

Figure 9. Location of surface-water and water-quality stations in the Powder River, Snake River Main Stem, Imnaha River, and Grande Ronde River Basins

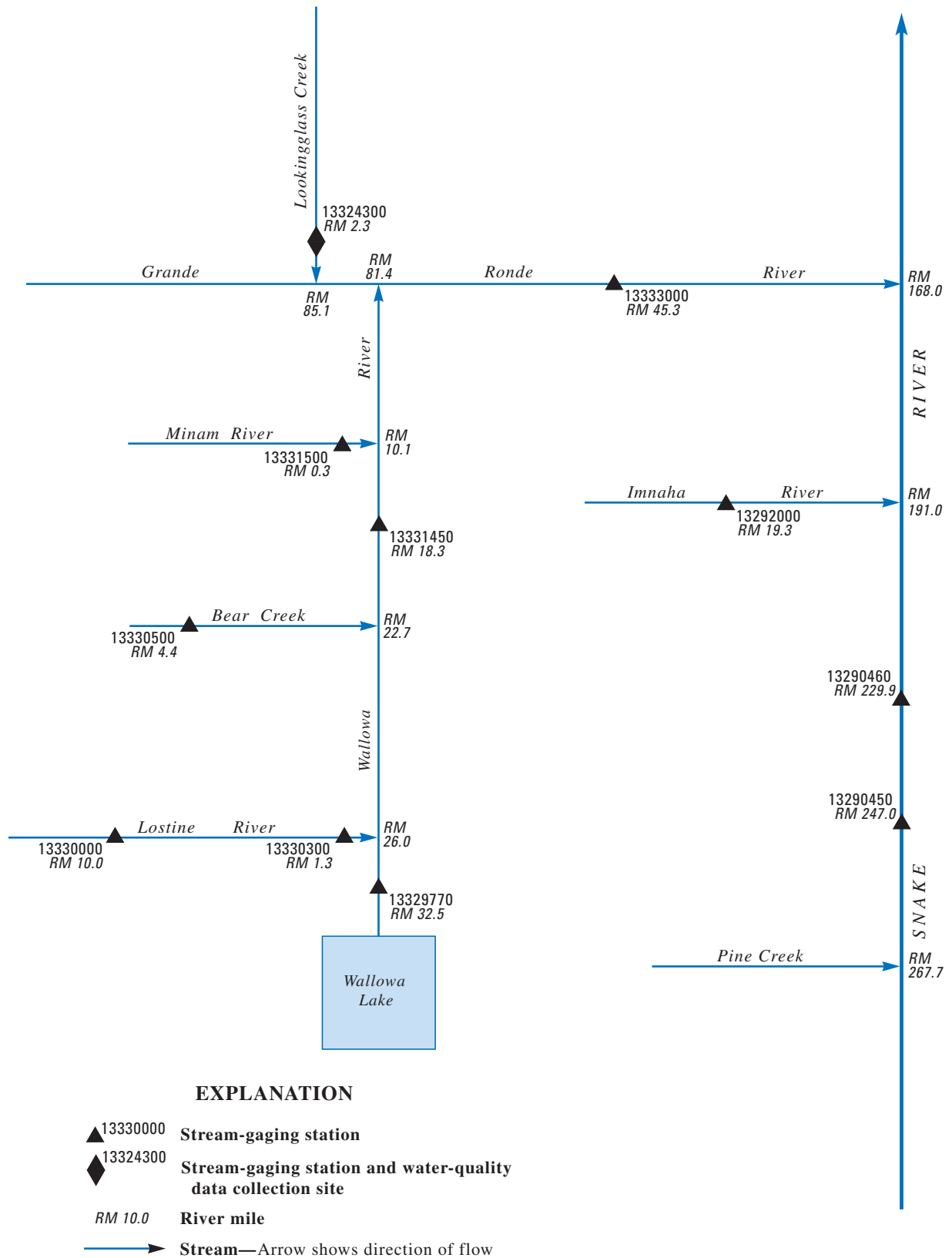


Figure 10. Schematic diagram showing gaging stations in the Imhaha and Grande Ronde River Basins, and Snake River main stem.

SNAKE RIVER MAIN STEM

13290450 SNAKE RIVER AT HELLS CANYON DAM, IDAHO-OREGON STATE LINE

LOCATION.--Lat 45°15'05", long 116°41'50", (NAD27), in SE 1/4 SE 1/4 sec.33, T.3 S., R.49 E., unsurveyed (Willamette meridian), Wallowa County, Oregon, Squirrel Prairie quad., Hydrologic Unit 17050201, Wallowa-Whitman National Forest, on left bank 0.2 mi upstream from Hells Canyon Creek, 0.4 mi downstream from Deep Creek, 0.6 mi downstream from Hells Canyon Dam, 15.5 mi northeast of Homestead, Oregon, and at mile 247.0.

DRAINAGE AREA.--73,300 mi², approximately.

PERIOD OF RECORD.--July 1965 to current year.

REVISED RECORDS.--WDR ID-78-2: 1969-70, 1972-76, WDR ID-79-2: 1972-73(m).

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft above NGVD of 1929 (levels by Idaho Power Company).

REMARKS.--Station equipment includes satellite telemetry. Flow regulated by many reservoirs above station, with a total usable capacity of more than 10,000,000 acre-feet, the most effective of which is Brownlee Reservoir 38 mi upstream (see sta 13289700). Diurnal fluctuations caused by Hells Canyon powerplant. Diversions above station for irrigation of about 3,820,000 acres, of which 742,000 acres are irrigated by withdrawals from ground water (1966 determination).

COOPERATION.--Discharge records furnished by Idaho Power and reviewed by U.S. Geological Survey beginning October 2001.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 103,000 ft³/s Jan. 2, 1997, gage height, 86.17 ft; minimum, 1,580 ft³/s Mar. 19, 1967, gage height, 59.9 ft; minimum daily, 4,360 ft³/s May 8, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 41,600 ft³/s May 20; minimum daily, 8,020 ft³/s Aug. 16.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9170	e8700	9150	9190	14200	8750	19300	13700	26800	16100	14500	10300
2	8780	e8700	9200	10100	12900	10500	18400	11500	27200	12300	10400	10400
3	8790	e8700	8990	13600	13700	9510	16400	11800	18200	14600	9080	8450
4	9400	e8700	8850	11900	15100	10400	18600	17500	19300	13700	11900	8490
5	8870	8880	8850	16800	11900	12800	19000	18500	23000	16900	14600	8610
6	8850	8800	8870	16500	11800	11000	16300	18200	22000	20500	16200	10500
7	15300	8760	8890	12100	11700	11700	13300	17700	19800	16700	12400	10600
8	8940	8640	8900	9720	9430	8910	12300	16700	14300	18400	11700	9320
9	8850	8700	8920	9660	9210	8840	13300	14700	12500	9490	12900	10200
10	8810	8650	8930	11600	9150	8880	13700	20900	11900	8930	8820	8800
11	8670	8670	8990	12300	9010	8840	14600	21400	11200	11500	8650	8760
12	8690	8670	8940	14300	8950	8890	11800	21900	12600	13000	8540	9010
13	8710	8660	15000	18700	8950	8910	11900	23700	15400	13800	8260	8820
14	8720	8730	14600	12600	9280	10500	14100	23800	12500	10000	8080	8890
15	8740	9000	10200	15300	9490	10800	12500	22700	8770	13500	8060	9950
16	8760	8790	9150	9340	11300	11300	11500	24200	8790	12500	8020	9190
17	8730	e8800	9180	12600	10700	13800	11300	28600	8810	8940	8240	8710
18	8730	8870	9170	11400	11300	11200	11300	31400	11400	13300	8200	8720
19	8710	8860	9210	9400	9250	10700	11300	31400	14300	14300	8040	8750
20	8710	e8800	14600	9220	9110	12400	11200	41600	12900	14300	8220	8750
21	8740	e8800	13100	9080	9040	12700	11400	40400	17300	11800	8440	11700
22	8700	e8800	14100	9070	9090	11500	11600	32900	12600	13200	8600	12900
23	8690	e8800	13400	9140	9110	11700	11400	34500	13600	8650	8590	11200
24	8720	e8800	12200	13400	9080	12500	11200	31100	16400	10100	8610	8700
25	8710	9130	11800	9950	9030	12400	11400	30700	12900	9540	8870	9590
26	8710	9020	12600	12500	8810	12800	11300	25800	10100	8730	10100	14200
27	8670	9010	11700	13400	8760	11700	11400	26900	16900	12200	9800	8860
28	8680	9040	9680	13100	8730	13500	10900	24700	22800	15000	11300	8620
29	8750	9140	9260	10800	---	19600	14400	21100	21500	18500	9720	9330
30	8780	9110	9160	12400	---	19600	16000	15700	20300	11000	8840	8940
31	8750	---	9180	10200	---	19500	---	23700	---	13000	8670	---
TOTAL	278830	264730	324770	369370	288080	366130	403100	739400	476070	404480	306350	289260
MEAN	8995	8824	10480	11920	10290	11810	13440	23850	15870	13050	9882	9642
MAX	15300	9140	15000	18700	15100	19600	19300	41600	27200	20500	16200	14200
MIN	8670	8640	8850	9070	8730	8750	10900	11500	8770	8650	8020	8450
AC-FT	553100	525100	644200	732600	571400	726200	799500	1467000	944300	802300	607600	573700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2005, BY WATER YEAR (WY)

MEAN	14930	14850	17290	21590	23550	27710	28800	26360	23770	13950	11410	13840
MAX	24140	28630	30410	50150	58220	66340	61960	68840	59080	25550	19860	24960
(WY)	1972	1985	1984	1997	1997	1986	1984	1984	1984	1983	1997	1997
MIN	8941	8482	8696	11860	10290	10600	7371	6401	5868	6901	6583	6887
(WY)	2002	2004	2003	2003	2005	1991	1988	1977	1992	1977	1992	1977

SNAKE RIVER MAIN STEM

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1966 - 2005	
ANNUAL TOTAL	4611010		4510570		19800	
ANNUAL MEAN	12600		12360		36560	
HIGHEST ANNUAL MEAN					9746	
LOWEST ANNUAL MEAN					98100	
HIGHEST DAILY MEAN	25400	Jun 3	41600	May 20	4360	Jan 2 1997
LOWEST DAILY MEAN	6850	Jun 20	8020	Aug 16	5330	May 8 1977
HIGHEST SEVEN-DAY MINIMUM	8240	Jun 25	8120	Aug 14	5330	Jun 4 1992
ANNUAL RUNOFF (AC-FT)	9146000		8947000		14350000	
10 PERCENT EXCEEDS	19000		18800		37300	
50 PERCENT EXCEEDS	11200		10600		15900	
90 PERCENT EXCEEDS	8700		8700		8840	

e Estimated

SNAKE RIVER MAIN STEM

13290460 SNAKE RIVER AT JOHNSON BAR, IDAHO-OREGON STATE LINE

LOCATION.-Lat 45°27'48", long 116°33'23"(revised), (NAD83), in SE¹/₄NE¹/₄ sec.22, T.1 S., R.50 E. (Willamette Meridian), Wallowa County, Oregon, Old Timer Mountain quad., Hydrologic Unit 17060101, Hells Canyon National Recreation Area, on left bank opposite lower end of Johnson Bar, 0.5 mi upstream from mouth of Sheep Creek, and at mile 229.9.

DRAINAGE AREA.-73,400 mi², approximately.

PERIOD OF RECORD.-July 1959 to September 1992 (gage heights only), October 1992 to September 1995 (discharge), October 1995 to current year (gage heights only).

GAGE.-Water-stage recorder. Datum of gage is 1,226.341 ft above NGVD of 1929 (levels by Corps of Engineers).

REMARKS.-Station equipment includes satellite telemetry. Diurnal fluctuations in stage are caused by Hells Canyon Powerplant. Records for years prior to the 1991 water year were not published, but are available from the Boise Field Office.

COOPERATION.--Gage-height records furnished by Idaho Power and reviewed by U.S. Geological Survey beginning April 2001.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 14.99 ft, May 20; minimum recorded gage height, 4.91 ft, Aug. 18, 19.

DAY	Gage height, feet											
	WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.31	5.18	5.28	5.30	6.58	5.16	8.08	6.70	9.88	7.33	6.72	5.55
2	5.21	5.19	5.30	5.41	6.35	5.64	7.82	6.01	9.74	6.18	5.86	5.70
3	5.20	5.19	5.25	6.60	6.59	5.36	7.39	5.99	8.07	6.89	5.27	5.08
4	5.39	5.18	5.20	6.08	6.96	5.72	7.80	7.57	7.72	6.50	5.95	5.06
5	5.23	5.19	5.18	7.20	6.08	6.14	8.04	7.85	8.86	7.25	6.65	5.09
6	5.23	5.17	5.20	7.38	6.09	5.92	7.39	7.74	8.64	8.19	7.21	5.56
7	6.96	5.18	5.20	6.28	6.08	6.05	6.59	7.67	8.24	7.37	6.33	5.64
8	5.26	5.18	5.22	5.49	5.40	5.27	6.20	7.53	6.85	7.80	5.90	5.46
9	5.23	5.19	5.23	5.44	5.30	5.19	6.47	6.73	6.37	5.69	6.50	5.61
10	5.21	5.15	5.22	6.00	5.29	5.20	6.46	8.44	6.14	5.19	5.34	5.18
11	5.16	5.14	5.26	6.03	5.24	5.19	6.89	8.58	5.83	5.84	5.15	5.15
12	5.16	5.14	5.23	6.80	5.22	5.20	6.18	8.66	6.23	6.27	5.12	5.23
13	5.17	5.14	6.65	7.76	5.22	5.21	6.07	9.13	7.00	6.73	5.03	5.17
14	5.17	5.17	6.92	6.22	5.31	5.67	6.67	9.17	6.47	5.62	4.96	5.20
15	5.18	5.22	5.76	7.05	5.40	5.72	6.30	8.93	5.22	6.30	4.95	5.49
16	5.19	5.21	5.30	5.47	5.82	5.79	5.84	9.26	5.21	6.37	4.94	5.29
17	5.18	5.23	5.30	6.12	5.81	6.63	6.02	10.32	5.22	5.35	4.98	5.12
18	5.19	5.24	5.30	6.10	5.90	5.99	5.94	11.11	5.77	6.21	5.01	5.13
19	5.18	5.23	5.32	5.36	5.34	5.71	5.98	11.13	6.76	6.64	4.94	5.14
20	5.18	5.25	6.58	5.33	5.28	6.10	5.92	13.05	6.29	6.77	5.02	5.14
21	5.19	5.24	6.60	5.26	5.25	6.36	5.93	12.93	7.62	6.14	5.06	5.89
22	5.18	5.24	6.51	5.27	5.25	5.94	5.98	11.22	6.35	6.58	5.13	6.33
23	5.17	5.24	6.53	5.27	5.27	6.01	5.98	11.47	6.53	5.16	5.12	5.94
24	5.18	5.27	6.26	6.46	5.26	6.12	5.94	10.77	7.16	5.51	5.12	5.16
25	5.18	5.28	6.07	5.56	5.25	6.19	5.95	10.58	6.53	5.45	5.18	5.33
26	5.18	5.24	6.20	6.14	5.18	6.42	5.94	9.62	5.64	5.16	5.57	6.68
27	5.17	5.23	6.10	6.51	5.16	6.02	5.96	9.69	7.09	5.94	5.48	5.33
28	5.17	5.25	5.53	6.46	5.16	6.37	5.87	9.36	8.63	6.68	5.82	5.14
29	5.19	5.28	5.33	5.76	---	8.15	6.63	8.59	8.52	7.97	5.52	5.36
30	5.21	5.28	5.29	6.22	---	8.12	7.24	7.25	8.28	5.95	5.27	5.26
31	5.20	---	5.29	5.71	---	8.11	---	8.58	---	6.27	5.13	---
MEAN	5.26	5.21	5.66	6.07	5.61	6.02	6.52	9.08	7.10	6.36	5.49	5.41
MAX	6.96	5.28	6.92	7.76	6.96	8.15	8.08	13.05	9.88	8.19	7.21	6.68
MIN	5.16	5.14	5.18	5.26	5.16	5.16	5.84	5.99	5.21	5.16	4.94	5.06

WTR YR 2005 MEAN 6.16 MAX 13.05 MIN 4.94

IMNAHA RIVER BASIN

13292000 IMNAHA RIVER AT IMNAHA, OR

LOCATION.--Lat 45°33'45", long 116°50'00", in NW ¼ SW ¼ sec.16, T.1 N., R.48 E., Wallowa County, Hydrologic Unit 17060102, on left bank at Imnaha, 0.3 mi downstream from Big Sheep Creek and at mile 19.3.

DRAINAGE AREA.--622 mi².

PERIOD OF RECORD.--June 1928 to current year.

REVISED RECORDS.--WSP 833: 1938. WSP 1397: 1929, 1932(M), 1949. WSP 1737: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,941.14 ft above NGVD of 1929. Prior to Aug. 6, 1934, nonrecording gage at site 0.25 mi upstream at different datum. Aug. 6-31, 1934, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. No regulation. Diversions for irrigation upstream from station. Water is diverted from Big Sheep Creek and tributaries upstream from station for irrigation in Wallowa River basin. National Weather Service satellite telemeter at station. Water-quality records for the periods August 1965 to September 1968 and from May 1976 to September 1977 have been collected at this location.

AVERAGE DISCHARGE.--77 years (water years 1929-2005), 509 ft³/s, 369,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,200 ft³/s Jan. 1, 1997, gage height, 11.44 ft, from floodmark, from rating curve extended above 7,900 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge observed, 16 ft³/s Nov. 22, 1931, result of freezeup; minimum daily, 25 ft³/s Nov. 22, 23, 1931.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 28	0615	2,060	4.27	May 16	0915	*2,780	*4.88
Apr 28	0045	1,800	4.05	May 20	2345	2,160	4.35
May 7	0200	2,220	4.40	May 30	0400	1,790	4.04
May 9	1815	2,420	4.58				

Minimum discharge, 70 ft³/s, Feb. 16, gage height, 1.19 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	137	144	142	157	170	154	574	1,080	1,350	693	204	124
2	136	149	155	152	165	151	521	1,050	1,210	679	196	122
3	135	166	118	130	172	160	509	1,080	1,090	619	190	121
4	133	154	130	102	168	157	553	1,200	1,030	569	183	119
5	131	149	132	105	167	158	518	1,400	1,110	540	176	119
6	131	153	139	95	161	163	492	1,840	1,060	517	171	119
7	131	151	142	129	155	170	553	2,010	945	506	168	117
8	130	151	151	151	149	186	692	1,710	866	485	166	116
9	138	152	152	151	132	203	663	2,070	799	516	163	114
10	146	154	165	159	143	225	594	2,150	760	512	159	122
11	135	155	207	144	139	242	561	1,880	792	467	154	126
12	132	155	236	137	180	263	577	1,720	789	426	153	124
13	130	153	228	149	164	265	590	1,660	739	402	149	123
14	129	151	224	130	142	251	556	1,590	730	382	148	121
15	129	150	221	117	112	242	535	1,770	762	356	146	119
16	129	150	210	144	95	232	556	2,590	809	335	142	117
17	130	149	210	160	119	227	773	2,460	957	324	140	119
18	190	148	204	164	128	212	938	2,380	899	309	141	120
19	174	145	197	182	165	212	950	2,510	805	297	139	118
20	170	143	192	182	176	243	906	2,280	767	285	136	115
21	185	124	168	166	162	255	877	2,010	836	273	132	114
22	174	137	167	163	142	248	891	1,860	910	263	131	114
23	168	151	141	170	131	261	1,000	1,800	905	258	149	117
24	166	146	129	172	136	266	1,140	1,610	851	248	140	133
25	158	151	187	179	137	260	1,290	1,470	832	238	135	130
26	156	148	169	186	137	242	1,490	1,430	808	228	132	122
27	157	139	149	187	140	358	1,640	1,440	850	220	130	119
28	155	140	149	186	147	1,660	1,660	1,520	903	213	126	117
29	153	105	172	186	---	1,100	1,420	1,580	784	207	124	115
30	153	93	174	183	---	815	1,200	1,600	711	203	126	116
31	153	---	161	178	---	651	---	1,480	---	201	126	---
TOTAL	4,574	4,356	5,321	4,796	4,134	10,232	25,219	54,230	26,659	11,771	4,675	3,592
MEAN	148	145	172	155	148	330	841	1,749	889	380	151	120
MAX	190	166	236	187	180	1,660	1,660	2,590	1,350	693	204	133
MIN	129	93	118	95	95	151	492	1,050	711	201	124	114
AC-FT	9,070	8,640	10,550	9,510	8,200	20,300	50,020	107,600	52,880	23,350	9,270	7,120

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2005, BY WATER YEAR (WY)

MEAN	156	183	211	210	241	414	937	1,553	1,309	553	195	145
MAX	501	625	806	1,343	570	1,026	1,760	2,804	2,612	1,348	380	256
(WY)	(1963)	(1974)	(1942)	(1997)	(1996)	(1995)	(1956)	(1948)	(1974)	(1975)	(1982)	(1978)
MIN	81.5	80.0	88.6	69.3	82.4	114	345	445	361	123	78.8	82.8
(WY)	(1937)	(1937)	(1936)	(1937)	(1937)	(1977)	(1977)	(1977)	(1992)	(1977)	(1931)	(1931)

IMNAHA RIVER BASIN

13292000 IMNAHA RIVER AT IMNAHA, OR—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1929 - 2005	
ANNUAL TOTAL	151,553		159,559			
ANNUAL MEAN	414		437		509	
HIGHEST ANNUAL MEAN					897	
LOWEST ANNUAL MEAN					184	
HIGHEST DAILY MEAN	1,890	May 29	2,590	May 16	12,400	Jan 1, 1997
LOWEST DAILY MEAN	65	Jan 6	93	Nov 30	25	Nov 22, 1931
ANNUAL SEVEN-DAY MINIMUM	81	Jan 3	117	Sep 16	43	Jan 8, 1993
ANNUAL RUNOFF (AC-FT)	300,600		316,500		369,000	
10 PERCENT EXCEEDS	985		1,200		1,380	
50 PERCENT EXCEEDS	184		170		228	
90 PERCENT EXCEEDS	130		124		113	



2005 Water Year
 IMNAHA RIVER BASIN

13292000 IMNAHA RIVER AT IMNAHA, OR

Latitude: 45° 33' 45"

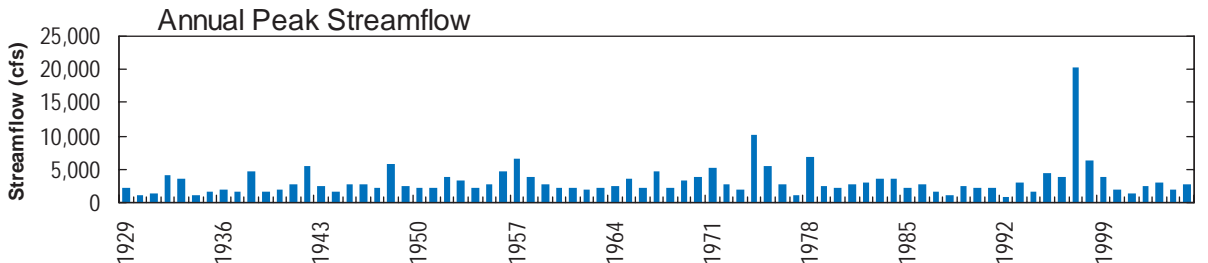
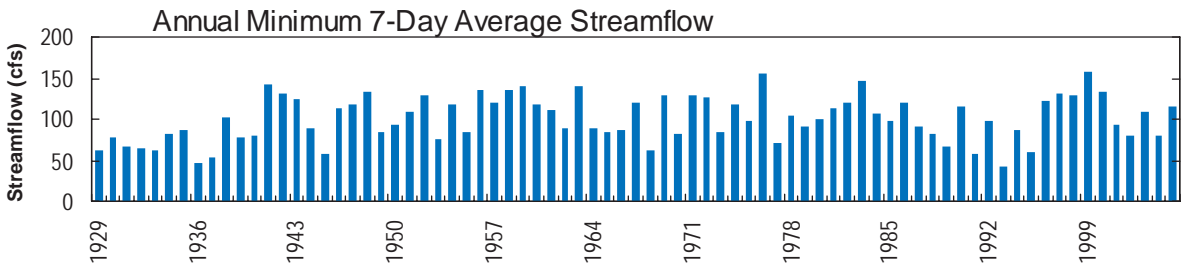
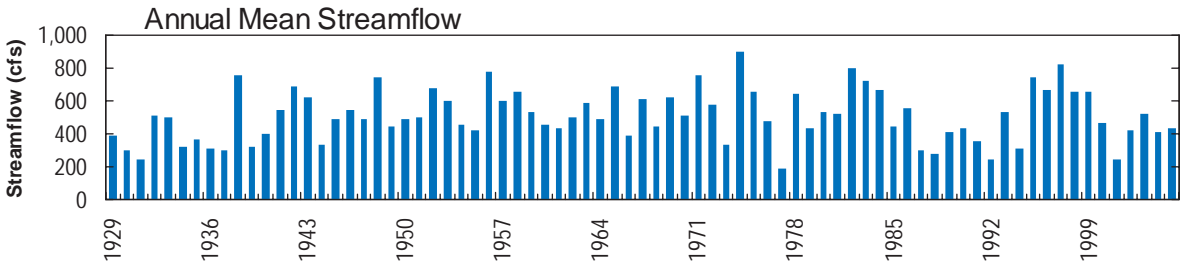
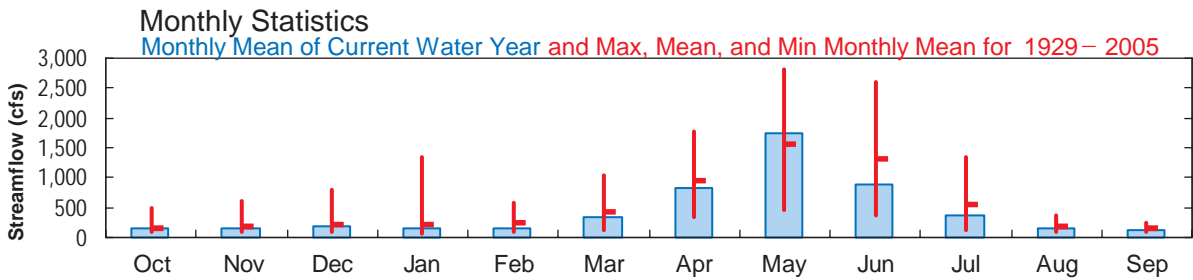
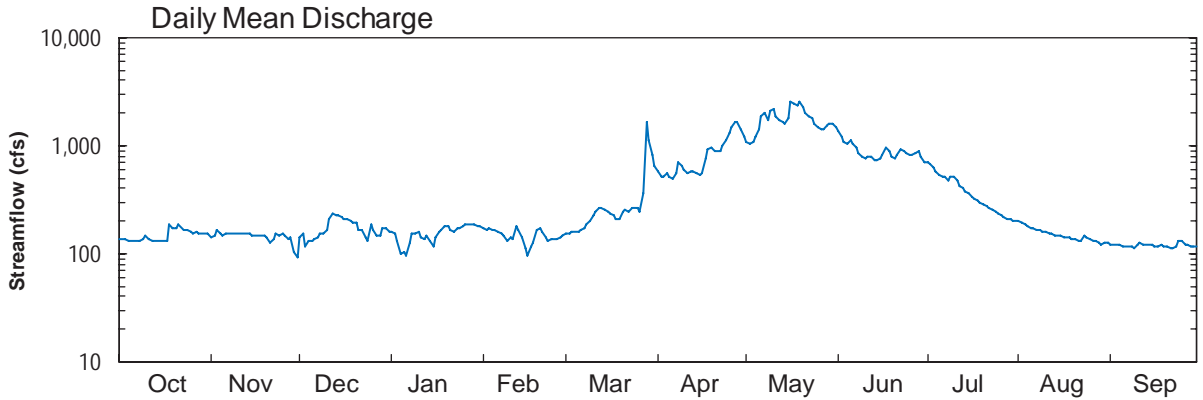
Longitude: 116° 50' 00"

Hydrologic Unit Code: 17060102

Wallowa County

Datum: 1941.14 feet

Drainage Area: 622 mi²



GRANDE RONDE RIVER BASIN

13324300 LOOKINGGLASS CREEK NEAR LOOKING GLASS, OR

LOCATION.--Lat 45°43'55", long 117°51'50", in NW ¼ NW ¼ sec.19, T.3 N., R.40 E., Union County, Hydrologic Unit 17060104, on left bank at Oregon State Fish and Wildlife Service fish hatchery, 310 ft upstream from Jarboe Creek, 2.3 mi northwest of Looking Glass and at mile 2.3.

DRAINAGE AREA.--78.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,530 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair except for those greater than 250 ft³/s, which are poor. Records include a diversion by the fish hatchery 0.3 mi upstream from station of up to 50 ft³/s that is returned through the fish ladder to the gage pool.

AVERAGE DISCHARGE.--23 years (water years 1983-2005), 137 ft³/s, 99,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,120 ft³/s Feb. 9, 1996, gage height, 7.41 ft, from rating curve extended above 1,000 ft³/s; minimum discharge, 25 ft³/s Oct. 11, 1983, result of regulation at fish hatchery upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 380 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 28	0130	*581	*5.81	No other peak greater than base discharge.			

Minimum discharge, 33 ft³/s, Sept. 26, gage height, 3.94 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	56	72	65	82	66	266	235	129	68	52	53
2	50	58	68	63	77	65	239	223	122	67	52	52
3	50	63	64	59	76	65	250	211	112	66	52	51
4	50	58	67	60	78	64	250	221	106	66	53	51
5	50	57	66	61	77	64	236	217	108	65	52	51
6	50	56	67	60	75	66	230	259	108	66	51	51
7	51	56	67	62	72	70	269	259	106	65	51	51
8	50	58	88	62	71	77	276	229	99	65	51	51
9	52	59	82	59	69	84	254	217	91	66	50	50
10	52	58	94	56	68	92	237	205	88	67	50	53
11	51	59	142	56	69	96	239	191	85	67	50	53
12	50	58	138	56	71	107	240	178	83	64	50	52
13	50	59	118	55	71	106	232	167	81	63	50	53
14	52	60	117	56	68	101	224	168	80	62	50	53
15	52	58	117	55	62	102	195	193	78	62	50	53
16	52	60	100	56	64	104	191	238	78	61	50	53
17	53	60	93	62	64	108	246	255	83	60	51	53
18	58	61	88	158	64	110	220	245	87	60	51	53
19	56	59	90	160	66	103	215	234	82	59	51	49
20	57	58	79	129	66	110	218	223	77	58	51	46
21	60	57	75	116	64	112	223	205	74	58	51	47
22	65	56	72	110	62	111	224	196	72	59	51	47
23	66	56	67	103	61	111	245	184	72	58	52	47
24	60	96	68	99	61	109	248	175	72	57	52	48
25	59	164	70	97	61	106	263	165	72	56	52	47
26	59	133	68	95	61	114	285	157	73	56	52	51
27	58	91	65	92	64	348	301	148	75	56	52	52
28	57	74	65	89	65	489	290	138	78	53	52	53
29	57	64	66	85	---	412	266	133	70	52	52	50
30	58	70	66	86	---	345	253	126	69	52	52	49
31	58	---	65	85	---	292	---	120	---	52	52	---
TOTAL	1,693	2,032	2,564	2,507	1,909	4,309	7,325	6,115	2,610	1,886	1,588	1,523
MEAN	54.6	67.7	82.7	80.9	68.2	139	244	197	87.0	60.8	51.2	50.8
MAX	66	164	142	160	82	489	301	259	129	68	53	53
MIN	50	56	64	55	61	64	191	120	69	52	50	46
AC-FT	3,360	4,030	5,090	4,970	3,790	8,550	14,530	12,130	5,180	3,740	3,150	3,020

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2005, BY WATER YEAR (WY)

	53.6	70.1	80.5	85.7	126	195	334	367	160	66.9	53.4	52.3
MEAN												
MAX	66.7	167	288	213	483	431	564	608	425	117	65.3	61.9
(WY)	(1986)	(1996)	(1996)	(1997)	(1996)	(1997)	(1997)	(1997)	(1984)	(1984)	(1985)	(1984)
MIN	45.2	46.8	53.2	51.0	54.4	83.3	183	114	57.4	47.0	37.1	40.1
(WY)	(1995)	(1988)	(1988)	(2001)	(2001)	(1985)	(2001)	(1992)	(1992)	(1994)	(1994)	(1994)

GRANDE RONDE RIVER BASIN

13324300 LOOKINGGLASS CREEK NEAR LOOKING GLASS, OR—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1983 - 2005	
ANNUAL TOTAL	54,042		36,061			
ANNUAL MEAN	148		98.8		137	
HIGHEST ANNUAL MEAN					227	1997
LOWEST ANNUAL MEAN					93.0	2001
HIGHEST DAILY MEAN	626	May 4	489	Mar 28	1,740	Feb 9, 1996
LOWEST DAILY MEAN	49	Aug 14	46	Sep 20	35	Oct 11, 1983
ANNUAL SEVEN-DAY MINIMUM	50	Aug 10	47	Sep 19	35	Aug 16, 1994
ANNUAL RUNOFF (AC-FT)	107,200		71,530		99,200	
10 PERCENT EXCEEDS	427		224		338	
50 PERCENT EXCEEDS	67		66		69	
90 PERCENT EXCEEDS	51		51		50	



2005 Water Year
 GRANDE RONDE RIVER BASIN

13324300 LOOKINGGLASS CREEK NEAR LOOKING GLASS, OR

Latitude: 45° 43 ' 55"

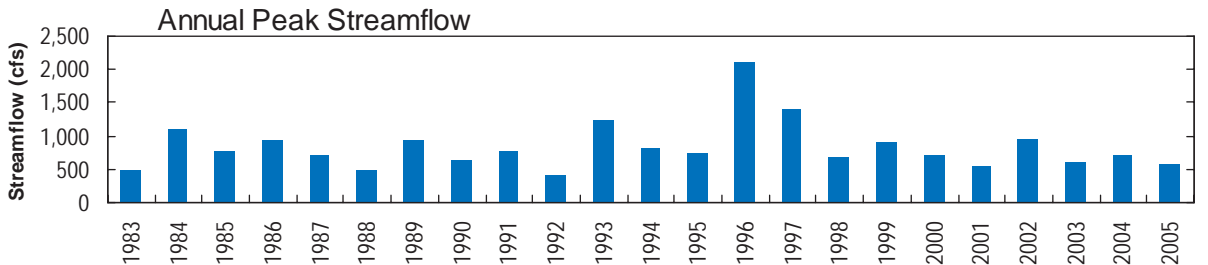
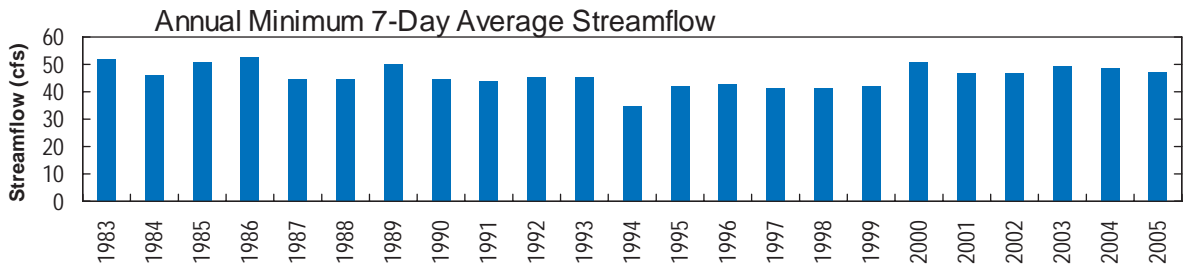
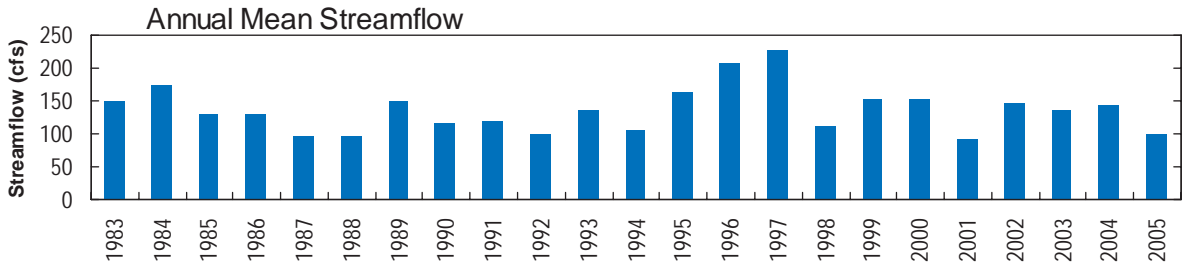
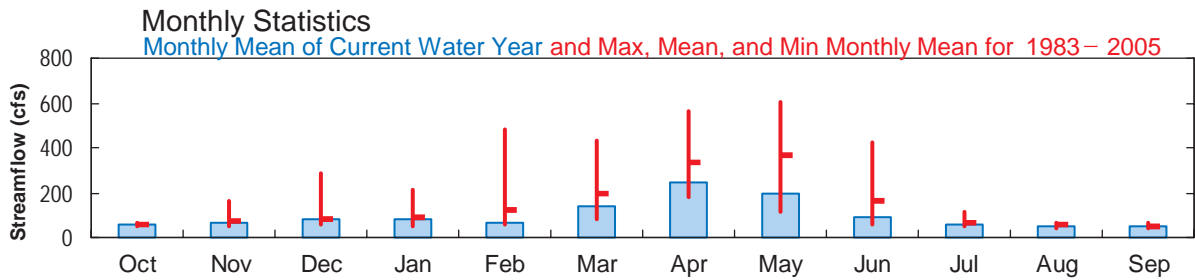
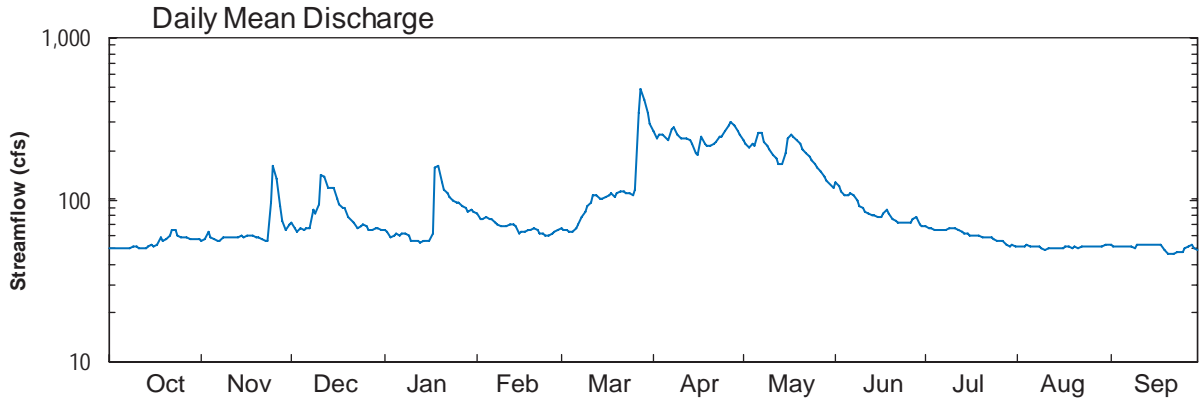
Longitude: 117° 51 ' 50"

Hydrologic Unit Code: 17060104

Union County

Datum: 2530 feet

Drainage Area: 78.3 mi²



GRANDE RONDE RIVER BASIN

13324300 LOOKINGGLASS CREEK NEAR LOOKING GLASS, OR—Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: May 1999 to current year.

INSTRUMENTATION.--Temperature recorder since May 1999.

REMARKS.--Records excellent except those for the period Oct. 1-18, which are good.

EXTREMES FOR PERIOD OF DAILY RECORD.--Maximum recorded, 20.0°C Aug. 24, 1999; minimum recorded, 0.0°C on several days during winter months.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 18.9°C July 12, but may have been higher during period of missing record; minimum, 0.2°C Feb. 15, 16.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	11.0	6.2	8.5	5.5	2.7	4.2	3.6	2.1	2.7	3.8	2.3	3.0
2	10.8	5.9	8.3	6.7	5.1	5.8	3.6	2.7	3.1	3.9	2.4	3.0
3	10.7	5.8	8.1	6.3	3.8	5.5	3.4	2.6	2.9	2.7	0.9	2.1
4	10.4	5.6	7.9	5.1	2.8	3.8	3.6	2.3	2.9	2.5	0.4	1.4
5	10.0	5.0	7.4	5.1	2.5	3.7	3.0	1.4	2.1	2.6	1.4	1.9
6	10.8	6.3	8.4	5.3	3.0	4.0	3.2	1.5	2.2	1.9	1.0	1.5
7	11.0	7.5	8.9	6.4	3.7	4.8	4.3	1.4	3.1	3.0	1.7	2.2
8	10.9	6.0	8.3	5.5	3.4	4.5	4.2	2.8	3.5	3.5	1.5	2.4
9	9.7	6.9	8.5	5.8	3.3	4.4	4.9	3.4	4.0	4.0	2.0	2.9
10	9.5	6.0	7.4	6.9	4.6	5.5	4.6	3.8	4.2	3.6	2.1	2.8
11	9.0	4.9	6.9	5.6	4.3	4.9	4.4	3.8	4.1	3.1	1.9	2.4
12	9.5	5.2	7.2	5.3	4.0	4.7	4.2	3.3	3.7	3.8	2.2	3.1
13	9.2	5.2	7.2	6.0	4.9	5.4	4.5	3.6	3.9	3.7	3.0	3.3
14	9.4	5.4	7.3	6.5	5.5	5.9	5.1	3.6	4.4	3.6	1.8	2.9
15	9.8	5.7	7.6	6.7	5.2	5.9	4.3	2.9	3.8	3.1	1.6	2.2
16	9.9	7.0	8.2	7.2	5.2	6.3	3.4	2.6	3.0	3.9	2.1	3.0
17	9.0	7.2	8.0	5.9	4.2	5.0	4.5	2.9	3.5	4.4	3.5	3.8
18	8.3	6.6	7.4	5.4	4.0	4.6	3.6	2.7	3.1	3.7	2.5	3.1
19	7.1	5.7	6.4	5.4	4.0	4.6	3.9	2.8	3.3	3.6	2.4	2.8
20	7.6	6.0	6.7	4.3	2.7	3.8	4.1	2.7	3.3	4.2	2.6	3.3
21	7.8	6.7	7.1	4.4	2.2	3.2	3.6	2.3	2.9	4.0	2.7	3.3
22	6.7	5.4	6.1	4.9	2.8	3.8	3.7	1.9	3.0	4.2	2.2	3.1
23	7.3	5.8	6.3	5.3	3.9	4.5	2.7	0.6	1.5	4.0	2.4	3.3
24	7.0	4.8	6.0	6.0	4.7	5.3	3.0	0.4	1.6	3.4	1.7	2.4
25	6.2	3.8	4.8	5.4	4.4	5.1	3.5	1.9	2.6	3.9	1.6	2.6
26	6.2	3.5	4.8	4.6	3.4	4.2	3.6	2.0	2.9	4.6	2.4	3.3
27	7.3	5.0	6.0	4.2	3.1	3.6	2.4	1.0	1.7	5.6	3.6	4.2
28	6.6	4.3	5.5	3.5	1.5	2.5	2.6	1.0	1.8	5.1	3.2	3.9
29	6.7	5.5	6.1	2.1	0.6	1.4	4.4	2.4	3.5	4.9	2.5	3.6
30	7.0	5.4	6.0	2.4	1.6	2.1	4.2	2.7	3.4	5.3	3.1	4.2
31	6.2	3.9	5.3	---	---	---	3.0	2.3	2.6	5.0	2.6	3.5
MONTH	11.0	3.5	7.1	7.2	0.6	4.4	5.1	0.4	3.0	5.6	0.4	2.9

GRANDE RONDE RIVER BASIN

13324300 LOOKINGGLASS CREEK NEAR LOOKING GLASS, OR—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4.1	1.9	2.9	6.8	3.8	4.9	6.3	4.3	5.0	11.1	4.5	7.2
2	4.1	2.0	2.8	6.6	3.0	4.6	6.7	3.8	5.1	9.8	5.9	7.7
3	4.2	1.6	2.7	7.7	2.8	4.7	6.8	4.7	5.4	11.6	6.7	8.6
4	4.6	2.3	3.3	7.0	2.4	4.4	7.0	3.7	5.0	11.1	6.9	8.4
5	4.3	2.3	3.3	7.3	2.3	4.5	7.3	3.2	4.9	10.9	7.2	8.7
6	4.3	2.2	2.9	7.6	2.8	4.9	8.3	4.2	6.0	8.9	7.8	8.3
7	4.0	1.0	2.3	8.2	3.5	5.4	7.6	5.1	6.0	9.5	7.1	7.9
8	3.6	1.3	2.2	8.1	3.2	5.1	7.0	4.0	5.4	10.7	6.1	8.0
9	3.9	0.8	2.1	8.1	2.8	5.1	6.1	3.8	4.7	9.2	7.2	8.0
10	3.8	0.7	2.0	7.8	3.1	5.0	8.1	3.6	5.5	8.3	6.4	7.4
11	4.2	0.7	2.4	7.7	2.6	4.8	7.8	4.8	5.9	12.0	6.2	8.5
12	5.7	2.8	4.1	7.1	3.0	4.8	6.4	4.3	5.1	11.5	6.9	9.0
13	5.0	2.4	3.8	6.4	1.9	3.8	5.3	3.4	4.2	13.6	6.8	9.9
14	3.9	1.4	2.7	6.8	1.7	3.9	7.6	3.1	4.6	11.7	8.7	10.0
15	3.4	0.2	1.6	7.2	2.4	4.3	8.0	2.6	4.9	10.5	8.8	9.4
16	3.4	0.2	1.5	5.9	3.2	4.4	8.9	4.2	6.3	9.1	7.9	8.6
17	3.7	0.3	1.7	6.6	3.1	4.4	8.7	4.8	6.4	9.6	7.0	8.1
18	4.2	0.3	2.0	5.3	2.6	3.9	8.3	4.4	5.8	9.9	7.4	8.3
19	4.7	1.4	2.8	7.4	3.8	5.4	6.6	3.8	5.3	10.1	7.2	8.5
20	4.5	2.4	3.5	8.1	4.4	5.9	7.3	4.0	5.8	9.2	7.5	8.1
21	6.1	2.8	4.3	6.8	3.8	5.1	8.5	5.4	6.6	11.0	6.5	8.6
22	5.3	1.7	3.2	5.7	3.2	4.4	10.6	4.2	7.0	10.6	7.1	8.7
23	5.4	1.4	3.1	7.0	4.1	5.1	8.3	5.3	6.6	11.8	5.9	8.4
24	5.5	1.5	3.2	6.1	3.0	4.3	10.3	4.7	7.1	9.9	5.4	7.7
25	5.9	1.7	3.5	5.4	2.7	3.8	11.4	5.2	7.9	13.5	5.6	9.2
26	6.0	1.9	3.6	4.7	2.5	3.5	11.6	5.4	8.2	14.7	6.6	10.2
27	6.2	1.9	3.7	4.5	3.8	4.2	9.9	5.8	7.6	15.8	7.4	11.1
28	5.6	2.8	4.1	5.5	3.8	4.3	9.4	4.2	6.4	16.7	8.7	12.0
29	---	---	---	5.3	2.5	3.8	7.8	4.4	6.1	16.6	9.0	12.2
30	---	---	---	5.2	2.9	3.9	9.9	5.6	7.2	17.1	8.9	12.5
31	---	---	---	6.3	3.1	4.5	---	---	---	11.8	9.3	10.4
MONTH	6.2	0.2	2.9	8.2	1.7	4.6	11.6	2.6	5.9	17.1	4.5	9.0
	JUNE			JULY			AUGUST			SEPTEMBER		
1	12.5	8.5	10.1	18.5	9.8	13.7	18.2	11.2	14.2	---	---	---
2	10.8	7.8	9.2	17.2	8.9	12.5	17.2	10.4	13.5	---	---	---
3	15.1	8.3	11.0	17.4	8.2	12.5	17.1	8.4	12.6	---	---	---
4	15.3	7.0	10.8	17.6	8.3	12.8	---	---	---	---	---	---
5	10.6	8.2	9.4	18.5	8.9	13.5	---	---	---	---	---	---
6	10.5	6.6	8.3	18.4	10.3	14.0	---	---	---	---	---	---
7	12.6	6.7	8.9	18.6	9.9	14.1	---	---	---	---	---	---
8	12.0	6.2	9.0	18.5	9.9	13.9	---	---	---	---	---	---
9	12.2	6.4	9.4	13.9	10.6	12.1	---	---	---	---	---	---
10	14.8	7.3	10.5	13.2	10.3	11.7	---	---	---	---	---	---
11	14.6	8.2	10.7	17.9	9.8	13.5	---	---	---	---	---	---
12	13.2	7.9	9.9	18.9	10.3	14.3	---	---	---	---	---	---
13	12.9	6.5	9.4	17.8	10.0	13.7	---	---	---	---	---	---
14	13.2	7.8	10.3	17.5	8.7	13.2	---	---	---	---	---	---
15	16.0	7.5	11.3	18.3	9.5	13.9	---	---	---	---	---	---
16	15.1	8.5	11.5	16.2	10.9	13.4	---	---	---	---	---	---
17	12.2	9.4	10.6	17.7	9.1	13.3	---	---	---	---	---	---
18	11.9	7.8	9.8	18.6	9.3	13.7	---	---	---	---	---	---
19	16.5	6.8	11.2	18.5	9.7	13.9	---	---	---	---	---	---
20	15.9	8.2	11.8	18.3	9.1	13.5	---	---	---	---	---	---
21	18.2	9.0	13.1	18.7	9.2	13.8	---	---	---	---	---	---
22	17.6	9.3	13.1	16.4	11.5	13.7	---	---	---	---	---	---
23	17.6	8.4	12.8	18.0	9.5	13.6	---	---	---	---	---	---
24	16.9	8.8	12.7	17.6	9.3	13.3	---	---	---	---	---	---
25	15.4	9.7	12.3	17.4	8.9	13.0	---	---	---	---	---	---
26	17.2	9.3	13.0	17.3	8.5	12.8	---	---	---	---	---	---
27	12.3	10.0	11.0	17.8	8.9	13.2	---	---	---	---	---	---
28	13.4	9.7	11.3	18.4	9.7	13.7	---	---	---	---	---	---
29	17.5	9.3	12.8	18.2	10.1	13.9	---	---	---	---	---	---
30	18.4	8.9	13.3	18.5	9.6	13.8	---	---	---	---	---	---
31	---	---	---	18.4	10.0	14.0	---	---	---	---	---	---
MONTH	18.4	6.2	10.9	18.9	8.2	13.4	18.2	8.4	13.4	---	---	---
YEAR	18.9	0.2	6.5									

GRANDE RONDE RIVER BASIN

13329770 WALLOWA RIVER ABOVE CROSS COUNTRY CANAL, NEAR ENTERPRISE, OR

LOCATION.--Lat 45°29'18", long 117°24'10", in SW ¼ SE ¼ sec.11, T.1 S., R.43 E., Wallowa County, Hydrologic Unit 17060105, on left bank 300 ft upstream from Cross Country canal, 6 mi northwest of Enterprise and at mile 32.5.

DRAINAGE AREA.--272 mi².

PERIOD OF RECORD.--April 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,330 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for the period May 16 to July 5, which are fair and those for the period May 5-15, which are poor. Regulation by Wallowa Lake. Many diversions for irrigation upstream from gage. U.S. Geological Survey satellite telemeter at station.

COOPERATION.--Gage height record was collected and discharge measurements made by the Wallowa County Soil and Water Conservation District. Records were provided by the State of Oregon Water Resources Department. Discharge measurements and records were reviewed by the U.S. Geological Survey.

AVERAGE DISCHARGE.--10 years (water years 1996-2005), 253 ft³/s, 183,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,590 ft³/s July 9, 1997, gage height, 4.17 ft; maximum gage height, 4.27 ft May 16, 1997; minimum discharge, 92 ft³/s Sept. 5, 2001.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 22	1700	*894	*3.49	No other peak greater than base discharge			

Minimum discharge, 118 ft³/s Jan. 11.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	213	184	172	159	155	160	168	221	654	496	143	145
2	202	189	171	158	153	159	170	214	611	410	137	145
3	197	202	169	146	153	164	185	225	560	386	136	151
4	193	192	169	141	153	159	184	248	515	351	137	159
5	186	189	168	141	154	157	176	287	509	299	130	157
6	187	185	168	140	151	157	182	397	519	275	124	152
7	189	184	170	146	147	157	190	432	469	273	125	151
8	187	186	176	145	146	156	196	415	449	260	129	147
9	202	187	183	146	146	157	194	508	427	279	134	149
10	199	187	193	148	145	155	191	550	416	266	135	157
11	195	187	206	141	145	153	196	496	394	248	132	160
12	192	186	207	145	151	153	211	456	369	226	127	168
13	191	188	195	e145	160	150	213	460	355	225	131	161
14	192	187	194	e142	149	149	206	477	344	212	130	154
15	194	184	189	e139	147	150	201	537	340	196	131	152
16	197	183	180	e142	149	152	198	727	334	191	127	150
17	201	180	181	e150	147	152	230	688	358	188	131	152
18	220	180	178	e185	143	151	220	641	384	166	132	154
19	203	176	179	195	145	153	219	708	395	157	130	146
20	203	176	170	176	150	154	216	747	395	149	132	142
21	205	169	165	172	160	152	220	739	434	143	131	139
22	203	172	167	168	154	154	213	774	444	149	135	139
23	201	177	157	165	152	162	213	777	399	163	139	145
24	195	182	157	163	153	164	218	709	370	154	136	159
25	192	187	162	163	152	158	236	637	370	147	135	157
26	190	182	163	163	152	155	252	587	365	147	134	159
27	190	179	161	164	153	186	269	549	428	147	136	156
28	189	177	158	165	154	206	262	567	514	139	137	152
29	187	165	163	164	---	185	243	601	510	136	141	148
30	187	167	164	163	---	172	229	630	501	134	145	154
31	188	---	160	160	---	165	---	640	---	140	149	---
TOTAL	6,070	5,469	5,395	4,840	4,219	4,957	6,301	16,644	13,132	6,852	4,151	4,560
MEAN	196	182	174	156	151	160	210	537	438	221	134	152
MAX	220	202	207	195	160	206	269	777	654	496	149	168
MIN	186	165	157	139	143	149	168	214	334	134	124	139
AC-FT	12,040	10,850	10,700	9,600	8,370	9,830	12,500	33,010	26,050	13,590	8,230	9,040
CFSM	0.72	0.67	0.64	0.57	0.55	0.59	0.77	1.97	1.61	0.81	0.49	0.56
IN.	0.83	0.75	0.74	0.66	0.58	0.68	0.86	2.28	1.80	0.94	0.57	0.62

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2005, BY WATER YEAR (WY)

MEAN	210	201	196	185	191	206	228	382	482	316	213	228
MAX	294	272	356	233	297	323	339	598	843	630	340	369
(WY)	(1998)	(1996)	(1996)	(1997)	(1996)	(1996)	(1997)	(1997)	(1998)	(1997)	(1996)	(1996)
MIN	145	155	138	139	139	160	155	199	179	174	124	107
(WY)	(2002)	(2002)	(2002)	(2004)	(2002)	(2005)	(2004)	(2002)	(2001)	(2001)	(2001)	(2001)

GRANDE RONDE RIVER BASIN

13329770 WALLOWA RIVER ABOVE CROSS COUNTRY CANAL, NEAR ENTERPRISE, OR—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1996 - 2005	
ANNUAL TOTAL	77,873		82,590			
ANNUAL MEAN	213		226		253	
HIGHEST ANNUAL MEAN					358	
LOWEST ANNUAL MEAN					179	
HIGHEST DAILY MEAN	568	Jul 1	777	May 23	1,140	May 16, 1997
LOWEST DAILY MEAN	125	Jan 6	124	Aug 6	98	Sep 5, 2001
ANNUAL SEVEN-DAY MINIMUM	132	Jan 2	129	Aug 6	103	Sep 3, 2001
ANNUAL RUNOFF (AC-FT)	154,500		163,800		183,500	
ANNUAL RUNOFF (CFSM)	0.782		0.832		0.931	
ANNUAL RUNOFF (INCHES)	10.65		11.30		12.65	
10 PERCENT EXCEEDS	350		438		414	
50 PERCENT EXCEEDS	187		172		204	
90 PERCENT EXCEEDS	140		141		149	

e Estimated

GRANDE RONDE RIVER BASIN

13329770 WALLOWA RIVER ABOVE CROSS COUNTRY CANAL, NEAR ENTERPRISE, OR—Continued



2005 Water Year
GRANDE RONDE RIVER BASIN

13329770 WALLOWA RIVER ABOVE CROSS COUNTRY CANAL, NEAR ENTERPRISE, OR

Latitude: 45° 29 ' 18"

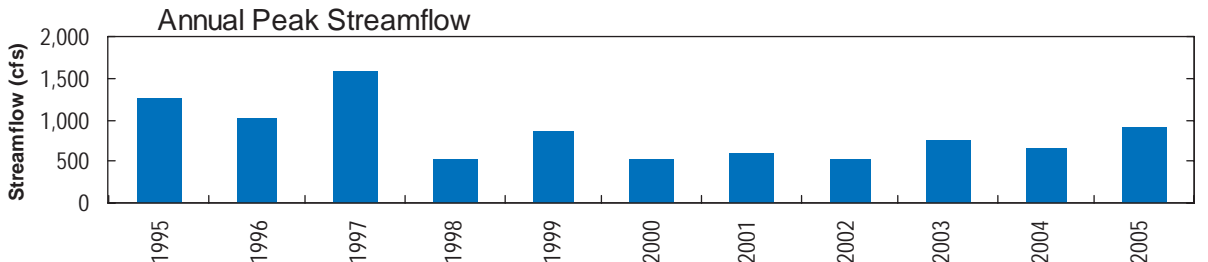
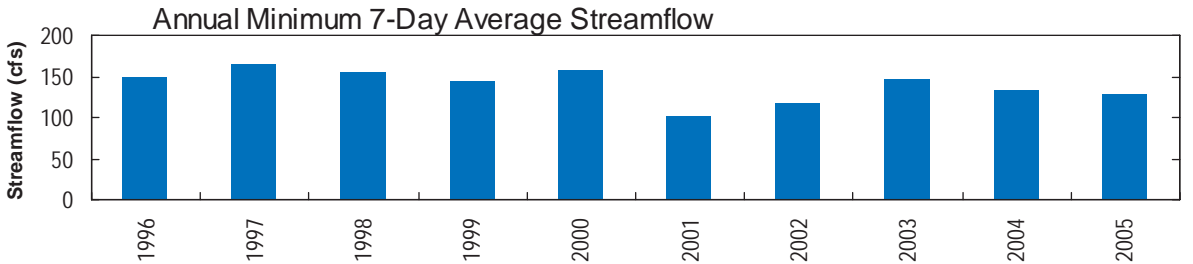
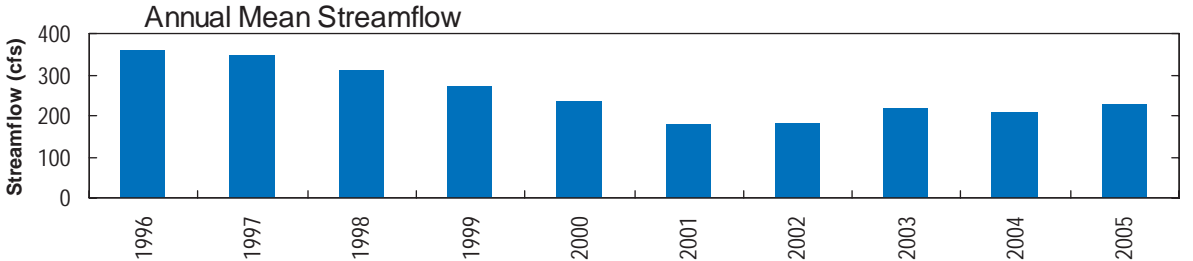
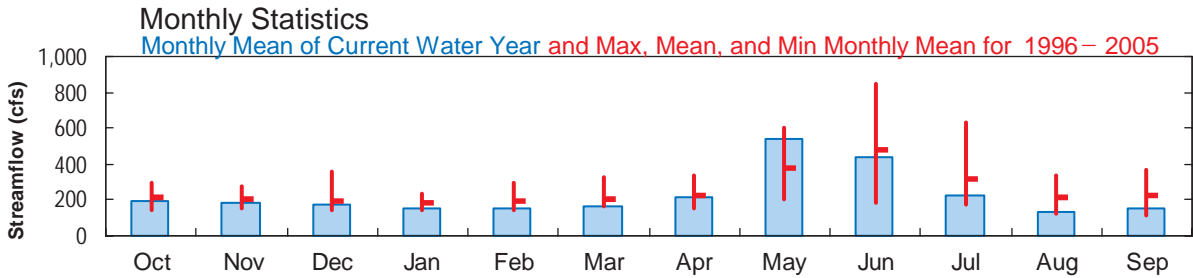
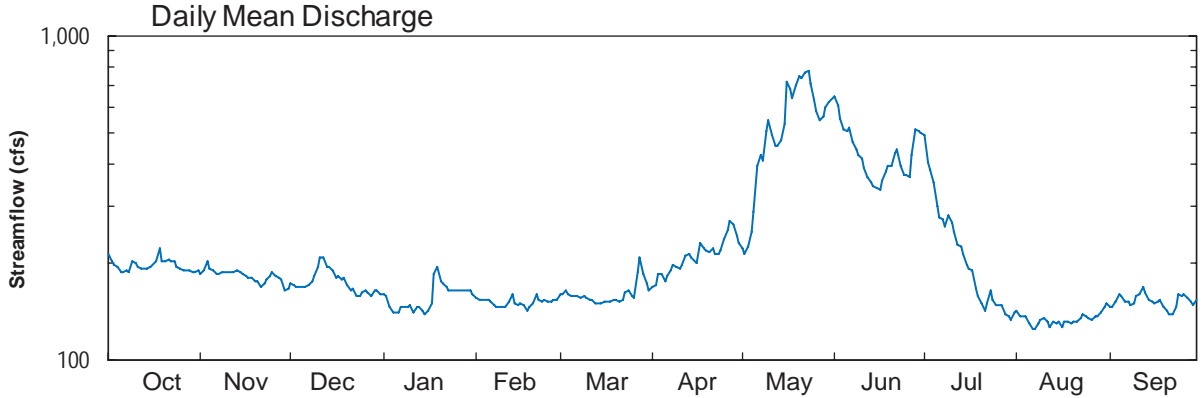
Longitude: 117° 24 ' 10"

Hydrologic Unit Code: 17060105

Wallowa County

Datum: 3330 feet

Drainage Area: 272 mi²



GRANDE RONDE RIVER BASIN

13330000 LOSTINE RIVER NEAR LOSTINE, OR

LOCATION.--Lat 45°26'20", long 117°25'35", in NW ¼ sec.34, T.1 S., R.43 E., Wallowa County, Hydrologic Unit 17060105, on left bank, 3.5 mi south of Lostine and at mile 10.0.

DRAINAGE AREA.--70.9 mi².

PERIOD OF RECORD.--August 1912 to March 1914, April to September 1915, July 1925 to September 1991, April 1995 to current year. Monthly discharge only for some periods, published in WSP 1317.

REVISED RECORDS.--WSP 1397: 1913, 1942. WSP 1737: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,650 ft above NGVD of 1929, from topographic map. See WSP 1317 or 1737 for history of changes prior to Dec. 16, 1953. Dec. 16, 1953 to Aug. 23 1977, at datum 1.04 ft higher.

REMARKS.--Records good except those for the period Dec. 20 to Jan. 12, Feb. 1-27 which are fair and estimated daily discharges, which are poor. Minam Lake, capacity 440 acre-ft, has stored and diverted flow from Minam River since 1917 for irrigation in Lostine River basin. Diversions for irrigation upstream from station. Continuous water-quality records for the period October 1957 to September 1958 have been collected at this location. U.S. Geological Survey satellite telemeter at station.

COOPERATION.--Gage height record was collected and discharge measurements made by the Wallowa County Soil and Water Conservation District. Records were provided by the State of Oregon Water Resources Department. Discharge measurements and records were reviewed by the U.S. Geological Survey.

AVERAGE DISCHARGE.--77 years (water years 1913, 1926-91, 1996-2005), 193 ft³/s, 139,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,550 ft³/s June 16, 1974, gage height, 8.59 ft, present datum; minimum discharge, 7.5 ft³/s Mar. 2, 1966, result of freezeup; minimum daily, 10 ft³/s Nov. 28-30, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 29	2130	*1,070	*6.06				

Minimum daily discharge, 25 ft³/s, Sept. 21,22, 29,30.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86	58	e42	58	82	47	83	248	685	549	91	34
2	82	65	e42	54	81	46	79	245	552	513	87	33
3	79	67	45	41	79	45	84	273	496	436	81	31
4	76	58	46	e38	77	44	82	333	505	394	76	31
5	73	63	43	37	75	43	75	413	553	385	72	31
6	71	61	42	e38	71	44	76	614	494	402	68	30
7	69	61	45	48	66	45	100	604	427	401	66	29
8	66	62	50	47	62	46	110	516	375	386	63	28
9	69	63	54	48	66	47	103	598	341	424	61	28
10	67	66	86	47	71	49	96	507	332	347	69	32
11	64	66	122	e46	70	51	96	448	350	319	69	34
12	62	66	122	44	67	56	98	419	360	320	68	33
13	60	65	104	45	63	54	94	423	349	308	66	31
14	58	64	99	40	58	53	88	475	383	269	65	30
15	57	64	95	36	e57	54	85	663	455	236	63	28
16	55	63	90	46	e56	53	85	908	527	227	60	28
17	60	61	88	45	e56	53	114	642	581	208	59	28
18	79	61	85	122	e57	52	110	561	493	187	58	28
19	69	58	83	170	58	52	108	614	434	177	56	27
20	66	54	80	133	56	54	104	563	476	167	53	26
21	69	49	71	118	53	53	108	507	624	155	51	25
22	69	58	76	113	50	51	113	561	730	150	49	25
23	71	55	60	109	49	52	130	553	693	145	48	26
24	66	60	74	107	48	52	154	496	615	129	45	28
25	62	65	72	104	47	49	252	483	625	121	44	28
26	64	58	68	101	46	50	317	515	600	113	42	28
27	63	53	65	100	46	114	377	612	662	106	40	27
28	64	52	63	97	47	140	369	745	648	101	38	26
29	62	38	62	93	---	110	319	864	550	97	37	e25
30	62	e42	60	90	---	95	274	903	535	93	36	e25
31	60	---	58	87	---	85	---	779	---	92	35	---
TOTAL	2,080	1,776	2,192	2,302	1,714	1,839	4,283	17,085	15,450	7,957	1,816	863
MEAN	67.1	59.2	70.7	74.3	61.2	59.3	143	551	515	257	58.6	28.8
MAX	86	67	122	170	82	140	377	908	730	549	91	34
MIN	55	38	42	36	46	43	75	245	332	92	35	25
AC-FT	4,130	3,520	4,350	4,570	3,400	3,650	8,500	33,890	30,650	15,780	3,600	1,710

GRANDE RONDE RIVER BASIN

13330000 LOSTINE RIVER NEAR LOSTINE, OR—Continued

DISCHARGE, CUBIC FEET PER SECOND—CONTINUED
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2005, BY WATER YEAR (WY)												
MEAN	55.7	63.3	58.1	49.7	47.7	55.7	162	512	786	380	85.5	49.7
MAX	291	226	212	158	191	169	393	909	1,427	913	180	104
(WY)	(1960)	(1928)	(1959)	(1974)	(1996)	(1986)	(1934)	(1928)	(1913)	(1975)	(1943)	(1978)
MIN	18.0	14.7	15.3	15.0	14.8	16.3	35.7	203	332	59.7	30.6	23.0
(WY)	(1937)	(1937)	(1937)	(1937)	(1937)	(1955)	(1975)	(1977)	(1926)	(1977)	(1931)	(1931)
SUMMARY STATISTICS												
	FOR 2004 CALENDAR YEAR				FOR 2005 WATER YEAR				WATER YEARS 1913 - 2005			
ANNUAL TOTAL	72,308				59,357							
ANNUAL MEAN	198				163				193			
HIGHEST ANNUAL MEAN									288			
LOWEST ANNUAL MEAN									90.9			
HIGHEST DAILY MEAN	1,230				908				2,540			
LOWEST DAILY MEAN	14				25				10			
ANNUAL SEVEN-DAY MINIMUM	17				26				11			
ANNUAL RUNOFF (AC-FT)	143,400				117,700				139,700			
10 PERCENT EXCEEDS	618				507				596			
50 PERCENT EXCEEDS	82				69				64			
90 PERCENT EXCEEDS	29				38				28			



2005 Water Year
GRANDE RONDE RIVER BASIN

13330000 LOSTINE RIVER NEAR LOSTINE, OR

Latitude: 45° 26 ' 20"

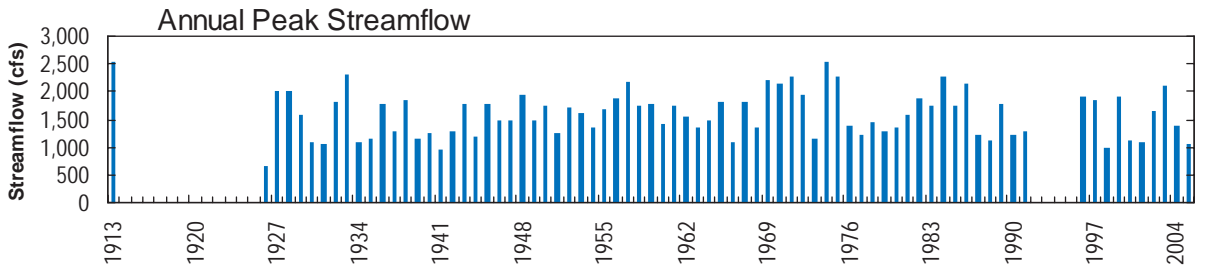
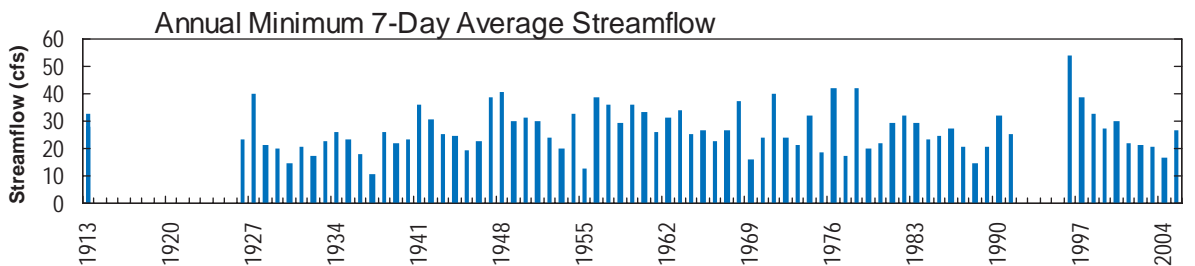
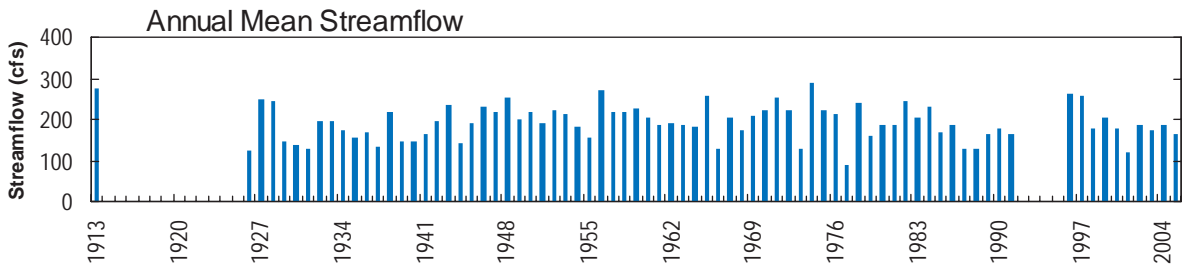
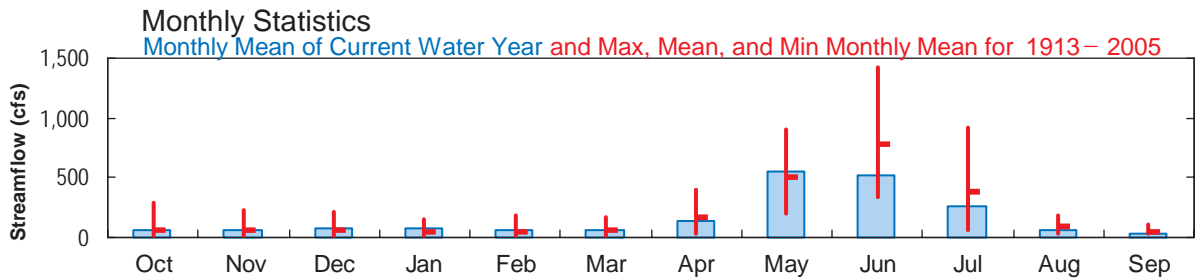
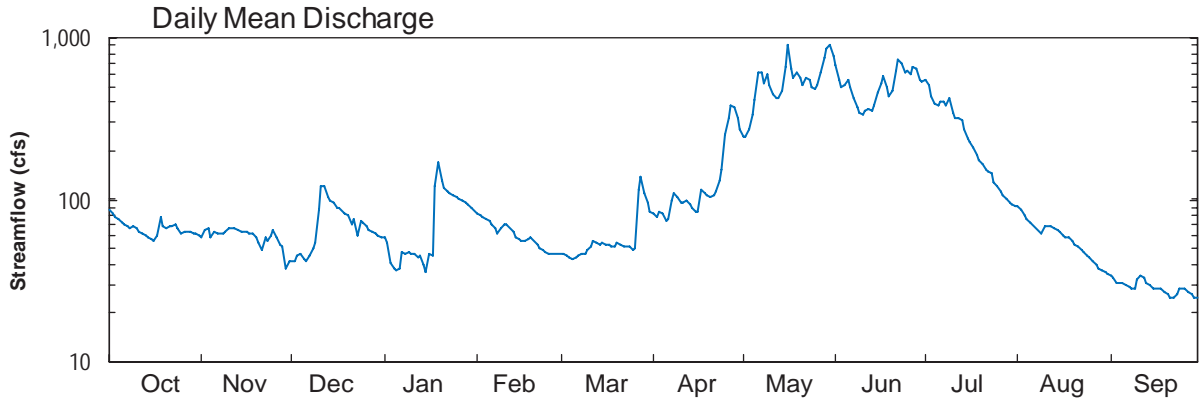
Longitude: 117° 25 ' 35"

Hydrologic Unit Code: 17060105

Wallowa County

Datum: 3650.00 feet

Drainage Area: 70.9 mi²



GRANDE RONDE RIVER BASIN

13330300 LOSTINE RIVER AT BAKER ROAD, NEAR LOSTINE, OR

LOCATION.--Lat 45°32'14", long 117°28'43", in NW ¼ SW ¼ sec.29, T.1 N., R.43 E., Wallowa County, Hydrologic Unit 17060105, on left bank, 300 ft upstream from bridge at Baker road, 4 mi northwest of Lostine and at mile 1.3.

DRAINAGE AREA.--90.9 mi².

PERIOD OF RECORD.--June 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,050 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Minam Lake, capacity 440 acre-ft, has stored and diverted flow from Minam River since 1917 for irrigation in Lostine River basin. Many diversions for irrigation upstream from gage. U.S. Geological Survey satellite telemetry at station.

COOPERATION.--Gage height record was collected and discharge measurements made by the Wallowa County Soil and Water Conservation District. Records were provided by the State of Oregon Water Resources Department. Discharge measurements and records were reviewed by the U.S. Geological Survey.

AVERAGE DISCHARGE.--10 years (water years 1996-2005), 174 ft³/s, 126,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,330 ft³/s May 30, 2003, from rating curve extended above 1,500 ft³/s, gage height, 6.73 ft; maximum gage height, 6.88 ft June 9, 1996; minimum discharge, 6.3 ft³/s Aug. 22, 1995.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16	0500	*1,090	*5.37				

Minimum daily discharge, 8.9 ft³/s, Aug. 5.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	72	45	59	78	51	83	230	649	482	20	56
2	91	80	40	56	78	51	81	202	495	463	22	35
3	93	87	38	44	76	51	86	232	445	393	30	27
4	99	78	39	43	76	49	84	294	438	351	41	26
5	100	79	38	42	74	47	78	372	488	319	42	30
6	99	79	38	43	71	47	76	599	431	303	9.3	40
7	95	77	38	47	67	47	93	620	369	278	14	39
8	91	75	41	49	64	49	108	522	321	257	18	25
9	93	69	44	49	65	49	102	607	304	313	26	12
10	94	71	59	50	65	50	96	544	310	264	28	11
11	90	71	91	49	64	51	94	479	325	218	27	10
12	88	71	98	47	67	54	98	444	351	230	24	10
13	86	69	82	48	65	53	96	462	371	217	23	13
14	85	68	77	44	61	52	90	514	394	183	22	13
15	85	e68	76	41	54	53	87	695	437	148	22	28
16	84	e67	79	47	e54	53	87	953	474	117	25	32
17	85	e65	78	47	e54	53	113	686	504	105	26	24
18	107	e64	76	94	e57	52	110	583	421	100	24	29
19	95	e61	75	155	61	53	111	653	345	87	37	27
20	92	e57	72	121	58	54	108	599	396	68	38	24
21	95	e55	65	106	56	54	112	531	544	54	35	31
22	95	e56	69	102	53	53	116	578	650	56	26	31
23	97	e55	58	99	52	54	133	581	636	53	31	34
24	92	53	70	96	52	55	155	519	555	40	54	41
25	87	56	65	95	51	53	237	500	537	35	53	61
26	89	51	61	93	50	51	298	537	509	25	41	68
27	84	47	62	92	49	99	372	628	539	16	38	58
28	84	47	62	90	50	139	375	751	559	17	43	66
29	80	42	58	87	---	111	332	852	499	13	44	61
30	76	45	58	84	---	95	290	909	477	13	52	58
31	74	---	59	82	---	86	---	768	---	18	56	---
TOTAL	2,787	1,935	1,911	2,201	1,722	1,869	4,301	17,444	13,773	5,236	991.3	1,020
MEAN	89.9	64.5	61.6	71.0	61.5	60.3	143	563	459	169	32.0	34.0
MAX	107	87	98	155	78	139	375	953	650	482	56	68
MIN	74	42	38	41	49	47	76	202	304	13	9.3	10
AC-FT	5,530	3,840	3,790	4,370	3,420	3,710	8,530	34,600	27,320	10,390	1,970	2,020
CFSM	0.99	0.71	0.68	0.78	0.68	0.66	1.58	6.19	5.05	1.86	0.35	0.37
IN.	1.14	0.79	0.78	0.90	0.70	0.76	1.76	7.14	5.64	2.14	0.41	0.42

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2005, BY WATER YEAR (WY)

MEAN	71.5	82.0	70.1	60.1	66.9	66.7	167	458	654	272	65.1	59.7
MAX	103	243	218	148	198	96.1	254	586	887	479	120	140
(WY)	(2001)	(1996)	(1996)	(1997)	(1996)	(1996)	(2000)	(1997)	(1997)	(1996)	(2004)	(2004)
MIN	35.4	34.9	30.1	25.5	24.6	41.9	104	308	252	71.3	25.9	22.4
(WY)	(2004)	(2004)	(2003)	(2004)	(2001)	(2002)	(2001)	(1999)	(2001)	(2001)	(2001)	(2001)

GRANDE RONDE RIVER BASIN

13330300 LOSTINE RIVER AT BAKER ROAD, NEAR LOSTINE, OR—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1996 - 2005	
ANNUAL TOTAL	65,378		55,190.3			
ANNUAL MEAN	179		151		174	
HIGHEST ANNUAL MEAN					251	
LOWEST ANNUAL MEAN					107	
HIGHEST DAILY MEAN	1,070	Jun 6	953	May 16	1,910	May 30, 2003
LOWEST DAILY MEAN	15	Jan 6	9.3	Aug 6	8.7	Sep 2, 1998
ANNUAL SEVEN-DAY MINIMUM	18	Jan 1	13	Sep 8	11	Aug 31, 1998
ANNUAL RUNOFF (AC-FT)	129,700		109,500		126,400	
ANNUAL RUNOFF (CFSM)	1.97		1.66		1.92	
ANNUAL RUNOFF (INCHES)	26.76		22.59		26.08	
10 PERCENT EXCEEDS	470		484		500	
50 PERCENT EXCEEDS	94		72		75	
90 PERCENT EXCEEDS	32		30		32	

e Estimated



2005 Water Year
 GRANDE RONDE RIVER BASIN

13330300 LOSTINE RIVER AT BAKER ROAD, NEAR LOSTINE, OR

Latitude: 45° 32' 14"

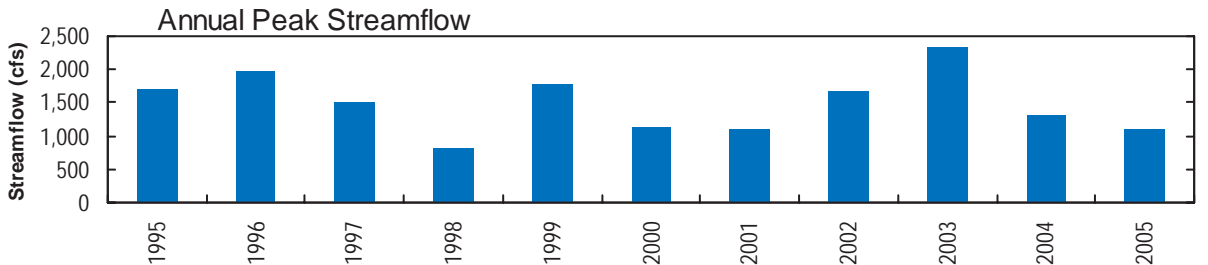
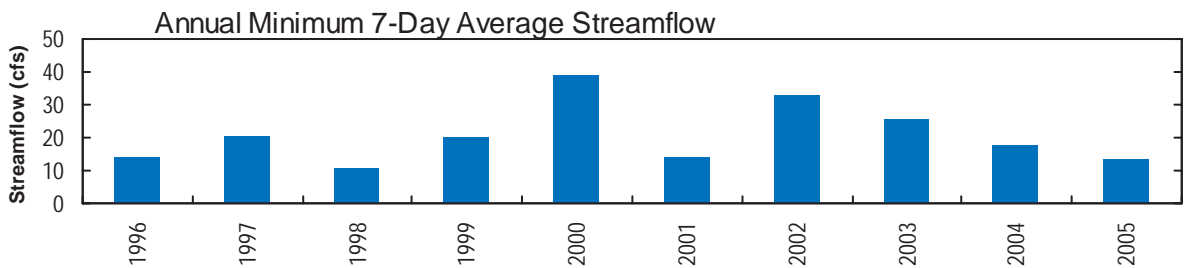
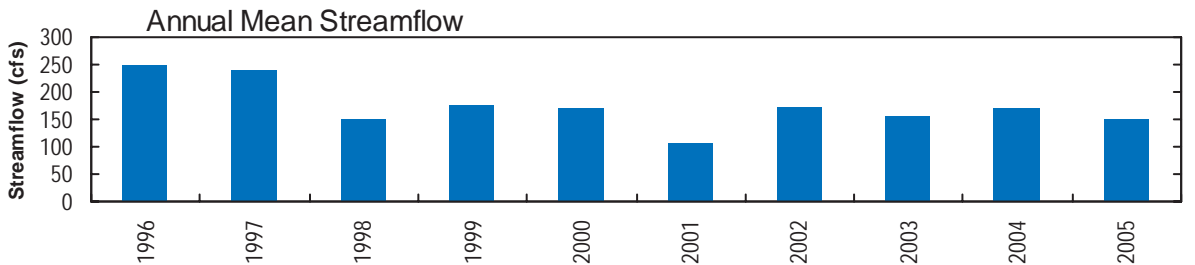
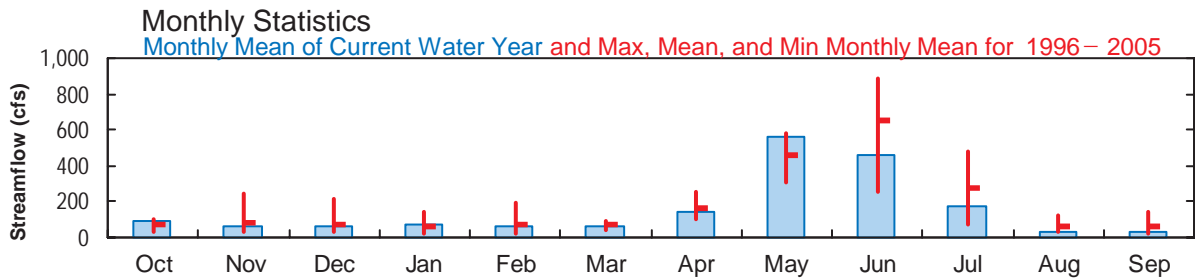
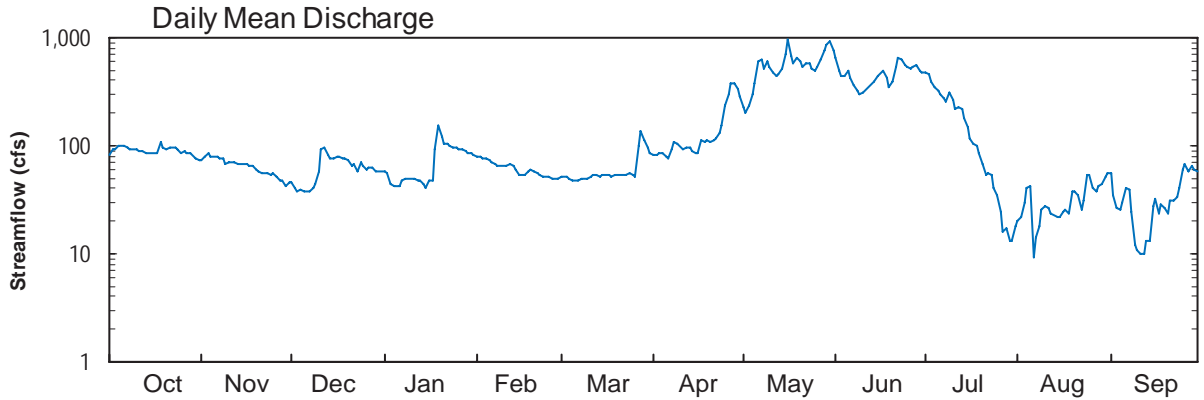
Longitude: 117° 28' 43"

Hydrologic Unit Code: 17060105

Wallowa County

Datum: 3050 feet

Drainage Area: 90.9 mi²



GRANDE RONDE RIVER BASIN

13330500 BEAR CREEK NEAR WALLOWA, OR

LOCATION.--Lat 45°31'37", long 117°33'05", in NW ¼ NE ¼ sec.34, T.1 N., R.42 E., Wallowa County, Hydrologic Unit 17060105, on left bank, at private road bridge, 3.0 mi southwest of Wallowa, and at mile 4.4.

DRAINAGE AREA.--68 mi², approximately.

PERIOD OF RECORD.--April to September 1915, April 1924 to September 1985, April 1995 to current year. Monthly discharge only for some periods, published in WSP 1317.

REVISED RECORDS.--WSP 1397: 1915, 1927, 1929-30, 1932, 1936-40, 1945, 1949.

GAGE.--Water-stage recorder. Elevation of gage is 3,250 ft above NGVD of 1929, from topographic map. Apr. 13 to Sept. 16, 1915, nonrecording gage at site 1.0 mi upstream at different datum. Apr. 22, 1924 to Nov. 2, 1931, water-stage recorder at site 1.5 mi upstream at different datum.

REMARKS.--Records good except those for the period Apr. 27 to May 29, which are fair and estimated daily discharges, which are poor. No regulation. Diversions for irrigation upstream from station. Water for irrigation in Lostine River basin diverted from Little Bear Creek, a tributary upstream from station, in sec.32, T.1 S., R.43 E. U.S. Geological Survey satellite telemeter at station.

COOPERATION.--Gage height record was collected and discharge measurements made by the Wallowa County Soil and Water Conservation District. Records were provided by the State of Oregon Water Resources Department. Discharge measurements and records were reviewed by the U.S. Geological Survey.

AVERAGE DISCHARGE.--71 years (water years 1925-85, 1996-2005), 114 ft³/s, 82,480 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,150 ft³/s May 30, 2003, gage height, 4.37 ft, from rating curve extended above 800 ft³/s; maximum gage height, 5.38 ft Jan. 24, 1984 (result of ice jam); minimum daily discharge, 3 ft³/s Jan. 20, Feb. 1, 1937.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16	0115	*707	*3.33	No other peak greater than base discharge.			

Minimum discharge, 8.0 ft³/s, Sept. 23.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	28	e26	41	43	26	90	237	368	137	18	9.5
2	28	31	e26	34	43	25	82	222	303	122	17	9.3
3	26	34	e27	e27	41	25	84	253	270	104	16	9.2
4	25	29	e27	e23	40	24	83	351	269	91	16	9.2
5	24	31	e25	e23	39	24	79	387	288	83	15	9.1
6	24	31	e26	e24	37	24	78	513	264	78	15	9.0
7	23	32	e27	e34	35	25	110	532	227	74	14	8.9
8	23	33	e27	e35	36	26	140	434	195	67	14	8.7
9	25	35	e34	e35	39	27	129	470	173	77	13	8.5
10	24	37	38	e34	41	28	115	428	161	70	13	9.8
11	23	38	81	e33	49	30	108	393	162	61	13	9.8
12	22	39	94	e30	41	32	105	377	159	54	12	9.4
13	22	38	86	e31	34	32	96	373	149	49	12	9.2
14	21	37	82	e27	31	31	89	426	159	44	12	9.0
15	21	36	76	e27	30	31	84	526	179	40	12	8.8
16	20	36	69	e29	e30	31	84	645	205	36	11	8.7
17	23	35	66	e30	e30	31	126	512	218	35	11	8.7
18	28	34	62	e90	e33	30	129	526	189	32	11	8.7
19	25	32	59	e130	e33	30	125	468	165	31	11	8.4
20	24	30	57	e102	e32	31	117	439	177	29	11	8.5
21	29	28	52	66	e30	31	118	400	223	27	11	8.2
22	29	32	51	62	e28	29	123	443	240	25	11	8.2
23	30	29	e42	61	27	30	152	427	210	24	10	8.4
24	29	31	e52	60	27	29	191	384	187	22	10	8.9
25	27	36	e50	58	26	28	292	342	182	21	10	8.7
26	28	32	e49	57	25	28	338	400	169	20	10	8.6
27	28	30	e48	56	25	116	500	488	195	20	9.8	8.4
28	30	29	e43	54	26	179	360	516	210	19	9.7	8.3
29	30	e21	e42	51	---	148	309	529	165	18	9.8	8.3
30	31	e26	38	49	---	120	279	452	149	18	9.7	8.4
31	30	---	37	47	---	101	---	390	---	18	9.6	---
TOTAL	801	970	1,519	1,460	951	1,402	4,715	13,283	6,210	1,546	377.6	264.8
MEAN	25.8	32.3	49.0	47.1	34.0	45.2	157	428	207	49.9	12.2	8.83
MAX	31	39	94	130	49	179	500	645	368	137	18	9.8
MIN	20	21	25	23	25	24	78	222	149	18	9.6	8.2
AC-FT	1,590	1,920	3,010	2,900	1,890	2,780	9,350	26,350	12,320	3,070	749	525

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 2005, BY WATER YEAR (WY)

	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
MEAN	24.8	40.0	49.3	44.4	48.3	67.2	171	373	395	117	20.1	15.9																																																																					
MAX	160	220	195	141	192	186	422	682	869	388	37.5	44.2																																																																					
(WY)	(1928)	(1928)	(1996)	(1984)	(1996)	(1972)	(1936)	(1928)	(1974)	(1943)	(1975)	(1941)																																																																					
MIN	7.58	8.20	7.29	5.16	4.46	11.1	49.6	138	112	18.6	8.10	6.33																																																																					
(WY)	(1936)	(1953)	(1937)	(1937)	(1937)	(1977)	(1975)	(1977)	(1926)	(1977)	(1940)	(1935)																																																																					

GRANDE RONDE RIVER BASIN

13330500 BEAR CREEK NEAR WALLOWA, OR—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1925 - 2005	
ANNUAL TOTAL	40,318		33,499.4			
ANNUAL MEAN	110		91.8		114	
HIGHEST ANNUAL MEAN					178	
LOWEST ANNUAL MEAN					46.2	
HIGHEST DAILY MEAN	806	May 27	645	May 16	1,480	Jun 17, 1974
LOWEST DAILY MEAN	11	Jan 6	8.2	Sep 21	3.0	Jan 20, 1937
ANNUAL SEVEN-DAY MINIMUM	14	Jan 1	8.4	Sep 17	3.9	Jan 19, 1937
ANNUAL RUNOFF (AC-FT)	79,970		66,450		82,480	
10 PERCENT EXCEEDS	318		283		346	
50 PERCENT EXCEEDS	40		33		42	
90 PERCENT EXCEEDS	20		10		11	

e Estimated



2005 Water Year
 GRANDE RONDE RIVER BASIN

13330500 BEAR CREEK NEAR WALLOWA, OR

Latitude: 45° 31 ' 37"

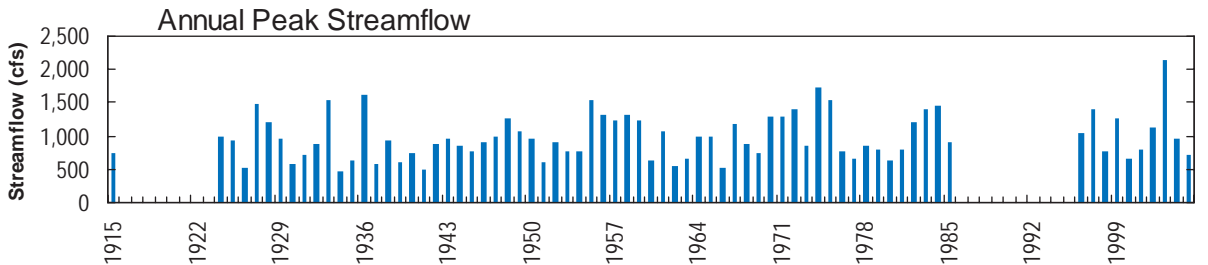
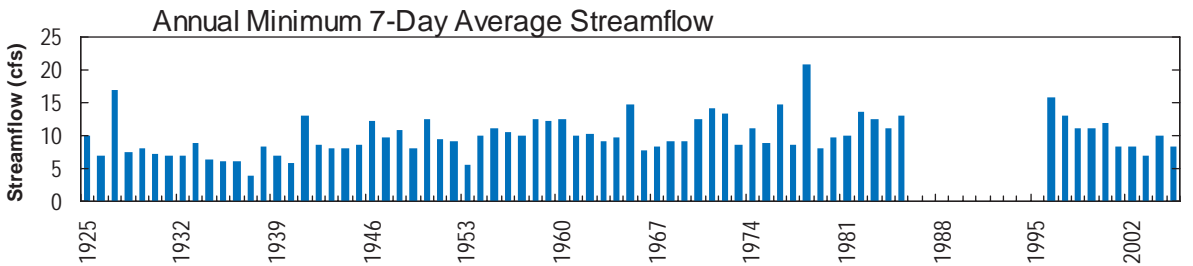
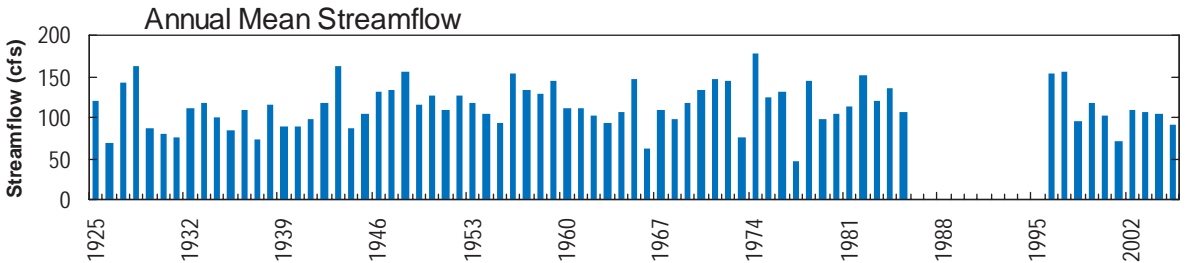
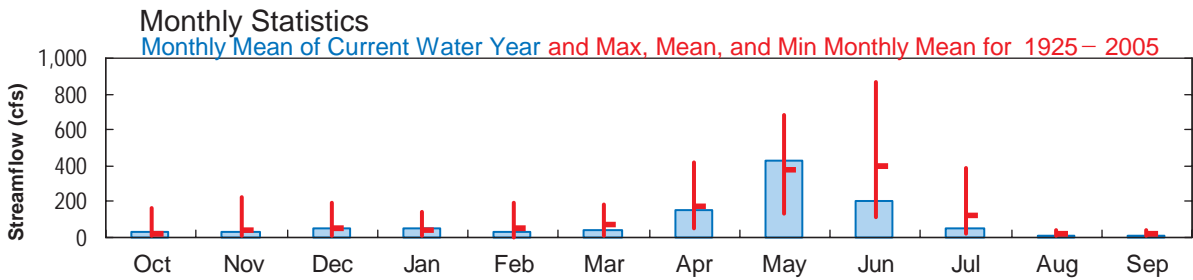
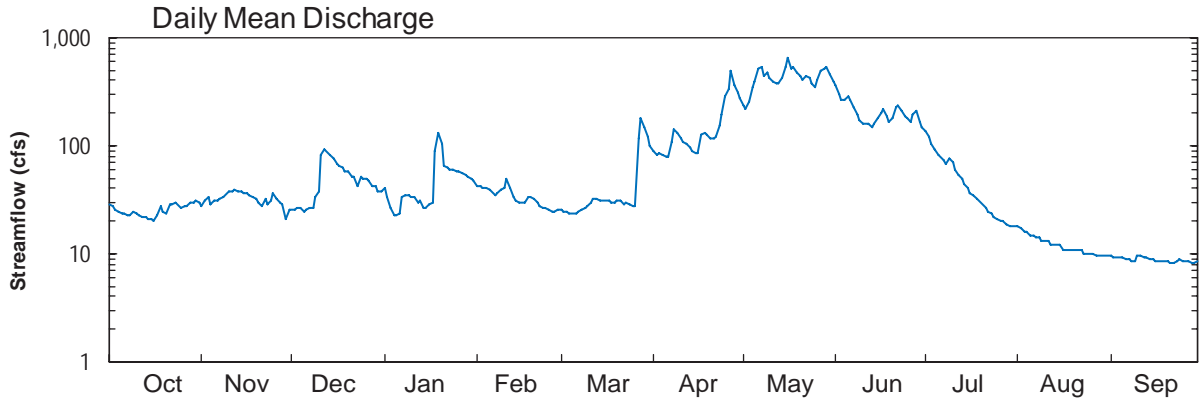
Longitude: 117° 33 ' 05"

Hydrologic Unit Code: 17060105

Wallowa County

Datum: 3250.00 feet

Drainage Area: 68 mi²



GRANDE RONDE RIVER BASIN

13331450 WALLOWA RIVER BELOW WATER CANYON, NEAR WALLOWA, OR

LOCATION.--Lat 45°36'30", long 117°36'55", in NW ¼ SW ¼ sec.31, T.2 N., R.42 E., Wallowa County, Hydrologic Unit 17060105, on left bank, 160 ft upstream from bridge, approximately 6 mi east of Wallowa and at mile 18.3.

DRAINAGE AREA.--628 mi².

PERIOD OF RECORD.--August 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,760 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Wallowa Lake. Many diversions for irrigation upstream from station.

COOPERATION.--Gage height record was collected and discharge measurements made by the Wallowa County Soil and Water Conservation District. Records were provided by the State of Oregon Water Resources Department. Discharge measurements and records were reviewed by the U.S. Geological Survey.

AVERAGE DISCHARGE.--10 years (water years 1996-2005), 620 ft³/s, 449,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,640 ft³/s Feb 9, 1996, gage height, 4.76 ft; minimum discharge, 102 ft³/s July 29, 1998.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16	0715	*2,510	*3.27	No other peak above base discharge.			

Minimum discharge, 110 ft³/s, Aug. 6.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	357	317	289	293	336	272	456	672	1,390	946	144	174
2	357	327	283	288	335	270	454	615	1,180	869	144	152
3	350	347	278	262	330	272	488	663	1,060	765	143	138
4	347	330	278	247	328	268	500	778	1,010	688	148	147
5	337	326	272	250	328	264	472	956	1,080	591	153	151
6	341	325	273	242	317	263	461	1,490	1,020	540	118	159
7	340	321	281	261	304	265	486	1,610	916	500	115	166
8	332	321	301	265	305	266	527	1,380	822	457	121	156
9	344	318	316	269	298	267	509	1,580	729	535	125	176
10	345	322	329	272	295	268	491	1,560	680	493	135	204
11	337	324	401	263	295	268	486	1,420	694	434	135	197
12	334	324	432	264	312	270	511	1,310	714	413	131	204
13	328	323	401	266	326	267	519	1,300	722	399	135	201
14	326	319	392	261	302	266	502	1,360	714	375	132	191
15	325	316	381	254	271	270	485	1,680	788	340	127	199
16	324	318	365	261	269	269	479	2,380	868	316	121	193
17	328	319	360	265	271	274	580	1,950	934	308	127	179
18	372	314	353	341	270	269	572	1,640	902	284	129	183
19	346	309	350	472	285	270	567	1,730	804	263	126	182
20	339	304	340	419	289	271	542	1,660	824	241	128	185
21	344	287	323	398	290	272	552	1,520	997	219	133	189
22	347	305	328	389	282	271	540	1,560	1,130	212	130	184
23	349	303	298	382	273	274	565	1,560	1,080	219	139	184
24	340	311	304	378	274	280	611	1,420	971	213	156	198
25	331	328	316	374	272	273	781	1,320	944	208	173	213
26	331	317	311	371	269	268	926	1,290	916	191	166	219
27	329	303	303	369	267	455	1,040	1,350	1,000	182	162	208
28	327	302	295	365	268	697	1,030	1,490	1,120	176	162	212
29	327	270	306	359	---	575	901	1,630	1,020	150	164	223
30	324	273	307	354	---	508	780	1,720	973	139	168	224
31	324	---	299	347	---	472	---	1,500	---	134	170	---
TOTAL	10,482	9,423	10,065	9,801	8,261	9,714	17,813	44,094	28,002	11,800	4,360	5,591
MEAN	338	314	325	316	295	313	594	1,422	933	381	141	186
MAX	372	347	432	472	336	697	1,040	2,380	1,390	946	173	224
MIN	324	270	272	242	267	263	454	615	680	134	115	138
AC-FT	20,790	18,690	19,960	19,440	16,390	19,270	35,330	87,460	55,540	23,410	8,650	11,090
CFSM	0.54	0.50	0.52	0.50	0.47	0.50	0.95	2.26	1.49	0.61	0.22	0.30
IN.	0.62	0.56	0.60	0.58	0.49	0.58	1.06	2.61	1.66	0.70	0.26	0.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2005, BY WATER YEAR (WY)

	338	385	399	384	462	571	733	1,283	1,555	727	292	318
MEAN	338	385	399	384	462	571	733	1,283	1,555	727	292	318
MAX	436	743	864	747	1,124	830	1,122	1,955	2,508	1,472	463	454
(WY)	(1998)	(1996)	(1996)	(1997)	(1996)	(1997)	(1997)	(1997)	(1997)	(1997)	(1996)	(1997)
MIN	261	258	263	239	227	313	552	836	526	285	141	166
(WY)	(2002)	(2004)	(2003)	(2001)	(2001)	(2005)	(2001)	(2002)	(2001)	(2001)	(2005)	(2001)

GRANDE RONDE RIVER BASIN

13331450 WALLOWA RIVER BELOW WATER CANYON, NEAR WALLOWA, OR—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1996 - 2005	
ANNUAL TOTAL	207,013		169,406			
ANNUAL MEAN	566		464		620	
HIGHEST ANNUAL MEAN					952 1997	
LOWEST ANNUAL MEAN					395 2001	
HIGHEST DAILY MEAN	2,510	May 28	2,380	May 16	3,900	Feb 9, 1996
LOWEST DAILY MEAN	218	Jan 6	115	Aug 7	109	Jul 29, 1998
ANNUAL SEVEN-DAY MINIMUM	222	Jan 4	126	Aug 6	123	Aug 21, 2001
ANNUAL RUNOFF (AC-FT)	410,600		336,000		449,500	
ANNUAL RUNOFF (CFSM)	0.901		0.739		0.988	
ANNUAL RUNOFF (INCHES)	12.26		10.03		13.42	
10 PERCENT EXCEEDS	1,330		1,020		1,430	
50 PERCENT EXCEEDS	400		323		409	
90 PERCENT EXCEEDS	271		165		238	

GRANDE RONDE RIVER BASIN

13331450 WALLOWA RIVER BELOW WATER CANYON, NEAR WALLOWA, OR—Continued



2005 Water Year
GRANDE RONDE RIVER BASIN

13331450 WALLOWA RIVER BELOW WATER CANYON, NR WALLOWA, OR

Latitude: 45° 36' 30"

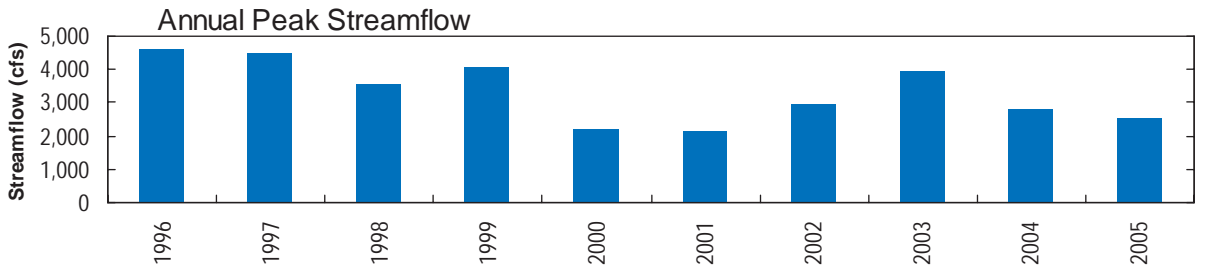
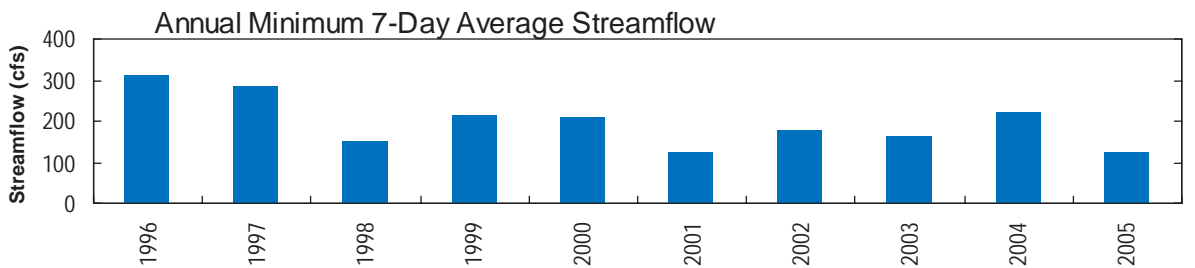
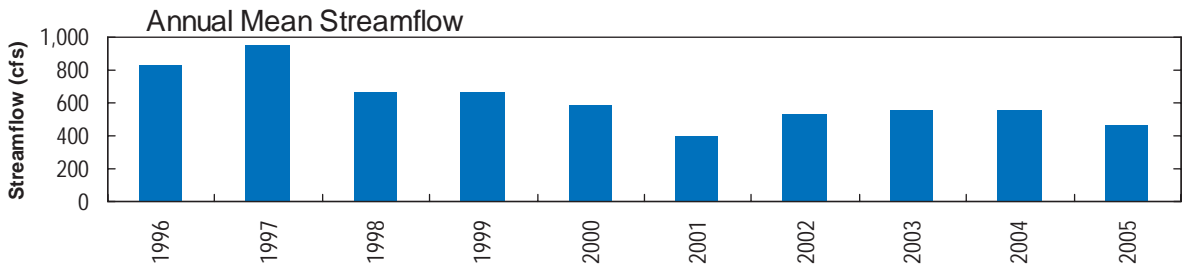
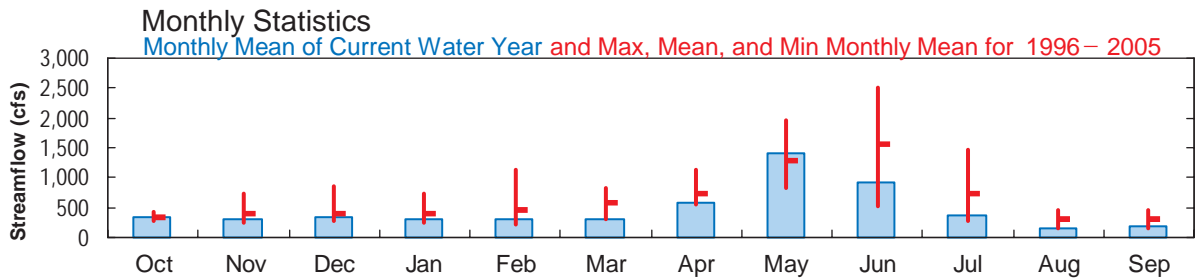
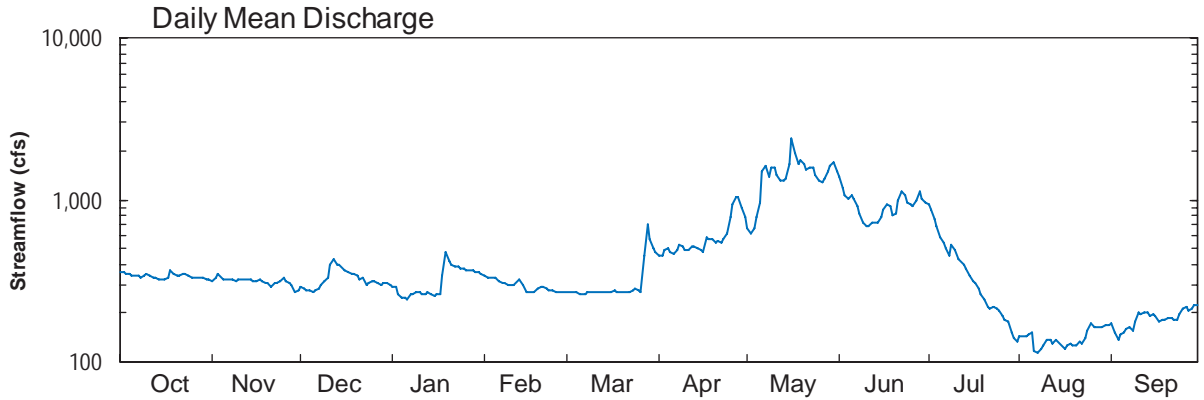
Longitude: 117° 36' 55"

Hydrologic Unit Code: 17060105

Wallowa County

Datum: 2760 feet

Drainage Area: 628 mi²



GRANDE RONDE RIVER BASIN

13331500 MINAM RIVER AT MINAM, OR
(Hydrologic bench-mark station)

LOCATION.--Lat 45°37'12", long 117°43'32", in SW ¼ SW ¼ sec.29, T.2 N., R.41 E., Wallowa County, Hydrologic Unit 17060105, on left bank 2.3 mi downstream from Squaw Creek, 0.3 mi west of Minam and at mile 0.3.

DRAINAGE AREA.--240 mi², approximately.

PERIOD OF RECORD.--June 1912 to March 1914, September 1965 to current year. Monthly discharge only for some periods, published in WSP 1317.

GAGE.--Water-stage recorder. Datum of gage is 2,540.48 ft above NGVD of 1929. June 1912 to March 1914, nonrecording gage at approximately same site at different datum.

REMARKS.--Records good except those for the period Nov. 20 to Feb. 20, which are fair and estimated daily discharges, which are poor. No regulation. Minam Lake, capacity 440 acre-ft, has stored and diverted flow from Minam River since 1917 for irrigation in Lostine River basin. Continuous water temperature October 1965 to September 1985. Chemical analysis water years 1966 to 1995.

AVERAGE DISCHARGE.--41 years (water years 1913, 1966-2005), 453 ft³/s, 25.62 in/yr, 327,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,260 ft³/s June 16, 1974, gage height, 6.89 ft; maximum gage height, 7.3 ft May 28, 1913, datum then in use; minimum discharge, 10 ft³/s Dec. 6, 1972, Jan. 10, 1973, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,450 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 7	0415	1,980	3.48	May 30	0245	1,920	3.42
May 16	0700	*2,730	*4.18				

Minimum discharge, 54 ft³/s, Sept. 29, 30, gage height, 0.33 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	117	110	130	142	183	130	347	730	1,520	741	138	68
2	114	116	124	140	180	127	331	720	1,260	724	134	67
3	110	128	103	120	179	127	355	747	1,110	636	129	66
4	108	114	e110	95	178	125	412	868	1,060	568	123	65
5	107	117	e110	86	176	122	410	1,060	1,130	528	119	65
6	106	118	e120	87	163	123	382	1,610	1,050	522	115	64
7	105	117	e120	133	153	125	450	1,880	950	524	111	62
8	102	117	e130	150	148	129	554	1,630	856	500	108	60
9	106	119	131	140	136	131	476	1,790	784	555	105	58
10	113	125	155	141	146	139	414	1,630	736	500	101	65
11	105	128	265	136	142	142	393	1,450	725	455	97	71
12	101	129	311	126	178	151	391	1,350	724	415	96	67
13	99	126	257	136	167	150	383	1,310	691	402	95	67
14	96	122	240	125	148	146	372	1,350	687	371	93	64
15	96	120	234	104	120	148	357	1,670	749	329	91	62
16	95	123	216	122	116	145	357	2,550	817	302	87	60
17	98	120	205	145	122	147	516	2,200	926	285	86	59
18	139	118	195	e180	127	140	567	1,870	863	264	86	60
19	128	117	186	e240	160	141	519	1,830	772	249	85	60
20	119	111	181	281	158	149	468	1,660	743	233	82	58
21	133	92	161	266	145	152	456	1,490	863	220	80	58
22	137	110	167	251	129	145	462	1,460	1,010	209	77	56
23	137	118	136	240	124	145	525	1,420	994	203	76	56
24	132	117	142	235	129	147	605	1,320	908	190	75	58
25	123	140	181	228	127	140	750	1,230	872	180	75	58
26	118	135	175	224	126	136	855	1,240	855	172	74	58
27	118	119	148	223	125	308	969	1,340	903	165	72	58
28	120	115	159	215	128	715	995	1,510	988	156	70	56
29	120	88	197	207	---	605	892	1,660	828	149	68	56
30	118	89	149	198	---	465	790	1,740	759	143	69	55
31	119	---	139	193	---	385	---	1,580	---	141	69	---
TOTAL	3,539	3,518	5,277	5,309	4,113	6,080	15,753	45,895	27,133	11,031	2,886	1,837
MEAN	114	117	170	171	147	196	525	1,480	904	356	93.1	61.2
MAX	139	140	311	281	183	715	995	2,550	1,520	741	138	71
MIN	95	88	103	86	116	122	331	720	687	141	68	55
AC-FT	7,020	6,980	10,470	10,530	8,160	12,060	31,250	91,030	53,820	21,880	5,720	3,640
CFSM	0.48	0.49	0.71	0.71	0.61	0.82	2.19	6.17	3.77	1.48	0.39	0.26
IN.	0.55	0.55	0.82	0.82	0.64	0.94	2.44	7.11	4.21	1.71	0.45	0.28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2005, BY WATER YEAR (WY)

MEAN	93.8	146	184	198	251	320	548	1,311	1,541	599	149	95.3
MAX	173	508	765	470	977	697	888	2,016	3,125	1,392	257	180
(WY)	(1969)	(1996)	(1996)	(1997)	(1996)	(1986)	(1913)	(1971)	(1974)	(1975)	(1974)	(1978)
MIN	38.1	56.1	62.4	59.6	56.9	66.7	235	484	494	125	72.6	45.9
(WY)	(1988)	(1994)	(1979)	(1977)	(1977)	(1977)	(1967)	(1977)	(1992)	(1977)	(1966)	(1987)

GRANDE RONDE RIVER BASIN
13331500 MINAM RIVER AT MINAM, OR—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1913 - 2005	
ANNUAL TOTAL	166,083		132,371			
ANNUAL MEAN	454		363		453	
HIGHEST ANNUAL MEAN					713	
LOWEST ANNUAL MEAN					189	
HIGHEST DAILY MEAN	2,720	May 28	2,550	May 16	5,160	Jun 15, 1974
LOWEST DAILY MEAN	34	Jan 5	55	Sep 30	11	Dec 6, 1972
ANNUAL SEVEN-DAY MINIMUM	50	Jan 1	57	Sep 24	15	Dec 6, 1972
ANNUAL RUNOFF (AC-FT)	329,400		262,600		327,800	
ANNUAL RUNOFF (CFSM)	1.89		1.51		1.89	
ANNUAL RUNOFF (INCHES)	25.74		20.52		25.62	
10 PERCENT EXCEEDS	1,330		990		1,290	
50 PERCENT EXCEEDS	174		145		193	
90 PERCENT EXCEEDS	102		75		72	

e Estimated



2005 Water Year
 GRANDE RONDE RIVER BASIN

13331500 MINAM RIVER NEAR MINAM, OR

Latitude: 45° 37' 12"

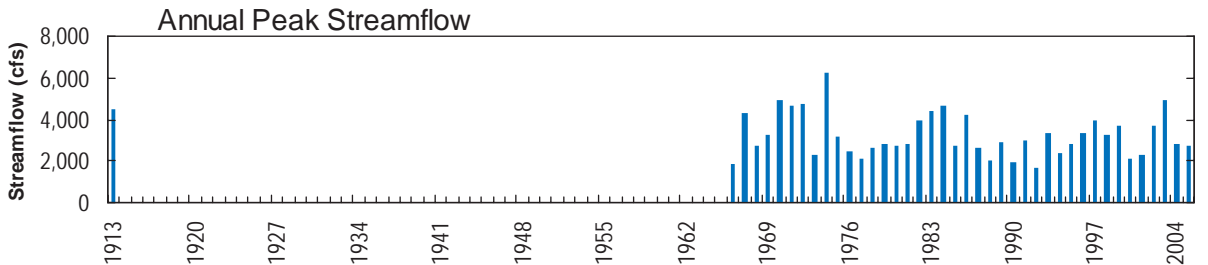
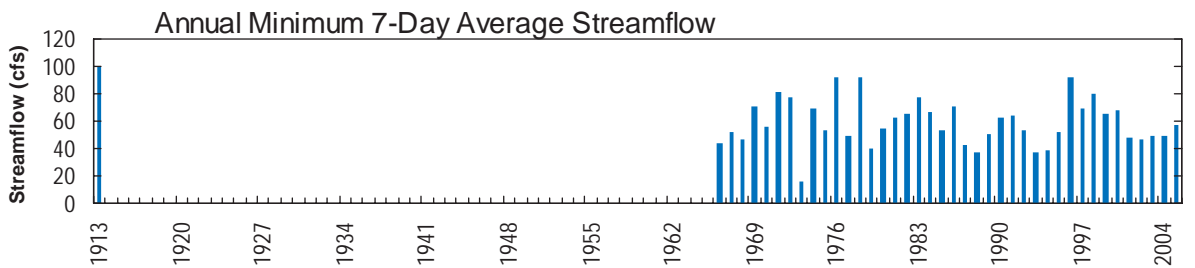
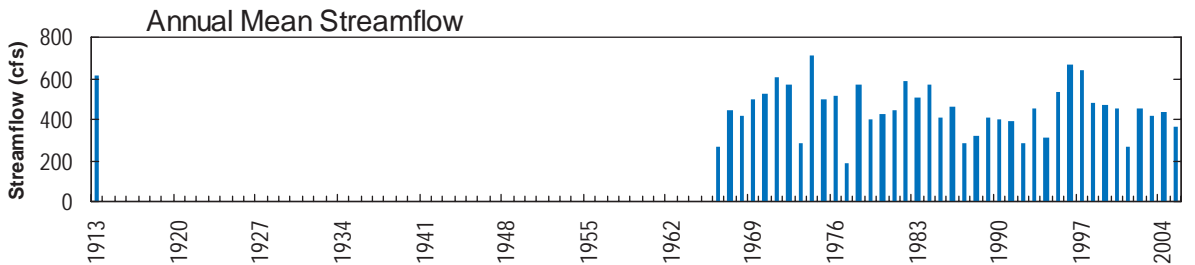
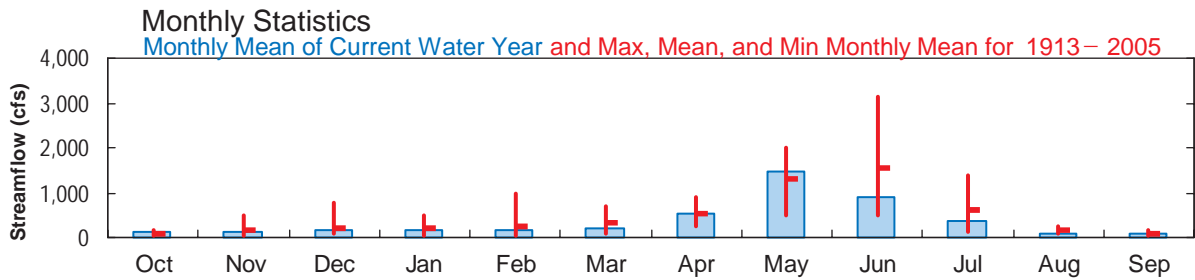
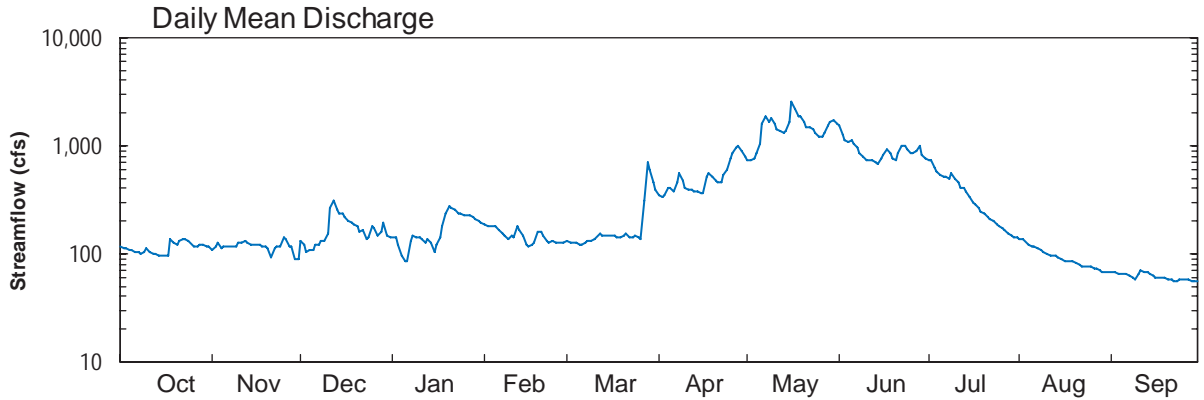
Longitude: 117° 43' 32"

Hydrologic Unit Code: 17060105

Wallowa County

Datum: 2540.48 feet

Drainage Area: 240 mi²



GRANDE RONDE RIVER BASIN

13333000 GRANDE RONDE RIVER AT TROY, OR

LOCATION.--Lat 45°56'45", long 117°27'00", in NE ¼ NW ¼ sec.4, T.5 N., R.43 E., Wallowa County, Hydrologic Unit 17060106, on left bank, on upstream side of bridge at Troy 100 ft downstream from Wenaha River and at mile 45.3.

DRAINAGE AREA.--3,275 mi².

PERIOD OF RECORD.--August 1944 to current year. Monthly discharge only August 1944, published in WSP 1317.

REVISED RECORDS.--WSP 1397: 1946(M), 1948-50.

GAGE.--Water-stage recorder. Datum of gage is 1,585.98 ft above NGVD of 1929. Aug. 17, 1944 to Sept. 30, 1949, nonrecording gage at datum 10.85 ft lower. Oct. 1, 1949 to Sept. 5, 1963, water-stage recorder at datum 1.15 ft higher. Sept. 6, 1963 to Oct. 19, 1994, water-stage recorder at site 500 ft downstream, at present datum.

REMARKS.--No estimated daily discharges. Records good. Flow slightly regulated by Wallowa Lake and small reservoirs. Diversions for irrigation upstream from station, chiefly in vicinity of LaGrande, Enterprise, and Wallowa; transbasin diversions for irrigation from Big Sheep Creek and tributaries in Imnaha River Basin to Wallowa River Basin, and from South Fork Catherine Creek to the Powder River Basin. U.S. Geological Survey satellite telemeter and National Weather Service telemeter at station.

AVERAGE DISCHARGE.--61 years (water years 1945-2005), 3,034 ft³/s, 2,198,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,800 ft³/s Feb. 9, 1996, gage height, 13.76 ft, from rating curve extended above 20,000 ft³/s; minimum discharge, 321 ft³/s Nov. 25, 1993; result of freezeup, but may have been less during period of ice effect that day.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 17	0400	*10,700	*7.88	No other peak greater than base discharge.			

Minimum discharge, 410 ft³/s, Sept. 4, gage height, 3.16 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	771	844	824	1,020	1,450	1,020	3,520	3,740	4,920	2,360	500	461
2	770	830	865	1,010	1,380	1,040	3,360	3,440	4,420	2,240	505	463
3	761	889	875	951	1,350	1,050	3,390	3,440	3,980	2,030	501	439
4	755	896	815	839	1,350	1,070	4,080	3,660	3,690	1,840	499	421
5	747	854	789	830	1,340	1,070	3,850	4,060	3,610	1,680	501	427
6	725	861	751	882	1,300	1,080	3,560	5,580	3,690	1,570	499	434
7	741	853	868	877	1,230	1,110	3,500	8,370	3,440	1,500	460	441
8	725	853	1,010	950	1,180	1,190	3,790	7,900	3,120	1,380	453	447
9	737	842	1,130	978	1,130	1,250	3,610	7,930	2,840	1,380	452	436
10	784	841	1,250	945	1,110	1,340	3,310	8,250	2,650	1,570	453	474
11	775	849	1,890	900	1,070	1,370	3,110	7,740	2,530	1,390	457	509
12	757	852	2,280	860	1,130	1,400	3,090	7,020	2,490	1,230	457	501
13	753	858	2,160	880	1,210	1,420	3,150	6,520	2,460	1,200	452	507
14	735	866	2,020	879	1,200	1,400	3,020	6,220	2,360	1,120	456	499
15	715	850	2,060	831	1,090	1,370	2,850	6,670	2,380	1,030	450	484
16	705	851	1,930	804	983	1,340	2,750	9,180	2,440	945	443	493
17	714	846	1,770	867	969	1,360	3,360	10,100	2,610	888	438	486
18	826	827	1,630	1,520	991	1,320	3,650	9,160	2,660	861	451	474
19	889	837	1,540	2,940	1,000	1,280	3,600	8,980	2,500	799	451	475
20	835	825	1,450	2,620	1,080	1,310	3,460	8,370	2,370	766	439	471
21	861	798	1,360	2,420	1,080	1,340	3,390	7,820	2,510	722	435	473
22	920	765	1,260	2,230	1,040	1,340	3,360	7,310	2,830	678	433	477
23	960	810	1,190	2,070	1,000	1,370	3,430	7,230	2,860	668	425	471
24	934	894	1,080	1,940	982	1,390	3,620	6,580	2,650	665	434	477
25	893	1,190	1,090	1,830	974	1,360	3,890	5,990	2,450	639	449	497
26	867	1,300	1,110	1,750	974	1,330	4,320	5,570	2,430	617	466	515
27	876	1,110	1,130	1,700	973	3,010	4,630	5,330	2,400	590	457	518
28	868	1,020	1,070	1,660	990	6,820	4,750	5,370	2,840	576	447	506
29	858	921	1,080	1,610	---	5,490	4,440	5,450	2,640	556	447	510
30	870	837	1,110	1,550	---	4,650	4,060	5,660	2,480	520	451	527
31	867	---	1,110	1,510	---	3,910	---	5,210	---	508	459	---
TOTAL	24,994	26,669	40,497	42,653	31,556	56,800	107,900	203,850	87,250	34,518	14,220	14,313
MEAN	806	889	1,306	1,376	1,127	1,832	3,597	6,576	2,908	1,113	459	477
MAX	960	1,300	2,280	2,940	1,450	6,820	4,750	10,100	4,920	2,360	505	527
MIN	705	765	751	804	969	1,020	2,750	3,440	2,360	508	425	421
AC-FT	49,580	52,900	80,330	84,600	62,590	112,700	214,000	404,300	173,100	68,470	28,210	28,390

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2005, BY WATER YEAR (WY)

MEAN	868	1,215	1,936	2,146	3,139	4,315	6,263	7,301	5,592	2,112	830	758
MAX	2,559	3,766	7,212	6,280	14,390	11,520	11,390	13,820	11,610	4,951	1,385	1,291
(WY)	(1960)	(1996)	(1996)	(1974)	(1996)	(1972)	(1997)	(1948)	(1974)	(1975)	(1984)	(1984)
MIN	528	618	673	702	769	888	2,257	2,368	1,501	520	438	409
(WY)	(1988)	(1988)	(2003)	(1979)	(1977)	(1977)	(1968)	(1977)	(1992)	(1977)	(1992)	(2001)

GRANDE RONDE RIVER BASIN

13333000 GRANDE RONDE RIVER AT TROY, OR—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1945 - 2005	
ANNUAL TOTAL	999,090		685,220			
ANNUAL MEAN	2,730		1,877		3,034	
HIGHEST ANNUAL MEAN					5,253	
LOWEST ANNUAL MEAN					1,136	
HIGHEST DAILY MEAN	11,300	May 29	10,100	May 17	42,200	Feb 9, 1996
LOWEST DAILY MEAN	520	Jan 6	421	Sep 4	344	Aug 20, 1977
ANNUAL SEVEN-DAY MINIMUM	577	Aug 11	435	Sep 3	361	Aug 18, 1977
ANNUAL RUNOFF (AC-FT)	1,982,000		1,359,000		2,198,000	
10 PERCENT EXCEEDS	6,440		4,070		7,360	
50 PERCENT EXCEEDS	1,270		1,080		1,600	
90 PERCENT EXCEEDS	727		472		680	



2005 Water Year
 GRANDE RONDE RIVER BASIN

13333000 GRANDE RONDE RIVER AT TROY, OR

Latitude: 45° 56' 45"

Longitude: 117° 27' 00"

Hydrologic Unit Code: 17060106

Wallowa County

Datum: 1585.98 feet

Drainage Area: 3275 mi²

