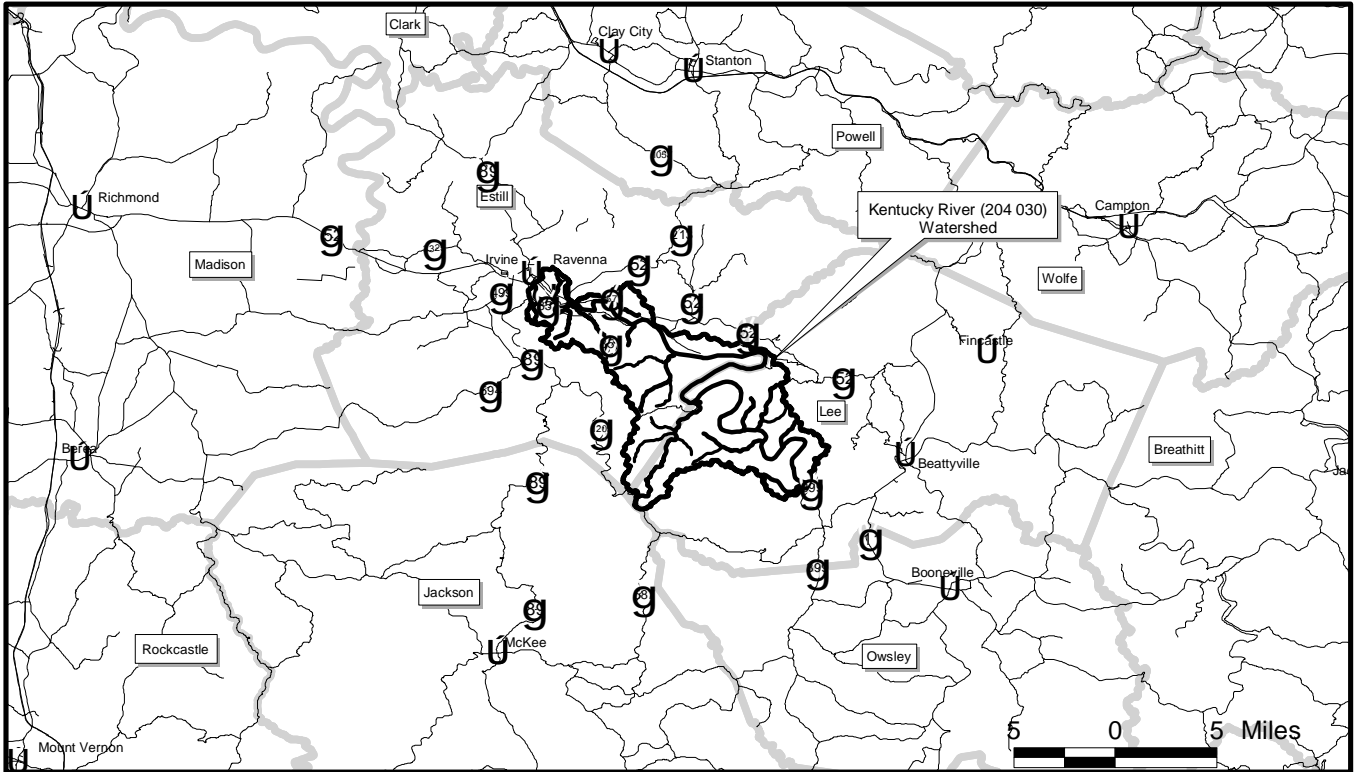


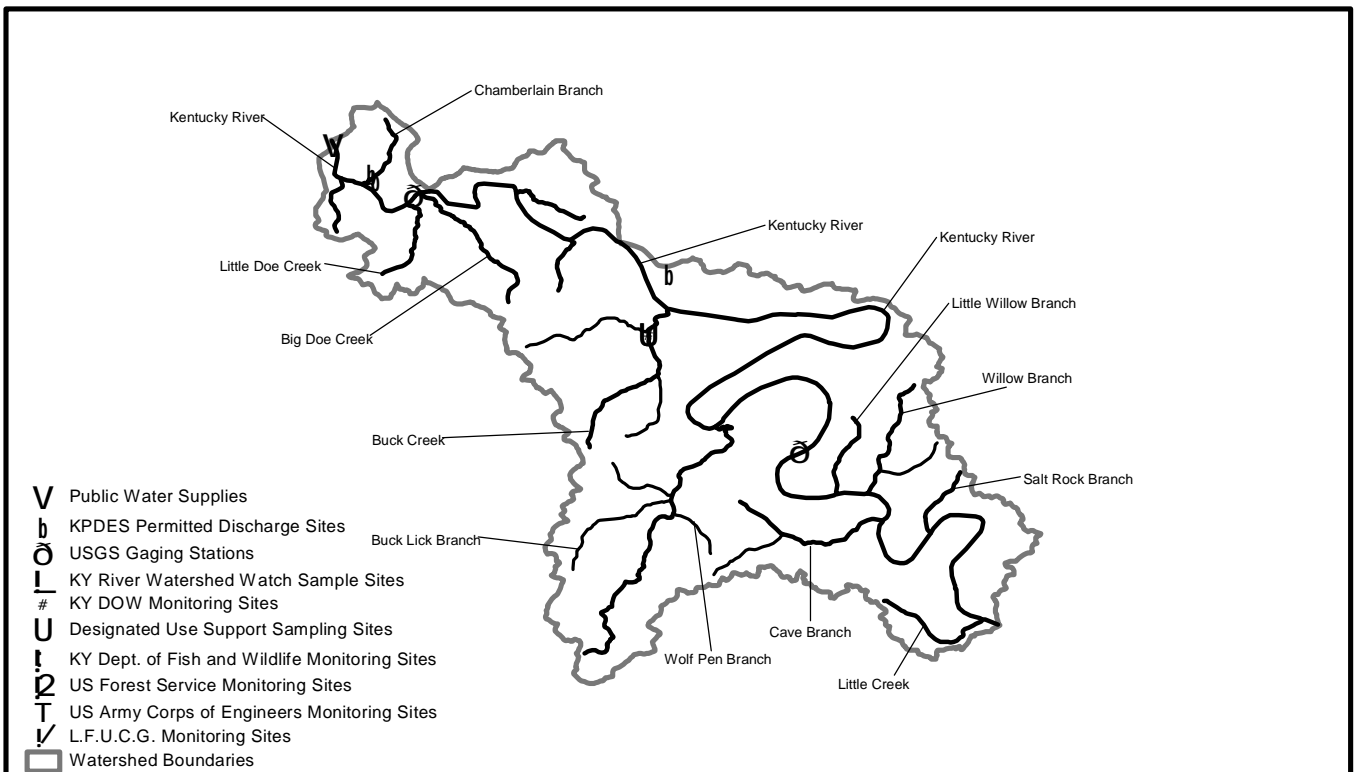
# Kentucky River (204 030) Watershed

## Watershed Number: 05100204030

### Location Map



### Watershed Features



**Geography.** The Kentucky River 204 030 watershed straddles the southern boundary between Lee County and Estill County. The land is in the escarpment area of the Eastern Kentucky Coal Field physiographic region, characterized by hilly terrain, very rapid surface runoff, and moderate rates of groundwater drainage. The watershed is underlain by coals, sandstones, and shales: this geology is generally conducive to productive wells, although water quality may be low for wells that draw from coal layers. Parts of the watershed lie over easily weathered clay shales that store water but allow little groundwater flow. Other parts of the watershed lie above interbedded clay shales and siltstones.

**Waterways.** This watershed includes the Kentucky River between Sturgeon Creek (Heidelberg) and Station Camp Creek (Irvine). Among the creeks that feed it are Cave Branch, Willow Branch, Ross Creek, Wolf Pen Branch, Buck Lick Branch, Buck Creek, and Big Doe Creek. Water from the Millers Creek, Cow Creek, Sturgeon Creek, and Kentucky River 204 010 watersheds also flow into this watershed.

**Land and water use.** Land in the watershed is mainly rural and wooded; about 10% is agricultural. The surface waters of the watershed supply the drinking water for the municipal system in Irvine. Two businesses hold permits for discharges into the creeks. See tables for details.

**Agency data assessment.** The assessed creek segments in this watershed fully support their designated uses, based on biological and/or water-quality data. 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 a moderate 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.** No volunteer data were collected in this watershed in 1999.

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="38,466"/>	<i>Acres</i>	<i>% of Total</i>		
<i>Residential Area:</i>	<input type="text" value="310"/>		<input type="text" value="0.8"/>	<i>Number of Mine Permits:</i>	<input type="text" value="1"/>
<i>Commercial Area:</i>	<input type="text" value="156"/>		<input type="text" value="0.4"/>	<i>Total Permitted Mining Area (Acres):</i>	<input type="text" value="39"/>
<i>Industrial Area:</i>	<input type="text" value="63"/>		<input type="text" value="0.2"/>	<i>Number of Identified Wetland Areas:</i>	<input type="text" value="4"/>
<i>Agricultural Area:</i>	<input type="text" value="3,827"/>		<input type="text" value="10.0"/>	<i>Total Wetland Area (Acres):</i>	<input type="text" value="9"/>
<i>Rural and Wooded Area:</i>	<input type="text" value="34,062"/>		<input type="text" value="88.7"/>		
<i>Other Land-use Area:</i>	<input type="text" value="0"/>		<input type="text" value="0.0"/>		

**Withdrawal and Discharge Sites:**

<i>Number of Public Water Supplies and Water Withdrawal Sites:</i>	<input type="text" value="1"/>	<i>Number of KPDES Discharge Permits:</i>	<input type="text" value="3"/>
<i>Surface Water Withdrawals:</i>	<input type="text" value="1"/>		
<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="0"/>
<i>Number of Kentucky Division of Water Sampling Sites:</i>	<input type="text" value="1"/>
<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="0"/>
<i>Number of Lexington-Fayette Urban Co. Gov. Sampling Sites:</i>	<input type="text" value="0"/>

**Watershed Indicators and Ranking Categories:** **Overall Watershed Ranking:**

Protection Ranking	Observed Impacts	Potential Impacts	Restoration Ranking	Medium
High	Medium	Low	Medium	

**Protection Categories:**

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Wetland Areas	9	Acres	0 - 106	12
Surface Drinking Water Sources	1	No. of sources	0 - 14	2
Ground Drinking Water Sources	0	No. of sources	0 - 17	1
Groundwater Sensitivity	3.32	Score	2 - 5	3.21
KY Dept. of Fish and Wildlife Management Areas	0	Acres	0 - 2951	93
U.S. Forest Service Management Areas	35,169	Acres	0 - 155253	12,600
Kentucky State Park Areas	0	Acres	0 - 1928	42
Nature Preserves Commission Areas	0	Acres	0 - 1430	32
Nature Conservancy Areas	0	Acres	0 - 2473	28
Reference Reach Watersheds	0.00	Score	0 - 100	3.08
Outstanding Resource Watersheds	0.00	Score	0 - 0	0.00
Recognized Stream Resources	0	No. of resources	0 - 8	1
Kentucky Rivers Assessment Scores	8.49	Score	0 - 11	1.80

**Observed Impact Categories:**

*Human Health Impact Categories:*

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Flood Declarations	4	Number since 1970	0 - 10	4
Water Supply Inadequacy	0.00	Score	0 - 2	0.22
Observed Impacts to Surface Drinking Water	1.00	Score	1 - 1	1.00
Observed Impacts to Fish Consumption	1.00	Score	1 - 1	1.00
Observed Impacts to Primary Water Contact	1.00	Score	1 - 3	1.33
Contamination Sites Impacting Human Health	1	Number of sites	0 - 71	4

*Ecological Health Impact Categories:*

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Observed Impacts to Aquatic Life	1.00	Score	1 - 3	1.31
Contamination Sites Impacting Ecological Health	1	Number of sites	0 - 71	4

**Potential Impact Categories:**

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Potential Contamination Sites	9	Number of sites	1 - 121	12
Potential Pesticide Loading	1	Est. sales in tons	0 - 45	10
Potential Fertilizer Loading	140	Est. tons applied	0 - 2747	394
Agricultural Erosion Potential	4.18	Est. tons erosion / acre	0 - 9	3.20
Livestock Operations Potential Impact	2,239	Animal units	55 - 43826	7,021
KPDES Discharge Violations	0	Number of violations	0 - 541	39
KY Division of Water Citizen Complaints	4	Number of complaints	0 - 53	9
Toxic Release Inventory	0	Score	0 - 11547626	231,638
Population Change Projection	-13	Number of persons	-149 - 11030	448
Population Not on Public Sewer Systems	660	Number of persons	12 - 4511	1,114
Mining Area	38	Acres	0 - 6305	355
Surface Water Runoff Potential	60.81	SCS Curve Number	60 - 79	68
KPDES Permitted Discharges	3	Number of sites	0 - 56	6

Watershed Name: Kentucky River

11-Digit Watershed Identity Number: 05100204030

### Stream and Waterbody Use Support Summary

<i>Total Stream Miles:</i>						
<input type="text" value="75.29"/>	<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	2.3	2.3	0.0	0.0	0.0
<i>Designated Uses</i>						
<i>Aquatic Life:</i>	1	2.3	2.3	0.0	0.0	0.0
<i>Primary Contact:</i>						
<i>Fish Consumption:</i>						
<i>Drinking Water:</i>						

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

### Assessed Stream Segments and Waterbodies

<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>
Buck Creek	0	2.3	2.3	AL	Fully Supporting

*\*Abbreviations: AL - Aquatic Life Support, PC - Primary Contact Recreation, SC - Secondary Contact Recreation, FC - Fish Consumption, DW - Drinking Water Supply, UT - Unnamed Tributary*

Watershed Name:                     Kentucky River                    

11-Digit Watershed Identity Number:                     05100204030                    

*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>
IRVINE MUNICIPAL UTILITIES	Surface Water	Water Treatment Plant	0330205

<i>KPDES Permitted Discharge Facilities</i>			<i>KPDES Site ID Number</i>
<i>Facility</i>	<i>Type of Facility</i>		
CSX TRANSPORTATION RAVENNA	RAILROADS, LINE HAUL OPERATING		KY0046957
FAUSTE OIL SERVICES INC	PETROLEUM BULK STATIONS & TERM		KY0095664

*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	USCE374040083565301	Flow
Kentucky River	US COE	USCE373607083500001	Flow

<i>KY Division of Water Sampling Sites</i>	
<i>Stream Name</i>	<i>Type of Sampling</i>
Buck Creek	Physical/Chemical Monitoring