

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:

| | | | | | |
|---------------------------------|-------------------------------------|--------------|-----------------------------------|---|--------------------------------|
| <i>Total Land Area (Acres):</i> | <input type="text" value="75,927"/> | <i>Acres</i> | <i>% of Total</i> | | |
| <i>Residential Area:</i> | <input type="text" value="1,257"/> | | <input type="text" value="1.7"/> | <i>Number of Mine Permits:</i> | <input type="text" value="0"/> |
| <i>Commercial Area:</i> | <input type="text" value="998"/> | | <input type="text" value="1.3"/> | <i>Total Permitted Mining Area (Acres):</i> | <input type="text" value="0"/> |
| <i>Industrial Area:</i> | <input type="text" value="0"/> | | <input type="text" value="0.0"/> | <i>Number of Identified Wetland Areas:</i> | <input type="text" value="6"/> |
| <i>Agricultural Area:</i> | <input type="text" value="41,588"/> | | <input type="text" value="54.8"/> | <i>Total Wetland Area (Acres):</i> | <input type="text" value="1"/> |
| <i>Rural and Wooded Area:</i> | <input type="text" value="31,990"/> | | <input type="text" value="42.1"/> | | |
| <i>Other Land-use Area:</i> | <input type="text" value="85"/> | | <input type="text" value="0.1"/> | | |

Withdrawal and Discharge Sites:

| | | | |
|--|--------------------------------|---|---------------------------------|
| <i>Number of Public Water Supplies and Water Withdrawal Sites:</i> | <input type="text" value="0"/> | <i>Number of KPDES Discharge Permits:</i> | <input type="text" value="13"/> |
| <i>Surface Water Withdrawals:</i> | <input type="text" value="0"/> | | |
| <i>Groundwater Withdrawals:</i> | <input type="text" value="0"/> | | |
| <i>No. of Potable Water Treatment Facilities:</i> | <input type="text" value="0"/> | | |

Sampling Site Statistics:

| | |
|--|--------------------------------|
| <i>Number of USGS Gaging Stations:</i> | <input type="text" value="0"/> |
| <i>Number of Kentucky Division of Water Sampling Sites:</i> | <input type="text" value="1"/> |
| <i>Number of Kentucky Dept. of Fish and Wildlife Sampling Sites:</i> | <input type="text" value="1"/> |
| <i>Number of US Forest Service Sampling Sites:</i> | <input type="text" value="0"/> |
| <i>Number of US Army Corps of Engineers Sampling Sites:</i> | <input type="text" value="0"/> |
| <i>Number of Kentucky River Watershed Watch Sampling Sites:</i> | <input type="text" value="2"/> |
| <i>Number of Lexington-Fayette Urban Co. Gov. Sampling Sites:</i> | <input type="text" value="0"/> |

| | | | | |
|---|------------------|-------------------|---------------------|-----------------------------------|
| Watershed Indicators and Ranking Categories: | | | | Overall Watershed Ranking: |
| Protection Ranking | Observed Impacts | Potential Impacts | Restoration Ranking | Low |
| Low | Low | High | Low | |

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 | 2.46 | 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 | 0.80 | 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 | 1.00 | Score | 1 - 3 | 1.33 |
| Contamination Sites Impacting Human Health | 7 | 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 | 1.72 | Score | 1 - 3 | 1.31 |
| Contamination Sites Impacting Ecological Health | 7 | Number of sites | 0 - 71 | 4 |

Potential Impact Categories:

| Indicator | Value | Units | Range of All Watersheds | Mean of All Watersheds |
|---|--------|--------------------------|-------------------------|------------------------|
| Potential Contamination Sites | 15 | Number of sites | 1 - 121 | 12 |
| Potential Pesticide Loading | 20 | Est. sales in tons | 0 - 45 | 10 |
| Potential Fertilizer Loading | 1,381 | Est. tons applied | 0 - 2747 | 394 |
| Agricultural Erosion Potential | 3.78 | Est. tons erosion / acre | 0 - 9 | 3.20 |
| Livestock Operations Potential Impact | 20,943 | Animal units | 55 - 43826 | 7,021 |
| KPDES Discharge Violations | 66 | Number of violations | 0 - 541 | 39 |
| KY Division of Water Citizen Complaints | 14 | Number of complaints | 0 - 53 | 9 |
| Toxic Release Inventory | 0 | Score | 0 - 11547626 | 231,638 |
| Population Change Projection | 584 | Number of persons | -149 - 11030 | 448 |
| Population Not on Public Sewer Systems | 1,257 | Number of persons | 12 - 4511 | 1,114 |
| Mining Area | 0 | Acres | 0 - 6305 | 355 |
| Surface Water Runoff Potential | 75.41 | SCS Curve Number | 60 - 79 | 68 |
| KPDES Permitted Discharges | 13 | Number of sites | 0 - 56 | 6 |

Stream and Waterbody Use Support Summary

| | | | | | | |
|---|---------------------------|------------------------------|---------------------------------|-------------------------------------|-------------------------------|---------------------------|
| Total Stream Miles: <input type="text" value="106.46"/> | <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: | 2 | 19.8 | 5.5 | 14.3 | 0.0 | 0.0 |
| Designated Uses | | | | | | |
| Aquatic Life: | 2 | 19.8 | 5.5 | 14.3 | 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> |
| Eagle Creek | 75.8 | 81.3 | 5.5 | AL | Fully Supporting |
| Lytle Fork | 0 | 14.3 | 14.3 | 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> |
| Lytle Fork | 0 | 14.3 | 14.3 | Aquatic Life Support | Partially Supporting |
| Possible Causes of Impairment: Other habitat alterations | | | Possible Sources For Impairment: Agriculture, Habitat Modification (other than Hydromodification), Natural Sources, Removal of Riparian Vegetation | | |

**Abbreviations: UT - Unnamed Tributary*

Watershed Name: Lytle Fork & Eagle Creek

11-Digit Watershed Identity Number: 05100205360

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> |
| DIX RIVER STONE | CRUSHED AND BROKEN LIMESTONE | KYG840118 |
| GEORGETOWN LANDFILL | REFUSE SYSTEMS | KY0073211 |
| K & T AUTO PARTS & MOTEL | HOTELS AND MOTELS | KY0092860 |
| KIEL BROTHERS OIL CO BP #136 | GASOLINE SERVICE STATIONS | KY0081663 |
| MALLARD POINT SUBD | LAND SUBDIVIDERS & DEV, EX CEM | KY0074829 |
| MIKES I 75 CHEVRON | GASOLINE SERVICE STATIONS | KY0073440 |
| PILOT TRAVEL CENTER #353 | GASOLINE SERVICE STATIONS | KY0094200 |
| SADIEVILLE STP | SEWERAGE SYSTEMS | KY0081868 |
| SAYLORS MHP | OPER OF RES MOBILE HOME SITES | KY0089346 |
| THREE SPRINGS CAMPGROUND | REC VEHICLE PARKS & CAMPSITES | KY0084182 |

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> |
| South Rays Fork | USGS | USGS03291050 | Flow |
| Eagle Creek | USGS | USGS03291000 | Flow |

| <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 20 (Lytle Fork) | Hess Branch | Mouth | 23.9 | 14.3 | 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 E Fork | K03 | Above Hinton Cemetary Rd |
| Eagle Creek W Fork | K04 | Burgess Rd. Bridge 1.25mi North |

Results from 1999 KY River Watershed Watch Sampling:

Conventional Parameters:

Sample ID Number: K03 Stream: Eagle Creek East Fork

| Physical Data (May): | | | |
|----------------------|------|------------------------|------|
| pH | 7.75 | Alkalinity | 310 |
| Temperature | 21 | Total Hardness | 252 |
| Dissolved Oxygen | 7 | Chlorides | 1350 |
| | | Conductivity | 4523 |
| | | Total Organic Carbon | 23.8 |
| | | Total Suspended Solids | 48 |

| Fecal Data (July / August): | | |
|-----------------------------|-------------|----------------------|
| Coliform Count | Strep Count | Coliform/Strep Ratio |
| July | 10 | 230 |
| August | | 0.043 |

Sample ID Number: K04 Stream: Eagle Creek West Fork

| Physical Data (May): | | | |
|----------------------|-----|------------------------|------|
| pH | 7.5 | Alkalinity | 188 |
| Temperature | 20 | Total Hardness | 222 |
| Dissolved Oxygen | 6.7 | Chlorides | 21.0 |
| | | Conductivity | 450 |
| | | Total Organic Carbon | 10.4 |
| | | Total Suspended Solids | 11 |

| Fecal Data (July / August): | | |
|-----------------------------|-------------|----------------------|
| Coliform Count | Strep Count | Coliform/Strep Ratio |
| July | 60 | 30 |
| August | | 2 |

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: K03 Stream: Eagle Creek East Fork

| | | | | | |
|--------------------------------|------|------------------------------|-------|---------|-----|
| Ammonia | 0.04 | Orthophosphate as Phosphate | 0.034 | Sulfate | 6.0 |
| Ammonia Nitrogen | 0.03 | Orthophosphate as Phosphorus | 0.011 | | |
| Total Kjeldahl Nitrogen as NH3 | 0.18 | Total Recoverable Phosphorus | 0.31 | | |
| Total Kjeldahl Nitrogen as N | 0.15 | | | | |
| Nitrate | | | | | |
| Nitrate Nitrogen | | | | | |

Note: All indicators are in milligrams per liter (mg/L) which is equivalent to parts per million (ppm).

Sample ID Number: K04 Stream: Eagle Creek West Fork

| | | | | | |
|--------------------------------|------|------------------------------|-------|---------|------|
| Ammonia | 0.12 | Orthophosphate as Phosphate | 0.105 | Sulfate | 21.3 |
| Ammonia Nitrogen | 0.10 | Orthophosphate as Phosphorus | 0.034 | | |
| Total Kjeldahl Nitrogen as NH3 | 0.39 | Total Recoverable Phosphorus | 0.13 | | |
| Total Kjeldahl Nitrogen as N | 0.32 | | | | |
| 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: K03 Stream: Eagle Creek East Fork

| | | | | | | | | | |
|-----------|------|----------|-------|-----------|-------|-----------|--------|----------|------|
| Aluminum | 3.95 | Calcium | 48.64 | Lead | | Selenium | 0.02 | Thallium | |
| Antimony | | Chromium | | Lithium | 0.41 | Silicon | 6.82 | Vanadium | |
| Barium | 0.23 | Cobalt | 0.006 | Magnesium | 29.65 | Sodium | 775.22 | Zinc | 0.01 |
| Beryllium | | Copper | | Manganese | 1.38 | Strontium | 1.30 | | |
| Boron | 1.40 | Iron | 5.31 | Potassium | 45.42 | Sulfur | 3.01 | | |

Watershed Name: Lytle Fork & Eagle Creek

11-Digit Watershed Identity Number: 05100205360

Note: All indicators are in milligrams per liter (mg/L) which is equivalent to parts per million (ppm).

Sample ID Number: K04 Stream: Eagle Creek West Fork

| | | | | | | | | | |
|-----------|-----------------------------------|----------|------------------------------------|-----------|------------------------------------|-----------|------------------------------------|----------|------------------------------------|
| Aluminum | <input type="text" value="1.78"/> | Calcium | <input type="text" value="59.95"/> | Lead | <input type="text"/> | Selenium | <input type="text" value="0.01"/> | Thallium | <input type="text"/> |
| Antimony | <input type="text"/> | Chromium | <input type="text"/> | Lithium | <input type="text" value="0.009"/> | Silicon | <input type="text" value="3.98"/> | Vanadium | <input type="text"/> |
| Barium | <input type="text" value="0.06"/> | Cobalt | <input type="text" value="0.004"/> | Magnesium | <input type="text" value="15.60"/> | Sodium | <input type="text" value="10.71"/> | Zinc | <input type="text" value="0.006"/> |
| Beryllium | <input type="text"/> | Copper | <input type="text"/> | Manganese | <input type="text" value="0.39"/> | Strontium | <input type="text" value="0.20"/> | | |
| Boron | <input type="text" value="0.09"/> | Iron | <input type="text" value="0.81"/> | Potassium | <input type="text" value="7.32"/> | Sulfur | <input type="text" value="7.10"/> | | |

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 |
|---------------|-----------------------|----------------------|----------------------|----------------------|
| K03 | Eagle Creek East Fork | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| K04 | Eagle Creek West Fork | <input type="text"/> | <input type="text"/> | <input type="text"/> |

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