Kentucky Geological Survey
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UNIVERSITY OF KENTUCKY, LEXINGTON

Big Sandy/Little Sandy and Tygarts Creek Basins

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Map and Chart 192
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Basin Location

Nearly 7,600 miles of streams flow through the basin's 3,440 square miles in 14 counties to the Tug Fork, Big Sandy River, and Ohio River. The Tygarts Creek–Little Sandy River Basin includes 1,160 square miles. The Big Sandy River Basin has 2,285 square miles in Kentucky and 1,950 square miles in West Virginia and Virginia. There are nearly 17,000 acres of wetlands, including water bodies.

Residents draw about 27 million gallons of water per day (mgd) from streams and reservoirs in the basin. About three in five residents are on public water; other households rely primarily on domestic wells. Only about one in four households are on public sewer. On-site wastewater treatment is a critical issue affecting water quality throughout the basin.

More than 540 miles of streams in the basin do not fully support designated uses for warm-water aquatic habitat, fish consumption, and primary contact recreation. Most streams have not been assessed. The percentage of assessed streams not supporting uses was: warm-water aquatic habitat (60%); fish consumption (16%); primary contact recreation (40%).

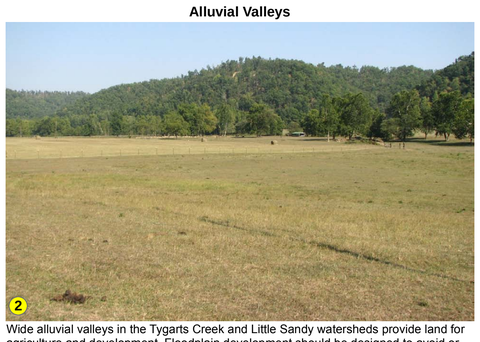
45 miles of streams have been declared special use waters: either exceptional waters or reference reach waters.

There are four remediation priority watersheds including 200 square miles: primary impacts are pathogens, PCBs, metals, siltation, dissolved solids, chlorides, and salinity.

Greenbo Lake

Beautiful Greenbo Lake in Greenup County reflects the surrounding hills on a quiet day. The 181-acre lake is located within Greenbo Lake State Resort Park. The 3,000-acre park provides camping, fishing (renowned for largemouth bass), boating, golf, and hiking and biking trails.

Alluvial Valleys

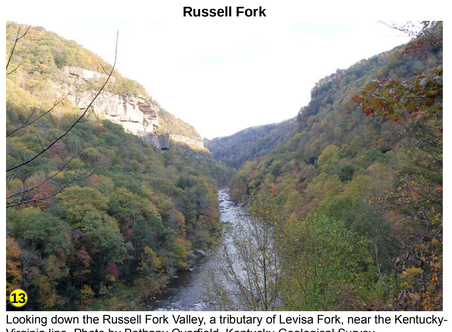


Wide alluvial valleys in the Tygarts Creek and Little Sandy watersheds provide land for agriculture and development. Floodplain development should be designed to avoid or minimize flood damage.

Carter Caves

Carter Caves State Resort Park in Carter County is a popular attraction for tourism, golfing, and business meetings. Beautiful hiking trails and caves can be found in the steep-sided tributary valleys of Tygarts Creek formed by Mississippian limestones.

Russell Fork

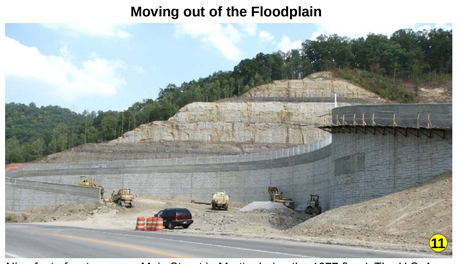


Looking down the Russell Fork Valley, a tributary of Levisa Fork, near the Kentucky-Virginia line. Photo by Bethany Overfield, Kentucky Geological Survey.

Wetlands

Nearly 17,000 acres of wetlands 1 acre or larger have been delineated in the basin by the National Wetlands Inventory Program. Wetlands are vital to aquatic life and the maintenance of water quality.

Moving out of the Floodplain

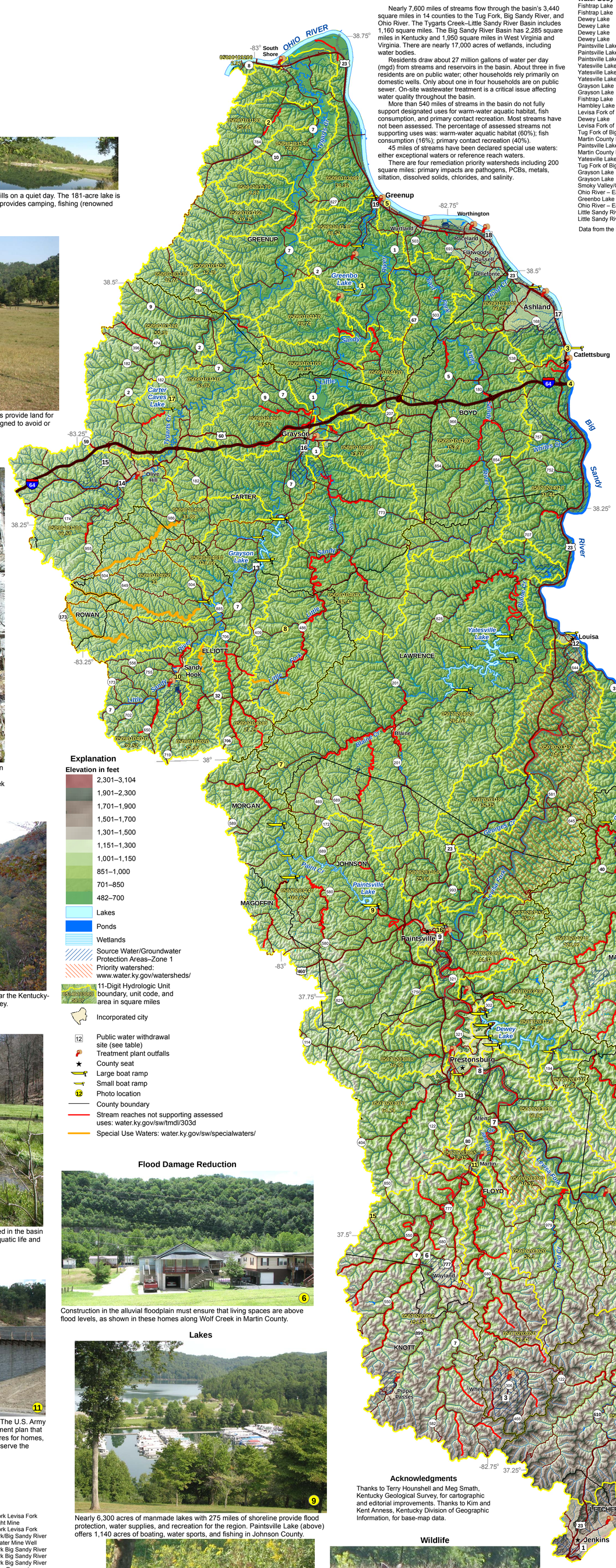


Nine feet of water ran on Main Street in Martin during the 1977 flood. The U.S. Army Corps of Engineers, Huntington District, is implementing a redevelopment plan that will provide relocation and other nonstructural flood protection measures for homes, businesses, and government buildings. The plan was designed to preserve the cohesiveness of the Floyd County community.

Public Water Withdrawals

Location ID[1]	PWSID	Owner	Source
1	0670213	Jenkins Water System	Lake 203
2	0980120	Elkhorn City Water Department	Russell Fork Levisa Fork
3	0360463	Wheelwright Utilities Commission	Wheelwright Mine
4	0980575	Mountain Water District	Russell Fork Levisa Fork
5	0980350	Pikeville Water Department	Levisa Fork/Big Sandy River
6	0360152	Francis Water Company	Francis Water Mine Well
7	0360026	Southern Water & Sewer District	Levisa Fork Big Sandy River
8	0360358	Prestonsburg City Utilities Commission	Levisa Fork Big Sandy River
9	0580340	Paintsville Utility Commission	Levisa Fork Big Sandy River
10	0800273	Martin County Water District	Curtis Crum Reservoir
11	0800273	Martin County Water District	Tug Fork Big Sandy River
12	0640257	Louisa Board of Water and Sewer Commission	Levisa Fork Big Sandy River
13	0220555	Rattlesnake Ridge Water District	Grayson Lake
14	0220335	Olive Hill Municipal Water Works	Tygarts Creek
15	0220335	Olive Hill Municipal Water Works	Olive Hill Reservoir
16	0220164	Grayson Utility Commission	Little Sandy River
17	0100011	Ashland Water Works	Ohio River
18	0450376	Russell Water Works	Ohio River
19	0450169	Greenup Water Department	Little Sandy River

Data from the Kentucky Infrastructure Authority (2008)
[1]Public Water System Identification Number



Flood Damage Reduction

Construction in the alluvial floodplain must ensure that living spaces are above flood levels, as shown in these homes along Wolf Creek in Martin County.

Lakes

Nearly 6,300 acres of manmade lakes with 275 miles of shoreline provide flood protection, water supplies, and recreation for the region. Paintsville Lake (above) offers 1,140 acres of boating, water sports, and fishing in Johnson County.

Acknowledgments

Thanks to Terry Hounshell and Meg Smath, Kentucky Geological Survey, for cartographic and editorial improvements. Thanks to Kim and Kent Anness, Kentucky Division of Geographic Information, for base-map data.

Wildlife

The resources in the basin are shared by many (above and left).

Boat Ramps in the Basin

Water Body	Name	Type	Directions	Fee	Latitude	Longitude
Fishtrap Lake	Lick Creek ramp	any boat	Ky. 80 southeast of Pikeville; left on U.S. 460; left on Ky. 1373 to ramp	no	37.40779	-82.31801
Fishtrap Lake	Dam ramp	any boat	Ky. 80 southeast of Pikeville to Ky. 1789; follow signs	yes	37.43665	-82.41445
Dewey Lake	Jenny Wiley State Park Marina ramp	any boat	Ky. 1428 east of Prestonsburg; left on Ky. 302 to state park	no	37.69361	-82.72723
Dewey Lake	Jenny Wiley State Park–Stratton Branch ramp	any boat	Ky. 1428 east of Prestonsburg; Ky. 302 to state park; follow Ky. 302 around lake to ramp	no	37.70194	-82.73893
Dewey Lake	Jenny Wiley State Park Campground ramp	any boat	Ky. 1428 east of Prestonsburg; left on Ky. 302; follow around lake to site	no	37.71440	-82.73890
Dewey Lake	Terry ramp	any boat	Ky. 1428 east of Prestonsburg; left on Ky. 302; follow around lake to site	no	37.72645	-82.74262
Paintsville Lake	Paintsville Lake State Park ramp	any boat	Ky. 40 west of Paintsville; right on Ky. 2275 to lake	no	37.84292	-82.87993
Paintsville Lake	Big Mine Fork ramp	any boat	Ky. 40 east of Salyersville; Ky. 1437 north to Wheelersburg; right on Ky. 5041 (Jellico Branch Road – Big Mine Fork) to ramp	no	37.87450	-82.98621
Paintsville Lake	Open Fork boat ramp	any boat	Ky. 172 east of West Liberty to Relief; right on Open Fork Road; follow signs	no	37.92989	-83.00146
Yatesville Lake	Rich Creek ramp	any boat	Ky. 32 west of Louisa; follow signs	no	38.06448	-82.75062
Yatesville Lake	Pleasant Ridge ramp	any boat	Ky. 32 west of Louisa to Pleasant Ridge Road	no	38.09525	-82.68909
Yatesville Lake	Barkers Marina ramp	any boat	Ky. 3 north of Louisa; left on Ky. 3397; left on Ky. 1185	no	38.11880	-82.69359
Grayson Lake	Bruin Creek	any boat	Ky. 7 north of Sandy Hook; follow signs to lake (before entering Carter County)	no	38.20149	-83.01083
Grayson Lake	Dam ramp	any boat	Ky. 7 south of Grayson; first road on left after crossing dam	yes	38.24833	-82.98608
Fishtrap Lake	Grapevine ramp	small boat only	U.S. 23 north of Pikeville; right on U.S. 119; right on Ky. 194 to Phyllis; follow signs to lake	yes	37.43156	-82.35885
Hambley Lake	Hambley Lake ramp	small boat only	Ky. 1426 to Combs Avenue; turn right at three-way stop onto Trivette Drive; ramp is near Agriculture Extension Office	no	37.48465	-82.51652
Levisa Fork of Big Sandy River	Prestonsburg ramp	small boat only	Ky. 1428 to West Court Street; right onto north Front Street; take first left to river park	no	37.66397	-82.77329
Dewey Lake	German Bridge ramp	small boat only	Ky. 1428 east of Prestonsburg to Emma; left on Ky. 194 to bridge	no	37.68481	-82.65298
Levisa Fork of Big Sandy River	Paintsville River Access	small boat only	Ky. 40 in Paintsville; southeast on Ky. 1428; left onto State Street; left onto Chessie Lane to River Road	no	37.81329	-82.79204
Tug Fork of Big Sandy River	Warfield ramp	small boat only	Ky. 40 east of Inez to Warfield; left on Ky. 292 to ramp	no	37.84611	-82.42032
Martin County Reservoir	Martin County Reservoir ramp	small boat only	Ky. 40 southeast from Inez; left onto Ky. 908; left onto Reservoir Road	no	37.87892	-82.51803
Paintsville Lake	Lost Creek boat ramp	small boat only	Ky. 172 north from West Liberty; right onto Ky. 437; right on to Ky. 1260; right onto Lost Creek Road to ramp	no	37.89743	-82.98873
Martin County Lake	Martin County Lake ramp	small boat only	Ky. 40 west of Inez; Ky. 645 north; Ky. 1884 east (Milo Road)	no	37.92178	-82.56743
Yatesville Lake	Twin Branch ramp	small boat only	Ky. 3 north of Louisa; left on Ky. 1; left on Ky. 828 (which becomes Twin Branch Road) to ramp	no	38.10873	-82.74443
Tug Fork of Big Sandy River	Louisa ramp	small boat only	Ky. 3 in Louisa to north Winston Street; right onto Main Street to ramp	no	38.11975	-82.60501
Grayson Lake	Caney Creek	small boat only	Ky. 7 north of Sandy Hook; left on Ky. 504	no	38.16466	-83.08912
Grayson Lake	Clifty Creek ramp	small boat only	Ky. 7 south of Grayson; pass dam on Grayson Lake; right on gravel road just before bridge over Clifty Creek arm	no	38.23014	-83.01448
Smoky Valley/Carter Caves Lake	Smoky Valley/Carter Caves Lake ramp	small boat only	I-64 west of Grayson (exit 161); turn right and follow signs to Carter Caves State Park	no	38.36659	-83.12958
Ohio River – East	Catlettsburg ramp	small boat only	In Catlettsburg; Division Street behind floodwall at boat club	no	38.41662	-82.59643
Greenbo Lake	Greenbo Lake State Park	small boat only	Ky. 1 south of Greenbo; right on Ky. 1711; follow signs	no	38.48488	-82.88410
Ohio River – East	Ashland ramp	small boat only	In Ashland; north end of 16th Street behind floodwall	no	38.48167	-82.63849
Little Sandy River	Raccoon ramp	small boat only	Ky. 2 southwest of Greenup (6 miles) at bridge crossing	no	38.53038	-82.87130
Little Sandy River	Greenup ramp	small boat only	U.S. 23 northwest of Greenup (1/4 mile)	no	38.57981	-82.84300

Data from the Kentucky Department of Fish and Wildlife Resources: kygeonet.ky.gov/kdfwr/viewer.htm.

Flood Protection

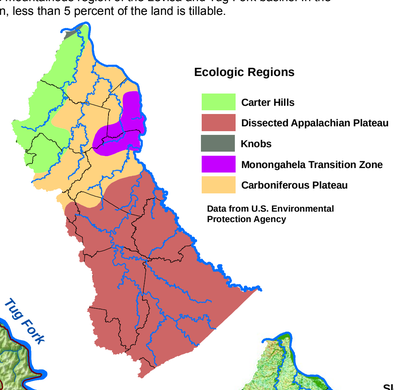
As a river town at the confluence of the Ohio and Big Sandy Rivers, Catlettsburg was subject to flooding on a regular basis—estimated at every 18 months prior to 1937. During that year, a major flood convinced the town that a floodwall was necessary. The levee (left) and floodwall seen here have been in operation since that time, and are crucial to the survival of the town during floods. Photo by Bart Davidson, Kentucky Geological Survey.

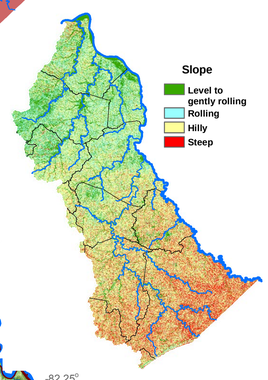
Levisa Fork

Levisa Fork, seen here at Paintsville in Johnson County, drains three-fourths of the mountainous Dissected Appalachian Plateau region. Thin soils, lack of public wastewater treatment, mining, logging, and failed septic systems throughout the watershed contribute to water-quality problems.

Agriculture

Narrow alluvial valleys, such as this in the headwaters of Blaine Creek in Lawrence County, provide limited level land for homes and agriculture in the mountainous region of the Levisa and Tug Fork basins. In the region, less than 5 percent of the land is tillable.





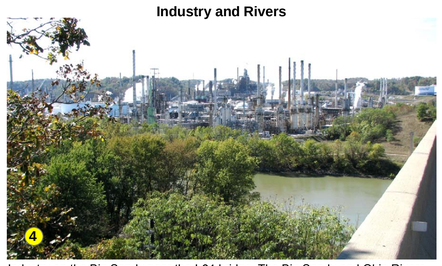
Recreation

Kayakers run the Class V water on the Russell Fork River in the Breaks Interstate Park on the Kentucky-Virginia line. A variety of experiences—boating, fishing, or merely enjoying the scenery—is provided by waterways throughout the basin. Breaks Interstate Park is one of two interstate parks in America and encompasses 4,500 acres of woodland. The Breaks, home of the deepest gorge east of the Mississippi River, also rises to lofty heights where golden eagles make their home. The Towers and other rock formations, caves, flora, and wildlife make the park a unique tourist destination. Photo by Bethany Overfield, Kentucky Geological Survey.

River Transportation

River transportation supports industry on the Ohio and Big Sandy Rivers.

Industry and Rivers

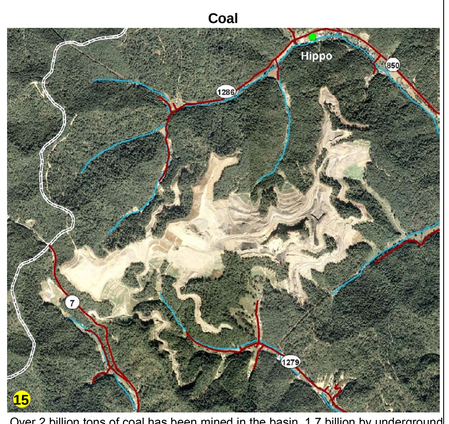


Industry on the Big Sandy near the I-64 bridge. The Big Sandy and Ohio Rivers provide water, transportation, and level land for industry.

Little Sandy River

The Little Sandy River undercuts its sandstone bank in a quiet bend near Sandy Hook in Elliott County.

Coal

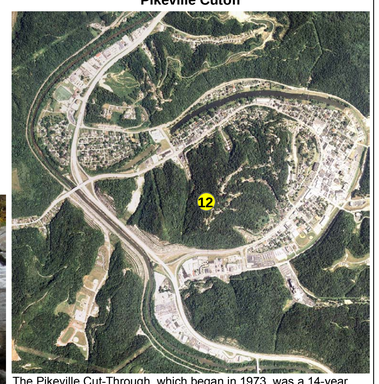


Over 2 billion tons of coal has been mined in the basin, 1.7 billion by underground mining. In recent years, surface mines—such as this mountaintop job near Hippo in Floyd County—have played a greater role in production. Photo from the U.S. Department of Agriculture, National Agricultural Imagery Program, 2004.

More Information

Boating and fishing access sites, Ky. Dept. Fish and Wildlife Resources: kygeonet.ky.gov/kdfwr/
Big Sandy/Little Sandy and Tygarts Basin Team: www.watersheds.ky.gov/basins/big_little_sandy/
Dewey Lake, U.S. Army Corps of Engineers: www.lrh.usace.army.mil/projects/lakes/DEW/
Fishtrap Lake: parks.ky.gov/findparks/recparks/ft/
Grayson Lake: parks.ky.gov/findparks/recparks/gl/
Paintsville Lake, U.S. Army Corps of Engineers: www.lrh.usace.army.mil/projects/lakes/piv/
Yatesville Lake, parks.ky.gov/findparks/recparks/yl/
Kentucky Division of Water: water.ky.gov/
Kentucky Water Resources Research Institute: www.uky.edu/WaterResources/
Kentucky Geological Survey: www.uky.edu/kgs/water/library
Water Watch Data: kgsmap.uky.edu/website/krww/
U.S. Geological Survey surface water data: water.usgs.gov/osw/

Pikeville Cutoff



The Pikeville Cut-Through, which began in 1973, was a 14-year engineering achievement second only to the Panama Canal. The channel is 1,300 feet wide, 3,700 feet long, and 523 feet deep. It reroutes the flow of the Levisa Fork away from the oxbow that encircles Pikeville and controls flooding. The 390 acres of flat land that were created have seen extensive development. This 2004 photo from the U.S. Department of Agriculture shows the completed cutoff.