

Water-Data Report 2009

06465500 Niobrara River near Verdel, Nebr.

Niobrara Basin
Lower Niobrara Subbasin

LOCATION.--Lat 42°44'23", long 98°13'22" referenced to North American Datum of 1983, in NW ¼ NW ¼ sec.23, T.32 N., R.8 W., Knox County, NE, Hydrologic Unit 10150007, on right bank at downstream side of county road bridge, 6.6 mi south of Verdel, 7.5 mi upstream from Verdigre Creek, and at mile 14.8.

DRAINAGE AREA.--11,580 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April 1938 to May 1940, June 1958 to current year.

REVISED RECORDS.--WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 1,312.12 ft above sea level. Apr. 25, 1938, to June 16, 1939, non-recording gage at site 2,600 ft downstream; June 17, 1939, to June 13, 1940, non-recording gage 2850 ft downstream; and June 14, 1958 to July 24, 1985, water-stage recorder at site 2600 ft downstream, all at datum 4.00 ft lower.

REMARKS.--Records fair to poor because of the difficulty of determining bed regime changes. Discharge measurements generally made every six weeks. Natural flow of stream affected by irrigation and power developments.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1,170	932	1,420	e1,900	e1,900	e1,540	3,490	3,100	2,570	1,980	2,120	1,780
2	1,150	1,020	1,810	e1,900	e1,960	e1,680	3,090	3,300	2,540	1,900	1,900	1,650
3	1,280	1,120	1,930	e1,930	e1,930	e1,830	2,980	3,410	2,360	2,050	1,720	1,940
4	1,260	1,320	1,570	e1,900	e1,840	e2,060	2,930	3,130	2,340	2,470	1,630	2,130
5	1,290	1,220	e1,160	e1,840	e1,840	e2,200	3,420	2,530	2,510	2,400	2,080	1,870
6	1,670	1,030	e1,390	e1,730	e1,790	e2,100	3,100	1,530	2,570	2,410	1,990	1,780
7	1,870	1,330	e1,440	e1,560	e1,960	e2,140	2,560	995	2,970	2,380	2,890	1,710
8	1,550	1,110	e1,440	e1,600	e2,230	e2,200	2,690	927	2,690	2,190	2,390	1,730
9	1,380	1,130	e1,490	e1,690	e2,440	e2,210	3,270	902	2,700	2,250	2,390	1,680
10	1,340	1,140	e878	e1,740	e2,710	e1,890	3,320	705	2,760	2,140	2,240	1,760
11	1,420	1,250	e1,470	e1,690	e2,800	e2,000	3,290	805	2,710	1,930	2,050	1,930
12	1,620	1,320	e1,680	e1,620	e2,920	e2,100	3,400	713	2,970	2,140	1,820	2,030
13	2,170	1,170	e1,450	e1,590	e3,000	e2,260	3,520	854	3,050	1,890	1,770	1,800
14	1,880	1,200	e1,210	e1,560	e2,780	e2,510	3,410	900	2,890	2,460	1,720	1,790
15	1,660	1,200	e985	e1,520	e2,470	e2,750	3,380	989	3,270	3,090	2,420	1,690
16	1,540	1,290	e906	e1,470	e2,310	e2,780	3,400	936	3,830	3,400	3,300	1,610
17	1,380	1,260	e930	e1,590	e2,220	e2,690	3,500	1,130	3,500	3,430	3,040	1,620
18	1,240	1,230	e1,050	e1,750	e2,060	e2,500	3,630	1,450	3,590	3,200	2,590	1,610
19	1,060	1,300	e1,200	e1,840	e2,000	e2,330	3,830	1,470	3,300	3,050	2,840	1,600
20	830	1,470	e1,320	e1,990	e1,820	e2,400	3,720	1,710	2,630	2,780	2,480	1,600
21	979	1,400	e1,350	e2,140	e1,670	e2,500	3,960	1,750	2,810	2,600	1,760	1,840
22	1,810	1,430	e1,470	e2,080	e1,580	e2,600	3,610	2,300	2,620	2,420	1,380	1,970
23	2,800	1,500	e1,630	e1,870	e1,580	e2,800	3,680	2,350	2,530	2,190	1,780	1,840
24	2,400	1,410	e1,750	e1,750	e1,610	3,280	3,400	2,430	2,440	2,200	1,730	1,650
25	1,500	1,350	e1,810	e1,660	e1,480	3,070	3,590	2,390	2,290	2,070	2,020	1,640
26	1,030	1,260	e1,900	e1,660	e1,360	3,330	3,700	2,750	2,460	1,930	1,990	1,700
27	804	1,270	e1,900	e1,660	e1,300	3,000	3,450	2,550	2,490	1,860	1,950	1,630
28	844	1,370	e1,870	e1,590	e1,400	2,680	3,250	2,250	2,180	1,970	1,870	1,470
29	1,030	1,510	e1,900	e1,580	---	2,720	3,210	2,170	1,920	2,020	1,820	1,480
30	1,060	1,520	e1,840	e1,750	---	2,960	3,300	2,340	1,920	2,420	1,840	1,590
31	960	---	e1,960	e1,840	---	3,410	---	2,580	---	2,080	1,830	---
Total	43,977	38,062	46,109	53,990	56,960	76,520	101,080	57,346	81,410	73,300	65,350	52,120
Mean	1,419	1,269	1,487	1,742	2,034	2,468	3,369	1,850	2,714	2,365	2,108	1,737
Max	2,800	1,520	1,960	2,140	3,000	3,410	3,960	3,410	3,830	3,430	3,300	2,130
Min	804	932	878	1,470	1,300	1,540	2,560	705	1,920	1,860	1,380	1,470
Ac-ft	87,230	75,500	91,460	107,100	113,000	151,800	200,500	113,700	161,500	145,400	129,600	103,400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2009, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	1,432	1,518	1,429	1,476	1,917	2,529	2,326	2,174	1,916	1,400	1,160	1,268
Max	2,480	2,762	2,118	2,372	3,557	4,425	4,693	5,290	4,442	5,370	2,108	2,094
(WY)	(1996)	(1999)	(1997)	(2006)	(1997)	(1960)	(1995)	(1995)	(1962)	(1962)	(2009)	(1986)
Min	1,009	943	787	706	941	1,444	1,282	1,228	1,044	551	644	704
(WY)	(1977)	(1977)	(1969)	(1940)	(1939)	(1981)	(1939)	(1969)	(1976)	(1974)	(1971)	(1939)

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SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1938 - 2009	
Annual total	655,913		746,224			
Annual mean	1,792		2,044		1,718	
Highest annual mean					2,461	1962
Lowest annual mean					1,269	1976
Highest daily mean	10,600	Jun 6	3,960	Apr 21	25,100	Mar 27, 1960
Lowest daily mean	775	Aug 31	705	May 10	104	Nov 30, 1960
Annual seven-day minimum	801	Aug 26	829	May 8	210	Nov 27, 1976
Maximum peak flow			^a 4,850	Jun 16	^b 39,000	Mar 27, 1960
Maximum peak stage			^c 5.38	Feb 14	^c 10.62	Mar 12, 1966
Annual runoff (ac-ft)	1,301,000		1,480,000		1,244,000	
10 percent exceeds	2,630		3,230		2,700	
50 percent exceeds	1,550		1,900		1,530	
90 percent exceeds	988		1,190		900	

^a Gage height, 3.80 ft.

^b Gage height, 10.10 ft.

^c Backwater from ice.

