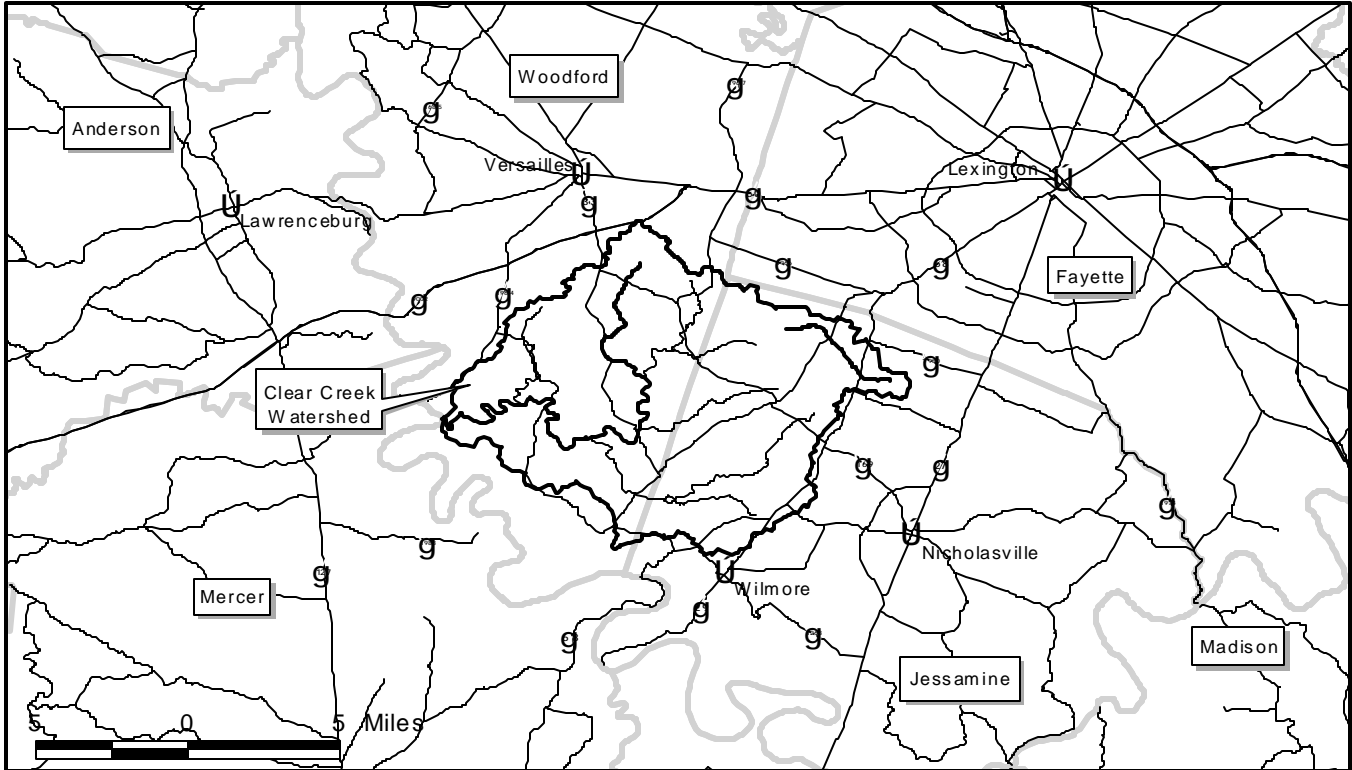


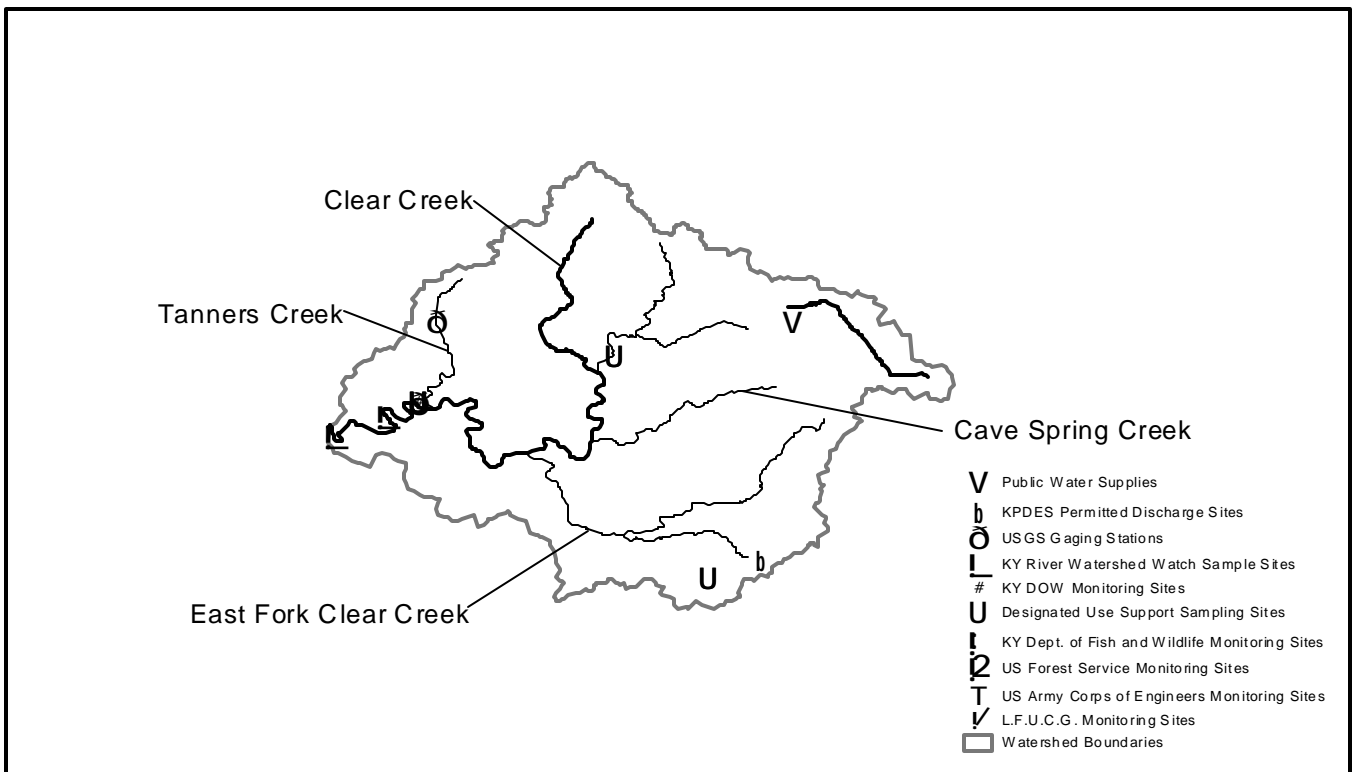
Clear Creek Watershed

Watershed Number: 05100205220

Location Map



Watershed Features



Geography. The Clear Creek watershed covers northwest Jessamine County and southern Woodford County. The land is in the inner subregion of the Bluegrass physiographic region, characterized by undulating terrain and moderate rates of both surface runoff and groundwater drainage. The watershed lies above thick layers of easily dissolved limestone that form carbonate aquifers. Groundwater flows through channels in the limestone, so caves and springs are common in regions with this geology.

Waterways. Clear Creek empties into the Kentucky River just below Lock and Dam Number 6. Among the creeks that feed it are Tanners Creek, Spring Creek, and East Fork Clear Creek.

Land and water use. Land in the watershed is mainly agricultural; almost 5% is rural and wooded, and 2% is residential. One business holds a permit for discharges into the creeks. See tables for details.

Agency data assessment. The assessed creek segments in this watershed include one designated as threatened, 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. Both volunteer monitoring sites on Clear Creek showed phosphorus levels elevated enough to cause potential nutrient enrichment problems (> 0.1 mg/L). One site also exhibited high levels of bacteria indicative of fecal contamination (above 200 colonies/ml). Thallium was also elevated at this site. 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:

Total Land Area (Acres):	46,489	Acres	% of Total		
Residential Area:	982		2.1	Number of Mine Permits:	0
Commercial Area:	37		0.1	Total Permitted Mining Area (Acres):	0
Industrial Area:	0		0.0	Number of Identified Wetland Areas:	38
Agricultural Area:	43,162		92.9	Total Wetland Area (Acres):	24
Rural and Wooded Area:	2,152		4.6		
Other Land-use Area:	143		0.3		

Withdrawal and Discharge Sites:

Number of Public Water Supplies and Water Withdrawal Sites:	1	Number of KPDES Discharge Permits:	1
Surface Water Withdrawals:	1		
Groundwater Withdrawals:	0		
No. of Potable Water Treatment Facilities:	0		

Sampling Site Statistics:

Number of USGS Gaging Stations:	0
Number of Kentucky Division of Water Sampling Sites:	1
Number of Kentucky Dept. of Fish and Wildlife Sampling Sites:	0
Number of US Forest Service Sampling Sites:	0
Number of US Army Corps of Engineers Sampling Sites:	0
Number of Kentucky River Watershed Watch Sampling Sites:	2
Number of Lexington-Fayette Urban Co. Gov. Sampling Sites:	0

Watershed Name:

Clear Creek

11-Digit Watershed Identity Number:

05100205220

Watershed Indicators and Ranking Categories:

Overall Watershed Ranking:

Protection Ranking

Observed Impacts

Potential Impacts

Restoration Ranking

Medium

High

Low

High

Low

Protection Categories:

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Wetland Areas	24	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	5.00	Score	2 - 5	3.21
KY Dept. of Fish and Wildlife Management Areas	0	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	100.00	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	1.26	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	6	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	6	Number of sites	0 - 71	4

Potential Impact Categories:

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Potential Contamination Sites	13	Number of sites	1 - 121	12
Potential Pesticide Loading	12	Est. sales in tons	0 - 45	10
Potential Fertilizer Loading	1,154	Est. tons applied	0 - 2747	394
Agricultural Erosion Potential	1.99	Est. tons erosion / acre	0 - 9	3.20
Livestock Operations Potential Impact	15,512	Animal units	55 - 43826	7,021
KPDES Discharge Violations	0	Number of violations	0 - 541	39
KY Division of Water Citizen Complaints	17	Number of complaints	0 - 53	9
Toxic Release Inventory	131,732	Score	0 - 11547626	231,638
Population Change Projection	338	Number of persons	-149 - 11030	448
Population Not on Public Sewer Systems	1,398	Number of persons	12 - 4511	1,114
Mining Area	0	Acres	0 - 6305	355
Surface Water Runoff Potential	72.40	SCS Curve Number	60 - 79	68
KPDES Permitted Discharges	1	Number of sites	0 - 56	6

Watershed Name: Clear Creek

11-Digit Watershed Identity Number: 05100205220

Stream and Waterbody Use Support Summary

Total Stream Miles: <input type="text" value="51.7"/>	<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>
Segments Assessed:	3	14.1	13.1	0.0	0.0	1.0
Designated Uses						
Aquatic Life:	2	13.1	13.1	0.0	0.0	0.0
Primary Contact:	2	9.8	8.8	0.0	0.0	1.0
Fish Consumption:	1	8.8	8.8	0.0	0.0	0.0
Drinking Water:						

* 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>
Clear Creek	0	8.8	8.8	AL, FC, PC	Fully Supporting
UT of Clear Creek	0	4.3	4.3	AL	Fully Supporting
UT to East Fork Clear Creek	2.8	3.8	1	PC	Threatened

**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: Clear Creek

11-Digit Watershed Identity Number: 05100205220

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>
CHAMPIONS GOLF CLUB	Surface Water	Water Withdrawal Site	WW1229

<i>KPDES Permitted Discharge Facilities</i>		
<i>Facility</i>	<i>Type of Facility</i>	<i>KPDES Site ID Number</i>
TURFMOR MOTEL	HOTELS AND MOTELS	KY0088561

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>
Tanners Creek	USGS	USGS03287128	Flow
Clear Creek	USGS	USGS03287130	Flow

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

<i>KY River Watershed Watch Sampling Sites</i>		
<i>Stream Name</i>	<i>KRWW Sample ID No.</i>	<i>Site Description</i>
Clear Creek	K29	At KY 33 Bridge
Clear Creek	K28	500m upstream of Mouth of Clear Creek

Watershed Name:

Clear Creek

11-Digit Watershed Identity Number:

05100205220

Results from 1999 KY River Watershed Watch Sampling:

Conventional Parameters:

Sample ID Number: K28 Stream: Clear Creek

Physical Data (May):			
pH	7.8	Alkalinity	200
Temperature	18.3	Total Hardness	228
Dissolved Oxygen	6.8	Chlorides	9.0
		Conductivity	433
		Total Organic Carbon	4.4
		Total Suspended Solids	

Fecal Data (July / August):		
Coliform Count	Strep Count	Coliform/Strep Ratio
July	20	370
August		0.054

Sample ID Number: K29 Stream: Clear Creek

Physical Data (May):			
pH	8.4	Alkalinity	201
Temperature	18	Total Hardness	264
Dissolved Oxygen	11	Chlorides	7.9
		Conductivity	519
		Total Organic Carbon	4.5
		Total Suspended Solids	

Fecal Data (July / August):		
Coliform Count	Strep Count	Coliform/Strep Ratio
July	220	900
August	>60000	1100
		>54.5

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: K28 Stream: Clear Creek

Ammonia	0.05	Orthophosphate as Phosphate	1.009	Sulfate	14.7
Ammonia Nitrogen	0.04	Orthophosphate as Phosphorus	0.329		
Total Kjeldahl Nitrogen as NH3	0.17	Total Recoverable Phosphorus	0.37		
Total Kjeldahl Nitrogen as N	0.14				
Nitrate	0.5				
Nitrate Nitrogen	0.11				

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

Sample ID Number: K29 Stream: Clear Creek

Ammonia	0.11	Orthophosphate as Phosphate	0.830	Sulfate	52.5
Ammonia Nitrogen	0.09	Orthophosphate as Phosphorus	0.271		
Total Kjeldahl Nitrogen as NH3	0.15	Total Recoverable Phosphorus	0.29		
Total Kjeldahl Nitrogen as N	0.12				
Nitrate	4.0				
Nitrate Nitrogen	0.90				

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: K28 Stream: Clear Creek

Aluminum	1.44	Calcium	78.77	Lead	0.02	Selenium	0.01	Thallium	
Antimony		Chromium		Lithium		Silicon	3.45	Vanadium	
Barium	0.04	Cobalt		Magnesium	7.76	Sodium	4.64	Zinc	0.004
Beryllium		Copper		Manganese	0.27	Strontium	0.14		
Boron	0.10	Iron	0.17	Potassium	4.82	Sulfur	5.19		

Watershed Name: Clear Creek

11-Digit Watershed Identity Number: 05100205220

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

Sample ID Number: **K29** Stream: **Clear Creek**

Aluminum	0.13	Calcium	88.83	Lead		Selenium	0.01	Thallium	0.024
Antimony		Chromium		Lithium		Silicon	2.90	Vanadium	
Barium	0.04	Cobalt		Magnesium	10.30	Sodium	11.06	Zinc	
Beryllium		Copper		Manganese	0.20	Strontium	0.18		
Boron	0.10	Iron	0.03	Potassium	3.03	Sulfur	15.84		

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
K28	Clear Creek			
K29	Clear Creek			

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