

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): | 24,130 | Acres | % of Total | | |
|--------------------------|--------|-------|------------|--------------------------------------|----|
| Residential Area: | 1,165 | | 4.8 | Number of Mine Permits: | 0 |
| Commercial Area: | 34 | | 0.1 | Total Permitted Mining Area (Acres): | 0 |
| Industrial Area: | 110 | | 0.5 | Number of Identified Wetland Areas: | 29 |
| Agricultural Area: | 12,217 | | 50.6 | Total Wetland Area (Acres): | 53 |
| Rural and Wooded Area: | 10,603 | | 43.9 | | |
| Other Land-use Area: | 0 | | 0.0 | | |

Withdrawal and Discharge Sites:

| | | | |
|---|---|------------------------------------|----|
| Number of Public Water Supplies and Water Withdrawal Sites: | 2 | Number of KPDES Discharge Permits: | 11 |
| Surface Water Withdrawals: | 2 | | |
| 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: | 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 Indicators and Ranking Categories:

Overall Watershed Ranking:

Protection Ranking

Observed Impacts

Potential Impacts

Restoration Ranking

High

High

High

Medium

High

Protection Categories:

| Indicator | Value | Units | Range of All Watersheds | Mean of All Watersheds |
|--|-------|------------------|-------------------------|------------------------|
| Wetland Areas | 53 | Acres | 0 - 106 | 12 |
| Surface Drinking Water Sources | 2 | No. of sources | 0 - 14 | 2 |
| Ground Drinking Water Sources | 0 | No. of sources | 0 - 17 | 1 |
| Groundwater Sensitivity | 3.43 | Score | 2 - 5 | 3.21 |
| KY Dept. of Fish and Wildlife Management Areas | 150 | 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 | 3 | No. of resources | 0 - 8 | 1 |
| Kentucky Rivers Assessment Scores | 9.68 | 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 | 3.00 | Score | 1 - 3 | 1.33 |
| Contamination Sites Impacting Human Health | 6 | 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 | 6 | 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 | 7 | Est. sales in tons | 0 - 45 | 10 |
| Potential Fertilizer Loading | 298 | Est. tons applied | 0 - 2747 | 394 |
| Agricultural Erosion Potential | 2.45 | Est. tons erosion / acre | 0 - 9 | 3.20 |
| Livestock Operations Potential Impact | 4,610 | Animal units | 55 - 43826 | 7,021 |
| KPDES Discharge Violations | 27 | Number of violations | 0 - 541 | 39 |
| KY Division of Water Citizen Complaints | 19 | Number of complaints | 0 - 53 | 9 |
| Toxic Release Inventory | 1,826,970 | Score | 0 - 11547626 | 231,638 |
| Population Change Projection | 313 | Number of persons | -149 - 11030 | 448 |
| Population Not on Public Sewer Systems | 662 | Number of persons | 12 - 4511 | 1,114 |
| Mining Area | 0 | Acres | 0 - 6305 | 355 |
| Surface Water Runoff Potential | 71.59 | SCS Curve Number | 60 - 79 | 68 |
| KPDES Permitted Discharges | 11 | Number of sites | 0 - 56 | 6 |

Watershed Name: Elkhorn Creek

11-Digit Watershed Identity Number: 05100205290

Stream and Waterbody Use Support Summary

| Total Stream Miles: <input type="text" value="33.93"/> | Number of Segments | Stream Miles Assessed | Miles * Fully Supportina | Miles * Partially Supportina | Miles * Not Supportina | Miles * Threatened |
|---|-----------------------|-----------------------------|--------------------------------|------------------------------------|------------------------------|-----------------------|
| Segments Assessed: | 1 | 17.7 | 0.0 | 0.0 | 17.7 | 0.0 |
| Designated Uses | | | | | | |
| Aquatic Life: | 1 | 17.7 | 17.7 | 0.0 | 0.0 | 0.0 |
| Primary Contact: | 1 | 17.7 | 0.0 | 0.0 | 17.7 | 0.0 |
| Fish Consumption: | 1 | 17.7 | 17.7 | 0.0 | 0.0 | 0.0 |
| Drinking Water: | | | | | | |

* Blank values indicate no assessed segments for this category.

| Assessed Stream Segments and Waterbodies | | | | | |
|--|-----------------------|---------------------|------------------------------|-------------------|-----------------------------|
| Stream or Waterbody Name * | Starting Milepoint | Ending Milepoint | Segment Length (miles) | Designated Uses * | Overall Level of Support |
| Elkhorn Creek | 0 | 17.7 | 17.7 | AL, FC, PC | Not 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 | | | | | |
|--|-----------------------|---------------------|---|--|------------------|
| Stream or Waterbody Name * | Starting Milepoint | Ending Milepoint | Segment Length (miles) | Impaired or Threatened Designated Use | Level of Support |
| Elkhorn Creek | 0 | 17.7 | 17.7 | Primary Contact (Recr) | Not Supporting |
| <i>Possible Causes of Impairment:</i> | | | <i>Possible Sources For Impairment:</i> | | |
| Pathogens | | | Agriculture, Grazing related Sources | | |

**Abbreviations: UT - Unnamed Tributary*

Watershed Name: Elkhorn Creek

11-Digit Watershed Identity Number: 05100205290

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> |
| KY FISH/WLIFE-FRKFT FISH HATCHERY | Surface Water | Water Withdrawal Site | WW1098 |
| OLD GRAND DAD DISTILLING CO. | Surface Water | Water Withdrawal Site | WW0064 |

| <i>KPDES Permitted Discharge Facilities</i> | | | <i>KPDES Site ID Number</i> |
|---|--------------------------------|--|-----------------------------|
| <i>Facility</i> | <i>Type of Facility</i> | | |
| ELKHORN MHP | OPER OF RES MOBILE HOME SITES | | KY0083429 |
| JIM BEAM BRANDS OLD GRANDAD | DIST, RECTIFIED & BLENDED LIQ | | KY0001252 |
| LEESTOWN CO INC | DIST, RECTIFIED & BLENDED LIQ | | KY0001023 |
| RIDGEWOOD ESTATES SEWER SERV | LAND SUBDIVIDERS & DEV, EX CEM | | KY0074802 |

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> |
| Elkhorn Creek | USGS | USGS03289500 | Flow |

| <i>KY Division of Water Sampling Sites</i> | |
|--|------------------------------|
| <i>Stream Name</i> | <i>Type of Sampling</i> |
| Elkhorn Creek | Biological Monitoring |
| Elkhorn 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> |
| Elkhorn Creek | K80 | Strohmeir Rd. at old Iron Bridge |

Watershed Name:

Elkhorn Creek

11-Digit Watershed Identity Number:

05100205290

Results from 1999 KY River Watershed Watch Sampling:

Conventional Parameters:

Sample ID Number: K80 Stream: Elkhorn Creek

Physical Data (May):

| | | | |
|------------------|-----|------------------------|--|
| pH | 7.9 | Alkalinity | |
| Temperature | 19 | Total Hardness | |
| Dissolved Oxygen | 6.8 | Chlorides | |
| | | Conductivity | |
| | | Total Organic Carbon | |
| | | Total Suspended Solids | |

Fecal Data (July / August):

| | Coliform Count | Strep Count | Coliform/Strep Ratio |
|--------|----------------|-------------|----------------------|
| July | 20 | 250 | 0.08 |
| 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: K80 Stream: Elkhorn Creek

| | | | | | |
|--------------------------------|--|------------------------------|--|---------|--|
| Ammonia | | Orthophosphate as Phosphate | | Sulfate | |
| Ammonia Nitrogen | | Orthophosphate as Phosphorus | | | |
| Total Kjeldahl Nitrogen as NH3 | | Total Recoverable Phosphorus | | | |
| 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: K80 Stream: Elkhorn Creek

| | | | | | | | | | |
|-----------|--|----------|--|-----------|--|-----------|--|----------|--|
| Aluminum | | Calcium | | Lead | | Selenium | | Thallium | |
| Antimony | | Chromium | | Lithium | | Silicon | | Vanadium | |
| Barium | | Cobalt | | Magnesium | | Sodium | | Zinc | |
| Beryllium | | Copper | | Manganese | | Strontium | | | |
| Boron | | Iron | | Potassium | | Sulfur | | | |

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

| | | | | |
|-----|---------------|--|--|------|
| K80 | Elkhorn Creek | | | 0.06 |
|-----|---------------|--|--|------|

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