Water-Data Report 2013

05543500 ILLINOIS RIVER AT MARSEILLES, IL

Upper Illinois Basin
Upper Illinois Subbasin

LOCATION.--Lat 41°19′37″, long 88°43′03″ referenced to North American Datum of 1927, in SE ¼ SW ¼ sec.13, T.33 N., R.4 E., LaSalle County, IL, Hydrologic Unit 07120005, on right bank 0.5 mi downstream from Marseilles dam in Marseilles, 6.9 mi upstream from Fox River, and at mile 246.5.

DRAINAGE AREA.--8,259 mi^2, does not include diversion from Lake Michigan through the Chicago Sanitary and Ship Canal, which has occurred since Jan. 17, 1900.

SURFACE-WATER RECORDS

PERIOD OF RECORD.—
SURFACE-WATER DISCHARGE AND STAGE
DISCHARGE: October 1919 to current year. Prior to October 1939, published as "at Morris."
STAGE: Water years 1994 to current year.
PARTIAL RECORD: Annual maximum, water years 1894 to 1898 and 1900 to 1919.
SURFACE-WATER QUALITY
CHEMICAL: Water years 1975-97.
SEDIMENT: February 2003 to September 2009.
SPECIFIC CONDUCTANCE: Water years 1975-81.
WATER TEMPERATURE: Water years 1975-81.
MISCELLANEOUS: Water Year 1998; Contaminants in streambed sediments, October 1996; contaminants in fish tissue, October 1996; sediment concentration and particle size, water years 1993-97, 2003-2005.
BIOLOGICAL
ALGAE: Water years 1989-90, 1996-97.

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

GAGE.--Water-stage recorder and satellite telemeter. Datum of gage is 452.91 ft above NGVD of 1929 (452.71 ft NAVD 1988). October 1919 to January 1935, nonrecording gage at site at Morris, 16.6 mi upstream, at datum 25.59 ft higher. January 1935 to September 1939, water-stage recorder 300 ft downstream from Morris site at that datum. October 1939 to September 2002, water-stage recorder at current site at datum 10 ft. higher.

REMARKS.--Discharge records good except for estimated daily discharges, which are poor. Figures of daily discharge include flow through navigation locks. Flow regulated by powerplants and navigation dam above station. Since Jan. 17, 1900, flow has included diversion from Lake Michigan through Chicago Sanitary and Ship Canal.

EXTREMES FOR PERIOD OF RECORD.--
SURFACE-WATER DISCHARGE AND STAGE: Maximum discharge, 105,000 ft^3/s, Apr. 19, 2013, gage height, 28.27 ft; minimum daily discharge, 461 ft^3/s, Nov. 21, 2002, due to temporary dam closure.
SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily, 1,050 mg/L, Jan 9, 2008; minimum daily, 6 mg/L, Jan. 28-Feb. 6, 2004.
SUSPENDED-SEDIMENT LOADS: Maximum daily, 209,000 tons, Jan. 9, 2008; minimum daily, 37 tons, Feb. 4, 2004.

EXTREMES OUTSIDE PERIOD OF RECORD.--
SURFACE-WATER DISCHARGE AND STAGE: Flood of May 6, 1892 reached an estimated discharge of 72,500 ft^3/s, stage not determined. A stage of 26.2 ft at Morris occurred in 1831, discharge not determined, and a stage of 35.4 ft (ice jam) occurred at present site and datum on Jan. 21, 1916, estimated discharge, 40,000 ft^3/s.

05543500 ILLINOIS RIVER AT MARSEILLES, IL—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2,330	4,220	1,700	3,690	20,200	11,700	8,850	18,300	31,900	13,900	4,480	3,750
2	1,550	3,750	3,420	3,370	17,900	12,300	9,590	16,500	34,900	12,900	e4,700	5,020
3	2,120	2,840	2,180	4,650	14,700	12,000	7,950	15,000	32,800	10,500	5,820	3,530
4	2,480	3,510	2,640	2,280	12,100	10,500	8,280	13,600	29,400	10,700	4,840	3,300
5	2,000	3,750	3,540	3,500	12,100	10,800	7,190	12,400	25,800	10,500	4,730	3,190
6	1,150	2,590	3,630	2,250	9,860	9,930	7,050	11,600	23,500	9,040	4,150	2,560
7	1,200	3,470	1,880	3,730	11,200	9,560	7,990	10,500	18,700	8,350	5,370	3,780
8	2,170	2,790	3,950	5,350	11,900	9,290	8,070	10,300	17,200	8,550	3,530	2,260
9	1,840	5,010	2,670	2,980	12,000	9,940	9,440	10,600	13,800	e11,500	4,250	2,550
10	1,750	1,540	4,700	3,740	11,000	e17,800	9,310	9,520	12,800	e9,430	4,760	2,180
11	2,320	4,730	2,720	6,760	13,100	e39,300	17,600	11,600	13,100	e7,920	4,190	2,400
12	1,320	5,090	3,120	7,480	15,500	41,200	26,900	10,800	12,200	e6,800	3,400	2,660
13	3,340	4,270	3,170	e7,020	13,800	33,400	25,900	e10,000	23,600	6,220	5,130	2,010
14	3,210	3,460	3,250	8,160	12,400	26,600	23,000	e9,060	26,000	6,970	3,540	2,800
15	4,840	4,090	3,620	7,760	10,600	22,100	20,200	e8,150	20,000	5,470	3,090	3,370
16	4,910	2,750	2,670	7,680	10,400	19,500	21,400	7,050	15,700	5,760	3,360	1,590
17	2,290	3,320	3,520	8,280	8,890	16,400	28,800	7,490	14,100	5,530	3,020	3,320
18	4,710	3,280	3,940	6,080	9,060	15,100	62,600	7,410	12,800	5,030	4,330	4,200
19	5,310	2,730	3,630	6,310	8,740	15,400	100,000	6,330	12,600	5,660	1,880	8,480
20	4,260	2,150	7,240	5,330	8,100	13,000	95,500	6,530	11,900	4,910	1,990	5,540
21	2,830	3,740	8,940	4,150	8,590	11,200	74,100	13,000	10,600	5,300	3,860	4,760
22	3,220	2,470	8,630	e3,220	7,670	10,800	57,100	17,500	10,400	5,860	4,210	5,790
23	4,570	2,500	8,570	e2,400	7,880	10,600	47,900	17,800	11,500	5,020	2,990	4,630
24	4,280	2,720	7,200	e2,250	6,720	9,140	43,700	15,500	11,300	2,960	3,250	4,830
25	4,720	3,350	6,740	e2,970	7,160	8,600	39,200	14,200	11,300	5,130	3,070	3,290
26	7,040	2,580	5,010	e2,400	7,760	8,140	35,200	10,900	15,100	4,110	2,940	3,280
27	6,840	1,880	5,830	3,880	8,010	8,900	29,100	11,000	14,600	5,030	2,400	3,600
28	5,150	2,770	4,920	6,970	9,770	7,930	26,600	20,700	15,400	3,320	3,600	3,770
29	5,240	1,880	4,040	8,790	---	7,680	22,800	32,400	15,200	3,890	2,420	3,430
30	4,650	3,390	4,330	16,500	---	8,380	e20,300	33,200	16,300	3,690	3,480	3,340
31	3,250	---	4,350	21,100	---	9,970	---	32,200	---	e4,200	4,330	---
Total	106,890	96,620	135,750	181,030	307,110	457,160	901,620	431,140	534,500	214,150	117,110	109,210
Mean	3,448	3,221	4,379	5,840	10,970	14,750	30,050	13,910	17,820	6,908	3,778	3,640
Max	7,040	5,090	8,940	21,100	20,200	41,200	100,000	33,200	34,900	13,900	5,820	8,480
Min	1,150	1,540	1,700	2,250	6,720	7,680	7,050	6,330	10,400	2,960	1,880	1,590

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 2013, BY WATER YEAR (WY)

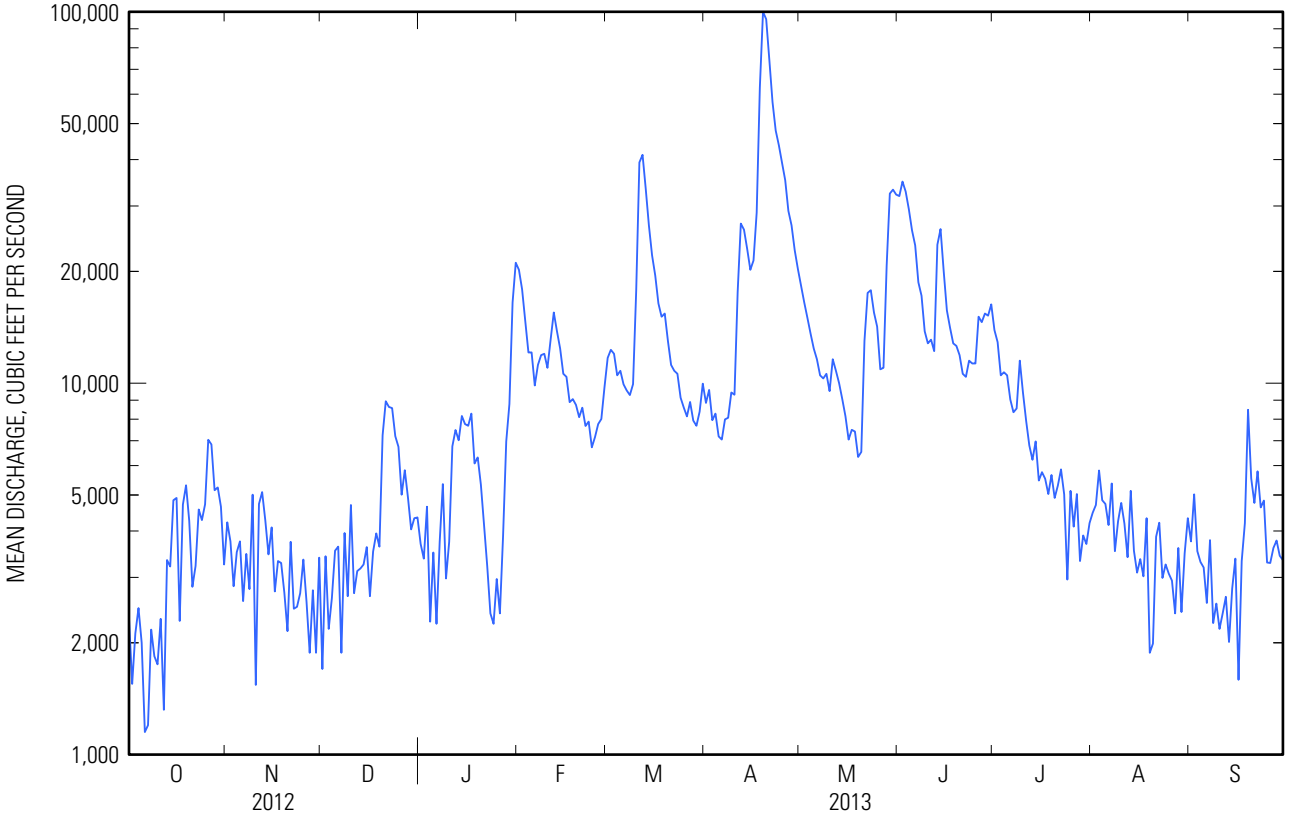
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	7,364	8,317	9,819	10,250	11,780	15,170	16,080	13,860	11,990	9,051	7,752	7,656
Max	21,050	24,180	30,100	28,430	25,970	41,290	33,180	35,180	25,940	21,020	19,220	27,450
(WY)	(1927)	(1986)	(1983)	(1993)	(1997)	(1979)	(1922)	(1943)	(1993)	(1957)	(1924)	(2008)
Min	2,608	2,278	3,551	2,899	2,906	4,748	5,937	5,419	3,978	3,120	3,742	3,109
(WY)	(2006)	(2000)	(2003)	(2003)	(2003)	(2003)	(2012)	(2005)	(2005)	(2005)	(2012)	(2012)

05543500 ILLINOIS RIVER AT MARSEILLES, IL—Continued

SUMMARY STATISTICS

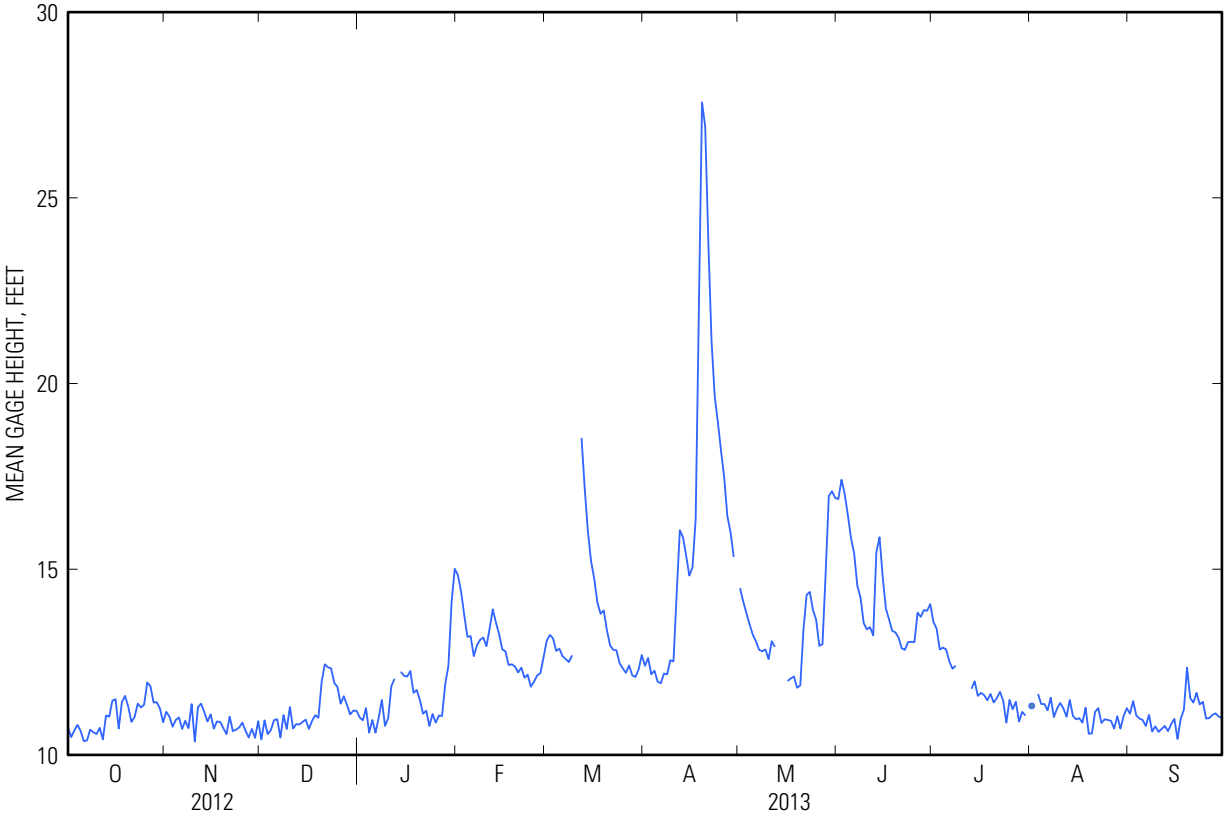
	Calendar Year 2012		Water Year 2013		Water Years 1920 - 2013	
Annual total	2,316,070		3,592,290			
Annual mean	6,328		9,842		10,750	
Highest annual mean					17,850	1993
Lowest annual mean					5,583	1964
Highest daily mean	46,500	May 8	100,000	Apr 19	102,000	Sep 16, 2008
Lowest daily mean	1,150	Oct 6	1,150	Oct 6	[A]461	Nov 21, 2002
Annual seven-day minimum	1,680	Oct 6	1,680	Oct 6	1,670	Oct 17, 2005
Maximum peak flow			105,000	Apr 19	105,000	Apr 19, 2013
Maximum peak stage			28.27	Apr 19	28.27	Apr 19, 2013
Instantaneous low flow			608	B		
10 percent exceeds	10,900		20,200		19,600	
50 percent exceeds	4,740		6,330		8,800	
90 percent exceeds	2,330		2,530		4,350	

[A] Due to temporary dam closure.
[B] Several days.



05543500 ILLINOIS RIVER AT MARSEILLES, IL—Continued

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	10.73	11.16	10.42	11.01	14.84	13.07	12.40	14.49	16.89	13.58	11.32	11.11
2	10.48	11.03	10.93	10.93	14.40	13.23	12.61	14.13	17.41	13.40	---	11.45
3	10.66	10.76	10.56	11.26	13.76	13.14	12.17	13.82	17.03	12.84	11.64	11.06
4	10.81	10.94	10.67	10.60	13.18	12.80	12.27	13.52	16.46	12.89	11.37	10.98
5	10.64	11.01	10.94	10.94	13.20	12.86	11.97	13.24	15.84	12.84	11.37	10.94
6	10.37	10.70	10.96	10.60	12.66	12.66	11.93	13.06	15.42	12.52	11.20	10.78
7	10.39	10.92	10.47	11.00	12.95	12.58	12.19	12.83	14.55	12.32	11.54	11.08
8	10.68	10.72	11.07	11.48	13.10	12.50	12.17	12.79	14.24	12.40	11.02	10.63
9	10.61	11.37	10.70	10.78	13.16	12.68	12.55	12.84	13.55	---	11.25	10.77
10	10.56	10.36	11.29	10.99	12.93	---	12.52	12.58	13.38	---	11.40	10.62
11	10.73	11.29	10.71	11.85	13.40	---	14.34	13.06	13.44	---	11.25	10.70
12	10.42	11.38	10.83	12.05	13.92	18.53	16.05	12.91	13.22	---	11.03	10.78
13	11.06	11.15	10.82	---	13.56	17.17	15.86	---	15.46	11.78	11.48	10.64
14	11.03	10.90	10.89	12.24	13.25	16.01	15.36	---	15.86	11.98	11.05	10.83
15	11.46	11.09	10.95	12.13	12.84	15.22	14.83	---	14.79	11.59	10.96	10.97
16	11.50	10.71	10.70	12.11	12.79	14.74	15.05	11.99	13.94	11.67	10.99	10.43
17	10.71	10.90	10.92	12.26	12.42	14.10	16.36	12.06	13.65	11.61	10.87	10.97
18	11.42	10.89	11.07	11.67	12.44	13.80	21.96	12.11	13.34	11.47	11.27	11.22
19	11.59	10.72	11.00	11.75	12.38	13.89	27.57	11.81	13.30	11.64	10.57	12.35
20	11.30	10.56	11.96	11.48	12.22	13.36	26.92	11.87	13.16	11.41	10.58	11.53
21	10.89	11.03	12.44	11.11	12.35	12.95	23.79	13.38	12.87	11.53	11.16	11.41
22	11.02	10.64	12.36	11.19	12.08	12.83	21.15	14.31	12.83	11.70	11.26	11.67
23	11.38	10.68	12.33	10.78	12.16	12.82	19.66	14.39	13.04	11.46	10.86	11.36
24	11.28	10.74	11.94	11.10	11.84	12.47	18.96	13.90	13.04	10.87	10.96	11.43
25	11.35	10.87	11.83	10.87	11.97	12.33	18.19	13.64	13.04	11.48	10.94	10.98
26	11.95	10.65	11.38	11.06	12.14	12.21	17.47	12.94	13.83	11.23	10.92	10.99
27	11.85	10.47	11.58	11.05	12.20	12.41	16.42	12.98	13.72	11.43	10.71	11.08
28	11.41	10.70	11.35	11.91	12.62	12.14	16.00	14.90	13.90	10.90	11.04	11.12
29	11.42	10.46	11.09	12.40	---	12.10	15.33	16.97	13.88	11.16	10.71	11.03
30	11.25	10.91	11.19	14.11	---	12.30	---	17.10	14.06	11.06	11.05	11.00
31	10.88	---	11.19	15.01	---	12.69	---	16.92	---	---	11.26	---
Mean	11.03	10.86	11.18	---	12.88	---	---	---	14.30	---	---	11.06
Max	11.95	11.38	12.44	---	14.84	---	---	---	17.41	---	---	12.35
Min	10.37	10.36	10.42	---	11.84	---	---	---	12.83	---	---	10.43

05543500 ILLINOIS RIVER AT MARSEILLES, IL—Continued