05080000 RED LAKE RIVER AT FISHER, MN

Lower Red Basin
Red Lake Subbasin

LOCATION.--Lat 47°48′01″, long 96°48′31″ referenced to North American Datum of 1927, in SW ¼ NE ¼ sec.21, T.150 N., R.48 W., Polk County, MN, Hydrologic Unit 09020303, on left bank 10 ft upstream from bridge on county highway, 0.5 mile west of Fisher and at river mile 27.6.

DRAINAGE AREA.--5,680 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--March to September, 1999 (gage heights and maximum discharge only), October 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 800.00 ft above sea level (levels by Minnesota Department of Transportation).

REMARKS.--Records good to fair except those for estimated daily discharges, which are poor. Runoff from 1,950 mi² of Red Lake River basin above Lower Red Lake outlet is completely controlled by dam at outlet of Lower Red Lake. Flow partially affected by occasional regulation of Thief and Mud Lakes in Thief River basin.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 41.00 ft occurred in spring of 1997 (from information provided by the National Weather Service).

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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	270	1,050	e694	e374	e282	e751	e12,100	3,820	3,130	5,850	694	763
2	259	1,030	e636	e372	e278	e752	e11,400	4,080	2,940	e4,290	719	749
3	252	1,010	e585	e371	e273	e754	e10,800	4,100	2,750	2,810	664	732
4	258	966	e537	e369	e271	e760	e10,400	3,960	2,540	2,000	678	711
5	276	944	e512	e369	e270	e768	e9,920	e3,770	2,380	1,600	679	687
6	295	984	e496	e368	e270	e776	e9,620	3,510	2,250	1,390	638	663
7	331	1,070	e487	e368	e271	e776	e9,310	3,200	1,980	1,150	644	642
8	354	1,550	e485	e366	e271	e770	e9,120	2,920	1,880	1,040	680	639
9	455	2,320	e487	e365	e272	e762	9,040	2,680	1,700	938	661	676
10	560	2,350	e493	e364	e274	e747	9,140	2,530	1,600	871	675	701
11	610	2,050	e495	e361	e277	e722	8,820	2,510	1,590	826	684	740
12	662	1,750	e493	e357	e286	e704	8,260	2,460	1,610	787	670	775
13	1,300	1,620	e490	e349	e297	e703	7,780	2,420	1,580	719	639	947
14	3,250	1,560	e484	e339	e309	e720	7,470	2,520	1,610	704	636	897
15	3,900	1,510	e464	e326	e330	e778	7,270	2,630	1,470	692	685	808
16	3,420	1,530	e446	e315	e396	e882	6,880	2,720	1,440	715	893	749
17	2,730	1,480	e427	e312	e525	e1,460	6,380	2,770	1,400	741	1,650	698
18	e2,250	1,250	e410	e312	e677	e2,480	5,990	2,730	1,370	840	2,740	677
19	e1,870	e982	e398	e314	e748	e3,450	5,660	2,660	1,350	755	2,510	635
20	1,640	e862	e392	e314	e770	e3,940	5,340	2,510	1,350	770	2,120	632
21	1,450	e772	e390	e311	e781	e4,600	5,060	2,390	1,320	762	1,860	606
22	1,310	e719	e389	e304	e783	e6,440	4,760	2,260	1,310	745	1,720	595
23	e1,240	e722	e388	e294	e779	e9,420	4,410	2,130	1,270	651	1,610	579
24	e1,170	e813	e386	e288	e774	e15,600	4,110	2,040	1,210	667	1,410	596
25	1,120	e921	e387	e285	e772	e23,700	3,840	1,990	1,140	709	1,240	569
26	e1,140	e1,010	e388	e282	e769	e25,200	3,690	2,260	1,010	788	1,120	594
27	e1,180	e1,010	e388	e280	e760	e21,500	3,640	4,090	1,870	711	988	559
28	1,180	e925	e384	e279	e755	e16,300	3,620	4,780	5,770	693	966	564
29	1,140	e840	e380	e278	---	e14,200	3,680	4,440	8,370	652	919	552
30	1,110	e763	e379	e280	---	e13,400	3,700	3,770	7,790	646	866	563
31	1,090	---	e375	e282	---	e12,800	---	3,310	---	736	874	---
Total	38,072	36,363	14,145	10,148	13,520	186,615	211,210	93,960	68,980	37,248	33,532	20,298
Mean	1,228	1,212	456	327	483	6,020	7,040	3,031	2,299	1,202	1,082	677
Max	3,900	2,350	694	374	783	25,200	12,100	4,780	8,370	5,850	2,740	947
Min	252	719	375	278	270	703	3,620	1,990	1,010	646	636	552
Ac-ft	75,520	72,130	28,060	20,130	26,820	370,200	418,900	186,400	136,800	73,880	66,510	40,260
Cfsm	0.22	0.21	0.08	0.06	0.09	1.06	1.24	0.53	0.40	0.21	0.19	0.12
In.	0.25	0.24	0.09	0.07	0.09	1.22	1.38	0.62	0.45	0.24	0.22	0.13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2009, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	1,063	1,602	860	649	649	1,715	3,942	2,165	3,091	1,865	1,118	923
Max	2,261	4,103	1,582	1,272	1,214	6,020	8,682	3,666	6,374	5,711	3,188	2,878
(WY)	(2000)	(2001)	(2002)	(2006)	(2006)	(2009)	(2006)	(2001)	(2002)	(2002)	(2001)	(2002)
Min	152	163	159	152	109	241	594	750	944	583	208	164
(WY)	(2004)	(2004)	(2004)	(2004)	(2007)	(2008)	(2003)	(2003)	(2006)	(2008)	(2003)	(2003)

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SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 2000 - 2009	
Annual total	277,927		764,091			
Annual mean	759		2,093		1,636	
Highest annual mean					2,591	2001
Lowest annual mean					624	2008
Highest daily mean	3,900	Oct 15	25,200	Mar 26	26,200	Apr 3, 2006
Lowest daily mean	182	Aug 30	252	Oct 3	101	Sep 9, 2003
Annual seven-day minimum	206	Aug 27	271	Feb 3	106	Feb 11, 2007
Maximum peak flow			[a]25,200	Mar 26	26,400	Apr 3, 2006
Maximum peak stage			[b]40.64	Mar 26	40.81	Apr 3, 2006
Annual runoff (ac-ft)	551,300		1,516,000		1,185,000	
Annual runoff (cfsm)	0.134		0.369		0.288	
Annual runoff (inches)	1.82		5.00		3.91	
10 percent exceeds	1,750		4,770		3,440	
50 percent exceeds	452		808		1,110	
90 percent exceeds	233		322		202	

[a] Estimated daily-mean discharge.

[b] Backwater from ice.