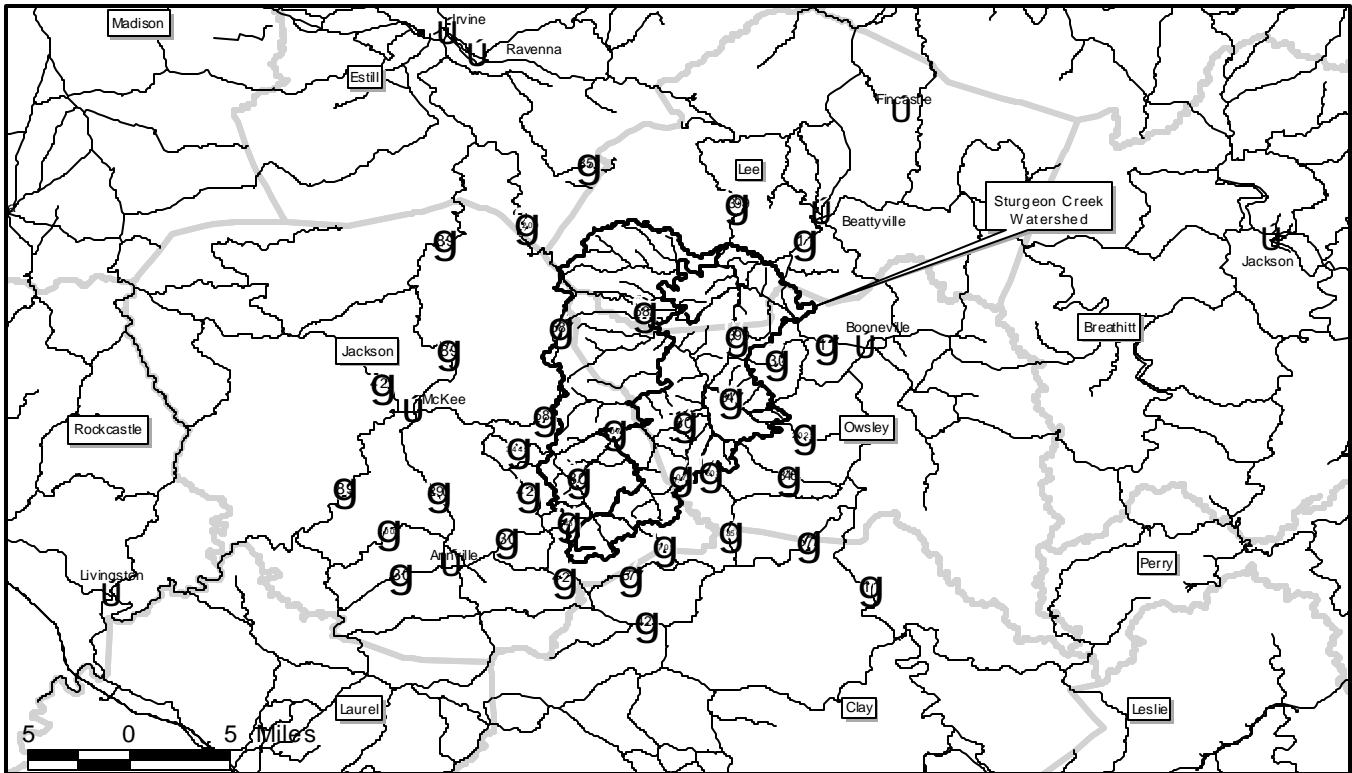


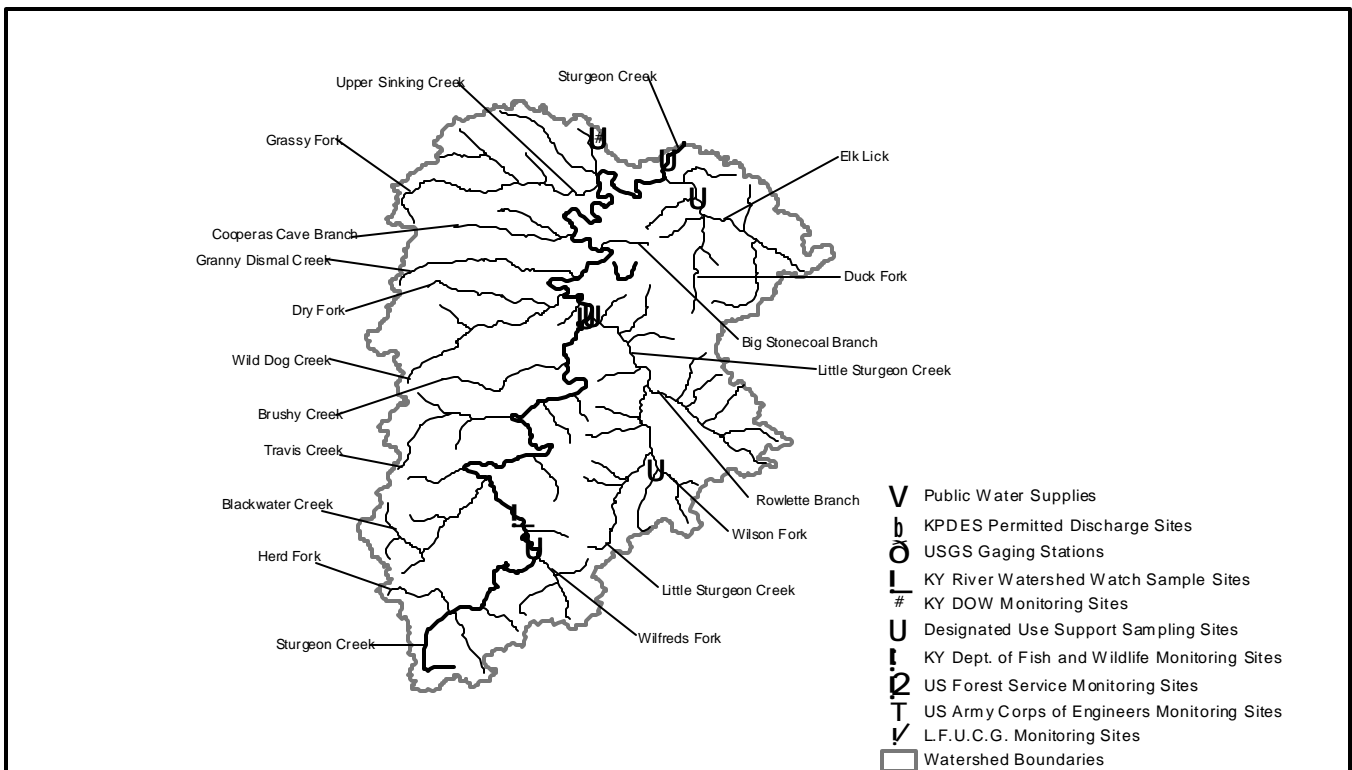
# Sturgeon Creek Watershed

## Watershed Number: 05100204020

### Location Map



### Watershed Features



**Geography.** The Sturgeon Creek watershed covers eastern Jackson County, western Owsley County, and southern Lee County. The land is in the escarpment and plateau areas of the Eastern Kentucky Coal Field physiographic region, characterized by rolling to hilly terrain, medium to very rapid surface runoff, and slow to medium 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.

**Waterways.** Sturgeon Creek empties into the Kentucky River at Heidelberg. Among the creeks that feed it are Herd Fork, Brushy Creek, Wild Dog Creek, Granny Dismal Creek, Upper Sinking Creek, Grassy Fork, Rowlette Branch, Little Sturgeon Creek, Elk Lick, and Duck Branch.

**Land and water use.** Land in the watershed is three-fourths rural and wooded and about 20% agricultural. No businesses or 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 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 at Sturgeon Creek were elevated enough to cause potential nutrient enrichment problems (0.1 mg/L). Data also show elevated chromium.

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):	Acres	% of Total		
71,066				
Residential Area:	0	0.0	Number of Mine Permits:	37
Commercial Area:	0	0.0	Total Permitted Mining Area (Acres):	357
Industrial Area:	0	0.0	Number of Identified Wetland Areas:	3
Agricultural Area:	15,217	21.4	Total Wetland Area (Acres):	2
Rural and Wooded Area:	53,432	75.3		
Other Land-use Area:	2,327	3.3		

#### Withdrawal and Discharge Sites:

Number of Public Water Supplies and Water Withdrawal Sites:	0	Number of KPDES Discharge Permits:	0
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:	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:	1
Number of Lexington-Fayette Urban Co. Gov. Sampling Sites:	0

Watershed Name:

Sturgeon Creek

11-Digit Watershed Identity Number:

05100204020

**Watershed Indicators and Ranking Categories:**

Overall Watershed Ranking:

Protection Ranking  
High

Observed Impacts  
Medium

Potential Impacts  
Low

Restoration Ranking  
Medium

Medium

**Protection Categories:**

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Wetland Areas	2	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	3.13	Score	2 - 5	3.21
KY Dept. of Fish and Wildlife Management Areas	0	Acres	0 - 2951	93
U.S. Forest Service Management Areas	26,913	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	83.00	Score	0 - 100	3.08
Outstanding Resource Watersheds	0.00	Score	0 - 0	0.00
Recognized Stream Resources	1	No. of resources	0 - 8	1
Kentucky Rivers Assessment Scores	1.94	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	5	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	0	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	0	Number of sites	0 - 71	4

**Potential Impact Categories:**

Indicator	Value	Units	Range of All Watersheds	Mean of All Watersheds
Potential Contamination Sites	11	Number of sites	1 - 121	12
Potential Pesticide Loading	3	Est. sales in tons	0 - 45	10
Potential Fertilizer Loading	232	Est. tons applied	0 - 2747	394
Agricultural Erosion Potential	3.76	Est. tons erosion / acre	0 - 9	3.20
Livestock Operations Potential Impact	3,497	Animal units	55 - 43826	7,021
KPDES Discharge Violations	0	Number of violations	0 - 541	39
KY Division of Water Citizen Complaints	6	Number of complaints	0 - 53	9
Toxic Release Inventory	0	Score	0 - 11547626	231,638
Population Change Projection	5	Number of persons	-149 - 11030	448
Population Not on Public Sewer Systems	1,207	Number of persons	12 - 4511	1,114
Mining Area	355	Acres	0 - 6305	355
Surface Water Runoff Potential	61.49	SCS Curve Number	60 - 79	68
KPDES Permitted Discharges	0	Number of sites	0 - 56	6

Watershed Name: Sturgeon Creek

11-Digit Watershed Identity Number: 05100204020

### Stream and Waterbody Use Support Summary

<b>Total Stream Miles:</b> <input type="text" value="161.06"/>	<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>
<b>Segments Assessed:</b>	7	42.9	42.9	0.0	0.0	0.0
<b>Designated Uses</b>						
<b>Aquatic Life:</b>	7	42.9	42.9	0.0	0.0	0.0
<b>Primary Contact:</b>	1	12.5	12.5	0.0	0.0	0.0
<b>Fish Consumption:</b>						
<b>Drinking Water:</b>						

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

<b>Assessed Stream Segments and Waterbodies</b>					
<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>
Duck Fork	0	4.8	4.8	AL	Fully Supporting
Little Sturgeon Creek	4.8	6.8	2	AL	Fully Supporting
Little Sturgeon Creek	0	2.8	2.8	AL	Fully Supporting
Sturgeon Creek	24	33.3	9.3	AL	Fully Supporting
Sturgeon Creek	13.7	24	10.3	AL	Fully Supporting
Sturgeon Creek	1.2	13.7	12.5	AL, PC	Fully Supporting
Sturgeon Creek	0	1.2	1.2	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: Sturgeon Creek

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*Withdrawal Sites and Discharge Facilities:*

*Gaging Stations and Sampling Sites:*

<i>KY Division of Water Sampling Sites</i>	
<i>Stream Name</i>	<i>Type of Sampling</i>
Sturgeon 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>
Sturgeon Creek	K43	SR 30 Bridge over Sturgeon Creek

**Results from 1999 KY River Watershed Watch Sampling:**

**Conventional Parameters:**

Sample ID Number: K43 Stream: Sturgeon Creek

Physical Data (May):	
pH	6.7
Temperature	19
Dissolved Oxygen	9.2
Alkalinity	62
Total Hardness	60
Chlorides	4.8
Conductivity	141
Total Organic Carbon	4.9
Total Suspended Solids	8

Fecal Data (July / August):		
Coliform Count	Strep Count	Coliform/Strep Ratio
July	30	350
August		0.086

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: K43 Stream: Sturgeon Creek

Ammonia		Orthophosphate as Phosphate	0.009	Sulfate	5.6
Ammonia Nitrogen		Orthophosphate as Phosphorus	0.003		
Total Kjeldahl Nitrogen as NH3	0.33	Total Recoverable Phosphorus	0.10		
Total Kjeldahl Nitrogen as N	0.27				
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: K43 Stream: Sturgeon Creek

Aluminum	0.57	Calcium	14.34	Lead		Selenium	0.009	Thallium	
Antimony		Chromium	0.03	Lithium	0.009	Silicon	1.39	Vanadium	
Barium	0.03	Cobalt		Magnesium	5.16	Sodium	3.24	Zinc	0.01
Beryllium	0.001	Copper		Manganese	0.28	Strontium	0.06		
Boron	0.09	Iron	0.75	Potassium	4.30	Sulfur	1.32		

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

K43	Sturgeon Creek			
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Note: All indicators are in micrograms per liter which is equivalent to parts per billion (ppb).