

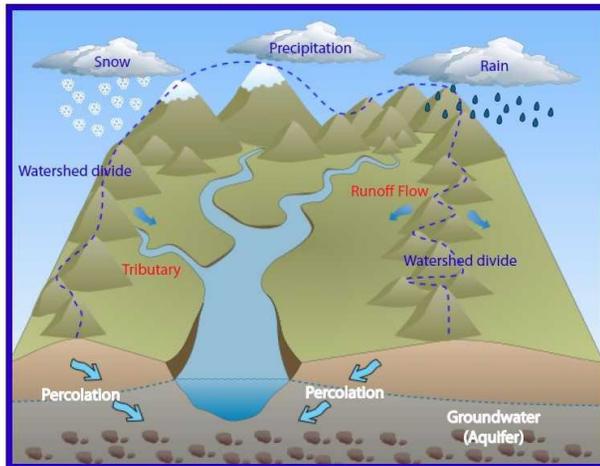


Dix River Watershed

COUNCIL UPDATE
NOVEMBER 19, 2019

What is a watershed?

Everyone Lives in a Watershed



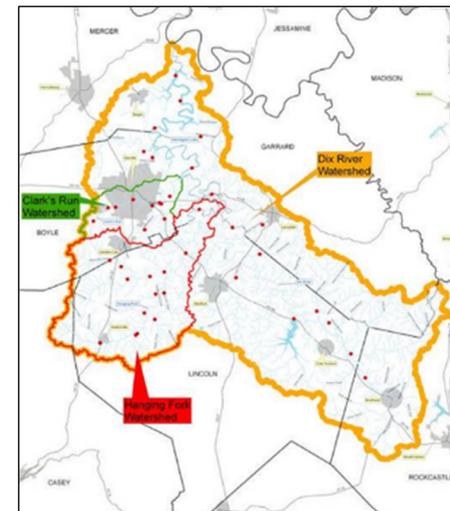
The area of land that drains to a common waterbody (stream, river, lake, ocean, etc).

Everything we do on land ultimately affects our water.



Dix River Watershed

- ▶ 424 square miles
- ▶ Impoundment is public water supply and major recreational resource
- ▶ Impaired waters throughout, primarily for high pathogen levels
- ▶ Herrington Lake impaired for high nutrient levels and organic materials
- ▶ **Focused on Clarks Run and Hanging Fork Subwatersheds**



Watershed Planning and “Implementation”

- ✓ Summarize existing info/characterize area
- ✓ Collect new water quality samples (1+ years)
- ✓ Analyze and summarize water quality findings
- ✓ Make management recommendations based on findings
- ✓ Get feedback from community about feasibility and support for recommendations
- ✓ Finalize recommendations – partners, timeline, costs
- ▶ Conduct improvement activities (with \$ and tech assistance)
- ▶ Repeat sampling to check for water quality changes
- ▶ Continue until water quality goals are achieved

Major Watershed Plan Conclusions

High bacteria/pathogen issues—mainly human sources to blame

Recommendations:

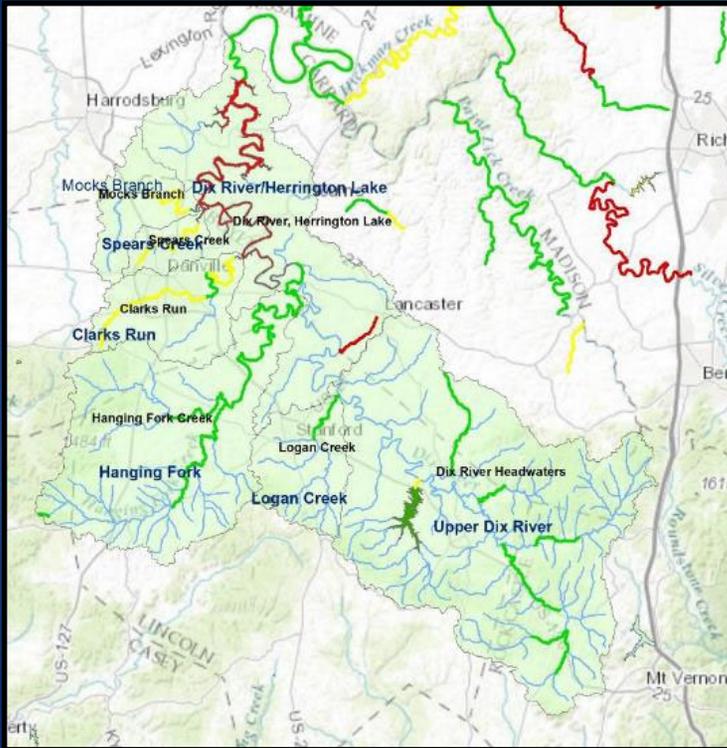
- ▶ Most homes rely on septic systems – need to educate homeowners, repair/replace septic, or expand sanitary sewer coverage.
- ▶ Reduce fecal inputs from livestock.

Inadequate riparian zone throughout much of the watershed.

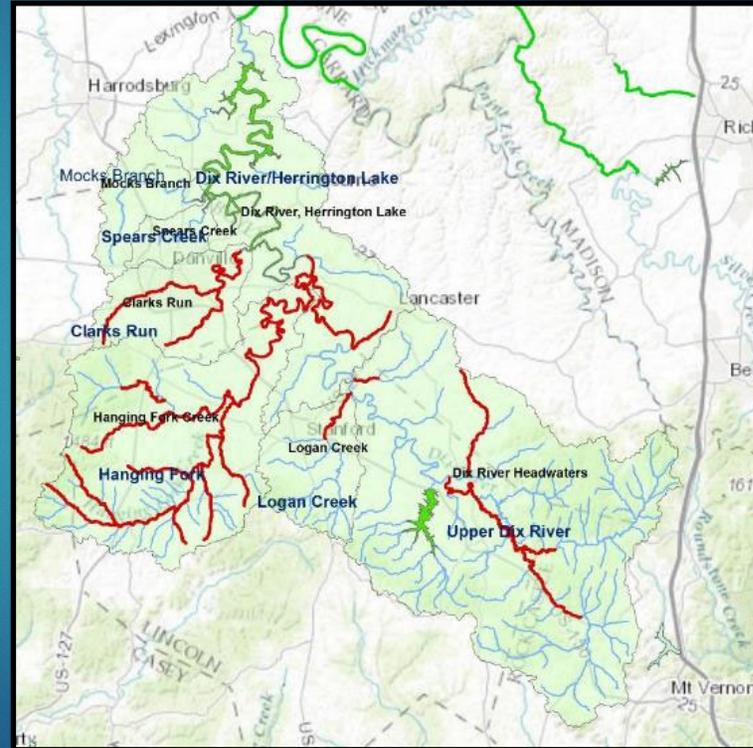
Recommendations:

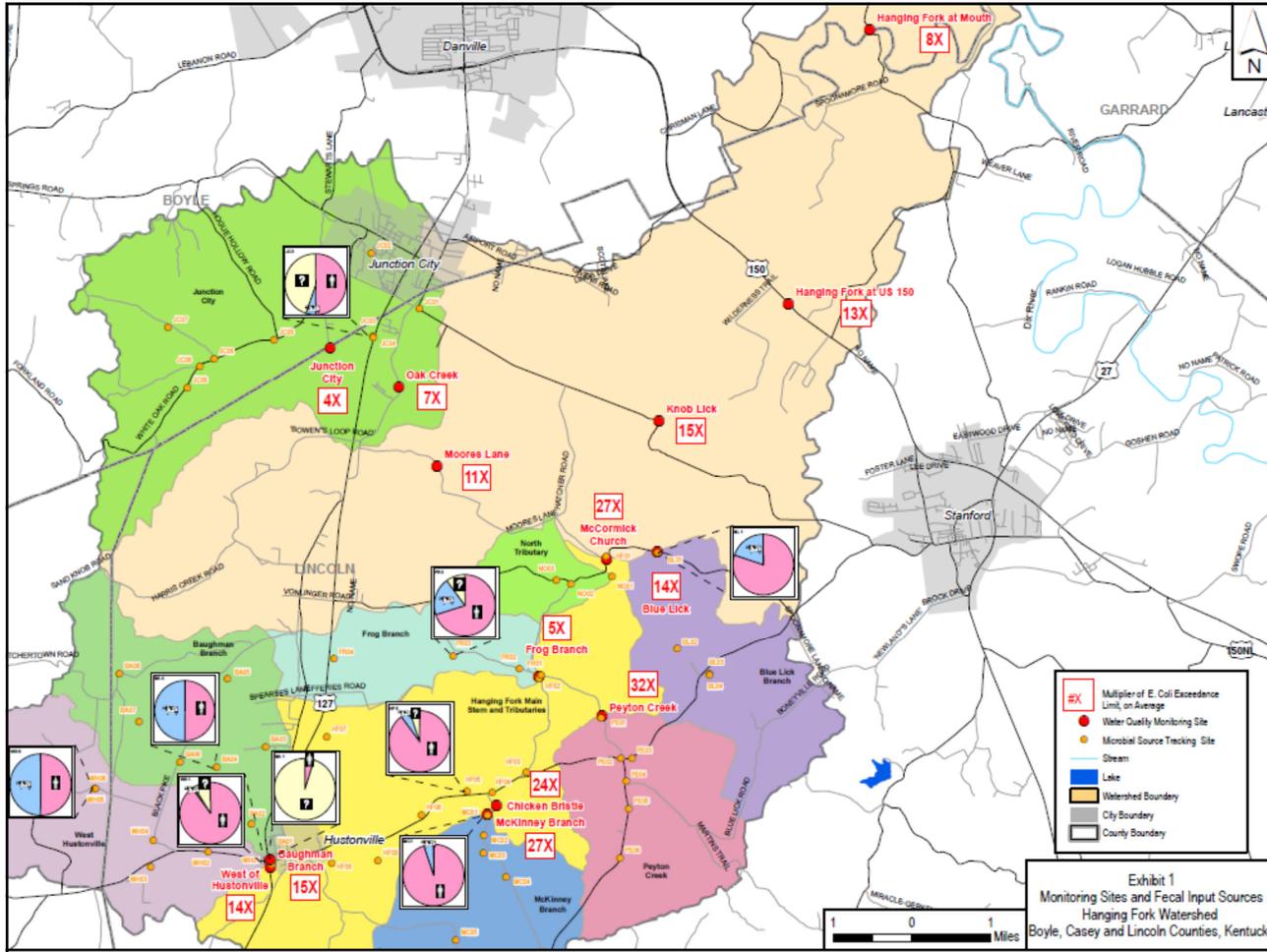
- ▶ Encourage private landowners to reduce streambank mowing, plant trees.
- ▶ Work with ag agencies to promote livestock exclusion fencing.

Aquatic Life Support



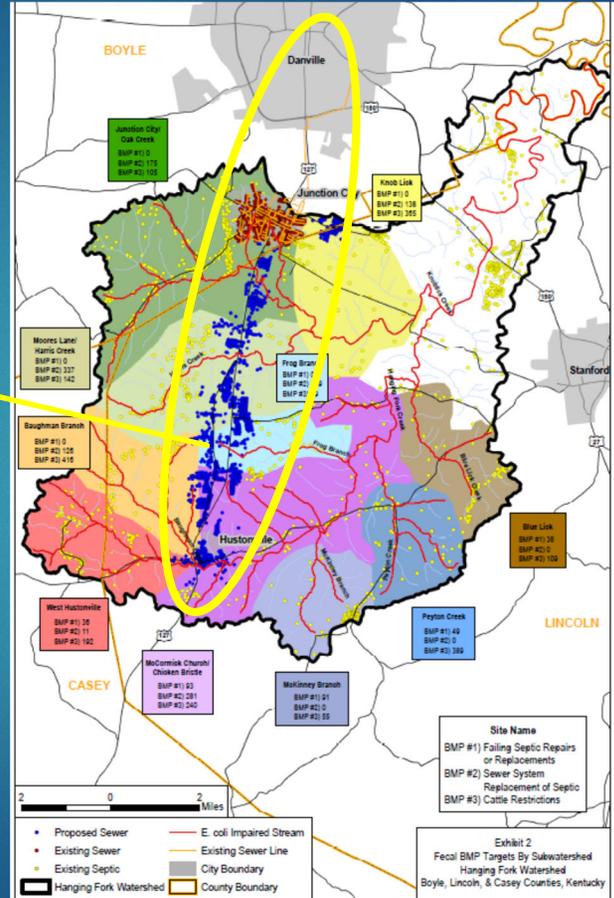
Primary Contact Recreation

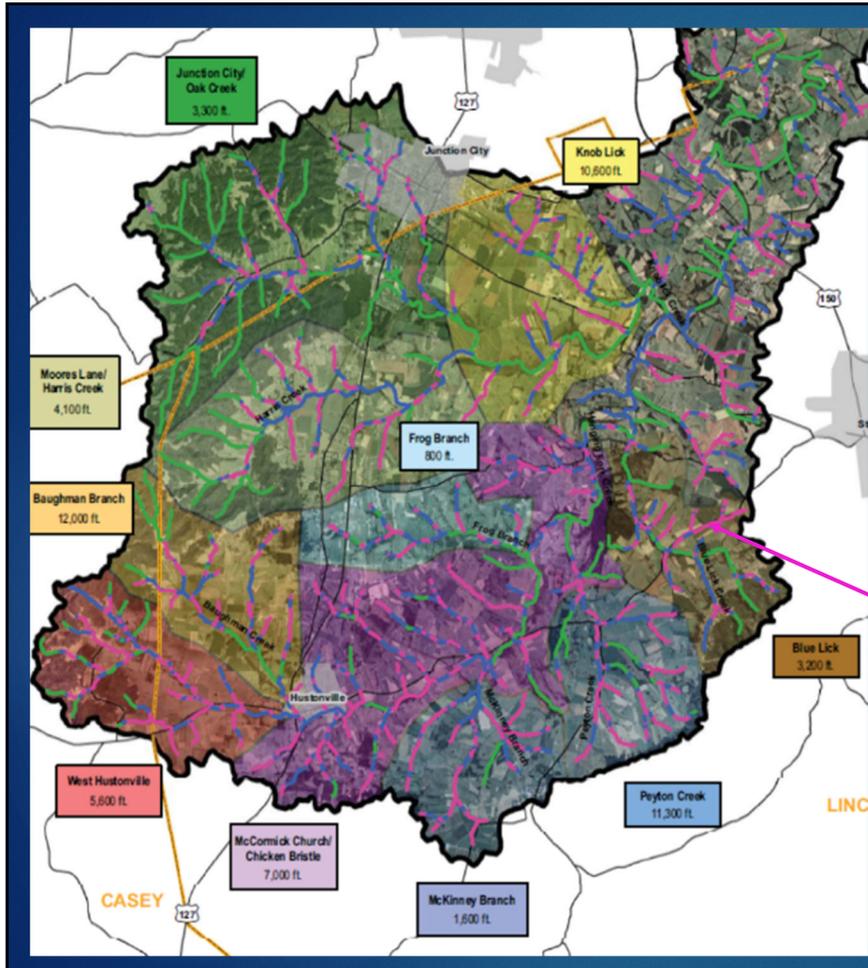




E. Coli levels in Hanging Fork Creek Watershed

Sanitary Sewer Connection between Hustonville and Danville





Stream Lengths recommended for Riparian Improvement



Timeline of Dix River Project Activities

2006 – Dix River Watershed Council began meeting

2006 thru 2007 – Intensive Water Quality sampling by Third Rock Consultants

2009 – Clarks Run and Hanging Fork Watershed Plans approved

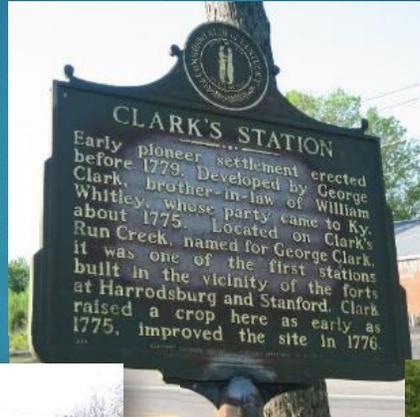
2010 – USEPA 319 Grant to City of Danville
Stream enhancement project and educational outreach

2011 – USEPA 319 Grant to Lincoln County Soil Conservation District
Agricultural best practices

2012 / 2016 / 2019 – USEPA 319 Grants to Bluegrass Greensource
Assistance with septic program, educational outreach and stream buffer improvements

2017 – USEPA Grant to Lincoln County Sanitation District
Sanitary sewer connections

Clarks Run Environmental & Educational Corp (CREEC)



CREEC 319 Mini-Grant (2017)

- ▶ Educational Signage along trail
- ▶ Invasive Plant Clearing & Tree Planting
- ▶ Organizational Visioning & Recruitment
- ▶ Website Improvements
- ▶ Earth Day Festival

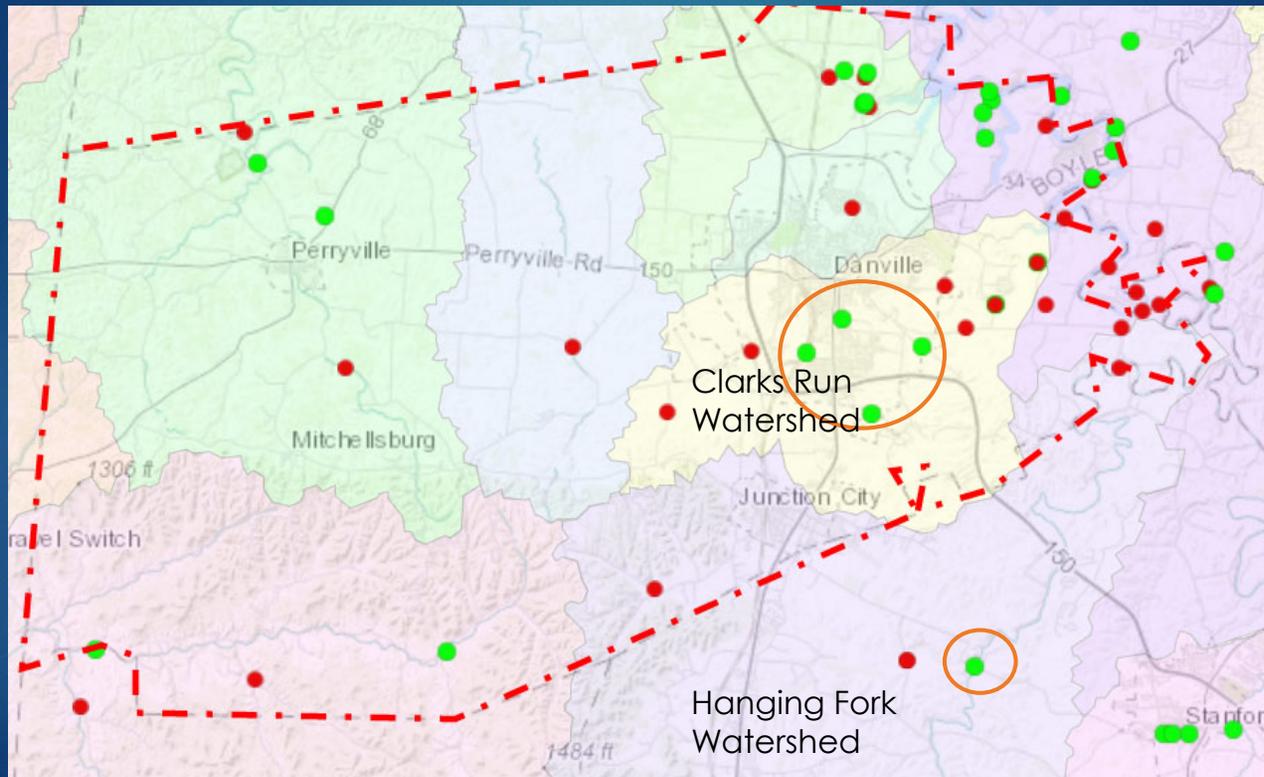


Kentucky River Watershed Watch Volunteer Sampling

- ▶ 4 active sites in Clarks Run and 2 in Hanging Fork
- ▶ Sample 3 times/year
- ▶ Field chemistry, E coli, nutrients, metals
- ▶ Results summarized and presented annually
- ▶ Trainings offered each year

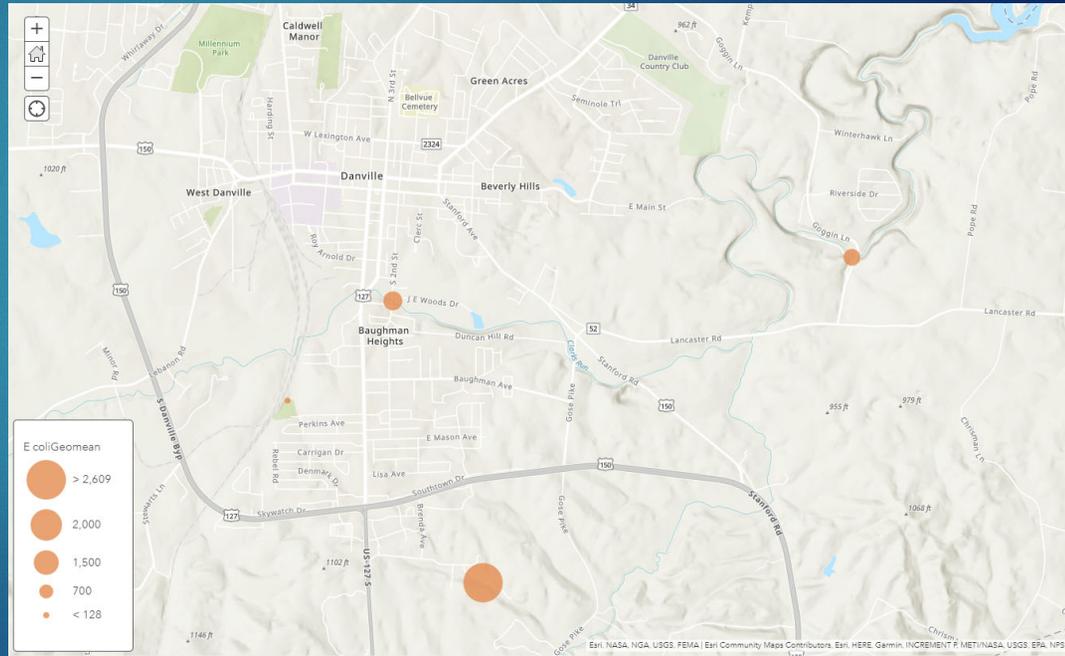
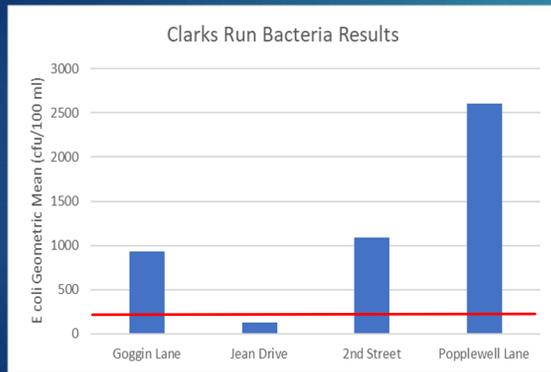


Watershed Watch Sampling Locations

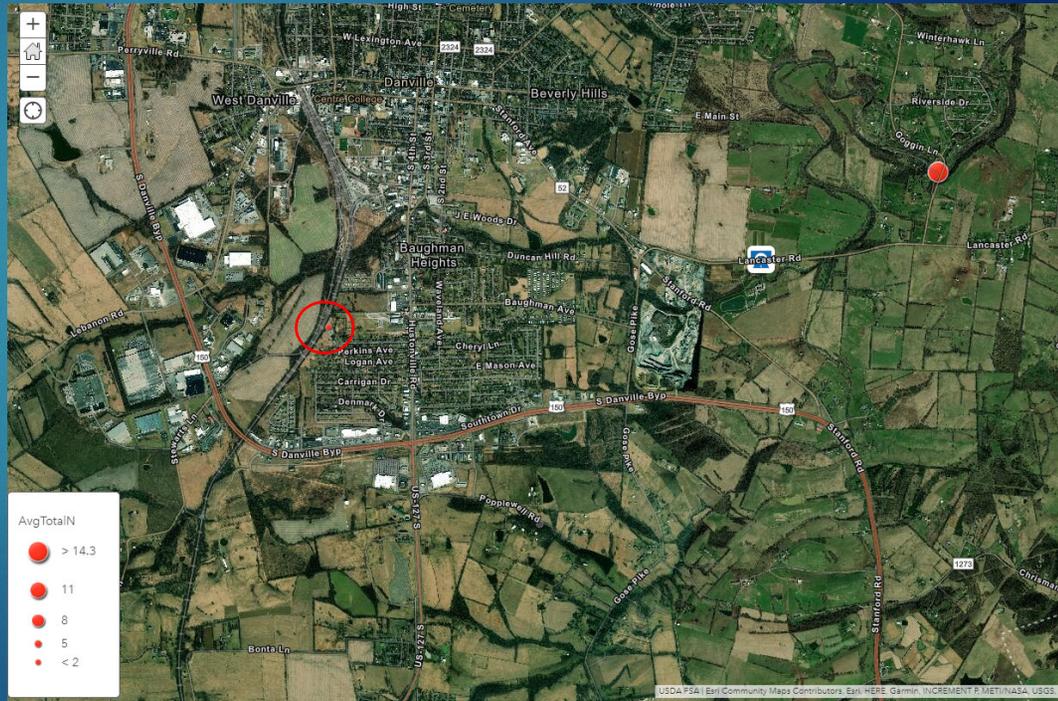
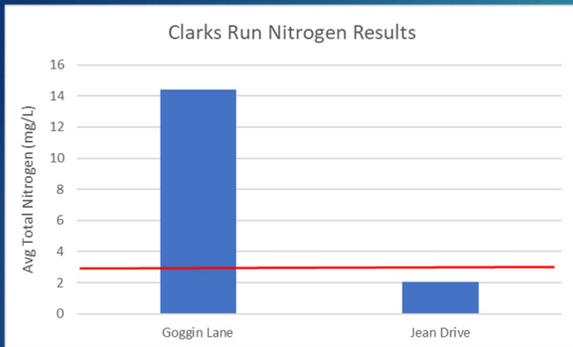


Clarks Run Bacteria Results

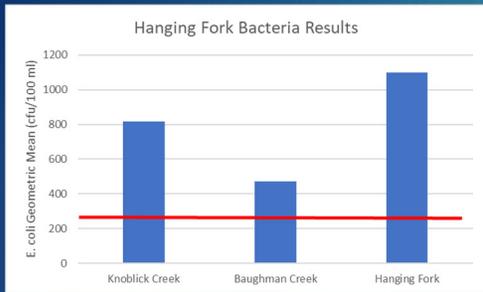
- Findings of high E coli and nitrogen at some Clarks Run locations



Clarks Run Nitrogen Results



Hanging Fork Bacteria Results



Herrington Lake Conservation League & NEW Volunteer Lake Sampling Program

- ▶ 10 sites on Herrington Lake
- ▶ Sampling every 2 weeks during recreation season
- ▶ Coordinating sampling with LANDSAT flyover dates
- ▶ Creating database of observations



Danville Water Treatment Plant

Source Water Protection Assistance Program Grant Project

Encourages local students and community to learn about local water supply and the way water cycles through local waterbodies.

Demonstrates stormwater runoff concepts and management approaches.

Walking trail with raised boardwalk over wetland area, splash play area.



Agricultural Best Management Practices

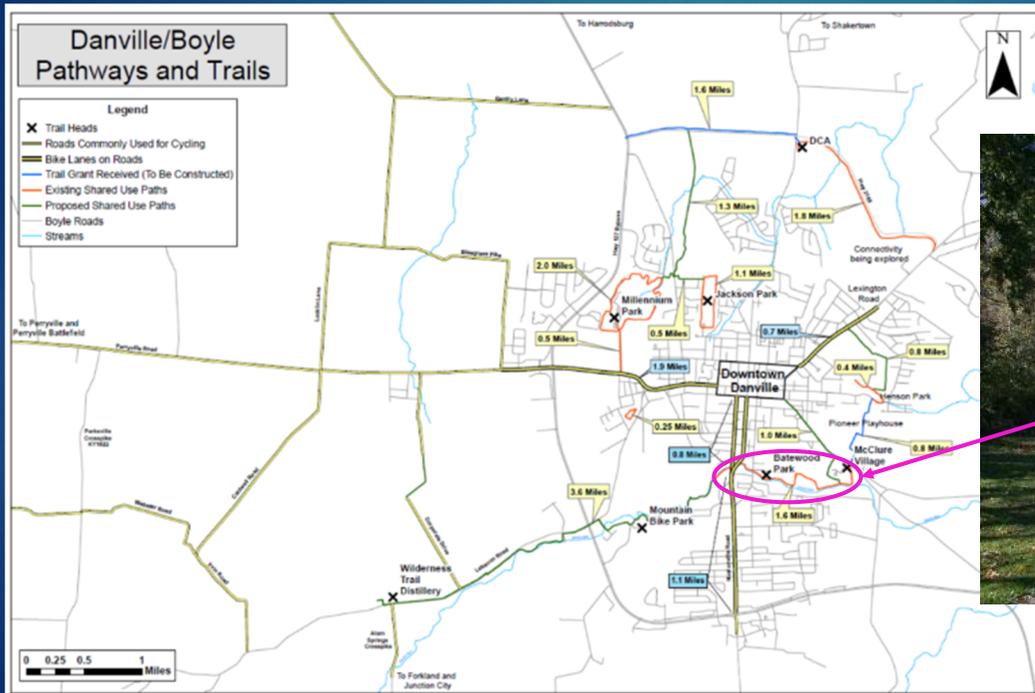


Livestock exclusion fencing at Kubale Farm



Offsite watering at Bright Farm

Clarks Run Recreational Trail



Lincoln County Sewer Connections Hanging Fork Watershed

- ▶ Spearheaded by Lincoln County Sanitation District
- ▶ Capturing about 500 homes, currently served by septic systems
- ▶ Homeowner Assistance program reduced costs of connection and septic decommissioning



Questions or comments?



Malissa McAlister

Kentucky River Basin Coordinator
Kentucky Water Resources Research Institute
233 Mining & Minerals Building
Lexington, KY 40506-0107
(859)324-0845
www.uky.edu/WaterResources
mmcalister@uky.edu