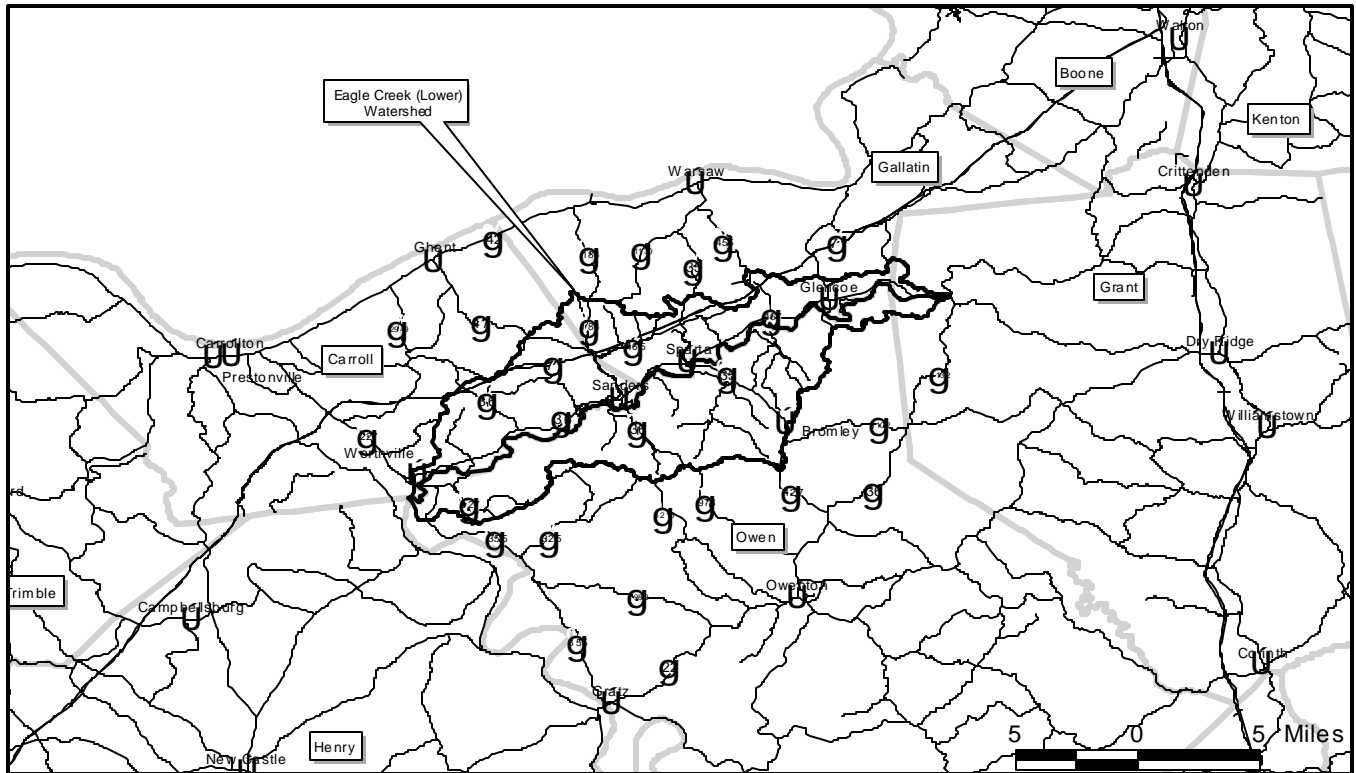


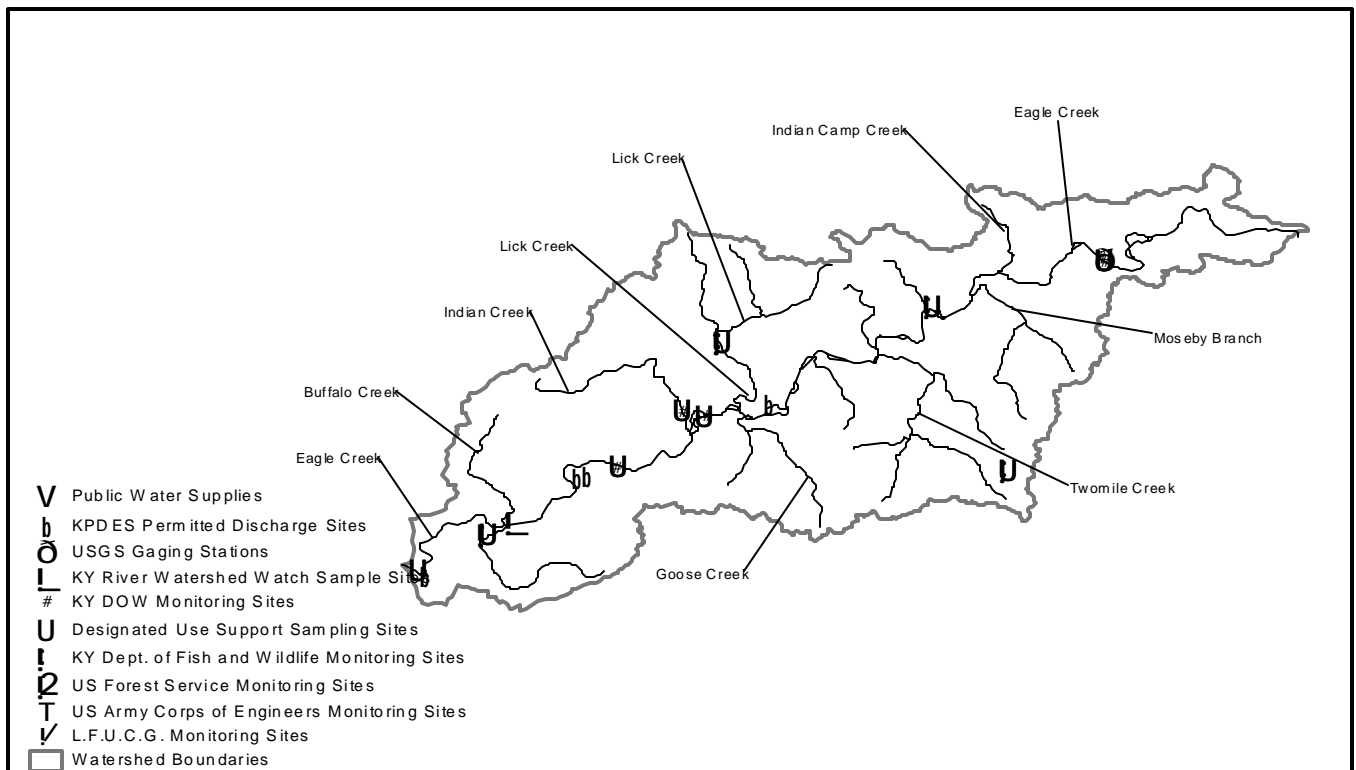
Eagle Creek (Lower) Watershed

Watershed Number: 05100205410

Location Map



Watershed Features



Geography. The Eagle Creek (lower) watershed covers southeast Carroll County, southwest Gallatin County, and northern Owen County. The land is in the hills of the bluegrass subregion of the Bluegrass physiographic region, characterized by hilly terrain, very rapid surface runoff, and slow groundwater drainage. Parts of the watershed lie over interbedded shales and limestones (these are 20% limestone; water conduction is poor because of the clay content of the shale). Other areas are underlain by interbedded limestones and shales (>20% limestone, allowing groundwater flow where the clay content is low enough). Unconsolidated silts, sands, and gravels occur along the flood plain of the creek.

Waterways. This watershed includes the section of Eagle Creek between the mouth of Tenmile Creek (near Folsom in Grant County) and the confluence of Eagle Creek with the Kentucky River southwest of Worthville at the corner of Carroll, Owen, and Henry Counties. Among the creeks that feed it in this watershed are Indian Camp Creek, Moseby Branch, Hodge Branch, Lost Branch, Ellis Creek, Goose Creek, Lick Creek, Indian Creek, Buffalo Creek, and Buck Run. The watershed also receives the water from the Eagle Creek (upper) and Tenmile Creek watersheds.

Land and water use. Land in the watershed is almost 60% agricultural, about 35% rural and wooded, and more than 5% residential and commercial. Three businesses and organizations hold permits for discharges into the creeks. See tables for details.

Agency data assessment. The nine assessed creek segments in this watershed include two that do not support some or all of their designated uses, based on biological and/or water-quality data. Two others only partially support their uses. Siltation, pathogens, and alteration of flow and other stream features contribute to the impairment of these streams. 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 one volunteer monitoring site in the watershed. 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):	56,162	Acres	% of Total		
Residential Area:	2,489		4.4	Number of Mine Permits:	0
Commercial Area:	913		1.6	Total Permitted Mining Area (Acres):	0
Industrial Area:	0		0.0	Number of Identified Wetland Areas:	23
Agricultural Area:	32,646		58.1	Total Wetland Area (Acres):	12
Rural and Wooded Area:	20,136		35.8		
Other Land-use Area:	0		0.0		

Withdrawal and Discharge Sites:

Number of Public Water Supplies and Water Withdrawal Sites:	0	Number of KPDES Discharge Permits:	4
Surface Water Withdrawals:	0		
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:	5
Number of Kentucky Dept. of Fish and Wildlife Sampling Sites:	5
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:	1
Number of Lexington-Fayette Urban Co. Gov. Sampling Sites:	0

Watershed Name:

Eagle Creek

11-Digit Watershed Identity Number:

05100205410

Watershed Indicators and Ranking Categories:

Overall Watershed Ranking:

Protection Ranking

Observed Impacts

Potential Impacts

Restoration Ranking

High

Medium

High

High

High

Protection Categories:

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Wetland Areas	12	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	2.51	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	0.00	Score	0 - 100	3.08
Outstanding Resource Watersheds	0.00	Score	0 - 0	0.00
Recognized Stream Resources	2	No. of resources	0 - 8	1
Kentucky Rivers Assessment Scores	4.38	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	1	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	3.00	Score	1 - 3	1.33
Contamination Sites Impacting Human Health	3	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	1.49	Score	1 - 3	1.31
Contamination Sites Impacting Ecological Health	3	Number of sites	0 - 71	4

Potential Impact Categories:

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Potential Contamination Sites	4	Number of sites	1 - 121	12
Potential Pesticide Loading	10	Est. sales in tons	0 - 45	10
Potential Fertilizer Loading	547	Est. tons applied	0 - 2747	394
Agricultural Erosion Potential	5.35	Est. tons erosion / acre	0 - 9	3.20
Livestock Operations Potential Impact	9,038	Animal units	55 - 43826	7,021
KPDES Discharge Violations	48	Number of violations	0 - 541	39
KY Division of Water Citizen Complaints	10	Number of complaints	0 - 53	9
Toxic Release Inventory	0	Score	0 - 11547626	231,638
Population Change Projection	120	Number of persons	-149 - 11030	448
Population Not on Public Sewer Systems	1,175	Number of persons	12 - 4511	1,114
Mining Area	0	Acres	0 - 6305	355
Surface Water Runoff Potential	73.79	SCS Curve Number	60 - 79	68
KPDES Permitted Discharges	4	Number of sites	0 - 56	6

Stream and Waterbody Use Support Summary

Total Stream Miles: <input type="text" value="89.39"/>	<i>Number of Seaments</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:	9	40.8	14.9	5.9	20.0	0.0
Designated Uses						
Aquatic Life:	9	40.8	27.8	5.9	7.1	0.0
Primary Contact:	1	12.9	0.0	0.0	12.9	0.0
Fish Consumption:	1	12.9	12.9	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>
Buck Run	0	4.9	4.9	AL	Not Supporting
Eagle Creek	14.4	27.3	12.9	AL, FC, PC	Not Supporting
Eagle Creek	8.8	10.2	1.4	AL	Fully Supporting
Eagle Creek	3.5	8.8	5.3	AL	Fully Supporting
Eagle Creek	0	3.5	3.5	AL	Fully Supporting
Indian Creek	0	4.7	4.7	AL	Fully Supporting
Lick Creek	0	2.8	2.8	AL	Partially Supporting
Moseby Branch	0	2.2	2.2	AL	Not Supporting
Two Mile Creek	0	3.1	3.1	AL	Partially Supporting

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

Causes for Nonsupport or Impairment of Designated Uses					
<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>
Buck Run	0	4.9	4.9	Aquatic Life Support	Not Supporting
<i>Possible Causes of Impairment:</i> Noxious aquatic plants, Siltation			<i>Possible Sources For Impairment:</i> Agriculture, Grazing related Sources, Pasture grazing - Riparian and/or Upland		
Eagle Creek	14.4	27.3	12.9	Primary Contact (Recr)	Not Supporting
<i>Possible Causes of Impairment:</i> Pathogens			<i>Possible Sources For Impairment:</i> Agriculture		
Lick Creek	0	2.8	2.8	Aquatic Life Support	Partially Supporting

Watershed Name: Eagle Creek

11-Digit Watershed Identity Number: 05100205410

<p><i>Possible Causes of Impairment:</i> Other habitat alterations, Siltation</p>		<p><i>Possible Sources For Impairment:</i> Agriculture, Dredging, Grazing related Sources, Hydromodification, Inappropriate Waste Disposal/Wildcat Dumping, Land Disposal, Pasture grazing - Upland</p>			
Moseby Branch	0	2.2	2.2	Aquatic Life Support	Not Supporting
<p><i>Possible Causes of Impairment:</i> Flow alteration, Other habitat alterations</p>		<p><i>Possible Sources For Impairment:</i> Bank or Shoreline Modification/Destabilization, Habitat Modification (other than Hydromodification), Natural Sources</p>			
Two Mile Creek	0	3.1	3.1	Aquatic Life Support	Partially Supporting
<p><i>Possible Causes of Impairment:</i> Flow alteration</p>		<p><i>Possible Sources For Impairment:</i> Natural Sources</p>			
<p>*Abbreviations: UT - Unnamed Tributary</p>					

Watershed Name: Eagle Creek

11-Digit Watershed Identity Number: 05100205410

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>
EAGLE CREEK RESORT	HOTELS AND MOTELS	KY0028673
EAGLE VALLEY CAMPING RESORT	SPORTING & RECREATIONAL CAMPS	KY0033669
VALLEY HAVEN RESTHOME	INTERMEDIATE CARE FACILITIES	KY0028053

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>
Eagle Creek	USGS	USGS03291500	Flow

<i>KY Division of Water Sampling Sites</i>	
<i>Stream Name</i>	<i>Type of Sampling</i>
Eagle Creek	Other Monitoring
Eagle Creek	Biological Monitoring
Indian Creek	Physical/Chemical Monitoring
Eagle Creek	Physical/Chemical Monitoring

<i>KY Dept of Fish and Wildlife Sampling / Assessment Sites</i>					
<i>Stream Segment</i>	<i>Upstream Description</i>	<i>Downstream Description</i>	<i>Total Length of Segment</i>	<i>Upstream Mile Point</i>	<i>Downstream Mile Point</i>
Eagle Creek 2 (Twin Creek)	Buck Run	Mouth	102	3.5	0
Buck Run	Headwaters	Mouth	4.9	4.9	0
Lick Creek	Stoney Creek	Mouth	5.1	2.8	0
Two Mile Creek	Upstream of Two Mile Creek	Mouth	5.4	3.1	0
Moseby Branch	Hodge Branch	Mouth	3.4	2.2	0

<i>KY River Watershed Watch Sampling Sites</i>		
<i>Stream Name</i>	<i>KRWW Sample ID No.</i>	<i>Site Description</i>
Eagle Creek	K47	Happy Hollow Trailer Park Lot D61

Results from 1999 KY River Watershed Watch Sampling:

Conventional Parameters:

Sample ID Number: K47 Stream: Eagle Creek

Physical Data (May):	
pH	7.5
Temperature	17.2
Dissolved Oxygen	5.4
Alkalinity	
Total Hardness	
Chlorides	
Conductivity	
Total Organic Carbon	
Total Suspended Solids	

Fecal Data (July / August):		
Coliform Count	Strep Count	Coliform/Strep Ratio
July	<10	150
August		<0.067

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: K47 Stream: Eagle 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: K47 Stream: Eagle 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

K47	Eagle Creek			
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Note: All indicators are in micrograms per liter which is equivalent to parts per billion (ppb).