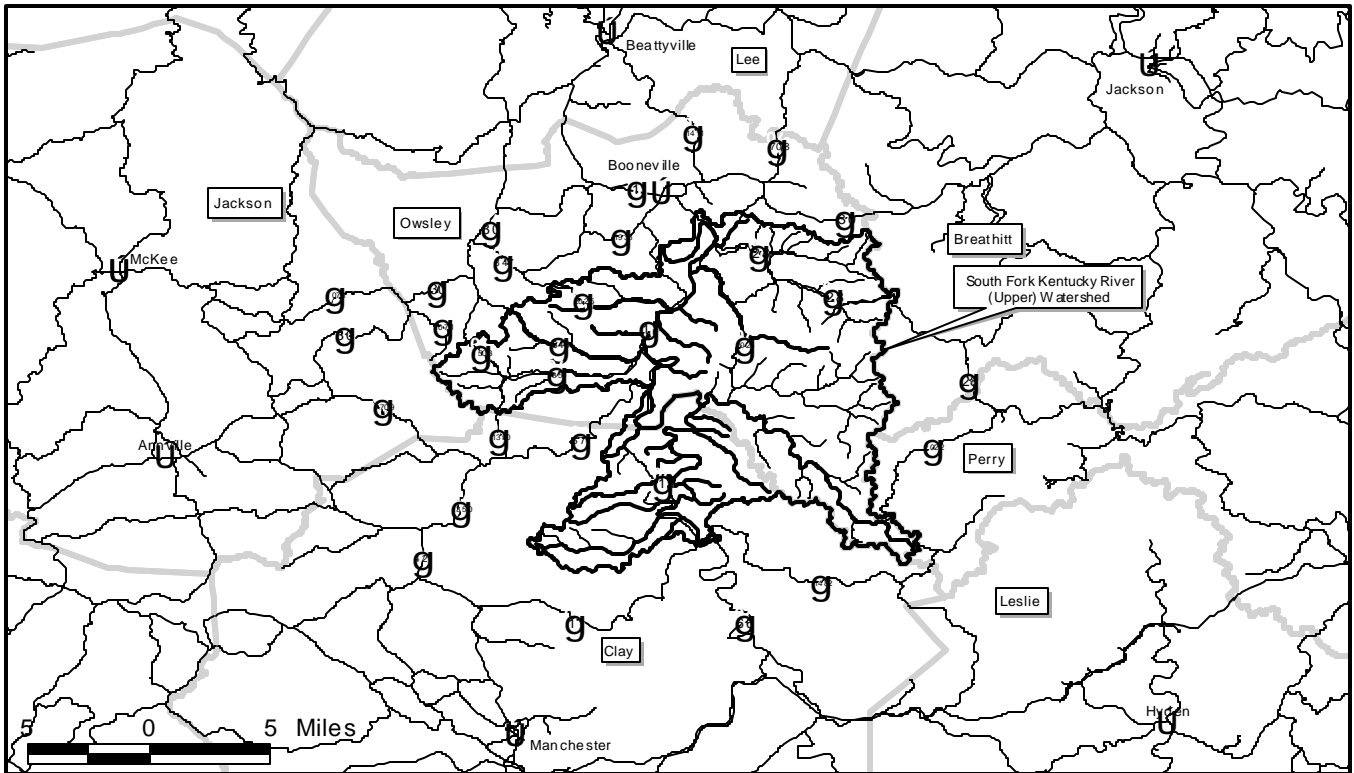


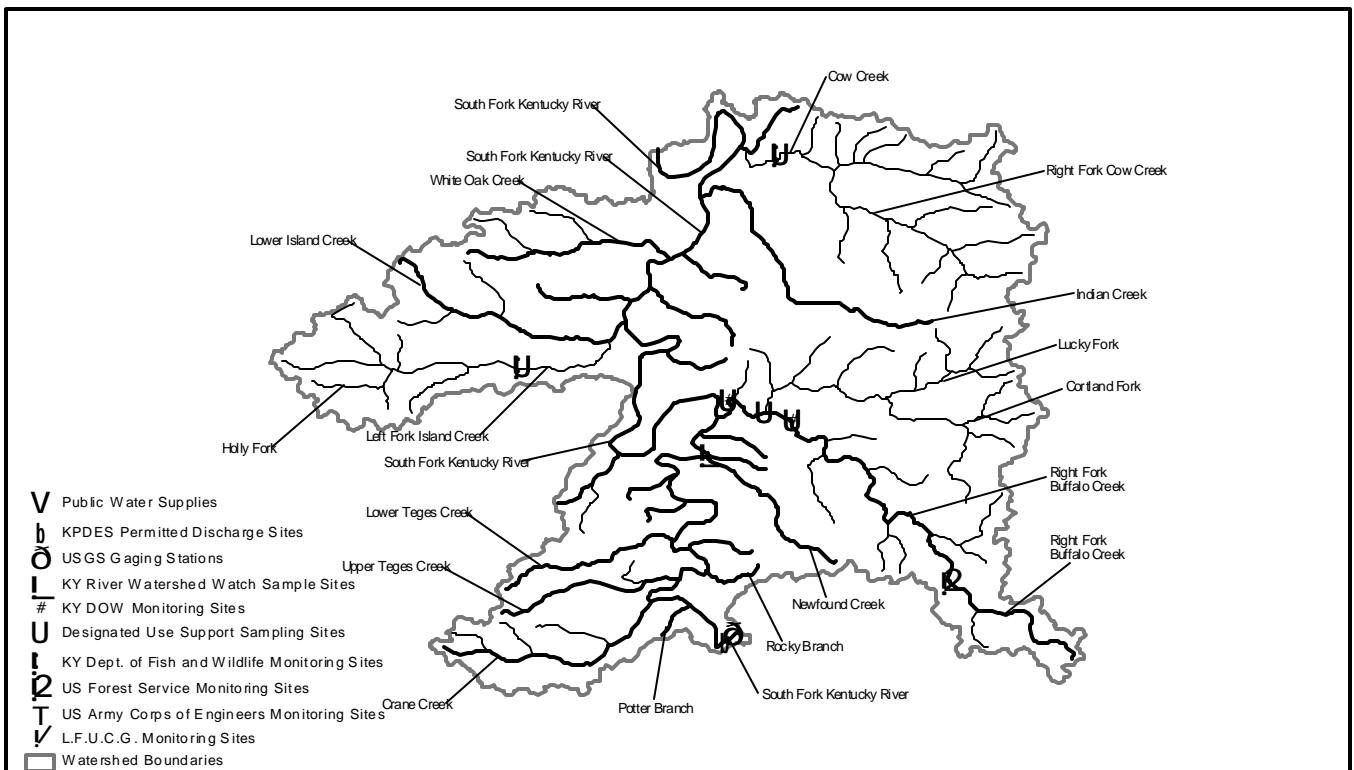
South Fork Kentucky River (Upper) Watershed

Watershed Number: 05100203020

Location Map



Watershed Features



Geography. The South Fork Kentucky River (upper) watershed occupies northeast Clay County, and southern Owsley County. The land is in the Eastern Kentucky Coal Field physiographic region, characterized by mountainous terrain, rapid surface runoff, and moderate rates of 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. Unconsolidated silts, sands, and gravels occur along the flood plain of the river.

Waterways. The South Fork Kentucky River upper watershed includes the section from Oneida to just south of Booneville (approximately that portion of the river that flows through the Daniel Boone National Forest). Among the creeks that feed it are Crane Creek, Right Fork Buffalo Creek, Left Fork Island Creek, Lower Island Creek, Indian Creek, White Oak Creek, and Cow Creek. Water from the Goose Creek, Red Bird River, Bullskin Creek, and Sexton Creek watersheds also flows into this watershed.

Land and water use. Land in the watershed is mainly rural and wooded; about 5% is agricultural. One school holds a permit for discharges into the creeks. See tables for details.

Agency data assessment. The assessed creek segments in this watershed include one that only partially supports its designated uses, based on biological and/or water-quality data. Siltation and exotic species contribute to the impairment of the stream. 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. The site at Bishops Branch showed elevated levels of chromium in 1999. 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):	83,241	Acres	% of Total		
Residential Area:	21		0.0	Number of Mine Permits:	34
Commercial Area:	10		0.0	Total Permitted Mining Area (Acres):	222
Industrial Area:	105		0.1	Number of Identified Wetland Areas:	3
Agricultural Area:	3,950		4.8	Total Wetland Area (Acres):	2
Rural and Wooded Area:	78,685		94.7		
Other Land-use Area:	343		0.4		

Withdrawal and Discharge Sites:

Number of Public Water Supplies and Water Withdrawal Sites:	0	Number of KPDES Discharge Permits:	1
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:	2
Number of Kentucky Dept. of Fish and Wildlife Sampling Sites:	2
Number of US Forest Service Sampling Sites:	1
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 Indicators and Ranking Categories:

Overall Watershed Ranking:

Protection Ranking	Observed Impacts	Potential Impacts	Restoration Ranking
High	Medium	Low	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	3.00	Score	2 - 5	3.21
KY Dept. of Fish and Wildlife Management Areas	0	Acres	0 - 2951	93
U.S. Forest Service Management Areas	82,525	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	24.00	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	3.63	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	6	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	1.21	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	12	Number of sites	1 - 121	12
Potential Pesticide Loading	2	Est. sales in tons	0 - 45	10
Potential Fertilizer Loading	235	Est. tons applied	0 - 2747	394
Agricultural Erosion Potential	3.24	Est. tons erosion / acre	0 - 9	3.20
Livestock Operations Potential Impact	1,994	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	120	Number of persons	-149 - 11030	448
Population Not on Public Sewer Systems	926	Number of persons	12 - 4511	1,114
Mining Area	225	Acres	0 - 6305	355
Surface Water Runoff Potential	60.38	SCS Curve Number	60 - 79	68
KPDES Permitted Discharges	1	Number of sites	0 - 56	6

Stream and Waterbody Use Support Summary

Total Stream Miles: <input type="text" value="185.41"/>	<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:	5	23.6	18.6	5.0	0.0	0.0
Designated Uses						
Aquatic Life:	5	23.6	18.6	5.0	0.0	0.0
Primary Contact:	1	1.6	1.6	0.0	0.0	0.0
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>
Buffalo Creek	0	1.6	1.6	AL, PC	Fully Supporting
Cow Creek	0	2.7	2.7	AL	Fully Supporting
Left Fork Buffalo Creek	0	3.1	3.1	AL	Fully Supporting
Left Fork Island Creek	0	5	5	AL	Partially Supporting
Right Fork Buffalo Creek	0	11.2	11.2	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*

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>
Left Fork Island Creek	0	5	5	Aquatic Life Support	Partially Supporting
<i>Possible Causes of Impairment:</i> Exotic species, Siltation			<i>Possible Sources For Impairment:</i> Agriculture, Crop-related Sources, Nonirrigated Crop Production		

**Abbreviations: UT - Unnamed Tributary*

Watershed Name: South Fork Kentucky River

11-Digit Watershed Identity Number: 05100203020

Withdrawal Sites and Discharge Facilities:

KPDES Permitted Discharge Facilities		
<i>Facility</i>	<i>Type of Facility</i>	<i>KPDES Site ID Number</i>
ONEIDA BAPTIST INSTITUTE	ELEMENTARY & SECONDARY SCHOOLS	KY0087271

Gaging Stations and Sampling Sites:

US Geological Survey and US Army Corps of Engineers Stream Gaging Stations			
<i>Stream Location</i>	<i>Agency</i>	<i>Station ID Number</i>	<i>Sampling Parameter</i>
South Fork Kentucky River	USGS	USGS03281200	Flow
South Fork Kentucky River	US COE	USNWS15-6028-46	Flow

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

KY Dept of Fish and Wildlife Sampling / Assessment Sites					
<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>
Island Creek (Left Fork)	Rone Fork Branch	Lower Island Creek	7	3.8	0.4
Cow Creek	Left & right fork confluence	Mouth	2.7	2.7	0

US Forest Service Sampling Sites		
<i>11-Digit HUC</i>	<i>HUC Name</i>	<i>US Forest Service Site ID</i>
05100203020	South Fork Kentucky River (upper)	0510020329004

KY River Watershed Watch Sampling Sites		
<i>Stream Name</i>	<i>KRWW Sample ID No.</i>	<i>Site Description</i>
Bishops Branch	K70	At mouth

Results from 1999 KY River Watershed Watch Sampling:

Conventional Parameters:

Sample ID Number: K70 Stream: Bishops Branch

Physical Data (May):	
pH	7.5
Temperature	0
Dissolved Oxygen	8.5
Alkalinity	66
Total Hardness	162
Chlorides	79.8
Conductivity	588
Total Organic Carbon	3.9
Total Suspended Solids	9

Fecal Data (July / August):		
Coliform Count	Strep Count	Coliform/Strep Ratio
July	30	80
August		0.38

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: K70 Stream: Bishops Branch

Ammonia		Orthophosphate as Phosphate	0.010	Sulfate	100
Ammonia Nitrogen		Orthophosphate as Phosphorus	0.003		
Total Kjeldahl Nitrogen as NH3		Total Recoverable Phosphorus	0.08		
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: K70 Stream: Bishops Branch

Aluminum	0.26	Calcium	29.55	Lead		Selenium		Thallium	
Antimony		Chromium	0.04	Lithium	0.009	Silicon	1.73	Vanadium	0.06
Barium	0.07	Cobalt		Magnesium	18.09	Sodium	50.04	Zinc	0.01
Beryllium		Copper	0.009	Manganese	0.07	Strontium	0.41		
Boron	0.12	Iron	0.43	Potassium	4.43	Sulfur	23.22		

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

K70	Bishops Branch			
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Note: All indicators are in micrograms per liter which is equivalent to parts per billion (ppb).