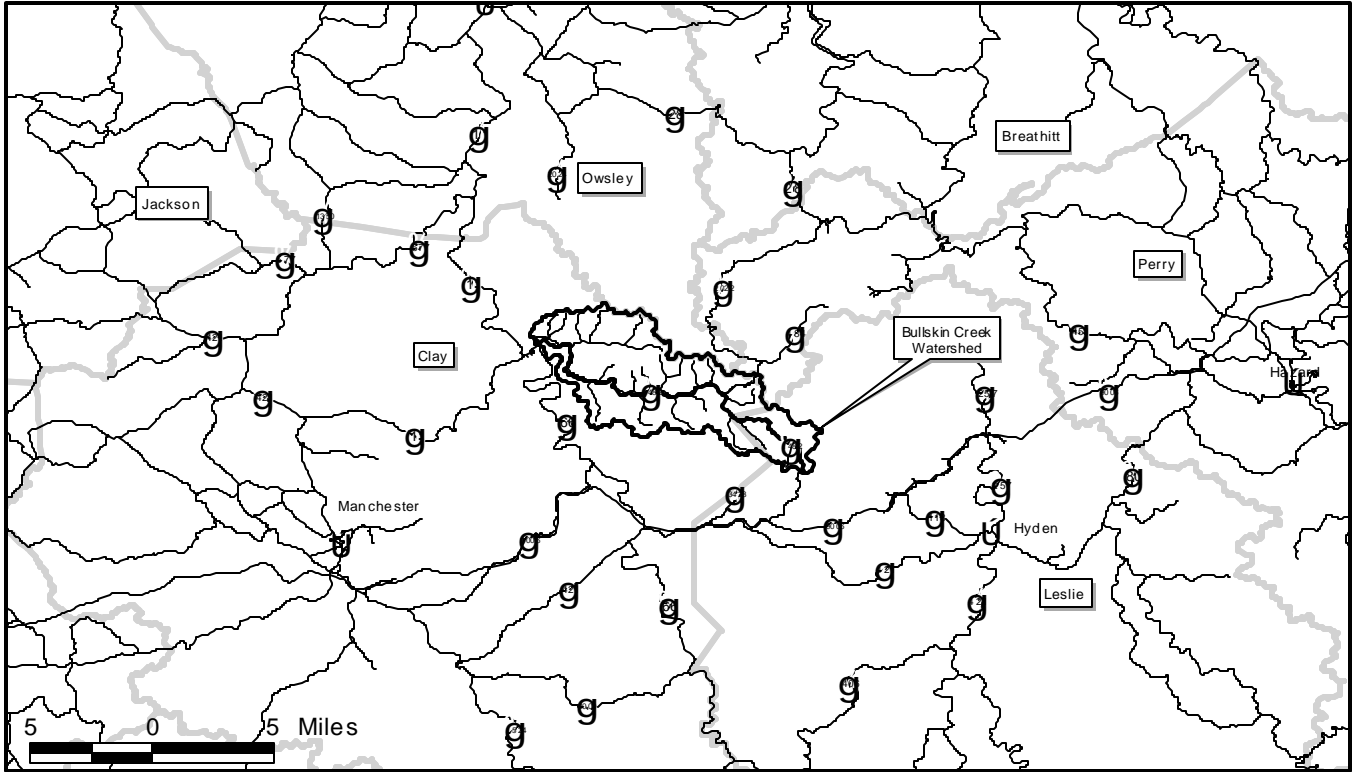


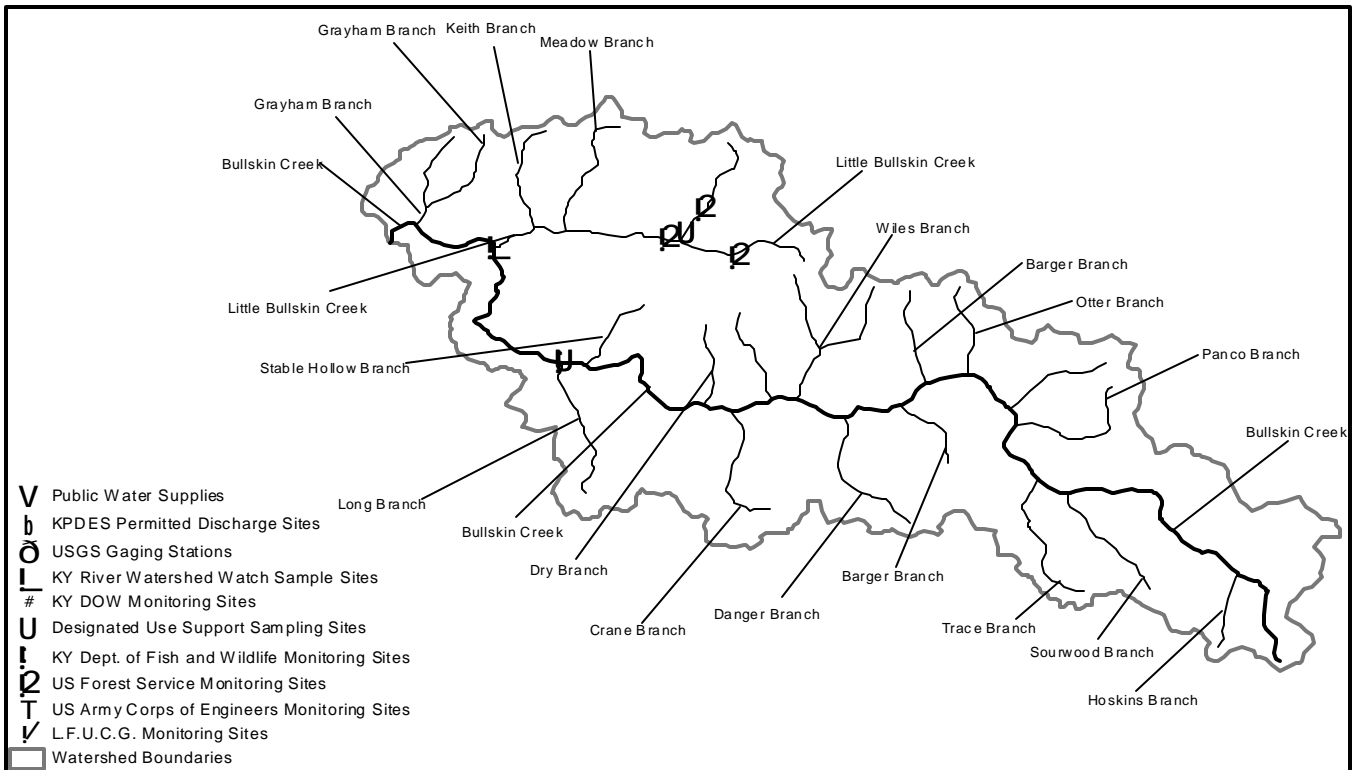
Bullskin Creek Watershed

Watershed Number: 05100203030

Location Map



Watershed Features



Geography. The Bullskin Creek watershed lies in northeast Clay County and a corner of Leslie 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.

Waterways. Bullskin Creek empties into the South Fork Kentucky River near Oneida. Among the creeks that feed it are Little Bullskin Creek, Meadow Branch, Barger Branch, Wiles Branch, and Long Branch.

Land and water use. Land in the watershed is rural and wooded. 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. Bullskin Creek showed elevated levels of copper 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): | 18,886 | Acres | % of Total | | |
|--------------------------|--------|-------|------------|--------------------------------------|----|
| Residential Area: | 0 | 0.0 | | Number of Mine Permits: | 3 |
| Commercial Area: | 0 | 0.0 | | Total Permitted Mining Area (Acres): | 59 |
| Industrial Area: | 0 | 0.0 | | Number of Identified Wetland Areas: | 2 |
| Agricultural Area: | 156 | 0.8 | | Total Wetland Area (Acres): | 1 |
| Rural and Wooded Area: | 18,700 | 99.2 | | | |
| 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: | 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: | 0 |
| Number of Kentucky Dept. of Fish and Wildlife Sampling Sites: | 1 |
| Number of US Forest Service Sampling Sites: | 3 |
| 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:

Bullskin Creek

11-Digit Watershed Identity Number:

05100203030

Watershed Indicators and Ranking Categories:

Overall Watershed Ranking:

Protection Ranking

Observed Impacts

Potential Impacts

Restoration Ranking

Medium

Medium

Medium

Low

Medium

Protection Categories:

| Indicator | Value | Units | Range of All Watersheds | Mean of All Watersheds |
|--|--------|------------------|-------------------------|------------------------|
| Wetland Areas | 1 | 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 | 18,886 | 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 | 0.64 | 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 | 1.00 | 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 | 2 | Number of sites | 1 - 121 | 12 |
| Potential Pesticide Loading | 2 | Est. sales in tons | 0 - 45 | 10 |
| Potential Fertilizer Loading | 48 | Est. tons applied | 0 - 2747 | 394 |
| Agricultural Erosion Potential | 4.04 | Est. tons erosion / acre | 0 - 9 | 3.20 |
| Livestock Operations Potential Impact | 285 | Animal units | 55 - 43826 | 7,021 |
| KPDES Discharge Violations | 0 | Number of violations | 0 - 541 | 39 |
| KY Division of Water Citizen Complaints | 1 | Number of complaints | 0 - 53 | 9 |
| Toxic Release Inventory | 0 | Score | 0 - 11547626 | 231,638 |
| Population Change Projection | 67 | Number of persons | -149 - 11030 | 448 |
| Population Not on Public Sewer Systems | 359 | Number of persons | 12 - 4511 | 1,114 |
| Mining Area | 59 | Acres | 0 - 6305 | 355 |
| Surface Water Runoff Potential | 60.06 | SCS Curve Number | 60 - 79 | 68 |
| KPDES Permitted Discharges | 0 | Number of sites | 0 - 56 | 6 |

Watershed Name: Bullskin Creek

11-Digit Watershed Identity Number: 05100203030

Stream and Waterbody Use Support Summary

| | | | | | | |
|------------------------------------|---------------------------|------------------------------|---------------------------------|-------------------------------------|-------------------------------|---------------------------|
| <i>Total Stream Miles:</i> | | | | | | |
| <input type="text" value="45.52"/> | <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> |
| <i>Segments Assessed:</i> | 2 | 15.1 | 15.1 | 0.0 | 0.0 | 0.0 |
| <i>Designated Uses</i> | | | | | | |
| <i>Aquatic Life:</i> | 2 | 15.1 | 15.1 | 0.0 | 0.0 | 0.0 |
| <i>Primary Contact:</i> | | | | | | |
| <i>Fish Consumption:</i> | | | | | | |
| <i>Drinking Water:</i> | | | | | | |

* Blank values indicate no assessed segments for this category.

| <i>Assessed Stream Segments and Waterbodies</i> | | | | | |
|---|---------------------------|-------------------------|-------------------------------|--------------------------|---------------------------------|
| <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> |
| Big Dan Branch | 0 | 1.2 | 1.2 | AL | Fully Supporting |
| Bullskin Creek | 0 | 13.9 | 13.9 | 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: Bullskin Creek

11-Digit Watershed Identity Number: 05100203030

Withdrawal Sites and Discharge Facilities:

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> |
| Bullskin Creek | Neds Fork | Little Bullskin Creek | 13.9 | 12.2 | 1.3 |

| <i>US Forest Service Sampling Sites</i> | | |
|---|-----------------|----------------------------------|
| <i>11-Digit HUC</i> | <i>HUC Name</i> | <i>US Forest Service Site ID</i> |
| 05100203030 | Bullskin Creek | 0510020329002 |
| 05100203030 | Bullskin Creek | 0510020329003 |
| 05100203030 | Bullskin Creek | 0510020329001 |

| <i>KY River Watershed Watch Sampling Sites</i> | | |
|--|---------------------------|-----------------------------------|
| <i>Stream Name</i> | <i>KRWW Sample ID No.</i> | <i>Site Description</i> |
| Bullskin Creek | K67 | At mouth of Little Bullskin Creek |

Watershed Name:

Bullskin Creek

11-Digit Watershed Identity Number:

05100203030

Results from 1999 KY River Watershed Watch Sampling:

Conventional Parameters:

Sample ID Number: K67 Stream: Bullskin Creek

Physical Data (May):

| | | | |
|------------------|-----|------------------------|-----|
| pH | 7.5 | Alkalinity | 215 |
| Temperature | 0 | Total Hardness | 302 |
| Dissolved Oxygen | 9.2 | Chlorides | 7.9 |
| | | Conductivity | 630 |
| | | Total Organic Carbon | 1.6 |
| | | Total Suspended Solids | |

Fecal Data (July / August):

| | Coliform Count | Strep Count | Coliform/Strep Ratio |
|--------|----------------|-------------|----------------------|
| July | 150 | 1000 | 0.15 |
| 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: K67 Stream: Bullskin Creek

| | | | | | |
|--------------------------------|------|------------------------------|-------|---------|-----|
| Ammonia | | Orthophosphate as Phosphate | 0.032 | Sulfate | 133 |
| Ammonia Nitrogen | | Orthophosphate as Phosphorus | 0.010 | | |
| Total Kjeldahl Nitrogen as NH3 | | Total Recoverable Phosphorus | 0.08 | | |
| Total Kjeldahl Nitrogen as N | | | | | |
| Nitrate | 0.1 | | | | |
| Nitrate Nitrogen | 0.02 | | | | |

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: K67 Stream: Bullskin Creek

| | | | | | | | | | |
|-----------|------|----------|--------|-----------|-------|-----------|-------|----------|------|
| Aluminum | | Calcium | 72.019 | Lead | | Selenium | | Thallium | |
| Antimony | | Chromium | 0.04 | Lithium | 0.01 | Silicon | 3.11 | Vanadium | 0.07 |
| Barium | 0.06 | Cobalt | | Magnesium | 26.86 | Sodium | 15.93 | Zinc | 0.01 |
| Beryllium | | Copper | 0.01 | Manganese | 0.12 | Strontium | 0.97 | | |
| Boron | 0.13 | Iron | 0.38 | Potassium | 4.37 | Sulfur | 57.85 | | |

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

| | | | | |
|-----|----------------|--|--|--|
| K67 | Bullskin Creek | | | |
|-----|----------------|--|--|--|

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