

Water-Data Report 2012

393556093132501 ELK CREEK NR SUMNER MO, DS ON SWAN LAKE REFUGE



Division of Biological Resources
Water Resources Branch

Water-Data Report 2012

393556093132501 Elk Creek nr Sumner MO, DS on Swan Lake Refuge

LOCATION: Lat. 39° 35' 56.0" N, long. 93° 13' 25" W, at Swan Lake NWR, 23.5 miles southeast of Chillecothe, MO, in Charlton County. Gage is located near abandoned railroad bridge crossing on western border of Swan Lake NWR.

DRAINAGE AREA: 113 square miles

SURFACE WATER RECORDS

PERIOD OF RECORD: November 30, 2011 to present.

GAGE SITE: Design Analysis 522+ in communication with Esterline pressure transducer in a square metal gage house. GOES antenna in communication with DA 522+ DCP transmits every hour in a 10 second window at a baud rate of 300. Instruments are powered by a solar panel run to a battery through a SunSaver power regulator. Solar panel, GPS and GOES antennas are attached to a mast connected to the gage house. Stage is collected at 15-minute intervals. Weekly gage height data available online, NWS Id is SUMM7. Datum of gage is in North American Vertical Datum of 1988.

NATIONAL WILDLIFE REFUGE: Swan Lake NWR

REMARKS: Records coded fair for 2012 calendar year.

EXTREMES FOR PERIOD OF RECORD: Maximum gage height, 656.23 ft, March 31, 2012; minimum gage height, 645.27 ft, August 17, 2012.

EXTREMES FOR CURRENT YEAR: Maximum gage height, 656.23 ft, March 31; minimum gage height, 645.27 ft, August 17.

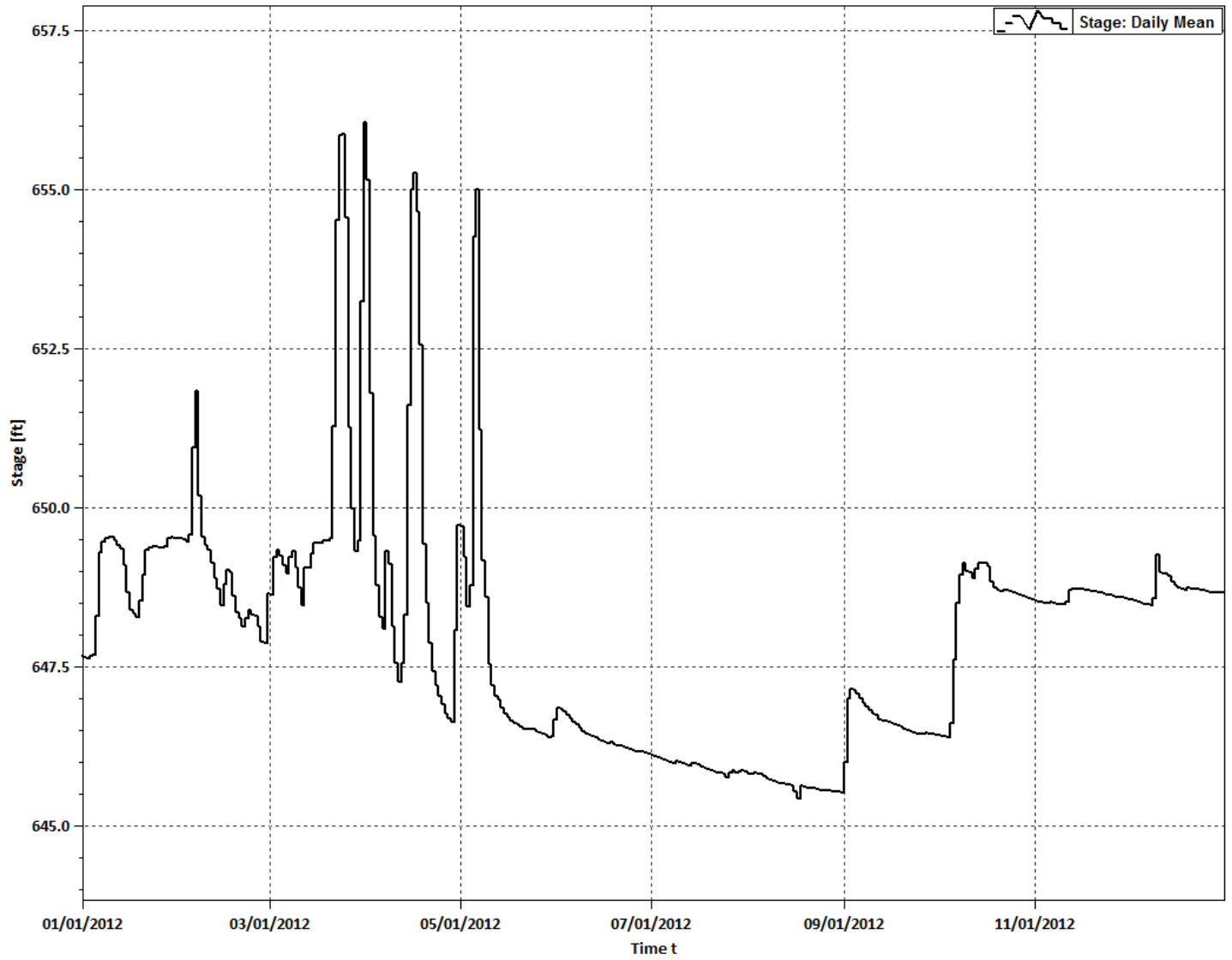
U.S. Department of Interior
U.S. Fish and Wildlife Service

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GAGE HEIGHT, FEET
CALENDAR YEAR 2012
DAILY MEAN VALUES

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	647.64	649.52	648.64	655.15	649.72	646.86	646.12	645.83	646.01	646.43	648.54	648.57
2	647.64	649.50	649.24	651.81	649.22	646.84	646.10	645.81	647.00	646.42	648.53	648.55
3	647.67	649.47	649.35	649.57	648.46	646.79	646.09	645.83	647.16	646.41	648.52	648.54
4	647.68	649.57	649.24	648.79	648.78	646.74	646.07	645.81	647.14	646.40	648.50	648.52
5	648.31	650.96	649.09	648.28	654.26	646.69	646.04	645.81	647.08	646.61	648.51	648.51
6	649.30	651.83	648.97	648.11	655.00	646.64	646.03	645.78	647.00	647.62	648.52	648.49
7	649.47	650.20	649.22	649.32	651.23	646.60	646.01	645.75	646.93	648.50	648.51	648.49
8	649.53	649.54	649.31	649.12	649.17	646.55	645.99	645.72	646.87	648.95	648.50	648.47
9	649.55	649.41	649.06	648.14	648.59	646.50	646.02	645.71	646.82	649.13	648.49	648.57
10	649.54	649.33	648.74	647.57	647.54	646.46	646.01	645.70	646.77	649.01	648.48	649.26
11	649.48	649.13	648.47	647.27	647.21	646.43	645.99	645.68	646.74	648.98	648.53	648.99
12	649.40	648.89	649.05	647.57	647.04	646.42	645.97	645.68	646.68	648.90	648.71	648.97
13	649.35	648.73	649.07	648.31	646.99	646.39	645.96	645.65	646.65	649.04	648.73	648.96
14	649.09	648.46	649.28	651.62	646.85	646.37	645.99	645.65	646.65	649.14	648.73	648.93
15	648.68	648.81	649.44	655.01	646.77	646.34	645.98	645.63	646.63	649.14	648.73	648.84
16	648.39	649.02	649.45	655.26	646.71	646.32	645.97	645.54	646.61	649.13	648.72	648.78
17	648.33	649.00	649.46	654.65	646.66	646.31	645.92	645.44	646.60	649.09	648.71	648.75
18	648.28	648.62	649.49	652.55	646.62	646.31	645.92	645.63	646.58	648.84	648.70	648.73
19	648.54	648.37	649.49	649.43	646.59	646.29	645.90	645.61	646.55	648.75	648.70	648.71
20	648.96	648.27	649.53	648.51	646.56	646.27	645.88	645.60	646.53	648.71	648.69	648.74
21	649.35	648.13	651.28	647.87	646.53	646.27	645.86	645.60	646.51	648.68	648.67	648.74
22	649.37	648.27	654.52	647.42	646.52	646.25	645.84	645.60	646.48	648.70	648.67	648.73
23	649.39	648.40	655.85	647.20	646.53	646.22	645.84	645.58	646.46	648.71	648.65	648.72
24	649.39	648.32	655.88	647.04	646.52	646.21	645.83	645.57	646.44	648.69	648.63	648.72
25	649.38	648.29	654.56	646.92	646.49	646.19	645.77	645.56	646.44	648.67	648.63	648.70
26	649.38	648.14	651.26	646.77	646.48	646.17	645.84	645.56	646.46	648.65	648.61	648.69
27	649.39	647.89	649.98	646.69	646.46	646.17	645.87	645.56	646.46	648.63	648.60	648.68
28	649.51	647.87	649.31	646.63	646.42	646.17	645.83	645.54	646.45	648.61	648.59	648.68
29	649.54	648.65	649.48	648.08	646.39	646.15	645.85	645.54	646.44	648.59	648.59	648.68
30	649.52		653.24	649.73	646.42	646.14	645.87	645.54	646.43	648.58	648.58	648.67
31	649.52		656.07		646.67		645.87	645.53		648.56		648.67
Mean	648.99	648.99	650.48	649.35	647.79	646.40	645.94	645.65	646.65	648.40	648.61	648.71
Max	649.55	651.83	656.07	655.26	655.00	646.86	646.12	645.83	647.16	649.14	648.73	649.26
Min	647.64	647.87	648.47	646.63	646.39	646.14	645.77	645.44	646.01	646.40	648.48	648.47

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WATER TEMPERATURE RECORDS

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PERIOD OF RECORD: November 30, 2011 to present.

INSTRUMENTATION: Sutron Monitor 1 in metal gage housing in communication with a KPSI submersible pressure transducer mounted on a fencepost. Water temperature data are collected at hourly intervals.

REMARKS: Records coded FAIR for 2012 calendar year.

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WATER TEMPERATURE [°C]

Day	January			February			March			April			May			June		
	min	max	mean	min	max	mean	min	max	mean	min	max	mean	min	max	mean	min	max	mean
1	3.73	5.95	5.16	6.58	9.69	7.93	4.18	12.0	7.36	18.4	22.4	20.0	14.6	25.2	17.1	16.4	19.5	17.9
2	0.83	3.73	2.43	6.63	9.66	8.07	6.20	12.3	8.71	19.9	26.0	22.0	20.0	25.2	22.0	18.2	23.3	19.7
3	0.49	2.58	1.44	6.68	9.32	7.70	2.92	7.88	5.26	20.1	25.8	22.3	20.4	25.9	22.7	20.2	23.5	21.8
4	1.88	3.52	2.53	5.86	6.68	6.18	3.23	7.88	5.22	16.2	22.1	18.4	20.1	27.3	23.8	21.1	28.6	23.4
5	2.28	3.80	3.06	4.47	6.84	5.47	2.96	9.68	5.49	12.1	18.9	14.9	20.3	27.2	23.4	22.5	28.5	25.1
6	3.53	5.20	4.29	4.10	6.80	5.30	5.65	13.1	8.09	11.6	18.9	15.6	20.3	24.2	21.4	22.6	27.3	24.4
7	3.95	5.33	4.73	4.47	6.67	5.32	10.3	13.2	11.4	12.0	18.5	14.2	21.0	25.2	23.1	20.8	26.5	23.4
8	3.75	4.89	4.28	3.29	5.10	4.07	8.14	13.2	10.5	10.7	18.7	13.5	17.0	25.2	20.7	20.9	28.2	23.7
9	2.65	4.39	3.60	1.55	4.14	2.31	4.90	12.5	7.68	13.3	19.8	16.5	16.9	24.4	20.3	21.1	29.8	24.4
10	2.80	4.95	3.86	2.20	4.20	2.64	6.53	14.4	9.72	13.4	19.5	16.6	17.4	23.8	20.4	22.4	30.7	25.5
11	3.16	5.08	4.13	-0.06	3.79	0.78	8.69	14.4	10.7	11.9	17.3	14.7	19.6	24.2	21.9	22.9	29.8	25.5
12	0.12	3.92	1.46	0.01	1.37	0.41	10.2	16.2	11.2	11.3	17.0	14.3	19.6	24.0	21.2	20.9	28.9	24.2
13	0.03	0.88	0.42	0.11	1.37	0.62	10.7	19.2	14.0	11.0	17.3	14.2	17.2	23.3	19.2	19.5	28.3	23.1
14	0.43	1.56	0.96	0.56	4.35	1.26	13.1	19.3	16.1	12.4	16.1	14.4	18.3	24.9	21.0	20.4	29.0	24.2
15	0.64	2.43	1.50	1.72	4.35	2.45	15.3	21.1	17.6	14.7	16.4	15.1	18.9	25.4	21.7	22.1	29.0	25.3
16	1.61	4.84	2.92	1.65	7.45	3.19	16.2	22.0	18.8	13.7	17.5	15.3	19.6	25.6	22.5	23.3	29.3	25.7
17	1.40	4.89	3.59	3.57	9.63	5.58	16.9	21.8	19.2	14.5	18.5	16.1	19.1	24.6	21.9	22.8	30.4	25.6
18	0.26	1.61	1.00	3.91	9.63	6.55	17.4	21.7	19.3	15.6	23.3	18.2	19.9	26.0	22.1	24.0	30.9	27.3
19	0.00	1.57	0.81	3.77	8.94	5.93	18.1	21.2	19.5	16.6	23.3	19.3	21.4	25.0	23.0	24.2	31.4	27.5
20	-0.05	0.32	0.11	3.22	8.94	5.53	16.6	20.6	18.3	13.1	21.2	16.8	21.8	25.2	23.4	24.4	30.4	27.3
21	-0.02	0.61	0.27	5.30	9.39	6.54	16.6	19.4	17.5	11.4	17.7	14.2	19.1	25.5	22.0	23.6	30.4	26.5
22	0.21	2.24	1.12	4.89	9.39	6.93	15.9	18.5	16.8	13.3	17.7	15.3	18.6	25.2	21.4	22.5	31.3	26.6
23	0.93	2.19	1.76	7.16	12.2	8.60	16.0	18.3	16.6	11.5	16.9	13.6	19.1	26.2	21.8	22.8	30.8	25.0
24	0.25	3.22	1.55	5.18	12.2	7.89	14.8	18.5	16.1	13.7	19.7	15.9	20.5	25.0	22.6	22.2	31.6	25.2
25	1.96	3.51	2.60	1.53	7.76	4.50	15.9	21.3	17.8	17.9	24.7	20.0	21.3	26.5	23.0	26.2	33.8	29.3
26	2.66	5.52	3.81	2.46	10.6	5.31	17.4	22.5	19.3	19.5	24.8	22.4	22.6	29.6	25.0	21.9	32.4	26.5
27	2.58	4.17	3.14	4.19	11.1	7.52	16.8	22.5	19.1	15.3	23.7	18.5	23.6	31.4	26.6	22.2	31.5	26.2
28	0.55	3.81	1.94	5.65	10.1	7.68	16.7	24.3	19.6	14.0	19.9	15.7	23.0	30.3	26.3	23.8	32.7	27.7
29	0.85	4.22	2.25	6.33	11.0	8.73	15.1	24.2	19.0	12.4	19.7	15.0	21.5	29.6	25.3	25.0	33.3	28.7
30	2.47	6.70	3.58				16.9	20.1	18.1	13.1	16.7	14.0	20.4	29.3	24.3	25.2	32.5	28.5
31	5.56	9.20	6.41				17.5	20.5	18.7				19.5	26.0	22.0			
Monthly Average	1.66	3.77	2.60	3.69	7.68	5.21	12.2	17.5	14.3	14.1	20.0	16.6	19.8	26.0	22.4	22.2	29.5	25.2

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WATER TEMPERATURE [°C]

Day	July			August			September			October			November			December		
	min	max	mean	min	max	mean	min	max	mean	min	max	mean	min	max	mean	min	max	mean
1	25.3	32.0	28.2	23.1	36.4	28.8	21.6	22.7	22.0	15.3	18.4	16.8	7.14	8.06	7.53	5.79	6.75	6.13
2	24.6	33.2	28.3	23.3	33.5	27.3	21.6	22.7	22.2	14.9	18.6	16.8	8.01	8.82	8.29	6.45	6.98	6.73
3	25.1	32.9	28.7	23.2	34.1	27.7	22.7	24.3	23.1	14.9	19.2	17.1	8.17	8.88	8.68	6.94	8.50	7.49
4	25.0	33.4	28.8	24.6	36.0	28.4	24.1	25.5	24.5	16.4	19.1	17.4	7.74	8.88	8.30	8.02	8.74	8.25
5	24.8	33.3	28.5	21.3	36.7	27.4	25.0	26.0	25.4	12.7	16.7	14.2	8.36	8.68	8.55	7.33	8.70	8.02
6	25.4	33.5	29.1	18.7	36.5	25.8	24.1	25.9	25.1	10.2	12.7	10.9	8.10	8.62	8.33	7.24	7.90	7.63
7	25.5	34.8	29.5	20.0	38.6	27.1	23.9	25.5	24.7	9.29	10.9	10.1	7.88	8.65	8.40	7.59	7.77	7.68
8	24.8	34.3	27.7	22.4	31.1	25.8	20.1	24.5	21.9	9.04	11.3	10.0	7.26	8.70	7.96	7.08	7.79	7.51
9	23.3	32.9	26.8	20.1	35.4	25.8	18.8	22.2	20.3	10.3	12.0	11.1	8.12	9.08	8.45	6.99	7.49	7.18
10	23.3	33.5	27.8	18.4	32.8	24.5	18.2	21.3	19.8	10.2	12.0	11.1	8.99	10.9	9.62	4.12	6.99	5.23
11	23.2	33.6	27.4	15.7	33.8	22.8	19.0	21.8	20.3	10.3	11.6	10.9	9.79	12.1	11.2	2.77	4.12	3.27
12	23.4	32.0	27.7	19.4	28.4	23.0	20.6	23.5	21.7	11.1	12.4	11.4	6.16	9.79	7.03	2.61	3.62	3.08
13	23.6	30.7	25.9	19.8	24.9	22.2	18.4	23.5	21.4	12.4	13.6	12.7	5.00	6.55	5.65	2.83	3.84	3.19
14	21.2	32.4	25.3	15.8	26.6	19.8	16.6	18.7	17.6	13.6	15.4	14.6	5.60	6.16	5.93	2.82	3.84	3.31
15	23.7	33.6	27.9	14.9	31.8	21.2	15.8	19.1	17.5	13.5	15.2	14.4	6.13	6.91	6.75	3.55	5.41	4.20
16	24.3	33.5	28.3	20.0	35.1	24.6	17.0	19.4	18.1	14.2	15.9	14.9	6.23	7.12	6.75	5.40	5.73	5.49
17	24.1	34.4	28.3	9.86	37.5	20.5	18.3	20.3	19.1	15.1	15.9	15.5	6.25	7.01	6.75	5.15	5.58	5.34
18	25.1	34.5	28.6	8.78	33.3	18.5	15.8	20.3	17.9	12.1	15.4	13.6	6.52	7.34	7.01	4.55	5.70	5.05
19	25.1	36.7	29.4	11.3	41.0	20.8	15.0	19.6	17.2	10.6	12.1	11.1	7.29	8.41	7.66	4.66	5.54	4.97
20	22.9	35.9	28.4	10.5	33.2	19.4	16.2	19.5	18.1	10.3	11.2	10.7	8.34	8.89	8.56	2.70	4.83	4.26
21	21.8	35.8	27.4	12.5	38.8	21.0	16.7	20.4	18.4	11.2	12.3	11.6	7.62	8.84	8.30	1.25	3.32	2.17
22	22.4	36.3	27.9	12.3	43.4	23.1	15.6	19.8	17.6	12.3	13.3	12.6	8.42	9.22	8.67	3.32	4.19	3.68
23	23.3	38.1	28.9	14.4	39.2	22.9	13.0	18.9	15.6	13.2	14.8	13.7	7.54	9.19	8.59	3.94	4.75	4.24
24	24.3	38.7	29.6	15.7	32.2	22.6	13.0	17.3	15.2	14.7	16.8	15.5	5.48	7.54	6.22	4.52	4.86	4.63
25	24.1	37.0	29.0	16.0	34.0	22.2	16.5	19.5	17.4	16.5	18.1	17.0	5.13	5.85	5.47	4.73	5.28	4.92
26	23.4	31.7	26.7	21.6	27.5	23.2	19.0	19.9	19.5	12.8	16.6	14.2	4.49	5.66	5.07	4.89	5.40	5.12
27	22.8	35.9	27.8	16.9	35.3	23.2	17.4	20.0	18.9	10.1	12.8	11.2	4.11	4.91	4.45	5.06	5.48	5.24
28	20.7	36.6	26.8	15.6	33.9	22.2	17.0	20.0	18.7	8.39	10.6	9.26	4.26	4.79	4.55	5.16	5.38	5.27
29	22.1	36.4	27.5	15.8	38.0	23.1	14.9	20.0	17.3	7.79	9.21	8.32	4.16	5.41	4.51	5.23	5.71	5.40
30	24.0	32.3	27.4	15.5	36.7	22.8	15.1	18.9	16.9	6.88	8.40	7.67	4.94	5.79	5.26	5.38	5.97	5.62
31	22.4	37.7	27.8	17.3	25.9	20.4				6.89	7.68	7.36				5.32	5.56	5.46
Monthly Average	23.7	34.4	28.0	17.3	34.2	23.5	18.4	21.4	19.8	11.8	13.9	12.7	6.77	7.89	7.28	4.95	5.86	5.35

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SUMMARY STATISTICS

	Calendar Year 2012	Period of Record (2011-2012)#
Minimum Unit Value [°C]	-0.06 (Feb 11)	-0.06 (Feb 11, 2012)
Maximum Unit Value [°C]	43.36 (Aug 27)	43.36 (Aug 27, 2012)
Median of Daily Mean [°C]	16.55	14.33

#See Period of Record; partial year used in monthly and annual statistics

