



Water-Data Report 2007

03307000 RUSSELL CREEK NEAR COLUMBIA, KY

Green Basin
Upper Green Subbasin

LOCATION.--Lat 37°07'09", long 85°23'38" referenced to North American Datum of 1927, Adair County, KY, Hydrologic Unit 05110001, on left bank at downstream side of bridge on State Highway 61, 0.3 mile upstream from Butlers Fork, 5.0 miles west of Columbia, and at mile 26.9. Records include flow of Butlers Fork.

DRAINAGE AREA.--188.0 mi² of which 15 mi² probably is noncontributing.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1939 to current year. Prior to December 1939, monthly discharge only, published in WSP 1305.

REVISED RECORDS.--WSP 1275: 1940. WSP 1335: 1953. WSP 1555: Drainage area. WRD KY-75-1: 19449(M), 1955(M), 1962(M), 1967(M), 1974(M).

GAGE.--Water-stage recorder with telemetry and crest-stage gage. Datum of gage is 610.96 feet above NGVD of 1929. Prior to June 25, 1953, nonrecording gage at same site and datum.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet and the U.S. Army Corps of Engineers, Louisville District.

REMARKS.--Records fair except for those estimated, which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in January 1937 reached a stage of about 23 feet, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 2	0600	*4,140	*12.43

03307000 RUSSELL CREEK NEAR COLUMBIA, KY—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	351	374	285	829	e108	1,280	156	80	28	19	20	4.5
2	250	551	281	496	e99	2,620	138	75	27	17	16	5.6
3	175	366	190	362	e91	902	120	84	26	16	13	4.3
4	152	275	155	296	e81	558	322	e112	32	15	12	3.7
5	186	219	136	1,150	e76	390	261	591	43	17	10	3.4
6	270	178	e117	947	e72	299	182	498	31	21	9.6	3.4
7	166	170	e102	1,470	e68	244	150	318	27	21	8.7	3.2
8	141	206	e91	1,530	e65	216	128	224	26	19	8.0	3.1
9	127	199	e87	802	e64	192	114	167	29	16	7.5	3.3
10	116	164	e84	570	e62	175	104	135	24	14	6.4	6.8
11	112	151	e87	423	e62	160	114	113	22	108	5.9	27
12	233	142	94	340	e64	143	284	97	21	231	5.4	28
13	149	130	118	295	e86	133	183	86	20	57	5.0	19
14	122	126	132	351	e277	132	486	73	18	31	5.0	11
15	108	174	117	554	e190	131	1,000	65	18	23	4.6	7.3
16	102	904	107	931	e134	148	614	79	17	20	4.5	5.4
17	520	637	97	575	e116	133	380	109	16	17	4.5	5.3
18	e625	434	91	432	e108	115	282	78	15	17	4.2	5.8
19	e448	324	87	344	e103	107	236	62	33	17	4.0	5.6
20	1,270	257	84	268	e108	162	193	57	58	34	4.7	4.8
21	759	212	88	577	e135	222	164	53	47	59	4.2	4.4
22	479	184	615	781	192	175	144	48	28	31	4.1	4.2
23	324	167	775	490	153	147	130	44	22	19	3.7	4.2
24	234	150	460	367	140	130	120	41	21	16	3.4	4.1
25	176	138	845	289	547	117	115	39	23	15	3.1	3.8
26	166	127	1,170	235	490	109	118	37	21	13	3.7	3.3
27	1,410	117	708	e196	320	102	131	35	19	20	3.7	3.4
28	1,440	110	488	e170	239	178	110	33	21	155	3.6	4.0
29	698	109	355	e150	---	406	99	32	23	169	3.1	3.8
30	440	129	276	e135	---	206	87	30	19	48	2.6	6.0
31	335	---	367	e121	---	165	---	29	---	29	2.6	---
Total	12,084	7,424	8,689	16,476	4,250	10,197	6,665	3,524	775	1,304	196.8	201.7
Mean	390	247	280	531	152	329	222	114	25.8	42.1	6.35	6.72
Max	1,440	904	1,170	1,530	547	2,620	1,000	591	58	231	20	28
Min	102	109	84	121	62	102	87	29	15	13	2.6	3.1
Cfsm	2.25	1.43	1.62	3.07	0.88	1.90	1.28	0.66	0.15	0.24	0.04	0.04
In.	2.60	1.60	1.87	3.54	0.91	2.19	1.43	0.76	0.17	0.28	0.04	0.04

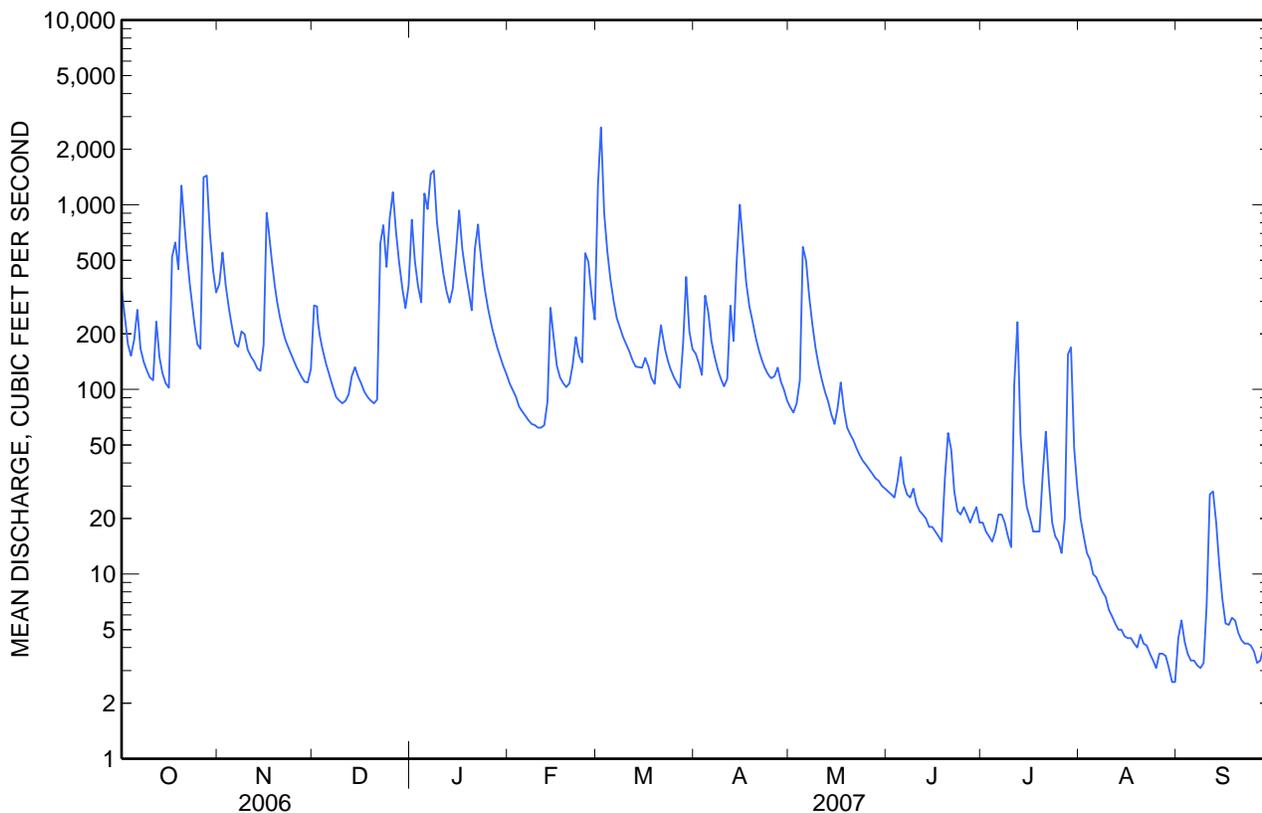
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2007, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	78.0	206	402	472	568	559	386	272	199	120	87.0	116
Max	636	1,047	2,540	1,779	1,588	1,787	856	1,464	800	751	502	1,114
(WY)	(1976)	(1952)	(1979)	(1950)	(1989)	(1975)	(1972)	(1983)	(1950)	(1967)	(1967)	(1979)
Min	1.38	8.92	18.6	26.5	61.1	91.0	70.1	39.8	14.6	10.0	4.25	2.09
(WY)	(1954)	(1954)	(1954)	(1981)	(1941)	(1941)	(1986)	(1941)	(1988)	(1944)	(1991)	(1953)

03307000 RUSSELL CREEK NEAR COLUMBIA, KY—Continued

SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 1940 - 2007	
Annual total	102,045		71,786.5			
Annual mean	280		197		287	
Highest annual mean					651	1979
Lowest annual mean					118	1941
Highest daily mean	6,920	Sep 23	2,620	Mar 2	25,000	Dec 9, 1978
Lowest daily mean	11	Aug 7	2.6	Aug 30	0.40	Sep 25, 1952
Annual seven-day minimum	14	Aug 3	3.2	Aug 25	0.47	Oct 19, 1953
Maximum peak flow			4,140	Mar 2	40,600	Sep 1, 1982
Maximum peak stage			12.43	Mar 2	26.12	Sep 1, 1982
Instantaneous low flow			2.4	Aug 30	2.4	Aug 30, 2007
Annual runoff (cfsm)	1.62		1.14		1.66	
Annual runoff (inches)	21.94		15.44		22.58	
10 percent exceeds	529		497		624	
50 percent exceeds	147		112		102	
90 percent exceeds	36		5.0		15	



03307000 RUSSELL CREEK NEAR COLUMBIA, KY—Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--December 22, 1999 to current year.

INSTRUMENTATION.--Water temperature recorder with telemetry

REMARKS.--Records fair to poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--Maximum recorded water-temperature, 34°C, August 1, 2006; minimum recorded 0.0°C, many days in December and January.

EXTREMES FOR CURRENT YEAR.--Maximum recorded, 30.7°C, August 23, minimum recorded water-temperature, 0.3°C, December 9.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	16.8	15.3	16.1	13.7	12.5	13.4	14.2	10.5	12.5	11.1	9.0	10.2
2	17.6	16.0	16.8	12.5	10.0	11.2	10.5	8.0	9.1	9.0	7.8	8.4
3	18.3	16.6	17.4	10.0	8.3	9.0	8.0	5.7	6.9	7.8	6.7	7.1
4	19.3	17.4	18.3	8.5	7.4	8.1	5.7	3.8	4.6	8.6	6.3	7.2
5	19.8	18.1	18.8	9.9	8.2	9.0	4.1	3.1	3.6	12.7	8.6	11.1
6	18.1	16.2	17.2	11.6	9.8	10.6	4.0	2.9	3.5	12.7	11.7	12.3
7	16.2	14.9	15.5	12.6	11.6	12.1	3.9	2.1	3.4	11.7	10.1	10.7
8	15.9	14.1	15.0	13.0	12.5	12.8	2.1	0.7	1.4	10.3	9.0	9.8
9	16.8	14.8	15.7	13.4	11.9	12.7	---	---	---	9.0	7.4	8.2
10	17.6	15.8	16.6	14.1	12.4	13.4	2.0	0.4	1.1	7.4	6.0	6.5
11	17.8	16.9	17.3	14.1	12.1	13.3	3.2	1.3	2.1	6.4	5.3	5.8
12	17.1	13.6	15.4	---	---	---	5.2	2.7	4.0	8.9	6.4	7.6
13	13.6	11.4	12.4	10.3	9.2	9.7	7.3	5.2	6.3	10.7	8.9	9.9
14	11.6	10.1	10.8	9.6	8.5	9.0	7.7	6.2	6.9	12.1	10.7	11.5
15	10.8	9.3	10.1	10.8	9.2	10	8.2	7.1	7.5	12.6	11.6	12.3
16	10.9	10.3	10.6	---	---	---	8.0	6.6	7.2	11.6	7.5	9.6
17	14.1	10.9	12.8	10.9	10.1	10.4	8.8	7.1	7.8	7.5	6.2	6.6
18	---	---	---	10.3	9.6	10.1	9.2	7.5	8.3	6.7	6.0	6.3
19	---	---	---	10.1	9.1	9.6	9.9	8.4	9.2	7.2	6.4	6.8
20	15.1	12.5	13.7	9.1	7.7	8.5	8.4	7.4	8.0	6.4	5.4	5.9
21	12.5	11.3	11.9	7.7	6.5	7.1	9.4	8.2	8.8	6.6	5.3	5.9
22	12.3	11.7	12.1	---	---	---	10.7	9.4	10.1	7.4	6.6	7.1
23	11.7	10.2	11.0	6.6	5.3	6.0	10.7	9.0	10	7.2	5.7	6.5
24	10.2	9.1	9.6	6.9	5.4	6.1	9.0	7.8	8.1	5.9	5.2	5.5
25	9.4	8.2	8.9	7.8	6.0	6.9	8.9	7.6	8.1	5.9	4.8	5.4
26	10.6	9.3	9.7	8.6	7.0	7.7	9.0	8.1	8.7	5.0	3.8	4.5
27	12.7	10.6	11.7	9.0	7.5	8.2	8.1	7.1	7.5	5.7	4.1	5.0
28	12.8	12.1	12.7	9.6	8.1	8.8	7.7	6.8	7.3	5.6	3.5	4.8
29	12.3	11.4	12.0	---	---	---	7.9	7.1	7.6	3.5	2.1	2.6
30	12.8	11.6	12.3	13.7	11.7	12.8	8.5	7.2	7.9	2.4	1.4	1.9
31	13.8	12.8	13.4	---	---	---	11.1	8.5	9.8	1.5	0.4	1.0
Month	---	---	---	---	---	---	---	---	---	12.7	0.4	7.2

03307000 RUSSELL CREEK NEAR COLUMBIA, KY—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	2.0	1.4	1.7	9.8	7.9	8.7	20.4	18.2	19.2	23.1	19.3	21.0
2	2.5	1.7	2.0	9.6	8.7	9.2	20.8	18.4	19.6	22.5	20.3	21.3
3	2.0	0.6	1.3	9.4	8.1	8.9	21.2	18.1	19.5	---	---	---
4	1.6	0.4	0.9	8.1	5.9	6.9	19.2	15.5	17.6	---	---	---
5	0.7	0.2	0.4	7.0	4.9	6.1	15.5	11.5	13.3	20.1	18.2	19.4
6	0.8	0.2	0.4	8.0	6.2	7.1	11.5	9.2	10.4	20.5	18.5	19.5
7	1.6	0.6	1.0	9.7	6.9	8.4	9.2	7.3	8.0	21.0	18.2	19.6
8	2.1	0.7	1.2	10.3	7.9	9.2	8.2	5.9	7.1	21.6	18.4	20.0
9	1.5	0.5	0.9	11.0	8.4	9.9	9.9	6.4	8.0	22.6	19.1	20.8
10	1.7	0.3	0.8	11.4	10.4	10.9	11.9	7.9	9.7	24.0	20.7	22.2
11	2.0	0.3	0.9	11.9	9.7	10.8	13.1	10.9	11.7	24.2	21.8	22.8
12	2.4	0.9	1.7	11.8	9.4	10.7	12.1	11.0	11.6	25.3	22.2	23.5
13	4.0	2.4	3.2	13.5	10.5	12.0	11.3	9.5	10.5	24.4	21.5	22.8
14	3.7	2.7	3.3	15.7	13.3	14.4	11.0	9.8	10.4	---	---	---
15	2.7	1.4	2.0	15.1	13.3	14.5	11.0	9.4	10.3	---	---	---
16	1.7	0.3	0.9	13.3	11.0	12.1	11.6	8.7	10.1	---	---	---
17	---	---	---	11.0	9.2	10.1	13.7	10.5	12.1	---	---	---
18	1.7	0.3	0.9	10.3	7.7	8.9	14.5	13.2	13.7	---	---	---
19	2.5	0.4	1.5	10.2	8.0	9.1	14.3	12.9	13.6	---	---	---
20	5.3	2.2	3.9	11.7	9.9	10.8	15.4	12.0	13.8	---	---	---
21	8.0	5.3	6.7	14.0	11.3	12.7	17.2	13.2	15.2	---	---	---
22	9.2	7.4	8.3	15.5	13.3	14.4	18.5	14.8	16.7	---	---	---
23	8.3	6.6	7.5	16.7	14.1	15.5	17.8	16.6	17.4	---	---	---
24	7.2	6.1	6.5	18.7	15.7	17.0	19.7	17.1	18.2	---	---	---
25	7.6	6.7	7.1	19.9	16.6	18.1	21.0	18.4	19.6	---	---	---
26	7.5	6.9	7.3	20.2	17.7	18.8	20.5	19.0	19.7	---	---	---
27	8.0	6.4	7.2	20.9	18.1	19.3	---	---	---	---	---	---
28	8.4	6.4	7.5	19.6	18.2	19.1	19.4	16.2	17.7	---	---	---
29	---	---	---	19.0	16.9	17.9	20.8	16.7	18.5	---	---	---
30	---	---	---	19.0	16.8	18.0	22.4	17.9	19.8	---	---	---
31	---	---	---	19.4	17.4	18.5	---	---	---	---	---	---
Month	---	---	---	20.9	4.9	12.5	---	---	---	---	---	---

03307000 RUSSELL CREEK NEAR COLUMBIA, KY—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	---	---	---	---	---	---	---	---	---	26.8	23.0	24.9
2	---	---	---	---	---	---	---	---	---	26.8	23.6	25.2
3	---	---	---	---	---	---	---	---	---	27.7	24.7	26.1
4	---	---	---	---	---	---	---	---	---	27.6	24.2	25.7
5	---	---	---	---	---	---	---	---	---	26.8	23.5	25.1
6	---	---	---	---	---	---	---	---	---	25.8	24.1	25.0
7	---	---	---	---	---	---	---	---	---	26.4	24.0	25.1
8	---	---	---	---	---	---	---	---	---	26.6	24.4	25.5
9	---	---	---	---	---	---	---	---	---	25.9	24.9	25.4
10	---	---	---	---	---	---	---	---	---	24.9	24.4	24.6
11	---	---	---	---	---	---	---	---	---	25.2	23.6	24.5
12	---	---	---	---	---	---	---	---	---	24.5	21.5	22.9
13	---	---	---	---	---	---	---	---	---	24.0	20.5	22.2
14	---	---	---	---	---	---	---	---	---	23.5	22.0	22.6
15	---	---	---	---	---	---	---	---	---	22.6	19.9	21.1
16	---	---	---	---	---	---	29.6	26.4	27.9	---	---	---
17	---	---	---	---	---	---	29.8	26.7	28.0	21.4	17.5	19.5
18	---	---	---	---	---	---	27.9	24.5	26.2	22.4	19.1	20.7
19	---	---	---	---	---	---	27.8	24.3	26.0	22.8	19.8	21.3
20	---	---	---	---	---	---	29.0	25.4	27.0	23.1	20.1	21.5
21	---	---	---	---	---	---	28.5	26.1	27.0	23.3	20.1	21.6
22	---	---	---	---	---	---	29.9	25.5	27.5	24.6	21.5	22.9
23	---	---	---	---	---	---	30.7	26.5	28.3	25.4	22.2	23.7
24	---	---	---	---	---	---	30.6	26.5	28.5	24.9	22.8	23.8
25	---	---	---	---	---	---	29.3	26.8	28.1	25.5	23.0	24.2
26	---	---	---	---	---	---	29.6	26.2	27.7	25.5	23.4	24.4
27	---	---	---	---	---	---	29.3	25.3	27.2	24.2	22.9	23.4
28	---	---	---	---	---	---	28.5	25.6	27.0	23.5	21.5	22.3
29	---	---	---	---	---	---	28.7	25.6	27.0	21.6	19.1	20.3
30	---	---	---	---	---	---	28.2	25.4	26.6	20.5	17.8	19.1
31	---	---	---	---	---	---	26.7	24.8	25.8	---	---	---
Month	---	---	---	---	---	---	---	---	---	---	---	---