	TN06010107029T_1110	2.4
Unnamed Trib to Clear Creek	TN06010107029T_1120	5.4
Warden Branch	TN06010107007_0420	1.8
West Fork Gists Creek	TN06010107007_1710	9.5
Yellow Breeches Creek	TN06010107025_0420	12.9

**Table A3-8b.**

**Tables A3-8a-b. Streams Not Assessed for the Designated Use of Fish & Aquatic Life in the Lower French Broad River Watershed.**

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)	SUPPORT DESCRIPTION
Baskins Creek	TN06010107010_0600	1.3	Not Supporting
Beech Branch	TN06010107010_0300	1.0	Not Supporting
Boyd's Creek	TN06010107003_1000	15.4	Not Supporting
Clear Creek	TN06010107029T_1100	3.3	Not Supporting
Clear Creek	TN06010107029T_1150	13.6	Not Supporting
Dudley Creek	TN06010107010_0400	5.7	Not Supporting
Gnatty Branch	TN06010107010_0100	1.8	Not Supporting
Holy Branch	TN06010107010_1300	1.0	Not Supporting
King Branch	TN06010107010_0200	2.5	Not Supporting
Leadvale Creek	TN06010107029T_0400	4.4	Not Supporting
Little Pigeon River	TN06010107007_2000	2.4	Not Supporting
Little Pigeon River	TN06010107007_1000	3.5	Not Supporting
Mill Creek	TN06010107010_1800	5.9	Not Supporting
Roaring Fork	TN06010107010_0500	1.5	Not Supporting
Walden Creek	TN06010107010_1900	2.6	Not Supporting
West Prong Little Pigeon River	TN06010107010_3000	5.4	Not Supporting
West Prong Little Pigeon River	TN06010107010_2000	5.7	Not Supporting
West Prong Little Pigeon River	TN06010107010_1000	8.1	Not Supporting

**Table A3-9. Stream Segments Impaired Due to Escherichia coli in the Lower French Broad River Watershed.**

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)	SUPPORT DESCRIPTION
Dumplin Creek	TN06010107038_1000	19.1	Not Supporting
Mill Creek	TN06010107010_1800	5.9	Not Supporting
Walden Creek	TN06010107010_1900	2.6	Not Supporting
Walden Creek	TN06010107010_1950	8.6	Not Supporting
West Prong Little Pigeon River	TN06010107010_1000	8.1	Not Supporting

**Table A3-10. Stream Segments Impaired Due to Siltation in the Lower French Broad River Watershed.**

SEGMENT NAME	WATERBODY SEGMENT ID	SEGMENT SIZE (MILES)	SUPPORT DESCRIPTION
West Prong Little Pigeon River	TN06010107010_1000	8.1	Not supporting
West Prong Little Pigeon River	TN06010107010_2000	5.7	Not supporting
West Prong Little Pigeon River	TN06010107010_3000	5.4	Not supporting
Clear Creek	TN06010107029T_1150	13.6	Not supporting

**Table A3-11. Stream Segments Impaired Due to Nutrients in the Lower French Broad River Watershed.**

WATERBODY ID	WATERBODY NAME	TOTAL SEGMENT MILES IMPAIRED	HUC-12
TN06010107029T_0600	Clay Creek	22.3	060101070101
TN06010107003_0120	Happy Creek	17.2	060101070202
TN06010107010_4000	West Prong Little Pigeon River	1.3	060101070307
TN06010107010_1910	Cove Creek	8.5	060101070312
TN06010107007_1600	Middle Creek	16.7	060101070314

**Table A3-12. Streams Added to the 2008 303(d) List in the Tennessee Portion of the Lower French Broad River Watershed.** For more information see Tennessee's 2008 303(d) List at: [http://www.state.tn.us/environment/wpc/publications/2008\\_303d.pdf](http://www.state.tn.us/environment/wpc/publications/2008_303d.pdf).

WATERBODY ID	WATERBODY NAME	TOTAL SEGMENT MILES/ACRES IMPAIRED	CAUSE/POLLUTANT	HUC-12
TN06010107029T_1150	Clear Creek	13.6	Nutrients	060101070103
TN06010107010_1900	Walden Creek	2.6	Loss of Biological Integrity due to Siltation	060101070312
TN06010107007_1000	Little Pigeon River	3.5	<i>Escherichia coli</i>	060101070315

**Table A3-13. Streams (or pollutants) Delisted Since the 2006 303(d) List in the Tennessee Portion of the Lower French Broad River Watershed.** For more information see Tennessee's 2008 303(d) List at [http://www.state.tn.us/environment/wpc/publications/2008\\_303d.pdf](http://www.state.tn.us/environment/wpc/publications/2008_303d.pdf).

<b>WATERBODY</b>	<b>DESCRIPTION</b>	<b>BASIS FOR</b>	<b>HUC-12</b>
Agana Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Alum Cave Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Ash Hopper Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Baskins Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070309
Beech Branch*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Big Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Big Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Bill Deadening Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Bird Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070303
Bird Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070303
Black Fox Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070311
Boulevard Prong	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
Boulevard Prong UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
Buck Fork UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070301
Bullhead Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Bullhead Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Butler Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070304
Caney Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Caney Creek*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Cannon Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
Cannon UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
Carr Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Cat Stairs Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070304
Cataract Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Chapman Prong	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070301
Chucky Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070306
Clear Fork UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070312
Cliff Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070310
Cole Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Cole Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Copeland Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070303
Cove Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070312
Critter Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Darky Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070304
Darky Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070304
Double Gourd Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Dry Pond Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Dudley Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070311
Dudley Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070311
Duds Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070311
Dunn Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070306
Dunn Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070306

Table A3-14a.

<b>WATERBODY</b>	<b>DESCRIPTION</b>	<b>BASIS FOR</b>	<b>HUC-12</b>
Eagle Rocks Prong	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070301
Eagle Rocks Prong UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070301
East Prong Bird Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070305
East Prong Bird Creek*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070305
Enloe Hollow Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070310
Evans Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070304
Evans Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070304
Falls Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070309
False Gap Prong	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
False Gap Prong UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
Fighting Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Fighting Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Flat Branch*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Flat Creek	From Muddy Hollow Road to headwaters	Exceptional biological diversity. WPC ecoregion reference stream for 67g	060101070104
Flint Rock Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
French Broad River	From Holston River to Douglas Dam	Federally endangered Pink Mucket, federal threatened Snail Darter, state endangered Lake Sturgeon and Blue Sucker	060101070201
French Broad River	From Holston River to Douglas Dam	Federally endangered Pink Mucket, federal threatened Snail Darter, state endangered Lake Sturgeon and Blue Sucker	060101070204
Gnatty Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Gnatty Branch*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Grapeyard Branch	From Dudley Creek to origin including tributaries	Great Smoky Mountains N.P.	060101070311
Grassy Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070308
Grassy Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070308
Hickory Flats Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Hickory King Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Hills Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070303
Hills Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070303
Holston River	From confluence with French Broad River to McBee Island	Federal endangered Pink Mucket, federal threatened Snail Darter	060101070204
Horseshoe Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
Huskey Grove Branch*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Indian Camp Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070310
Injun Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070303
Injun Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070303
Johns Branch*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070305
Jones Branch*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070306

Table A3-14b.

<b>WATERBODY</b>	<b>DESCRIPTION</b>	<b>BASIS FOR</b>	<b>HUC-12</b>
Kalanu Prong	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
Kalanu Prong UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
King Branch*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
King Hollow Branch*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070312
Laurel Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070301
Laurel Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070301
Laurel Branch*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070303
LeConte Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070308
LeConte Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070308
Left Fork Copeland Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070303
Lester Prong	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
Lester Prong UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
Lindsey Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070304
Little Bird Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070303
Little Bird Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070303
Little Dudley Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070311
Little Dudley Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070311
Little Laurel Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070301
Little Pigeon River Including Middle Fork	From the headwaters within Great Smoky Mountains N.P. to Pittman Center is ONRW. Portion from Pitman Center to Mill Branch is proposed ONRW. Portion from Pitman Center to Hwy 411 is Tier 2	ONRW in Great Smoky Mountains N.P. Portion from Pitman Center to Mill Branch is proposed ONRW. Exceptional biological diversity. WPC ecoregion reference stream for 66g near Greenbriar Cove on middle prong	060101070301
Little Pigeon River Including Middle Fork	From the headwaters within Great Smoky Mountains N.P. to Pittman Center is ONRW. Portion from Pitman Center to Mill Branch is proposed ONRW. Portion from Pitman Center to Hwy 411 is Tier 2	ONRW in Great Smoky Mountains N.P. Portion from Pitman Center to Mill Branch is proposed ONRW. Exceptional biological diversity. WPC ecoregion reference stream for 66g near Greenbriar Cove on middle prong	060101070303
Little Pigeon River UT*	From the headwaters within Great Smoky Mountains N.P. to Pittman Center is ONRW. Portion from Pitman Center to Mill Branch is proposed ONRW. Portion from Pitman Center to Hwy 411 is Tier 2	ONRW in Great Smoky Mountains N.P. Portion from Pitman Center to Mill Branch is proposed ONRW. Exceptional biological diversity. WPC ecoregion reference stream for 66g near Greenbriar Cove on middle prong	060101070301

**Table A3-14c.**

<b>WATERBODY</b>	<b>DESCRIPTION</b>	<b>BASIS FOR</b>	<b>HUC-12</b>
Little Pigeon River UT*	From the headwaters within Great Smoky Mountains N.P. to Pittman Center is ONRW. Portion from Pitman Center to Mill Branch is proposed ONRW. Portion from Pitman Center to Hwy 411 is Tier 2	ONRW in Great Smoky Mountains N.P. Portion from Pitman Center to Mill Branch is proposed ONRW. Exceptional biological diversity. WPC ecoregion reference stream for 66g near Greenbriar Cove on middle prong	060101070303
Little Rhododendron Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070303
Little Rhododendron Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070303
Long Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
Lowes Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
Lowes Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
Machine Branch*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070312
Matthews Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070306
Matthews Creek*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070306
Mill Dam Branch*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070304
Moccasin Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Noisy Creek	From Webb Creek to headwaters	Naturally reproducing trout stream, Great Smoky Mountains N.P.	060101070304
Noisy Creek UT*	From Webb Creek to headwaters	Naturally reproducing trout stream, Great Smoky Mountains N.P.	060101070304
Norton Creek	From West Prong Little Pigeon River to headwaters	Naturally reproducing trout stream	060101070307
Ogle Spring Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070306
Oldham Creek*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070305
Painter Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070308
Parton Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Pecks Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070301
Porters Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
Porters Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
Powdermill Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070305
Ramp Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Ramsay Prong	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070301
Ramsay Prong UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070301
Ramsey Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070304
Ramsey Creek UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070304
Redwine Creek	From Webb Creek to origin	Naturally reproducing trout stream, Great Smoky Mountains N.P.	060101070304
Redwine Creek UT*	From Webb Creek to origin	Naturally reproducing trout stream, Great Smoky Mountains N.P.	060101070304
Rhododendron Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070303
Road Prong	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307

Table A3-14d.

<b>WATERBODY</b>	<b>DESCRIPTION</b>	<b>BASIS FOR</b>	<b>HUC-12</b>
Road Prong UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Road Turn Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Roaring Fork	From Little Pigeon River to headwaters	Naturally reproducing trout stream, Great Smoky Mountains N.P.	060101070310
Roaring Fork UT*	From Little Pigeon River to headwaters	Naturally reproducing trout stream, Great Smoky Mountains N.P.	060101070310
Rocky Spur Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070310
Rocky Spur Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070310
Rymel Branch UT**	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070312
Rymel Branch*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070312
Sawmill Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Sheep Pen Branch*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070304
Shirt Tail Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070301
Shirt Tail Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070301
Shutts Prong	From Porters Creek to headwaters	Great Smoky Mountains N.P.	060101070302
Shutts Prong UT*	From Porters Creek to headwaters	Great Smoky Mountains N.P.	060101070302
Snakefeeder Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070304
Soak Ash Creek	From Webb Creek to origin	Naturally reproducing trout stream, Great Smoky Mountains N.P.	060101070304
Soak Ash Creek UT*	From Webb Creek to origin	Naturally reproducing trout stream, Great Smoky Mountains N.P.	060101070304
South Prong Waldens Creek*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070312
Spring Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Steep Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Steep Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Styx Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Styx Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Sugar Camp Branch*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070312
Sugarland Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Surry Fork	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070310
Teds Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070303
Texas Creek	From Webb Creek to origin	Naturally reproducing trout stream, Great Smoky Mountains N.P.	060101070304
Texas Creek UT*	From Webb Creek to origin	Naturally reproducing trout stream, Great Smoky Mountains N.P.	060101070304
Thirst Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Timothy Creek	From Webb Creek to origin	Naturally reproducing trout stream, Great Smoky Mountains N.P.	060101070304
Todd Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Todd Branch*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Tomahawk Prong	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Trillium Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
Trout Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307

**Table A3-14e.**

<b>WATERBODY</b>	<b>DESCRIPTION</b>	<b>BASIS FOR</b>	<b>HUC-12</b>
Trout Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Tuckahoe Creek	In its entirety	State Scenic River	060101070205
Tumbling Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070304
Tumbling Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070304
Twin Creek	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070311
Twomile Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Upland Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Walker Camp Prong	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Walker Camp Prong UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Warden Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070304
Warden Branch*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070304
Watercrease Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070308
Webb Creek	From Great Smoky Mountains boundary (Creek mile 5.8) to origin	Naturally reproducing trout stream in Great Smoky Mountains N.P.	060101070304
Webb Creek UT*	From Great Smoky Mountains boundary (Creek mile 5.8) to origin	Naturally reproducing trout stream in Great Smoky Mountains N.P.	060101070304
West Prong Bird Creek*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070305
West Prong Little Pigeon River	From river mile 19.0 to origin	ONRW in Great Smoky Mountains N.P. Naturally reproducing trout stream	060101070307
West Prong Little Pigeon River UT*	From river mile 19.0 to origin	ONRW in Great Smoky Mountains N.P. Naturally reproducing trout stream	060101070307
West Prong Little River UT*	From river mile 19.0 to origin	ONRW in Great Smoky Mountains N.P. Naturally reproducing trout stream	060101070307
West Prong Little River UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070312
Whistlepig Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070307
Wilhite Creek	From River Mile 3.0 to headwaters	Exceptional biological diversity	060101070306
Wilson Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070305
Wooly Tops Branch	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302
Wooly Tops Branch UT*	Portion in Great Smoky Mountains N.P.	Great Smoky Mountains N.P.	060101070302

**Table A3-14f.**

**Table A3-14a-f. Known High Quality Waters in the Tennessee Portion of the Lower French Broad River Watershed as of September 2008.** The most recently published list is available at [www.state.tn.us/environment/wpc/publications/hqwlist.mht](http://www.state.tn.us/environment/wpc/publications/hqwlist.mht). WPC, Water Pollution Control; UT, Unnamed Tributary; N.P., National Park; ONRW, Outstanding National Resource Water; \*Located within state or federally protected lands; N.P., National Park.

**APPENDIX IV**

LAND USE/LAND COVER	AREAS IN HUC-12 SUBWATERSHEDS (ACRES)				
	0101	0102	0103	0104	0201
Bare Rock/Sand/Clay	1,578	984	2,690	298	10
Deciduous Forest	17,730	9,561	14,229	7,636	4,827
Developed Open Space	2,649	2,273	1,831	927	981
Emergent Herbaceous Wetlands					
Evergreen Forest	1,990	1,091	2,902	1,048	1,111
Grassland/Herbaceous	1,173	660	981	336	267
High Intensity Development	15	8	18		4
Low Intensity Development	503	483	109	78	186
Medium Intensity Development	64	155	44	3	48
Mixed Forest	1,172	877	1,134	631	423
Open Water	5,242	4,761	9,233	692	802
Pasture/Hay	13,468	8,237	9,299	5,178	8,967
Row Crops	363	62	101	45	239
Shrub/Scrub	1,220	501	902	289	333
Woody Wetlands	140	31	7	13	18
<b>Total</b>	<b>47,307</b>	<b>29,684</b>	<b>43,480</b>	<b>17,174</b>	<b>18,216</b>

*Table A4-1a.*

LAND USE/LAND COVER	AREAS IN HUC-12 SUBWATERSHEDS (ACRES)				
	0202	0203	0204	0205	0301
Bare Rock/Sand/Clay	7	29	16	9	
Deciduous Forest	15,605	11,057	13,492	7,197	6,934
Developed Open Space	1,866	2,104	2,372	1,395	
Emergent Herbaceous Wetlands					
Evergreen Forest	1,339	1,795	2,525	1,973	4,869
Grassland/Herbaceous	284	416	376	299	
High Intensity Development	4	20	57	1	
Low Intensity Development	346	586	654	179	
Medium Intensity Development	51	122	279	7	
Mixed Forest	745	1,117	1,402	888	664
Open Water	4		880	14	
Pasture/Hay	9,296	12,816	8,860	5,649	
Row Crops	212	159	510	28	
Shrub/Scrub	225	261	451	309	8
Woody Wetlands	64	18	22	16	
<b>Total</b>	<b>30,048</b>	<b>30,500</b>	<b>31,896</b>	<b>17,964</b>	<b>12,475</b>

*Table A4-1b.*

AND USE/LAND COVER	AREAS IN HUC-12 SUBWATERSHEDS (ACRES)				
	0302	0303	0304	0305	0306
Bare Rock/Sand/Clay	1	2	3	2	12
Deciduous Forest	8,327	16,117	8,812	6,387	25,146
Developed Open Space	4	1,050	659	967	2,120
Emergent Herbaceous Wetlands					
Evergreen Forest	2,577	1,703	1,035	1,057	6,837
Grassland/Herbaceous		114	7	62	357
High Intensity Development					
Low Intensity Development		47	35	22	149
Medium Intensity Development		7	2	11	16
Mixed Forest	547	1,689	789	190	4,288
Open Water					
Pasture/Hay		3,297	80	672	5,145
Row Crops	6	32	1	4	52
Shrub/Scrub	48	142	15	72	378
Woody Wetlands		28		1	87
<b>Total</b>	<b>11,510</b>	<b>24,228</b>	<b>11,438</b>	<b>10,447</b>	<b>44,587</b>

*Table A4-1c.*

LAND USE/LAND COVER	AREAS IN HUC-12 SUBWATERSHEDS (ACRES)				
	0307	0308	0309	0310	0311
Bare Rock/Sand/Clay	5				1
Deciduous Forest	22,535	2,852	1,423	3,734	4,208
Developed Open Space	2,697	59	85	164	575
Emergent Herbaceous Wetlands					
Evergreen Forest	5,283	252	71	350	314
Grassland/Herbaceous	22	1		2	16
High Intensity Development	217	5	6	6	2
Low Intensity Development	459	10	17	29	69
Medium Intensity Development	420	14	19	19	36
Mixed Forest	1,848	153	91	289	425
Open Water					
Pasture/Hay	223		1	2	44
Row Crops	6				1
Shrub/Scrub	234	1	1	3	10
Woody Wetlands	32				
<b>Total</b>	<b>33,981</b>	<b>3,347</b>	<b>1,714</b>	<b>4,595</b>	<b>5,701</b>

*Table A4-1d.*

LAND USE/LAND COVER	AREAS IN HUC-12 SUBWATERSHEDS (ACRES)			
	0312	0313	0314	0315
Bare Rock/Sand/Clay	13	5	11	22
Deciduous Forest	25,459	1,809	3,886	10,670
Developed Open Space	2,963	920	1,059	1,504
Emergent Herbaceous Wetlands				
Evergreen Forest	3,730	272	757	2,315
Grassland/Herbaceous	170	57	127	293
High Intensity Development	15	143	39	76
Low Intensity Development	385	545	317	625
Medium Intensity Development	92	336	196	257
Mixed Forest	3,616	207	560	1,033
Open Water	3	8		52
Pasture/Hay	4,280	1,579	2,629	5,177
Row Crops	70	80	39	197
Shrub/Scrub	248	63	120	338
Woody Wetlands	56	20	6	24
<b>Total</b>	<b>41,100</b>	<b>6,044</b>	<b>9,746</b>	<b>22,583</b>

**Table A4-1e.**

**Tables A4-1a-e. Land Use Distribution in the Lower French Broad River Watershed by HUC-12.** Data are from 2001 Multi-Resolution Land Characterization (MRLC) derived by applying a generalized Anderson Level II system to mosaics of Landsat thematic mapper images collected every five years.

HYDROLOGIC SOIL GROUPS
<b>GROUP A SOILS</b> have low runoff potential and high infiltration rates even when wet. They consist chiefly of sand and gravel and are well to excessively drained.
<b>GROUP B SOILS</b> have moderate infiltration rates when wet and consist chiefly of soils that are moderately deep to deep, moderately to well drained, and moderately coarse to coarse textures.
<b>GROUP C SOILS</b> have low infiltration rates when wet and consist chiefly of soils having a layer that impedes downward movement of water with moderately fine to fine texture.
<b>GROUP D SOILS</b> have high runoff potential, very low infiltration rates, and consist chiefly of clay soils.

**Table A4-2. Hydrologic Soil Groups in Tennessee as Described in WCS.** Soils are grouped into four hydrologic soil groups that describe a soil's permeability and, therefore, its susceptibility to runoff.

STATION	LOCATION	HUC 12	AREA (SQ MILES)	LOW FLOW (CFS)		
				1Q10	7Q10	3Q20
03469000	French Broad River	060101070201	4,543.00		992.0000	696.0000
03469010	Millican Creek	060101070201	4.20			0.0000
03470500	French Broad River	060101070204				
03469500	West Prong Little Pigeon River	060101070307	76.20			
03469175	Little Pigeon River	060101070315				
03470000	Little Pigeon River	060101070315	353.00	31.9650	43.2060	32.1240

**Table A4-3. United States Geological Survey Continuous Record Gaging Stations in the Lower French Broad River Watershed.** Additional information may be found at: <http://water.usgs.gov/osw/streamstats/>

AGENCY	STATION	LOCATION	HUC_12
USEPA	471000	French Broad River	060101070101
USEPA	471101	Douglas Lake	060101070101
TVA	475083	French Broad River @ RM 60.8	060101070101
TVA	475084	French Broad River @ RM 64.2	060101070101
TVA	475085	French Broad River @ RM 71.4	060101070101
TVA	475974	French Broad River @ RM 55.0	060101070101
TVA	475993	French Broad River @ RM 60.7	060101070101
TVA	475994	French Broad River @ RM 67.0	060101070101
TVA	476015	French Broad River @ RM 65.52	060101070101
TVA	476378	French Broad River @ RM 61.3	060101070101
TVA	477178	French Broad River @ RM 58.0	060101070101
TVA	477249	French Broad River @ RM 64.0	060101070101
TVA	477422	French Broad River @ RM 60.0	060101070101
TVA	477423	French Broad River @ RM 66.0	060101070101
TVA	477424	French Broad River @ RM 68	060101070101
TVA	477425	French Broad River @ RM 67.9	060101070101
TVA	477426	French Broad River @ RM 69.5	060101070101
TVA	477427	French Broad River @ RM 70.0	060101070101
TVA	477529	French Broad River @ RM 57.0	060101070101
TVA	477530	French Broad River @ RM 59.0	060101070101
TVA	477531	French Broad River @ RM 61.0	060101070101
TVA	477543	French Broad River @ RM 56.1	060101070101
TVA	477593	French Broad River @ RM 55.0	060101070101
TVA	477613	French Broad River @ RM 56.0	060101070101
TDEC	CLAY002.9CO	Clay Creek	060101070101
TDEC	LEADV001.2JE	Leadvale Creek	060101070101
TDEC	LEADV001.4JE	Leadvale Creek	060101070101
TDEC	TISSUE46	French Broad River @ RM 60.0	060101070101
USEPA	471102	Douglas Reservoir	060101070102
USEPA	471103	Douglas Reservoir	060101070102
TVA	475082	French Broad River @ RM 54.0	060101070102
TVA	475985	French Broad River @ RM 54.3	060101070102
TVA	475992	French Broad River @ RM 49.8	060101070102
TVA	476377	French Broad River @ RM 52.0	060101070102
TVA	476919	French Broad River @ RM 45.1	060101070102
TVA	476920	French Broad River @ RM 54.1	060101070102
TVA	477082	French Broad River @ RM 45.28	060101070102
TVA	477105	French Broad River @ RM 50.6	060101070102
TVA	477106	French Broad River @ RM 54.4	060101070102
TVA	477510	French Broad River @ RM 51.0	060101070102
TVA	477516	French Broad River @ RM 50.0	060101070102
TVA	477527	French Broad River @ RM 49.0	060101070102
TVA	477528	French Broad River @ RM 53.0	060101070102
TVA	477542	French Broad River @ RM 53.1	060101070102
TVA	477546	French Broad River @ RM 46.6	060101070102
TVA	477592	French Broad River @ RM 44.8L	060101070102

Table A4-4a.

AGENCY	STATION	LOCATION	HUC 12
TVA	360194	Flat Creek @ RM 2.7	060101070103
TVA	360195	Flat Creek @ RM 0.8	060101070103
USEPA	471104	Douglas Reservoir	060101070103
USEPA	471105	Douglas Reservoir	060101070103
USEPA	471106	Douglas Reservoir	060101070103
TVA	475081	French Broad River @ RM 33.0	060101070103
TVA	475439	French Broad River @ RM 45.1	060101070103
TVA	475447	Clear Creek @ RM 2.75	060101070103
TVA	475473	French Broad River @ RM 43.0	060101070103
TVA	475991	French Broad River @ RM 39.0	060101070103
TVA	476000	Clear Creek @ RM 2.0	060101070103
TVA	476375	French Broad River @ RM 43.3	060101070103
TVA	476376	French Broad River @ RM 34.6	060101070103
TVA	476446	French Broad River @ RM 32.33	060101070103
TVA	477032	French Broad River @ RM 40.5	060101070103
TVA	477033	French Broad River @ RM 33.5	060101070103
TVA	477034	French Broad River @ RM 32.4	060101070103
TVA	477044	Flat Creek @ RM 1.0	060101070103
TVA	477068	French Broad River @ RM 35.0	060101070103
TVA	477069	French Broad River @ RM 42.0	060101070103
TVA	477103	French Broad River @ RM 37.6	060101070103
TVA	477104	French Broad River @ RM 45.0	060101070103
TVA	477248	French Broad River @ RM 38.0	060101070103
TVA	477515	French Broad River @ RM 36.0	060101070103
TVA	477517	Muddy Creek @ RM 1.0	060101070103
TVA	477518	Muddy Creek @ RM 4.5	060101070103
TVA	477526	French Broad River @ RM 32.45	060101070103
TVA	477544	Muddy Creek @ RM 1.75	060101070103
TVA	477545	Muddy Creek @ RM 3.0	060101070103
TVA	477591	Flat Creek @ RM 0.8L	060101070103
TVA	477612	Flat Creek @ RM 3.1	060101070103
TVA	477621	French Broad River @ RM 34.0	060101070103
TVA	477636	French Broad River @ RM 41.5	060101070103
TVA	477667	French Broad River @ RM 32.80	060101070103
TVA	477672	French Broad River @ RM 34.5	060101070103
TDEC	CLEAR001.3JE	Clear Creek @ RM 1.3	060101070103
TDEC	CLEAR002.7JE	Clear Creek @ RM 2.73	060101070103
TDEC	CLEAR003.6JE	Clear Creek @ RM 3.6	060101070103
TVA	DOUGLAS90	Douglas Reservoir	060101070103
TVA	DOUGLAS92	Douglas Reservoir	060101070103
TVA	DOUGLAS93	Douglas Reservoir	060101070103
TDEC	TISSUE45	French Broad River @ RM 40.0	060101070103
TVA	477514	Flat Creek @ RM 6.0	060101070104
TVA	477610	Flat Creek @ RM 4.8	060101070104
TVA	477611	Flat Creek @ RM 5.2	060101070104
TDEC	ECO67G10	Flat Creek	060101070104
TVA	475088	French Broad River @ RM 32.3	060101070201

Table A4-4b.

AGENCY	STATION	LOCATION	HUC 12
TVA	476016	French Broad River @ RM 31.75	060101070201
TVA	476057	French Broad River @ RM 22.0	060101070201
TVA	476398	French Broad River @ RM 28.7	060101070201
TVA	476400	French Broad River @ RM 32.2	060101070201
TVA	476403	French Broad River @ RM 17.3	060101070201
TVA	476404	French Broad River @ RM 28.70	060101070201
TVA	476918	French Broad River @ RM 33.04	060101070201
TVA	477035	French Broad River @ RM 32.0	060101070201
TVA	477036	French Broad River @ RM 31.0	060101070201
TVA	477037	French Broad River @ RM 30.0	060101070201
TVA	477038	French Broad River @ RM 29.0	060101070201
TVA	477039	French Broad River @ RM 28.0	060101070201
TVA	477040	French Broad River @ RM 27.0	060101070201
TVA	477041	French Broad River @ RM 26.0	060101070201
TVA	477042	French Broad River @ RM 25.0	060101070201
TVA	477264	French Broad River @ RM 31.2	060101070201
TVA	477265	French Broad River @ RM 30.2	060101070201
TVA	477266	French Broad River @ RM 29.2	060101070201
TVA	477267	French Broad River @ RM28.2	060101070201
TVA	477268	French Broad River @ RM 27.2	060101070201
TVA	477666	French Broad River @ RM 31.5	060101070201
TVA	475088C	French Broad River @ RM 32.3	060101070201
TVA	475088CU1	French Broad River @ RM 32.3	060101070201
TVA	475088CU2	French Broad River @ RM 32.3	060101070201
TVA	475088CU3	French Broad River @ RM 32.3	060101070201
TVA	475088CU4	French Broad River @ RM 32.3	060101070201
TVA	476400C	French Broad River @ RM 32.2	060101070201
TDEC	BOYDS003.7SV	Boyds Creek @ RM 3.7	060101070202
TVA	475470	Dumplin Creek @ RM 1.77	060101070203
TVA	477467	French Broad River @ RM 28.1	060101070203
TDEC	DUMPL000.8SV	Dumplin Creek @ RM 0.8	060101070203
TDEC	1390	French Broad River	060101070204
TVA	475471	French Broad River @ RM 3.82	060101070204
TVA	475612	French Broad River @ RM 0.4	060101070204
TVA	476109	French Broad River @ RM 16.4	060101070204
TVA	476395	French Broad River @ RM 0.1	060101070204
TVA	476396	French Broad River @ RM 9.8	060101070204
TVA	476401	French Broad River @ RM 0.1	060101070204
TVA	476402	French Broad River @ RM 9.8	060101070204
TVA	476405	French Broad River @ RM 1.0	060101070204
TVA	476983	French Broad River @ RM 0.3	060101070204
TVA	477464	French Broad River @ RM 7.6	060101070204
TVA	477465	French Broad River @ RM16.0	060101070204
TDEC	FRENCHBRD003.8	French Broad River	060101070204
TDEC	ECO66G04	Middle Prong Little Pigeon River	060101070301
EPA Environmental Resource Lab	2A07811L	Falson Gap Prong	060101070302

**Table A4-4c.**

AGENCY	STATION	LOCATION	HUC 12
EPA Environmental Resource Lab	2A07811U	Falson Gap Prong	060101070302
TVA	475468	Little Pigeon River @ RM 11.63	060101070303
TVA	476050	Little Pigeon River @ RM 21.5	060101070303
TDEC	LPIGEONIS18	Walden Creek @ RM 3.4	060101070303
TDEC	LPIGEONIS20	Little Pigeon River @ RM 25.5	060101070303
TDEC	LPIGEONIS21	Little Pigeon River @ RM 16.0	060101070303
TDEC	WEBB000.0SV	Webb Creek	060101070303
TDEC	LPIGEONIS14	Norton Branch	060101070304
TDEC	LPIGEONIS22	Webb Creek @ RM 3.6	060101070304
TDEC	LPIGEONIS24	Webb Creek @ RM 2.3	060101070304
EPA National Aquatic Resource Survey	OWW04440-0110	Webb Creek	060101070304
TDEC	BIRD001.3SV	Bird Creek	060101070305
TVA	475461	East Fork Little Pigeon River @ RM 1.98	060101070306
TDEC	DUNN000.5SV	Dunn Creek	060101070306
TDEC	DUNN007.8SV	Dunn Creek	060101070306
TVA	475463	West Prong Little Pigeon River @ RM 20.66	060101070307
TVA	475464	West Prong Little Pigeon River @ RM 18.89	060101070307
TVA	475465	West Prong Little Pigeon River @ RM 16.17	060101070307
TVA	475466	West Prong Little Pigeon River @ RM 9.20	060101070307
TVA	475504	West Prong Little Pigeon River @ RM 13.0	060101070307
TVA	475505	West Prong Little Pigeon River @ RM 10.62	060101070307
TVA	475995	West Prong Little Pigeon River @ RM 12.2	060101070307
TDEC	LPIGEONIS10	West Prong Little Pigeon River @ RM 21.9	060101070307
TDEC	LPIGEONIS11	West Prong Little Pigeon River @ RM 16.4	060101070307
TDEC	LPIGEONIS13	West Prong Little Pigeon River @ RM 16.35	060101070307
TDEC	WPLPI008.7SV	West Prong Little Pigeon River @ RM 8.7	060101070307
TDEC	DUDLE003.3SR	Dudley Creek @ RM 3.3	060101070311
TDEC	DUDLE003.5SR	Dudley Creek @ RM 3.5	060101070311
TVA	475462	Walden Creek @ RM 0.53	060101070312
TDEC	COVE001.4SV	Cove Creek @ RM 1.4	060101070312
TDEC	COVE007.9SV	Cove Creek @ RM 7.9	060101070312
TVA	475467	West Prong Little Pigeon River @ RM 2.62	060101070313
TVA	475506	West Prong Little Pigeon River @ RM 0.2	060101070313
TDEC	LPIGEONIS19	Walden Creek	060101070313

**Table A4-4d.**

AGENCY	STATION	LOCATION	HUC 12
EPA National Aquatic Resource Survey	OWW04440-0238	Middle Creek	060101070314
TVA	475469	Little Pigeon River @ RM 0.55	060101070315
TVA	475509	Little Pigeon River @ RM 4.5	060101070315
TVA	475510	Little Pigeon River @ RM 5.25	060101070315
TVA	476399	Little Pigeon River @ RM 0.70	060101070315
TDEC	GISTS000.5SV	Gist Creek	060101070315
TDEC	GISTS003.2SV	Gist Creek	060101070315
TDEC	LPIGE000.7SV	Little Pigeon River @ RM 0.7	060101070315
TDEC	LPIGE006.6SV	Little Pigeon River @ RM 6.6	060101070315

**Table A4-4e.**

**Tables A4-4a-e. STORET Water Quality Monitoring Stations in the Lower French Broad River Watershed..** TDEC, Tennessee Department of Environment and Conservation; TVA, Tennessee Valley Authority; USEPA, United States Environmental Protection Agency.

PERMIT NUMBER	COUNTY	DESCRIPTION	WATERBODY	HUC-12
NRS03.371	Jefferson	Boat Launch Ramp Construction	French Broad River	060101070101
NRS05.148	Cocke	Maintenance	Clay Creek	060101070101
NR0603.118	Jefferson	Utility Line Crossings	UT to Seahorne Creek	060101070102
NR06MS.010	Jefferson	Stream Restoration	Goose Creek	060101070103
NR0703.066	Jefferson	Water Line Extension	Patterson Branch	060101070103
NR0703.067	Jefferson	Water Line Extension	Goose Creek & UT to Goose Creek	060101070103
NRS02.260	Jefferson	State Industrial Access Road	UT to Clear Creek	060101070103
NRS03.134	Jefferson	Utility Line Crossings	Shadden Creek	060101070103
NR0603.145	Sevier	Construction and Removal of Minor Road Crossings	Flat Creek	060101070104
NR0603.146	Sevier	Utility Line Crossings	Flat Creek	060101070104
NR0603.168	Sevier	Culvert Installation	Hettie Creek	060101070104
NR0703.020	Sevier	Construction and Removal of Minor Road Crossings	Hettie Creek	060101070104
NRS04.272	Sevier	Culvert Extension	Hettie Creek	060101070104
NRS05.481	Sevier	Bridge Replacement	Flatt Creek	060101070104
NR0603.066	Sevier	Bank Stabilization	French Broad River	060101070201
NR0603.072	Sevier	River Crossings	French Broad River	060101070201
NR0603.082	Sevier	Bank Stabilization	French Broad River	060101070201
NR0603.159	Sevier	Bank Stabilization	French Broad River	060101070201
NRS04.356	Sevier	Water Withdrawal	French Broad River	060101070201
NRS06.029	Sevier	Bank Stabilization	French Broad River	060101070201
NRS06.139	Sevier	Bank Stabilization	French Broad River	060101070201
NR0603.204	Sevier	Stream Determination	Boyds Creek	060101070202
NR0603.230	Sevier	Outfall Structure	Boyds Creek	060101070202
NRS03.363	Sevier	Bridge Repair	Knob Creek	060101070202
NRS03.398	Sevier	Sewer Line Crossing	Boyds Creek	060101070202
NR0603.102	Jefferson	Water Line Crossing	Dumplin Creek	060101070203
NR0703.050	Jefferson	Water Line Crossing	Dumplin Creek	060101070203
NRS03.217	Jefferson	Bridges and Approaches	Dumplin Creek	060101070203
NRS05.441	Jefferson	Sediment Removal	Dumplin Creek	060101070203
NR0603.141	Knox	Alteration to WWC	UT to McCall Branch	060101070204
NR0703.087	Knox	Culvert Replacement	UT to Sixmile Branch	060101070204
NR0703.105	Knox	Culvert Replacement	UT to Sixmile Branch	060101070204
NRS05.267	Knox	Cattle Crossing	Hines Creek	060101070204
NRS05.267B	Knox	Bank Stabilization	Hines Creek	060101070204
NRS06.281	Knox	Bridges and Approaches	French Broad River	060101070204
NR0703.001	Knox	Sediment Removal	Tuckhahoe Creek	060101070205
NRS05.446	Knox	Utility Line Crossings	Beaver Creek	060101070205
NR0603.107	Sevier	Construction and Removal of Minor Road Crossings	UT to Bird Creek	060101070305
NR0603.126	Sevier	Culvert Extension	Unnamed Stream to Powdermill Creek	060101070305
NRS00.239	Sevier	Impoundment Repair	Big Ridge Branch	060101070305

**Table A4-5a.**

PERMIT NUMBER	COUNTY	DESCRIPTION	WATERBODY	HUC-12
NRS05.321	Sevier	Stream Relocation	West Prong Bird Creek	060101070305
NRS05.321B	Sevier	Minor Alterations to Wetlands	West Prong Bird Creek/Wetland	060101070305
NR0703.009	Sevier	Construction and Removal of Minor Road Crossings	Dockery Branch	060101070306
NRS05.310	Sevier	Bridges and Approaches	Wilhite Creek	060101070306
NR0603.089	Sevier	Construction and Removal of Minor Road Crossings and Utility Line Crossings	UT to Norton Creek & Caney Creek	060101070307
NR0603.112	Sevier	Utility Line Crossings	UT to Norton Creek & Caney Creek	060101070307
NR0603.165	Sevier	Maintenance	West Prong Little Pigeon River	060101070307
NR0603.195	Sevier	Utility Line Crossings	King Branch	060101070307
NRS03.364	Sevier	Culvert Installation	West Prong Little Pigeon River	060101070307
NRS04.098	Sevier	Installation and Replacement of Raw Water Intake	West Prong Little Pigeon River	060101070307
NRS06.083	Sevier	Rehabilitation of Foothills Parkway	West Fork of the Little Pigeon River	060101070307
NRS05.248	Sevier	Bridges and Approaches	Roaring Fork Creek	060101070310
NRS00.364B	Sevier	SR 73 Upgrade and Expansion	Dudley Creek	060101070311
NR0603.007	Sevier	Construction and Removal of Minor Road Crossings	UT to Mill Creek	060101070312
NR0603.010	Sevier	Culvert Installation	Walden Creek & Lost Branch	060101070312
NR0603.039	Sevier	Construction and Removal of Minor Road Crossings	Compton Branch	060101070312
NR0603.068	Sevier	Construction and Removal of Minor Road Crossings	UT to Mill Creek	060101070312
NR0603.069	Sevier	Construction and Removal of Minor Road Crossings	UT to Mill Creek	060101070312
NR0603.070	Sevier	Construction and Removal of Minor Road Crossings	UT to Mill Creek	060101070312
NR0603.088	Sevier	Construction and Removal of Minor Road Crossings	UT to Walden Creek	060101070312
NR0603.098	Sevier	Culvert Replacement	Clear Fork Creek	060101070312
NR0603.136	Sevier	Culvert Installation	UT to Laurel Creek	060101070312
NR0603.170	Sevier	Bank Stabilization	Walden Creek	060101070312
NR0603.206	Sevier	Culvert Installation	UT of Mill Creek	060101070312
NR0603.223	Sevier	Driveway Crossing	Walden Creek	060101070312
NR0603.229	Sevier	Minor Alterations to Wetlands	UT to Mill Creek	060101070312
NR0603.245	Sevier	Bank Stabilization	Clear Fork of Walden Creek	060101070312
NR0603.254	Sevier	Culvert Extension	UT to Mill Creek	060101070312
NR0703.025	Sevier	Water Line Crossing	UT to Little Cove Creek	060101070312
NR0703.043	Sevier	Utility Line Crossings	Little Cove Creek	060101070312
NR0703.064	Sevier	Culvert Installation	UT to Caney Creek to West Prong Little Pigeon River	060101070312
NR0703.077	Sevier	Sewer Line crossing	Walden Creek & Lost Branch	060101070312

**Table A4-5b.**

PERMIT NUMBER	COUNTY	DESCRIPTION	WATERBODY	HUC-12
NR0703.103	Sevier	Minor Alterations to Wetlands	Wetland Adjacent to UT to Mill Creek	060101070312
NRS07.171	Sevier	Stream Encapsulation	UT to Mill Creek	060101070312
NRS03.291	Sevier	Bank Stabilization	Walden Creek	060101070312
NRS06.209	Sevier	Stream Relocation and Enhancement	UT	060101070312
NR0603.078	Sevier	Construction of Intake and Outfall Structure	West Prong Little Pigeon River	060101070313
NRS06.224	Sevier	Boardwalk Construction and Storm Water Outfall	West Prong Little Pigeon River	060101070313
NR0603.183	Sevier	Alteration to WWC	UT to Middle Creek	060101070314
NRS02.360	Sevier	Road Widening	Middle Creek	060101070314
NRS02.360B	Sevier	Road Widening	Middle Creek	060101070314
NRS02.360C	Sevier	Road Widening	Middle Creek	060101070314
NRS02.360D	Sevier	Road Widening	Middle Creek	060101070314
NRS02.360E	Sevier	Road Widening	Middle Creek	060101070314
NRS02.360F	Sevier	Road Widening	Middle Creek	060101070314
NRS02.360G	Sevier	Road Widening	Wetland Area 6	060101070314
NRS02.360H	Sevier	Road Widening	Wetland Area 7	060101070314
NRS02.360I	Sevier	Road Widening	Wetland Area 8	060101070314
NRS02.360J	Sevier	Road Widening	Wetland Area 11	060101070314
NRS02.360K	Sevier	Road Widening	Wetland Area 12	060101070314
NRS02.360L	Sevier	Road Widening	Wetland Area 13	060101070314
NRS05.052	Sevier	Stream Encapsulation	Lower Middle Creek	060101070314
NRS05.249	Sevier	Stream Encapsulation and Culvert Removal	Middle Creek	060101070314
NRS05.437	Sevier	Utility Line Crossings	Middle Creek	060101070314
NRS07.161	Sevier	Culvert Installation	UT to Middle Creek	060101070314
NR0603.029	Sevier	Construction and Removal of Minor Road Crossings	Gists Creek	060101070315
NR0603.251	Sevier	Construction and Removal of Minor Road Crossings	Norton Branch	060101070315
NR0603.262	Sevier	Construction and Removal of Minor Road Crossings	UTs to West Fork of Gists Creek	060101070315
NR0603.282	Sevier	Construction of Intake and Outfall Structure	Little Pigeon River	060101070315
NR0703.094	Sevier	Water Withdrawal	Gist Creek & Little Pigeon River	060101070315
NRS02.408	Sevier	Construction and Removal of Minor Road Crossings	Little Pigeon River	060101070315
NRS02.408B	Sevier	Construction and Removal of Minor Road Crossings	Wetlands on Little Pigeon River	060101070315
NRS03.174	Sevier	Stream Relocation	Little Pigeon River	060101070315
NRS03.290	Sevier	Bank Stabilization	Little Pigeon River & Gist Creek	060101070315
NRS05.014	Sevier	Stream Relocation and Culvert Installation	Little Pigeon River	060101070315

**Table A4-5c.**

PERMIT NUMBER	COUNTY	DESCRIPTION	WATERBODY	HUC-12
NRS05.482	Sevier	Bridges and Approaches	Gist Creek & Little Pigeon River	060101070315
NRS05.482B	Sevier	Minor Alterations to Wetlands	Wetland	060101070315
NRS06.141	Sevier	Water Withdrawal	Little Pigeon River	060101070315
NRS07.154	Sevier	Stream Relocation, Culvert Replacement and Stream Restoration	Gist Creek & Little Pigeon River	060101070315

**Table A4-5d.**

**Tables A4-5a-d. ARAPs (Aquatic Resource Alteration Permit) issued June 2002 through June 2007 in the Lower French Broad River Watershed. UT, Unnamed Tributary.**

PERMIT NUMBER	COUNTY	PERMITTEE: DISCRPTION	AREA	WATERBODY	HUC-12
TNR132451	Cocke	Newport Utilities: Emerald Point Subdivision Water and Sewer Utilities	10.10	Tributaries to French Broad River (Douglas Lake)	060101070101
TNR131482	Jefferson	Franklin Ridge Development, LLC: Franklin Ridge Apartments	9.00	On-Site Pond	060101070102
TNR131916	Jefferson	LKM Properties: Weigel's Farm Store	1.84	UT to French Broad River (Douglas Lake)	060101070102
TNR132000	Jefferson	Kent Woods: Retail Business Park	16.30	UT to Douglas Lake	060101070102
TNR132101	Jefferson	Myers Construction Company: English Meadows Subdivision	10.50	Spring Creek to French Broad River (Douglas Reservoir)	060101070102
TNR132121	Jefferson	Town of Dandridge: Swannsylvania CDBG Water Project	17.70	Seahorn Creek & Douglas Lake	060101070102
TNR132276	Jefferson	Concrete Materials, Inc.: Ready Mix Concrete Plant	4.00	Rimmer Creek	060101070102
TNR132506	Jefferson	Southview Development: Dandridge Condominiums	15.00	Rimmer Creek & UT to Douglas Lake	060101070102
TNR190304	Jefferson	TDOT: SR 9 Bridges and Approaches	4.45	French Broad River	060101070102
TNR131709	Sevier	Kent Woods: Southwind Subdivision	28.44	Douglas Lake	060101070103
TNR131739	Jefferson	Ruey Hsiung Cheng: Eagle View Estates	43.10	Patterson Branch & Douglas Lake	060101070103
TNR131910	Jefferson	Doug Keene: Shady Cove Subdivision	4.64	Douglas Lake	060101070103
TNR132217	Jefferson	Craig Faulkner: Millstone Subdivision	16.00	UT to Goose Creek to Douglas Lake	060101070103
TNR132295	Jefferson	Sevier Ventures, Richard Hain: Hickory Landing Condominiums	60.00	Muddy Creek	060101070103
TNR132351	Jefferson	William J. Haywood: Apple Ridge Subdivision	80.00	UT to Douglas Lake	060101070103
TNR132488	Jefferson	Bouldercrest Villas, LLC: Bouldercrest Villas Subdivision	11.50	Douglas Lake	060101070103
TNR132504	Jefferson	Tim McCormick: Oaks at Goose Creek Subdivision	6.00	Wells Branch	060101070103
TNR132518	Jefferson	Ronald Freedman: Ridge View Subdivision	15.35	UT to Goose Creek	060101070103
TNR190295	Jefferson	TDOT: SR 139 Bridge Replacement	2.50	Shadden Creek	060101070103
TNR190296	Jefferson	TDOT: SIA Access Rd	3.81	Clear Creek	060101070103
TNR190618	Jefferson	TDOT: SR 35 Culvert Replacement	1.60	Clear Creek	060101070103
TNR131632	Sevier	Heartland Development: Fox Vista Subdivision	18.40	Douglas Lake	060101070104

Table A4-6a.

PERMIT NUMBER	COUNTY	PERMITTEE: DISCRPTION	AREA	WATERBODY	HUC-12
TNR131742	Sevier	Kevin Blalock: Burning Oaks Subdivision	36.00	UT to Flat Creek	060101070104
TNR132029	Sevier	Leon Anderson: Site Grading	2.00	Hettie Creek	060101070104
TNR132085	Sevier	Smoky Mountain Estates Properties, Inc.: Smoky Mountain Estates	59.12	Flat Creek	060101070104
TNR132178	Sevier	Greg Layman: Roadway, Culvert, and Utility Construction	1.45	Hettie Creek	060101070104
TNR132303	Sevier	Heartland Development: Fox Vista Subdivision	55.80	Douglas Lake	060101070104
TNR132369	Sevier	Teddy Jones and Gary Myers: Site Grading	6.50	Patterson Creek	060101070104
TNR190671	Sevier	TDOT: SR 35 Bridge Construction	1.62	Flat Creek	060101070104
TNR130170	Knox	Gregory Layman, Developer: River Island Subdivision	60.00	French Broad River	060101070201
TNR131701	Sevier	Ralph and Pearl Laughton: Providence Hill Subdivision	26.20	UTs to Millican Creek	060101070201
TNR131853	Sevier	Blue Ridge Development and New Hope Ministries: Cross Pointe	47.00	French Broad River	060101070201
TNR132026	Sevier	Awl Phase Construction: Sylvia Lane Property Subdivision	5.00	Millican Creek	060101070201
TNR132049	Sevier	Al Franke: Falcon Ridge Subdivision	26.55	UT to the French Broad River	060101070201
TNR132252	Sevier	MD Investments: Comfort Suites Hotel	2.80	Dumplin Creek	060101070201
TNR131607	Knox	Heartland Development, LLC: Commercial Development	6.88	UT to Boyds Creek	060101070202
TNR131616	Sevier	Tim Norwood: Storage Development	2.59	UT to Boyds Creek	060101070202
TNR131660	Sevier	Gary Mack: Happy Creek Subdivision	19.00	Happy Creek	060101070202
TNR131674	Sevier	Doug Smith: Hillsong Subdivision	9.56	Boyds Creek	060101070202
TNR131696	Sevier	Heartland Development, LLC: Van Guilder at Creekside	11.13	Boyd's Creek	060101070202
TNR131708	Sevier	Darrell Keene Development: Commercial Development	9.00	UTs to Boyds Creek	060101070202
TNR131720	Knox	Heartland Development, LLC: Borrow Area	3.64	UT to Boyd's Creek	060101070202
TNR131811	Sevier	D & D Properties	8.01	UT to Boyd's Creek	060101070202
TNR131849	Sevier	Prime Investments: Cool Springs Subdivision	57.23	Boyds Creek	060101070202
TNR131874	Sevier	Reagan Farms Commercial Park: Site Grading	4.21	Bridge Creek	060101070202

Table A4-6b.

PERMIT NUMBER	COUNTY	PERMITTEE: DISCRIPTION	AREA	WATERBODY	HUC-12
TNR131909	Sevier	Howard L. and Jean Brown: First Rage Storage	3.98	Boyds Creek	060101070202
TNR131949	Sevier	F & W Builders, LLC: Chesney Commons Condominiums	4.80	UT to Boyds Creek	060101070202
TNR131967	Sevier	North American Development Corporation: Condominium Development	9.70	UT to Boyds Creek	060101070202
TNR132007	Sevier	Mark Parsons: Byrd Haven Estates	25.66	Happy Creek	060101070202
TNR132058	Sevier	North American Development Corporation: Simmons View Condominiums	6.10	Boyds Creek	060101070202
TNR132194	Sevier	Heartland Development: The Presidential Subdivision	46.00	UT to Boyds Creek	060101070202
TNR132275	Sevier	Faith In The Word Church: Shoney's Restaurant	2.20	UT to Boyds Creek	060101070202
TNR132417	Sevier	Kevin Scott Whaley: Gaylon Heirs Property	2.00	Knob Creek	060101070202
TNR132499	Sevier	Hodges Bend, LLC: The Vista at Hodges Bend	68.00	Boyd's Creek	060101070202
TNR190191	Sevier	TDOT: SR 448	13.45	Little Pigeon River & West Prong Little Pigeon River to French Broad River	060101070202
TNR190256	Sevier	TDOT: SR 35	13.26	Boyds Creek	060101070202
TNR131436	Jefferson	David L. Jones: Baldwin Cate Farm Subdivision	21.70	UT to Dumplin Creek	060101070203
TNR131553	Sevier	Heritage Log Homes: Utility Improvements	14.50	UT of Dumplin Creek	060101070203
TNR131645	Sevier	Carl Copen: Northview Business Park	7.00	Unnamed Stream to Dumplin Creek	060101070203
TNR131768	Sevier	Smoky Mountain Building Products, LLC: Technology Park	7.05	UT to Dumplin Creek	060101070203
TNR131789	Sevier	Kirby Smith: Clear Creek Estates	14.90	Dumplin Creek	060101070203
TNR131832	Jefferson	George Johnson: Office Building Construction	0.00	Hunnicutt Branch	060101070203
TNR131897	Jefferson	Woodridge L & P D, LLC: Site Grading	9.65	Chaney Branch	060101070203
TNR131979	Jefferson	Donny Meadows: Mountain Meadows Subdivision	44.48	Piedmont Branch	060101070203
TNR132144	Jefferson	Hui Lin Chan: Highway 92 Borrow Area	8.20	UT to Dumplin Creek.	060101070203
TNR132192	Jefferson	David L. Jones: Milldale Square Subdivision	6.00	Dumplin Creek	060101070203
TNR132242	Jefferson	Jeff Richardson: Storage Rental Buildings	2.45	Dumplin Creek	060101070203
TNR132485	Jefferson	Holy Trinity Catholic Church: Building Construction	2.30	UT to Dumplin Creek	060101070203

**Table A4-6c.**

<b>PERMIT NUMBER</b>	<b>COUNTY</b>	<b>PERMITTEE: DISCRPTION</b>	<b>AREA</b>	<b>WATERBODY</b>	<b>HUC-12</b>
TNR190352	Jefferson	TDOT: Bridge Replacement	1.04	Dumplin Creek	060101070203
TNR190559	Sevier	TDOT: Top Flite Drive	4.41	UTs to Dumplin Creek & Sinkhole	060101070203
TNR131785	Sevier	Doug Clifton: Bays Mountains Subdivision	40.40	Dry Branch	060101070204
TNR131836	Knox	Johnson Bible College: Expansion	4.00	French Broad River	060101070204
TNR131928	Knox	Clyde Baker: Cross Walk Community Church	2.30	Upper Tennessee River (Fort Loudoun Reservoir)	060101070204
TNR131968	Knox	Franklin Development, LLC: The Village of Sevier Subdivision	18.90	UT to Sixmile Branch	060101070204
TNR132174	Knox	Jack and Sandy Grubbs: Safe Haven Subdivision	7.35	Burnett Creek to French Broad	060101070204
TNR132176	Knox	Con-Way Freight Services: Parking Lot Expansion	2.17	French Broad River	060101070204
TNR132205	Knox	Showcase Homes: Ford Valley Estates	5.50	UT to French Broad River (Fort Loudon Lake)	060101070204
TNR132461	Knox	Riverwalk Landing, LLC: Riverwalk Landing Subdivision	37.20	Fort Loudoun Lake	060101070204
TNR132564	Sevier	Hill View Estates, LLC: Hill View Estates	6.00	Gap Creek	060101070204
TNR131524	Sevier	Alex Davis ET AL: Smoky Village Subdivision	6.00	UT to Tuckahole Kinners Branch	060101070205
TNR131525	Sevier	Earl Stiles: Hollow Hill Subdivision	8.00	UT to French Broad	060101070205
TNR131889	Knox	Knoxville Utilities Board: Gas Main Replacement	0.80	UTs to First Creek	060101070205
TNR132098	Sevier	Joe McCarter: Thorngrove Pike Exploration	26.00	UT to Tuckahoe Creek	060101070205
TNR132201	Jefferson	Southview Development: Site Clearing	61.00	Caldwell Branch	060101070205
TNR131932	Sevier	Jeff Shultz: Office Development	4.00	Middle Creek	060101070303
TNR131936	Sevier	Leonard Waring: The Tradition Subdivision	33.00	Lone Branch	060101070303
TNR131959	Sevier	Webb Mountain, LLC: Webb Mountain Subdivision	5.00	Little Pigeon River & Henry Branch	060101070303
TNR132047	Sevier	Property Express, LLC: Diamond Ridge Subdivision	16.10	UT of Knight Mill Branch	060101070303
TNR190564	Sevier	TVA - Dumplin Valley-Pigeon Forge Transmission Line	3.00	Little Pigeon River @ RM 10	060101070303
TNR131456	Sevier	Hibbard Family Corporation: Mountain Grace Estates	30.00	Bird Creek to Little Pigeon River	060101070305
TNR131776	Sevier	Byrd's Eye View, LLC: Bird's Eye View Subdivision	31.35	Bird Creek	060101070305
TNR131926	Sevier	Frederick Dreambuilders: Settler's Ridge Subdivision	26.00	UT to Powdermill Creek	060101070305
TNR131970	Sevier	Serenity Woods, LLC: Serenity Woods Subdivision	13.00	Oldham Creek	060101070305

**Table A4-6d.**

PERMIT NUMBER	COUNTY	PERMITTEE: DISCRIPTION	AREA	WATERBODY	HUC-12
TNR132019	Sevier	Bruce Marr: The Landing at Birds Creek	9.95	UT of Bird's Creek	060101070305
TNR132041	Sevier	Through the Woods, LLC: Glades Point Subdivision	3.54	West Prong Birds Creek	060101070305
TNR132055	Sevier	Rich Thompson and Alan Maio: Green Mountain Subdivision	14.83	UT to Tyant Branch to Birds Creek	060101070305
TNR132056	Sevier	Rich Thompson and Alan Maio: Green Mountain Subdivision	26.35	Two UTs to Birds Creek	060101070305
TNR132158	Sevier	Blalock's Charles & Sons: Portable Concrete Plant	0.00	Bird Creek	060101070305
TNR131551	Sevier	Bud Ogle: Preston Ridge Subdivision	19.50	Unnamed Creek to Walnut Grove Branch	060101070306
TNR131593	Sevier	Sevier County, Tennessee: Water Line Improvements	11.10	Mill Branch, Dunn Creek, Dugan Branch, Canupp Branch, Fats Fork, Obes Branch, & Wilhite Creek	060101070306
TNR131948	Sevier	D.S. Builders: Ridgewood Estates Subdivision	11.50	East Fork	060101070306
TNR132010	Sevier	Charlie Stranahan: Dixon Mountain Estates	20.00	UT to Dunn Creek	060101070306
TNR132069	Sevier	Covenant Investment Group: The Condos at Ridgewood Estates	9.74	UT to East Fork Little Pigeon River	060101070306
TNR132110	Sevier	Awl Phase Construction of Tennessee: Autumn Ridge Estates	33.00	East Fork of Little Pigeon River	060101070306
TNR132139	Sevier	S & S Partners: Forest Glenn Subdivision	21.50	Yellow Breeches Creek	060101070306
TNR132359	Sevier	Alexis Tejada: Bearwallow Mountain Subdivision	55.13	UT to Mill Branch	060101070306
TNR132386	Sevier	Bonus Room Storage: Heritage Hills Storage	4.90	Walnut Grove Branch	060101070306
TNR190726	Sevier	TDOT: Bridge Replacement	1.73	Dunn Creek	060101070306
TNR190738	Sevier	TDOT: Small Structure Replacement	4.12	East Fork Creek	060101070306
TNR131265	Sevier	Norton Creek, LLC: Norton Creek Subdivision	1.40	Norton Creek	060101070307
TNR131453	Sevier	Marvin T. and Renee B. Merritt: Mountain Shangrila	9.20	UT to Gnatty Branch to UT to West Prong Little Pigeon River	060101070307
TNR131474	Sevier	City of Pigeon Forge: Pigeon Forge Greenway Trail	4.60	West Prong Little Pigeon River	060101070307
TNR131489	Sevier	Fred Allred: Campbell Lead Road Condominiums	9.67	Buckberry Branch & Cliff Branch to West Prong Little Pigeon River	060101070307
TNR131491	Sevier	Dan Haynes: Helicopter Headquarters Museum	4.02	West Prong Little Pigeon River	060101070307

Table A4-6e.

PERMIT NUMBER	COUNTY	PERMITTEE: DISCRPTION	AREA	WATERBODY	HUC-12
TNR131504	Sevier	City of Pigeon Forge: Gravity Sewer Installation	6.00	Mill Creek	060101070307
TNR131510	Sevier	Gatlinburg Falls, LLC: Holly Forest Subdivsion	6.00	Gnatty Branch	060101070307
TNR131556	Sevier	Whispering Pines, LLC	1.10	West Prong Little Pigeon River	060101070307
TNR131560	Sevier	Keith Biggs: The Inn at Christmas Place	6.12	West Prong Little Pigeon River	060101070307
TNR131613	Sevier	Jon Bickis: Sunrise Pointe Subdivision	2.03	Holy Branch Creek	060101070307
TNR131614	Sevier	Andy MacKinnon, MacKinnon Development: Linebergers Plaza	1.10	West Prong Little Pigeon River	060101070307
TNR131669	Sevier	The Maples Group: Briarwood Gate Cabins	10.50	UT to West Prong Little Pigeon River	060101070307
TNR131764	Sevier	H2O Sevier, LLC: Cherokee Lodge Condominiums	2.79	UT to West Prong Little Pigeon River	060101070307
TNR131875	Sevier	2 Ducks LLC: Teaster Commons Fill Area	2.00	West Prong Little Pigeon River	060101070307
TNR131921	Sevier	David Acor: Elkington Place Subdivision	1.70	Buckberry Branch	060101070307
TNR131992	Sevier	Ray Beck: Teaster Lane	2.12	West Prong Little Pigeon River	060101070307
TNR132413	Sevier	Great Smoky Mountains Church of Christ: Site Renovation	2.25	West Prong Little Pigeon River	060101070307
TNR131608	Sevier	Stan Sorey: Summit Manor Condominiums	1.92	West Prong Little Pigeon River	060101070308
TNR132429	Sevier	Holly Ridge Development, LLC: Holly Ridge Condominiums	3.16	UT to West Prong Little Pigeon River	060101070309
TNR131591	Sevier	Theodore Mullikin: Condominium Development	2.03	Dudley Creek	060101070311
TNR132088	Sevier	Bruce Marr: Majestic Hills Subdivision	2.28	Hogpen Branch	060101070311
TNR132313	Sevier	Allen Hood	19.00	Hogpen Branch	060101070311
TNR131446	Sevier	CG Investments, Inc: Serenity Cove Subdivision	10.00	Laurel Lick Branch	060101070312
TNR131457	Sevier	Ray Teaster: Road Construction	39.00	South Prong of Walden Creek	060101070312
TNR131471	Sevier	Pine Mountain Hospitality Group: Pine Mountain Campground	9.69	Mill Creek	060101070312
TNR131480	Sevier	Randy Fox: Fox Crossing Subdivision	10.00	UT to Walden Creek	060101070312
TNR131534	Sevier	Mike McCarter: Teaberry Mountain Subdivision	8.00	UT to Cove Creek	060101070312
TNR131618	Sevier	TFM Properties: Cave Mountain Commons	1.75	UT to Cove Creek	060101070312
TNR131636	Sevier	TCB Construction Company: Stone Mill Subdivision	1.20	UT to Cove Creek	060101070312
TNR131648	Sevier	Ross Ogle: Site Grading	8.00	Walden Creek	060101070312

Table A4-6f.

PERMIT NUMBER	COUNTY	PERMITTEE: DISCRPTION	AREA	WATERBODY	HUC-12
TNR131655	Sevier	Jeff Harris: On Higher Ground Lot and Water Line Extension	9.40	UT to Little Cove Creek	060101070312
TNR131676	Sevier	Cabins USA, LLC: Mountain Park Cabin Rentals	4.30	Dry Fork	060101070312
TNR131735	Sevier	Fairtenn, LLC: Misty Ridge Subdivision	15.61	UTs to Mill Creek	060101070312
TNR131740	Sevier	Brookside R.V. Resort and Sales	1.50	Walden Creek	060101070312
TNR131765	Sevier	Gary Fields: The Summit at Bluff Mountain	2.40	UTs to Waldens Creek	060101070312
TNR131784	Sevier	Mountain Ridge, LLC: Cherokee Valley Subdivision	9.00	Walden Creek & Lost Branch	060101070312
TNR131834	Sevier	Chuck McGinnis: Thunder Mountain	1.95	Little Cove Creek	060101070312
TNR131846	Sevier	Fairtenn, LLC: Wilderness Falls Access Road	18.00	UTs to Mill Creek	060101070312
TNR131871	Sevier	Don Hall: Pine Mountain Road	2.82	Mill Creek	060101070312
TNR131966	Sevier	Pigeon Forge First Baptist Church: Church Relocation	14.00	Mill Creek	060101070312
TNR132081	Sevier	Roy Lafollette: Lafollette's Landing Subdivision	13.80	UT to Walden Creek	060101070312
TNR132105	Sevier	Highway Host, Inc.: Laurel Branch North Subdivision	16.37	Laurel Creek & UT to Walden Creek	060101070312
TNR132133	Sevier	A. C. Masingill: Road Construction	15.00	Lost Branch to Walden Creek	060101070312
TNR132168	Sevier	Blalock Lumber Company: Portable Concrete Plant	1.50	Rush Branch to Mill Creek	060101070312
TNR132285	Sevier	CG Investments, Inc.: Serenity Cove Road Construction	12.20	Laurel Lick Branch	060101070312
TNR132404	Sevier	Sevier County Board of Education: Boys and Girls Club	2.17	East Prong of Bird Creek	060101070312
TNR132412	Sevier	Awl Phase Construction of Tennessee: Wears Valley Estates	6.00	South Prong of Walden Creek	060101070312
TNR132476	Sevier	Randy Jones: Cabin Development	2.00	Lick Branch to Walden's Creek	060101070312
TNR131419	Sevier	Hidden Mountain Construction: Road Construction	3.90	West Prong Little Pigeon River	060101070313
TNR131496	Sevier	Appleview Farms, LLC: Appleview Farms Condominiums	2.10	West Prong Little Pigeon River	060101070313
TNR131503	Sevier	Smoky Hollow Land Company, LLC:Timer Woods Subdivision	52.70	UT to West Prong Little Pigeon River	060101070313
TNR131555	Sevier	Rashmin R. Jardosh: Mainstay Suites Hotel	1.36	West Prong Little Pigeon River	060101070313

**Table A4-6g.**

PERMIT NUMBER	COUNTY	PERMITTEE: DISCRPTION	AREA	WATERBODY	HUC-12
TNR131568	Sevier	Miller Land Partnership: Retail Development	13.30	Norton's Branch to West Prong Little Pigeon River	060101070313
TNR131604	Sevier	David Travis: Grand Vista Condominiums	19.20	Three UTs to West Prong Little Pigeon River	060101070313
TNR131746	Sevier	Pigeon Forge Development Group: Mountain Meadow Condominiums	14.00	UT to West Prong Little Pigeon River	060101070313
TNR131758	Sevier	Highlands Union Bank: Building Construction	1.10	West Prong Little Pigeon River	060101070313
TNR131798	Sevier	Bankeast: Parking Area Construction	1.30	UT to West Prong Little Pigeon River	060101070313
TNR131863	Sevier	The City of Pigeon Forge: Parkway/Teaster Lane Connector	1.35	West Prong Little Pigeon River	060101070313
TNR131873	Sevier	City of Pigeon Forge: North Parkway Interceptor	3.00	West Prong Little Pigeon River	060101070313
TNR131902	Sevier	2 Ducks, LLC: Site Grading	1.45	West Prong Little Pigeon River	060101070313
TNR131934	Sevier	River's Edge Development, LLC: Rivers Edge Condominiums	1.95	West Prong Little Pigeon River	060101070313
TNR132182	Sevier	Blue Ridge Residential: Wisteria Pointe Condominiums	1.45	UT to West Prong Little Pigeon River	060101070313
TNR130198	Sevier	Hidden Springs Resort	0.00	Seaton Branch & UT	060101070314
TNR131479	Sevier	Bob Gillespie and Dewayne Cable: Landmark Pointe	96.19	UT to Middle Creek	060101070314
TNR131857	Sevier	Roy Gutridge: Roy Gutridge Development	8.30	UT to Middle Creek	060101070314
TNR131896	Sevier	Johnson Sevierville, LLC: Commercial Shopping and AutoZone Parking Area	1.63	Middle Creek	060101070314
TNR131951	Sevier	James Conner: Snapwood Estates	6.87	Middle Creek	060101070314
TNR131963	Sevier	Chuck Smith: Cypress Court Subdivision	3.10	UT to Little Pigeon River	060101070314
TNR131986	Sevier	Curt Frederick: Double Cup Investments Subdivision	3.17	Middle Creek	060101070314
TNR132037	Sevier	Dollywood: Mystery Mine	1.70	UT of Middle Creek	060101070314
TNR132080	Sevier	Joe McMakin: Bear Cove Falls	5.20	UT to Middle Creek	060101070314
TNR132367	Sevier	Dollywood: Road Expansion		UT of Middle Creek	060101070314
TNR132558	Sevier	Covenant Health Properties: Demolition and Backfill	8.00	Middle Creek	060101070314
TNR131533	Sevier	Steven E. Marshall: Ridge Haven Subdivision	41.10	UT to Gists Creek	060101070315

**Table A4-6h.**

PERMIT NUMBER	COUNTY	PERMITTEE: DISCRPTION	AREA	WATERBODY	HUC-12
TNR131566	Sevier	Sevier Ventures, Inc.: Eagles Watch Subdivision	1.40	Flat Creek	060101070315
TNR131652	Sevier	James E. Gibson: Pleasant Hill Estates	4.00	UT of Gists Creek	060101070315
TNR131680	Sevier	Doug Shoemaker: Mountain Living Homes Retail Center	1.50	Little Pigeon River	060101070315
TNR131783	Sevier	Sevier County Electric System: Pole Storage Yard	2.25	UT to Little Pigeon River	060101070315
TNR131872	Sevier	Charles Blalock and Sons: North Materials Management	48.50	UTs to Little Pigeon River	060101070315
TNR131924	Sevier	Pilot Corporation: Pilot Food Mart	1.78	Little Pigeon River	060101070315
TNR131944	Sevier	Eugene Coldiron: Sugar Loaf Ridge Subdivision	29.50	UTs to West Fork of Gists Creek	060101070315
TNR131978	Sevier	Ron Ogle: Furniture Store and Warehouse	5.29	UT to Little Pigeon River	060101070315
TNR131981	Sevier	KBM Commercial Properties: Allensville Square	27.00	UT to Little Pigeon River	060101070315
TNR131982	Sevier	Holrob-SOCO, LLC: Christmas Place Property	8.00	Little Pigeon River	060101070315
TNR132040	Sevier	DT Corporation: Allensville Square	36.00	UT to Little Pigeon River	060101070315
TNR132334	Sevier	Terry Williams: Dogwood Trace Subdivision	40.00	UT to Norton Branch	060101070315
TNR132357	Sevier	GAC Investments, LLC: New Era Road Subdivision	20.00	Gist Creek	060101070315
TNR132396	Sevier	Citizens National Bank: River Park Apartments	3.56	Little Pigeon River	060101070315

**Table A4-6i.**

**Tables A4-6a-i. CGPs (Construction General Permits) issued June 2002 through June 2007 in the Lower French Broad River Watershed.** Area, acres of property associated with construction activity; UT, Unnamed Tributary.

PERMIT NUMBER	PERMITTEE	SIC	SIC NAME	MADI	WATERBODY	HUC-12
TN0004987	Rinker Materials South Central (Forks of The River Quarry)	1422	Crushed and Broken Limestone	Minor	French Broad River & UT	060101070204
TN0063096	French Broad Sand & Gravel, Inc. (Sand Dredge and Processing Facility)	1442	Construction Sand and Gravel	Minor	French Broad River @ RM 3.8-5.7	060101070204
TN0063347	Jefferson County Hwy Dept (Limestone Quarry and Processing Facility)	1422	Crushed and Broken Limestone	Minor	UT to Goose Creek	060101070103
TN0066214	Sevier County Hwy. Dept. (Sevier County Quarry)	1422	Crushed and Broken Limestone	Minor	Karst Topography Via Sinkholes	060101070306
TN0065951	Vulcan Construction Materials, LP (Kodak Quarry)	1422	Crushed and Broken Limestone	Minor	Dumplin Creek	060101070203
TN0003018	Vulcan Construction Materials, LP (Sevierville Quarry)	1422	Crushed and Broken Limestone	Minor	West Prong Little Pigeon River	060101070313

**Table A4-7. Permitted Mining Facilities in the Lower French Broad River Watershed.** SIC, Standard Industrial Classification; MADI, Major Discharge Indicator; UT Unnamed Tributary.

PERMIT NUMBER	PERMITTEE	SIC CODE	SIC NAME	MADI	WATERBODY	HUC-12
TN0024503	TDOT-I40 Rest Area	4952	Sewerage Systems	Minor	Douglas Lake @ RM 55.0 to French Broad River	060101070101
TN0064971	White Pine STP	4952	Sewerage Systems	Minor	French Broad River @ RM 67.9 (Douglas Reservoir)	060101070101
TN0021245	Dandridge STP	4952	Sewerage Systems	Minor	French Broad River @ RM 45.5 (Douglas Reservoir)	060101070102
TN0003280	Bush Brothers and Company, Inc.	2033	Canned Fruits, Vegetables, Preserves, Jams and Jellies	Minor	Clear Creek @ RM Muddy Creek Embayment @ RM 5.3 of Douglas Reservoir	060101070103
TN0027421	TVA Douglas Hydro Plant	4911	Electrical Services	Minor	French Broad River	060101070103
TN0078131	Harbor Crest Condo Association	4952	Sewerage Systems	Minor	French Broad River @ RM 38.01	060101070103
TN0063959	Sevierville STP (McCroskey Island)	4952	Sewerage Systems	Major	French Broad River @ RM 27.3	060101070201
TN0022748	Harrison Chilhowee Baptist Academy	4952	Sewerage Systems	Minor	UT @ RM 0.4 to Boyd's Creek @ RM 11.3	060101070202
TN0055328	Dumplin Valley Associates	4952	Sewerage Systems	Minor	Dumplin Creek @ RM 2.8	060101070203
TN0055565	Jefferson County High School	4952	Sewerage Systems	Minor	UT @ RM 0.4 to Dumplin Creek @ RM 12.3	060101070203
TN0023337	Johnson Bible College-Knoxville	4952	Sewerage Systems	Minor	French Broad River @ RM 9.9	060101070204
TN0028223	Gap Creek Elementary School	4952	Sewerage Systems	Minor	Cement Mill Creek @ RM 2.0	060101070204
TN0061581	Pepsi Bottling Group	2086	Bottled and Canned Softdrinks and Carbonated Waters	Minor	French Broad River @ RM 0.9	060101070204
TN0078948	Panasonic Electronic Devices Corporation of America	3651	Household Audio and Video Equipment	Minor	French Broad River @ RM 1.9	060101070204
TN0055310	Webb Creek Utility District	4952	Sewerage Systems	Minor	Webb Creek @ RM 2.8	060101070304
TN0055689	Caton's Chapel Elementary School	4952	Sewerage Systems	Minor	Bird Creek @ RM 1.7	060101070305
TN0059102	Venture Out at Gatlinburg	4952	Sewerage Systems	Minor	Ogle Springs Branch @ RM 1.6	060101070306
TN0060569	East Sevier County Utility District STP	4952	Sewerage Systems	Minor	Wilhite Creek @ RM 4.05	060101070306

**Table A4-8a.**

PERMIT NUMBER	PERMITTEE	SIC CODE	SIC NAME	MADI	WATERBODY	HUC-12
TN0020117	Gatlinburg STP	4952	Sewerage Systems	Major	West Prong Little Pigeon River @ RM 16.4	060101070307
TN0021237	Pigeon Forge STP	4952	Sewerage Systems	Major	West Prong Little Pigeon River @ RM 16.4	060101070312
TN0002194	Johnson Matthey Catalysts	2819	Industrial Inorganic Chemicals, NEC	Minor	Little Pigeon River @ RM 7.4	060101070315

**Table A4-8b.**

**Tables A4-8a-b. Municipal and Industrial Permittees in the Lower French Broad Watershed.** SIC, Standard Industrial Code; MADI, Major Discharge Indicator; UT, Unnamed Tributary.

PERMIT NUMBER	PERMITTEE	WATERBODY	HUC-12
TNG110330	Concrete Materials, Inc.	UT to Douglas Reservoir	060101070102
TNG110257	A & W Ready Mix Concrete, LLC	UT to French Broad River	060101070201
TNG110154	Ross Prestressed Concrete Company, Inc.	French Broad River @ RM 0.4 (Fort Loudon Lake)	060101070204
TNG110325	Blalock Lumber Company Concrete Plant #6	Bird Creek	060101070305
TNG110329	A & W Ready Mix Concrete, LLC	Bird Creek	060101070305
TNG110324	Blalock Lumber Company	Mill Creek	060101070312
TNG110126	Blalock Lumber Company Concrete Plant 1	West Prong Little Pigeon River to French Broad River	060101070313
TNG110230	Blalock Lumber Company	Middle Creek to Pigeon River	060101070314
TNG110264	Blalock Lumber Company	Middle Creek	060101070314
TNG110338	Blalock Lumber Company	Middle Creek to Little Pigeon River	060101070314
TNG110125	Blalock Lumber Company Concrete Plant 2	Little Pigeon River to French Broad River	060101070315

**Table A4-9. RMCP (Ready Mix Concrete Plant) Permittees in the Lower French Broad River Watershed.** UT, Unnamed Tributary.

PERMIT NUMBER	PERMITTEE	SECTOR	RECEIVING STREAM	AREA	HUC-12
TNR051470	Greene's Auto Parts	M	Crider Creek to Long Creek	6.00	060101070101
TNR052047	Clayton Homes White Pine	A	Leadvale Creek to Douglas Lake Embayment to French Broad River	27.00	060101070101
TNR053182	Builders Transport, Inc.	P	French Broad River	22.60	060101070102
TNR053538	U.S. Marine Bayliner Marine	V	Douglas Lake	13.30	060101070102
TNR056763	Liford Corporation	W	UT (Rimmer Creek) to Douglas Reservoir	20.00	060101070102
TNR050362	Bush Brothers & Company, Inc.	U	Clear Creek	1.50	060101070103
TNR053387	Ball Metal Food Container Corporation	AA	Clear Creek to Douglas Lake	2.00	060101070103
TNR054187	A & W Ready Mix Concrete, LLC	E	UT to French Broad River	2.00	060101070201
TNR056492	Swaggerty Sausage Company, Inc.	U	Johnny Creek	3.00	060101070201
TNR050699	Floyd's Auto Parts	M	Knob Creek to Bridge Creek	3.00	060101070202
TNR051218	Smoky Mountain Auto Parts	M	WWC to Nails Creek to Little River	6.00	060101070202
TNR051204	Jasper Jones Auto Parts	M	WWC to Piedmont Branch	10.00	060101070203
TNR054058	Asphalt Plant #3	D	Dumplin Creek	6.00	060101070203
TNR055979	Performance Parts and Sales	M	Storm Water to Detention Pond at base of property to Piedmont Branch	3.35	060101070203
TNR056487	Performance Parts and Sales	M	Ditch to Piedmont Branch	3.35	060101070203
TNR056781	Heritage Log Homes, Inc.	A	UT to Dumplin creek	20.00	060101070203
TNR056798	Charles Blalock & Sons, Inc. Asphalt Plant #3	D	Dumplin Creek	3.50	060101070203
TNR050145	Chapman Enterprises, Inc.	M	WWC to Six Mile Branch to Burnett Creek to French Broad River	4.00	060101070204
TNR050328	Aqua-Chem, Inc. Water Tech. Division	AA	Sand Creek	2.00	060101070204
TNR050484	Precision Disc Corporation	AA	French Broad River Approximately 1 Mile Above The Tennessee River	0.10	060101070204
TNR050537	Rocore Knoxville, LLC	AA	French Broad River	24.78	060101070204
TNR050935	Lowe's Auto Parts, Inc.	M	UT to Hines Creek to French Broad River	10.00	060101070204
TNR051213	Renfro Construction Company, Inc.	D	Not Identified	16.00	060101070204
TNR051333	Tennessee Steel Processors Company	AC	French Broad River	1.60	060101070204

**Table A4-10a.**

PERMIT NUMBER	PERMITTEE	SECTOR	RECEIVING STREAM	AREA	HUC-12
TNR051486	Ashland Chemical, Inc.	AD	WWC to the North & East of the facility	4.00	060101070204
TNR053062	Con-Way Southern Express - NKX	P	French Broad River	21.00	060101070204
TNR053230	Sea Ray Boats, Inc.	R	French Broad River	12.70	060101070204
TNR053407	Sea Ray Boats, Inc.	R	French Broad River	59.26	060101070204
TNR053414	Burkhart Enterprises, Inc.	Q	French Broad River	30.00	060101070204
TNR053420	Forks of The River WWTP	T	French Broad River	1.00	060101070204
TNR053726	Bullet Boats, Inc.	R	UT to Hines Creek	3.00	060101070204
TNR053761	Super Service, Inc.	P	Sand Branch of Swampond Creek to Holston River	6.30	060101070204
TNR053870	Tennessee Metals Company, LLC	N	French Broad River	6.60	060101070204
TNR054407	Panasonic Electronic Devices Corporation of America	AC	French Broad River	20.00	060101070204
TNR054467	Duracap Asphalt Paving Company	D	French Broad River	11.96	060101070204
TNR054475	Rowe Transfer, Inc.	P	French Broad River	5.00	060101070204
TNR054502	Fi-Shock, Inc	AC	Metropolitan Storm Sewer	12.32	060101070204
TNR055026	Interstate Steel Corporation	AA	Hines Creek	0.75	060101070204
TNR056493	Pepsi Bottling Group	U	French Broad River @ RM 0.9	23.89	060101070204
TNR056573	Pepsi Bottling Group	P	French Broad River	0.80	060101070204
TNR050083	East Tennessee Auto Center	M	Thompson Creek to Duggan Creek	39.00	060101070205
TNR050226	Denton Auto Parts	M	Not Identified	6.12	060101070205
TNR054369	Wheeler Mull Furniture	W	Tuckahoe Creek	2.00	060101070205
TNR056155	Hillbilly Auto Parts, Inc.	M	Ditch to UT	25.00	060101070205
TNR056373	Mustang Performance	M	Tuckahok Creek	2.00	060101070205
TNR054430	MMD Mountain Mold & Die, Inc.	Y	East Prong Little Pigeon River	0.60	060101070306
TNR054050	Sevier Solid Waste Compost Facility	AD	UT to Middle Creek	6.00	060101070313
TNR055944	Charles Blalock & Sons, Inc. Asphalt Plant #1	D	West Prong Little Pigeon River to French Broad River	3.66	060101070313
TNR056611	Rolling Frito-Lay Sales, LP - Sevierville Bin	P	West Prong Little Pigeon River	0.90	060101070313
TNR050035	Blalock Operation Center	D	UT to Little Pigeon River	36.00	060101070315
TNR050046	The Arnold Engineering Company	E	UT to East Prong Little Pigeon River	5.90	060101070315
TNR050447	Johnson Matthey, Inc.	C	UT to Little Pigeon River @ RM 7	12.24	060101070315
TNR050448	Johnson Matthey, Inc.	C	Little Pigeon River @ RM 4	5.10	060101070315
TNR051591	Process Technology, Inc.	C	Little Pigeon River @ RM 7	2.50	060101070315

**Table A4-10b.**

PERMIT NUMBER	PERMITTEE	SECTOR	RECEIVING STREAM	AREA	HUC-12
TNR053612	Conner Motor Company	M	Kellum Creek	20.00	060101070315
TNR054263	MMi-Trutec	F	East Fork Little Pigeon River or Lane Hollow Branch	1.00	060101070315
TNR056482	American Truck & SUV, Inc.	M	Dry Fork to Gists Creek	0.75	060101070315

**Table A4-10c.**

**Tables 4-10a-c. TMSPs (Tennessee Multi Sector Permit) issued in the Lower French Broad River Watershed.** Area, Acres associated with industrial activity; WWC, Wet Weather Conveyance; UT, Unnamed Tributary. See Table A4-13 for Sector Details.

PERMIT NUMBER	PERMITTEE	WATERBODY	HUC-12
TNG830033	Baxter's Grocery	Infiltration Trench or Yellow Breeches Creek	060101070306

**Table A4-11. UST (Underground Storage Tank) Remediation Permittees in the Lower French Broad River Watershed.**

PERMIT NUMBER	PERMITTEE	WATERBODY	HUC-12
TN0004511	Knox Chapman Utility Knoxville WTP	French Broad River @ RM 3.4	060101070204

**Table A4-12. WTPs (Water Treatment Plant) in the Lower French Broad River Watershed.**

<b>SECTOR</b>	<b>TMSP SECTOR NAME</b>
A	Timber Products Facilities
AA	Facilities That Manufacture Metal Products including Jewelry, Silverware and Plated Ware
AB	Facilities That Manufacture Transportation Equipment, Industrial or Commercial Machinery
AC	Facilities That Manufacture Electronic and Electrical Equipment and Components, Photographic and Optical Goods
AD	Facilities That Are Not Covered Under Sectors A Thru AC (Monitoring Required)
AE	Facilities That Are Not Covered Under Sectors A Thru AC (Monitoring Not Required)
B	Paper and Allied Products Manufacturing Facilities
C	Chemical and Allied Products Manufacturing Facilities
D	Asphalt Paving, Roofing Materials, and Lubricant Manufacturing Facilities
E	Glass, Clay, Cement, Concrete, and Gypsum Product Manufacturing Facilities
F	Primary Metals Facilities
G	Metal Mines (Ore Mining and Dressing) (RESERVED)
H	Inactive Coal Mines and Inactive Coal Mining-Related Facilities
I	Oil or Gas Extraction Facilities
J	Construction Sand and Gravel Mining and Processing and Dimension Stone Mining and Quarrying Facilities
K	Hazardous Waste Treatment Storage or Disposal Facilities
L	Landfills and Land Application Sites
M	Automobile Salvage Yards
N	Scrap Recycling and Waste and Recycling Facilities
O	Steam Electric Power Generating Facilities
P	Vehicle Maintenance or Equipment Cleaning areas at Motor Freight Transportation Facilities, Passenger Transportation Facilities, Petroleum Bulk Oil Stations and Terminals, the United States Postal Service, or Railroad Transportation Facilities
Q	Vehicle Maintenance Areas and Equipment Cleaning Areas of Water Transportation Facilities
R	Ship or Boat Building and Repair Yards
S	Vehicle Maintenance Areas, Equipment Cleaning Areas or From Airport Deicing Operations located at Air Transportation Facilities
T	Wastewater Treatment Works
U	Food and Kindred Products Facilities
V	Textile Mills, Apparel and other Fabric Product Manufacturing Facilities
W	Furniture and Fixture Manufacturing Facilities
X	Printing and Platemaking Facilities
Y	Rubber and Miscellaneous Plastic Product Manufacturing Facilities
Z	Leather Tanning and Finishing Facilities

**Table A4-13. TMSP Sectors and Descriptions.**

**APPENDIX V**

<b>LAND TREATMENT – CONSERVATION BUFFERS</b>				
	Field Borders (feet)	Filter Strip (feet)	Streambank / Shoreline Protection (feet)	Riparian Forest Buffer (acres)
FY 2002	2208		1200	18
FY 2003	1100	1	725	660
FY 2004		1	14487	1
FY 2005	43300	30	6955	22
FY 2006	3800			

**Table A5-1a. Land Treatment Conservation Practices (Conservation Buffers), in Partnership with NRCS in the Lower French Broad River Watershed.** Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.

<b>EROSION CONTROL</b>		
	Est. soil saved (tons/year)	Land Treated with erosion control measures (acres)
FY 2002	5123	454
FY 2003	6494	545

**Table A5-1b. Erosion Control Conservation Practices, in Partnership with NRCS in the Lower French Broad River Watershed.** Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.

<b>NUTRIENT MANAGEMENT</b>			
	AFO Nutrient Mgmt Applied (acres)	Non-AFO Nutrient Mgmt. Applied (acres)	Total Applied (acres)
FY 2002	10	1437	1447
FY 2003		1636	1636
FY 2004	736		736
FY 2005	1924		1924
FY 2006	1625		1625

**Table A5-1c. Nutrient Management Conservation Practices in Partnership with NRCS in the Lower French Broad River Watershed.** Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.

<b>PEST MANAGEMENT</b>	
	Pest Mgmt. Systems (acres)
FY 2002	1493
FY 2003	141
FY 2004	725
FY 2005	1935
FY 2006	1684

**Table A5-1d. Pest Management Conservation Practices in Partnership with NRCS in the Lower French Broad River Watershed.** Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.

<b>GRAZING/FORAGES</b>				
	Prescribed Grazing (acres)	Fencing (feet)	Heavy Use Area Protection (acres)	Pasture and Hay Planting (acres)
FY 2002	1639			
FY 2003	1352			
FY 2004	770	6822		73
FY 2005	1123	7270	2	164
FY 2006	223	10448	2	346

**Table A5-1e. Grazing/Forages Conservation Practices in Partnership with NRCS in the Lower French Broad River Watershed.** Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.

<b>TREE AND SHRUB PRACTICES</b>				
	Land Improved through Forest Stand improvement (acres)	Total Tree & Shrub Estab. (acres)	Forestland Re-established or improved (acres)	Use Exclusion (acres)
FY 2002	694	43		
FY 2003	392	24		
FY 2004	114		114	
FY 2005	113	16	129	
FY 2006	220		220	8

**Table A5-1f. Tree and Shrub Conservation Practices in Partnership with NRCS in the Lower French Broad River Watershed.** Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.

<b>LAND TREATMENT – TILLAGE AND CROPPING</b>						
	Residue Mgmt, No-till, Strip till (acres)	Residue Mgmt - Mulch Till (acres)	Tillage & Residue Mgmt Systems (acres)	Conservation Crop Rotation (acres)	Contour Farming (acres)	Cover Crop (acres)
FY 2002	100		100			
FY 2003		145	145			
FY 2004	107	53	160	6		
FY 2005	632	17	649	261	250	273
FY 2006	135		135	267	24	71

**Table A5-1g. Land Treatment Conservation Practices (Tillage and Cropping), in Partnership with NRCS in the Lower French Broad River Watershed.** Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.

<b>WETLANDS</b>	
	Wetlands Created or Restored (acres)
FY 2002	1
FY 2003	9
FY 2005	1

**Table A5-1h. Wetland Conservation Practices in Partnership with NRCS in the Lower French Broad River Watershed.** Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.

<b>WILDLIFE HABITAT MANAGEMENT</b>			
	Upland Habitat Mgmt (acres)	Wetland Habitat Mgmt (acres)	Total Wildlife Habitat Mgmt Applied (acres)
FY 2003	981	9	990
FY 2004	754		754
FY 2005	1032	2	1034
FY 2006	659		659

**Table A5-1i. Wildlife Habitat Management Conservation Practices in Partnership with NRCS in the Lower French Broad River Watershed.** Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.

<b>WATER SUPPLY</b>			
	Pipeline (ft)	Pond (number)	Watering Facility (number)
FY 2004			16
FY 2005	250	1	17
FY 2006	1920		23

**Table A5-1j. Water Supply Conservation Practices in Partnership with NRCS in the Lower French Broad River Watershed.** Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.

<b>WASTE MANAGEMENT FACILITIES</b>			
	Waste Storage Facility (number)	Composting Facility (number)	Total Facilities (number)
FY 2006	2		2

**Table A5-1k. Waste Management Conservation Practices in Partnership with NRCS in the Lower French Broad River Watershed.** Data are from Performance & Results Measurement System (PRMS) for each fiscal year reporting period (October 1 through September 30) from 2002 to 2006.

<b>PRACTICE</b>	<b>NRCS CODE</b>	<b>NUMBER OF BMPs</b>
Critical Area Planting	342	1
Pond	378	4
Pasture or Hayland Renovation	512	8
Pipeline	516	1
Access Road	560	1
Heavy Use Area	561	12
Stream Crossing	576	1
Streambank/Shoreline Protection	580	1
Watering Facility	614	33
<b>Total BMPs</b>		<b>62</b>

**Table A5-2. Best Management Practices Installed by Tennessee Department of Agriculture and Partners in the Lower French Broad River Watershed.**

<b>SITE ID</b>	<b>WATER BODY</b>	<b>YEAR</b>
420000501	Little Pigeon River	2000
420000502	Little Pigeon River	2000
420000503	Little Pigeon River	2000
420000504	Little Pigeon River	2000
420000505	Little Pigeon River	2000
420000711	French Broad River	2000
420000712	French Broad River	2000
420000713	French Broad River	2000
420000714	French Broad River	2000
420000715	French Broad River	2000
420000716	French Broad River	2000
420000717	French Broad River	2000
420000718	French Broad River	2000
420000719	French Broad River	2000
420000720	French Broad River	2000
420000721	French Broad River	2000
420000722	French Broad River	2000
420000723	French Broad River	2000
420000724	French Broad River	2000
420031406	French Broad River	2003
420031407	French Broad River	2003
420031408	French Broad River	2003
420031409	French Broad River	2003
420031410	French Broad River	2003
420031411	French Broad River	2003
420031412	French Broad River	2003
420031413	French Broad River	2003
420031414	French Broad River	2003
419950901	Burnett Creek	1995
419960901	East Fork Creek	1996
419961001	Dunn Creek	1996
419961101	Wilhite Creek	1996
419970701	Little Pigeon River	1997
419970801	West Prong Little Pigeon River	1997
419970901	Flat Creek	1997
419971001	Clear Creek	1997
4199310801	Dunn Creek	1993

**Table A5-3. TWRA TADS Sampling Sites in the Lower French Broad River Watershed.**