

## LEWIS RIVER BASIN

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14220500 LEWIS RIVER AT ARIEL, WA

LOCATION.--Lat 45°57'07", long 122°33'46", in NW 1/4 NE 1/4 sec.4, T.5 N., R.2 E., Cowlitz County, Hydrologic Unit 17080002, on right bank 0.4 mi southeast of Ariel, 0.5 mi downstream from Merwin Dam and powerplant, 3.3 mi upstream from Cedar Creek, and at mile 19.0.

DRAINAGE AREA.--731 mi<sup>2</sup>.

PERIOD OF RECORD.--July to October 1909, November 1909 (gage heights only), July to October 1922, July 1923 to current year. Published as "near Ariel" water years 1922-29. Prior to October 1952, discharge measurements made at site 0.5 mi downstream; low discharges not equivalent due to local inflow.

REVISED RECORDS.--WSP 884: 1938. WSP 984: 1936-37, 1940-42. WSP 1318: 1924-30(M).

GAGE.--Water-stage recorder. Datum of gage is 44.0 ft above sea level (levels by Pacificorp). July to November 1909, nonrecording gage at site 4 mi upstream at different datum. July 27 to Oct. 29, 1922, and July 31, 1923, to Apr. 20, 1930, nonrecording gages at site 0.5 mi downstream at datums 3.90 ft and 0.90 ft higher respectively, than present datum.

REMARKS.--No estimated daily discharges. Records good. No diversion upstream from station. Flow regulated by Swift and Yale Reservoirs, and Lake Merwin (stations 14217600, 14218500, 14220000). Chemical analyses July 1959 to June 1960, April 1979 to September 1986. Additional data from April to August 1980 are published in U.S. Geological Survey Open-File Report 81-1007. Water temperatures October 1950 to September 1963.

AVERAGE DISCHARGE.--78 years (water years 1924-2001), 4,810 ft<sup>3</sup>/s, 89.36 in/yr, 3,485,000 acre-ft/yr, adjusted for storage in Lake Merwin Reservoir since March 1931, Yale Reservoir since August 1952, and Swift Reservoir since October 1958.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 129,000 ft<sup>3</sup>/s Dec. 22, 1933, gage height, 35.0 ft, from floodmarks, from rating curve extended above 56,000 ft<sup>3</sup>/s on basis of computation of peak flow over dam; no flow at times June 30, July 1-3, 6-9, 1931 (caused by regulation during construction of Merwin Dam); minimum daily discharge, 1 ft<sup>3</sup>/s July 6, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,670 ft<sup>3</sup>/s May 14, gage height, 6.54 ft; minimum discharge, 968 ft<sup>3</sup>/s Mar. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3380	4300	3040	3050	1560	1030	3000	4760	2730	1880	1470	1460
2	4290	2030	3040	3060	1560	1030	3010	5960	2730	1860	1470	1460
3	5010	3120	3060	3030	1570	1030	3010	5950	2730	1790	1470	1470
4	5000	3180	3090	3010	1570	1040	2900	5940	2740	1780	1460	1730
5	3560	3200	3070	3030	1570	1040	2900	5930	2730	1740	1470	2740
6	3380	3430	3070	3020	1590	1030	2750	5040	2720	1710	1470	3130
7	3430	3670	2190	3020	1600	1030	2100	3830	2710	1690	1460	3520
8	3510	3110	3050	3030	1600	1030	2050	4040	2570	1690	1460	3520
9	3590	2290	3030	3030	1600	1020	2050	4030	2390	1690	1460	3510
10	3630	3530	3000	3020	1600	1020	2070	4300	2330	1690	1460	3070
11	3550	3630	3000	3030	1590	1020	2050	4450	2290	1670	1460	2690
12	3350	3640	3000	3010	1600	1030	2070	4440	2300	1620	1470	2700
13	3460	3510	3000	3040	1600	1020	2070	4450	2300	1640	1470	2710
14	3400	3400	2580	3030	1590	1030	2060	6190	2290	1630	1460	2700
15	3420	3260	3050	3010	1600	1030	2070	9350	2290	1630	1460	2700
16	4580	2120	3050	3020	1590	1030	2070	8640	2290	1630	1460	2710
17	4970	2940	3080	2940	1590	1040	2060	7420	2280	1630	1460	2710
18	4350	2910	3070	2890	1590	1030	2060	5630	2120	1570	1460	2700
19	3180	2910	3030	2880	1590	1020	1870	4660	2070	1480	1460	2670
20	3270	3020	3000	2890	1590	1030	1610	4050	2010	1480	1470	2480
21	3250	3050	3020	2900	1570	1020	1620	4030	1950	1480	1480	2320
22	3280	2920	3050	2900	1550	1020	1620	3600	1930	1480	1470	2260
23	3260	2930	3020	2890	1550	1030	1630	3410	1890	1470	1450	2250
24	3230	2960	3000	2090	1550	1020	1630	3410	1890	1470	1460	2180
25	3220	2980	3010	1570	1550	1030	1630	3650	1890	1460	1460	2150
26	3090	2990	3010	1570	1560	1030	1640	3780	1890	1470	1460	2150
27	3210	3330	3000	1570	1550	1040	1640	3770	1900	1470	1460	2150
28	3200	4100	3000	1560	1360	1360	1640	3310	1880	1460	1460	2150
29	3200	4230	3030	1570	---	1990	1650	3020	1880	1470	1460	2150
30	4910	2270	3030	1580	---	2030	2320	2700	1870	1470	1460	2150
31	5430	---	3040	1570	---	2530	---	2730	---	1470	1460	---
TOTAL	115590	94960	92710	81810	43990	35680	62850	146470	67590	49670	45360	74290
MEAN	3729	3165	2991	2639	1571	1151	2095	4725	2253	1602	1463	2476
MAX	5430	4300	3090	3060	1600	2530	3010	9350	2740	1880	1480	3520
MIN	3090	2030	2190	1560	1360	1020	1610	2700	1870	1460	1450	1460
AC-FT	229300	188400	183900	162300	87250	70770	124700	290500	134100	98520	89970	147400
MEAN†	1182	1706	2765	2700	3097	4074	4398	5164	2134	1246	1011	827
CFSM†	1.62	2.33	3.78	3.69	4.24	5.57	6.02	7.06	2.92	1.70	1.38	1.13
IN.†	1.86	2.60	4.36	4.26	4.41	6.43	6.71	8.15	3.26	1.97	1.59	1.26
AC-FT†	72700	101500	170000	166000	172000	250500	261700	317500	127000	76620	62170	48200

CAL YR 2000 TOTAL 1476710 MEAN 4035 MAX 11800 MIN 1460 AC-FT 2929000 MEAN† 3610 CFSM† 4.94 IN.† 67.24 AC-FT† 2621000  
WTR YR 2001 TOTAL 910970 MEAN 2496 MAX 9350 MIN 1020 AC-FT 1807000 MEAN† 2524 CFSM† 3.45 IN.† 46.88 AC-FT† 1827000

† Adjusted for change in contents in Lake Merwin, Swift Reservoir and Yale Reservoir.