Water-Data Report 2013

06790500 North Loup River near Saint Paul, Nebr.

Loup Basin
Lower North Loup Subbasin

LOCATION.--Lat 41°15′48″, long 98°26′56″ referenced to North American Datum of 1927, in NW ¼ NW ¼ NE ¼ sec.22, T.15 N., R.10 W., Howard County, NE, Hydrologic Unit 10210007, on right bank 310 ft downstream from bridge on U.S. Highway 281, 3 mi north of St. Paul, and 2.9 mi upstream from confluence with Middle Loup River.

DRAINAGE AREA.--4,302 mi^2 of which 3,062 mi^2 probably is noncontributing.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--DAILY DISCHARGE--October 1894 to September 1915, August 1928 to current year. Monthly discharge only for some periods, published in WSP 1310.

PERIOD OF RECORD.--DAILY GAGE HEIGHT--October 2009 to current year.

REVISED RECORDS.--WSP 976: 1942. WSP 1390: 1896. WDR NE-75-1: 1974. WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 1,759.29 ft, adjusted, above sea level. See WSP 1918 for history of changes prior to Oct. 1, 1954.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Natural flow affected by diversions and groundwater withdrawals for irrigation and return flow from irrigated areas and by storage at the Calamus Reservoir after April 8, 1987.

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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	895	834	842	e836	e717	1,060	1,180	1,030	1,580	593	827	562
2	892	876	829	e987	e925	914	1,100	1,150	1,410	562	1,620	633
3	649	868	830	e954	e846	942	1,050	975	1,180	582	1,030	662
4	636	858	819	e894	e860	1,030	1,090	843	1,080	631	821	749
5	655	813	838	e971	e927	1,160	1,140	881	1,030	561	840	865
6	685	820	835	e968	e1,010	1,100	1,350	877	1,030	585	1,040	928
7	709	766	810	e1,000	e925	1,090	1,450	874	1,030	514	1,050	780
8	734	756	849	e973	e825	1,220	1,500	948	1,060	515	998	834
9	771	755	862	e1,040	e940	1,300	2,430	983	1,160	744	1,030	767
10	706	772	652	e1,060	1,040	1,490	1,730	1,020	1,110	638	960	732
11	755	808	693	e974	1,140	1,320	1,300	999	998	457	980	670
12	655	841	726	e639	1,020	1,360	1,090	923	907	402	1,060	687
13	656	836	889	e578	821	1,230	1,140	839	852	391	1,220	703
14	643	801	1,050	e619	803	1,140	1,410	793	928	373	1,110	716
15	548	741	1,210	e708	867	1,170	1,280	798	889	436	1,560	751
16	549	764	1,050	e993	793	1,270	1,320	679	842	419	1,590	800
17	583	779	887	e932	795	1,340	1,320	688	927	440	1,480	876
18	568	771	919	e974	822	1,450	1,420	698	976	487	1,290	993
19	584	765	885	e992	868	1,350	1,330	765	892	669	1,230	1,100
20	566	778	1,020	e667	793	1,170	1,160	896	800	526	1,100	1,110
21	507	792	978	e555	666	1,120	1,150	971	796	520	1,050	1,090
22	485	778	799	e608	239	1,120	1,230	1,040	836	481	1,370	1,030
23	518	747	e700	e610	564	1,140	1,260	1,110	882	632	1,610	1,000
24	767	782	e599	e491	760	1,110	1,140	957	958	656	1,430	1,240
25	800	774	e530	e783	1,150	1,070	1,000	1,200	916	896	1,320	1,160
26	826	774	e499	e876	1,420	997	937	1,060	896	1,110	1,200	1,000
27	764	792	e600	e910	1,090	981	952	919	1,010	844	1,060	968
28	757	828	e567	e789	1,100	1,000	866	1,400	851	753	787	1,330
29	790	804	e674	e772	---	1,050	888	1,760	755	878	669	1,400
30	789	831	e851	e596	---	1,130	833	2,590	636	920	586	1,110
31	825	---	e821	e452	---	1,160	---	1,880	---	844	571	---
Total	21,267	23,904	25,113	25,201	24,726	35,984	37,046	32,546	29,217	19,059	34,489	27,246
Mean	686	797	810	813	883	1,161	1,235	1,050	974	615	1,113	908
Max	895	876	1,210	1,060	1,420	1,490	2,430	2,590	1,580	1,110	1,620	1,400
Min	485	741	499	452	239	914	833	679	636	373	571	562
Ac-ft	42,180	47,410	49,810	49,990	49,040	71,370	73,480	64,550	57,950	37,800	68,410	54,040

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	908	927	874	884	1,110	1,272	1,141	1,059	1,080	725	706	854
Max	1,375	1,416	1,385	1,703	1,861	2,589	2,315	1,743	3,420	2,471	1,812	1,384
(WY)	(2010)	(2010)	(1998)	(1998)	(1998)	(1936)	(2001)	(1995)	(2010)	(1993)	(1966)	(1965)
Min	568	647	433	517	603	787	702	576	398	199	221	326
(WY)	(1940)	(1938)	(1930)	(1940)	(1942)	(1934)	(1946)	(1943)	(2006)	(1974)	(1941)	(1940)

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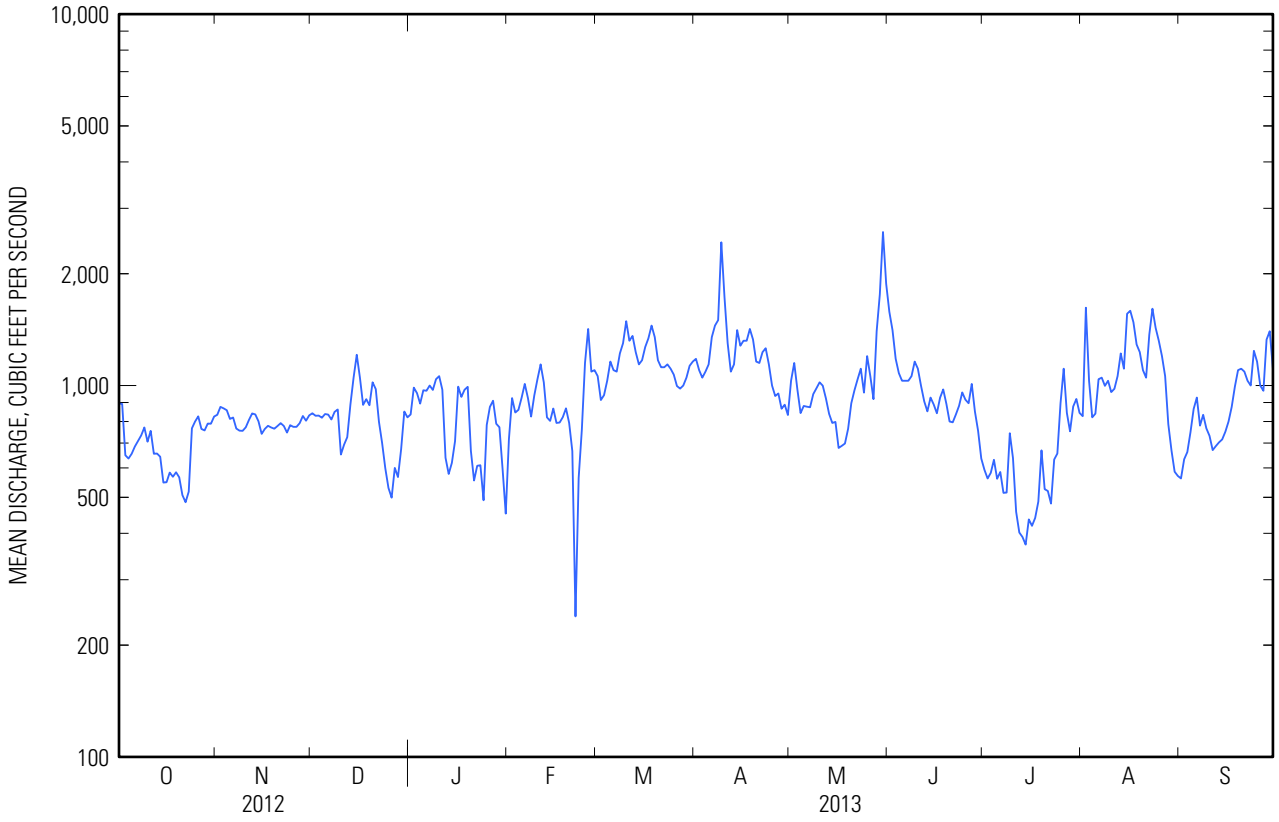
SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1928 - 2013	
Annual total	322,985		335,798			
Annual mean	882		920		960	
Highest annual mean					1,422	2010
Lowest annual mean					668	1940
Highest daily mean	2,250	Apr 15	2,590	May 30	21,300	Jun 22, 1947
Lowest daily mean	275	Jul 3	239	Feb 22	85	Aug 8, 1941
Annual seven-day minimum	298	Jun 27	417	Jul 11	98	Aug 6, 1941
Maximum peak flow			4,310	May 30	[a]90,000	Jun 6, 1896
Maximum peak stage			4.54	May 30	[b]14.90	Jun 6, 1896
Annual runoff (ac-ft)	640,600		666,100		695,700	
10 percent exceeds	1,450		1,280		1,400	
50 percent exceeds	820		877		900	
90 percent exceeds	424		585		520	

[a] Estimated.
[b] From floodmark, datum then in use.



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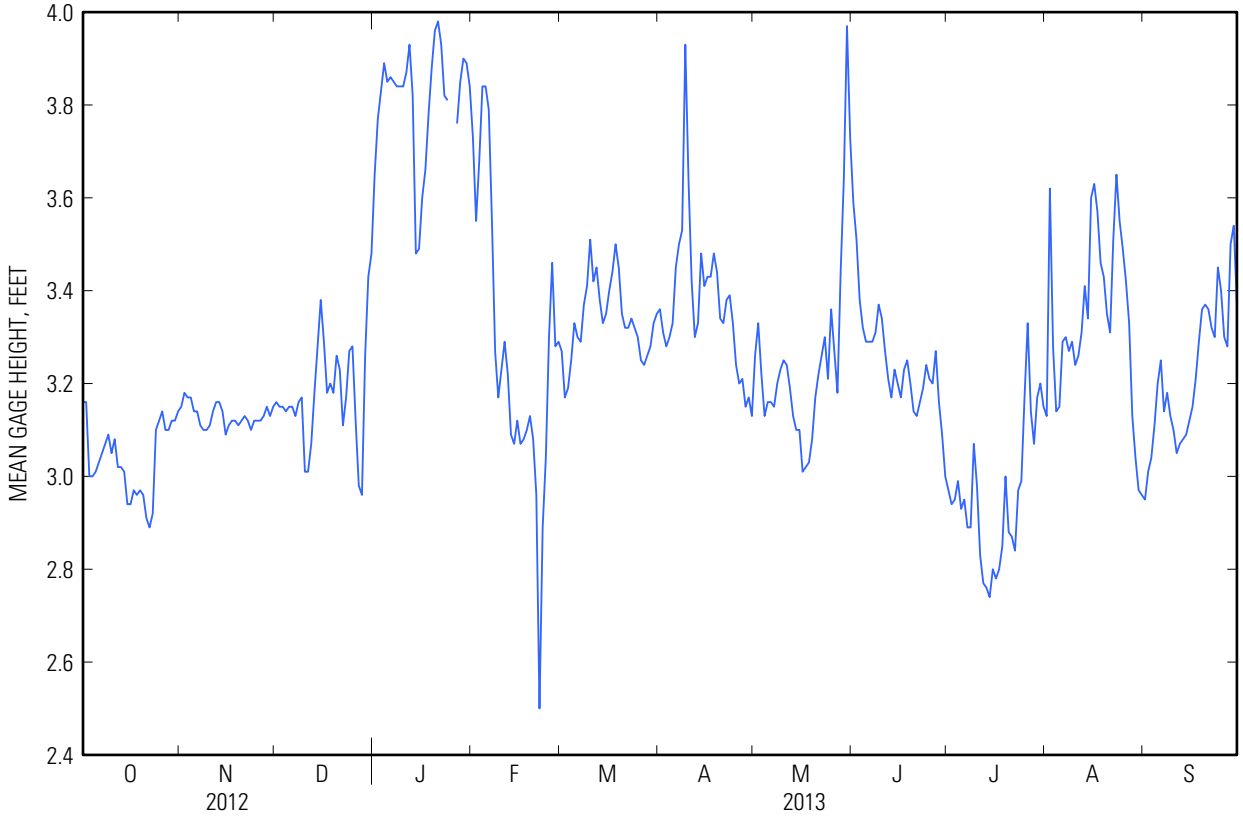
GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	3.16	3.15	3.16	3.65	3.73	3.27	3.36	3.26	3.59	2.97	3.13	2.95
2	3.16	3.18	3.15	3.77	3.55	3.17	3.31	3.33	3.51	2.94	3.62	3.01
3	3.00	3.17	3.15	3.83	3.68	3.19	3.28	3.22	3.38	2.95	3.28	3.04
4	3.00	3.17	3.14	3.89	3.84	3.25	3.30	3.13	3.32	2.99	3.14	3.11
5	3.01	3.14	3.15	3.85	3.84	3.33	3.33	3.16	3.29	2.93	3.15	3.20
6	3.03	3.14	3.15	3.86	3.79	3.30	3.45	3.16	3.29	2.95	3.29	3.25
7	3.05	3.11	3.13	3.85	3.55	3.29	3.50	3.15	3.29	2.89	3.30	3.14
8	3.07	3.10	3.16	3.84	3.27	3.37	3.53	3.20	3.31	2.89	3.27	3.18
9	3.09	3.10	3.17	3.84	3.17	3.41	3.93	3.23	3.37	3.07	3.29	3.13
10	3.05	3.11	3.01	3.84	3.23	3.51	3.64	3.25	3.34	2.98	3.24	3.10
11	3.08	3.14	3.01	3.87	3.29	3.42	3.42	3.24	3.27	2.83	3.26	3.05
12	3.02	3.16	3.07	3.93	3.22	3.45	3.30	3.19	3.21	2.77	3.31	3.07
13	3.02	3.16	3.18	3.82	3.09	3.38	3.33	3.13	3.17	2.76	3.41	3.08
14	3.01	3.14	3.28	3.48	3.07	3.33	3.48	3.10	3.23	2.74	3.34	3.09
15	2.94	3.09	3.38	3.49	3.12	3.35	3.41	3.10	3.20	2.80	3.60	3.12
16	2.94	3.11	3.29	3.60	3.07	3.40	3.43	3.01	3.17	2.78	3.63	3.15
17	2.97	3.12	3.18	3.66	3.08	3.44	3.43	3.02	3.23	2.80	3.57	3.21
18	2.96	3.12	3.20	3.78	3.10	3.50	3.48	3.03	3.25	2.85	3.46	3.29
19	2.97	3.11	3.18	3.88	3.13	3.45	3.44	3.08	3.20	3.00	3.43	3.36
20	2.96	3.12	3.26	3.96	3.08	3.35	3.34	3.17	3.14	2.88	3.35	3.37
21	2.91	3.13	3.23	3.98	2.96	3.32	3.33	3.22	3.13	2.87	3.31	3.36
22	2.89	3.12	3.11	3.93	2.50	3.32	3.38	3.26	3.16	2.84	3.51	3.32
23	2.92	3.10	3.17	3.82	2.89	3.34	3.39	3.30	3.19	2.97	3.65	3.30
24	3.10	3.12	3.27	3.81	3.04	3.32	3.33	3.21	3.24	2.99	3.55	3.45
25	3.12	3.12	3.28	---	3.30	3.30	3.24	3.36	3.21	3.17	3.49	3.40
26	3.14	3.12	3.12	---	3.46	3.25	3.20	3.27	3.20	3.33	3.42	3.30
27	3.10	3.13	2.98	3.76	3.28	3.24	3.21	3.18	3.27	3.14	3.33	3.28
28	3.10	3.15	2.96	3.85	3.29	3.26	3.15	3.44	3.16	3.07	3.13	3.50
29	3.12	3.13	3.26	3.90	---	3.28	3.17	3.64	3.09	3.17	3.04	3.54
30	3.12	3.15	3.43	3.89	---	3.33	3.13	3.97	3.00	3.20	2.97	3.37
31	3.14	---	3.48	3.84	---	3.35	---	3.73	---	3.15	2.96	---
Mean	3.04	3.13	3.18	---	3.27	3.34	3.37	3.25	3.25	2.96	3.34	3.22
Max	3.16	3.18	3.48	---	3.84	3.51	3.93	3.97	3.59	3.33	3.65	3.54
Min	2.89	3.09	2.96	---	2.50	3.17	3.13	3.01	3.00	2.74	2.96	2.95

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