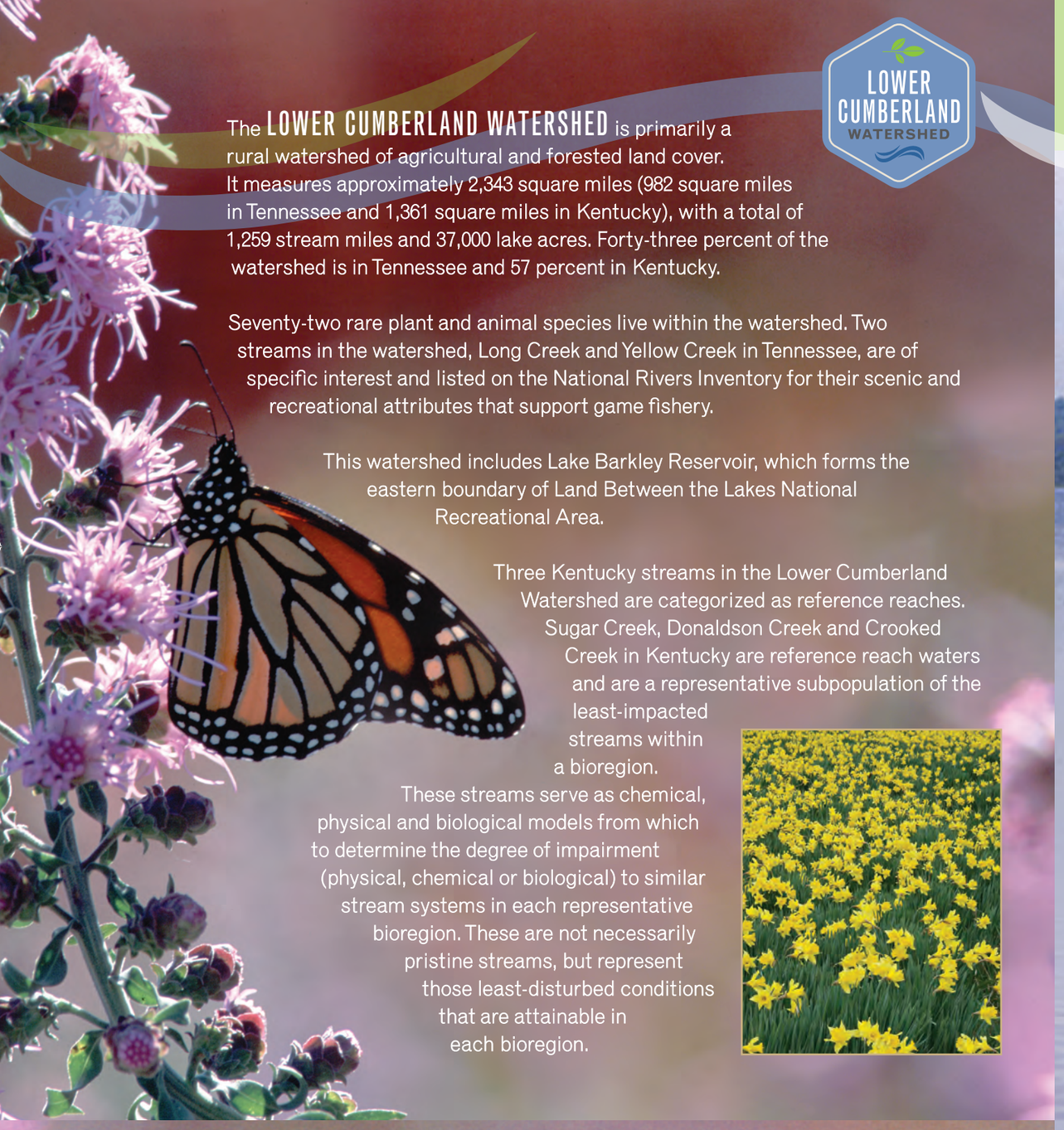
CUMBERLAND RIVER
COMPACT

LOWER CUMBERLAND WATERSHED

An overview of our water quality

This brochure describes the current water quality of the Lower Cumberland Watershed and is produced and distributed by the Cumberland River Compact. It is based on current water sampling collected and interpreted by the Tennessee Department of Environment and Conservation and the Kentucky Division of Water with assistance from the Nature Conservancy, Tennessee Chapter.

The Lower Cumberland Watershed is one of 14 watersheds in Tennessee and Kentucky that make up the Cumberland River basin.

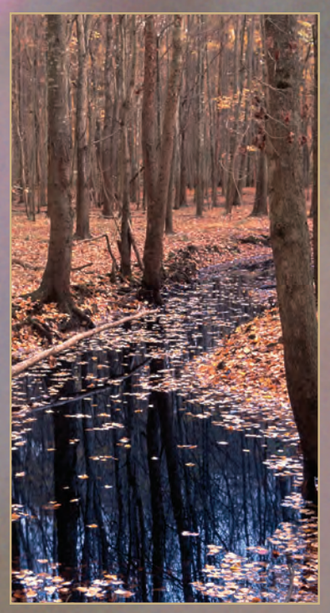


The **LOWER CUMBERLAND WATERSHED** is primarily a rural watershed of agricultural and forested land cover. It measures approximately 2,343 square miles (982 square miles in Tennessee and 1,361 square miles in Kentucky), with a total of 1,259 stream miles and 37,000 lake acres. Forty-three percent of the watershed is in Tennessee and 57 percent in Kentucky.

Seventy-two rare plant and animal species live within the watershed. Two streams in the watershed, Long Creek and Yellow Creek in Tennessee, are of specific interest and listed on the National Rivers Inventory for their scenic and recreational attributes that support game fishery.

This watershed includes Lake Barkley Reservoir, which forms the eastern boundary of Land Between the Lakes National Recreational Area.

Three Kentucky streams in the Lower Cumberland Watershed are categorized as reference reaches. Sugar Creek, Donaldson Creek and Crooked Creek in Kentucky are reference reach waters and are a representative subpopulation of the least-impacted streams within a bioregion. These streams serve as chemical, physical and biological models from which to determine the degree of impairment (physical, chemical or biological) to similar stream systems in each representative bioregion. These are not necessarily pristine streams, but represent those least-disturbed conditions that are attainable in each bioregion.



A majority of streams in the watershed are characterized by coarse chert gravel and sand substrates with areas of bedrock, moderate gradients, and relatively clear water. The oak-hickory natural vegetation was mostly deforested in the mid- to late 1800s, in conjunction with iron ore related mining and smelting of mineral limonite, but now the region is again heavily forested. Some agriculture occurs on flatter areas between streams and in stream and river valleys: mostly hay, pasture and cattle with some cultivation of corn and tobacco.

The Lower Cumberland Watershed is home to a number of rare species including one amphibian, two crustaceans, two fish species and one reptile. The hellbender, eyeless crayfish, blue sucker, Southern cavefish and the alligator snapping turtle are among the species that inhabit the watershed.

Small streams, including those that don't flow all of the time, make up the majority of the waters. Streamflow could come from a drizzle of snowmelt running down a mountainside or a spring-fed pond or depression filled with rainwater that overflows into the stream. These small streams with flow only parts of the year are referred to as headwater streams, and are often unnamed and rarely appear on maps. Yet the health of small streams is critical to the health of the entire river network and downstream communities. These small streams often appear insignificant, but in fact are very important, as they feed into and create our big rivers. Practice good stream stewardship no matter where you live so that we keep these gifts of nature healthy for future generations.

"The health of our waters is the principal measure of how we live on the land."

— LUNA LEOPOLD
ECOLOGIST AND AUTHOR

ALL PHOTOS BY BYRON JORJORIAN

LOWER CUMBERLAND WATERSHED: How our water is being affected

#	STREAM SEGMENT	STATE	MILES	POLLUTANT	SUSPECTED SOURCES OF POLLUTION
1	Little Bartons Creek	TN	4	Pathogens	Grazing in riparian zone
2	Little McAdoo Creek	TN	15	Pathogens, nutrients and sediment	Non-irrigated crop production, land development and sources unknown
3	Little River	KY	43	Nutrients, sediment, mercury, pathogens, organic enrichment/oxygen depletion and pathogens	Agriculture, impoundment, municipal point source discharges, habitat modification, crop production, urban runoff/storm sewers, loss of riparian habitat, channelization and streambank modifications/destabilization
4	Sinking Fork	KY	33	Sediment, nutrients and organic enrichment/oxygen depletion	Agriculture, livestock (grazing or feeding operations) and loss of riparian habitat
5	Muddy Fork	KY	12	Pathogens	Sanitary sewer system failures
6	Eddy Creek	KY	7	Pathogens, sediment and unknown	Agriculture, animal feeding operations (NPS), package plant or other permitted small flows, off-road vehicles and sources unknown
7	Livingston Creek Spring Creek Crab Creek Skinframe Creek	KY	11	Pathogens, nutrients, pH/ acidity/caustic conditions, sediment and unknown	Agriculture, grazing in riparian zone, crop production, loss of riparian habitat, channelization and sources unknown
8	Claylick Creek Cypress Creek	KY	12	Pathogens, nutrients and sediment	Agriculture, livestock (grazing or feeding operations), loss of riparian habitat, crop production (crop land or dry land) and non-irrigated crop production
9	Sandy Creek	KY	2	Pathogens, sediment, habitat alterations and unknown	Dredge mining, grazing in riparian or shoreline zone, non-irrigated crop production and sources unknown
10	Donaldson Creek	KY	2	Unknown	Dredge mining
11	South Fork of Bayou de Chien	KY	7	Nutrients and sediment	Channel erosion/incision from upstream hydromodifications, agriculture, crop production (crop or dry land), loss of riparian habitat, dredging (e.g., for navigation channels) and impacts from hydrostructure flow regulation/modification
12	Hammond Creek	KY	0.2	Ammonia, chlorine, pathogens, nutrients, organic enrichment/oxygen depletion and turbidity	Municipal point source discharges
13	Sugar Creek	KY	6	Sediment	Agriculture
14	Antioch Creek Bud's Creek Golden Horn Creek	TN	16	Habitat alterations and sediment	Grazing in riparian zones and non-irrigated crop production
15	Erin Branch	TN	14	Pathogens	Municipal run-off
16	Ferguson Creek	KY	2	Pathogens and unknown	Sources unknown
17	Long Pond Branch	KY	1	Sediment	Sources unknown
18	Lower Branch	KY	6	Unknown	Sources unknown
19	Bartee Branch	TN	4	Organic enrichment/oxygen depletion	Upstream impoundments
20	Richland Creek	KY	5	Pathogens	Sources unknown
21	Sugar Creek	KY	6	Pathogens	Sources unknown
22	Wall Branch	TN	5	Nutrients	Sources unknown
23	Skinner Creek	KY	6	Unknown	Sources unknown
24	Tributary to Dry Creek	KY	2	Unknown	Sources unknown
25	Hematite Lake	KY	85 acres	Organic enrichment /oxygen depletion and nutrients	Agriculture and sources unknown
26	Lake Barkley Reservoir	TN	N/A	Organic enrichment/oxygen depletion and temperature	Cooling water discharges
27	Dry Creek to Eddy Creek	KY	4	Sediment/siltation and pathogens	Off-road vehicle

What can I do to keep my streams and rivers clean?

- Leave a 35' to 100' no mow zone between streams and activity that disturbs, compacts or removes soil.
- Harvest rainwater from roof tops using rain barrels or larger cisterns.
- Keep livestock fenced away from streams and rivers.
- Don't pour toxic household chemicals down the drain; take them to a hazardous waste center.
- Use hardy plants that require little or no watering, fertilizers or pesticides in your yard.
- Do not over apply fertilizers. Consider using organic or slow release fertilizers instead.
- Recycle yard waste in a compost pile and use a mulching mower.
- Use pervious surfaces like wood, brick or gravel for decks and walkways; this allows rain to soak in and not run off.
- Never pour used oil or antifreeze into the storm drain or the street.
- Pick up after your dog, and dispose of the waste in the toilet or the trash.
- Drive less — walk or bike; many pollutants in our waters come from car exhaust and car leaks.
- Join watershed clean-up efforts and restoration activities.
- Encourage greenways, conservation easements and other practices that protect the land around our rivers and streams.
- Become a member of the Cumberland River Compact and visit cumberlandrivercompact.org often to keep up to date.

CUMBERLAND RIVER COMPACT
TWO VICTORY AVENUE, SUITE 300 | NASHVILLE, TENNESSEE 37213

CUMBERLAND RIVER COMPACT

Our mission is to enhance the health and enjoyment of the Cumberland River and its tributaries through education, collaboration and action.

OUR WATER. OUR FUTURE.

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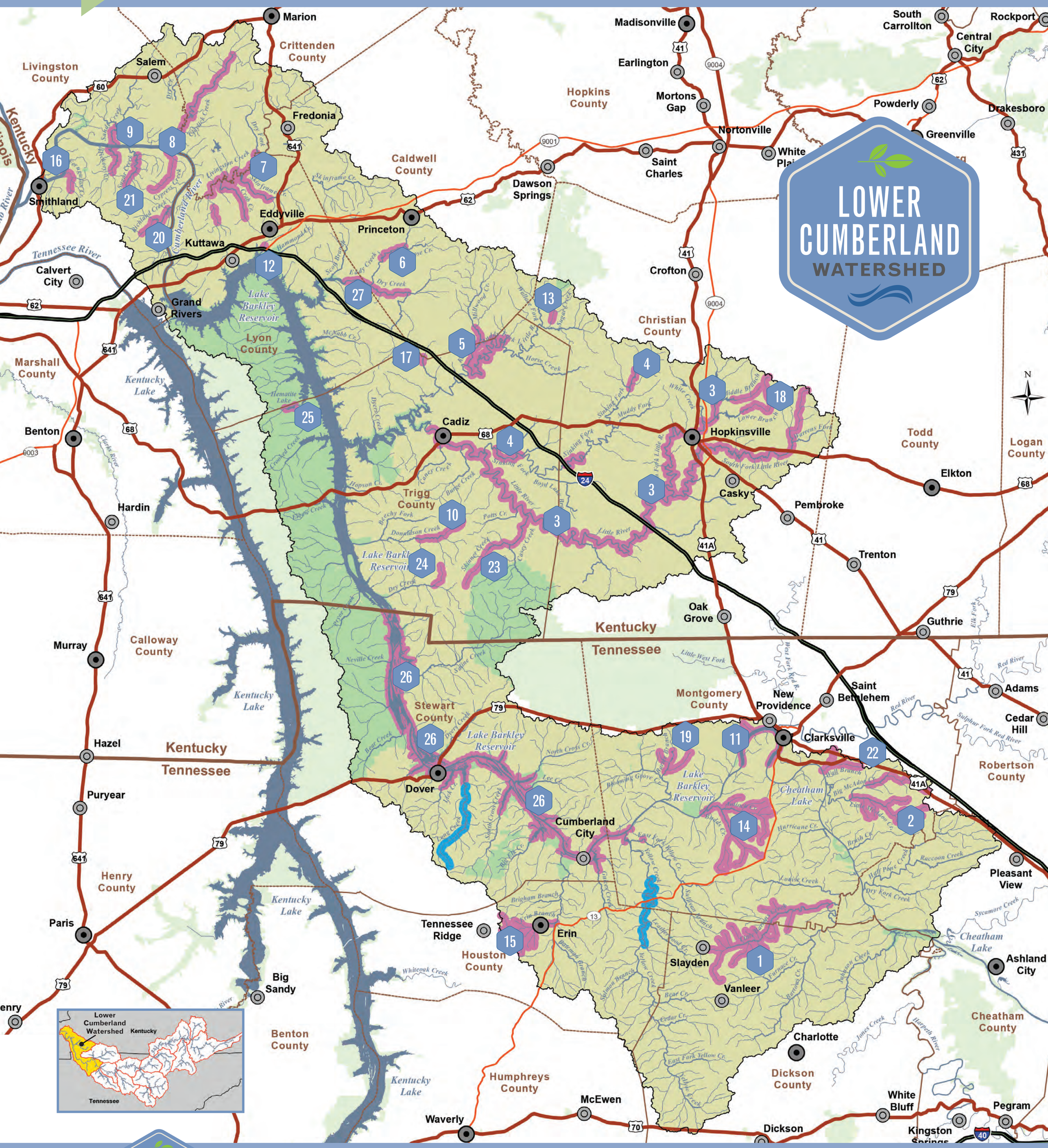

MAP KEY

- County seats
- Other incorporated towns
- Streams that contain conditions that are a threat to human health and/or have an impaired ecology
- National Rivers Inventory streams: a registry of river segments noted for their scenic and recreational attributes
  For more information, visit nps.gov/ncrc/programs/rtca/nri

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Approximately 67 miles of waterways in the Lower Cumberland Watershed are considered impaired.

CONDITIONS OF IMPAIRMENT KEY

P	Pathogens
pH	Acidic pH
H	Habitat loss or alteration
M	Metals
N	Nutrients
S	Sediment
U	Unknown causes or sources
UR	Urban runoff

For more information, please see corresponding table on reverse side. The majority of blue streams on the map have not been assessed for water quality.

P S 1 N — Little Bartons Creek	P M S UR 2 H N — Little McAdoo Creek	P M S U 3 H N — Little River	P S U 4 H N — Sinking Fork	U 5 — Muddy Fork	P S U 6 — Eddy Creek	P S U 7 pH H N — Livingston Creek, Spring Creek, Crab Creek, Skinframe Creek	P S 8 H N — Claylick Creek, Cypress Creek	P S U 9 H N — Sandy Creek
U 10 — Donaldson Creek	S 11 H N — South Fork of Bayou de Chien	12 pH N — Hammond Creek	S 13 — Sugar Creek	S 14 H — Antioch Creek, Bud's Creek, Golden Horn Creek	P 15 — Erin Branch	P 16 — Ferguson Creek	S 17 — Long Pond Branch	U 18 — Lower Branch
19 H — Bartee Branch	P 20 — Richland Creek	P 21 — Sugar Creek	22 N — Wall Branch	U 23 — Skinner Creek	U 24 — Tributary to Dry Creek	U 25 — Hematite Lake	U 26 — Lake Barkley Reservoir	S 27 P — Dry Creek to Eddy Creek

U.S. ENVIRONMENTAL PROTECTION AGENCY
epa.gov

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
(888) 891-8332
tn.gov/environment

TENNESSEE DEPARTMENT OF AGRICULTURE WATER RESOURCES
(615) 837-5225
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KENTUCKY DIVISION OF WATER
(502) 564-3410
water.ky.gov

THE NATURE CONSERVANCY TENNESSEE REGION
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