



## Watershed Data Resources

### Climate and Weather

#### STATE RESOURCES

*Kentucky Mesonet at Western Kentucky University*

[www.kymesonet.org](http://www.kymesonet.org)

A network of automated weather and climate monitoring stations being developed by the Kentucky Climate Center at Western Kentucky University to serve diverse needs in communities across the Commonwealth of Kentucky. Kentucky Mesonet provides the following data: temperature, dew point, humidity, precipitation, wind speed and direction, solar radiation, and wind chill at sites across the state.

*UK Ag Weather*

[weather.uky.edu](http://weather.uky.edu)

Hosted by the University of Kentucky (UK) Department of Biosystems & Agricultural Engineering, weather information is provided by the National Weather Service (NWS), National Climatic Data Center (NCDC), Midwest Regional Center (MRC), and Kentucky Mesonet, as well as various information generated by the UK Agricultural Weather Center.

#### NATIONAL RESOURCES

*Community Collaborative Rain, Hail & Snow Network*

[www.cocorahs.org](http://www.cocorahs.org)

A non-profit, community based, network of volunteers who measure and report the amount of rain, hail and snow in their backyards.

*Weather Underground*

[www.wunderground.com](http://www.wunderground.com)

Among the many weather services available, this site stands out due to forecasts of precipitation totals by hour which is helpful for planning wet weather sampling.

National Oceanic and Atmospheric Administration (NOAA)

*Climate Data Online (CDO)*

[www.ncdc.noaa.gov/cdo-web](http://www.ncdc.noaa.gov/cdo-web)

Archives global historical weather and climate data in addition to station history information. These data include quality controlled daily, monthly, seasonal, and yearly measurements of temperature, precipitation, wind, and degree days, as well as radar data and 30-year climate normals.

*National Weather Service (NWS)*

[www.weather.gov](http://www.weather.gov)

Provides weather, water, and climate data, forecasts and warnings for the protection of life and property, and enhancement of the national economy.

*NWS: Advanced Hydrologic Prediction Service*

[water.weather.gov/ahps/region.php?state=ky](http://water.weather.gov/ahps/region.php?state=ky)

Combines weather forecasts with United States Geological Survey (USGS) stream gages to forecast the magnitude and uncertainty of floods or drought occurrence, from hours to days and months in advance. These graphical products are useful planning tools for economic and emergency managers.

*US Climate Resilience Toolkit*

[toolkit.climate.gov](http://toolkit.climate.gov)

Provides a framework to discover and document climate hazards, which can then be used to develop workable solutions to lower climate-related risks.



## Watershed Data Resources

### Water Quality-Related Databases

#### STATE RESOURCES

Kentucky Division of Water (KDOW)

*Integrated Assessment and Total Maximum Daily Loads*

<http://water.ky.gov/waterquality/Pages/303dList.aspx>

The 303(d) list of impaired waters as well as current Total Maximum Daily Load (TMDL) documents and water health reports are available here.

*Water Maps Portal*

[watermaps.ky.gov](http://watermaps.ky.gov)

Offers a wide variety of water-specific web maps, applications, and services including:

- Flood Risk Portal
- Water Health Portal
- KY Watershed viewer
- Harmful Algal Bloom viewer
- Drought viewer
- FEMA flood map updates
- Story Map Gallery

KDOW maintains data internally via K-WADE and the Ecological Data Application System (EDAS) as well as their assessment database. Information can be obtained from these databases via Freedom of Information Act (FOIA) requests.

Kentucky Geological Survey (KGS)

*Kentucky Groundwater Data Repository*

[kgs.uky.edu/kgsweb/DataSearching/watersearch.asp](http://kgs.uky.edu/kgsweb/DataSearching/watersearch.asp)

Kentucky groundwater-quality data compiled by federal, state, and academic agencies.

*Kentucky Interagency Groundwater Monitoring Network*

[www.uky.edu/KGS/water/gnet/](http://www.uky.edu/KGS/water/gnet/)

Stores groundwater data from long-term groundwater quality monitoring sites, annual monitoring reports, and basin summaries.

*Watershed Watch in Kentucky*

[kgs.uky.edu/wwky/main.htm](http://kgs.uky.edu/wwky/main.htm)

Offers a repository of results collected by the organization's volunteer water samplers. Select sites and data of interest through a variety of criteria, including an interactive map, site number, volunteer name, stream name, stream basin (watershed) and county. An interactive grading site can be accessed at:

[kgs.uky.edu/kgsweb/wwky/grading](http://kgs.uky.edu/kgsweb/wwky/grading)

Volunteer lake monitoring program results can be viewed at: [kgs.uky.edu/wwky/lake](http://kgs.uky.edu/wwky/lake)

*EnviroHealthLink*

[kyibis.mc.uky.edu/ehl/](http://kyibis.mc.uky.edu/ehl/)

Environmental Public Health Tracking (EPHT) Program at the Kentucky Department for Public Health provides health effect data, environmental hazard and exposure data, and community data. EnviroHealthLink is created as part of this program in partnership with the Centers for Disease Control and Prevention (CDC).

*Kentucky Transportation Cabinet (KYTC)*

*Environmental*

[maps.kytc.ky.gov/photolog/?config=EnvironmentalOverview](http://maps.kytc.ky.gov/photolog/?config=EnvironmentalOverview)

Interactive map of KYTC projects, sensitive and special use water areas, bat habitat, and other transportation layers including projects.

While not on the websites, assessments of aquatic ecosystems are performed for larger-scale environmental projects by KYTC (Categorical Exclusion Level 3, Environmental Assessment, or Environmental Impact Statement). These assessments include biological, habitat, and chemical assessments.



## Watershed Data Resources

### REGIONAL RESOURCES

*Division of Mine Permits Watershed Trend Station Data*

[minepermits.ky.gov/Pages/Watershed-Trend-Station-Data.aspx](http://minepermits.ky.gov/Pages/Watershed-Trend-Station-Data.aspx)

Water quality data taken from in-stream sampling sites throughout the Kentucky coalfields. The table on the site lists information for each sample site and a link to its data sheet containing the measurements of concentration for tested analytes.

*Hancock Biological Station and Murry State University - Kentucky Lake and Lake Barkley*  
[murraystate.edu/wsi/wsi\\_database.html](http://murraystate.edu/wsi/wsi_database.html)  
[murraystate.edu/qacd/cos/hbs/wq.cfm](http://murraystate.edu/qacd/cos/hbs/wq.cfm)

Maintains several long-term databases with information on Kentucky Lake and Lake Barkley as well as several surrounding streams. Users can download data and review real-time data.

*UnderBGKY Water Quality Monitoring*  
[www.underbgky.org](http://www.underbgky.org)

Provides real-time monitoring data on various streams and cave systems around Bowling Green. Maintained by Western Kentucky University in conjunction with City of Bowling Green.

*Stormwater Municipalities*  
[www.lexingtonky.gov/stormwater](http://www.lexingtonky.gov/stormwater)  
[www.louisvillemsd.org/WaterQuality](http://www.louisvillemsd.org/WaterQuality)  
[www.sd1.org/ProjectsandPrograms/WatershedManagement.aspx](http://www.sd1.org/ProjectsandPrograms/WatershedManagement.aspx)

Extensive monitoring data has been collected from Kentucky's two Phase I Municipal Separate Storm Sewer Systems (MS4) – Lexington Fayette Urban County Government (LFUCG) and Louisville Metropolitan Sewer District (MSD) – as well as the Phase II Sanitation District 1 (SD1) in Northern Kentucky.

*Public Water Systems*

Drinking water utilities measure the intake water on a routine basis. These data can be obtained from the utilities.

### NATIONAL RESOURCES

Environmental Protection Agency (EPA)

*Water Quality Portal (WQP)*

<https://www.waterqualitydata.us/>

A cooperative service sponsored by USGS, EPA, and the National Water Quality Monitoring Council (NWQMC). It serves data collected by over 400 state, federal, tribal, and local agencies. WQP is the mechanism for anyone, including the public, to retrieve water monitoring data from EPA. It replaces STORET.

*Water Quality Exchange (WQX)*

[www.epa.gov/waterdata/water-quality-data-wqx](http://www.epa.gov/waterdata/water-quality-data-wqx)

The mechanism for data partners to submit water monitoring data to EPA.

*Grants Reporting and Tracking System (GRTS)*

[www.epa.gov/nps/grants-reporting-and-tracking-system-grts](http://www.epa.gov/nps/grants-reporting-and-tracking-system-grts)

Provides history of all nonpoint source funded projects by watershed. Can login as a guest user or work with KDOW to assist. Access all final project reports.

*How's My Waterway*

[watersgeo.epa.gov/mywaterway](http://watersgeo.epa.gov/mywaterway)

Learn the condition of local streams, lakes and other waters anywhere in the US... quickly and in plain language. See if your local waterway was checked for pollution, what was found, and what is being done. Uses EPA database of State water quality monitoring reports. An app is due to be published soon.

*The Assessment, Total Maximum Daily Load (TMDL) Tracking and Implementation System (ATTAINS)*

[www.epa.gov/waterdata/attains](http://www.epa.gov/waterdata/attains)

An online system for accessing information about the conditions in the Nation's surface waters. Select the watershed of interest and get assessment data, status, causes and sources of impairment, and TMDLs.



## Watershed Data Resources

*Nitrogen and Phosphorus Pollution Data Access Tool (NPDAT)*

[www.epa.gov/nutrient-policy-data/nitrogen-and-phosphorus-pollution-data-access-tool](http://www.epa.gov/nutrient-policy-data/nitrogen-and-phosphorus-pollution-data-access-tool)

EPA's Nitrogen and Phosphorus Pollution Data Access Tool (NPDAT) helps states, other partners, and stakeholders to: (1) Prioritize watersheds on a statewide basis for nitrogen and phosphorus loading reductions, and (2) Set watershed load reduction goals based upon best available information.

United States Geological Survey (USGS)  
Groundwater Watch

[groundwaterwatch.usgs.gov](http://groundwaterwatch.usgs.gov)

Contains active groundwater levels, aquifer composite hydrographs, and long-term data.

*National Water Census (NWC)*

[water.usgs.gov/watercensus](http://water.usgs.gov/watercensus)

Provides information that will allow resource managers to assess the supply, use, and availability of the Nation's water. The goal of the NWC is to provide nationally-consistent base layers of well-documented data that account for water availability and use nationally.

*National Water Information System (NWIS)*

[waterdata.usgs.gov/nwis/rt](http://waterdata.usgs.gov/nwis/rt)

Real-time data on streamflow conditions typically recorded at 15-minute intervals.

National Water Quality Assessment Program (NAWQA)

[water.usgs.gov/nawqa](http://water.usgs.gov/nawqa)

A resource for national, regional, and local assessments and trend analyses for water quality including nutrients, aquatic ecology, trace elements, pesticides, and other compounds on surface water and groundwater.

Water Quality Watch

[waterwatch.usgs.gov/wqwatch](http://waterwatch.usgs.gov/wqwatch)

Real-time water quality data including water-temperature, conductivity, pH, dissolved

oxygen, turbidity, nitrate, discharge, and chlorophyll.

## Permitting

### STATE RESOURCES

*Kentucky Division of Environmental Protection (DEP) Permitting E-Search*

[dep.gateway.ky.gov/eSearch/](http://dep.gateway.ky.gov/eSearch/)

The Kentucky DEP's Search Online provides a comprehensive view of DEP's regulated community (agency interests) and their activities, by allowing the public access to information about permitting and compliance activities within the scope of DEP.

*Kentucky Infrastructure Authority (KIA) Water Resource Information System (WRIS)*

[kia.ky.gov/WRIS/Pages/WRIS-Portal.aspx](http://kia.ky.gov/WRIS/Pages/WRIS-Portal.aspx)

[kia.ky.gov/WRIS/Pages/Internet-Mapping.aspx](http://kia.ky.gov/WRIS/Pages/Internet-Mapping.aspx)

The WRIS Portal contains utility information including: KPDES permits, mapping for both wastewater and drinking water systems assets, Area Development District (ADD) information, and State Revolving Fund (SRF) information.

*Kentucky Division of Mine Permits - Interactive Mining Maps:*

[minepermits.ky.gov/Pages/InteractiveMaps.aspx](http://minepermits.ky.gov/Pages/InteractiveMaps.aspx)

The following are applications on the site:

- Surface Mining Information System Mapping Application
- Kentucky Water Sample Data Viewer
- Kentucky Mine Mapping Information System

### NATIONAL RESOURCES

*Enforcement and Compliance History Online (ECHO)*

[echo.epa.gov](http://echo.epa.gov)

An enforcement and compliance history site that can generate regulatory information for a specific entity including compliance with Clean Water Act (CWA), Safe Drinking Water Act (SDWA), Resource Conservation and Recovery Act (RCRA), and other permits.



## Watershed Data Resources

*Permit Compliance System (PCS) and Integrated Compliance Information System (ICIS)*

[www.epa.gov/enviro/pcs-icis-overview](http://www.epa.gov/enviro/pcs-icis-overview)

Provides information on companies which have been issued permits to discharge wastewater into rivers including: when a permit was issued and expires, how much the company is permitted to discharge, and the actual monitoring data showing what the company has discharged.

## Geographic Information Systems and Mapping

### STATE RESOURCES

Kentucky Geography Network

*Ky Geonet*

[kygeonet.ky.gov](http://kygeonet.ky.gov).

On this site you will find links to KyGeoPortal to download GIS data, KyStoryMaps to tour Kentucky with interactive Story Maps, KyFromAbove for the aerial photography and elevation data program and KyGovMaps to use web maps/apps.

*KyGeoPortal*

[kygissserver.ky.gov/geoportal/](http://kygissserver.ky.gov/geoportal/)

Provides access to GIS data that can be used in mapping software, much of which is exclusively for Kentucky. It is also a data clearinghouse that provides easy and convenient ways to discover and share geospatial data resources.

*KyFromAbove*

[kyfromabove.ky.gov/](http://kyfromabove.ky.gov/)

The initiative is focused on building and maintaining a current basemap, including current color leaf-off aerial photography and elevation data (LiDAR).

Kentucky Geological Survey

[kgs.uky.edu/kygeode/services](http://kgs.uky.edu/kygeode/services)

Provides access to KGS data, maps, and publications including: oil & gas wells and records, coal data and mining, groundwater wells, springs, groundwater quality data, karst potential, geological and geotechnical data, and

a host of other Geographic Information System (GIS) services.

### NATIONAL RESOURCES

*The National Map (TNM)*

[viewer.nationalmap.gov/advanced-viewer/](http://viewer.nationalmap.gov/advanced-viewer/)

Supporting themes include boundaries, elevation, geographic names, hydrography, land cover, orthoimagery, structures, and transportation. Other types of georeferenced or mapping information can be added within TNM Viewer or brought in with TNM data into a GIS to create specific types of maps or map views and (or) to perform modeling or analyses.

*WATERS GeoViewer*

<https://www.epa.gov/waterdata/waters-geoviewer>

The Watershed Assessment, Tracking and Environmental Results System (WATERS) integrates water-related information by linking it to the National Hydrography Dataset Plus (NHDPlus) provides the underlying geospatial hydrologic framework that supports a variety of network-based capabilities including upstream/downstream search and watershed delineation.

*Earth Explorer (EE)*

[earthexplorer.usgs.gov](http://earthexplorer.usgs.gov)

Allows users to search, download, and order satellite images, aerial photographs, and cartographic products. In addition to data from the Landsat missions, EE provides access to MODIS land data products from the NASA Terra and Aqua missions, and ASTER level-1B data products.

*Landsat database*

[landsat.usgs.gov/landsat-data-access](http://landsat.usgs.gov/landsat-data-access)

Provides the longest temporal record of moderate resolution multispectral data of the Earth's surface on a global basis.



### Planning, Prioritization and Analysis Tools

#### STATE RESOURCES

*Kentucky Division of Water's Recovery Potential Screening Tool*

Contact Caroline Chan at KDOW directly to obtain access on the data layers in this GIS database that can be used to determine recovery potential within the state.

*UK's Watershed Atlas Project*  
[ukla.ca.uky.edu/KLEAR/Watershed-Atlas-Project](http://ukla.ca.uky.edu/KLEAR/Watershed-Atlas-Project)

The Watershed Atlas Project is an approach to waterway and watershed health assessment that utilizes existing publicly available geospatial data to visualize landscape indicator aspects of multiple watersheds simultaneously.

#### REGIONAL RESOURCES

*Cumberland River Compact*  
<https://cumberlandriverbasin.org/icreek>

iCreek is an interactive tool developed by the Cumberland River Compact and The Nature Conservancy of Tennessee. If you live in the Cumberland River Basin, the tool will tell you if your neighborhood waterway is healthy. If your waterway is unhealthy, the tool will also list activities you can do and resources you can use to help your stream.

#### NATIONAL RESOURCES

United States Geological Survey (USGS)  
*StreamStats*  
[water.usgs.gov/osw/streamstats](http://water.usgs.gov/osw/streamstats)

Interactive application that will delineate drainage areas from a point for user-selected sites on streams, and then get basin characteristics and estimates of flow statistics.

Flood Inundation Mapper (FIM)  
[water.usgs.gov/osw/flood\\_inundation](http://water.usgs.gov/osw/flood_inundation)

Helps communities protect lives and property by exploring the depth and area of inundation under different flood scenarios.

Environmental Protection Agency (EPA)  
*Recovery Potential Screening Tool*  
[www.epa.gov/rps](http://www.epa.gov/rps)

This compares watershed condition and restorability, piloted in Kentucky, opportunity to request assistance with using Kentucky-specific tool through Division of Water.

*Watershed Index Online (WSIO)*  
[www.epa.gov/waterdata/watershed-index-online](http://www.epa.gov/waterdata/watershed-index-online)

A national watershed indicator data library and analysis tool for comparing watershed characteristics within user-defined geographic areas.

*National Stormwater Calculator*  
[www.epa.gov/water-research/national-stormwater-calculator](http://www.epa.gov/water-research/national-stormwater-calculator)

Software application that estimates the annual amount of rainwater and frequency of runoff from a specific site.

*NEPAssist*  
[www.epa.gov/nepa/nepassist](http://www.epa.gov/nepa/nepassist)

Facilitates the environmental review process and project planning in relation to environmental considerations. Sites also contains EJSCREEN - an environmental justice mapping and screening tool.

Federal Emergency Management Agency  
*Disaster Declarations Visualization*  
[www.fema.gov/data-visualization-summary-disaster-declarations-and-grants](http://www.fema.gov/data-visualization-summary-disaster-declarations-and-grants)

This page contains an interactive tool to allow users to explore grant data and disasters declared by location and disaster.

*Stroud Water Research Center WikiWatershed Toolkit*  
[wikiwatershed.org](http://wikiwatershed.org)

Web toolkit designed to help citizens, conservation practitioners, municipal decision-makers, researchers, educators, and students advance knowledge and stewardship of fresh water.



### Other Related Environmental Data

#### STATE RESOURCES

*The Kentucky Department of Fish and Wildlife Resources (KDFWR) – Wildlife Action Plan*  
[fw.ky.gov/WAP/Pages/default.aspx](http://fw.ky.gov/WAP/Pages/default.aspx)

The KDFWR Wildlife Action Plan was developed to identify and conserve Kentucky's Species of Greatest Conservation Need and to comply with the requirements of the congressionally authorized State and Tribal Wildlife Grants (STWG) Program. This document represents a proactive plan for sustaining the diversity of species and habitats found in Kentucky.

*State Hazard Mitigation Plan*  
<https://kyem.ky.gov/recovery/Pages/State-Hazard-Mitigation-Plan.aspx>

Provides risk assessment, mitigation strategies, and coordination of local planning efforts as part of the Kentucky Division of Emergency Management.

#### NATIONAL RESOURCES

*United States Fish and Wildlife Service Information for Planning and Consultation*  
[ecos.fws.gov/ipac/](http://ecos.fws.gov/ipac/)

Quickly and easily identify United States Fish and Wildlife managed resources and suggested conservation measures for your project.

*Federal Emergency Management Agency (FEMA) - Disaster Declarations Visualization*  
[www.fema.gov/data-visualization-summary-disaster-declarations-and-grants](http://www.fema.gov/data-visualization-summary-disaster-declarations-and-grants)

Summaries of disaster declarations by state. Data available for download and analysis.

*National Resources Conservation Service (NRCS) - Web Soil Survey*  
[websoilsurvey.sc.egov.usda.gov/App/HomePage.htm](http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm)

Web Soil Survey (WSS) provides soil data and information produced by the National Cooperative Soil Survey. NRCS has soil maps

and data available online for more than 95 percent of the nation's counties.

*United States Army Corps of Engineers (USACE) – National Inventory of Dams*  
[nid.usace.army.mil](http://nid.usace.army.mil)

Interactive maps and reports of the National Inventory of Dams. Includes searchable database of heights, hazard classification, storage, withdrawals, and other information.

*United States Census Bureau – Census Data*  
[census.gov/quickfacts/table/](http://census.gov/quickfacts/table/)  
QuickFacts from the Census Bureau contains information based on state, county, city, town or zip code on population, age & sex, ethnicity, population characteristics, housing, families and living arrangements, education, health, economy, transportation, income & poverty, businesses and geography.

*United States Department of Agriculture - Ag Statistics*  
[www.nass.usda.gov/Statistics\\_by\\_State/Kentucky/index.php](http://www.nass.usda.gov/Statistics_by_State/Kentucky/index.php)  
[www.nass.usda.gov/Publications/AgCensus/2012/Online\\_Resources/Ag\\_Census\\_Web\\_Maps/index.php](http://www.nass.usda.gov/Publications/AgCensus/2012/Online_Resources/Ag_Census_Web_Maps/index.php)

The National Agricultural Statistics Service (NASS) offers Quick Stats, an online database containing official published aggregate estimates related to U.S. agricultural production. Get county agricultural statistics for various years.