Water-Data Report 2011

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, phone telemeter, automatic water sampler, and U.S. Army Corps of Engineers 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. Suspended sediment samples collected twice weekly with additional samples during high-runoff periods by an automatic water sampler.

EXTREMES FOR PERIOD OF RECORD.--
SURFACE-WATER DISCHARGE AND STAGE: Maximum discharge, 104,000 ft^3/s, Sept. 16, 2008, gage height, 28.13 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.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2,420	2,080	4,830	28,300	e2,720	31,800	9,110	37,400	33,600	9,910	9,570	3,660
2	2,930	3,010	5,280	25,100	e2,530	25,600	9,110	32,600	27,600	9,970	9,300	4,760
3	3,840	2,360	4,040	18,100	e2,220	22,300	7,380	28,400	24,200	10,400	9,160	6,710
4	3,080	2,260	5,340	12,700	e2,100	20,700	9,690	24,900	21,100	11,100	9,430	3,980
5	2,550	4,010	4,560	11,500	e3,090	25,900	7,490	20,300	19,300	9,190	8,580	5,630
6	3,360	1,240	4,060	10,100	e2,490	29,000	7,370	18,800	19,000	9,170	8,000	4,450
7	2,630	2,830	3,180	7,320	e3,060	28,100	8,900	17,500	17,400	8,900	8,380	4,430
8	3,160	1,570	3,790	7,350	e2,870	25,800	10,300	16,200	14,600	8,220	9,000	4,500
9	3,230	2,960	2,910	6,730	e3,030	24,500	11,800	14,100	27,100	8,240	10,500	5,090
10	2,440	2,100	4,220	5,950	e2,850	23,200	11,800	13,700	49,600	7,080	10,600	4,150
11	3,230	2,620	4,340	5,250	e2,760	23,300	11,600	13,300	45,300	7,840	9,190	5,580
12	3,090	3,110	4,350	5,580	e2,810	21,500	10,500	13,300	31,300	5,510	8,230	4,060
13	3,110	1,690	6,420	5,520	e2,810	19,600	11,900	13,000	23,700	7,140	8,380	3,510
14	4,160	3,880	4,570	5,140	e3,970	17,700	11,400	12,700	18,800	6,210	8,050	4,150
15	2,810	3,050	e3,800	5,370	5,720	14,300	10,900	15,700	18,800	6,340	8,610	3,750
16	3,120	2,410	e3,710	4,890	7,820	14,500	10,500	17,400	20,100	4,850	7,320	2,890
17	1,820	3,310	e3,960	5,260	15,500	13,900	10,900	17,200	21,500	5,220	6,960	1,440
18	1,520	1,490	e3,450	5,470	28,300	13,500	12,100	16,300	18,800	5,120	6,570	5,340
19	2,690	2,480	e3,260	5,320	27,600	12,900	12,700	15,500	15,700	4,620	5,640	5,050
20	1,390	3,200	e3,270	5,030	25,800	12,900	25,900	14,600	22,000	4,340	e6,290	4,730
21	2,120	1,510	e3,240	e3,800	30,900	11,500	31,600	11,700	28,200	5,120	e7,410	3,170
22	2,690	4,160	e3,210	e3,100	31,900	13,600	32,200	11,500	25,000	7,030	e7,730	3,310
23	3,020	8,740	e3,200	e2,280	25,200	15,400	43,900	11,600	20,500	13,200	e7,720	3,440
24	3,550	5,920	e3,180	e2,870	20,600	13,500	44,100	12,600	16,300	19,000	7,200	3,000
25	4,270	5,430	e3,190	e2,970	18,200	13,600	37,200	18,300	14,300	17,200	8,370	4,110
26	4,920	4,810	e3,180	e2,930	17,800	12,400	41,200	40,000	14,700	17,500	7,460	7,960
27	3,110	4,630	e3,160	e2,920	16,100	11,900	49,600	50,700	11,400	13,600	7,240	8,700
28	4,100	5,020	e3,180	e2,940	25,000	10,300	49,100	43,900	10,200	15,300	4,580	10,400
29	2,020	3,680	e3,710	e2,940	---	9,580	44,700	42,500	10,400	14,100	5,990	8,070
30	3,110	6,280	5,420	e2,890	---	9,290	40,400	45,500	9,540	11,300	5,330	8,130
31	2,980	---	12,800	e2,870	---	8,770	---	39,900	---	11,500	4,480	---
Total	92,470	101,840	130,810	218,490	335,750	550,840	635,350	701,100	650,040	294,220	241,270	148,150
Mean	2,983	3,395	4,220	7,048	11,990	17,770	21,180	22,620	21,670	9,491	7,783	4,938
Max	4,920	8,740	12,800	28,300	31,900	31,800	49,600	50,700	49,600	19,000	10,600	10,400
Min	1,390	1,240	2,910	2,280	2,100	8,770	7,370	11,500	9,540	4,340	4,480	1,440

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 2011, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	7,430	8,383	9,859	10,290	11,810	15,240	16,040	13,870	12,000	9,134	7,838	7,750
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	6,516	5,419	3,978	3,120	3,875	3,345
(WY)	(2006)	(2000)	(2003)	(2003)	(2003)	(2003)	(1986)	(2005)	(2005)	(2005)	(2005)	(1999)

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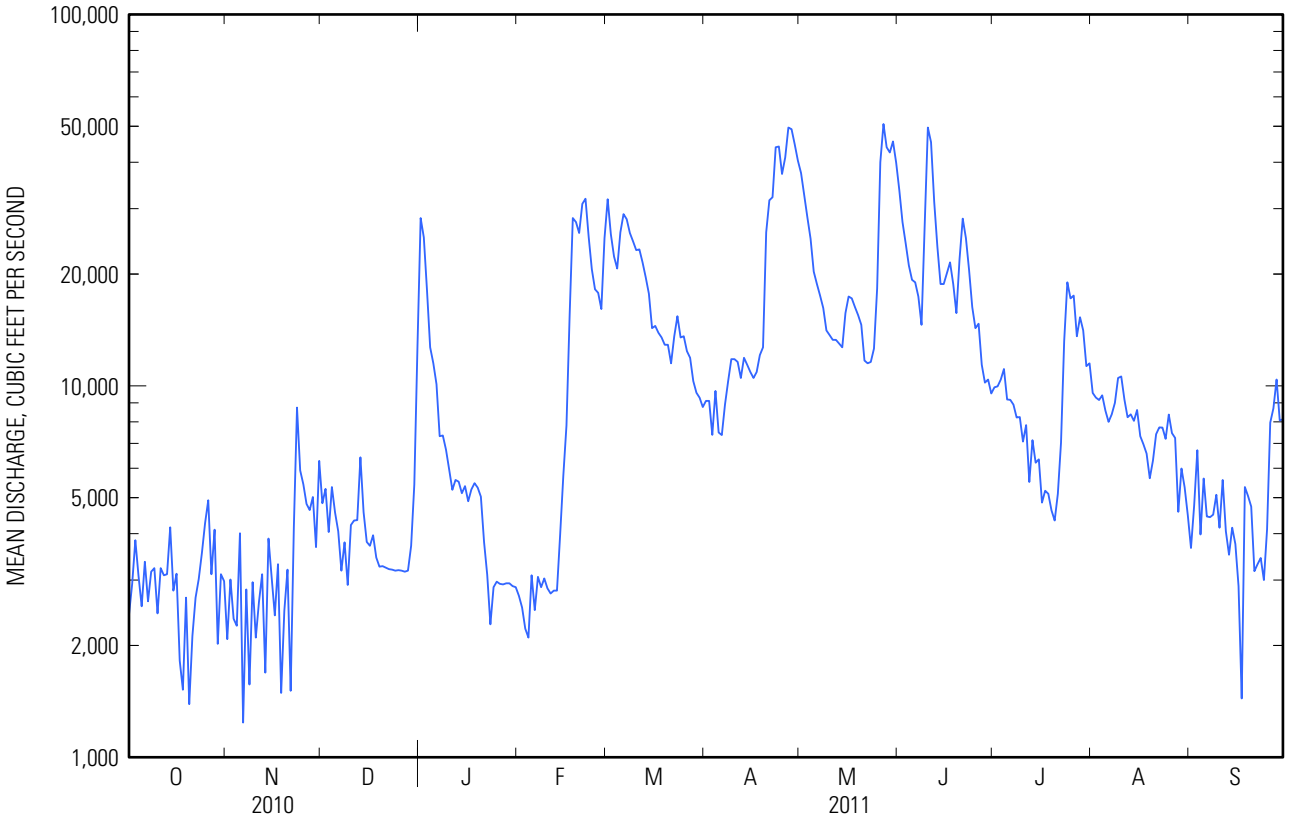
SUMMARY STATISTICS

	Calendar Year 2010		Water Year 2011		Water Years 1920 - 2011	
Annual total	3,736,470		4,100,330			
Annual mean	10,240		11,230		10,790	
Highest annual mean					17,850	1993
Lowest annual mean					5,583	1964
Highest daily mean	44,700	Jun 24	50,700	May 27	102,000	Sep 16, 2008
Lowest daily mean	1,240	Nov 6	1,240	Nov 6	[A]461	Nov 21, 2002
Annual seven-day minimum	2,180	Oct 17	2,180	Oct 17	1,670	Oct 17, 2005
Maximum peak flow			52,800	May 27	104,000	Sep 16, 2008
Maximum peak stage			20.46	May 27	28.13	Sep 16, 2008
Instantaneous low flow			996	Oct 1		
10 percent exceeds	21,900		25,800		19,700	
50 percent exceeds	7,770		7,490		8,840	
90 percent exceeds	3,090		2,860		4,400	

[A]Due to temporary dam closure.



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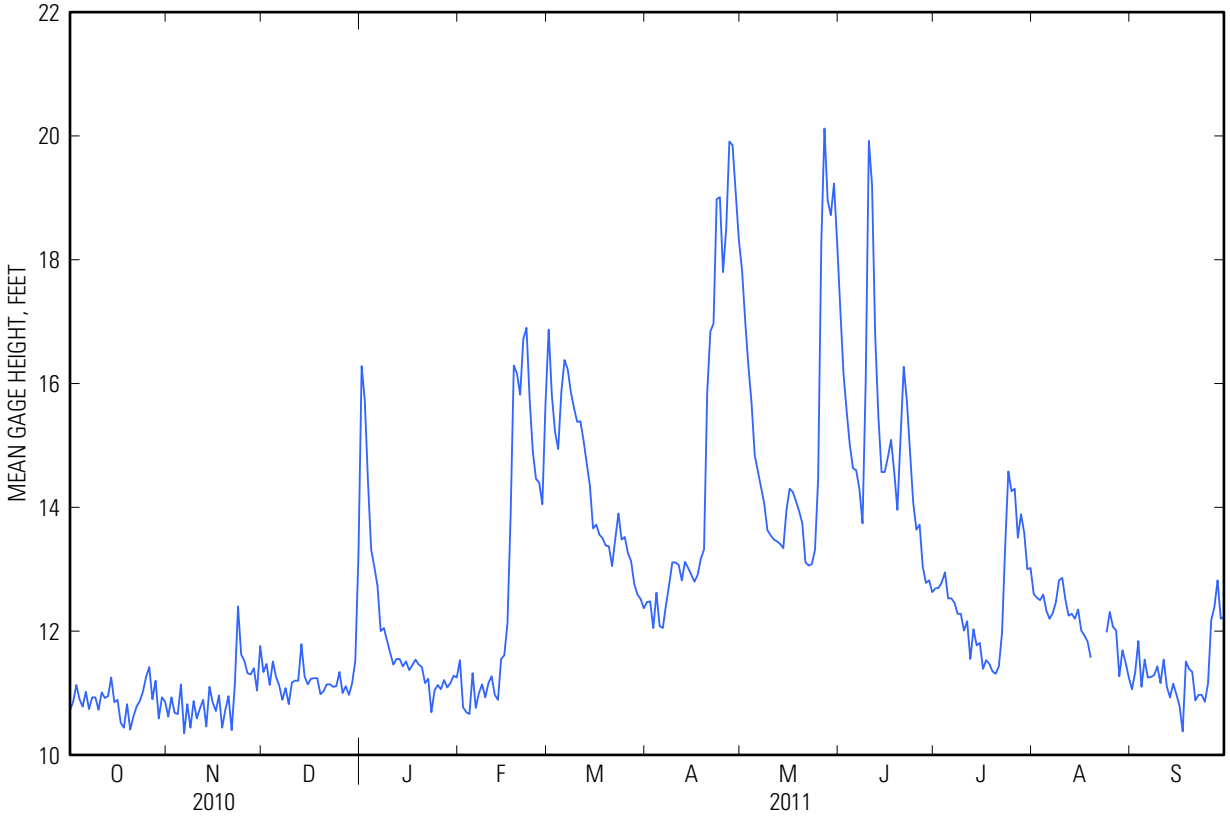
GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	10.72	10.62	11.34	16.28	11.53	16.87	12.47	17.83	17.19	12.69	12.60	11.06
2	10.86	10.93	11.47	15.72	10.77	15.81	12.48	17.00	16.16	12.70	12.54	11.33
3	11.13	10.68	11.13	14.41	10.69	15.22	12.05	16.28	15.55	12.79	12.50	11.84
4	10.90	10.66	11.51	13.32	10.66	14.94	12.62	15.68	15.00	12.95	12.59	11.10
5	10.78	11.14	11.26	13.04	11.32	15.87	12.08	14.84	14.63	12.53	12.33	11.54
6	11.02	10.35	11.12	12.73	10.76	16.38	12.05	14.58	14.60	12.53	12.20	11.25
7	10.74	10.82	10.89	12.00	11.00	16.23	12.42	14.32	14.30	12.46	12.29	11.26
8	10.93	10.44	11.08	12.05	11.14	15.86	12.75	14.06	13.74	12.28	12.47	11.29
9	10.93	10.87	10.82	11.85	10.93	15.60	13.11	13.63	16.03	12.28	12.82	11.43
10	10.73	10.59	11.17	11.65	11.16	15.38	13.11	13.55	19.92	12.01	12.86	11.16
11	11.01	10.75	11.20	11.46	11.27	15.39	13.07	13.48	19.21	12.16	12.51	11.54
12	10.92	10.89	11.20	11.55	10.97	15.08	12.82	13.45	16.77	11.55	12.25	11.10
13	10.95	10.46	11.79	11.55	10.89	14.71	13.12	13.41	15.47	12.03	12.28	10.93
14	11.25	11.10	11.27	11.43	11.55	14.35	13.02	13.34	14.57	11.77	12.20	11.15
15	10.85	10.85	11.14	11.51	11.61	13.66	12.91	13.95	14.57	11.81	12.35	10.98
16	10.89	10.71	11.23	11.37	12.13	13.72	12.80	14.30	14.81	11.39	12.01	10.79
17	10.52	10.96	11.24	11.45	13.88	13.56	12.91	14.25	15.09	11.53	11.93	10.38
18	10.44	10.44	11.24	11.54	16.29	13.50	13.17	14.10	14.57	11.47	11.83	11.51
19	10.82	10.73	10.98	11.46	16.16	13.38	13.32	13.94	13.96	11.35	11.57	11.39
20	10.41	10.95	11.03	11.42	15.82	13.37	15.84	13.74	15.13	11.31	---	11.34
21	10.62	10.40	11.14	11.16	16.72	13.05	16.84	13.11	16.27	11.43	---	10.88
22	10.78	11.14	11.14	11.23	16.90	13.49	16.97	13.06	15.71	11.97	---	10.97
23	10.87	12.40	11.10	10.69	15.74	13.90	18.98	13.08	14.88	13.37	---	10.97
24	11.02	11.62	11.11	11.04	14.90	13.48	19.01	13.31	14.07	14.58	11.98	10.86
25	11.26	11.52	11.34	11.13	14.46	13.52	17.80	14.46	13.64	14.26	12.31	11.16
26	11.42	11.32	11.00	11.06	14.40	13.26	18.50	18.27	13.72	14.30	12.07	12.18
27	10.90	11.30	11.11	11.21	14.05	13.13	19.91	20.12	13.04	13.51	12.01	12.39
28	11.20	11.40	10.97	11.09	15.68	12.76	19.85	18.96	12.78	13.89	11.27	12.82
29	10.59	11.04	11.16	11.16	---	12.59	19.08	18.72	12.82	13.59	11.69	12.20
30	10.93	11.76	11.52	11.28	---	12.52	18.31	19.23	12.63	13.00	11.49	12.23
31	10.86	---	13.25	11.25	---	12.37	---	18.27	---	13.02	11.25	---
Mean	10.88	10.96	11.26	11.94	12.98	14.29	14.78	15.17	15.03	12.53	---	11.37
Max	11.42	12.40	13.25	16.28	16.90	16.87	19.91	20.12	19.92	14.58	---	12.82
Min	10.41	10.35	10.82	10.69	10.66	12.37	12.05	13.06	12.63	11.31	---	10.38

	Calendar Year 2010
Mean	12.63
Max	19.11
Min	10.35

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