

Chapter 1 – Current Water Quality Initiatives

1.1 Workshop Summaries

Two workshops were held in the French Broad River basin during 1999 on May 6 in Clyde and May 7 in Fletcher. A total of 60 people were in attendance at these workshops. The purpose of these workshops was to let people know about the upcoming update of the 1995 French Broad River Basinwide Plan and to seek input prior to updating the plan. The workshops help to ensure that major public concerns are presented. The basinwide plan attempts to address these issues where possible.

After hearing a general presentation by DWQ, workshop participants were asked to provide input on the following topics:

- What are the short-term and long-term issues for the French Broad River basin?
- What actions are needed to address these issues?

The discussion on these questions was very productive. Comments and responses were recorded during both workshops (see Appendix V). A general summary showing common ideas and viewpoints as expressed by participants is presented below.

The most frequently cited issues by the workshop attendees were:

- Sedimentation
- Urbanization and increased impervious surfaces
- Land use planning is needed, but local opposition will be difficult to overcome
- Water quality public education efforts are needed
- Nonpoint source control funding and actions are needed, as well as a stronger state NPS control program
- DOT road development is a concern

Participants most frequently cited the following actions to address water quality issues:

- Incentives for local governments to take responsibility (including grants or other funds)
- Land use planning and implementation of BMPs to protect streams (suggested for current rural land uses as well as new development)
- Protect and increase stream buffers
- Emphasize upgrades of wastewater facilities
- Educate public on how to make a difference

DWQ considered these comments while drafting the revised French Broad River Basinwide Water Quality Plan and will continue to use these comments to guide water quality activities in the French Broad River basin.

1.2 Federal Initiatives

1.2.1 Section 319 – Base Program

Section 319 of the Clean Water Act provides grant money for nonpoint source demonstration projects. Approximately one million dollars are available annually for demonstration and education projects across the state. Project proposals are reviewed and selected by the North Carolina Nonpoint Source Workgroup, made up of state and federal agencies involved in regulation or research associated with nonpoint source pollution. Information on the North Carolina 319 grant program, including application deadlines and requests for proposals, are available online at <http://h2o.enr.state.nc.us/nps/bigpic.htm>. Six projects in the French Broad River basin have been funded through the Section 319 base program. These projects are listed in Table C-1 and descriptions of the projects are included below or in Part 1.5.

Table C-1 Section 319 Projects in the French Broad River Basin

FY	Title	Approved Federal \$	Non-Fed \$	Total \$	Reference in Plan
1994	Greenhouse Constructed Wetland Demonstration	19,500	13,000	32,500	Part 1.2.1
1995	North Toe River Christmas Tree BMP Demonstration	90,000	60,000	150,000	Part 1.5.3
1995	Allen Creek Land Acquisition	250,000	312,000	562,000	Part 1.5.2
1996	Water Quality Improvement Through Streambank Stabilization and Pasture Management	30,000	20,000	50,000	Part 1.2.1
1999	Mountain Nurseries Wetland Projects	11,815	7,880	19,695	Part 1.2.1
1999	Environmental Education and Nature Trail Revitalization	10,281	6,854	17,135	Part 1.2.1
2000	French Broad River Watershed Education Training Center	200,000	133,333	333,333	Part 1.5.2
319 Funding Total		\$ 611,596	\$ 553,067	\$ 1,164,663	

Greenhouse Constructed Wetland Demonstration

This NC Cooperative Extension Service project demonstrated some best management practices that could be used to reduce pollutant sources and treat discharge water on-site. A series of constructed wetlands were used to attenuate discharge from the nursery and greenhouse area and prevent off-site movement of residual nutrients, pesticides and sediment to surface waters. In addition, the wetland design provides growers with an option to produce marketable wetland plants to offset the cost of BMP installation and maintenance.

Water Quality Improvement through Streambank Stabilization & Pasture Management

This NC Cooperative Extension Service project evaluated BMP systems for reducing NPS impacts on degraded streams at six sites in the mountains, piedmont and coastal plain. The focus

included the development and testing of better animal and crop management systems to provide maximum environmental protection and feed value to the producers. The BMPs demonstrated at the Brevard High School FFA Farm (Transylvania County) include livestock exclusion, riparian buffers, field buffers, cattle watering systems, stream crossings and streambank stabilization methods. In addition, the Brevard High School site includes a constructed wetland and outdoor teaching facility. Participation by the science and agricultural classes in water quality monitoring at the BMP sites is ongoing.

Mountain Nurseries Wetland Projects

The NC Cooperative Extension Service is working with two different nurseries which will collaborate to provide space for the development of demonstration filtration systems to show methods for filtering nutrient and pesticide runoff to local streams. One of the two demonstrations will involve the construction and demonstration of a man-made wetland. The second of the two demonstration sites will utilize this BMP for filtering nutrients and pesticide residues. Man-made wetlands and the use of wetland species have proven to be effective ways of providing sediment and nutrient runoff filtration. Educational Field Days will be implemented to share the information and results gathered from these demonstration projects and to encourage the implementation of similar systems at other nurseries.

Environmental Education and Nature Trail Revitalization (Transylvania County)

T.C. Henderson Elementary School has the unique opportunity to provide students with a demonstration of various techniques to protect water quality. The school campus is 16.81 acres with 6 acres of undisturbed forest. Due to the passage of a total school bond, the campus will undergo major renovation of the parking lot and playground. This will provide an excellent opportunity for students to study the impact these changes could have on the natural areas of the campus. An erosion control plan will be developed by the Transylvania Soil and Water Conservation District (SWCD) and implemented by contractors. Students will monitor sedimentation and study methods of controlling sediment loss. In addition, the Alice Tinesly Memorial Nature Trail, that surrounds the school within the forested area, will be enhanced considerably.

1.2.2 Section 319 – Incremental Program

Funding for implementation of the Federal Clean Water Action Plan Initiative, (often referred to as the Unified Watershed Assessment), is provided through the Section 319 Incremental Grant Program. These grant resources are to be allocated by the state for assessment and implementation in Hydrologic Units defined as "Needing Restoration" in the 1998 North Carolina Unified Watershed Assessment. This funding was first available for FY 1999 and continued funding of this program will be decided by Congress. Project proposals are reviewed and selected by the North Carolina Nonpoint Source Workgroup, made up of state and federal agencies involved in regulation or research associated with nonpoint source pollution. Information on the North Carolina 319 grant program, including application deadlines and requests for proposals, are available online at <http://h2o.enr.state.nc.us/nps/bigpic.htm>. Three projects in the French Broad River basin were funded during the first Section 319 Incremental Program allocation. These projects are listed in Table C-2 and presented in Part 1.5.

Table C-2 1999 Section 319 Incremental Funding

FY	Title	Approved Federal \$	Non-Fed \$	Total \$	Reference in Plan
1999I	Newfound Creek Watershed NPS Control Project	416,250	277,500	693,750	Part 1.5.2
1999I	Little Ivy River Watershed BMP Implementation Project	380,000	692,750	1,072,750	Part 1.5.2
1999I	Upper French Broad Project	132,000	88,000	220,000	Part 1.5.2
319 Incremental Funding Total		\$ 928,250	\$ 1,058,250	\$ 1,986,500	

1.2.3 USDA – NRCS Environmental Quality Improvement Program (EQIP)

Two areas within the French Broad River basin are included in the USDA – NRCS EQIP FY2000 Priority area budget. The Mountain Stream Restoration project includes Transylvania and Polk counties. In FY1999, \$48,500 was distributed. The Ivy River in Madison County, where FY1999 contracts worth \$49,000 were completed, is also included as a FY2000 priority area.

USDA – NRCS Environmental Quality Improvement Program (EQIP)

The EQIP program is a federal cost share program that in many states is not augmented by a state agricultural cost share program. For this reason, EQIP funds are allocated to priority areas where current available funding is identified as inadequate. Through applications, the NRCS districts are able to compete for EQIP incentive funding. A team of state agencies reviews new applications and reevaluates the performance of existing priority areas on an annual basis. Rankings are based upon performance (i.e., the value of contracts completed versus the amount of money allocated and environmental benefit). Initial allocations are based upon ranking and proposal requests. The NRCS administers the local signup, environmental benefits ratings, and contract administration.

Two areas within the French Broad River basin are included in the USDA – NRCS EQIP FY2000 Priority area budget. The Mountain Streambank Stabilization Priority area is located in the upper portions of the watershed including Henderson and Transylvania counties. The Ivy River Watershed Priority area is focused on implementation of treatments in the 31,000-acre watershed (see Table C-3). NRCS district contacts can be found in Appendix VI.

Table C-3 USDA-NRCS Environmental Quality Improvement Projects in the French Broad River Basin

Priority Area	Primary Resource Concern	Targeted Practices	Lead NRCS District	Final Allocation
Upper French Broad	Loss of riparian vegetation, sedimentation, erosion, streambank and shoreline degradation	Streambank and shoreline protection, critical area planting, riparian buffers, land smoothing	Henderson and Transylvania County	\$48,467
French Broad	Animal waste, soil erosion, nutrient runoff	Field border, field strips, livestock exclusion, alternative watering source, nutrient management	Madison County	\$49,178

1.3 State Initiatives

1.3.1 NC Wetlands Restoration Program

The North Carolina Wetlands Restoration Program (NCWRP) is a nonregulatory program responsible for implementing wetland and stream restoration projects throughout the state. The focus of the program is to improve water quality, flood prevention, fisheries, wildlife habitat and recreational opportunities. The NCWRP is not a grant program. Instead, the NCWRP funds wetland, stream and streamside (riparian) area projects directly through the Wetlands Restoration Fund.

Restoration sites are targeted through the use and development of the Basinwide Wetlands and Riparian Restoration Plans. These plans were developed, in part, using information compiled in DWQ's Basinwide Water Quality Plans. The Basinwide Wetlands and Riparian Restoration Plans are updated every five years on the same schedule as DWQ's Basinwide Water Quality Plans. As new data and information become available about water quality degradation issues in the French Broad River basin, priority subbasins identified in the NCWRP's plans, may be modified.

The NCWRP is also working to develop comprehensive Local Watershed Restoration Plans within the identified Priority Subbasins. These more locally-based plans will identify wetland areas, contiguous reaches of stream, and contiguous strips of buffer that, once restored, will provide significant water quality and other environmental benefits to watersheds. The NCWRP will coordinate with local community groups, local governments and others to develop and implement these plans.

The NCWRP can perform restoration projects cooperatively with other state or federal programs or environmental groups. For example, the NCWRP's efforts can complement projects funded through the Section 319 Program. Integrating wetlands or riparian area restoration components with 319 funded or proposed projects will often improve the overall water quality benefits of the project. The NCWRP actively seeks landowners within the French Broad River basin who have restorable wetland, riparian and stream sites.

For more information about participating in the NCWRP, please contact Crystal Braswell at (919) 733-5208 or visit the website at <http://h2o.enr.state.nc.us/>, then click on Wetlands Restoration Program.

1.3.2 Clean Water Management Trust Fund

The Clean Water Management Trust Fund (CWMTF) offers approximately \$40 million annually in grants for projects within the broadly focused areas of restoring and protecting state surface waters, as well as establishing a network of riparian buffers and greenways. In the French Broad River basin, fourteen projects have been funded. The total amount of funds allocated to this basin through the CWMTF is \$9,572,761. These projects are presented in Table C-4 and Part 1.5.

For more information on the CWMTF or these grants, call (252) 830-3222 or visit the website at www.cwmf.net.

Table C-4 Clean Water Management Trust Fund Projects in the French Broad River Basin (as of 12/1999)

Name of Project	Purpose of Project	Grantee	Amount (\$)	Reference in Plan
Newfound Creek Watershed Planning Project	Planning	Buncombe County SWCD	118,866	Part 1.5.2
Crawford's Creek Riparian Protection Project	Easements	Conservation Fund	1,148,000	Part 1.5.1
Beaver Lake Bird Sanctuary Stormwater Wetland	Stormwater	Elisha Mitchell Audubon Society	139,700	Part 1.5.2
FBR Voluntary Buffer Partnership	Planning	Land of Sky COG	110,000	Part 1.4.5
Straight Pipe Elimination Grant	Wastewater	Madison County DEH	903,000	Part 1.5.2
Little Ivy River Project	Coordinate Public Programs	Madison County SWCD	400,000	Part 1.5.2
Upper French Broad River Stream and Riparian Restoration Project	Restoration	NC Cooperative Extension Service	300,000	Part 1.5.2
Lake Logan Buffer Acquisition	Acquisition-Buffers	NC Wildlife Resources Commission	3,000,000	Part 1.5.1
South Fork Mills River Trail Restoration	Restoration	NC Trout Unlimited	25,000	Part 1.5.2
Mills River Watershed Protection and Restoration Project	Coordinate Public Programs	Regional Water Authority and Carolina Mountain Land Conservancy	730,000	Part 1.5.2
Asheville Motor Speedway Acquisition	Acquisition-Greenways	Riverlink	250,000	Part 1.5.2
Toe River Straight Pipe Elimination Grant	Wastewater	Toe River Health District	791,500	Part 1.5.3
Flat Rock Wastewater Collection System	Municipal Wastewater	Village of Flat Rock	551,695	Part 1.5.2
French Broad River Riparian Buffer Acquisition	Restoration	Land of Sky COG	605,000	Part 1.5.2
Allens Creek Land Acquisition	Acquisition-Buffers	City of Waynesville	500,000	Part 1.5.2

1.4 Local Initiatives

Several counties and municipalities within the French Broad River basin have ongoing programs that directly impact water quality. In addition, several county agencies and municipalities have received funding to conduct specific water quality projects within the basin. Most of these are included in Tables C-2 and C-3. Some county and municipal agencies have received FEMA grants to address riverfront areas that repeatedly flood. These projects, in addition to the numerous individual greenway projects being pursued by county, municipal and private groups, may well have a beneficial effect on water quality within the basin. The following is a description of several local groups active in water quality initiatives within the basin.

1.4.1 Land of Sky Regional Council

The Land of Sky Regional Council is the council of governments for a 4-county area including Buncombe, Henderson, Madison and Transylvania counties. The chief elected official from each county and the 15 municipalities comprise the Council board and govern the agency. Land of Sky's mission is to work with local, state and federal agencies and regional leaders to foster desirable economic, social and ecological conditions in the region. Council programs exist in multiple areas with those related to water quality discussed in this section of the plan.

The Land of Sky Regional Council can be reached at (828) 251-6622.

1.4.2 Pigeon River Fund

The Pigeon River Fund is a public-private partnership, established in 1994 by the State of North Carolina and Carolina Power and Light. The Fund is dedicated to improving water quality across Haywood, Buncombe and Madison counties. Disbursement of funding for eligible projects generally fall into one of the following categories: creation of buffers and increased access, pollution control, education of water quality issues and strengthening of organizations. The Fund has awarded 56 grants since spring 1996 to carry out its mission of improving water quality in the three-county Carolina Power and Light service area.

To obtain more information about the Pigeon River Fund and water quality projects, call (828) 254-4960.

1.4.3 Riverlink

Riverlink is a regional nonprofit organization that is spearheading the economic and environmental revitalization of the French Broad River and its tributaries as a place to live, work and play. Recognizing that growth is an inevitable process; Riverlink is interested in promoting growth in an environmentally sustainable fashion. To this end, Riverlink has sought grant opportunities to fund various water quality initiatives along the French Broad River and its tributaries.

Riverlink has identified "degraded" mountain wetland sites within Buncombe and Haywood counties and has prioritized these sites for restoration potential. A GIS methodology was

developed to address an assortment of conservation and land use planning issues. This study can be downloaded via RiverLink's website at www.riverlink.org.

Riverlink is involved in several other water quality activities including serving as a partner with the French Broad River Voluntary Buffer Partnership, raising funds and administering the VWIN program for several counties in the French Broad River basin, and the Swannanoa Watershed Nonpoint Source Control Project (all described below). Riverlink also actively supports greenway development within the basin and publishes a bimonthly newsletter that describes water quality issues throughout the French Broad River basin.

For more information about Riverlink, call (828) 252-8474 or visit www.riverlink.org.

1.4.4 Mills River Partnership

Participants -- Land of Sky Regional Council, USDA Forest Service, Henderson County SWCD, Henderson County NRCS, Regional Water Authority, City of Hendersonville, Carolina Mountain Land Conservancy

Funding -- Clean Water Management Trust Fund, USDA Forest Service, Regional Water Authority, City of Hendersonville, Henderson County, Cross Creek Foundation and the Carolina Mountain Land Conservancy

The Mills River Partnership is comprised of various stakeholders who have partnered to improve water quality in the lower Mills River and Wash Creek while maintaining the outstanding quality of the other streams in the watershed. This partnership has initiated a project to work with landowners to maintain and enhance streamside buffers, acquire conservation easements, replace pesticide mixing areas with agrichemical handling facilities, and install sediment control measures. The Carolina Mountain Land Conservancy is offering assistance with conservation easements, as well as education of landowners regarding the various options for long-term protection of streamside buffers. In addition, the USDA Forest Service is addressing sediment control measures on unpaved roads and at creekside camping sites in the Pisgah National Forest that drain to Wash Creek. The Land of Sky Regional Council is working with local stakeholders to develop a comprehensive long-term plan for protecting water quality in the Mills River watershed. A survey of the Mills River is underway to identify high priority areas for buffer maintenance or enhancement. The NRCS and SWCD offices will work with farmers on the agricultural chemical handling facilities and buffer/streambank restoration elements of the project.

For more information about the Mills River Partnership and Project, call the Land of Sky Regional Council at (828) 251-6622.

1.4.5 French Broad River Voluntary Buffer Partnership

Participants -- Land of Sky Regional Council, TVA, local governments, landholders, private land trusts, state/federal resource management agencies

Funding -- Clean Water Management Trust Fund and the Tennessee Valley Authority

This partnership was initiated by the Land of Sky Regional Council in December 1997 to develop a comprehensive plan for protection and restoration of riparian buffers along the main stem of the French Broad River. The project area extends 117 miles from the headwaters of the French Broad to the Tennessee border. A survey of the upper 52-mile priority area in Transylvania and Henderson counties (origin near Rosman to confluence with Mud Creek) was conducted in preparation of the comprehensive plan. The survey identified 75 sites with active streambank erosion and a total length of 4 miles of affected riverbank. Following the development of a "toolbox" of possible buffer protection/restoration options, two public meetings were held by the partnership to present landowners with possible stabilization/protection options. The Voluntary Buffer Partnership has received a \$605,000 grant for the critical implementation phase of this project. These and future funds will be directed toward specific actions to stabilize, restore and protect targeted streambank and buffer areas along the mainstem of the upper 52 miles of the French Broad River.

1.4.6 Haywood Waterways Association

The Haywood Waterways Association is a nonprofit organization dedicated to improving and conserving the Pigeon River and its tributaries within Haywood County. The Association promotes water quality awareness among civic groups, public schools, businesses and landowners. Haywood Waterways Association has sponsored several water quality initiatives including greenways, information and work sessions, erosion control workshops and educational materials, and assistance with development of public school water quality curriculum and videos. Haywood Waterways Association has recently partnered with TVA to conduct an extensive nonpoint source inventory of Haywood County as described below. The HWA and the Soil and Water Conservation District recently received a Section 319 grant to develop a Watershed Assessment Plan and provide cost-share assistance to landowners to address water quality improvement needs on their land.

For more information about Haywood Waterways Association, contact Ron Moser at (828) 456-5195.

1.4.7 Volunteer Water Information Network Program (VWIN)

Participants-- Riverlink, Environmental Conservation Organization, Haywood Community College, Haywood Waterways Association, Sierra Club
Funding – Pigeon River Fund, Buncombe and Henderson counties, Cross Creek Foundation and various other groups. Riverlink and ECO administer the VWIN program in Buncombe and Henderson counties, respectively. Haywood Community College and Haywood Waterways Association administer the program in Haywood County, and the Sierra Club administers the program in Transylvania County.

The VWIN program is a water quality monitoring program initiated in 1990 with 27 sites in Buncombe County. Water samples are collected by trained volunteers, and samples are analyzed by a state certified laboratory at the University of North Carolina at Asheville's Environmental Quality Institute. Since 1990, the program has expanded to include 137 sites in the French Broad River basin, 12 of which are on the French Broad River proper.

In Transylvania, Henderson, Buncombe and Madison counties, all major tributaries and many minor tributaries are monitored, with most major tributaries having multiple monitoring sites. In Haywood County, there are two sites on the Pigeon River, with 16 sites on tributaries. VWIN has collected at least three years of monthly data for most sites and over six years of monthly data for many sites. Parameters monitored include major nutrients, turbidity, suspended solids, pH, alkalinity, conductivity and heavy metals such as zinc, copper and lead. Each county having monitoring stations has a coordinator to organize and train volunteers and ensure that all stations are monitored monthly.

For more information about the VWIN program, contact Marilyn Westphal at (828) 251-6823.

1.4.8 Environmental and Conservation Organization (ECO)

ECO is a nonprofit organization devoted to the conservation and preservation of Henderson County and its natural heritage. ECO addresses environmental community concerns through educational program development, recreational programs to encourage citizen environmental involvement, environmental service projects for the community, and encouragement of civic responsibility in economic and democratic processes that have environmental considerations. ECO has several ongoing water quality projects within Henderson County. Noteworthy is ECO's coordination of the Henderson County portion of the VWIN monitoring program, as well as coordination of the Henderson County Adopt-a-Stream Program and Henderson County's annual Big Sweep.

For more information about ECO, call (828) 692-0385.

1.4.9 Quality Forward

Quality Forward is a nonprofit organization that has been doing environmental work in Buncombe County since 1975. The River Improvement Program includes several components, including the Adopt-A-Stream program, the annual Big Sweep and Clean Streams Day volunteer clean-up efforts, and an environmental education program that teaches school and youth groups about water quality monitoring and benthic macroinvertebrate sampling. Quality Forward also coordinates the Swannanoa River Riparian Greenway Project, which is establishing riparian buffers, stormwater controls, and a walking trail along one mile of the Swannanoa River above Biltmore Village.

For more information about Quality Forward, call (828) 254-1776.

1.5 Current Initiatives by Major Watershed (Pigeon River, French Broad River and Nolichucky River)

1.5.1 Pigeon River and Tributaries

Storm Drain Stenciling Campaign

Participants -- Land of Sky Regional Council, County Coordinators of the Cooperative Extension Service

Funding -- Pigeon River Fund

LOS Regional Council has established a public awareness campaign on urban storm drain pollution in the French Broad River and Pigeon River watersheds. This effort provides for the placement of "Don't Dump - Drains to River" signs on storm drains. Each of the five affected counties has a coordinator to distribute kits to interested groups and the LOS Regional Council acts as overall coordinator.

Haywood County Nonpoint Source Inventory Project

Participants-- Haywood Waterways Association, TVA, Haywood County SWCD

Funding -- Pigeon River Fund

Haywood Waterways Association partnered with TVA to conduct a nonpoint source inventory of Haywood County using low elevation infrared photography and interpretation. TVA digitized multiple layers of GIS information obtained from photo interpretation. Nonpoint sources such as failing septic systems, eroding roads and streambanks, and animal access to streams were identified using aerial photography. This information is being used by TVA to apply a nutrient loading model to calculate a nutrient budget for the Haywood County portion of the Pigeon River watershed. This information will be used by the Haywood Waterways Association and the Haywood County Soil and Water Conservation District to develop and implement strategies for water quality improvements within this watershed. A watershed action plan will detail the inventory results and strategies.

Allen Creek Land Acquisition

The 8,400-acre Allen Creek watershed is designated as a WS-I watershed for the City of Waynesville. The city planned to acquire the remaining 627 acres of privately held land in the watershed. The city acquired 247 acres through a combination of monies from the city, the Clean Water Management Trust Fund and the Section 319 program.

Crawford's Creek Riparian Restoration Project

The Conservation Fund, with CWMTF funding, has acquired nearly seven miles of buffer easements in the Crawford Creek watershed, a High Quality Water.

Lake Logan Acquisition

The CWMTF contributed funds to the Wildlife Resources Commission to acquire a 4,374-acre tract adjacent to Lake Logan. Riparian buffers of 500 feet on the mainstem and 300 feet on tributaries of the West Fork Pigeon River will be protected by conservation easements. The land acquisition will protect approximately 28 miles and 1,200 acres of riparian buffer.

1.5.2 French Broad River and Tributaries

Ross Creek Urban Watershed Restoration Project

Participants-- Land of Sky Regional Council

Funding – Pigeon River Fund and federal 205(j) grant

Ross Creek, an urban watershed of approximately 3 square miles, lies predominately within the City of Asheville. The stream is impaired by urban stormwater pollution (see Section B, Chapter 2). LOS Regional Council obtained funding to increase stakeholder awareness of this stream's urban nature, as well as to develop a restoration plan for Ross Creek. Since initial funding of this project, the following activities have been conducted: intensive stream monitoring, a stream cleanup day, placing of curb "Don't Dump" markers on Ross Creek storm drains, three stakeholder meetings, and preliminary identification of locations for stream restoration projects. Future funded activities include continued education/participation of stakeholders and the development of a restoration plan for Ross Creek.

Mud Creek Watershed Project

Participants-- Land of Sky Regional Council, NC Division of Water Quality

Mud Creek is an impaired watershed within which are multiple land uses including agriculture and nonurban development along the headwaters and tributary streams, and urban development along the lower portions (see Section B, Chapter 2). LOS Regional Council received funding to assemble and educate the various stakeholders about water quality issues within the watershed and to assist with the development of a restoration and management plan for Mud Creek. DWQ also received a grant from the Clean Water Management Trust Fund to conduct an in-depth assessment of water quality impacts and sources for the Mud Creek watershed. DWQ and LOS Regional Council plan to work cooperatively in the assessment of issues, development of a restoration and management plan, and ultimately stakeholder ownership of management strategies that will result in water quality improvements within the Mud Creek watershed.

Storm Drain Stenciling Campaign

Participants -- Land of Sky Regional Council, County Coordinators from the Environmental and Conservation Organization, Cooperative Extension Service and Quality Forward

Funding – Pigeon River Fund

LOS Regional Council has established a public awareness campaign on urban storm drain pollution in the French Broad River and Pigeon River watersheds. This effort provides for the placement of "Don't Dump - Drains to River" signs on storm drains. Each of the five affected counties has a coordinator to distribute kits to interested groups and the LOS Regional Council acts as overall coordinator.

Bent Creek Watershed Project/Wesley Branch Wetlands Restoration Project

Participants-- Riverlink, USFS, NC Arboretum, Buncombe County, NC Wetlands Restoration Program

Working cooperatively with the US Forest Service and the North Carolina Arboretum, Riverlink has conducted a preliminary assessment of the Bent Creek watershed. The effort includes stream assessment, identification of potential water quality threats and possible projects. This study identified the Wesley Branch tributary as one in need of wetlands enhancement and protection. In addition, Buncombe County owns a 10-acre riparian wetland within the watershed. Riverlink is working in conjunction with the North Carolina Wetlands Restoration Program and Buncombe County to enhance and restore this area for water quality benefits, as well as for future educational programs at the North Carolina Arboretum.

Cane Creek Water Quality Project

Participants-- Riverlink

Riverlink is evaluating the existing and historic environmental conditions of the Cane Creek watershed in Buncombe County to provide baseline information that will be used to address ecosystem restoration and maintenance. This evaluation process will focus on the ecological, hydrological and water quality changes in Cane Creek. A model will be developed and used to identify and prioritize protection and restoration projects.

Swannanoa River Nonpoint Source Control Project

Participants – RiverLink, Swannanoa River Watershed Committee

Funding Source – Section 319

RiverLink, in conjunction with several public and private agencies, has secured \$542,400 to conduct a water quality improvement project in the Swannanoa River watershed. These funds will allow for conducting a nonpoint source assessment of the Swannanoa River watershed, hire a fulltime technical/engineer position for three years to design BMPs, and to implement \$250,000 of residential and urban nonpoint source controls.

The Swannanoa River Watershed Committee includes stakeholders from a variety of public and private agencies along with industrial and agricultural entities within the Swannanoa River watershed. This committee will assist with project management and be responsible for helping develop a watershed management plan and priorities.

Newfound Creek Watershed NPS Control Project

Participants -- Buncombe County Soil and Water Conservation District

Funding Source – Clean Water Management Fund, Section 319, NRCS and Pigeon River Fund

The 22,250-acre Newfound Creek Watershed in northwest Buncombe County is comprised of Newfound Creek, Morgan Branch, Brooks Branch, Round Hill Branch, Gouches Branch, Sluder Branch, Parker Branch, Dix Creek and several unnamed tributaries. Newfound Creek is listed in North Carolina's 1998 303(d) list with sediment, turbidity and fecal coliform bacteria as the problem parameters. The District has received funding to develop a management strategy for

these sources. The watershed has been integrated into a GIS system and, with assistance from TVA, infrared aerial photography is currently being digitized to identify nonpoint sources.

The watershed project will address all nonpoint sources in the watershed. Project personnel will provide landowners with the tools they need to help improve and preserve water quality through education, demonstration, information and cost sharing.

Other activities within the watershed include the installation of best management practices at 10 sites (9 via the NC Agricultural Cost Share Program and one via EQIP) as well as the installation of watershed boundary signs by the NC Department of Transportation for public awareness.

Little Ivy River Watershed BMP Implementation Project

Participants -- Madison County SWCD, Madison County Health Department, NC Division of Environmental Health

Funding -- CWMTF, Section 319, NRCS, NCDOT I-26 Section A-10 Mitigation

Little Ivy River Watershed is located in the southeast corner of Madison County. The nonpoint sources of pollution in the 31,000-acre watershed include fecal coliform, nutrients and sediment. A study by the NC Division of Environmental Health (DEH), Public Water Supply Section, in late 1994-1995 indicated widespread fecal coliform contamination throughout the Madison County portion of the Ivy River Watershed. Unregulated domestic waste discharges and at least 36 locations where animals are concentrated in the stream or at the stream edge were deemed to be the source of this potential health problem.

The Madison County Health Department, with the assistance of the DEH -- Waste Discharge Elimination (WaDE) Program and CWMTF straight pipe elimination grant, is currently in the midst of addressing the domestic discharge concerns. The Madison County SWCD plans to work on 40 of the animal operations identified in the Ivy River Fecal Coliform Study in Madison County over the next four years. This project will also concentrate on reducing fecal coliform discharges from livestock into the Ivy River Water Supply Watershed in Madison County by accelerating the implementation of cost-shared agricultural best management practices (BMPs).

The approach will be to establish a series of controlled grazing demonstrations, accompanied with an educational program. Installation of drystack feeding facilities and adoption of controlled grazing will result in reduced erosion and runoff from pastureland through improved ground cover, alternative watering systems, and better distribution of livestock away from streams. Vegetative areas along the streams will be installed or improved and will include such practices as riparian buffers and easements, livestock exclusion, cropland conversion, critical area stabilization, tree planting, livestock watering facilities, livestock heavy use areas and spring development. BMP effectiveness will be monitored with existing DWQ and VWIN monitoring.

Upper French Broad Riparian Restoration and Protection Project

Participants -- NC Cooperative Extension Service

Funding -- Section 319, NRCS

This project will be located in the upper French Broad River basin in Transylvania and Henderson counties. The Upper French Broad River Commission, consisting of riparian

landowners, representatives of government agencies and private organizations, will be established to oversee and implement the goals of the project. The Commission will review the status of current riparian protection in the watershed and make recommendations for best management practices (BMPs). Specific BMPs will include livestock exclusion from riparian areas, alternative livestock watering systems, stream crossings, cropland conversion, tree planting and associated agricultural practices.

French Broad River Riparian Buffer Acquisition

As a follow-up to the riparian buffer project assessment (see Part 1.4.5), a 53-acre tract of land at the confluence of Middle Fork and East Fork with the mainstem of the French Broad River will be purchased. This will result in the protection of 17.5 acres of riparian area at this site. An additional 33 acres of easements will be donated to the Voluntary Buffer Partnership. Assessment and restoration work in the area is ongoing.

Madison County Straight-Pipe Elimination Program

Participants -- Madison County; Towns of Mars Hill, Marshall and Hot Springs; Land-of-Sky Regional Council; and the NC Division of Environmental Health WaDE Program
Funding – ARC and CDBG grants, CWMTF

In fall 1997, Madison County was awarded ARC and CDBG grant funds to conduct a year-long straight pipe elimination planning project. The overall goals of this project were to identify the need to eliminate straight piping into Madison County streams and to repair any failing septic systems. In 1997, it was estimated that 25% of all households in the county were either straight piping or have a failing septic system. The project involved a house-to-house survey of all households in the county. This project was the planning phase to assess the needs of the county and further funding was to be secured for the implementation phase of the project. Additional funding has been secured from the Clean Water Management Trust Fund to continue the implementation phase of this project.

Beaver Lake Bird Sanctuary Stormwater Wetland

This project within the Beavercreek watershed will replace a 250-foot section of stormwater culvert with a wetland. This constructed wetland will slow flows and allow for deposition and detention of urban stormwater pollutants. Monitoring will be performed at the site to determine effectiveness of this stormwater management structure.

Mills River Watershed Protection and Restoration Project

The Mills River Partnership, with a grant from the CWMTF, has initiated a project to work with landowners to maintain and enhance streamside buffers, purchase conservation easements, replace pesticide-mixing areas, and install sediment control practices. The Carolina Mountain Land Conservancy will handle easement acquisitions and the Regional Water Authority of Asheville will conduct buffer and streambank work and replacement of streamside agricultural loading facilities. These efforts will acquire and restore 50 acres of riparian buffer easements and protect more than seven miles of streams. Erosion control on recreational sites and unpaved

roads will be installed in cooperation with the USDA-Forest Service. Other elements of the project will be implemented by the SWCD, NRCS and Land of Sky Regional Council.

Asheville Motor Speedway Acquisition

Riverlink, Inc., with a grant from the CWMTF, the Janirve Foundation and others, acquired the Asheville Motor Speedway property adjacent to the French Broad River. The CWMTF money was used to purchase a 100-foot riparian buffer. The property was donated to the City of Asheville as an extension to the greenway system and for the development of a public riverside park.

Flat Rock Wastewater Collection System

This CWMTF funding will eliminate over 400 failing septic systems and four private wastewater treatment package plants by providing for a collection system. The total flow of the combined systems is approximately 184,000 gallons per day. The collection system will connect with the City of Hendersonville wastewater treatment facility.

Upper French Broad River Stream and Riparian Restoration Project

Participants – NC Cooperative Extension Service

Funding – Clean Water Management Trust Fund

This project will repair degraded streams and riparian areas at four sites in Transylvania County. Funding will be used to repair degraded stream channels and streambanks, restore wetlands, and establish forested riparian buffers. The project sites include Kings Creek at Brevard College, Hawkins Branch tributary to the Little River, Nicholson Creek at Brevard High School, and the French Broad River at Champion Park and Rosman High School.

French Broad River Watershed Education Training Center

This training center will provide nonpoint source educational programming to landowners, concerned citizens, natural resource managers, and public schools in the local area. A multiagency team will serve as a steering committee for the center. The center will provide hands-on workshops and demonstrations of various nonpoint source BMPs. The center will also coordinate education and demonstration with ongoing restoration projects in the watershed.

Swannanoa River Riparian Greenway Project

Participants – Quality Forward, TVA, NRCS, CP&L, and landowners

The Swannanoa River in Asheville flows through highly developed residential and industrial areas and is impacted by erosion, sedimentation and stormwater runoff. Beginning in the spring 2000, Quality Forward is directing greenway development along one mile of the Swannanoa River above Biltmore Village. The project includes planting a riparian buffer and filter strip of native plants; repairing erosion problems; constructing stormwater retention basins; and creating an unpaved walking path with river access points. The project is being used by several

organizations as a teaching tool for the implementation of riparian BMPs in a highly developed urban setting.

1.5.3 Nolichucky River and Tributaries

North Toe River Christmas Tree BMP Demonstration

The purpose of the NC Cooperative Extension Service North Toe River Christmas Tree BMP Demonstration project was to demonstrate existing and experimental BMPs designed to minimize the impacts of Christmas tree production on water quality using a variety of BMP practices. These include implementation and demonstration of ground cover maintenance, installation and maintenance of field borders, training in predator insect control, soil testing and nutrient management, maintenance techniques for farm roads on steep slopes, and demonstrations varying the site preparation techniques (stump removal versus leaving them). A variety of approaches were used on a number of sites. In addition, five field days were held with an average attendance of 31 people. Information about Christmas tree best management practices is available through the County Cooperative Extension Service Office or the North Carolina Christmas Tree Growers Association.

Toe River Straight Pipe Elimination Grant

The Toe River Health District was awarded a grant that will be managed as a Revolving Loan Program intended to eliminate straight piping and failing septic systems in three targeted watersheds of the Toe River: Roaring Creek, Little Rock Creek and Bald Creek. The revolving loan program will assist low and moderate income households with the installation or repair of on-site septic systems located within 500 feet of surface waters.

