Water-Data Report 2007

05594000 SHOAL CREEK NEAR BREESE, IL

Kaskaskia Basin
Shoal Subbasin

LOCATION.--Lat 38°36′36″, long 89°29′41″ referenced to North American Datum of 1983, in SW ¼ SW ¼ sec.13, T.2 N., R.4 W., Clinton County, IL, Hydrologic Unit 07140203, on right bank at upstream side of bridge on old U.S. Highway 50, 0.4 mi upstream from railroad bridge, 1.7 mi east of Breese, 7 mi upstream from Beaver Creek, and at mile 21.3.

DRAINAGE AREA.--735 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.—
SURFACE-WATER DISCHARGE AND STAGE
DISCHARGE: November 1909 to December 1912, August to December 1914, October 1945 to current year.
STAGE: Water years 1994 to current year.
SURFACE-WATER QUALITY
CHEMICAL: Water years 1979-91.
MISCELLANEOUS: Water Years 1998 and 2002.

REVISED RECORDS.--WDR IL-75-1: Drainage area.

GAGE.--Water-stage recorder, U.S. Army Corps of Engineers satellite telemeter, and crest-stage gage. Datum of gage is 413.97 ft above NGVD of 1929 (413.58 ft NAVD 1988). Prior to Dec. 8, 1914, chain gage at site 0.4 mi downstream at different datum. Oct. 1, 1945, to Oct. 10, 1968, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Prior to October 2006, water diverted (less than 1 ft^3/s) 20 ft upstream from station for municipal water supply to Breese is not included in records. No diversion occurred during the 2007 water year.

EXTREMES FOR PERIOD OF RECORD.--
SURFACE-WATER DISCHARGE AND STAGE: Maximum discharge, 23,300 ft^3/s, May 9, 2002, gage height, 22.10 ft; maximum gage height, 23.02 ft, April 14, 1979, during period of constricted channel due to bridge construction; no flow for many days in 1954-56, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.--
SURFACE-WATER DISCHARGE AND STAGE: Flood of May 19, 1943, reached a stage of 25.6 ft, present site and datum, discharge, 52,000 ft^3/s on basis of contracted opening measurement of peak flow.

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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	5.3	116	e630	390	e384	3,790	182	135	52	91	13	e10
2	4.7	84	1,650	680	e315	2,090	699	136	48	66	13	e8.8
3	4.1	71	1,930	440	e172	1,150	469	184	58	50	14	e7.9
4	4.6	57	1,090	276	e146	867	475	242	103	44	15	e7.2
5	8.4	43	614	402	e121	659	538	536	73	48	14	e7.0
6	6.6	32	465	849	e112	553	302	520	60	65	14	e10
7	4.5	27	394	787	e96	490	214	304	57	39	12	e13
8	3.9	22	346	581	e92	444	178	191	54	72	12	22
9	4.5	19	316	505	e88	415	162	189	47	47	10	53
10	4.8	15	292	451	e86	398	150	223	39	34	8.8	10
11	4.6	22	280	397	e82	382	150	170	35	68	9.7	6.1
12	4.6	27	281	278	e84	363	205	145	33	43	10	6.4
13	4.7	30	259	1,640	e200	345	306	128	32	27	9.0	7.6
14	5.4	38	303	2,780	e359	337	259	113	30	23	8.3	8.3
15	7.2	49	365	3,300	e444	589	473	100	29	22	8.0	9.0
16	24	50	344	3,650	e390	1,980	919	102	27	19	7.5	6.5
17	59	86	316	4,120	e287	1,140	577	110	25	18	7.2	5.5
18	103	126	291	4,760	e190	514	354	124	23	22	7.3	3.8
19	116	142	275	4,870	e175	348	276	90	21	23	7.3	3.5
20	121	107	268	2,860	e440	289	226	74	21	28	7.7	4.1
21	71	94	310	1,380	1,030	258	187	65	21	50	6.8	4.1
22	43	80	782	952	2,030	228	165	59	20	64	7.6	4.0
23	31	61	1,220	785	2,000	214	150	54	21	36	7.9	3.6
24	26	47	816	664	1,420	269	139	50	37	26	8.0	2.9
25	21	39	575	604	2,330	328	135	50	62	19	10	3.7
26	31	33	465	562	2,920	299	150	55	294	15	e12	4.6
27	71	30	394	513	3,290	238	201	51	182	15	e13	4.8
28	147	28	346	490	3,900	197	221	63	112	16	e11	3.7
29	119	23	228	e460	---	179	180	88	85	16	e11	3.4
30	171	e57	146	e385	---	193	149	67	75	16	e12	3.2
31	147	---	157	e346	---	182	---	59	---	12	e11	---
Total	1,378.9	1,655	16,148	41,157	23,183	19,728	8,791	4,477	1,776	1,134	318.1	247.7
Mean	44.5	55.2	521	1,328	828	636	293	144	59.2	36.6	10.3	8.26
Max	171	142	1,930	4,870	3,900	3,790	919	536	294	91	15	53
Min	3.9	15	146	276	82	179	135	50	20	12	6.8	2.9
Cfsm	0.06	0.08	0.71	1.81	1.13	0.87	0.40	0.20	0.08	0.05	0.01	0.01
In.	0.07	0.08	0.82	2.08	1.17	1.00	0.44	0.23	0.09	0.06	0.02	0.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 2007, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	171	305	563	721	895	957	932	836	511	293	174	133
Max	1,704	2,557	3,925	4,320	4,385	4,334	3,062	6,322	3,697	1,853	1,493	1,774
(WY)	(1970)	(1947)	(1983)	(2005)	(1982)	(1978)	(1979)	(2002)	(1957)	(1957)	(1946)	(1993)
Min	1.19	4.65	8.03	6.31	8.97	11.9	56.0	12.3	15.9	2.50	7.38	2.32
(WY)	(1957)	(1955)	(1955)	(1977)	(1954)	(1954)	(1954)	(1954)	(1988)	(1954)	(1953)	(1953)

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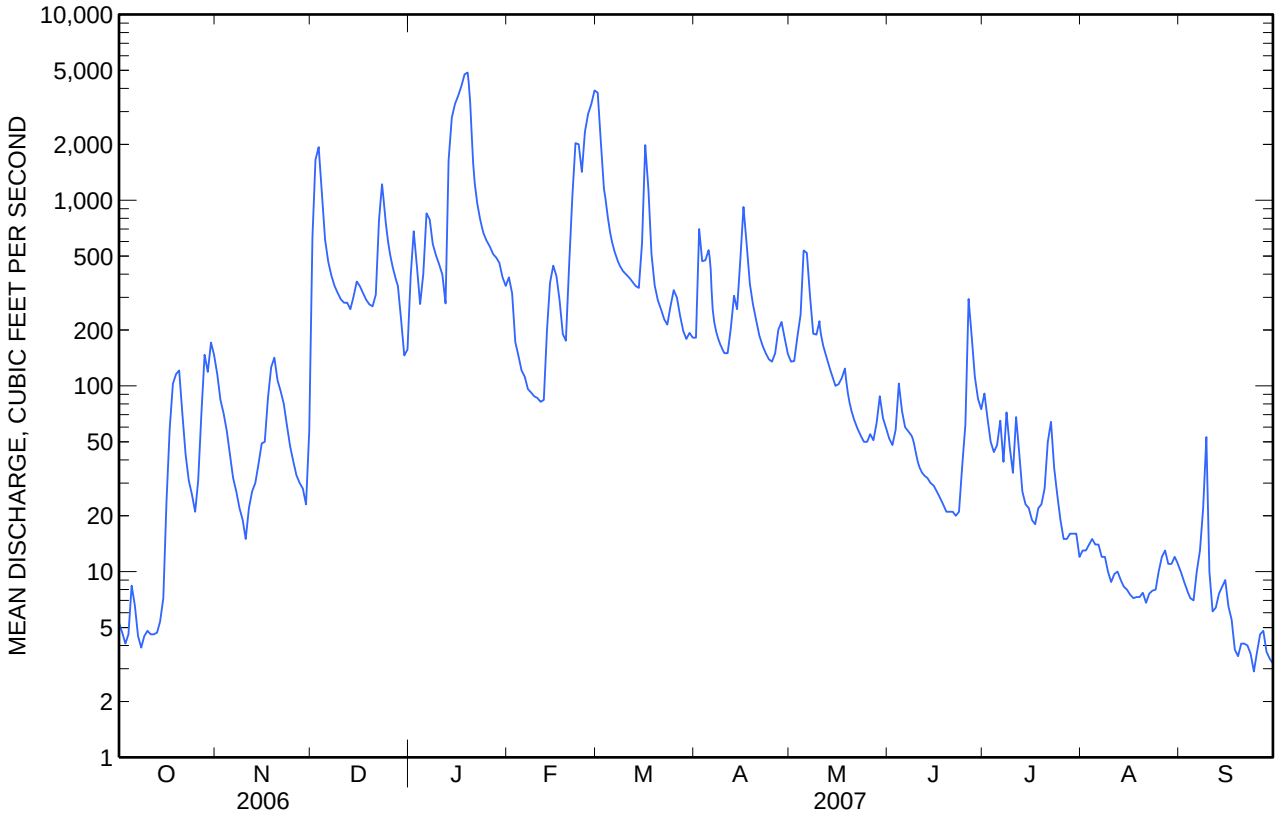
SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 1910 - 2007	
Annual total	78,231.5		119,993.7			
Annual mean	214		329		538	
Highest annual mean					1,119	2002
Lowest annual mean					28.5	1954
Highest daily mean	2,750	Mar 14	4,870	Jan 19	22,200	Jun 17, 1957
Lowest daily mean	3.9	Oct 8	2.9	Sep 24	0.00	A
Annual seven-day minimum	4.5	Oct 7	3.7	Sep 19	0.00	Jul 27, 1954
Maximum peak flow			5,140	Jan 19	[B]23,300	May 9, 2002
Maximum peak stage			17.16	Jan 19	[C]23.02	Apr 14, 1979
Instantaneous low flow			2.9	D		
Annual runoff (cfsm)	0.292		0.447		0.733	
Annual runoff (inches)	3.96		6.07		9.95	
10 percent exceeds	503		670		1,400	
50 percent exceeds	91		90		110	
90 percent exceeds	14		7.3		13	

[A] Many days in 1954-56, 1988.
[B] Gage height, 22.10 ft.
[C] Discharge, 20,600 ft³/s, during period of constricted channel from bridge construction.
[D] Sept. 24, 25, 30.



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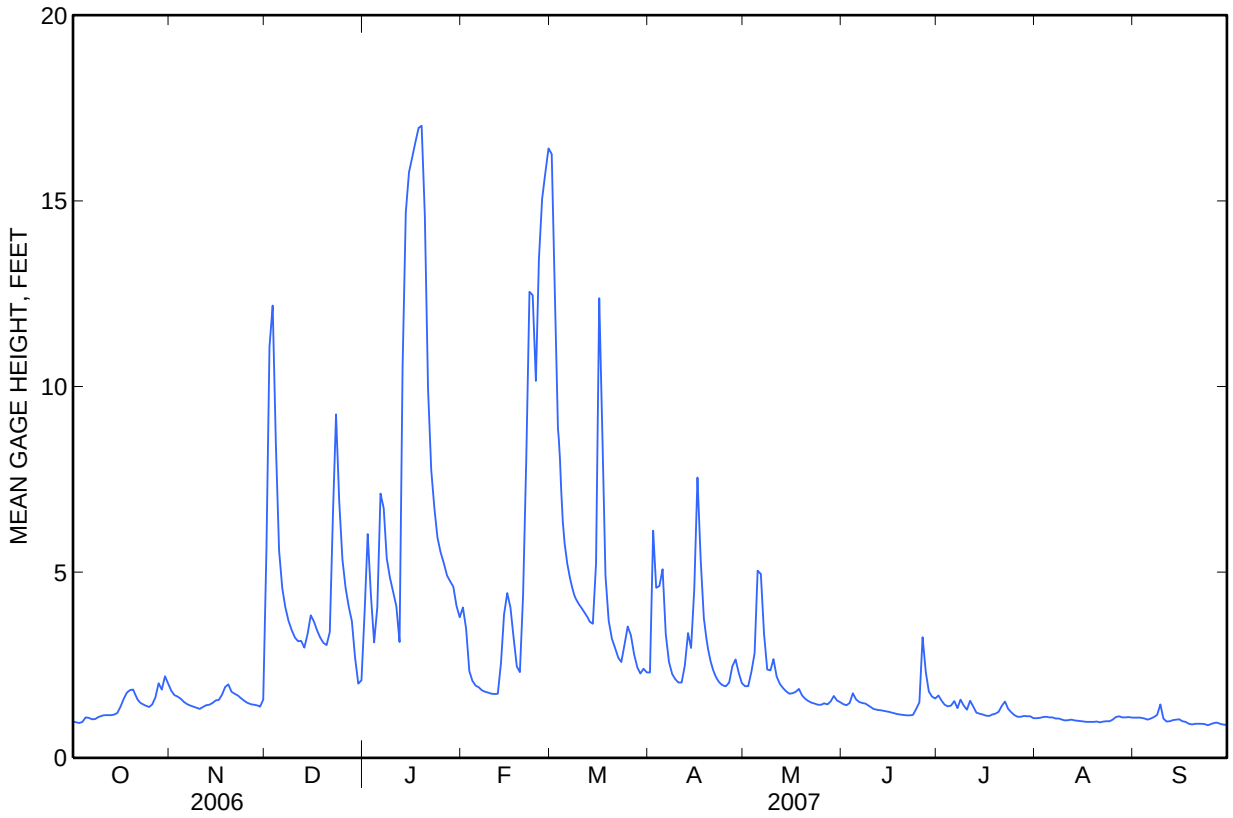
GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.98	1.81	e5.61	3.97	4.05	16.26	2.30	1.93	1.45	1.68	1.07	1.08
2	0.96	1.69	11.07	6.03	3.48	12.61	6.12	1.93	1.42	1.54	1.08	1.09
3	0.94	1.65	12.18	4.38	2.34	8.86	4.58	2.32	1.48	1.43	1.10	1.08
4	0.97	1.59	8.44	3.11	2.08	7.22	4.63	2.82	1.74	1.39	1.11	1.06
5	1.09	1.51	5.59	4.06	1.95	5.89	5.08	5.04	1.58	1.41	1.09	1.03
6	1.08	1.45	4.57	7.12	1.90	5.19	3.32	4.95	1.51	1.53	1.09	1.06
7	1.04	1.41	4.06	6.72	1.82	4.75	2.58	3.34	1.48	1.34	1.06	1.10
8	1.05	1.38	3.69	5.37	1.78	4.43	2.26	2.38	1.46	1.57	1.06	1.16
9	1.10	1.35	3.44	4.85	1.76	4.22	2.12	2.36	1.41	1.41	1.03	1.44
10	1.13	1.32	3.24	4.47	1.73	4.09	2.03	2.66	1.34	1.30	1.01	1.06
11	1.15	1.37	3.14	4.08	1.72	3.97	2.03	2.19	1.31	1.54	1.02	0.98
12	1.15	1.42	3.15	3.12	1.73	3.82	2.49	1.99	1.29	1.38	1.03	0.99
13	1.15	1.43	2.97	10.54	2.56	3.67	3.36	1.88	1.28	1.22	1.01	1.02
14	1.17	1.48	3.33	14.69	3.86	3.61	2.96	1.79	1.26	1.19	1.00	1.03
15	1.21	1.55	3.84	15.77	4.44	5.24	4.55	1.73	1.25	1.17	0.99	1.04
16	1.38	1.56	3.67	16.17	4.05	12.38	7.55	1.74	1.23	1.14	0.98	0.99
17	1.59	1.70	3.44	16.58	3.23	8.63	5.34	1.78	1.20	1.13	0.97	0.97
18	1.76	1.91	3.24	16.96	2.46	4.91	3.75	1.86	1.18	1.17	0.97	0.92
19	1.83	1.98	3.10	17.02	2.31	3.70	3.11	1.68	1.16	1.19	0.97	0.90
20	1.84	1.78	3.04	14.60	4.38	3.21	2.68	1.59	1.16	1.24	0.98	0.92
21	1.64	1.73	3.39	9.94	8.06	2.96	2.34	1.53	1.15	1.40	0.96	0.92
22	1.51	1.68	6.61	7.75	12.55	2.70	2.15	1.49	1.14	1.52	0.98	0.92
23	1.44	1.61	9.25	6.71	12.46	2.58	2.03	1.46	1.16	1.32	0.99	0.91
24	1.41	1.54	6.90	5.93	10.15	3.05	1.95	1.43	1.32	1.23	0.99	0.88
25	1.37	1.49	5.34	5.53	13.43	3.54	1.93	1.43	1.50	1.15	1.03	0.91
26	1.44	1.45	4.57	5.24	15.05	3.30	2.03	1.47	3.25	1.11	1.10	0.94
27	1.63	1.43	4.06	4.91	15.75	2.79	2.47	1.44	2.31	1.11	1.12	0.95
28	2.01	1.42	3.68	4.75	16.41	2.44	2.65	1.52	1.79	1.13	1.09	0.91
29	1.84	1.38	2.70	4.61	---	2.27	2.29	1.67	1.65	1.12	1.09	0.90
30	2.20	e1.57	2.00	4.09	---	2.40	2.02	1.55	1.60	1.12	1.10	0.89
31	2.01	---	2.09	3.79	---	2.30	---	1.50	---	1.07	1.09	---
Mean	1.39	1.55	4.69	7.83	5.62	5.06	3.16	2.08	1.47	1.30	1.04	1.00
Max	2.20	1.98	12.18	17.02	16.41	16.26	7.55	5.04	3.25	1.68	1.12	1.44
Min	0.94	1.32	2.00	3.11	1.72	2.27	1.93	1.43	1.14	1.07	0.96	0.88

	Water Year 2007
Mean	3.01
Max	17.02
Min	0.88

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