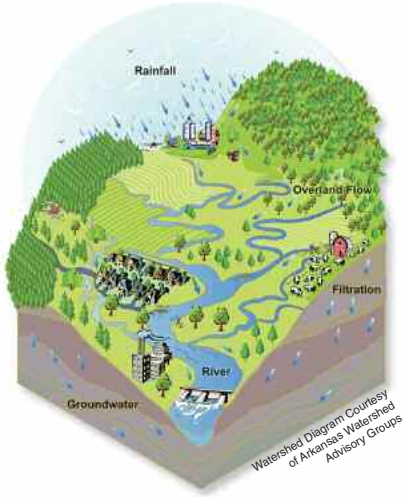
What Is a Watershed?

A watershed is all the land area that drains into a given body of water. Small watersheds combine to become big watersheds, sometimes called basins. When water from a few acres drains into a little stream, those few acres are its watershed. When that stream flows into a larger stream, and that larger stream flows into a bigger river, then the initial small watershed is now part of that river's watershed. Watersheds are a logical way to think about the connection between the land and the quality of water we enjoy. How we manage and treat the land has a direct impact on the ability of water to support a number of important public uses like swimming, fishing, aquatic species habitat and drinking water supply. We all live downstream from someone, and what happens in a watershed does not just stay in that watershed.



Water from rainfall that doesn't evaporate runs into ditches, streams, creeks, rivers, wetlands or lakes. A watershed is the land area from which water drains into a river, stream or lake.

Managing Programs by Watershed

Tennessee's water-protection program focuses on watersheds because it's the best way to evaluate, protect and improve the quality of all the waters in the state. When pollutants threaten or prevent our waters from meeting clean-water goals, we can look at all of the pollution sources in the affected watershed and develop more comprehensive control strategies.

Tennessee recognizes 55 watersheds, and TDEC has developed a watershed management plan for each of them. Visit **www.tn.gov/environment/watersheds** to view these plans. The U.S. Environmental Protection Agency also offers Surf Your Watershed at **www.epa.gov/surf** to help citizens locate, use and share environmental information about their watershed.

Citizen groups also play an important role in protecting Tennessee's waters. There are several highly effective watershed associations in Tennessee, and citizens are encouraged to become actively involved in protecting waters in their neighborhood. Visit WaterWorks! at **www.tennesseewaterworks.com** for more information.

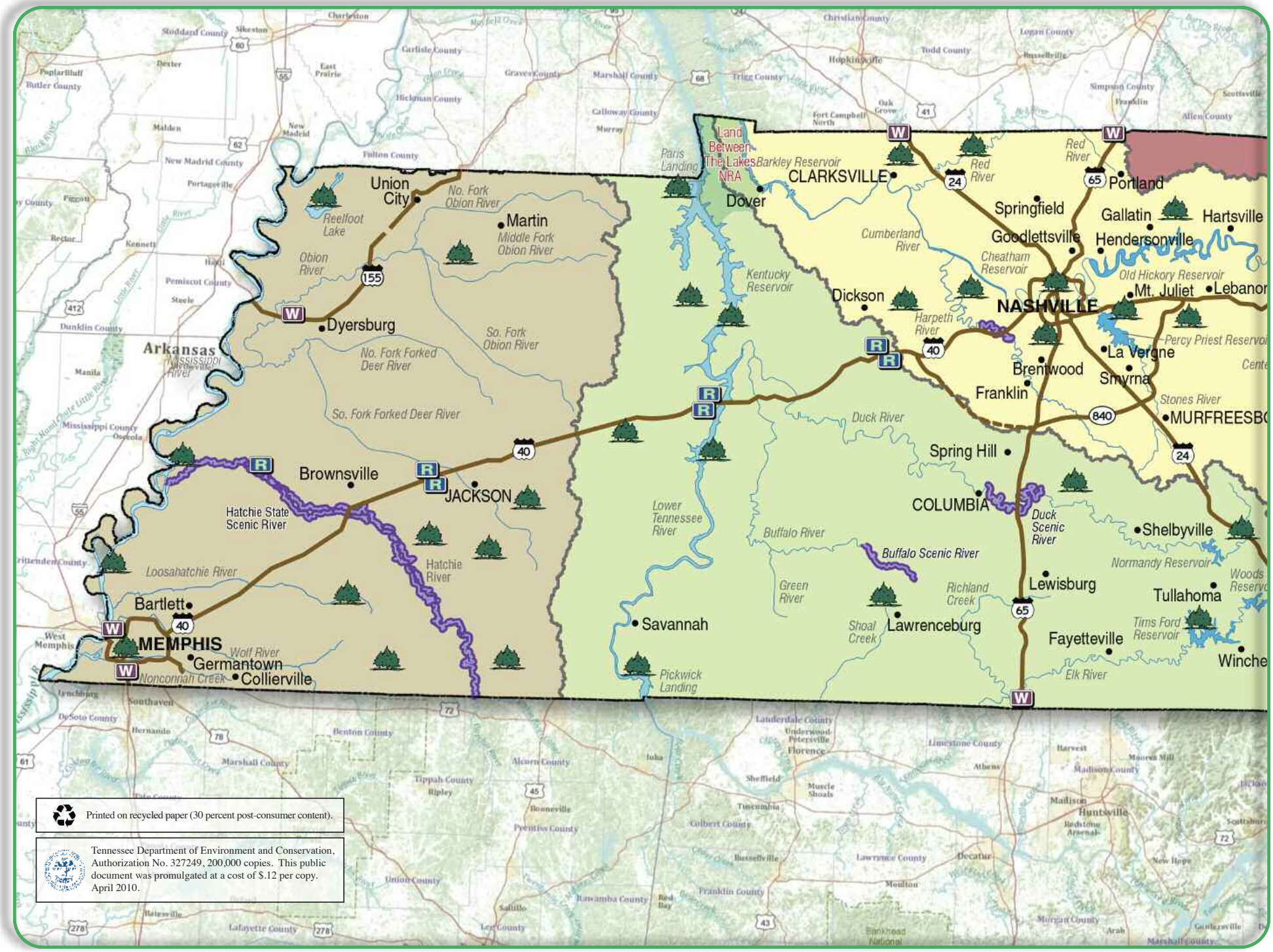
Tools Available to Protect Our Watersheds

The Tennessee Department of Environment and Conservation has an extensive program to monitor and assess water quality in each of the state's 55 watersheds. This information enables the department to better establish permit limitations and to develop needed controls on discharges and other impacts. Management plans for each of Tennessee's 55 watersheds may be viewed at **www.tn.gov/environment/watersheds.**

Most of Tennessee's towns discharge treated wastewater to streams, and many land-disturbing activities such as construction may involve altering water courses or wetlands. In most instances, permits for these discharges and disturbances are required, and each permit sets limits that are designed to be protective of the receiving rivers and streams.

Rainwater that does not soak into the ground becomes surface runoff, either flowing directly into streams or being channeled into conduits called storm sewers that eventually discharge into streams. As stormwater flows across roofs, roads, parking lots, construction sites and farms, it often picks up pollutants like motor oil, chemical fertilizers, silt and other nonpoint-source contaminants. Because most stormwater is not treated prior to entering streams, it's crucial that we do what we can to minimize these potential contaminants and prevent them from reaching our waterways. This is the goal of stormwater management.

In urbanized areas, stormwater runoff is channeled through Municipal Separate Storm Sewer Systems (MS4s). There are more than 100 designated MS4s in Tennessee, most of them managed by city or county governments, with conduits ranging from curbs to ditches to storm drains. TDOT has one of the largest designated MS4 programs in Tennessee, because it handles stormwater from miles of interstate roads, highways and maintenance facilities. MS4s seek to reduce the quantity of pollutants that stormwater picks up and carries into storm sewer systems during rain events. Visit **www.tnstormwater.org** for more information.



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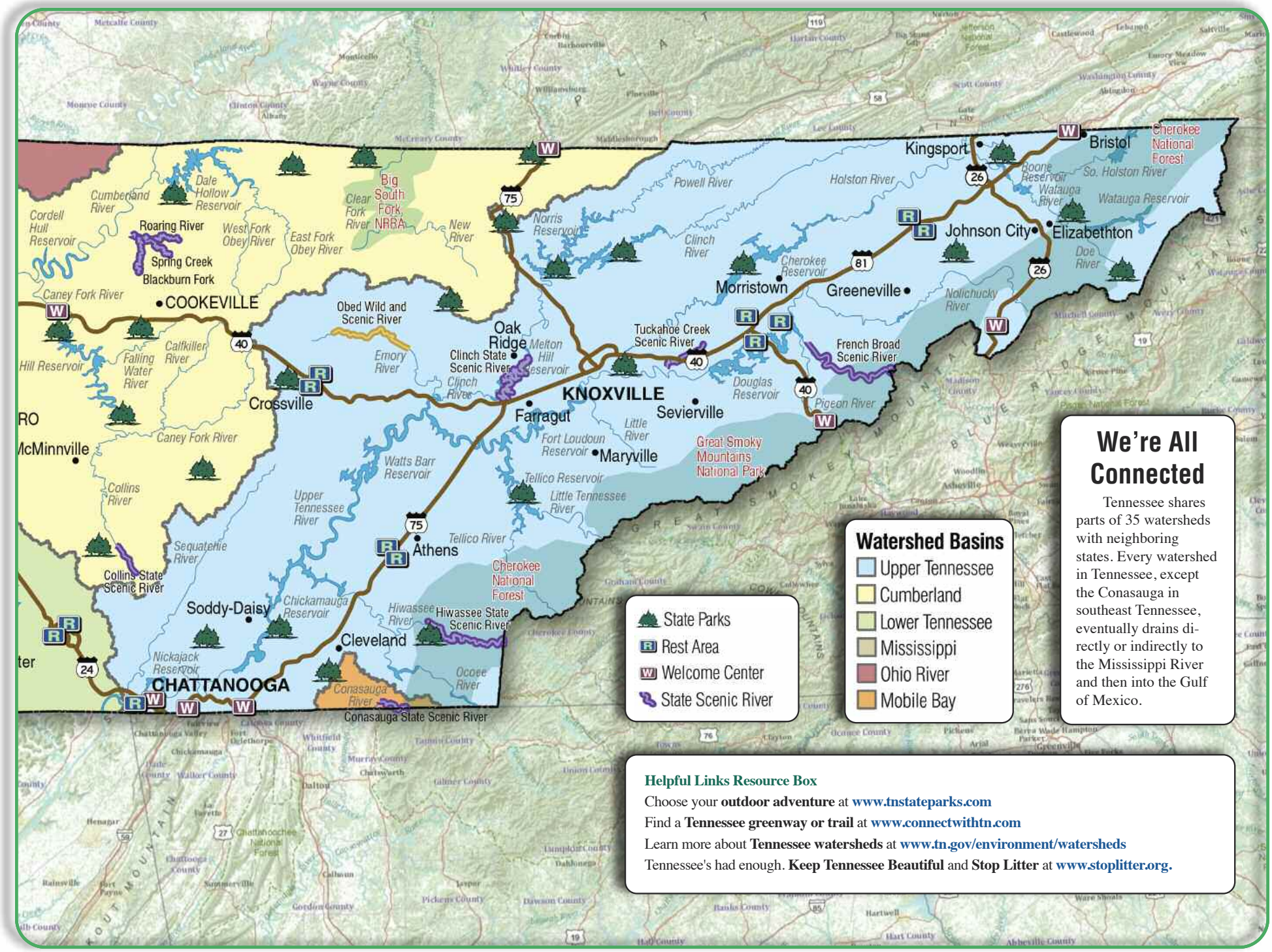


We're All Connected

Tennessee shares parts of 35 watersheds with neighboring states. Every watershed in Tennessee, except the Conasauga in southeast Tennessee, eventually drains directly or indirectly to the Mississippi River and then into the Gulf of Mexico.

Helpful Links Resource Box

Choose your **outdoor adventure** at **www.tnstateparks.com**

Find a **Tennessee greenway or trail** at **www.connectwithtn.com**

Learn more about **Tennessee watersheds** at **www.tn.gov/environment/watersheds**

Tennessee's had enough. **Keep Tennessee Beautiful** and **Stop Litter** at **www.stoplitter.org.**

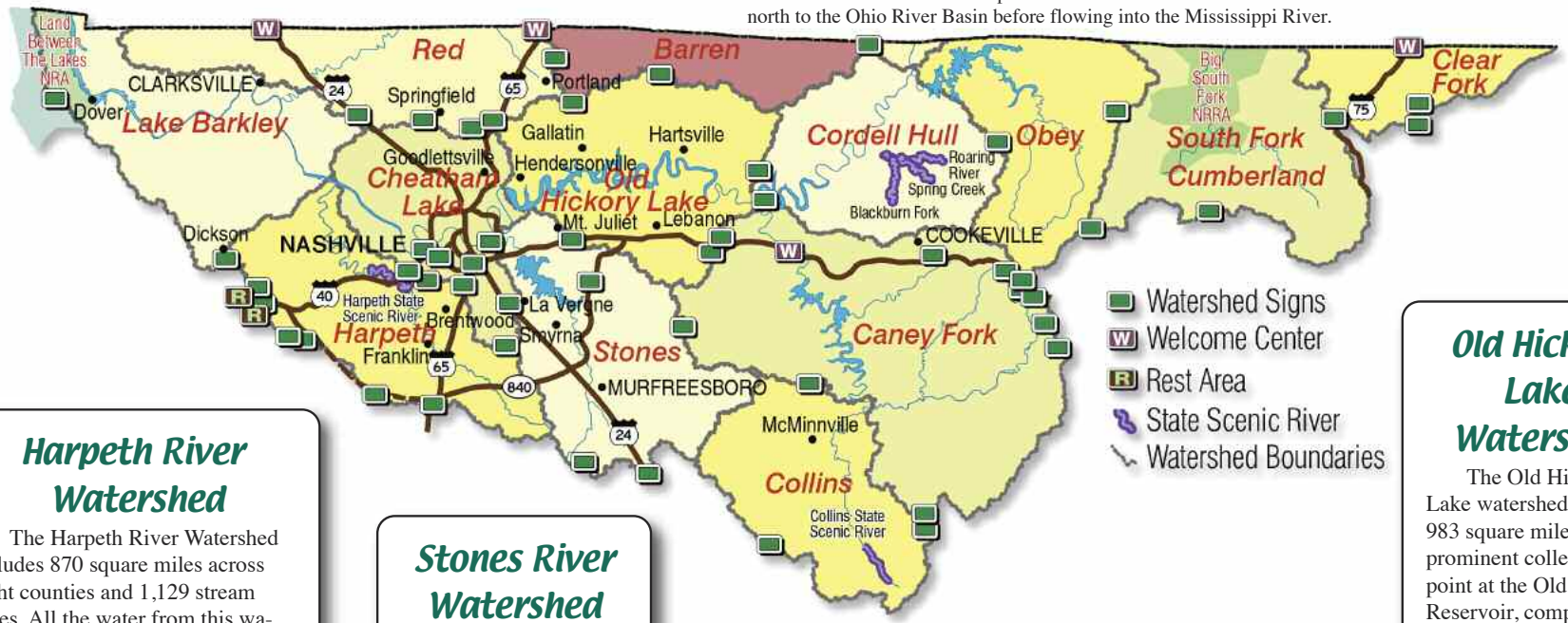
Cumberland River Basin

Cheatham Lake Watershed

Cheatham Lake is an impoundment of the Cumberland River and includes 320 miles of shoreline that extends 67.5 miles up the Cumberland River from Cheatham Dam through Nashville to Old Hickory Dam. The lock and dam were authorized by Congress in 1946 as a navigation project to enhance the development of the Cumberland River, and Cheatham Lake was filled and the lock opened to the public in December 1952.

The 688-mile long Cumberland River starts in eastern Kentucky on the Cumberland Plateau, flows through southeastern Kentucky and crosses into Tennessee at Clay County, and then curves back up into western Kentucky before draining into the Ohio River, a tributary to the Mississippi River. The **Cumberland River Basin** drains 18,000 square miles of land that is home to almost 2 million people.

Barren River Watershed is not part of the Cumberland Basin. It drains north to the Ohio River Basin before flowing into the Mississippi River.



Harpeth River Watershed

The Harpeth River Watershed includes 870 square miles across eight counties and 1,129 stream miles. All the water from this watershed is carried by the Harpeth River directly into the Cumberland River near Ashland City.

Stones River Watershed

The Stones River Watershed is 921 square miles and includes 1,031 stream miles with 22,691 lake acres. Sixty-nine rare plant and animal species have been documented in the Stones River Watershed, including eight rare fish species.

Caney Fork River Watershed

The Caney Fork River Watershed includes parts of 11 Middle Tennessee counties with more than 2,000 stream miles and 25,000 lake acres. Sixty rare plant and animal species have been documented in the watershed. Recent improvements by the U.S. Army Corps of Engineers at Center Hill Dam have improved dissolved oxygen levels in the Caney Fork River, making it a trophy trout stream and popular destination for anglers across the southeast.

Old Hickory Lake Watershed

The Old Hickory Lake watershed drains 983 square miles with a prominent collection point at the Old Hickory Reservoir, completed in 1957 and maintained by the U.S. Army Corps of Engineers. The reservoir provides a source of hydropower and water, as well as flood control. A single lock helps to maintain constant navigation through the Cumberland River.

Cumberland River Basin

Upper Tennessee River Basin

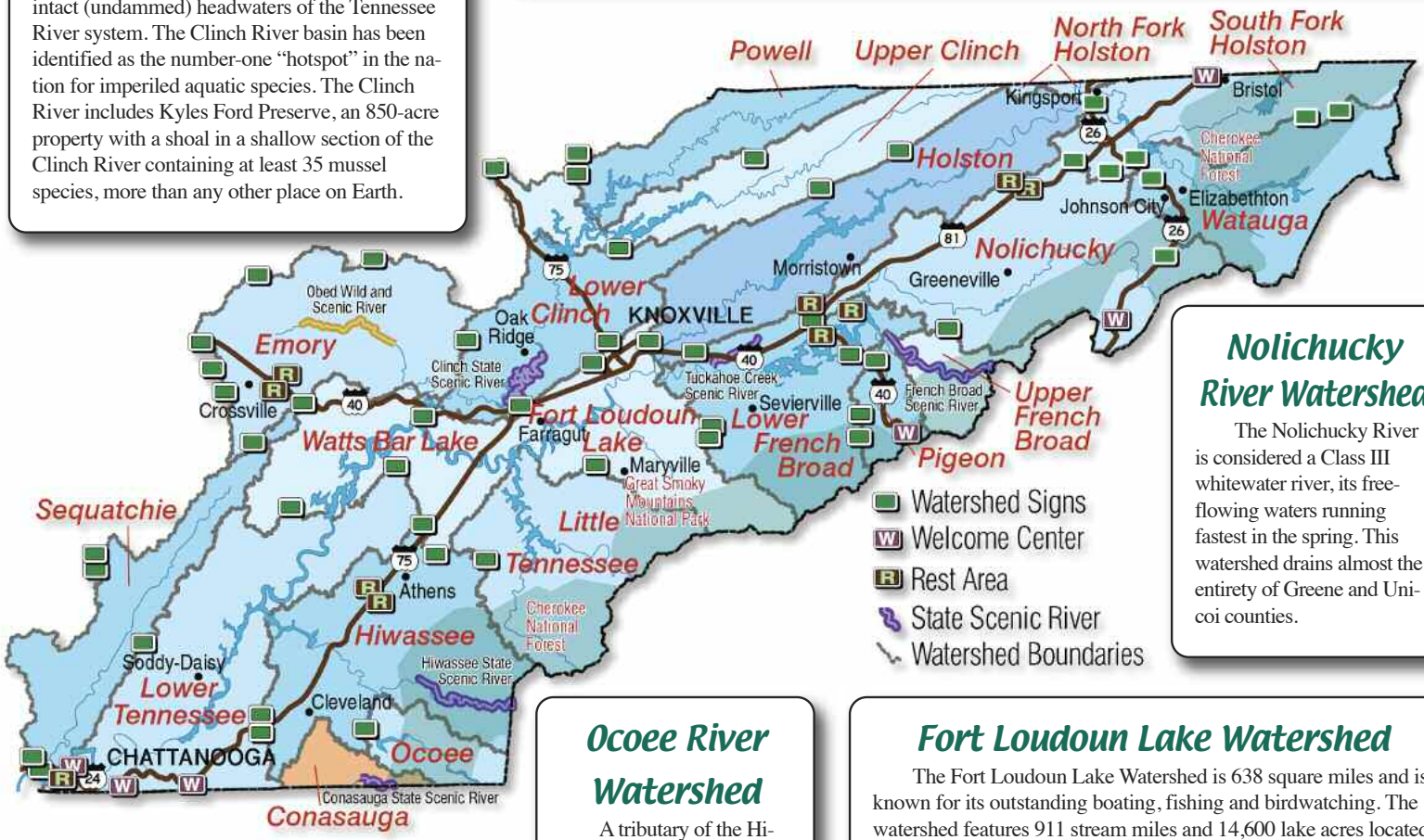
Emory River Watershed

The Emory River Watershed features more than 870 square miles along the Cumberland Plateau and drains to the Clinch River embayment of Watts Bar Reservoir. Parts of four streams in the watershed, including the Obed Wild and Scenic River, have been designated as part of the National Wild and Scenic River System. The National Wild and Scenic Rivers System was created by Congress in 1968 in an effort to preserve streams in their free-flowing condition. Frozen Head State Park and Catoosa Wildlife Management Area are popular destinations.

Clinch and Powell River Watersheds

The Clinch and Powell rivers are formed in the Appalachian Mountains of southwestern Virginia and are considered the only ecologically intact (undammed) headwaters of the Tennessee River system. The Clinch River basin has been identified as the number-one "hotspot" in the nation for imperiled aquatic species. The Clinch River includes Kyles Ford Preserve, an 850-acre property with a shoal in a shallow section of the Clinch River containing at least 35 mussel species, more than any other place on Earth.

The Tennessee River rolls along almost 650 miles, passing through three states and draining parts of four others, before eventually emptying into the Ohio River at Paducah, Kentucky. The **Upper Tennessee River Basin** includes roughly 200 river miles in East Tennessee, from the confluence of the Holston and French Broad rivers on the east side of Knoxville, to where the river crosses into northern Alabama just west of Chattanooga.



Nolichucky River Watershed

The Nolichucky River is considered a Class III whitewater river, its free-flowing waters running fastest in the spring. This watershed drains almost the entirety of Greene and Unicoi counties.

Conasauga is the only watershed in Tennessee that doesn't eventually drain into the Gulf of Mexico through the Mississippi River. It flows into the Gulf through Mobile Bay.

Ocoee River Watershed

A tributary of the Hiwassee River, the Ocoee River is known for its whitewater rafting and was host to whitewater slalom events during the 1996 Summer Olympics.

Fort Loudoun Lake Watershed

The Fort Loudoun Lake Watershed is 638 square miles and is known for its outstanding boating, fishing and birdwatching. The watershed features 911 stream miles and 14,600 lake acres located along the Tennessee River as it stretches from Knoxville to Lenoir City. Fort Loudoun Reservoir is uppermost in the chain of nine TVA reservoirs that form a continuous navigable channel from there to Paducah, Kentucky, 652 miles away. These reservoirs create lake like conditions for portions of the Tennessee River as it flows through the state.

Upper Tennessee River Basin

Mississippi River Basin

The Mississippi River is the second-longest river in the U.S., with a length of 2,320 miles. It has the third largest drainage basin in the world, exceeded in size only by the watersheds of the Amazon and Congo Rivers. The **Mississippi River Basin** covers more than 1.24 million square miles, includes all or parts of 31 states and two Canadian provinces. It drains 41 percent of the land area of the 48 contiguous states to the Gulf of Mexico.

Lower Obion River Watershed

Located in the northwestern corner of Tennessee, the Lower Obion River Watershed includes parts of seven Tennessee counties with more than 1,740 stream miles, 15,500 lake acres, two national wildlife refuges and six wildlife management areas. Forty-five rare plant and animal species have been documented in the watershed, including five rare fish species. Reelfoot Lake, an 18,000-acre natural area in the watershed, was created in the winter of 1811-1812 by a series of violent earthquakes in the New Madrid fault zone. The lake and surrounding forests attract a large diversity of wintering and breeding populations of waterfowl and boast a significant population of wintering bald eagles.

- Watershed Signs
- Welcome Center
- Rest Area
- State Scenic River
- Watershed Boundaries

State Scenic Rivers

Since 1968, sections of 13 rivers have been designated as State Scenic Rivers by the Tennessee General Assembly. The State Scenic Rivers Program seeks to preserve valuable selected rivers in their free-flowing natural or scenic conditions and to protect their water quality and adjacent lands while preserving the rights of riparian landowners. These river areas include more than 400 miles of mountain streams and deep gorges of East Tennessee, pastoral rivers of Middle Tennessee and the swamp rivers of West Tennessee.

Lower Hatchie River Watershed

The Hatchie River, which contains the largest forested floodplain in Tennessee, is also remarkable as the longest free-flowing tributary of the lower Mississippi River. Because it has remained largely undammed and unchannelized, the natural flood processes that drive the Hatchie River's ecosystem are intact, sustaining critical wetland habitats that support a rich ecological diversity, including more species of catfish than any other waterway in North America. Much of the Hatchie River is recognized as a State Scenic River.

Wolf River Watershed

The distinctive Ghost River section of the Wolf River in Fayette County consists of a 2,220-acre swath of unchannelized river that meanders through bottomland hardwood forests, open marshes and cypress-tupelo swamps. The braided channels and backwater sloughs of the Ghost River provide excellent habitat for rare aquatic organisms including endangered freshwater mussels and fish. A variety of aquatic and terrestrial habitats also offer unique opportunities for observing birds and other wildlife.

Mississippi River Basin

Lower Tennessee River Basin

Kentucky Lake Watershed

The Kentucky Lake Watershed is approximately 1,460 square miles and includes parts of nine counties with more than 100,000 lake acres. Forty-eight rare plant and animal species have been documented in the Kentucky Lake Watershed, including 23 rare plant and seven rare bird species.

Buffalo River Watershed

The Buffalo River is the longest unimpounded river in middle Tennessee and the largest tributary of the Duck River. It is a favorite destination for canoeing, and these float trips make a considerable contribution to the area's economy. Part of the Buffalo River is designated as a State Scenic River.

The Tennessee River rolls along almost 650 miles, passing through three states and draining parts of four others, before eventually emptying into the Ohio River at Paducah, Kentucky. The **Lower Tennessee River Basin** includes roughly 160 river miles in Tennessee, from where the river reenters Tennessee from northern Alabama at Pickwick Landing, to where it crosses into Kentucky at Land Between the Lakes.

Upper Elk River Watershed

The Upper Elk River Watershed contains productive, nutrient-rich waters, resulting in high densities of fish. The top of this watershed is known for its cooler temperatures, more rainfall and rough streams. Tims Ford Reservoir is a popular fishing and boating destination. Anglers fish for bass, hybrid striped bass and walleye in the lake. Just below the dam, the Elk River is stocked with trout. Woods Reservoir is known for bass and crappie fishing.

Duck River Watershed

Winding almost 270 miles east to west through the heart of Tennessee, the Duck River drains more than 2,800 square miles – roughly eight percent of Tennessee's total land area – and serves as the primary source of drinking water for 200,000 middle Tennesseans. As one of the longest free-flowing rivers in the state, the Duck River supports one of the most biologically diverse watersheds in the nation. More than 500 species of aquatic plants, fish and invertebrates have been documented, including at least 151 fish species and 54 species of mussel (the entire Duck River has been designated a mussel sanctuary by the Tennessee Wildlife Resources Agency). With its pastoral surroundings and gentle personality, the Duck River is also a popular choice for camping, canoeing and fishing; smallmouth bass, spotted bass, rock bass and catfish can be caught from boat or riverbank.

Lower Tennessee River Basin

Agencies with Water Responsibilities in Tennessee

Tennessee has more than 60,000 miles of rivers and streams that sustain our communities, support our economy, provide recreation and serve as home to an extraordinary variety of aquatic species. Partners at the local, state and federal level work together to ensure that Tennessee's waters are able to support each of these important uses.

AT THE LOCAL and STATE LEVEL

- **Tennessee counties, cities, towns and special districts** all have water management responsibilities. These include developing local stormwater runoff programs and operating some of the nation's best water and wastewater treatment facilities.
- **The Tennessee Department of Agriculture** manages the nonpoint-source pollution prevention program that funds stream restoration projects and Best Management Practices (BMPs) under the federal Clean Water Act. In addition, its Division of Forestry partners with TDEC to inspect logging sites for compliance with state water quality regulations and use of forestry BMPs. More at **www.tn.gov/agriculture**
- **The Tennessee Department of Environment and Conservation** is charged under various state laws to manage and protect Tennessee's drinking water, surface water and groundwater. Additionally, the department is authorized by the U.S. Environmental Protection Agency to administer federal regulatory programs for safe drinking water and surface water protection. More at **www.tn.gov/environment**
- **The Tennessee Department of Transportation** is responsible for planning, developing and maintaining a statewide transportation system while protecting the quality of our state's environment. More at **www.tn.gov/tdot**
- **The Tennessee Wildlife Resources Agency** is responsible for protecting and enhancing wildlife populations and their habitats; it also regulates boating, fishing and hunting on Tennessee waters. More at **www.tn.gov/twra**

AT THE FEDERAL LEVEL

- **The Tennessee Valley Authority** manages the Tennessee River system for flood control, navigation, power generation and water supply under its Congressional charter as a regional development agency. Since its creation in 1933, TVA has established a stairway of nine hydroelectric dams and locks, transforming not just the river valley but the economy of the region. More information at **www.tva.gov**
- The **U.S. Army Corps of Engineers** is charged with planning, designing, building and operating water resources and other civil works projects for navigation, flood control, environmental protection and disaster response. The Corps operates major dams in the Cumberland River Basin and flood control structures in the Mississippi River Basin for navigation, power generation, water supply and recreation. More information at **www.usace.army.mil**
- **The U.S. Department of Agriculture's Natural Resource Conservation Service** provides technical expertise and funding for private landowners to promote clean water and conservation practices. More information at **www.nrcs.usda.gov**
- **The U.S. Environmental Protection Agency** has broad responsibility for investigating the health and ecological effects of pollutants, setting drinking water and clean water standards, and administering permit programs. EPA delegates portions of its regulatory authority to states, including Tennessee. More information at **www.epa.gov**
- **The U.S. Fish and Wildlife Service** provides national oversight for a number of programs that focus on maintaining quality of critical fish and wildlife habitats. This includes mapping and monitoring the nation's wetlands. More information at **www.fws.gov**
- **The U.S. Geological Survey** conducts basic research and assessment of water quantity and quality and collects information on water uses. The Survey works with states, including Tennessee, to monitor groundwater quality and changes in volumes, compile data on various surface and groundwater uses, and investigate threats to surface and groundwater quality. More information at **www.usgs.gov**

Tennessee Watershed Signs

In March 2008, Tennessee launched a program to increase public awareness of the state's 55 watersheds and their importance to water quality, recreation and the environment. Working with the Department of Environment and Conservation, the Tennessee Department of Transportation erected 187 watershed-awareness signs at key entry points along Tennessee's highways. With their simple green-and-white logo identifying the approaching watershed and a call to "Help Keep It Clean," these signs are encouraging countless citizens to be aware of their local watershed and do their part to protect it.

"A Guide to Traveling Tennessee's Watersheds" is intended as a companion to these signs. You'll learn what watersheds are, why they are important, what threats they face and what Tennessee is doing to safeguard them. You'll also find maps and brief descriptions of Tennessee's distinctive watershed basins. Whether you're driving along a highway looking for the next watershed sign, or explaining to your friends which watershed they live in, we hope this guide will be a useful tool in ensuring clean, healthy waters for Tennessee and the region.