



**French Broad
Training Center**

Stream Science

Streams

When it rains, the water that falls is either absorbed into the ground, runs off the land's surface or evaporates. A stream is formed when the water moves downhill and creates small channels through the land. These channels eventually grow to form larger streams and then rivers, flowing ultimately to the earth's oceans.

Streams provide a habitat and food sources for many aquatic creatures. Fish, insects, mollusks and a variety of plants depend on streams to survive. A stream's size and flow are affected by several factors. Land use, soil types and climate greatly affect a stream's water movement, depth and width.

Stream restoration

Natural processes cause both a stream's channel and its bed (the land over which streams flow) to change. This process leads to continual erosion, transporting, sorting and depositing of materials such as rock and soil. Nature has its own rhythm with this process that has been ongoing since the beginning of time. However, land-use changes can disrupt this natural give-and-take process and lead to increased sedimentation and other water quality issues.

Stream restoration for those streams negatively affected by land use can be accomplished through a better understanding of how streams work and change and through strategic hands-on engineering efforts.

The French Broad River connection

Many of the streams in Transylvania, Henderson, Buncombe Counties and all the streams in Madison County are part of the French Broad River Basin. These streams may start small, but eventually lead to the French Broad River. The streams in this area form the second largest number of streams miles in North Carolina – 4,113. County seats Brevard, Hendersonville, Asheville and Marshall are all part of this watershed.

In Transylvania County, the North and West forks of the French Broad River converge above Rosman to form the main channel, and drain the Middle and East forks below Rosman. Many of the drainage streams are noted for high water quality and trout thrive there. Some of these streams harbor a diversity of organisms, including endangered species.

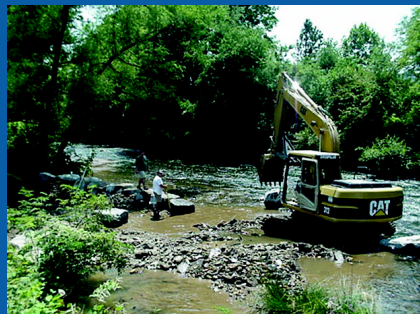
Tributaries draining to the French Broad main stem include the Davidson, Little and Mills Rivers. Mud Creek, an impaired waterway, joins the French Broad River before it flows into Buncombe and Madison counties. Larger tributaries in these counties include the Swannanoa and Ivy Rivers.

The French Broad drains into the Tennessee, Ohio and Mississippi Rivers, with the latter emptying south of New Orleans into the Gulf of Mexico.

Western North Carolina Stream Restoration



Stream restoration helps prevent bank erosion and improve the aquatic habitat of streams by directing water flow.



N.C. State University works with both public organizations and private environmental firms to engineer improved streams.

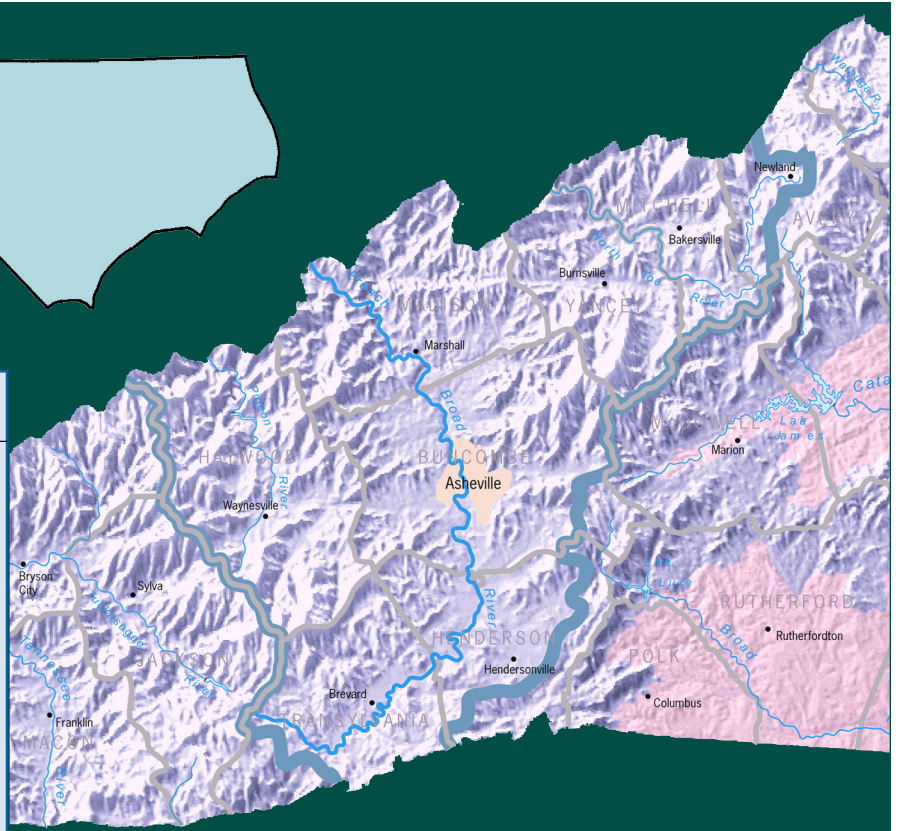


The French Broad River benefits from these projects because cleaner water finds its way to the river. Aquatic life is enhanced.

French Broad River Basin

BASIN FACTS

- The French Broad River drains into the Gulf of Mexico via the Tennessee, Ohio and Mississippi Rivers.
- About one-half of the land in the basin is forested.
- The basin is home to three major rivers: French Broad, Pigeon and Toe.



**NONPOINT SOURCE
MANAGEMENT PROGRAM**
Section 319(h) of the Clean Water Act
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**Soil & Water
Environmental
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