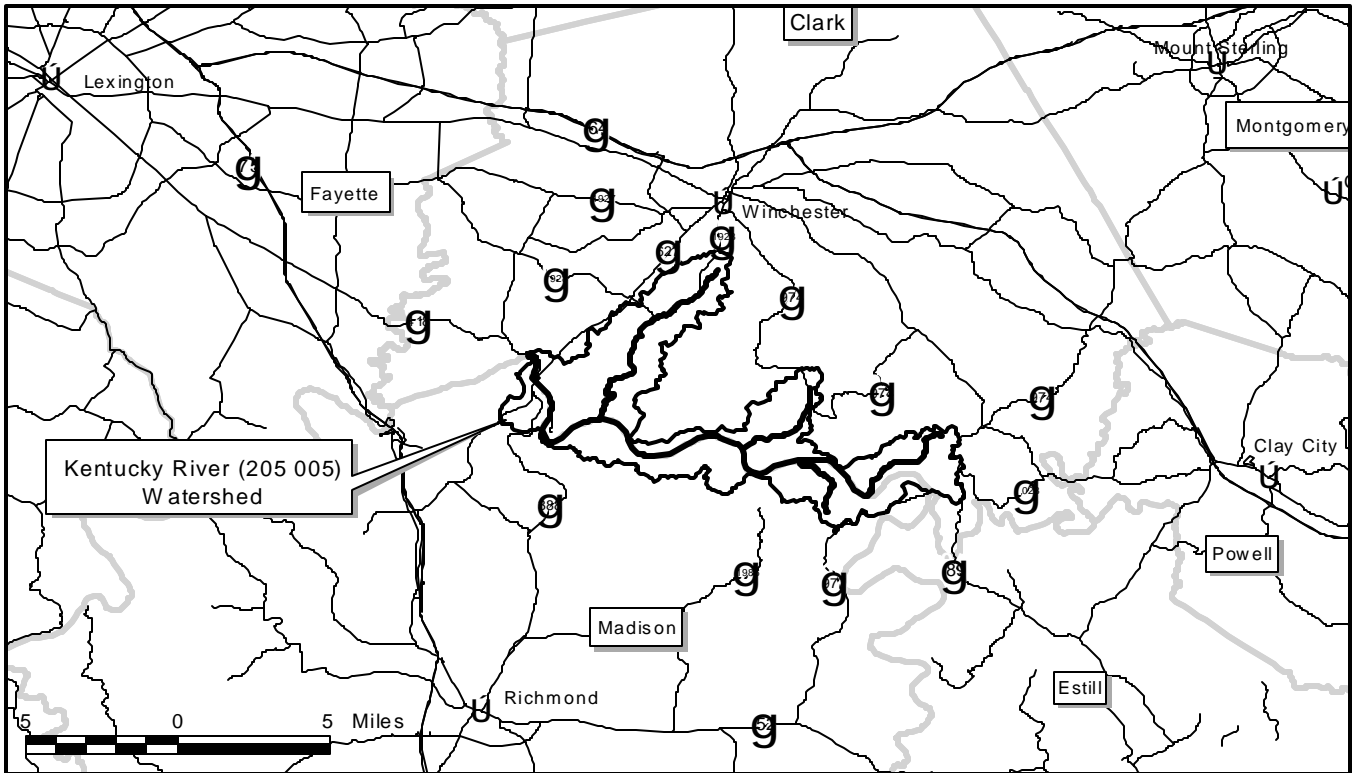


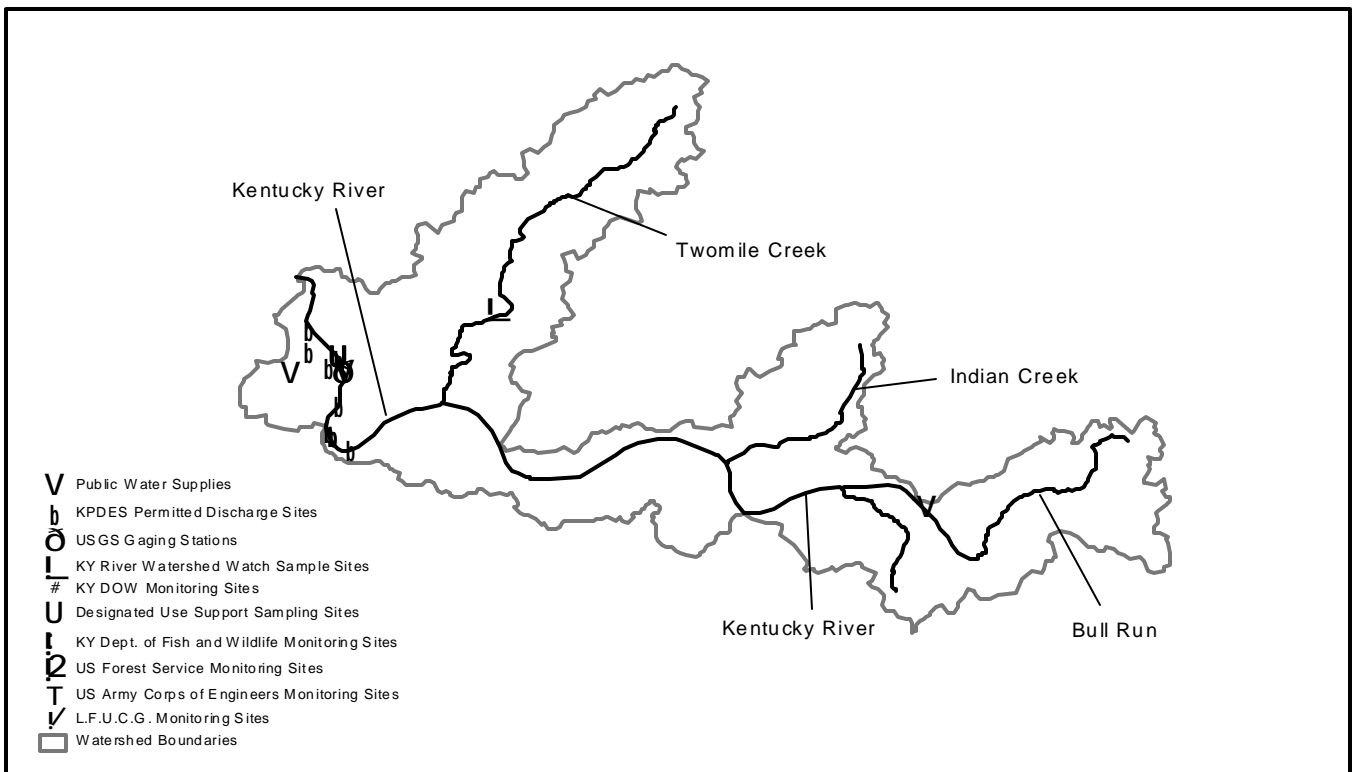
# Kentucky River (205 005) Watershed

## Watershed Number: 05100205005

### Location Map



### Watershed Features



**Geography.** The Kentucky River 205 005 watershed lies along the boundary between Clark County and Madison County. The land is in the Bluegrass physiographic region, characterized by hilly or undulating terrain, medium to very rapid rates of surface runoff, and slow to medium groundwater drainage. Parts of the watershed lie over easily weathered clay shales that store water but allow little groundwater flow. There are also areas of interbedded shales and limestones (these are 20% limestone; water conduction is poor because of the clay content of the shale). The rest of the watershed lies above interbedded clay shales and siltstones.

**Waterways.** This watershed includes the section of the Kentucky River between the Red River and Lower Howard Creek (Lisletown). Among the creeks that feed it are Twomile Creek, Indian Creek, and Bull Run. Water from the Otter Creek, Fourmile Creek, Upper Howard Creek, Red River (lower), and Kentucky River 204 080 watersheds also flow into this watershed.

**Land and water use.** Land in the watershed is about 70% agricultural and 30% rural and wooded. The surface waters of the watershed supply the drinking water for the municipal system in Winchester. Four businesses and organizations hold permits for discharges into the creeks. See tables for details.

**Agency data assessment.** The assessed segment of the river in this watershed does not support some or all of its designated uses, based on biological and/or water-quality data. Pathogens contribute to the impairment of the segment. See tables for details.

**Watershed rankings.** The ranking formula provides a preliminary ranking by synthesizing a broad spectrum of watershed characteristics, current conditions, and threats. This watershed ranks in the group with the highest need for protection and/or restoration. This rating is for the watershed on average: particular sites and particular waters within the watershed may vary widely. See tables for details.

**Volunteer data.** There is a volunteer site on Twomile Creek. See tables for details.

This report was prepared by the Kentucky Water Research Institute as a product of the statewide Kentucky Watershed Management process. Information presented in this report was collected from many sources. Reasonable attempts were made to ensure that information and figures are as accurate as possible, but no representation or guarantee is made as to either the correctness or suitability of information for particular purposes. All critical information should be independently verified. Please address questions or corrections to Basin Coordinator, KWRI, Rm. 233 Mining and Minerals Resources Building, University of Kentucky, Lexington, Kentucky 40506-0107.

**Summary of Basin Characteristics and Facilities**

**General Land-use Characteristics:**

<i>Total Land Area (Acres):</i>	<input type="text" value="22,536"/>	<i>Acres</i>	<i>% of Total</i>		
<i>Residential Area:</i>	<input type="text" value="235"/>		<input type="text" value="1.0"/>	<i>Number of Mine Permits:</i>	<input type="text" value="0"/>
<i>Commercial Area:</i>	<input type="text" value="0"/>		<input type="text" value="0.0"/>	<i>Total Permitted Mining Area (Acres):</i>	<input type="text" value="0"/>
<i>Industrial Area:</i>	<input type="text" value="75"/>		<input type="text" value="0.3"/>	<i>Number of Identified Wetland Areas:</i>	<input type="text" value="5"/>
<i>Agricultural Area:</i>	<input type="text" value="15,530"/>		<input type="text" value="69.0"/>	<i>Total Wetland Area (Acres):</i>	<input type="text" value="4"/>
<i>Rural and Wooded Area:</i>	<input type="text" value="6,643"/>		<input type="text" value="29.5"/>		
<i>Other Land-use Area:</i>	<input type="text" value="35"/>		<input type="text" value="0.2"/>		

**Withdrawal and Discharge Sites:**

<i>Number of Public Water Supplies and Water Withdrawal Sites:</i>	<input type="text" value="3"/>	<i>Number of KPDES Discharge Permits:</i>	<input type="text" value="11"/>
<i>Surface Water Withdrawals:</i>	<input type="text" value="3"/>		
<i>Groundwater Withdrawals:</i>	<input type="text" value="0"/>		
<i>No. of Potable Water Treatment Facilities:</i>	<input type="text" value="1"/>		

**Sampling Site Statistics:**

<i>Number of USGS Gaging Stations:</i>	<input type="text" value="1"/>
<i>Number of Kentucky Division of Water Sampling Sites:</i>	<input type="text" value="0"/>
<i>Number of Kentucky Dept. of Fish and Wildlife Sampling Sites:</i>	<input type="text" value="0"/>
<i>Number of US Forest Service Sampling Sites:</i>	<input type="text" value="0"/>
<i>Number of US Army Corps of Engineers Sampling Sites:</i>	<input type="text" value="0"/>
<i>Number of Kentucky River Watershed Watch Sampling Sites:</i>	<input type="text" value="1"/>
<i>Number of Lexington-Fayette Urban Co. Gov. Sampling Sites:</i>	<input type="text" value="0"/>



Watershed Name:                     Kentucky River                    

11-Digit Watershed Identity Number:                     05100205005                    

**Stream and Waterbody Use Support Summary**

<i>Total Stream Miles:</i> <input type="text" value="30.55"/>	<i>Number of Segments</i>	<i>Stream Miles Assessed</i>	<i>Miles * Fully Supportina</i>	<i>Miles * Partially Supportina</i>	<i>Miles * Not Supportina</i>	<i>Miles * Threatened</i>
<i>Segments Assessed:</i>	1	40.6	0.0	0.0	40.6	0.0
<i>Designated Uses</i>						
<i>Aquatic Life:</i>	1	40.6	40.6	0.0	0.0	0.0
<i>Primary Contact:</i>	1	40.6	0.0	0.0	40.6	0.0
<i>Fish Consumption:</i>	1	40.6	40.6	0.0	0.0	0.0
<i>Drinking Water:</i>	1	40.6	40.6	0	0	0

\* Blank values indicate no assessed segments for this category.

<i>Assessed Stream Segments and Waterbodies</i>					
<i>Stream or Waterbody Name *</i>	<i>Starting Milepoint</i>	<i>Ending Milepoint</i>	<i>Segment Length (miles)</i>	<i>Designated Uses *</i>	<i>Overall Level of Support</i>
Kentucky River	150.2	190.8	40.6	AL, FC, DW, PC	Not Supporting
<i>*Abbreviations: AL - Aquatic Life Support, PC - Primary Contact Recreation, SC - Secondary Contact Recreation, FC - Fish Consumption, DW - Drinking Water Supply, UT - Unnamed Tributary</i>					

<i>Causes for Nonsupport or Impairment of Designated Uses</i>					
<i>Stream or Waterbody Name *</i>	<i>Starting Milepoint</i>	<i>Ending Milepoint</i>	<i>Segment Length (miles)</i>	<i>Impaired or Threatened Designated Use</i>	<i>Level of Support</i>
Kentucky River	150.2	190.8	40.6	Primary Contact (Recr)	Not Supporting
<i>Possible Causes of Impairment:</i>			<i>Possible Sources For Impairment:</i>		
Pathogens			Source Unknown		
<i>*Abbreviations: UT - Unnamed Tributary</i>					

Watershed Name:                     Kentucky River                    

11-Digit Watershed Identity Number:                     05100205005                    

**Withdrawal Sites and Discharge Facilities:**

<i>Public Water Supplies and Water Withdrawal</i>			
<i>Facility</i>	<i>Origin of Source</i>	<i>Type of Facility</i>	<i>Permit ID Number</i>
EAST KY POWER/JK SMITH STATION	Surface Water	Water Withdrawal Site	0252102
WINCHESTER MUNICIPAL UTILITIES	Surface Water	Water Treatment Plant	0250473
WINCHESTER MUNICIPAL UTILITIES	Surface Water	Water Withdrawal Site	0250473

<i>KPDES Permitted Discharge Facilities</i>			<i>KPDES Site ID Number</i>
<i>Facility</i>	<i>Type of Facility</i>		
BANANAS ON THE RIVER	EATING PLACES	KY0099741	
BOONESBORO QUARRY	PAVING MIXTURES AND BLOCKS	KY0001058	
EAST KY POWER COOP DALE STEAM	ELECTRICAL SERVICES	KY0002194	
KY DOP FT BOONESBORO ST PK	AMUSEMENT AND RECREATION, NEC	KY0024406	

**Gaging Stations and Sampling Sites:**

<i>US Geological Survey and US Army Corps of Engineers Stream Gaging Stations</i>			
<i>Stream Location</i>	<i>Agency</i>	<i>Station ID Number</i>	<i>Sampling Parameter</i>
Kentucky River	US COE	USCE375341084154301	Flow
Kentucky River	USGS	USGS03284000	Flow

<i>KY River Watershed Watch Sampling Sites</i>		
<i>Stream Name</i>	<i>KRWW Sample ID No.</i>	<i>Site Description</i>
Two Mile Creek	K27	0.5mi south of Elkin Station Rd. Bridge

**Results from 1999 KY River Watershed Watch Sampling:**

**Conventional Parameters:**

Sample ID Number: K27      Stream: Two Mile Creek

**Physical Data (May):**

pH	<input type="text" value="8"/>	Alkalinity	<input type="text"/>
Temperature	<input type="text" value="22"/>	Total Hardness	<input type="text"/>
Dissolved Oxygen	<input type="text" value="9"/>	Chlorides	<input type="text"/>
		Conductivity	<input type="text"/>
		Total Organic Carbon	<input type="text"/>
		Total Suspended Solids	<input type="text"/>

**Fecal Data (July / August):**

	Coliform Count	Strep Count	Coliform/Strep Ratio
July	<input type="text" value="170"/>	<input type="text" value="210"/>	<input type="text" value="0.81"/>
August	<input type="text"/>	<input type="text"/>	<input type="text"/>

Note: Most indicators are in milligrams per liter (mg/L) which is equivalent to parts per million (ppm). Temperature is in Celsius degrees. Alkalinity and hardness are as mg/L of calcium carbonate. Bacterial counts are in colonies per 100 milliliters. Conductivity units are micro-mhos per centimeter.

**Nutrient Parameters:**

Sample ID Number: K27      Stream: Two Mile Creek

Ammonia	<input type="text"/>	Orthophosphate as Phosphate	<input type="text"/>	Sulfate	<input type="text"/>
Ammonia Nitrogen	<input type="text"/>	Orthophosphate as Phosphorus	<input type="text"/>		
Total Kjeldahl Nitrogen as NH3	<input type="text"/>	Total Recoverable Phosphorus	<input type="text"/>		
Total Kjeldahl Nitrogen as N	<input type="text"/>				
Nitrate	<input type="text"/>				
Nitrate Nitrogen	<input type="text"/>				

Note: All indicators are in milligrams per liter (mg/L) which is equivalent to parts per million (ppm).

**Metals and Mineral Parameters:**

Sample ID Number: K27      Stream: Two Mile Creek

Aluminum	<input type="text"/>	Calcium	<input type="text"/>	Lead	<input type="text"/>	Selenium	<input type="text"/>	Thallium	<input type="text"/>
Antimony	<input type="text"/>	Chromium	<input type="text"/>	Lithium	<input type="text"/>	Silicon	<input type="text"/>	Vanadium	<input type="text"/>
Barium	<input type="text"/>	Cobalt	<input type="text"/>	Magnesium	<input type="text"/>	Sodium	<input type="text"/>	Zinc	<input type="text"/>
Beryllium	<input type="text"/>	Copper	<input type="text"/>	Manganese	<input type="text"/>	Strontium	<input type="text"/>		
Boron	<input type="text"/>	Iron	<input type="text"/>	Potassium	<input type="text"/>	Sulfur	<input type="text"/>		

Note: All indicators are in milligrams per liter (mg/L) which is equivalent to parts per million (ppm).

**Pesticide/Herbicide Parameters:**

Sample ID No.      Stream      2,4-D      Chlorpyrifos      Triazines

K27	Two Mile Creek	<input type="text"/>	<input type="text"/>	<input type="text"/>
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Note: All indicators are in micrograms per liter which is equivalent to parts per billion (ppb).