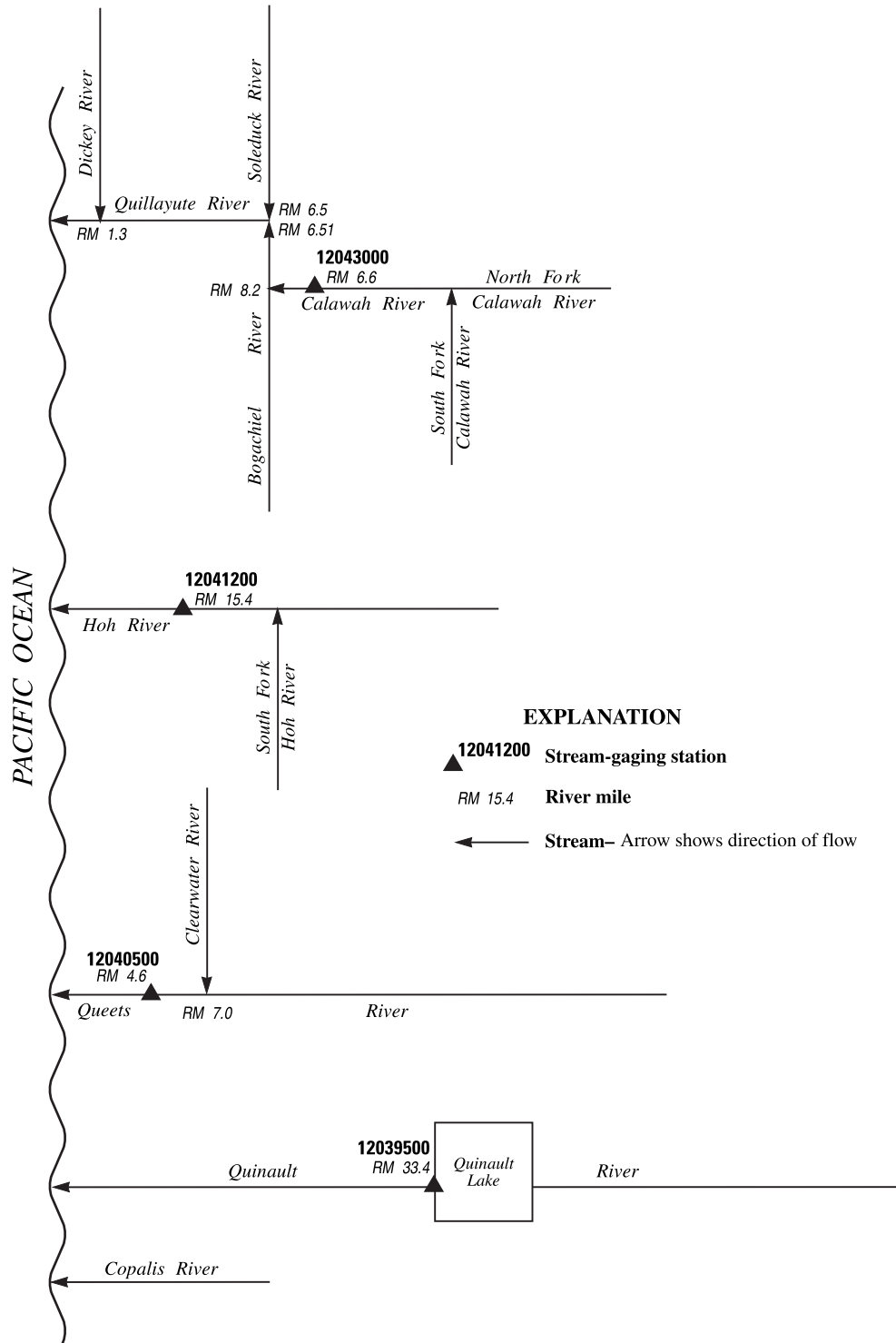


**Figure 12.** Location of surface-water stations in the Quinault, Queets, Hoh and Quillayute River Basins.



**Figure 13.** Schematic diagram showing surface-water stations in the Quinault, Queets, Hoh, and Quillayute River Basins.

QUINULT RIVER BASIN

12039500 QUINULT RIVER AT QUINULT LAKE, WA

LOCATION.--Lat 47°27'28", long 123°53'17", in SW 1/4 NE 1/4 sec.25, T.23 N., R.10 W., Grays Harbor County, Hydrologic Unit 17100102, Quinault Indian Reservation, on left bank at outlet of Quinault Lake, 50 ft downstream from Olympic Highway bridge on U.S. Highway 101, 2.0 mi southwest of Quinault, and at mile 33.4.

DRAINAGE AREA.--264 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1911 to current year. Monthly discharge for some months during the 1923-25, 1933 water years, published in WSP 1316.

REVISED RECORDS.--WSP 442: Drainage area. WSP 1286: 1915-16(M), 1934, 1936-39(M). WSP 1316: 1923, 1925, 1933. WSP 1635: 1917.

GAGE.--Water-stage recorder. Datum of gage is 178.44 ft above NGVD of 1929. Prior to Sept. 30, 1916, nonrecording gages at sites within 4 mi northeast of present site, at different datum. Oct. 1, 1916, to May 2, 1935, water-stage recorder at site 300 ft downstream from present site at datum 0.36 ft higher than present datum.

REMARKS.--Records good except estimated daily discharges, which are fair. Flow affected by natural storage in Quinault Lake. No diversions upstream from station. Chemical analyses July 1959 to June 1960, October 1962 to September 1970 (partial-record station), October 1971 to September 1974. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--92 years (water years 1912-2003), 2,863 ft<sup>3</sup>/s, 147.27 in/yr, 2,074,000 acre-ft/yr. Includes mean discharges for water years 1923-25, 1933, which were estimated for WSP 1316.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,200 ft<sup>3</sup>/s Nov. 4, 1955, gage height, 20.51 ft; minimum daily discharge, 250 ft<sup>3</sup>/s Oct. 29, 30, 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1909 reached a stage of approximately 22 ft, present datum, discharge, 52,600 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 12,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov 19	1800	15,900	10.66	Jan 26	1800	17,000	11.04
Dec 15	0900	14,200	10.06	Mar 14	0200	*29,000	*14.72
Jan 4	2300	14,100	10.02	Mar 22	1600	12,400	9.41

Minimum daily discharge, 285 ft<sup>3</sup>/s, Nov. 5.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	394	e295	1,660	3,130	9,160	1,740	3,610	1,810	2,180	1,550	692	e375
2	386	e295	1,560	8,010	6,980	1,630	3,500	1,840	2,120	1,450	673	e365
3	401	e290	1,460	12,100	5,480	1,550	3,330	1,860	2,040	1,340	650	e360
4	414	e290	1,410	11,700	4,490	1,460	3,060	1,870	2,010	1,250	630	e360
5	419	e285	1,350	12,200	3,820	1,410	2,830	1,850	2,050	1,200	609	e360
6	415	e300	1,290	8,320	3,340	1,490	2,700	1,780	2,200	1,180	595	e370
7	406	617	1,230	6,160	2,970	1,550	2,770	1,680	2,430	1,160	577	e380
8	400	1,730	1,170	4,950	2,690	1,510	4,510	1,600	2,580	1,150	562	e395
9	394	3,850	1,130	4,200	2,470	1,770	6,260	1,530	2,570	1,120	550	399
10	e385	4,740	1,410	3,680	2,280	2,850	5,660	1,490	2,470	1,090	540	416
11	e380	5,840	2,250	3,310	2,120	3,990	4,800	1,480	2,290	1,080	542	463
12	e375	7,200	7,270	3,820	1,990	7,090	4,270	1,530	2,130	1,100	544	487
13	e370	8,970	9,590	3,860	1,870	23,600	4,030	1,600	2,040	1,170	528	483
14	e365	7,460	9,670	3,840	1,780	27,100	3,950	1,660	1,990	1,220	515	464
15	e360	5,510	13,700	3,550	1,740	18,600	3,720	1,710	1,880	1,200	501	442
16	e355	4,600	12,100	3,140	1,990	12,400	3,440	1,700	1,770	1,140	490	438
17	e350	5,570	9,000	2,820	2,250	8,880	3,200	1,640	1,720	1,070	484	423
18	e345	5,750	6,790	2,640	2,230	6,690	2,990	1,550	1,770	1,010	476	432
19	e350	14,300	5,310	2,560	2,160	5,740	2,740	1,470	1,740	970	469	508
20	e355	12,500	4,340	2,420	2,370	6,520	2,530	1,400	1,630	937	462	543
21	e350	8,060	3,660	2,300	3,030	6,970	2,380	1,380	1,530	922	454	530
22	e345	5,660	3,160	3,080	3,580	11,000	2,260	1,400	1,460	903	445	508
23	e340	4,300	2,790	8,250	3,320	10,400	2,200	1,490	1,380	881	435	482
24	e335	3,470	2,520	8,570	2,890	7,510	2,220	1,750	1,310	860	427	458
25	e330	2,910	3,400	7,520	2,530	5,740	2,180	2,100	1,270	831	416	435
26	e325	2,530	6,070	13,900	2,250	4,760	2,070	2,140	1,290	799	417	417
27	e320	2,250	5,490	13,300	2,030	4,240	1,970	2,030	1,360	776	409	403
28	e315	2,050	5,240	8,890	1,870	3,770	1,880	2,080	1,420	756	401	393
29	e310	1,890	4,330	6,570	---	3,350	1,830	2,220	1,460	739	395	e380
30	e305	1,770	3,740	6,210	---	3,120	1,820	2,240	1,510	722	e385	e370
31	e300	---	3,260	10,100	---	3,420	---	2,230	---	709	e380	---
TOTAL	11,194	125,282	137,350	195,100	85,680	201,850	94,710	54,110	55,600	32,285	15,653	12,839
MEAN	361	4,176	4,431	6,294	3,060	6,511	3,157	1,745	1,853	1,041	505	428
MAX	419	14,300	13,700	13,900	9,160	27,100	6,260	2,240	2,580	1,550	692	543
MIN	300	285	1,130	2,300	1,740	1,410	1,820	1,380	1,270	709	380	360
AC-FT	22,200	248,500	272,400	387,000	169,900	400,400	187,900	107,300	110,300	64,040	31,050	25,470
CFSM	1.37	15.8	16.8	23.8	11.6	24.7	12.0	6.61	7.02	3.94	1.91	1.62
IN.	1.58	17.65	19.35	27.49	12.07	28.44	13.35	7.62	7.83	4.55	2.21	1.81

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 2003, BY WATER YEAR (WY)

MEAN	2,271	4,219	4,900	4,318	3,817	2,992	2,670	2,825	2,747	1,796	940	998
MAX	6,703	11,220	10,390	11,390	8,244	7,752	4,484	4,575	5,116	3,775	2,491	3,573
(WY)	(1922)	(1991)	(1980)	(1953)	(1961)	(1972)	(1943)	(1948)	(1956)	(1999)	(1999)	(1920)
MIN	266	410	1,676	1,177	673	1,162	1,182	1,635	982	585	422	367
(WY)	(1988)	(1937)	(1986)	(1937)	(1929)	(1912)	(1912)	(1920)	(1992)	(1926)	(1944)	(1998)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1912 - 2003

ANNUAL TOTAL	1,100,434	1,021,653	
ANNUAL MEAN	3,015	2,799	2,867
HIGHEST ANNUAL MEAN			4,072
LOWEST ANNUAL MEAN			1,785
HIGHEST DAILY MEAN	33,800	Jan 8	27,100
LOWEST DAILY MEAN	285	Nov 5	285
ANNUAL SEVEN-DAY MINIMUM	294	Oct 31	294
ANNUAL RUNOFF (AC-FT)	2,183,000	2,026,000	2,077,000
ANNUAL RUNOFF (CFSM)	11.4	10.6	10.9
ANNUAL RUNOFF (INCHES)	155.06	143.96	147.58
10 PERCENT EXCEEDS	5,790	6,860	5,530
50 PERCENT EXCEEDS	2,290	1,770	2,170
90 PERCENT EXCEEDS	414	380	662

e Estimated

12040500 QUEETS RIVER NEAR CLEARWATER, WA

LOCATION.--Lat 47°32'17", long 124°18'52", in NE ¼ SW ¼ sec.36, T.24 N., R.13 W., Jefferson County, Hydrologic Unit 17100102, Quinalt Indian Reservation, on right bank 2.4 mi downstream from mouth of Clearwater River, 0.8 mi east of Queets, and at mile 4.6.

DRAINAGE AREA.--445 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1930 to November 1949, water years 1950-67 (annual maximum), April 1974 to current year.

REVISED RECORDS.--WSP 1316: 1931-49(m).

GAGE.--Water-stage recorder. Datum of gage is 14.5 ft above NGVD of 1929 (river-profile survey). Sept. 15, 1930, to Jan. 22, 1935, at datum 4.0 ft higher.

REMARKS.--Records good except estimated daily discharges, which are fair. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station. Chemical analyses October 1977 to September 1993.

AVERAGE DISCHARGE.--48 years (water years 1931-49, 1975-2003), 4,363 ft<sup>3</sup>/s, 133.23 in/yr, 3,161,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 133,000 ft<sup>3</sup>/s Dec. 15, 1999, gage height, 27.18 ft, minimum discharge, 300 ft<sup>3</sup>/s Oct. 21-25, 29, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 42,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov 19	0200	52,200	19.76	Mar 13	0930	*68,100	*21.88
Jan 2	1030	44,400	18.60	Mar 22	0800	43,000	18.38
Jan 26	1030	42,900	18.37				

Minimum discharge, 348 ft<sup>3</sup>/s, Nov. 4, gage height, 6.17 ft.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	460	361	1,790	7,300	11,300	2,100	5,360	1,990	1,460	1,240	649	415
2	443	360	1,670	e30,000	8,090	1,960	6,050	1,950	1,410	989	615	404
3	528	356	1,560	e17,000	6,380	1,940	5,670	1,880	1,350	887	583	401
4	694	352	1,510	e19,000	5,150	1,760	4,740	1,910	1,350	851	572	403
5	578	363	e1,450	e14,000	4,350	1,870	4,390	2,080	1,420	862	563	404
6	537	893	e1,350	8,420	3,770	2,880	4,680	1,780	1,600	899	552	409
7	507	2,580	1,280	e6,500	3,330	2,970	6,850	1,640	1,760	878	541	551
8	490	6,970	1,210	5,180	2,990	2,490	12,900	1,580	1,730	868	528	554
9	487	10,400	1,170	4,400	2,720	6,380	14,200	1,500	1,600	832	520	486
10	473	7,310	3,130	e3,800	2,490	8,490	8,060	1,470	1,500	827	510	501
11	454	8,090	6,860	e3,600	2,300	9,390	7,240	1,460	1,340	859	547	924
12	437	11,500	18,900	e7,200	2,140	21,400	6,360	1,510	1,320	897	774	821
13	425	9,430	e12,000	e3,400	2,000	57,200	6,940	1,490	1,330	1,310	548	591
14	419	8,600	e14,500	5,400	1,890	38,700	6,470	1,520	1,360	1,530	502	495
15	411	4,990	21,600	3,990	2,060	18,600	5,660	1,590	1,250	1,400	495	454
16	409	6,920	14,600	e3,400	4,580	13,100	5,200	1,730	1,150	1,020	509	470
17	409	7,840	10,800	e3,100	4,720	9,960	5,050	1,730	1,170	871	509	501
18	409	14,900	8,480	e2,900	3,500	8,440	4,810	1,550	1,270	803	496	654
19	432	42,400	6,720	2,690	3,290	8,780	4,070	1,420	1,130	791	495	1,760
20	458	16,600	e5,400	2,430	6,530	12,100	3,620	1,350	1,020	801	489	934
21	445	8,800	4,400	e2,350	7,830	14,100	3,280	1,400	968	822	470	659
22	427	6,070	3,850	e7,750	6,740	28,800	2,980	1,410	1,010	797	464	554
23	414	4,660	3,400	12,900	4,700	14,400	2,900	1,570	936	793	455	502
24	406	3,780	e3,500	9,360	3,720	9,360	3,230	1,810	888	749	436	471
25	398	3,190	e18,000	7,940	3,140	7,300	2,870	2,000	894	696	421	451
26	393	2,780	e16,000	30,400	2,750	6,660	2,520	1,680	980	677	433	434
27	390	2,490	e10,000	14,600	2,450	6,560	2,330	1,470	1,080	670	448	429
28	390	2,280	e8,800	9,250	2,270	5,520	2,170	1,680	1,080	667	434	433
29	385	2,080	5,990	7,770	---	4,660	2,090	1,700	1,100	674	421	432
30	375	1,930	6,200	9,190	---	4,320	2,130	1,560	1,150	680	420	426
31	368	---	e4,900	19,600	---	5,490	---	1,550	---	681	418	---
TOTAL	13,851	199,275	221,020	284,820	117,180	337,680	154,820	50,960	37,606	27,321	15,817	16,923
MEAN	447	6,642	7,130	9,188	4,185	10,890	5,161	1,644	1,254	881	510	564
MAX	694	42,400	21,600	30,400	11,300	57,200	14,200	2,080	1,760	1,530	774	1,760
MIN	368	352	1,170	2,350	1,890	1,760	2,090	1,350	888	667	418	401
AC-FT	27,470	395,300	438,400	564,900	232,400	669,800	307,100	101,100	74,590	54,190	31,370	33,570
CFSM	1.00	14.9	16.0	20.6	9.40	24.5	11.6	3.69	2.82	1.98	1.15	1.27
IN.	1.16	16.66	18.48	23.81	9.80	28.23	12.94	4.26	3.14	2.28	1.32	1.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2003, BY WATER YEAR (WY)

MEAN	3,432	7,485	8,315	7,573	6,791	5,394	4,155	3,157	2,427	1,602	1,032	1,352
MAX	10,050	20,100	18,140	23,500	14,040	13,360	7,093	6,263	4,642	4,543	4,396	4,531
(WY)	(1976)	(1991)	(1980)	(1935)	(1999)	(1997)	(1937)	(1948)	(1997)	(1997)	(1991)	(1997)
MIN	348	754	2,435	1,787	1,818	1,876	1,546	1,644	980	682	469	439
(WY)	(1988)	(1937)	(1986)	(1937)	(1993)	(1992)	(1998)	(2003)	(1992)	(1992)	(1938)	(1993)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1931 - 2003

ANNUAL TOTAL	1,619,550	1,477,273	
ANNUAL MEAN	4,437	4,047	4,363
HIGHEST ANNUAL MEAN			6,595
LOWEST ANNUAL MEAN			2,872
HIGHEST DAILY MEAN	61,400	Jan 7	57,200
LOWEST DAILY MEAN	352	Nov 4	352
ANNUAL SEVEN-DAY MINIMUM	362	Oct 30	362
ANNUAL RUNOFF (AC-FT)	3,212,000		2,930,000
ANNUAL RUNOFF (CFSM)	9.97		9.10
ANNUAL RUNOFF (INCHES)	135.39		123.49
10 PERCENT EXCEEDS	9,870		9,330
50 PERCENT EXCEEDS	2,410		2,540
90 PERCENT EXCEEDS	492		714

e Estimated

12041200 HOH RIVER AT U.S. HIGHWAY 101, NEAR FORKS, WA

LOCATION.--Lat 47°48'25", long 124°14'59", in NE 1/4 NE 1/4 sec.33, T.27 N., R.12 W., Jefferson County, Hydrologic Unit 17100101, on left bank 250 ft downstream from U.S. Highway 101, 1.0 mi downstream from Hell Roaring Creek, 11.5 mi southeast of Forks, and at mile 15.4.

DRAINAGE AREA.--253 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 163.64 ft above NGVD of 1929.

REMARKS.--No estimated daily discharges. Records fair. No regulation or diversion upstream from station. Chemical analyses July 1960 to September 1961, November 1961 to September 1970 (partial-record station), October 1971 to September 1974. Prior to November 1961, published as Hoh River near Forks (Spruce). U.S. Geological Survey satellite telemeter at station. Water temperatures November 1970 to April 1971.

AVERAGE DISCHARGE.--43 years (water years 1961-2003), 2,540 ft<sup>3</sup>/s, 136.41 in/yr, 1,840,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 54,500 ft<sup>3</sup>/s Nov. 24, 1990, gage height, 19.61 ft from rating curve extended above 46,000 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 17.74 ft; minimum discharge, 249 ft<sup>3</sup>/s Oct. 23, 1987, gage height, 2.13 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 16,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov 19	0300	17,900	10.52	Jan 26	1200	20,800	11.38
Jan 2	1100	17,000	10.22	Mar 13	0800	*30,900	*14.12

Minimum discharge, 269 ft<sup>3</sup>/s, Nov. 5, gage height, 1.93 ft.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	436	294	1,340	2,970	5,850	1,280	3,350	1,490	1,690	1,680	1,190	644
2	384	277	1,270	12,700	4,190	1,200	3,180	1,600	1,310	1,080	1,080	594
3	492	276	1,210	8,950	3,430	1,170	2,760	1,380	1,510	1,140	990	652
4	756	278	1,150	9,640	2,870	1,110	2,310	1,280	1,520	1,100	961	715
5	670	276	1,070	7,340	2,470	1,200	2,160	1,300	1,670	1,130	925	737
6	682	550	1,010	4,460	2,190	1,490	2,140	1,160	2,010	1,260	898	714
7	663	1,630	969	3,520	2,000	1,470	2,860	1,090	2,360	1,260	898	814
8	644	2,960	929	2,930	1,850	1,280	5,480	1,070	2,410	1,220	867	741
9	608	4,210	924	2,570	1,700	2,570	6,460	1,040	2,190	1,140	867	602
10	553	2,920	1,680	2,310	1,570	3,490	3,860	1,080	2,040	1,230	832	584
11	497	3,890	2,860	2,220	1,470	3,890	3,430	1,170	1,760	1,360	809	802
12	451	6,140	10,400	3,050	1,390	9,400	3,020	1,140	1,730	1,450	770	833
13	422	5,320	5,950	2,490	1,330	28,100	3,080	1,150	1,710	1,930	709	643
14	414	3,900	8,600	2,780	1,270	20,000	2,890	1,210	1,690	1,880	697	580
15	405	2,520	10,300	2,270	1,330	9,960	2,610	1,260	1,470	1,650	735	555
16	422	3,440	6,990	1,990	2,120	6,970	2,520	1,310	1,400	1,390	865	475
17	423	3,930	5,020	1,790	1,960	5,090	2,450	1,260	1,470	1,180	832	435
18	422	5,850	3,720	1,700	1,620	4,270	2,230	1,150	1,690	1,110	842	468
19	418	16,400	3,020	1,640	1,530	3,980	1,940	1,050	1,490	1,140	880	991
20	462	7,550	2,570	1,530	2,290	4,450	1,790	1,010	1,290	1,230	790	757
21	447	4,500	2,250	1,520	2,950	5,140	1,720	1,030	1,230	1,370	757	589
22	425	3,290	2,030	3,800	2,860	11,000	1,630	1,150	1,190	1,360	798	519
23	405	2,630	1,860	7,400	2,160	6,590	1,620	1,480	1,070	1,340	733	513
24	379	2,220	1,790	4,990	1,850	4,500	1,780	1,990	1,010	1,200	596	504
25	367	1,940	7,270	4,050	1,650	3,650	1,710	2,280	1,050	1,080	582	531
26	353	1,760	6,590	14,800	1,510	3,460	1,580	1,830	1,260	1,060	714	557
27	334	1,630	4,450	7,750	1,400	3,320	1,520	1,570	1,510	1,110	716	641
28	328	1,550	3,680	4,800	1,340	2,940	1,470	1,970	1,590	1,130	654	705
29	320	1,460	2,810	4,020	---	2,590	1,480	2,050	1,710	1,210	648	725
30	307	1,400	2,710	4,580	---	2,600	1,460	1,810	1,800	1,310	659	704
31	300	---	2,300	9,140	---	3,580	---	1,790	---	1,340	661	---
TOTAL	14,189	94,991	108,722	145,700	60,150	161,740	76,490	43,150	48,110	40,300	24,955	19,324
MEAN	458	3,166	3,507	4,700	2,148	5,217	2,550	1,392	1,604	1,300	805	644
MAX	756	16,400	10,400	14,800	5,850	28,100	6,460	2,280	2,410	1,930	1,190	991
MIN	300	276	924	1,520	1,270	1,110	1,460	1,010	1,010	1,060	582	435
AC-FT	28,140	188,400	215,700	289,000	119,300	320,800	151,700	85,590	95,430	79,940	49,500	38,330
CFSM	1.81	12.5	13.9	18.6	8.49	20.6	10.1	5.50	6.34	5.14	3.18	2.55
IN.	2.09	13.97	15.99	21.42	8.84	23.78	11.25	6.34	7.07	5.93	3.67	2.84

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2003, BY WATER YEAR (WY)

	2095	3966	4184	3825	3384	2723	2130	2032	2102	1697	1248	1143
MEAN	2,095	3,966	4,184	3,825	3,384	2,723	2,130	2,032	2,102	1,697	1,248	1,143
MAX	5,602	10,690	8,701	6,780	6,214	5,697	3,248	2,915	3,117	2,820	2,557	2,266
(WY)	(1968)	(1991)	(1980)	(1974)	(1982)	(1972)	(1981)	(1997)	(1964)	(1999)	(1991)	(1969)
MIN	381	1,022	1,282	992	1,121	1,261	925	1,392	1,285	1,012	760	603
(WY)	(1988)	(1994)	(1986)	(1979)	(1993)	(1992)	(1975)	(2003)	(1992)	(1992)	(1994)	(1993)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1961 - 2003	
ANNUAL TOTAL	926,901		837,821			
ANNUAL MEAN	2,539		2,295		2,540	
HIGHEST ANNUAL MEAN					3,452	
LOWEST ANNUAL MEAN					1,645	
HIGHEST DAILY MEAN	34,300		28,100		39,000	
LOWEST DAILY MEAN	276		276		252	
ANNUAL SEVEN-DAY MINIMUM	287		287		259	
ANNUAL RUNOFF (AC-FT)	1,839,000		1,662,000		1,840,000	
ANNUAL RUNOFF (CFSM)	10.0		9.07		10.0	
ANNUAL RUNOFF (INCHES)	136.29		123.19		136.41	
10 PERCENT EXCEEDS	4,950		4,530		4,650	
50 PERCENT EXCEEDS	1,840		1,480		1,810	
90 PERCENT EXCEEDS	525		542		876	

QUILLAYUTE RIVER BASIN

12043000 CALAWAH RIVER NEAR FORKS, WA

LOCATION.--Lat 47°57'37", long 124°23'30", in NW ¼ SW ¼ sec 4, T.28 N., R.13 W., Clallam County, Hydrologic Unit 17100101, on left bank 30 ft downstream from U.S. Highway 101 bridge, 0.8 mi northwest of Forks, and at mile 6.6.

DRAINAGE AREA.--129 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1897 to December 1901, October to December 1975 (discharge measurements and peak discharges), January 1976 to September 1980, March 1984 to current year. Monthly and peak discharge only, November 1897 and August 1898, published in WSP 1316. Published as Calowa River at Forks, November 1897 to December 1899; as Calowa River near Forks, 1900; and as Kalawa River near Forks, 1901.

REVISED RECORDS.--WSP 1316: 1898-1902. WSP 1736: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 201.58 ft above NGVD of 1929. November 1897 to December 1901, nonrecording gage at same site but at different datum; October to December 1975, nonrecording gage and crest-stage gage at same site and datum.

REMARKS.--Records good except estimated daily discharges, which are fair. No regulation or diversion upstream from station. Chemical analyses October 1976 to September 1978. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--26 years (water years 1899-1901, 1977-80, 1985-2003), 1,045 ft<sup>3</sup>/s, 110.03 in/yr, 756,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,100 ft<sup>3</sup>/s Dec. 15, 1999, gage height, 20.74 ft, from rating curve extended above 10,000 ft<sup>3</sup>/s on basis of step-backwater analysis; minimum discharge, 15 ft<sup>3</sup>/s Sept. 28, 1899.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov 19	1200	10,600	12.34	Jan 26	0915	11,700	12.87
Dec 25	2045	13,000	13.47	Mar 13	0600	*22,800	*17.13
Jan 2	0900	13,300	13.58	Mar 22	0645	12,700	13.35

Minimum discharge, 42 ft<sup>3</sup>/s, Sept. 29, 30, gage height, 2.40 ft.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	49	374	1,860	3,210	561	1,450	456	238	e150	78	49
2	56	48	352	8,600	2,310	531	1,400	432	229	e130	76	48
3	96	48	335	4,670	1,760	514	1,390	422	221	e120	75	47
4	100	48	327	4,590	1,400	468	1,300	439	212	e110	74	47
5	78	53	311	3,460	1,160	547	1,200	434	205	e110	72	46
6	70	199	295	2,210	991	764	1,190	396	198	e105	70	45
7	65	341	282	1,640	868	755	2,150	375	192	e100	69	74
8	63	1,000	272	1,310	769	675	4,270	364	187	98	68	66
9	67	1,850	279	1,100	697	1,900	4,280	347	184	98	68	56
10	66	1,410	e600	957	637	2,730	2,430	346	181	93	67	58
11	61	1,970	e1,300	930	586	2,890	1,960	326	178	89	66	111
12	58	2,570	e6,000	1,140	544	7,820	1,640	314	175	94	75	104
13	57	1,920	2,910	987	511	18,100	1,520	302	190	175	76	68
14	56	1,600	4,250	1,230	480	10,100	1,380	316	187	339	66	58
15	55	990	4,910	1,020	568	4,440	1,240	325	178	269	63	55
16	54	1,430	3,560	907	1,020	3,090	1,130	417	165	173	62	57
17	53	1,680	2,980	812	990	2,490	1,110	438	159	144	61	60
18	52	3,650	2,260	740	866	2,140	1,080	403	155	128	59	66
19	64	9,400	1,790	681	797	2,010	1,000	377	151	118	58	133
20	69	3,730	1,450	630	1,310	2,120	904	360	149	112	57	90
21	61	1,930	1,190	645	1,940	3,070	818	351	160	108	55	67
22	56	1,300	1,020	1,680	1,890	7,930	740	343	194	102	54	58
23	54	992	891	3,800	1,320	3,860	725	338	162	98	53	54
24	52	803	842	2,760	1,030	2,530	753	317	148	95	53	50
25	51	677	7,150	2,190	856	1,860	678	324	139	92	52	48
26	50	590	5,050	7,470	746	1,660	625	298	133	90	56	46
27	52	523	2,980	3,610	659	1,550	583	286	129	87	58	45
28	55	472	2,380	2,420	615	1,400	544	274	e120	84	55	44
29	52	433	1,740	1,960	---	1,220	514	263	e115	82	53	43
30	51	401	1,770	2,200	---	1,140	486	253	e140	80	51	42
31	50	---	1,500	4,500	---	1,340	---	244	---	78	50	---
TOTAL	1,882	42,107	61,350	72,709	30,530	92,205	40,490	10,880	5,174	3,751	1,950	1,835
MEAN	60.7	1,404	1,979	2,345	1,090	2,974	1,350	351	172	121	62.9	61.2
MAX	100	9,400	7,150	8,600	3,210	18,100	4,280	456	238	339	78	133
MIN	50	48	272	630	480	468	486	244	115	78	50	42
AC-FT	3,730	83,520	121,700	144,200	60,560	182,900	80,310	21,580	10,260	7,440	3,870	3,640
CFSM	0.47	10.9	15.3	18.2	8.45	23.1	10.5	2.72	1.34	0.94	0.49	0.47
IN.	0.54	12.14	17.69	20.97	8.80	26.59	11.68	3.14	1.49	1.08	0.56	0.53

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 2003, BY WATER YEAR (WY)

	1898	1991	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
MEAN	696	1,935	2,179	1,897	1,807	1,481	1,012	647	422	215	160	201
MAX	1,977	4,706	4,395	3,428	3,782	3,583	1,532	1,161	1,128	788	766	812
(WY)	(1998)	(1991)	(1980)	(1997)	(1999)	(1997)	(1997)	(1984)	(1900)	(1997)	(1991)	(1978)
MIN	49.3	439	585	476	405	419	451	258	124	95.9	62.9	59.0
(WY)	(1988)	(1994)	(1986)	(1979)	(1993)	(1992)	(1998)	(1995)	(1995)	(1995)	(2003)	(1998)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1898 - 2003

ANNUAL TOTAL	385,237	364,863	1,045
ANNUAL MEAN	1,055	1,000	1,555
HIGHEST ANNUAL MEAN			1,999
LOWEST ANNUAL MEAN			1977
HIGHEST DAILY MEAN	14,600	18,100	22,900
LOWEST DAILY MEAN	48	42	15
ANNUAL SEVEN-DAY MINIMUM	49	45	26
ANNUAL RUNOFF (AC-FT)	764,100	723,700	756,800
ANNUAL RUNOFF (CFSM)	8.18	7.75	8.10
ANNUAL RUNOFF (INCHES)	111.09	105.22	110.03
10 PERCENT EXCEEDS	2,500	2,510	2,430
50 PERCENT EXCEEDS	450	346	554
90 PERCENT EXCEEDS	57	54	94

e Estimated