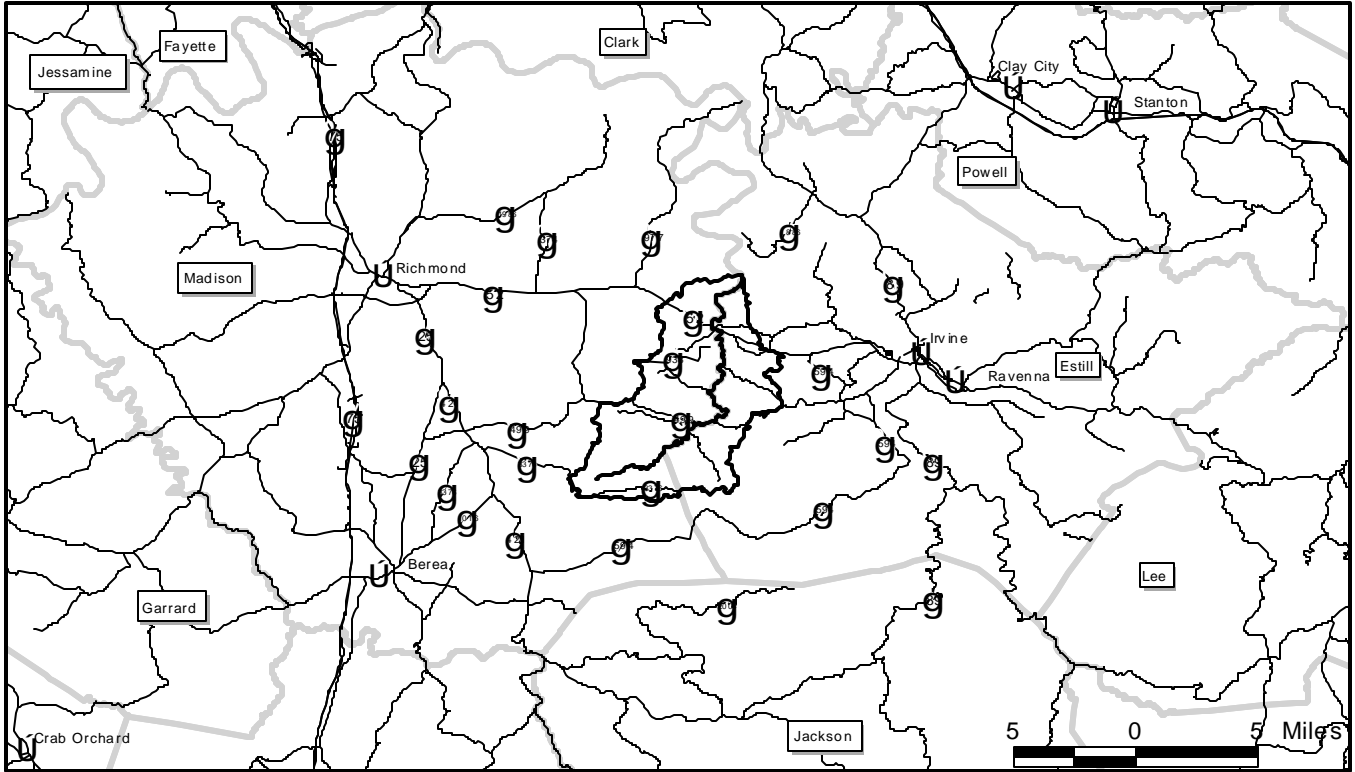


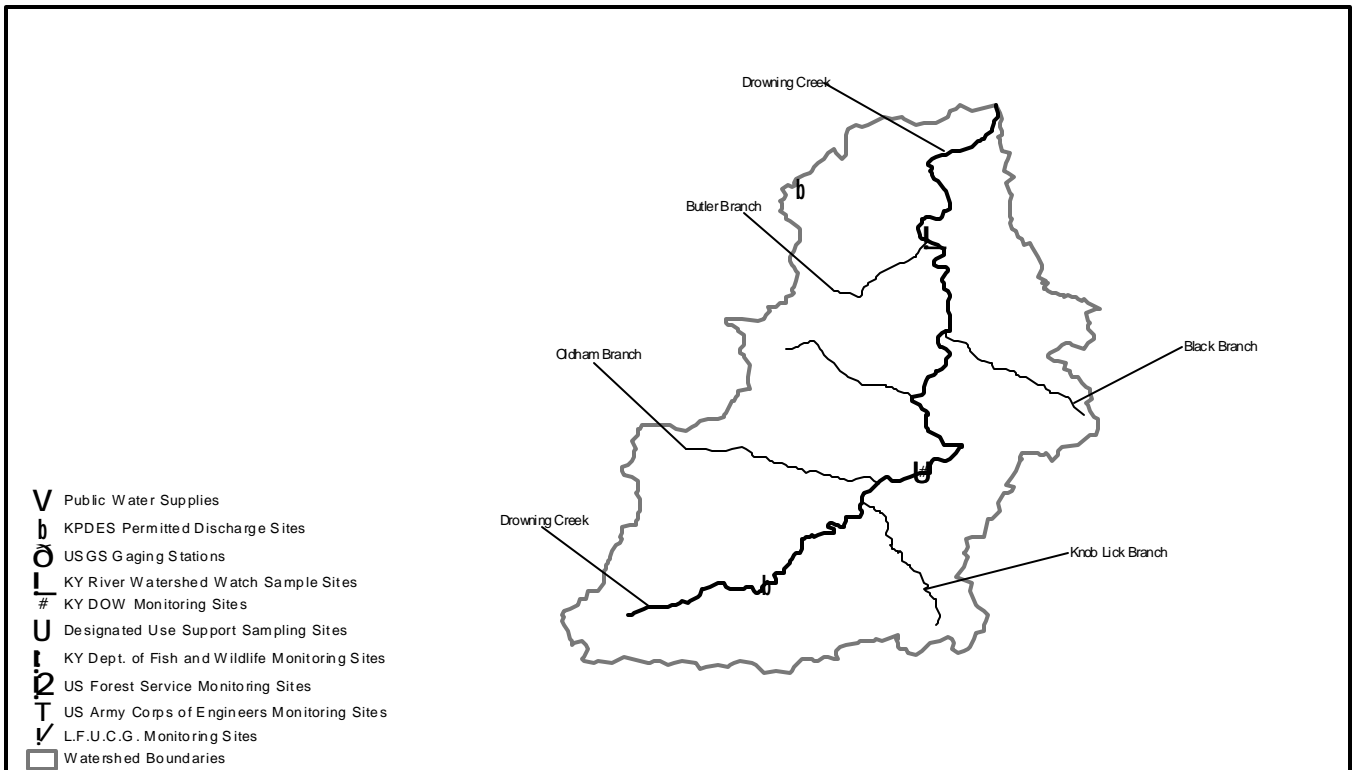
Drowning Creek Watershed

Watershed Number: 05100204100

Location Map



Watershed Features



Geography. The Drowning Creek watershed lies along the boundary between Madison and Estill Counties. The land is in the Knobs physiographic region, characterized by hilly terrain, very rapid surface runoff, and very slow groundwater drainage. In level parts of the Knobs, runoff and groundwater drainage are slow. The watershed lies partly above fractured shales through which groundwater can easily move but which stores very little water. Other sections of the watershed lie over easily weathered clay shales that store water but allow little groundwater flow. The rest of the watershed lies over interbedded shales and limestones (these are 20% limestone; water conduction is poor because of the clay content of the shale).

Waterways. Drowning Creek empties into the Kentucky River northeast of Bybee. Among the creeks that feed it are Knob Lick Branch, Oldham Branch, Butler Branch, and Black Branch.

Land and water use. Land in the watershed is about 55% agricultural and more than 40% rural and wooded. Two businesses and organizations 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 the lowest 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 sampling site on Drowning 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="23,428"/>	<i>Acres</i>	<i>% of Total</i>		
<i>Residential Area:</i>	<input type="text" value="467"/>		<input type="text" value="2.0"/>	<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="0"/>		<input type="text" value="0.0"/>	<i>Number of Identified Wetland Areas:</i>	<input type="text" value="2"/>
<i>Agricultural Area:</i>	<input type="text" value="13,007"/>		<input type="text" value="55.6"/>	<i>Total Wetland Area (Acres):</i>	<input type="text" value="1"/>
<i>Rural and Wooded Area:</i>	<input type="text" value="9,932"/>		<input type="text" value="42.4"/>		
<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="0"/>	<i>Number of KPDES Discharge Permits:</i>	<input type="text" value="2"/>
<i>Surface Water Withdrawals:</i>	<input type="text" value="0"/>		
<i>Groundwater Withdrawals:</i>	<input type="text" value="0"/>		
<i>No. of Potable Water Treatment Facilities:</i>	<input type="text" value="0"/>		

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="1"/>
<i>Number of Lexington-Fayette Urban Co. Gov. Sampling Sites:</i>	<input type="text" value="0"/>

Watershed Name:

Drowning Creek

11-Digit Watershed Identity Number:

05100204100

Watershed Indicators and Ranking Categories:

Overall Watershed Ranking:

Protection Ranking
Low

Observed Impacts
Low

Potential Impacts
Medium

Restoration Ranking
Low

Low

Protection Categories:

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Wetland Areas	1	Acres	0 - 106	12
Surface Drinking Water Sources	0	No. of sources	0 - 14	2
Ground Drinking Water Sources	0	No. of sources	0 - 17	1
Groundwater Sensitivity	3.00	Score	2 - 5	3.21
KY Dept. of Fish and Wildlife Management Areas	9	Acres	0 - 2951	93
U.S. Forest Service Management Areas	0	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	0.00	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	3	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	2	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	2	Number of sites	0 - 71	4

Potential Impact Categories:

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Potential Contamination Sites	8	Number of sites	1 - 121	12
Potential Pesticide Loading	20	Est. sales in tons	0 - 45	10
Potential Fertilizer Loading	252	Est. tons applied	0 - 2747	394
Agricultural Erosion Potential	3.17	Est. tons erosion / acre	0 - 9	3.20
Livestock Operations Potential Impact	5,399	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	70	Number of persons	-149 - 11030	448
Population Not on Public Sewer Systems	831	Number of persons	12 - 4511	1,114
Mining Area	0	Acres	0 - 6305	355
Surface Water Runoff Potential	76.51	SCS Curve Number	60 - 79	68
KPDES Permitted Discharges	2	Number of sites	0 - 56	6

Watershed Name: Drowning Creek

11-Digit Watershed Identity Number: 05100204100

Stream and Waterbody Use Support Summary

<i>Total Stream Miles:</i>						
<input type="text" value="30.99"/>	<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	9.5	9.5	0.0	0.0	0.0
<i>Designated Uses</i>						
<i>Aquatic Life:</i>	1	9.5	9.5	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.

<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>
Drowning Creek	0	9.45	9.45	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: Drowning Creek

11-Digit Watershed Identity Number: 05100204100

Withdrawal Sites and Discharge Facilities:

<i>KPDES Permitted Discharge Facilities</i>		
<i>Facility</i>	<i>Type of Facility</i>	<i>KPDES Site ID Number</i>
BYBEE GROCERY	GROCERY STORES	KY0099317
WACO ELEM SCHOOL	ELEMENTARY & SECONDARY SCHOOLS	KY0074551

Gaging Stations and Sampling Sites:

<i>KY Division of Water Sampling Sites</i>	
<i>Stream Name</i>	<i>Type of Sampling</i>
Drowning Creek	Biological Monitoring

<i>KY River Watershed Watch Sampling Sites</i>		
<i>Stream Name</i>	<i>KRWW Sample ID No.</i>	<i>Site Description</i>
Drowning Creek	K61	100yds upstream of SR52 bridge

Watershed Name: Drowning Creek

11-Digit Watershed Identity Number: 05100204100

Results from 1999 KY River Watershed Watch Sampling:

Conventional Parameters:

Sample ID Number: K61 Stream: Drowning Creek

Physical Data (May):

pH	7.5	Alkalinity	
Temperature	0	Total Hardness	
Dissolved Oxygen	10	Chlorides	
		Conductivity	
		Total Organic Carbon	
		Total Suspended Solids	

Fecal Data (July / August):

	Coliform Count	Strep Count	Coliform/Strep Ratio
July	<10	40	<0.25
August			

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: K61 Stream: Drowning Creek

Ammonia		Orthophosphate as Phosphate		Sulfate	
Ammonia Nitrogen		Orthophosphate as Phosphorus			
Total Kjeldahl Nitrogen as NH3		Total Recoverable Phosphorus			
Total Kjeldahl Nitrogen as N					
Nitrate					
Nitrate Nitrogen					

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: K61 Stream: Drowning Creek

Aluminum		Calcium		Lead		Selenium		Thallium	
Antimony		Chromium		Lithium		Silicon		Vanadium	
Barium		Cobalt		Magnesium		Sodium		Zinc	
Beryllium		Copper		Manganese		Strontium			
Boron		Iron		Potassium		Sulfur			

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

K61	Drowning Creek			
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Note: All indicators are in micrograms per liter which is equivalent to parts per billion (ppb).