



In cooperation with the Kentucky Transportation Cabinet—Department of Highways

Estimating Mean Annual Streamflow of Rural Streams in Kentucky

Water-Resources Investigations Report 02-4206

U.S. Department of the Interior
U.S. Geological Survey

EXAMPLE APPLICATIONS OF ESTIMATING EQUATIONS

The estimating equations presented in this report can be applied to rural, ungaged streams with flows not appreciably affected by local diversions by (1) determining the basin characteristics required for the appropriate equation, (2) checking to ensure that the basin characteristics fall within the range of characteristics values used to develop the equation, and (3) use of the measured basin characteristics values with the appropriate equation to compute the estimate.

For example, assume that an estimate of Q_a is needed for an ungaged rural stream site with a drainage area of 80 mi², at a latitude of 37.525°, and a mean basin elevation of 900 ft above sea level. A comparison of basin characteristics with those listed in table 2 indicates that the characteristics for this basin are within the range of characteristics of gaging stations used to develop the estimating equations. Estimates of Q_a are computed as

$$Q_a = 1.39 A^{1.00} (Lat_g - 36)^{-0.15} E^{0.12}.$$

Substituting the measured basin characteristics into the above equation yields

$$Q_a = 1.39(80)^{1.00}(37.525-36)^{-0.15}(0.900)^{0.12} \\ = 103 \text{ ft}^3/\text{s.}$$

If it is desired to quickly obtain an approximate estimate by use of the drainage-area-only equation, then the first equation in table 2 is applied:

$$Q_a = 1.38 A^{1.01}.$$

Substituting the measured basin characteristics into the above equation yields

$$Q_a = 1.38(80)^{1.01} = 115 \text{ ft}^3/\text{s.}$$

In situations where an estimate of Q_a is needed at a stream site on a reach near a gage location and the drainage area at the point of interest

is between 50 and 150 percent of the drainage area of the gaged site, then equation 9 can be applied to obtain a Q_a estimate weighted by use of gaging-station information as shown in the following example.

Assume there is a streamflow-gaging station located downstream on the same stream reach used in the previous example with a drainage area of 85.9 mi², a latitude of 37.704°, and a mean basin elevation of 866 ft above sea level. The Q_a at the gaged site as computed from the long-term streamflow data is 104 ft³/s. The regression estimate of Q_a at the gaged site is

$$Q_a = 1.39(85.9)^{1.00}(37.704-36)^{-0.15}(0.866)^{0.12} \\ = 108 \text{ ft}^3/\text{s.}$$

The coefficient R is determined as

$$R = Q_{a_{gm}} / Q_{a_{gr}} = \frac{104}{108} = 0.963.$$

The gage-weighted Q_a estimate for the ungaged site is computed as

$$Q_{a_{uw}} = Q_{a_{ur}} \left[R - \left(\frac{2(|\Delta A|)(R-1)}{A_g} \right) \right]$$

$$Q_{a_{uw}} = \\ 103 \left[0.963 - \left(\frac{2(|85.9 - 80.01|)(0.963 - 1)}{85.9} \right) \right]$$

$$Q_{a_{uw}} = 99.7 \text{ ft}^3/\text{s.}$$

This adjusted Q_a estimate for the ungaged upstream site, 99.7 ft³/s, is 96 percent of the measured long-term Q_a (104) at the gaged site. This result is consistent with the ratio of the drainage areas of these two sites, 0.93, and is reasonable.

SUMMARY

Mean annual streamflow data are needed by water-resource managers and engineers for design of structures in streams and rivers. Techniques for estimating streamflow characteristics at ungaged sites are part of this need; therefore, the U.S. Geological Survey, in cooperation with the Kentucky Transportation Cabinet—Department of Highways, began a study in 1999 to compile available continuous-record streamflow-gaging data, compute mean annual flow at streamflow-gaging stations, and develop equations for estimating mean annual streamflow at ungaged rural stream sites.

The values of mean annual streamflow, Q_a , were determined at selected streamflow-gaging stations in Kentucky and surrounding States. Streamflow data for the available period of record through the 1999 water year at 235 continuous-record streamflow-gaging stations with at least 5 years of record were used in the analysis. Record extension at selected stations was accomplished by use of the MOVE.1 technique to reduce time-sampling error and, thus, improve estimates of long-term Q_a values.

Techniques to estimate Q_a at ungaged stream sites in Kentucky were developed. A multiple-linear-regression analysis was used to relate Q_a values to drainage-basin characteristics. One-, two-, and three-variable regression equations that included total drainage area, streamflow-gaging station latitude minus 36 degrees, and mean basin elevation as explanatory variables were developed by use of generalized-least-squares regression, which compensated for differences in the variability and reliability of, and correlation among, the Q_a estimates at the 170 gaging stations with 10 or more years of record included in the regression analysis. The three-variable regression equation has an approximate average standard error of prediction of 13.7 percent. The one- and two-variable equations exhibit geographical biases, and the indicated standard errors of prediction may estimate poorly the true prediction errors, depending on the location in the State. The one- and two-variable models are suitable for initial approximate Q_a estimates; however, the three-variable equation should be used whenever possible for estimating mean annual streamflow of rural streams in Kentucky. Estimating

equations can be applied by (1) determining the basin characteristics required for the appropriate equation, (2) checking to ensure that the basin characteristics are within the range of values used to develop the equation, and (3) substituting the basin-characteristic values for the variables in the estimating equations as described in the example applications presented.

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GLOSSARY

COEFFICIENT OF MULTIPLE DETERMINATION.

The proportion of the variation in the dependent variable explained by the variables in a fitted regression model. Reported values are adjusted for error degrees of freedom.

LEVEL OF SIGNIFICANCE.—The selected maximum probability of making a Type I error, or rejecting a true null hypothesis. Hypothesis tests were used to determine if statistically significant relations existed between dependent and explanatory variables of regression models.

LOCAL DIVERSION.—A localized transfer of water, such as a water-supply withdrawal or wastewater releases, that artificially increase or decrease streamflow in a reach.

MULTICOLLINEARITY.—The presence of a high correlation (near linear dependencies) between two or more explanatory variables of a regression. Multicollinearity causes instability in the estimates of the least-squares regression coefficients.

MULTIPLE-LINEAR REGRESSION.—A method of regression wherein a linear relation between a dependent variable and more than one explanatory variable is defined.

ORDINARY-LEAST-SQUARES REGRESSION.—A method of fitting a regression model in which the sum of squared residuals (see Residual) is minimized.

PREDICTION SUM OF SQUARES (PRESS)

STATISTIC.—A measure of model-prediction error useful in regression-model selection. It is computed by summing the square of the prediction residuals resulting from the series of predictions of each observation by regressions defined using all other observations. Thus, each observation is in turn excluded from the regression data set and is not used in prediction of itself. This process simulates prediction using new data and is a form of data splitting useful for model validation (Allen 1971, 1974; and Montgomery and Peck, 1982).

REGULATED STREAMFLOW.—Streamflow controlled by upstream hydraulic structures such as dams.

RESIDUAL.—The difference between values of mean annual streamflow computed by use of streamflow-gaging data and values estimated by use of a regression model.

STANDARD ERROR OF ESTIMATE.—A measure of model-fitting error; it is the standard deviation of the residuals of a regression adjusted for error degrees of freedom. Percentage values in this report were estimated by use of model root-mean-square error, or the square root of the sum of the squares of the residuals divided by the error degrees of freedom— $n-k-1$, where n is the number of observations and k is the number of explanatory variables in the regression—(Statistical Analysis System Institute, Inc., 1985) and information from Hardison (1971).

STANDARD ERROR OF PREDICTION.—A measure of model-prediction error; it was estimated as the square root of the PRESS divided by the degrees of freedom for error (Statistical Analysis System Institute, Inc., 1985; Montgomery and Peck, 1982; and Choquette, 1988). (See Prediction Sum of Squares (PRESS) Statistic.)

STREAMFLOW.—Discharge, measured as the volume of water that passes a given point within a given period of time (cubic feet per second), that occurs in a natural channel whether or not it is affected by diversion or regulation.

STREAMFLOW-GAGING STATION.—An installation that provides systematic observations of stage from which streamflow is computed.

VARIANCE INFLATION FACTOR (VIF).—An indicator of multicollinearity; it is a measure of the combined effect of the dependencies among explanatory variables on the variance of each term in a regression model (Marquardt, 1970; and Montgomery and Peck, 1982).

WATER YEAR.—The 12-month period from October 1 through September 30. The water year is designated by the calendar year in which it ends.

Table 1. Continuous-record streamflow-gaging stations used in the study, selected basin characteristics, periods of record used in the analysis, corresponding mean annual flows, and selected reservoirs and diversions in the basin for Kentucky and surrounding States

[mi², square miles; ft³/s, cubic feet per second; ft³/s/mi², cubic feet per second per square mile; --, not applicable; LD, local diversion; all stations are in Kentucky unless otherwise noted]

Station number	Station name	Mean				Period of record used	Selected reservoirs		
		Total drainage area (mi ²)	Gage latitude (decimal degrees)	Gage longitude (decimal degrees)	Mean basin elevation (feet above sea level)		Number of years (water years ¹)	Mean annual flow (ft ³ /s)	Standardized mean annual flow (ft ³ /s/mi ²)
03202400	Guyandotte River near Baileysville, West Virginia	306	37.600	81.650	2,106	1969-98	30	424	1.39
03203000	Guyandotte River at Man, West Virginia	758	37.740	81.880	1,878	1930-62	33	984	1.30
03203600	Guyandotte River at Logan, West Virginia	833	37.840	82.000	1,827	1963-98	36	1,170	1.40
03204500	Mud River near Milton, West Virginia	256	38.390	82.110	909	1939-80	42	290	1.13
03206600	East Fork Twelvepole Creek near Dunlou, West Virginia	38.5	38.020	82.300	1,081	1965-98	34	53.5	1.39
03207000	Twelvepole Creek at Wayne, West Virginia	291	38.220	82.450	986	1916-17, 1928-31, 1947-54, 1956-66	25	320	1.10
03207020	Twelvepole Creek below Wayne, West Virginia	300	38.250	82.430	980	1916-17, 1928-31, 1947-54, 1956-82	40	349	1.16
03207500	Levisa Fork near Grundy, Virginia	235	37.300	82.130	2,036	1942-74, 1986-87	34	290	1.23
03207962	Dicks Fork at Phyllis	.82	37.449	82.338	1,500	1976-84	9	.94	1.15
03207965	Grapevine Creek near Phyllis	6.20	37.432	82.354	1,429	1974-82, 1990-92, 1995-99	17	8.46	1.36
03208000	Levisa Fork below Fishtrap Dam, near Millard	392	37.416	82.421	1,810	1939-92	54	475	1.21
03208500	Russel Fork at Haysi, Virginia	286	37.210	82.300	1,996	1927-99	73	336	1.18
03208950	Cranes Nest River near Clinwood, Virginia	66.5	37.120	82.440	2,074	1964-99	36	79.9	1.20
03209000	Pound River below Flannagan Dam near Haysi, Virginia	221	37.229	82.343	1,965	1927-99	72	277	1.26
03209300	Russell Fork at Elkhorn City	554	37.304	82.343	1,950	1961-92	32	708	1.28
									Flannagan Lake, 12/63; North Fork Pound Lake, 08/66

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[mi², square miles; ft³/s, cubic feet per second; ft³/s/mi², cubic feet per second per square mile; --, not applicable; LD, local diversion; all stations are in Kentucky unless otherwise noted]

Station number	Station name	Period of record used						Selected reservoirs		
		Total drainage area (mi ²)	Gage latitude (decimal degrees)	Gage longitude (decimal degrees)	Mean basin elevation (feet above sea level)	Number of years in the analysis (water years ¹)	Mean annual flow (ft ³ /s)	Standardized mean annual flow (ft ³ /s/mi ²)	in basin and Lake, 08/66	start date or type of local diversion and location
03209500	Levisa Fork at Pikeville	1,232	37.476	82.518	1,789	1938-99	62	1,470	1.19	Flannagan Lake, 12/63; North Fork Pound
03209800	Levisa Fork at Prestonsburg	1,702	37.671	82.777	1,628	1964-81	18	2,130	1.25	Fishtrap Lake, 10/68
03210000	Johns Creek near Meta	56.3	37.567	82.458	1,384	1942-93, 1995-99	57	68.9	1.22	--
03211500	Johns Creek near Van Lear	206	37.744	82.724	1,154	1940-92	53	232	1.12	Dewey Lake, 05/50
03212000	Paint Creek at Staffordsville	103	37.835	82.871	965	1951-75	25	128	1.25	--
03212500	Levisa Fork at Paintsville	2,144	37.815	82.792	1,485	1916, 1929-99	72	2,480	1.16	Dewey Lake, 05/50; Flannagan Lake, 12/63; North Fork Pound
03213700	Tug Fork at Williamson, West Virginia	936	37.673	82.280	1,731	1968-98	31	1,140	1.22	Fishtrap Lake, 10/68
03215000	Big Sandy River at Louisa	3,897	38.171	82.635	--	1940-47, 1949-76	36	4,440	1.14	Dewey Lake, 05/50; Flannagan Lake, 12/63; North Fork Pound
03215500	Blaine Creek at Yatesville	217	38.144	82.685	862	1916-18, 1939-75	40	247	1.14	Fishtrap Lake, 10/68
03216000	Ohio River at Ashland	60,750	38.481	82.637	--	1940-52	13	284,000	1.38	Various
03216350	Little Sandy River below Grayson Dam near Leon	196	38.254	82.991	912	1967-92	26	241	1.23	Grayson Lake, 03/68
03216400	Little Sandy River at Leon	255	38.286	82.977	905	1962-80	19	314	1.23	Grayson Lake, 03/68
03216500	Little Sandy River at Grayson Fallsburg	400	38.330	82.939	875	1939-99	61	479	1.20	Grayson Lake, 03/68
03216540	East Fork Little Sandy River near Fallsburg	12.2	38.234	82.709	855	1973-91	19	15.6	1.28	--

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[mi², square miles; ft³/s, cubic feet per second; ft³/s/mi², cubic feet per second per square mile; --, not applicable; LD, local diversion; all stations are in Kentucky unless otherwise noted]

Station number	Station name	Total drainage area (mi ²)	Gage latitude (decimal degrees)	Gage longitude (decimal degrees)	Mean basin elevation (feet above sea level)	Period of record used in the analysis (water years ¹)	Number of years	Mean annual flow (ft ³ /s)	Standardized mean annual flow (ft ³ /s/mi ²)	Selected reservoirs in basin and start date or type of local diversion and location
03216600	Ohio River at Greenup Dam	62,000	38.647	82.861	--	1969-99	31	285,100	1.37	Various
03216800	Tygarts Creek at Olive Hill	59.6	38.299	83.174	1,010	1958-94	37	88.0	1.48	--
03217000	Tygarts Creek near Greenup	242	38.564	82.952	920	1941-99	59	309	1.28	LD — gas-transmission-plant cooling
03237250	Kinniconick Creek at Tannery	294	38.543	82.225	972	1992-99	8	294	1.46	--
03237280	Upper Twin Creek at McGaw, Ohio	12.2	38.644	83.216	1,050	1964-99	36	13.6	1.12	--
03237500	Ohio Brush Creek near West Union, Ohio	387	38.800	83.420	877	1927-35, 1941-99	68	458	1.18	--
03237900	Cabin Creek near Tollesboro	22.4	38.568	83.537	833	1973-91	19	31	1.39	--
03238000	Ohio River at Maysville	70,130	38.649	83.764	--	1941-63	23	293,700	1.34	Various
03246500	East Fork Little Miami River at Williamsburg, Ohio	237	39.050	84.050	1,002	1950-53, 1961-74	18	277	1.17	--
03247500	East Fork Little Miami River at Perrintown, Ohio	476	39.140	84.240	930	1916-17, 1926-99	76	563	1.18	--
03248500	Licking River near Salyersville	140	37.751	83.084	1,129	1939-92, 1995-97	57	173	1.24	--
03249500	Licking River at Farmers	827	38.115	83.543	1,021	1929-31, 1939-94	59	1,050	1.27	Cave Run Lake, 12/73
03250000	Trippett Creek at Morehead	47.5	38.184	83.430	1,036	1942-80, 1989-92	43	74.8	1.58	LD — water supply, Morehead
03250100	North Fork Trippett Creek near Morehead	84.7	38.199	83.481	1,018	1968-94	27	133	1.57	--
03250320	Rock Lick Creek near Sharkey	4.01	38.252	83.584	919	1974-83	10	7.66	1.91	LD — impervious surface drainage, Maxey Flats waste-disposal site
03250500	Licking River at Blue Lick Springs	1,785	38.422	83.999	950	1939-59	21	2,270	1.27	--
03251000	North Fork Licking River near Lewisburg	119	38.549	83.794	875	1947-91	45	148	1.25	--
03251200	North Fork Licking River near Mount Olivet	226	38.649	83.764	857	1992-99	8	320	1.42	--

Table 1. Continuous-record streamflow-gaging stations used in the study, selected basin characteristics, periods of record used in the analysis, corresponding mean annual flows, and selected reservoirs and diversions in the basin for Kentucky and surrounding States—Continued
 [mi², square miles; ft³/s, cubic feet per second; ft³/s/mi², cubic feet per second per square mile; --, not applicable; LD, local diversion; all stations are in Kentucky unless otherwise noted]

Station number	Station name	Mean period of record used						Selected reservoirs		
		Total drainage area (mi ²)	Gage latitude (decimal degrees)	Gage longitude (decimal degrees)	Mean elevation (feet above sea level)	Number of years in the analysis (water years ¹)	Mean annual flow (ft ³ /s)	Standardized mean annual flow (ft ³ /s/mi ²)	In basin and start date or type of local diversion and location	
03251500	Licking River at McKimneysburg	2,326	38.598	84.267	921	1925, 1939-94	57	3,030	1.30	Cave Run Lake, 12/73
03252000	Stoner Creek at Paris	239	38.229	84.256	929	1954-91	38	294	1.23	LD—waste disposal, Paris (minor)
03252300	Hinkston Creek at Carlisle	154	38.242	84.053	936	1992-99	8	208	1.35	--
03252500	South Fork Licking River at Cynthiana	621	38.391	84.203	907	1939-94	56	766	1.23	LD—water supply, Cynthiana (minor)
03253500	Licking River at Catawba	3,300	38.710	84.311	--	1916-17, 1929-99	73	4,140	1.26	Cave Run Lake, 12/73
03254400	North Fork Grassy Creek near Piner	13.6	38.792	84.514	816	1968-83	16	17.0	1.25	--
03255000	Ohio River at Cincinnati, Ohio	76,580	39.094	84.511	--	1940-62	23	299,700	1.30	Various
03277200	Ohio River at Markland Dam	83,170	38.775	84.964	--	1971-99	29	2108,000	1.30	Various
03277400	Leatherwood Creek at Daisy	40.9	37.113	83.092	1,668	1965-74, 1992-98	17	60.4	1.48	--
03277450	Carr Fork near Sassafras	60.6	37.231	83.036	1,439	1964-94	31	77.6	1.28	Carr Fork Lake, 01/76
03277500	North Fork Kentucky River at Hazard	466	37.247	83.182	1,544	1941-93	53	576	1.24	Carr Fork Lake, 01/76
03278000	Bear Branch near Noble	2.21	37.451	83.195	1,167	1956-73	18	2.88	1.30	--
03278500	Troublesome Creek at Noble	177	37.443	83.218	1,273	1951-81	31	251	1.42	--
03280000	North Fork Kentucky River at Jackson	1,101	37.551	83.385	1,333	1929-31, 1938-99	65	1,460	1.32	Carr Fork Lake, 01/76
03280600	Middle Fork Kentucky River near Hyden	202	37.137	83.371	1,686	1958-92	35	296	1.47	LD—water supply, Hyden (minor)
03280700	Cutshin Creek at Wooton	61.3	37.165	83.308	1,530	1958-99	42	93.6	1.53	--
03280900	Middle Fork Kentucky River at Buckhorn	420	37.346	83.469	1,498	1957-75	19	632	1.50	Buckhorn Lake, 12/60
03281000	Middle Fork Kentucky River at Tallega	537	37.555	83.594	1,382	1931, 1940-99	61	751	1.40	Buckhorn Lake, 12/60
03281040	Red Bird River near Big Creek	155	37.179	83.593	1,407	1973-99	27	280	1.81	--
03281100	Goose Creek at Manchester	163	37.152	83.760	1,225	1965-99	35	266	1.63	--
03281500	South Fork Kentucky River at Booneville	722	37.479	83.677	1,188	1926-31, 1940-99	66	1,060	1.47	--

Table 1. Continuous-record streamflow-gaging stations used in the study, selected basin characteristics, periods of record used in the analysis, corresponding mean annual flows, and selected reservoirs and diversions in the basin for Kentucky and surrounding States—Continued

[mi², square miles; ft³/s, cubic feet per second; ft³/s/mi², cubic feet per second per square mile; --, not applicable; LD, local diversion; all stations are in Kentucky unless otherwise noted]

Station number	Station name	Total drainage area (mi ²)	Gage latitude (decimal degrees)	Gage longitude (decimal degrees)	Mean basin elevation (feet above sea level)	Period of record used in the analysis (water years ¹)	Number of years	Mean annual flow (ft ³ /s)	Standardized mean annual flow (ft ³ /s/mi ²)	Selected reservoirs in basin and start date or type of local diversion and location
03282000	Kentucky River at Lock 14 at Heidelberg	2,657	37.555	83.768	1,264	1926-31, 1939-99	67	3,750	1.41	Buckhorn Lake, 12/60; Carr Fork Lake, 01/76
03282040	Sturgeon Creek at Cressmont	77.3	37.501	83.810	1,098	1993-99	7	125	1.62	--
03282500	Red River near Hazel Green	65.8	37.812	83.464	1,106	1955-99	45	87.7	1.33	--
03283000	Stillwater Creek at Stillwater	24.0	37.757	83.487	1,090	1955-73	19	34.9	1.45	--
03283500	Red River at Clay City	362	37.864	83.933	1,040	1931, 1939-99	62	498	1.38	LD — waste disposal, Stanton (minor); water supply, Clay City (minor)
03284000	Kentucky River at Lock 10 near Winchester	3,955	37.895	84.262	--	1908-99	92	5,350	1.35	Buckhorn Lake, 12/60 Carr Fork Lake, 01/76
03284300	Silver Creek near Kingston	28.6	37.631	84.280	1,064	1968-83	16	42.1	1.47	LD — water supply, waste disposal, Berea (minor)
03284500	Kentucky River at Lock 8 near Camp Nelson	4,414	37.745	84.587	--	1940-71	32	5,530	1.25	Buckhorn Lake, 12/60 Carr Fork Lake, 01/76
03284550	West Hickman Creek at Jonestown	11.0	37.975	84.498	999	1975-84	10	16.8	1.52	LD — waste disposal, urban drainage, Lexington
03285000	Dix River near Danville	318	37.642	84.661	1,023	1943-99	57	475	1.49	--
03285500	Dix River near Burgin	395	37.753	84.703	997	1912-13, 1915-22	10	733	1.86	--
03287000	Kentucky River at Lock 6 near Salvisa	5,102	37.926	84.821	--	1926-99	74	6,790	1.33	Herrington Lake, 1/25; Buckhorn Lake, 12/60; Carr Fork Lake, 01/76
03287500	Kentucky River at Lock 4 at Frankfort	5,411	38.202	84.882	--	1926-30, 1933-99	72	7,220	1.33	Herrington Lake, 1/25;
03288000	North Elkhorn Creek near Georgetown	119	38.206	84.514	944	1951-83, 1989-98	43	175	1.47	Buckhorn Lake, 12/60; Carr Fork Lake, 01/76
03288100	North Elkhorn Creek at Georgetown	147	38.219	84.563	933	1993-99	7	252	1.71	--

Table 1. Continuous-record streamflow-gaging stations used in the study, selected basin characteristics, periods of record used in the analysis, corresponding mean annual flows, and selected reservoirs and diversions in the basin for Kentucky and surrounding States—Continued

[mi², square miles; ft³/s, cubic feet per second; ft³/s/mi², cubic feet per second per square mile; --, not applicable; LD, local diversion; all stations are in Kentucky unless otherwise noted]

Station number	Station name	Mean period of record used						Selected reservoirs in basin and start date or type of local diversion and location
		Total drainage area (mi ²)	Gage latitude (decimal degrees)	Gage longitude (decimal degrees)	Mean elevation (feet above sea level)	Number of years in the analysis (water years)	Mean annual flow (ft ³ /s)	
03288110	Royal Spring at Georgetown	--	38.209	84.562	890	1993-99	7	25.2
03288500	Cave Creek near Fort Spring	2.53	38.021	84.594	968	1953-72	20	2.94
03289000	South Elkhorn Creek at Fort Spring	24	38.043	84.626	965	1950-92	44	33.0
03289300	South Elkhorn Creek near Midway	105	38.141	84.645	928	1983-99	17	174
03289500	Elkhorn Creek near Frankfort	473	38.269	84.815	889	1919-20, 1941-83, 1988-99	58	644
03290000	Flat Creek near Frankfort	5.63	38.298	84.942	800	1952-71	20	6.48
03290500	Kentucky River at Lock 2 at Lockport	6,180	38.439	84.963	--	1927-30, 1933-37, 1939-99	70	8,410
03291000	Eagle Creek at Sadieville	42.9	38.389	84.543	915	1942-75	34	58.2
03291500	Eagle Creek at Glencoe	437	38.705	84.824	830	1916-18, 1929-31, 1939-77, 1990-99	55	576
03292460	Harrods Creek near LaGrange	24.1	38.447	85.409	796	1969-94	26	36.9
03292500	South Fork Beargrass Creek at Louisville	17.2	38.211	85.702	543	1945-53, 1955-62, 1971-83, 1989-99	41	22.9
03293000	Middle Fork Beargrass Creek at Louisville	18.9	38.237	85.665	621	1945-99	55	25.4
03294000	Silver Creek near Sellersburg, Indiana	189	38.371	85.726	597	1955-99	45	223
03294500	Ohio River at Louisville	91,170	38.280	85.799	--	1929-99	71	116,000
03295000	Salt River near Harrodsburg	41.4	37.757	84.873	944	1953-73	21	49.6
03295400	Salt River at Glensboro	172	38.002	85.061	850	1990-99	10	273
03295500	Salt River near Van Buren	196	37.968	85.134	839	1939-82	44	250
								1.18 1.27 Various 1.20 1.59 1.28 --
								-- -- -- -- -- -- --

Table 1. Continuous-record streamflow-gaging stations used in the study, selected basin characteristics, periods of record used in the analysis, corresponding mean annual flows, and selected reservoirs and diversions in the basin for Kentucky and surrounding States—Continued

[mi², square miles; ft³/s, cubic feet per second; ft³/s/mi², cubic feet per second per square mile; --, not applicable; LD, local diversion; all stations are in Kentucky unless otherwise noted]

Station number	Station name	Period of record used in the analysis						Mean annual flow (ft ³ /s)	Standardized mean annual flow (ft ³ /s/mi ²)	Selected reservoirs in basin and start date or type of local diversion and location
		Total drainage area (mi ²)	Gage latitude (decimal degrees)	Gage longitude (decimal degrees)	Mean basin elevation (feet above sea level)	Number of years	Mean annual flow (ft ³ /s)			
03295890	Brashears Creek at Taylorsville	259	38.037	85.241	772	1982-99	18	342	1.32	--
03296000	Plum Creek Subwatershed number 4 near Simpsonville	1.55	38.174	85.368	765	1956-64	9	1.68	1.08	--
03296500	Plum Creek near Wilsonville	19.1	38.106	85.437	719	1955-61	7	23.6	1.23	--
03297000	Little Plum Creek near Waterford	5.15	38.062	85.429	679	1955-61	7	6.97	1.35	--
03297500	Plum Creek at Waterford	31.8	38.051	85.432	692	1955-74	20	41.4	1.30	--
03297845	Floyds Fork near Crestwood	46.7	38.300	85.427	768	1980-91	12	56.7	1.21	--
03297900	Floyds Fork near Pewee Valley	79.9	38.285	85.468	764	1992-99	8	113	1.41	--
03298000	Floyds Fork at Fisherville	138	38.188	85.460	737	1945-99	55	182	1.32	LD—waste disposal, irrigation water supply
03298500	Salt River at Shepherdsville	1,197	37.985	85.717	722	1939-99	61	1,590	1.33	Taylorsville Lake, 01/83
03298550	Long Lick near Clermont	7.91	37.928	85.654	683	1993-99	7	11.7	1.48	--
03299000	Rolling Fork near Lebanon	239	37.497	85.324	932	1939-92	54	349	1.46	--
03300000	Beech Fork near Springfield	85.9	37.704	85.146	866	1953-72	20	104	1.21	--
03300400	Beech Fork at Maud	436	37.833	85.296	820	1973-99	27	638	1.46	--
03301000	Beech Fork at Bardstown	669	37.797	85.481	786	1941-74, 1998-99	36	911	1.36	--
03301500	Rolling Fork near Boston	1,299	37.767	85.704	775	1938-99	61	1,820	1.40	--
03301580	Wilson Creek near Deatsville	12.3	37.864	85.611	697	1992-96	5	18.9	1.54	--
03302000	Pond Creek near Louisville	64.0	38.120	85.796	542	1945-99	55	90.7	1.42	LD—waste disposal, urban drainage, Louisville
03302220	Buck Creek near New Middletown, Indiana	65.2	38.119	86.086	750	1970-99	30	78.2	1.20	--
03302300	Little Indian Creek near Galena, Indiana	16.1	38.312	85.898	814	1969-99	31	22.7	1.41	--
03303000	Blue River near White Cloud, Indiana	476	38.237	86.228	754	1932-99	68	657	1.38	--
03303280	Ohio River at Cannelton Dam	97,000	37.899	86.706	--	1976-99	24	2,123,000	1.27	Various

Table 1. Continuous-record streamflow-gaging stations used in the study, selected basin characteristics, periods of record used in the analysis, corresponding mean annual flows, and selected reservoirs and diversions in the basin for Kentucky and surrounding States—Continued
 [mi², square miles; ft³/s, cubic feet per second; ft³/s/mi², cubic feet per second per square mile; --, not applicable; LD, local diversion; all stations are in Kentucky unless otherwise noted]

Station number	Station name	Mean period of record used						Selected reservoirs in basin and start date or type of local diversion and location		
		Total drainage area (mi ²)	Gage latitude (decimal degrees)	Gage longitude (decimal degrees)	Mean elevation (feet above sea level)	Number of years in the analysis (water years ¹)	Mean annual flow (ft ³ /s)	Standardized mean annual flow (ft ³ /s/mi ²)		
03303400	Crooked Creek near Santa Claus, Indiana	7.86	38.118	86.890	495	1970-99	30	11.1	1.42	--
03303500	Ohio River at Owensesboro	97,200	37.778	87.109	--	1941-52	12	2125,000	1.29	Various
03304500	McGills Creek near McKinney	2.14	37.444	84.698	1,194	1952-71	20	2,58	1.20	--
03305000	Green River near McKinney	22.4	37.422	84.750	1,150	1952-73	22	31.5	1.41	--
03305500	Green River near Mount Salem	36.3	37.411	84.753	1,151	1954-61	8	54.0	1.49	--
03306000	Green River near Campbellsville	682	37.240	85.347	951	1931, 1964-94	32	1,120	1.64	Green River Lake, 02/69
03306500	Green River at Greensburg	736	37.254	85.503	933	1940-75	36	1,120	1.53	Green River Lake, 02/69
03307000	Russell Creek near Columbia	188	37.119	85.394	876	1940-99	60	292	1.55	--
03307100	Russell Creek near Gresham	265	37.168	85.470	842	1965-75	11	451	1.70	--
03307500	South Fork Little Barren River at Edmonton	18.3	36.974	85.603	899	1942-72	31	26.3	1.44	--
03308500	Green River at Munfordville	1,673	37.268	85.886	855	1916-22, 1928-31, 1938-99	73	2,740	1.64	Green River Lake, 02/69
03309000	Green River at Mammoth Cave	1,983	37.179	86.113	835	1939-50	12	2,880	1.45	--
03309500	McDougal Creek near Hodgenville	5.34	37.544	85.672	883	1954-71	18	7.00	1.31	--
03310000	North Fork Nolin River at Hodgenville	36.4	37.576	85.740	844	1942-73	32	46.9	1.29	--
03310300	Nolin River at White Mills	357	37.551	86.045	769	1960-99	40	492	1.38	--
03310400	Bacon Creek near Priceville	85.4	37.359	85.998	775	1960-94	35	58.4	.68	--
03310500	Nolin River at Wax	600	37.345	86.122	749	1937-62	26	793	1.32	--
03311000	Nolin River at Kyrock	703	37.274	86.251	736	1931, 1940-50, 1961-99	51	942	1.34	Nolin Lake, 03/63
03311500	Green River at Lock 6 at Brownsville	2,762	37.207	86.261	805	1925-31, 1939-92	61	4,370	1.58	Nolin Lake, 03/63; Green River Lake, 02/69
03311600	Beaverdam Creek at Rhoda	10.9	37.155	86.226	673	1973-94	22	18.2	1.66	--

Table 1. Continuous-record streamflow-gaging stations used in the study, selected basin characteristics, periods of record used in the analysis, corresponding mean annual flows, and selected reservoirs and diversions in the basin for Kentucky and surrounding States—Continued

[mi², square miles; ft³/s, cubic feet per second; ft³/s/mi², cubic feet per second per square mile; --, not applicable; LD, local diversion; all stations are in Kentucky unless otherwise noted]

Station number	Station name	Total drainage area (mi ²)	Gage latitude (decimal degrees)	Gage longitude (decimal degrees)	Mean basin elevation (feet above sea level)	Period of record used in the analysis (water years ¹)	Number of years	Mean annual flow (ft ³ /s)	Standardized mean annual flow (ft ³ /s/mi ²)	Selected reservoirs in basin and start date or type of local diversion and location
03312000	Bear Creek near Leitchfield	30.8	37.427	86.279	677	1950-71	22	42.7	1.39	--
03312500	Barren River near Pageville	531	36.852	86.077	827	1940-63	24	844	1.59	--
03312765	Beaver Creek at Highway 31 East near Glasgow	49.6	37.035	85.904	838	1992-99	8	97.5	1.96	--
03313000	Barren River near Finney	942	36.895	86.134	804	1942-50, 1961-94	43	1,500	1.59	Barren River Lake, 03/64
03313500	West Bays Fork at Scottsville	7.47	36.748	86.196	785	1951-72	22	10.8	1.45	--
03313700	West Fork Drakes Creek near Franklin	110	36.719	86.546	783	1969-99	31	194	1.77	--
03314000	Drakes Creek near Alvaton	478	36.895	86.381	724	1941-71	31	697	1.46	--
03314500	Barren River at Bowling Green	1,849	37.001	86.431	743	1939-94	56	2,600	1.41	Barren River Lake, 03/64
03315000	Barren River at Lock 1 at Greencastle	1,966	37.086	86.503	733	1925-31	7	2,500	1.27	--
03315500	Green River at Lock 4 at Woodbury	5,404	37.182	86.630	--	1938-92	55	8,460	1.57	Nolin Lake, 03/63; Barren River Lake, 03/64; Green River Lake, 02/69
03316000	Mud River near Lewisburg	90.5	37.004	86.907	599	1940-72	33	151	1.67	--
03316500	Green River at Paradise	6,183	37.265	86.979	--	1940-50, 1961-81, 1992-99	40	9,360	1.51	Nolin Lake, 03/63; Barren River Lake, 03/64; Green River Lake, 02/69
03317000	Rough River near Madrid	225	37.592	86.329	711	1939-59	21	318	1.41	--
03317500	North Fork Rough River near Westview	42.0	37.692	86.391	711	1955-73	19	36.7	.87	--
03318000	Rough River near Falls of Rough	454	37.609	86.496	685	1940-51	12	627	1.38	--
03318200	Rock Lick Creek near Glen Dean	20.1	37.657	86.562	617	1957-71	15	24.9	1.24	--
03318500	Rough River at Falls of Rough	504	37.589	86.551	676	1949-94	46	759	1.51	Rough River Lake, 10/59
03318800	Caney Creek near Horse Branch	124	37.464	86.656	606	1957-92	36	188	1.52	--

Table 1. Continuous-record streamflow-gaging stations used in the study, selected basin characteristics, periods of record used in the analysis, corresponding mean annual flows, and selected reservoirs and diversions in the basin for Kentucky and surrounding States—Continued
 [mi², square miles; ft³/s, cubic feet per second; ft³/s/mi², cubic feet per second per square mile; --, not applicable; LD, local diversion; all stations are in Kentucky unless otherwise noted]

Station number	Station name	Mean period of record used						Selected reservoirs in basin and start date or type of local diversion and location		
		Total drainage area (mi ²)	Gage latitude (decimal degrees)	Gage longitude (decimal degrees)	Mean elevation (feet above sea level)	Number of years in the analysis (water years ¹)	Mean annual flow (ft ³ /s)	Standardized mean annual flow (ft ³ /s/mi ²)		
03319000	Rough River near Dundee	757	37.547	86.722	647	1941-92	52	1,080	1.43	Rough River Lake, 10/59
03320000	Green River at Lock 2 at Calhoun	7,566	37.534	87.264	--	1931-99	69	11,200	1.48	Rough River Lake, Nolin Lake, 03/63; Barren River Lake, 03/64; Green River Lake, 02/69
03320500	Pond River near Apex	194	37.122	87.319	599	1941-99	59	274	1.41	--
03321000	Pond River near White Plains	343	37.227	87.349	562	1929-31, 1938-40	6	370	1.08	--
03321060	Pond River near Madisonville	469	37.317	87.369	535	1992-96	5	381	.81	--
03321210	Cypress Creek near Madisonville	14.2	37.489	87.286	437	1980-81, 1991-94	6	160	1.13	--
03321350	South Fork Panther Creek near Whitesville	58.2	37.619	86.887	556	1969-83	15	96.9	1.66	--
03322000	Ohio River at Evansville, Indiana	107,000	37.972	87.576	--	1941-74	34	133,000	1.24	Various
03322100	Pigeon Creek at Evansville, Indiana	323	38.004	87.539	443	1961-84	24	369	1.14	--
03322360	Beaverdam Creek near Corydon	14.3	37.704	87.698	446	1973-82, 1984-86, 1989-94	19	14.8	1.04	--
03322420	Ohio River at Uniontown Dam	108,000	37.792	87.986	--	1985-93	9	2138,000	1.28	Various
03366200	Herberts Creek near Madison, Indiana	9.31	38.782	85.486	826	1969-99	31	13.5	1.45	--
03378550	Big Creek near Wadesville, Indiana	104	38.082	87.769	456	1966-99	34	116	1.11	--
03383000	Tradewater River at Olney	255	37.224	87.781	532	1941-83, 1986-99	57	334	1.31	--
03383500	Tradewater River near Dalton	283	37.274	87.797	526	1929-31, 1938-40	6	284	1.00	--
03384000	Rose Creek at Nebo	2.10	37.383	87.633	423	1953-70	18	1.99	.95	--
03384500	Ohio River at Dam 51, at Golconda, Illinois	143,900	37.358	88.482	--	1941-52	12	3173,000	1.20	Various
03400500	Poor Fork at Cumberland	82.3	36.974	82.993	2,399	1941-93	53	143	1.73	--

Table 1. Continuous-record streamflow-gaging stations used in the study, selected basin characteristics, periods of record used in the analysis, corresponding mean annual flows, and selected reservoirs and diversions in the basin for Kentucky and surrounding States—Continued

[mi², square miles; ft³/s, cubic feet per second; ft³/s/mi², cubic feet per second per square mile; --, not applicable; LD, local diversion; all stations are in Kentucky unless otherwise noted]

Station number	Station name	Period of record used in the analysis					Mean annual flow (ft ³ /s)	Standardized mean annual flow (ft ³ /s/mi ²)	Selected reservoirs in basin and start date or type of local diversion and location
		Total drainage area (mi ²)	Gage latitude (decimal degrees)	Gage longitude (decimal degrees)	Mean basin elevation (feet above sea level)	Number of years			
03400785	Martins Fork above Smith	23.8	36.726	83.288	2,185	1986-90	5	47.0	1.98
03400800	Martins Fork near Smith	55.8	36.749	83.248	2,077	1972-99	28	119	2.12
03400990	Clover Fork at Harlan	222	36.848	83.326	2,181	1979-92	14	403	1.81
03401000	Cumberland River near Harlan	374	36.847	83.356	2,219	1941-99	59	695	1.86
03402000	Yellow Creek near Middlesboro	60.6	36.668	83.689	1,815	1941-99	59	120	1.98
									LD — water supply, waste disposal, Middlesboro (minor)
03402900	Cumberland River at Pine Street Bridge at Pineville	770	36.763	83.692	1,971	1992-99	8	1,480	1.92
03403000	Cumberland River near Pineville	809	36.813	83.766	1,943	1939-75, 1980-91	49	1,400	1.73
03403500	Cumberland River at Barbourville	960	36.862	83.887	1,850	1923-31, 1949-92, 1996-99	57	1,770	1.84
									Martins Fork Lake, 11/78; LD — power plant (minor)
03403910	Clear Fork at Saxon	331	36.634	84.112	1,633	1969-90, 1996-99	26	557	1.68
03404000	Cumberland River at Williamsburg	1,607	36.744	84.158	1,679	1951-99	49	2,730	1.70
03404500	Cumberland River at Cumberland Falls	1,977	36.837	84.343	1,603	1908-11, 1916-31, 1933-94	82	3,190	1.61
03404820	Laurel River at Municipal Dam near Corbin	140	36.970	87.120	1,204	1974-92	19	238	1.70
03404900	Lynn Camp Creek at Corbin	53.8	36.951	84.094	1,218	1974-99	26	88.9	1.65
03405000	Laurel River at Corbin	201	36.969	84.127	1,206	1923-24, 1943-73	33	338	1.68
03406000	Wood Creek near London	3.89	37.161	84.112	1,238	1954-71	18	5.34	1.37
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Table 1. Continuous-record streamflow-gaging stations used in the study, selected basin characteristics, periods of record used in the analysis, corresponding mean annual flows, and selected reservoirs and diversions in the basin for Kentucky and surrounding States—Continued
 [mi², square miles; ft³/s, cubic feet per second; ft³/s/mi², cubic feet per second per square mile; --, not applicable; LD, local diversion; all stations are in Kentucky unless otherwise noted]

Station number	Station name	Mean period of record used						Selected reservoirs in basin and start date or type of local diversion and location		
		Total drainage area (mi ²)	Gage latitude (decimal degrees)	Gage longitude (decimal degrees)	Mean elevation (feet above sea level)	Number of years in the analysis (water years ¹)	Mean annual flow (ft ³ /s)	Standardized mean annual flow (ft ³ /s/mi ²)		
03406500	Rockcastle River at Billows	604	37.171	84.296	1,178	1937-99	63	945	1.57	--
03407000	Rockcastle River at Rockcastle Springs	745	37.010	84.315	1,163	1923-31	9	1,090	1.47	--
03407100	Cane Branch near Parkers Lake	.67	36.868	84.449	1,216	1957-66, 1974	11	.92	1.37	--
03407300	Helton Branch near Greenwood	.85	36.885	84.482	1,217	1957-74	18	1,22	1.43	--
03407500	Buck Creek near Shopville	165	37.211	84.464	1,116	1953-91	39	277	1.68	--
03410500	South Fork Cumberland River near Sterns	954	36.627	84.533	1,605	1943-99	57	1,790	1.88	--
03411000	South Fork Cumberland River at Neelysville	1,271	36.840	84.583	1,501	1916-31, 1933-50	34	2,200	1.73	--
03411500	Cumberland River at Burnside	4,865	36.989	84.610	--	1915-50	36	7,630	1.57	Laurel River Lake, 10/73; Martins Fork Lake, 11/78
03412000	Pitman Creek near Somerset	26.3	37.135	84.588	1,082	1951-53	3	47.9	1.82	--
03413200	Beaver Creek near Monticello	43.4	36.797	84.896	1,212	1969-83, 1990-99	25	64.1	1.48	--
03414000	Cumberland River near Rowena	5,790	36.884	85.139	--	1940-92	53	9,010	1.56	Cumberland Lake, 12/50; Laurel River Lake, 10/73; Martins Fork Lake, 11/78
03414500	East Fork Obey River near Jamestown, Tennessee	202	36.416	85.026	1,645	1943-91	49	418	2.07	--
03415000	West Fork Obey River near Alpine, Tennessee	115	36.397	85.174	1,391	1943-71, 1980-81	31	157	1.37	--
03416000	Wolf River near Byrdstown, Tennessee	106	36.560	85.073	1,319	1943-91	49	189	1.78	--
03418000	Roaring River near Hilham, Tennessee	78.7	36.341	85.426	1,112	1932-74	43	109	1.39	--
03435140	Whippoorwill Creek near Claymour	20.8	36.875	87.089	719	1974-91	18	34.7	1.67	--
03435500	Red River near Adams, Tennessee	706	36.589	87.089	652	1921-69	49	937	1.33	--

Table 1. Continuous-record streamflow-gaging stations used in the study, selected basin characteristics, periods of record used in the analysis, corresponding mean annual flows, and selected reservoirs and diversions in the basin for Kentucky and surrounding States—Continued

[mi², square miles; ft³/s, cubic feet per second; ft³/s/mi², cubic feet per second per square mile; --, not applicable; LD, local diversion; all stations are in Kentucky unless otherwise noted]

Station number	Station name	Total drainage area (mi ²)	Gage latitude (decimal degrees)	Gage longitude (decimal degrees)	Mean basin elevation (feet above sea level)	Period of record used in the analysis (water years ¹)	Number of years	Mean annual flow (ft ³ /s)	Standardized mean annual flow (ft ³ /s/mi ²)	Selected reservoirs in basin and start date or type of local diversion and location
03436000	Sulfur Fork Red River near Adams, Tennessee	186	36.515	87.059	682	1940-91	52	252	1.35	--
03436700	Yellow Creek near Shiloh, Tennessee	124	36.349	87.539	677	1958-80	23	191	1.54	--
03437500	South Fork Little River at Hopkinsville	46.5	36.839	87.481	618	1950-73	24	65.8	1.42	--
03438000	Little River near Cadiz	244	36.778	87.722	578	1941-99	59	356	1.46	--
03438070	Muddy Fork Little River near Cerulean	30.5	36.978	87.710	569	1969-83	15	50.2	1.65	--
03438220	Cumberland River near Grand Rivers	17,600	37.021	88.221	--	1967-97	31	438,200	2.17	Dale Hollow Lake, 08/43; Lake Barkley, 08/44; Cumberland Lake, 12/50; various others
03529500	Powell River at Big Stone Gap, Virginia	112	36.870	82.780	2,414	1945-59, 1979-81	18	202	1.80	--
03530500	North Fork Powell River at Pennington Gap, Virginia	70	36.770	83.030	2,109	1946-51, 1979-81, 1994-95	11	137	1.95	--
03531000	Powell River near Pennington Gap, Virginia	290	36.734	82.999	2,161	1921-31	11	553	1.91	--
03531500	Powell River near Jonesville, Virginia	319	36.660	83.090	2,101	1932-99	68	543	1.70	--
03609500	Tennessee River near Paducah	40,200	37.020	88.281	--	1967-84	18	466,900	1.66	Kentucky Lake, 01/36; various others
03610000	Clarks River at Murray	89.7	36.593	88.300	553	1952-71	20	88.6	.99	--
03610200	Clarks River at Almo	134	36.692	88.274	540	1983-99	17	181	1.35	LD—waste-disposal, Murray
03610500	Clarks River near Benton	227	36.873	88.347	515	1939-73	35	278	1.22	LD—waste-disposal, Murray (minor)
03610545	West Fork Clarks River near Brewers	68.7	36.780	88.467	513	1969-83, 1990-94	20	91.5	1.33	--
03611260	Massac Creek near Paducah	14.6	37.041	88.711	436	1972-99	28	17.4	1.19	--
03611500	Ohio River at Metropolis, Illinois	203,000	37.148	88.741	--	1929-99	71	278,000	1.37	Various

Table 1. Continuous-record streamflow-gaging stations used in the study, selected basin characteristics, periods of record used in the analysis, corresponding mean annual flows, and selected reservoirs and diversions in the basin for Kentucky and surrounding States—Continued
 [mi², square miles; ft³/s, cubic feet per second; ft³/s/mi², cubic feet per second per square mile; --, not applicable; LD, local diversion; all stations are in Kentucky unless otherwise noted]

Station number	Station name	Period of record used						Selected reservoirs		
		Total drainage area (mi ²)	Gage latitude (decimal degrees)	Gage longitude (decimal degrees)	Mean basin elevation (feet above sea level)	Number of years in the analysis (water years) ¹	Mean annual flow (ft ³ /s)	Standardized mean annual flow (ft ³ /s/mi ²)	In basin and start date or type of local diversion and location	
03611800	Bayou Creek at Heath	6.55	37.099	88.824	422	1991, 1994-99	7	6.42	.98	--
03611850	Bayou Creek near Grahamville	14.9	37.145	88.827	405	1991, 1994-99	7	20.8	1.40	--
03611900	Little Bayou Creek near Grahamville	5.78	37.139	88.791	365	1991, 1994-99	7	6.59	1.14	--
03612000	Cache River at Forman, Illinois	244	37.336	88.924	491	1925-99	75	297	1.22	--
07022500	Perry Creek near Mayfield	1.72	36.679	88.632	517	1953-65, 1968-72	18	1.78	1.03	--
07023000	Mayfield Creek at Lovealceville	212	36.952	88.825	481	1939-72	34	231	1.09	--
07023500	Obion Creek at Pryorsburg	36.8	36.686	88.726	496	1952-73	22	40.1	1.09	--
07024000	Bayou De Chien near Clinton	68.7	36.629	88.964	422	1940-78, 1985-99	54	103	1.50	--
07026500	Reelfoot Creek near Samburg, Tennessee	110	36.442	89.296	391	1952-73	22	120	1.09	--

¹Water year refers to the 12-month period from October 1 through September 30. The water year is designated by the calendar year in which it ends.

²Value adjusted based on correlation of concurrent record with Ohio River at Louisville (03294500).

³Value adjusted based on correlation of concurrent record with Ohio River at Metropolis, Ill. (03611500).

⁴Values in the table are for the period after 1966 only—after the Kentucky Lake-Lake Barkley Canal was opened in May 1966.

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