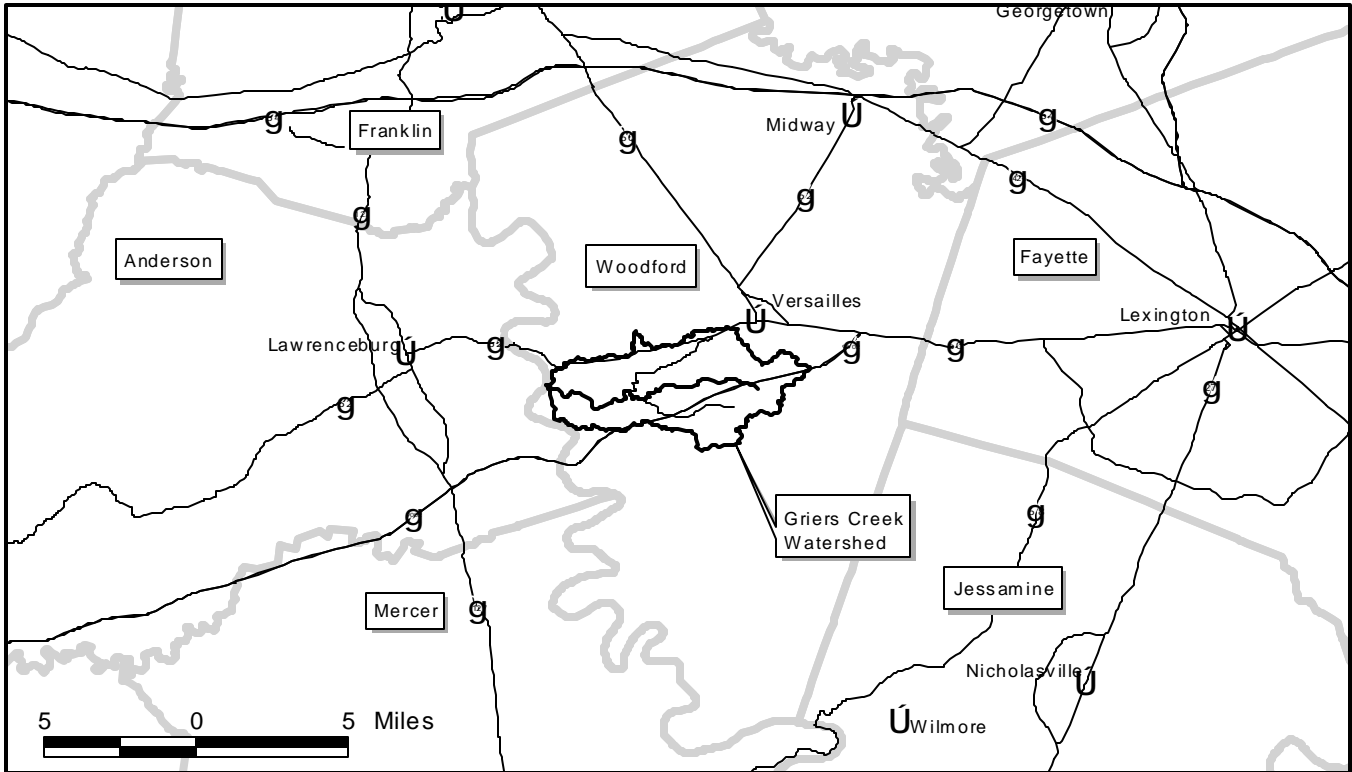


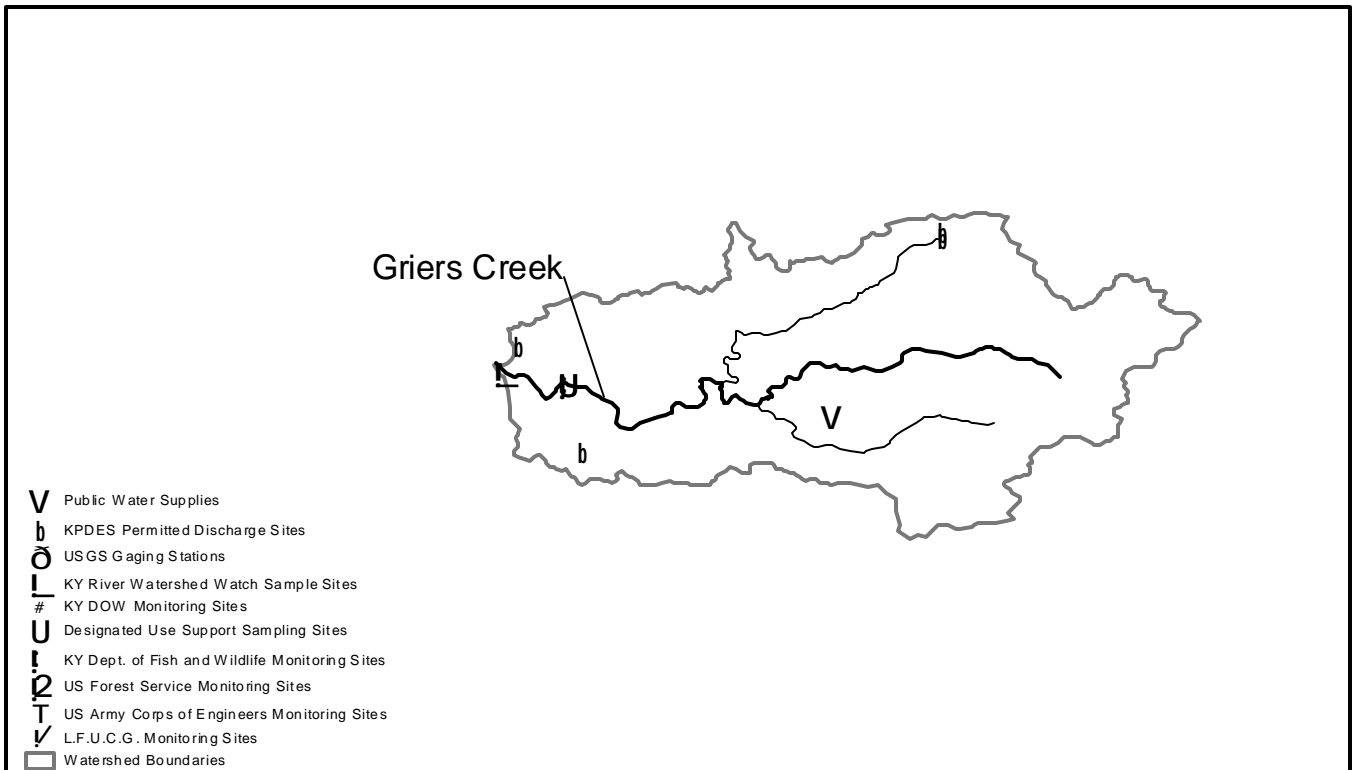
Griers Creek Watershed

Watershed Number: 05100205230

Location Map



Watershed Features



Geography. The Griers Creek watershed is in west-central 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. Griers Creek empties into the Kentucky River just above Tyrone. Its several branches drain the area south of downtown Versailles.

Land and water use. Land in the watershed is about 80% agricultural, more than 10% rural and wooded, and the remainder residential, commercial, or industrial. Four businesses and organizations hold permits for discharges into the creeks. See tables for details.

Agency data assessment. The assessed creek segment in this watershed only partially supports its designated uses, based on biological and/or water-quality data. A variety of factors 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 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. Phosphorus levels in Griers Creek were elevated enough to cause potential nutrient enrichment problems (> 0.1 mg/L). A significant amount of the triazine herbicide atrazine was detected (>1 microgram per liter); however, the concentration of atrazine was below the EPA's maximum contaminant level of 3 micrograms per liter. See tables for details.

Watershed Name:

Griers Creek

11-Digit Watershed Identity Number:

05100205230

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):	10,358	Acres	% of Total		
Residential Area:	169		1.6	Number of Mine Permits:	0
Commercial Area:	484		4.7	Total Permitted Mining Area (Acres):	0
Industrial Area:	101		1.0	Number of Identified Wetland Areas:	6
Agricultural Area:	8,311		80.2	Total Wetland Area (Acres):	3
Rural and Wooded Area:	1,278		12.3		
Other Land-use Area:	11		0.1		

Withdrawal and Discharge Sites:

Number of Public Water Supplies and Water Withdrawal Sites:	1	Number of KPDES Discharge Permits:	4
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:	0
Number of Kentucky Dept. of Fish and Wildlife Sampling Sites:	1
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:

Griers Creek

11-Digit Watershed Identity Number:

05100205230

Watershed Indicators and Ranking Categories:

Overall Watershed Ranking:

Protection Ranking

Observed Impacts

Potential Impacts

Restoration Ranking

Medium

Medium

Medium

Medium

Medium

Protection Categories:

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Wetland Areas	3	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	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	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	2.00	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	2	Number of sites	1 - 121	12
Potential Pesticide Loading	15	Est. sales in tons	0 - 45	10
Potential Fertilizer Loading	279	Est. tons applied	0 - 2747	394
Agricultural Erosion Potential	1.94	Est. tons erosion / acre	0 - 9	3.20
Livestock Operations Potential Impact	3,394	Animal units	55 - 43826	7,021
KPDES Discharge Violations	0	Number of violations	0 - 541	39
KY Division of Water Citizen Complaints	3	Number of complaints	0 - 53	9
Toxic Release Inventory	0	Score	0 - 11547626	231,638
Population Change Projection	250	Number of persons	-149 - 11030	448
Population Not on Public Sewer Systems	279	Number of persons	12 - 4511	1,114
Mining Area	0	Acres	0 - 6305	355
Surface Water Runoff Potential	73.10	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="14.16"/>	<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:	1	3.4	0.0	3.4	0.0	0.0
Designated Uses						
Aquatic Life:	1	3.4	0.0	3.4	0.0	0.0
Primary Contact:						
Fish Consumption:						
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>
Griers Creek	0	3.4	3.4	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>
Griers Creek	0	3.4	3.4	Aquatic Life Support	Partially Supporting
<i>Possible Causes of Impairment:</i>			<i>Possible Sources For Impairment:</i>		
Other habitat alterations, Siltation, Organic enrichment/Low DO			Agriculture, Habitat Modification (other than Hydromodification), Urban Runoff/Storm Sewers		
*Abbreviations: UT - Unnamed Tributary					

Watershed Name: Griers Creek

11-Digit Watershed Identity Number: 05100205230

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>
WOODFORD HILLS COUNTRY CLUB	Surface Water	Water Withdrawal Site	WW1425

<i>KPDES Permitted Discharge Facilities</i>			<i>KPDES Site ID Number</i>
<i>Facility</i>	<i>Type of Facility</i>		
GLENVIEW SUBD	LAND SUBDIVIDERS & DEV, EX CEM		KY0077038
OSRAM SYLVANIA INC LAMP PLANT	ELECTRIC LAMPS		KY0004065
OSRAM SYLVANIA PRODUCTS INC	PRESSED & BLOWN GLASS & GWARE		KY0097373
VERSAILLES WATER #2	WATER SUPPLY		KY0003174

Gaging Stations and Sampling Sites:

<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>
Griers Creek	Upstream of Griers Creek	Mouth	8.2	3.4	0

<i>KY River Watershed Watch Sampling Sites</i>		
<i>Stream Name</i>	<i>KRWW Sample ID No.</i>	<i>Site Description</i>
Grier's Creek	K13	Grier's Creek Rd. 0.5 miles below bridge

Results from 1999 KY River Watershed Watch Sampling:

Conventional Parameters:

Sample ID Number: K13 Stream: Grier's Creek

Physical Data (May):

pH	8.2	Alkalinity	210
Temperature	16	Total Hardness	270
Dissolved Oxygen	16.4	Chlorides	58.5
		Conductivity	647
		Total Organic Carbon	2.8
		Total Suspended Solids	

Fecal Data (July / August):

	Coliform Count	Strep Count	Coliform/Strep Ratio
July	110	1100	0.1
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: K13 Stream: Grier's Creek

Ammonia		Orthophosphate as Phosphate	0.852	Sulfate	38.3
Ammonia Nitrogen		Orthophosphate as Phosphorus	0.278		
Total Kjeldahl Nitrogen as NH3		Total Recoverable Phosphorus	0.28		
Total Kjeldahl Nitrogen as N					
Nitrate	5.1				
Nitrate Nitrogen	1.15				

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: K13 Stream: Grier's Creek

Aluminum	0.08	Calcium	99.20	Lead		Selenium	0.01	Thallium	
Antimony		Chromium		Lithium	0.008	Silicon	1.74	Vanadium	
Barium	0.02	Cobalt		Magnesium	7.46	Sodium	25.57	Zinc	
Beryllium		Copper		Manganese	0.01	Strontium	0.17		
Boron	0.14	Iron		Potassium	2.83	Sulfur	11.56		

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

K13	Grier's Creek			0.22
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Note: All indicators are in micrograms per liter which is equivalent to parts per billion (ppb).