



# TN WATER WATCH

## Harpeth Conservancy's River Advisory Tool

Providing predictions of bacteria contamination at river access points around Middle TN to raise awareness and help people make informed decisions about when and where they recreate

### AT A GLANCE

Tennessee Water Watch is a predictive river advisory tool that Harpeth Conservancy has developed and is launching for public use June 2024. This tool forecasts the levels of *E. coli* at select, highly recreated river access points and compares it to thresholds set by the Environmental Protection Agency in order to provide insight into the relative health risks of the water. As people make recreation plans, they can use this tool to make informed decisions about when and where to recreate and to gauge safety precautions.

"Before you play, check the water for the day!"

### KEY METRICS

The predictive model refreshes data hourly with weekly sampling done between June and September annually.



> **350**  
water samples



**11**  
data locations to date



Science-based conservation for the rivers of Tennessee



@harpethriver



<https://tnwaterwatch.org>



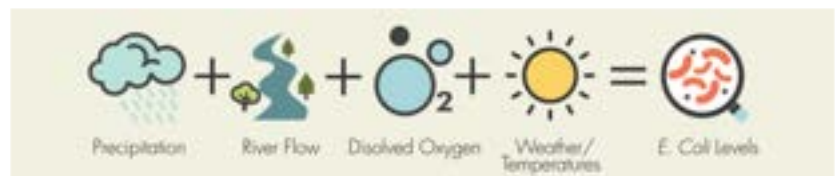
Middle Tennessee

### CHALLENGE

Maintaining river health is crucial for environmental sustainability, wildlife protection, and ensuring clean water access for our communities. Plus, it impacts residents' well-being. Monitoring factors like temperature, precipitation, dissolved oxygen, and microbial presence helps us to gauge river health. Unfortunately, conventional water sampling offers limited insights, insufficient for predicting **health risks during recreational use**. Harmful bacteria pose risks to swimmers, kayakers, and fishers, causing diseases like Salmonellosis and Legionnaires'. Sewage, urban, agricultural, or industrial runoff can also introduce bacteria.

### SOLUTION

Using past sample data in conjunction with real-time environmental factors (weather, river flow, precipitation, etc), Tennessee Water Watch can predict the level of harmful bacteria in the water. This results in a simple predictive equation that forecasts the levels of *E. coli* for the day (see example below).



### BENEFITS

#### Real-time safety alerts

1

The data uses real-time environmental factors (weather, river flow, precipitation, etc), refreshing hourly to allow for more accurate predictions that can inform the adoption of appropriate safety measures while recreating.

2

#### Source tracking to help determine bacteria sources

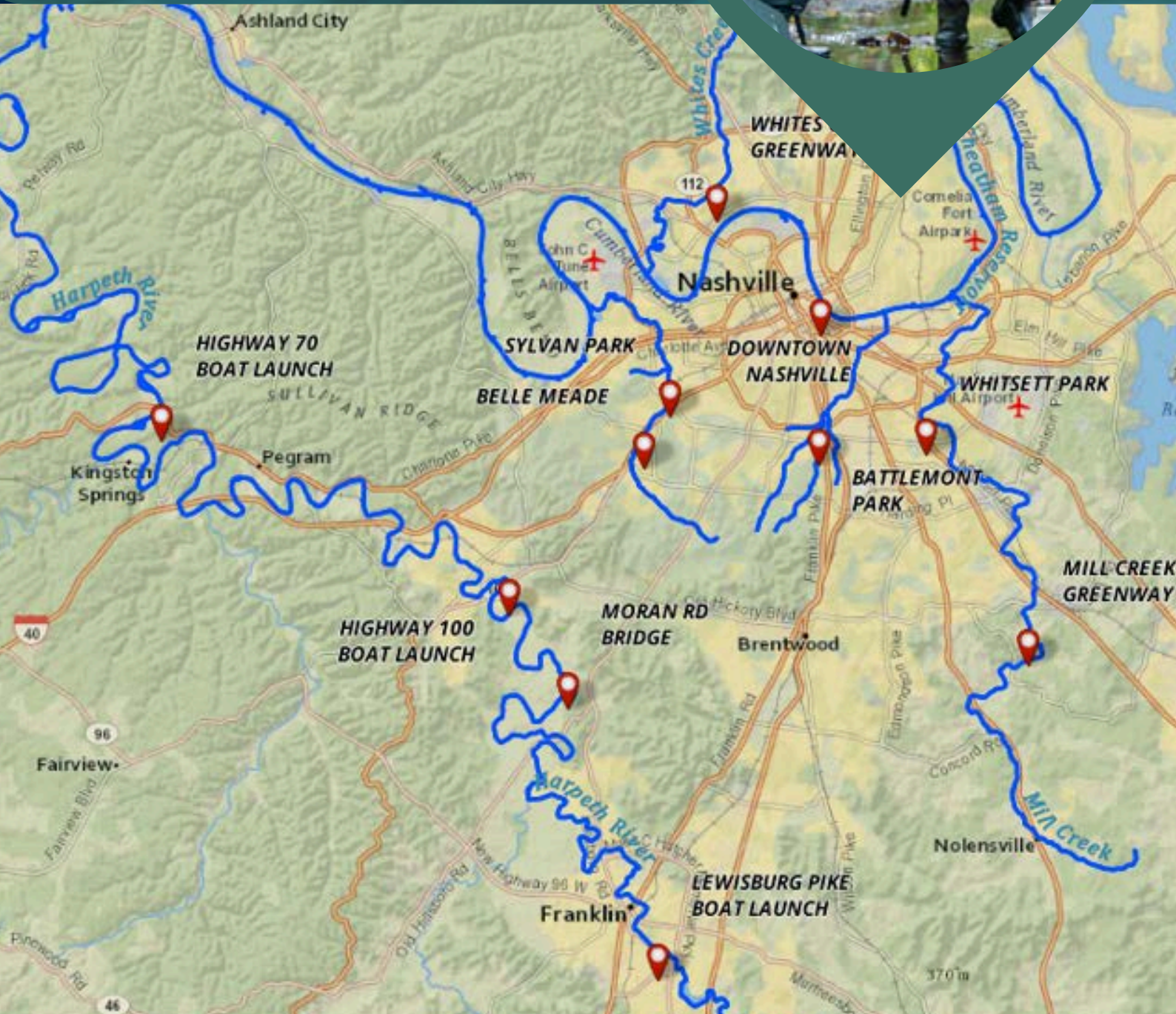
The data helps identify hotspots (areas within the river where bacteria levels are notably higher). We can then look at the surrounding area to identify sources of pollution and seek science-informed policy solutions.

3

#### Learning and volunteer opportunities

With our Citizen Science program, we engage volunteer participation in collecting water samples. Opportunities to learn and gain experience will expand to processing samples in our new on-site laboratory as we add new sampling sites as well as helping with other forms of data collection.

# TN WATER WATCH SAMPLING SITES



📍 Highway 100 Boat Launch, Harpeth River  
Hwy 70 Boat Launch, Harpeth River  
Lewisburg Pike, Harpeth River  
Moran Road Bridge, Harpeth River

Mill Creek Greenway, Mill Creek  
Whitsett Park, Mill Creek  
Jackson Blvd, Richland Creek  
Richland Creek Greenway, Richland Creek