

TN RIVER WATERSHED

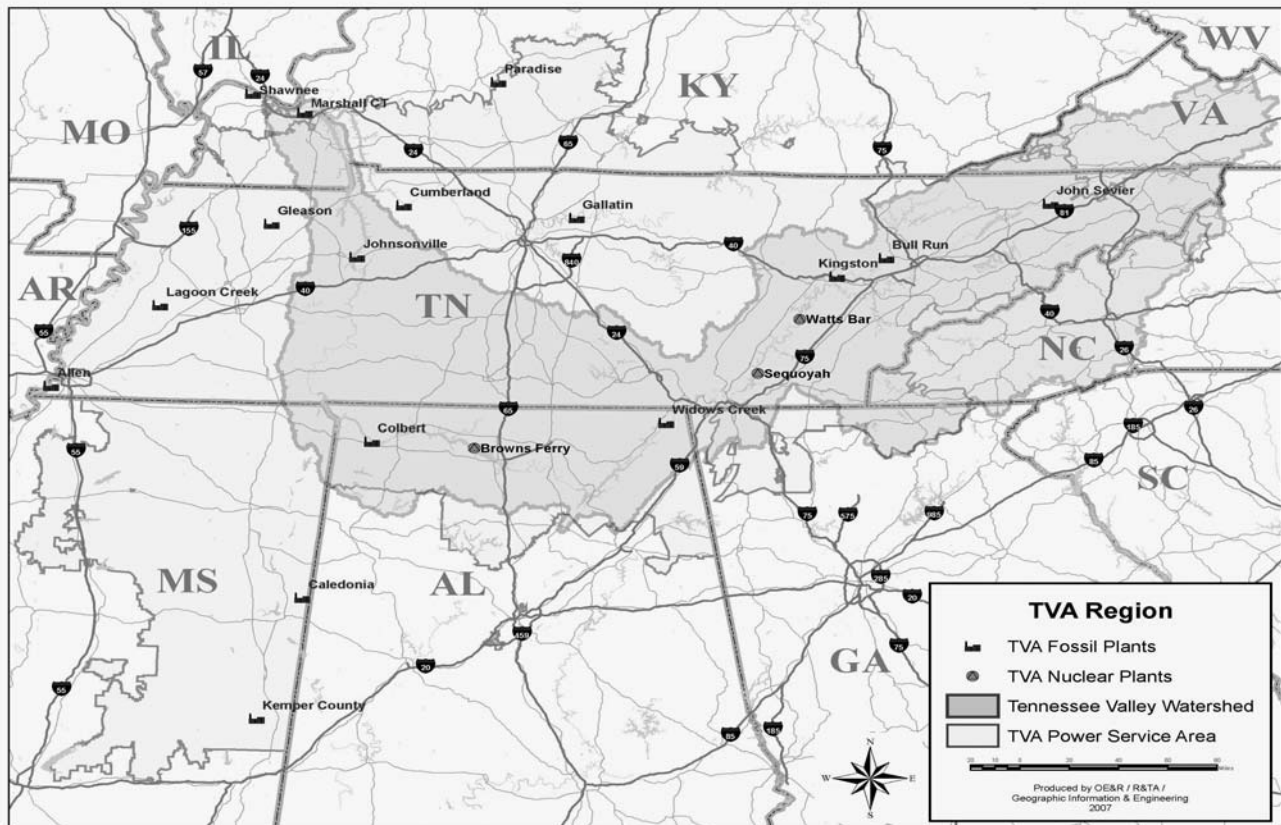
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Obed Watershed Community Association

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TN River Profile

- The Tennessee River Watershed covers 40,890 square miles, draining portions of sixty Tennessee counties and seven states.
- This river is the largest tributary to the Ohio River and is its equal in water volume.
- From its mouth at Paducah, Kentucky, to the Virginia headwaters of its own longest tributary, the Holston, the Tennessee travels 1,100 miles, falling two thousand feet in elevation along the way.
- The highest point in the Basin, located at Mount Mitchell, North Carolina (6,684 feet), is the highest peak east of the Mississippi River.



Major Tributaries

- The **Holston River** is the largest tributary to the Tennessee and includes the Watauga River within its drainage.
- The **French Broad River** meets the Holston at Knoxville after gathering the waters of the Pigeon and Nolichucky rivers.
- The **Little Tennessee River** joins the Tennessee at Lenoir City.
- The **Clinch River** enters at Kingston; the Clinch and Powell confluence is now found at Norris Lake.
- Below Decatur, the **Hiwassee River** brings its waters and those of the Ocoee River to the Tennessee,
- Above South Pittsburg is the mouth of the **Sequatchie River**.
- The **Flint and Elk Rivers** enter in the great bend of the Tennessee, which flows through Alabama and the northeast corner of Mississippi.
- As the Tennessee River flows north through its western Tennessee valley, the **Duck River** (fed by the Buffalo River) joins south of New Johnsonville.

- The **Big Sandy River** joins near Paris Landing.
- Continuing its way across western Kentucky, the Tennessee joins the Ohio River approximately 12 miles west of the Cumberland River confluence and 30 miles east of the union of the Ohio and Mississippi rivers.

Geologic History

Three Rivers in One: The current Tennessee River looks like it has been pieced together from at least three sections that have different origins in topography and time. Section one consists of multiple headwater tributaries down to Guntersville Reservoir and Dam. In section two, the river cuts through the ridge on the west side of the reservoir and flows west-northwest to the Alabama - Mississippi - Tennessee border. In section three, it flows due north to finally join the Ohio River

Oldest American Rivers: Two rivers cross the Appalachian mountains:

- Drainage for the French Broad River originates on the South Carolina border (well south of Asheville) and continues north-northwest from Asheville to cross the highest part of the Appalachians.
- The Pigeon River flows from Clyde, NC across the Appalachians to where the Pigeon River joins the French Broad just before reaching Douglas Reservoir.

From about 280-230 million years ago, the continent we now know as North America was continuous with Africa, South America, and Europe. Both rivers appear to date back to this time (known as Pangaea) and appear to be every bit as old as the New River in West Virginia.

Why Does the TN River Bend North? The TN River at Guntersville Lake is at its southernmost point in its path. Logically, the shortest distance for the Tennessee River to continue to the ocean would be to continue flowing south to the Gulf of Mexico. Instead, the Tennessee River turns west-northwest and then north to join the Ohio River. Why the river takes this path has been subject to much controversy. Most geologists conclude that it is a remnant of a drainage system that existed 250 million years ago.

Back in the time of Pangea, river drainage in western Tennessee could not go east as the Appalachians and Africa blocked any path to an ocean. Similarly, drainage could not go south as South America was in the way, and again there were more mountains to the south. Thus drainage was initially to the north, and then later it extended to the west. Zircons in Mesozoic sandstones in the Colorado Plateau can be traced back to their origin in the southern Appalachians.

Another model for the Tennessee River proposes that at one time the Tennessee River continued west to the Mississippi via the current route of the Hatchie River and shifted to its present northward course via "stream capture." However, topographic maps show no evidence of any relatively low ancestral valley pathway that would support this alternate model, and the terrain surrounding the current northward portion of the river "looks very old" on topographic maps.

Biotic Diversity

Mollusk Diversity: The Tennessee River hosts the most diverse mollusk fauna in North America. The town of Muscle Shoals, Alabama, derived its name from a series of islands and shoals created by the mounds of mussel shells deposited by the Cherokee Indians. Approximately 102 native freshwater mussels have been recorded within the Tennessee River Basin. Most of the present-day fauna are confined to the Clinch and Duck rivers. The diversity of mollusks and fish in the Tennessee River is a reflection of the unique aquatic habitats that exist throughout the Basin.

Freshwater Fish Diversity: The Tennessee River Basin is most notable for its abundance and diversity of freshwater fishes. Recognized as one of the most diverse rivers in North America, the Tennessee River supports about 240 fish species. Only the Mobile (236 species), Cumberland (186 species), Roanoke (82 species), and Conasauga (78 species) rivers compare in numbers of fish species.

Most Threatened: Along with its unmatched diversity, the Tennessee River Basin also has one of the most imperiled faunas. The U.S. Fish and Wildlife Service currently lists 51 aquatic species (fish and mollusks) as

either threatened or endangered.

Cultural History

Native Americans: Life in the valley was tied strongly to the river. Cherokee, Creek, and Chickasaw tribes sited most of their towns along the river. Other large Indian settlements were found on tributaries of the Tennessee or on river islands. The river was the primary means of transportation among these villages.

Early European Presence:

- In 1540, Hernando DeSoto's Spanish expedition traveled the Tennessee River from the present location of Chattanooga to the present location of Guntersville.
- During the latter part of the 1600s the Tennessee River was a vital part of the French trade route between the Mississippi Valley and Charleston, South Carolina. By the early 1700s the French had established several trading posts along the river. The English soon followed and competed for trade with the different tribes. This conflict resulted in the French and Indian War of 1760 which left the English in control of the area.

River Not a Path West:

- The terrors of the river as it cut a 30-mile long gorge through Walden's Ridge at Chattanooga were well dramatized in John Donelson's account of the 1780 voyage down the river.
- Muscle Shoals in northern Alabama formed a series of obstructions nearly 40 miles in length, with rock reefs, gravel bars, rapids, log snags, and a shallow channel that caused boats to ground.
- The Chickasaw tribes controlled the region of the shoals, and the Chickamauga tribes controlled the gorge. Until the early 1800s, these barriers left only the upper and lower Tennessee valleys open for settlement.
- Commercial keelboats carrying goods and people traveled up river as far as Tuscumbia by the 1820s. In 1821 the first steamboat traveled from the Ohio River as far as Florence, Alabama. Using the spring's high water, another steamboat reached Knoxville in 1828 and claimed a \$640 prize as the first one to reach that city. The steam lines divided service between Paducah-Florence and Chattanooga-Decatur, with limited service from Decatur to Knoxville. Regular through steam line service from Knoxville to the Ohio did not occur until 1890.

Civil War:

- The Tennessee River generally was seen as something to be crossed and was not widely used as a military route, although the Union army did transport some troops by water, chiefly in the western valley.
- The Confederate Fort Henry, built to guard the western Tennessee River near the Kentucky state line, fell in February 1862, and by April U.S. forces occupied the lower valley.
- Battles took place near the river - Shiloh, Chattanooga, Chickamauga, and Knoxville - but the objective remained the capture of railroads more than waterways.

Reconstruction

- In March 1867, a flood from the upper valley to Paducah washed away houses, bridges, and submerged some towns.
- The postwar arrival of outside capital helped revive the iron and timber industries of the eastern Tennessee valley. John T. Wilder's Rockwood iron works used the river to transfer material to Chattanooga, and the Scottish Carolina Timber and Land Company established operations on the Pigeon and French Broad rivers.
- In 1875, work began on a canal and dam system around Muscle Shoals and incorporated an 1837 canal built by the U.S. Army Corps of Engineers at Tuscumbia. Opening in 1890, it was the longest steamboat canal in the world; by that time, however, railroads largely had supplanted river commerce on the Tennessee. Steamboating declined sharply after 1916, and the canal ceased operation in 1918. Commercial steamers were gone by the 1930s when the age of dams arrived.

Dams

- In 1900 the U.S. Army Corps of Engineers proposed a dam on the Tennessee River at Scotts Point below Chattanooga to provide hydroelectric power and conquer the gorge's hazards. The site was moved to Hales Bar, and the Chattanooga and Tennessee River Power Company began construction in 1905. The first boat locked through the dam in 1913.
- In 1916 a federal report recommended three dams to deal with Muscle Shoals, and the Corps of Engineers began construction of Wilson Dam near Florence in 1918. Wilson was completed in 1925, and the corps began construction of Wheeler Dam several miles upriver in 1933, the same year the Tennessee Valley Authority (TVA) was established.
- The TVA took over the Wheeler project and other dams on the Tennessee system and initiated a massive building program. In its first ten years, the TVA completed nine dams, with Norris Dam the first to come on line in 1936.
- By 1944, a nine-foot-deep channel was available from Paducah to Knoxville, and that year the first modern towboat and barges arrived in Knoxville. Diesel-powered tows now dominated the river, transporting sand, gravel, coal, grain, and forest and petroleum products. The TVA continued its mission of flood control and power generation. Now, more than thirty dams have been built on the Tennessee system.
- Environmental activists, sportsmen, and archaeologists opposed new dam construction, losing the fight against the Tellico Dam on the Little Tennessee River and prevailing against the Columbia Dam on the Duck River.

TN-Tombigbee Waterway was authorized by Congress in 1946. The "Tenn-Tom" was designed by the Corps of Engineers to connect the Tennessee River near Pickwick Landing by canal and Yellow Creek to the Tombigbee River in Mississippi. This route allowed barge traffic to reach Mobile Bay and the Gulf of Mexico. The 232-mile waterway was begun in 1972 and completed in the 1980s.

Preservation vs. Development: In the mid and late twentieth century, the Tennessee River system became as much the focus of recreation and environmental preservation as the focus of commerce and industry. Tourism dominated lake use. TVA power generation has shifted primarily from hydro to steam and nuclear-powered plants which depend upon the river's water for cooling.

Even though now highly managed and often polluted by chemicals, sewage, radioactive releases, and heat plumes and drained of its waters by cities, power plants, and industries, this ancient river continues to flow, carrying the rain falling over Cumberland County to the ocean.

May we learn how to value and protect our water.

Resources: The Tennessee Historical Society, Nashville, Tennessee. Online Edition copyright© 2002 The University of Tennessee Press, Knoxville; USGS; Southeastern and South-Central Sections of the Geological Society of America

The Obed Community Association has as its purpose community appreciation and volunteer involvement in ongoing appreciation for our natural and cultural heritage of the Obed River watershed within Cumberland County. Louise Gorenflo, OWCA community educator, produced this fact sheet. Those wanting to join this membership organization or more information may contact OWCA at 484-9033 or at 185 Hood Drive, Crossville, TN 38555.