



NONPOINT SOURCE SUCCESS STORY

Kentucky

Watershed Planning and Septic Outreach Leads to Red Bird River Delisting

Waterbody Improved

The Kentucky Division of Water (DOW) added an approximately 15-mile segment of Red Bird River (miles 0.0–15.35) to the 2016 Clean Water Act (CWA) section 303(d) list/Integrated Report as impaired (partial support) for primary contact recreation (PCR) due to *Escherichia coli* bacteria. In 2021, the U.S Environmental Protection Agency (EPA) approved DOW’s statewide bacteria total maximum daily load (TMDL), which includes Red Bird River. After years of outreach and septic system improvements, water quality collected in 2018 indicated the segment fully supports its PCR designated use. As a result, DOW proposes to delist the *E. coli* impairment for this Red Bird River segment in the 2022 Integrated Report to Congress.

Problem

Red Bird River (KY-2483) drains into the South Fork of the Kentucky River in southeast Kentucky (Figure 1). Red Bird River is approximately 34 miles long and drains a 195.5-square-mile watershed dominated by forestland in Clay, Leslie, and Bell counties. Water chemistry sampling of Red Bird River in 2013 indicated that concentrations of *E. coli* did not support the PCR designated use, resulting in a 15-mile segment being listed as impaired on the 2016 CWA section 303(d) list/Integrated Report. A bacteria TMDL was subsequently developed and was approved in 2021. Other Red Bird River watershed streams listed in this bacteria TMDL include Upper Jacks Creek (mi. 0–2.3), Big Creek (mi. 0–4.25), Elk Creek (mi. 0–5.75), and Lawson Creek (mi. 0–2.85).

Story Highlights

Watershed planning efforts began in June 2010 when the U.S. Forest Service and local community partners met to find ways to improve water quality and tourism in the Red Bird River watershed. In 2015, the CWA section 319(h) program awarded \$231,237 to the Daniel Boone National Forest to develop and implement the Red Bird River watershed plan. In 2016, the Red Bird River Watershed Team finalized the plan, which outlines watershed needs for septic system improvements, erosion mitigation, and trash cleanup. To reduce bacteria loading in the watershed, this project funded two septic system workshops (Figure 2), 24 septic cleanouts, and 11 new septic

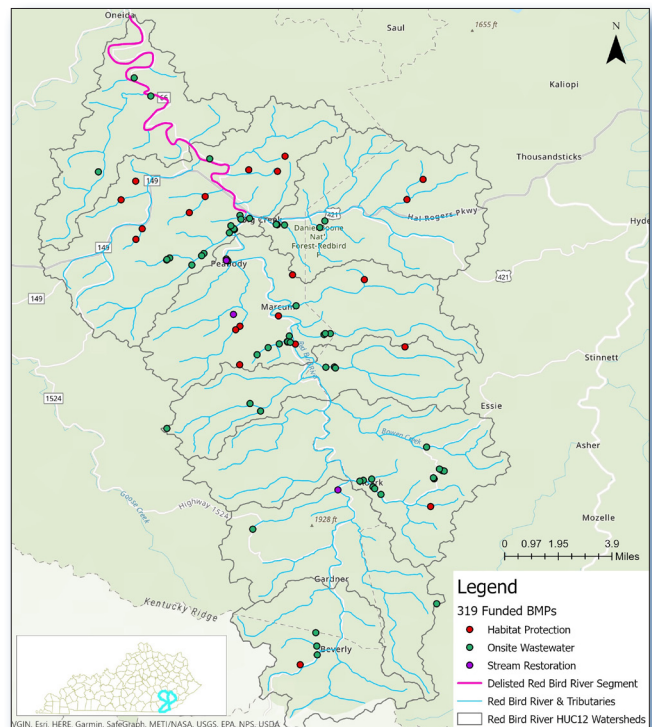


Figure 1. Red Bird River is in southeastern Kentucky.

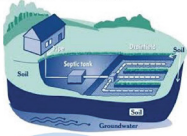
system installations through partners such as Eastern Kentucky PRIDE, the Red Bird Mission, the University of Kentucky, and the Cumberland Valley Resource Conservation and Development Council (CVRCD). Outside funding to the Red Bird Mission made it possible to multiply the impact of this effort by installing an additional 19 new septic systems and completing two septic repairs.

Attend a workshop to qualify for
A FREE SEPTIC PUMPOUT

A failing septic system can cost thousands of dollars to repair, pose a serious health risk to your family and have negative impacts on water quality in your community.

Attend this FREE workshop to learn:

- How does my septic system work?
- How can I prevent my system from needing expensive repairs?
- Am I eligible for financial assistance to pump or replace my system?



THE CARE AND FEEDING OF YOUR SEPTIC SYSTEM

Presented by Brad Lee

UK

College of Agriculture, Food and Environment
 Cooperative Extension Service

WHEN: May 2, 2018; 1-2pm

WHERE: Cardinal House
 Red Bird Mission Workhouse
 70 Queendale Center
 Beverly KY

For More Information Please Contact
 Lois Smith 606-598-0520

This work was funded in part by a grant from the US EPA under 319(h) of the Clean Water Act

Figure 2. Septic system outreach flyer for Red Bird River.



Figure 3. Red Bird River cleanup, November 2017.

Community engagement was high throughout the project, as evidenced by volunteer engagement on streamside trash cleanups, erosion control projects, and septic system workshops. Over the course of three years, volunteers conducted trash cleanups along 16.6 miles of stream in the Red River watershed (Figure 3). Grant funding also helped mitigate erosion along 69.2 miles of hiking trails in the Daniel Boone National

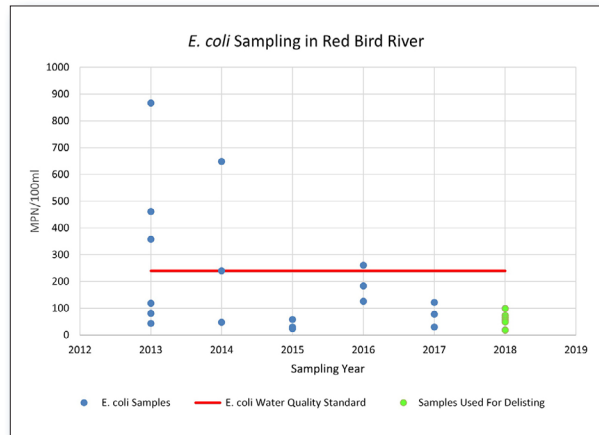


Figure 4. Bacteria sampling in the Red Bird River watershed.

Forest. Additionally, 100 community members attended an informational meeting on septic improvements, and 73 people attended septic workshops.

Results

Following substantial watershed planning, septic investment and watershed cleanup, new data demonstrates the Red Bird River Creek segment from miles 0.0 to 15.35 now supports the PCR designated use. In 2018, DOW monitoring results show that all five samples during the PCR season (May–September) were under the 240 most probable number (MPN)/100 milliliters (mL) water quality threshold for delisting (see Figure 4). As a result, Red Bird River (miles 0.0–15.35) now meets its primary contact recreation designated use, and *E. coli* is proposed for delisting as part of the 2022 Integrated Report to Congress.

Partners and Funding

Substantial local engagement led to finalization of the Red Bird River Watershed Plan and focused engagement on septic system improvements. The U.S. Forest Service and Red Bird Mission played pivotal roles in galvanizing community support, while also leveraging over \$154,000 in matching funds. DOW awarded another EPA 319(h) grant for \$178,255 in 2019 to continue septic system improvements, erosion mitigation, and stream restoration efforts. Matching funds nearing \$119,000 are slated to multiply this investment, with an enduring impact on the health of this watershed.



U.S. Environmental Protection Agency
 Office of Water
 Washington, DC

EPA 841-F-23-001K
 September 2023

For additional information contact:

Josiah Frey
 Kentucky Division of Water
 502-782-0164 • josiah.frey@ky.gov