

Surface Water Supply of the United States 1959

Part 14. Pacific Slope Basins in Oregon and Lower Columbia River Basin

Prepared under the direction of J. V. B. WELLS, Chief, Surface Water Branch

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1638

*Prepared in cooperation with the States
of Oregon and Washington and with
other agencies*



UNITED STATES DEPARTMENT OF THE INTERIOR

FRED A. SEATON, *Secretary*

GEOLOGICAL SURVEY

Thomas B. Nolan, *Director*

**For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington 25, D.C. - Price \$1.00 (paper cover)**

PREFACE

This report was prepared by the Geological Survey in cooperation with the States of Oregon and Washington and with other agencies, by personnel of the Water Resources Division, L. B. Leopold, chief, under the general direction of J. V. B. Wells, chief, Surface Water Branch, succeeded by E. L. Hendricks, and F. J. Flynn, chief, Basic Records Section.

The data were collected and computed under supervision of district engineers, Surface Water Branch, as follows:

K. N. Phillips.....	Portland, Oreg.
F. M. Veatch	Tacoma, Wash.

CALENDAR FOR WATER YEAR 1959

OCTOBER 1958

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

NOVEMBER 1958

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

DECEMBER 1958

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

JANUARY 1959

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

FEBRUARY 1959

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

MARCH 1959

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

APRIL 1959

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

MAY 1959

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

JUNE 1959

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

JULY 1959

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

AUGUST 1959

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

SEPTEMBER 1959

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

CONTENTS

	Page
Scope of work.....	1
Cooperation.....	1
Division of work.....	2
Definition of terms and abbreviations.....	2
Downstream order and station numbers.....	3
Explanation of data.....	3
Accuracy of field data and computed results.....	7
Publications.....	8
Records of discharge collected by agencies other than the Geological Survey.....	11
Hydrologic conditions.....	12
Gaging-station records.....	13
<u>Lower Columbia River basin</u>	
Columbia River:	
Walla Walla River basin	
South Fork Walla Walla River near Milton, Oreg.....	13
North Fork Walla Walla River near Milton, Oreg.....	14
Walla Walla River:	
Mill Creek near Walla Walla, Wash.....	15
Blue Creek near Walla Walla, Wash.....	16
Mill Creek at Walla Walla, Wash.....	17
Dry Creek near Walla Walla, Wash.....	18
Touchet River:	
East Fork Touchet River near Dayton, Wash.....	19
Touchet River at Bolles, Wash.....	20
Walla Walla River near Touchet, Wash.....	21
Springs in the Walla Walla River basin, Oreg.-Wash.....	22
Columbia River below McNary Dam at Umatilla, Oreg.....	24
Umatilla River basin	
Umatilla River above Meacham Creek, near Gibbon, Oreg.....	29
Umatilla River at Pendleton, Oreg.....	30
McKay Creek near Pilot Rock, Oreg.....	31
McKay Reservoir near Pendleton, Oreg.....	32
McKay Creek near Pendleton, Oreg.....	33
Birch Creek at Rieth, Oreg.....	34
Umatilla River at Yoakum, Oreg.....	35
Butter Creek near Pine City, Oreg.....	36
Principal diversions from Umatilla River between Yoakum and Umatilla gaging stations, Oreg.....	37
Umatilla River near Umatilla, Oreg.....	38
Willow Creek basin	
Willow Creek at Heppner, Oreg.....	39
John Day River basin	
John Day River:	
Strawberry Creek above Slide Creek, near Prairie City, Oreg.....	40
John Day River at Prairie City, Oreg.....	41
John Day River at Picture Gorge, near Dayville, Oreg.....	42
North Fork John Day River:	
Camas Creek near Lehman, Oreg.....	43
Camas Creek near Ukiah, Oreg.....	44
Middle Fork John Day River at Ritter, Oreg.....	45
North Fork John Day River at Monument, Oreg.....	46
John Day River at Service Creek, Oreg.....	47
John Day River at McDonald Ferry, Oreg.....	48
Deschutes River basin	
Deschutes River below Snow Creek, near Lapine, Oreg.....	49
Cultus River above Cultus Creek, near Lapine, Oreg.....	50
Cultus Creek above Crane Prairie Reservoir, near Lapine, Oreg.....	51
Deer Creek above Crane Prairie Reservoir, near Lapine, Oreg.....	52
Quinn River near Lapine, Oreg.....	53
Charlton Creek above Crane Prairie Reservoir, near Lapine, Oreg.....	54
Deschutes River below Crane Prairie Reservoir, near Lapine, Oreg.....	55
Brown Creek near Lapine, Oreg.....	56
Davis Lake basin (closed basin at head of Davis Creek):	
Odell Creek near Crescent, Oreg.....	57
Deschutes River below Wickiup Reservoir, near Lapine, Oreg.....	58
Fall River near Lapine, Oreg.....	59
Little Deschutes River:	
Crescent Creek at Crescent Lake, near Crescent, Oreg.....	60
Little Deschutes River near Lapine, Oreg.....	61
Reservoirs in Deschutes River basin above Bend, Oreg.....	62
Deschutes River at Benham Falls, near Bend, Oreg.....	63
Deschutes River below Lava Island, near Bend, Oreg.....	64
Diversions from Deschutes River near Bend, Oreg.....	65
Deschutes River below Bend, Oreg.....	66
Tumalo Creek near Bend, Oreg.....	67
Squaw Creek near Sisters, Oreg.....	68
Deschutes River near Culver, Oreg.....	69
Beaver Creek (head of Crooked River) near Paulina, Oreg.....	70
Crooked River near Post, Oreg.....	71
Crooked River above Hoffman Dam, near Prineville, Oreg.....	72
Crooked River near Culver, Oreg.....	73
Metolius River:	
Lake Creek near Sisters, Oreg.....	74

Gaging-station records--Continued

Lower Columbia River basin--Continued	
Columbia River--Continued	
Deschutes River basin--Continued	Page
Metolius River near Grandview, Oreg.....	75
Deschutes River near Madras, Oreg.....	76
White River below Tygh Valley, Oreg.....	77
Deschutes River at Moody, near Biggs, Oreg.....	78
Columbia River at The Dalles, Oreg.....	79
Klickitat River basin	
Klickitat River above West Fork, near Glenwood, Wash.....	80
Klickitat River near Glenwood, Wash.....	81
Little Klickitat River near Goldendale, Wash.....	82
Little Klickitat River near Wauklacus, Wash.....	83
Klickitat River near Pitt, Wash.....	84
Hood River basin	
Hood River:	
West Fork Hood River near Dee, Oreg.....	85
Hood River near Hood River, Oreg.....	86
White Salmon River basin	
White Salmon River below Cascades Creek, near Trout Lake, Wash.....	87
White Salmon River above Trout Lake Creek, near Trout Lake, Wash.....	88
Trout Lake Creek near Trout Lake, Wash.....	89
White Salmon River near Trout Lake, Wash.....	90
White Salmon River at B-Z Corner, Wash.....	91
White Salmon River at Husum, Wash.....	92
White Salmon River near Underwood, Wash.....	93
Little White Salmon River basin	
Little White Salmon River at Willard, Wash.....	94
Little White Salmon River above Lapham Creek, near Willard, Wash.....	95
Little White Salmon River near Cook, Wash.....	96
Wind River basin	
Wind River above Trout Creek, near Carson, Wash.....	97
Wind River near Carson, Wash.....	98
Sandy River basin	
Sandy River:	
Salmon River near Government Camp, Oreg.....	99
Sandy River near Marmot, Oreg.....	100
Bull Run River:	
Lake Ben Morrow near Bull Run, Oreg.....	101
Bull Run River near Bull Run, Oreg.....	102
Little Sandy River near Bull Run, Oreg.....	103
Sandy River below Bull Run River, near Bull Run, Oreg.....	104
Washougal River basin	
Washougal River near Washougal, Wash.....	105
Willamette River basin	
Middle Fork Willamette River near Oakridge, Oreg.....	106
Hills Creek above Hills Creek Reservoir, near Oakridge, Oreg.....	107
Middle Fork Willamette River above Salt Creek, near Oakridge, Oreg.....	108
Salmon Creek near Oakridge, Oreg.....	109
North Fork of Middle Fork Willamette River near Oakridge, Oreg.....	110
Middle Fork Willamette River below North Fork, near Oakridge, Oreg.....	111
Lookout Point Reservoir near Lowell, Oreg.....	112
Middle Fork Willamette River near Dexter, Oreg.....	113
Fall Creek below Winberry Creek, near Fall Creek, Oreg.....	114
Middle Fork Willamette River at Jasper, Oreg.....	115
Coast Fork Willamette River at London, Oreg.....	116
Cottage Grove Reservoir near Cottage Grove, Oreg.....	117
Coast Fork Willamette River below Cottage Grove Dam, Oreg.....	118
Row River above Pitcher Creek, near Dorena, Oreg.....	119
Dorena Reservoir near Cottage Grove, Oreg.....	120
Row River near Cottage Grove, Oreg.....	121
Mosby Creek at mouth, near Cottage Grove, Oreg.....	122
Coast Fork Willamette River near Goshen, Oreg.....	123
McKenzie River at outlet of Clear Lake, Oreg.....	124
McKenzie River near Belknap Springs, Oreg.....	125
Smith River near Belknap Springs, Oreg.....	126
McKenzie River at McKenzie Bridge, Oreg.....	127
South Fork McKenzie River above Cougar Reservoir, near Rainbow, Oreg.....	128
South Fork McKenzie River near Rainbow, Oreg.....	129
Blue River near Blue River, Oreg.....	130
McKenzie River near Vida, Oreg.....	131
McKenzie River near Coburg, Oreg.....	132
Willamette River at Harrisburg, Oreg.....	133
Long Tom River near Notl, Oreg.....	134
Coyote Creek near Crow, Oreg.....	135
Fern Ridge Reservoir near, Glinira, Oreg.....	136
Long Tom River below Fern Ridge Dam, near Smithfield, Oreg.....	137
Amazon Creek near Eugene, Oreg.....	138
Long Tom River at Monroe, Oreg.....	139
Marys River near Philomath, Oreg.....	140
Calapooya River at Holley, Oreg.....	141
Calapooya River at Albany, Oreg.....	142
Willamette River at Albany, Oreg.....	143
North Santiam River (head of Santiam River) below Boulder Creek, near Detroit, Oreg.....	144
Breitenbush River above Canyon Creek, near Detroit, Oreg.....	145
Detroit Reservoir near Detroit, Oreg.....	146
North Santiam River at Niagara, Oreg.....	147
Little North Santiam River near Mehama, Oreg.....	148

Gaging-station records--Continued

Lower Columbia River basin--Continued

Columbia River--Continued

Willamette River basin--Continued

Page

North Santiam River at Mehama, Oreg.....	149
South Santiam River below Cascadia, Oreg.....	150
Middle Santiam River at mouth, near Foster, Oreg.....	151
Wiley Creek near Foster, Oreg.....	152
South Santiam River at Waterloo, Oreg.....	153
Santiam River at Jefferson, Oreg.....	154
Luckiamute River near Hoskins, Oreg.....	155
Luckiamute River at Pelee, Oreg.....	156
Luckiamute River near Suver, Oreg.....	157
Rickreall Creek near Dallas, Oreg.....	158
Willamette River at Salem, Oreg.....	159
Mill Creek at Salem, Oreg.....	160
South Yamhill River (head of Yamhill River) near Willamina, Oreg.....	161
Willamina Creek near Willamina, Oreg.....	162
Mill Creek near Willamina, Oreg.....	163
South Yamhill River near Whiteson, Oreg.....	164
North Yamhill River near Fairdale, Oreg.....	165
Haskins Creek below reservoir, near McMinnville, Oreg.....	166
North Yamhill River at Pike, Oreg.....	167
Willamette River at Wilsonville, Oreg.....	168
Molalla River above Pine Creek, near Wilhoit, Oreg.....	169
Molalla River near Canby, Oreg.....	170
Pudding River near Mount Angel, Oreg.....	171
Pudding River at Aurora, Oreg.....	172
Tualatin River:	
Scoggin Creek near Gaston, Oreg.....	173
Tualatin River near Dilley, Oreg.....	174
Tualatin River near Willamette, Oreg.....	175
Clackamas River at Big Bottom, Oreg.....	176
Reservoirs in Willamette River basin, Oreg.....	177
Oak Grove Fork near Government Camp, Oreg.....	178
Oak Grove Fork above powerplant intake, Oreg.....	179
Clackamas River above Three Lynx Creek, Oreg.....	180
Clackamas River at Estacada, Oreg.....	181
Johnson Creek at Sycamore, Oreg.....	182
<u>Lake River basin</u>	
Lake River:	
Salmon Creek near Battle Ground, Wash.....	183
<u>Lewis River basin</u>	
Lewis River near Trout Lake, Wash.....	184
Big Creek below Skookum Meadow, near Trout Lake, Wash.....	185
Rush Creek above Meadow Creek, near Trout Lake, Wash.....	186
Meadow Creek below Lone Butte Meadow, near Trout Lake, Wash.....	187
Rush Creek above falls, near Cougar, Wash.....	188
Curly Creek near Cougar, Wash.....	189
Lewis River above Muddy River, near Cougar, Wash.....	190
Muddy River below Clear Creek, near Cougar, Wash.....	191
Pine Creek near Cougar, Wash.....	192
Speely Creek near Cougar, Wash.....	193
Reservoirs in Lewis River basin, Wash.....	194
Lewis River at Ariel, Wash.....	195
East Fork Lewis River near Heisson, Wash.....	196
<u>Kalama River basin</u>	
Kalama River below Italian Creek, near Kalama, Wash.....	197
<u>Cowlitz River basin</u>	
Cowlitz River at Packwood, Wash.....	198
Cispus River near Randle, Wash.....	199
Cowlitz River near Kosmos, Wash.....	200
Cowlitz River at Mossyrock, Wash.....	201
Tilton River:	
West Fork Tilton River near Morton, Wash.....	202
Tilton River above Bear Canyon Creek, near Cinebar, Wash.....	203
Cinnabar Creek near Cinebar, Wash.....	204
Klickitat Creek at Mossyrock, Wash.....	205
Winston Creek near Mayfield, Wash.....	206
Cowlitz River near Mayfield, Wash.....	207
Mill Creek near Salkum, Wash.....	208
Toutle River:	
Silver Lake at Silver Lake, Wash.....	209
Toutle River near Silver Lake, Wash.....	210
Cowlitz River at Castle Rock, Wash.....	211
Delameter Creek near Castle Rock, Wash.....	212
Coweman River near Kelso, Wash.....	213
<u>Elokomin River basin</u>	
Elokomin River near Cathlamet, Wash.....	214
<u>Grays River basin</u>	
Grays River above South Fork, near Grays River, Wash.....	215
Grays River below South Fork, near Grays River, Wash.....	216
West Fork Grays River near Grays River, Wash.....	217

Gaging-station records--Continued	Page
<u>Pacific slope basins in Oregon</u>	
<u>Nehalem River basin</u>	
Nehalem River near Foss, Ore.....	218
Wilson River basin	
Wilson River near Tillamook, Ore.....	219
Siletz River basin	
Siletz River at Siletz, Ore.....	220
Alsea River basin	
North Fork Alsea River at Alsea, Ore.....	221
South Fork Alsea River near Alsea, Ore.....	222
Fall Creek near Alsea, Ore.....	223
Five Rivers near Fisher, Ore.....	224
Alsea River near Tidewater, Ore.....	225
Drift Creek near Salado, Ore.....	226
Needle Branch near Salado, Ore.....	227
Meadow Creek:	
Flynn Creek near Salado, Ore.....	228
Horse Creek:	
Deer Creek near Salado, Ore.....	229
<u>Umpqua River basin</u>	
South Umpqua River (head of Umpqua River):	
Jackson Creek near Tiller, Ore.....	230
South Umpqua River at Tiller, Ore.....	231
Elk Creek near Drew, Ore.....	232
Days Creek at Days Creek, Ore.....	233
Cow Creek near Azalea, Ore.....	234
West Fork Cow Creek near Glendale, Ore.....	235
Cow Creek near Riddle, Ore.....	236
South Myrtle Creek near Myrtle Creek, Ore.....	237
North Myrtle Creek near Myrtle Creek, Ore.....	238
Lookingglass Creek:	
Olalla Creek near Tenmile, Ore.....	239
Lookingglass Creek at Brockway, Ore.....	240
South Umpqua River near Brockway, Ore.....	241
Deer Creek near Roseburg, Ore.....	242
North Umpqua River:	
Lemolo Reservoir near Toketee Falls, Ore.....	243
North Umpqua River below Lemolo Reservoir, near Toketee Falls, Ore.....	244
Clearwater River above Trap Creek, near Toketee Falls, Ore.....	245
Fish Creek at Big Camas ranger station, near Toketee Falls, Ore.....	246
North Umpqua River above Copeland Creek, near Toketee Falls, Ore.....	247
Steamboat Creek near Glide, Ore.....	248
Rock Creek near Glide, Ore.....	249
Little River at Peel, Ore.....	250
Sutherland Creek at Sutherland, Ore.....	251
North Umpqua River at Winchester, Ore.....	252
Umpqua River:	
Calapooya Creek near Oakland, Ore.....	253
Umpqua River near Elkton, Ore.....	254
Elk Creek near Drain, Ore.....	255
<u>Tenmile Creek basin</u>	
Tenmile Creek near Lakeside, Ore.....	256
<u>Coos River basin</u>	
South Fork Coos River:	
Millicoma River:	
West Fork Millicoma River near Allegany, Ore.....	257
Coquille River basin	
South Fork Coquille River above Panther Creek, near Illahe, Ore.....	258
South Fork Coquille River near Illahe, Ore.....	259
South Fork Coquille River near Powers, Ore.....	260
South Fork Coquille River at Powers, Ore.....	261
Rogue River basin	
Rogue River above Prospect, Ore.....	262
South Fork Rogue River near Prospect, Ore.....	263
Middle Fork Rogue River:	
Red Blanket Creek near Prospect, Ore.....	264
Rogue River below South Fork Rogue River, near Prospect, Ore.....	265
South Fork Big Butte Creek near Butte Falls, Ore.....	266
Elk Creek near Trail, Ore.....	267
Rogue River at Dodge Bridge, near Eagle Point, Ore.....	268
South Fork Little Butte Creek:	
Dead Indian collection canal near Pinehurst, Ore.....	269
South Fork Little Butte Creek near Lakecreek, Ore.....	270
North Fork Little Butte Creek at Fish Lake, near Lakecreek, Ore.....	271
North Fork Little Butte Creek near Lakecreek, Ore.....	272
Emigrant Creek (head of Bear Creek) near Ashland, Ore.....	273
Bear Creek at Medford, Ore.....	274
Rogue River at Raygold, near Central Point, Ore.....	275
Rogue River at Grants Pass, Ore.....	276
Applegate River near Copper, Ore.....	277
Applegate River near Applegate, Ore.....	278

Gaging-station records--Continued	
Pacific slope basins--Continued	
Rogue River basin--Continued	
Grave Creek at Pease Bridge, near Placer, Oreg.....	279
East Fork Illinois River near Takilma, Oreg.....	280
Sucker Creek near Holland, Oreg.....	281
West Fork Illinois River below Rock Creek, near O'Brien, Oreg.....	282
Illinois River at Kerby, Oreg.....	283
Illinois River near Selma, Oreg.....	284
Reservoirs in Rogue River basin, Oreg.....	285
Discharge at partial-record stations and miscellaneous sites.....	286
Crest-stage partial-record stations.....	286
Measurements at miscellaneous sites.....	293
Index.....	295

 ILLUSTRATIONS

Figure 1. Map of the conterminous United States showing areas covered by 18 of the 20 volumes on surface water supply.....	Page 9
2. Comparison of discharge at two key gaging-stations during 1959 water year with median discharge for 25-year period.....	12

SCOPE OF WORK

This volume is one of a series of 20 reports presenting records of stage, discharge, and content of streams, lakes, and reservoirs in the United States during the 1959 water year. Since 1888, when the United States Geological Survey first studied streamflow in relation to problems of irrigation, similar records have been obtained at more than 15,200 gaging stations in the 50 States. On September 30, 1959, the Geological Survey and cooperating organizations were maintaining 7,110 gaging stations. Partial-record stations for low flow or for flood flow have been operated at many other points. In addition, discharge measurements are made at miscellaneous sites. The records for the 1959 water year at gaging stations, partial-record stations, and miscellaneous sites in the Pacific slope basins in Oregon and lower Columbia River basin are given in this report.

COOPERATION

Many State, municipal, and private organizations have cooperated with the Geological Survey in this work by either furnishing or helping to collect data. Organizations that supplied data are acknowledged in station descriptions, and organizations that assisted in the collection of data through cooperative agreements with the Survey are:

Oregon: State of Oregon, L. A. Stanley, State engineer, and M. K. McIver, chairman, Oregon State Highway Commission; Fish Commission of Oregon, M. C. James, State Fisheries director; County Court of Douglas County, and the cities of Coos Bay-North Bend, Dallas, Eugene, McMinnville, and Portland.

Washington: State Department of Conservation, Earl Coe, director, and M. G. Walker, supervisor of the Division of Water Resources; State Department of Fisheries, M. E. Moore, director; State Department of Game, J. A. Biggs, director; cities of Goldendale and Tacoma; Klickitat, Skamania, and Wahkiakum County Public Utility Districts; and Klickitat County.

Assistance in the form of funds or services was given by the Corps of Engineers, Department of the Army, in collecting records published herein for 44 gaging stations in Oregon and 8 in Washington.

Assistance was also furnished by the Bureau of Reclamation and Bonneville Power Administration, United States Department of the Interior.

The following organizations aided in collecting records:

Oregon: Counties of Crook, Deschutes, Jackson, Jefferson, Josephine, Klamath, and Umatilla; city of Grants Pass; The California Oregon Power Co., Pacific Power & Light Co., Portland General Electric Co., and Coos-Curry Public Utility District.

Washington: Pacific Power & Light Co.

DIVISION OF WORK

The stream-gaging work was done by the Water Resources Division of the Geological Survey, under the direction of personnel shown in the preface. The data for stations in the several States were collected and prepared for publication in the district offices listed below.

<u>State</u>	<u>District office</u>	<u>Address</u>
Oregon a/.....	Portland.....	1001 NE. Lloyd Boulevard.
Washington.....	Tacoma.....	207 Federal Building.

a/ The work was done in collaboration with L. A. Stanley, State engineer, and M. K. McIver, chairman, State Highway Commission.

Information of a more detailed nature than that published for most of the gaging stations given in this report is on file in the district offices listed above. Provisional records of discharge prior to publication, and other unpublished data concerning the gaging-station records may generally be obtained from the district office.

DEFINITION OF TERMS AND ABBREVIATIONS

The terms of streamflow and other hydrologic data, as used in this report, are defined as follows:

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied herein only to those gaging stations where a continuous record of discharge is obtained.

Partial-record station is a particular site where limited stream-flow data are collected systematically over a period of years for use in hydrologic analyses.

Cubic foot per second (cfs) is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second.

Cubic feet per second per square mile (cfsm) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Runoff in inches (in.) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Acre-foot (ac-ft) is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43,560 cubic feet.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons, and represents a runoff of 0.0372 inch from 1 square mile.

Stage-discharge relation is the relation between gage height and the amount of water flowing in a channel, expressed as volume per unit of time.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, a long reach of the channel, or an artificial structure.

Contents is the volume of water in a reservoir. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

The drainage area of a stream at a specified location is that area, measured in a horizontal plane, which is so enclosed by a topographic divide that direct surface runoff from precipitation normally would drain by gravity into the river above the specified point.

Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBERS

Beginning with the series of reports for the water year ending September 30, 1951, the order of listing gaging-station records was changed. In this report, in a downstream direction along the main stem, all stations on a tributary entering above a main-stem station are listed before that station. If a tributary enters between two main-stem stations, it is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. To indicate the rank of any tributary on which a gaging station is situated and the stream to which it is immediately tributary, each indentation in the listing of gaging stations in the table of contents of this report represents one rank. This downstream order and system of indentation show which gaging stations are on tributaries between any two stations on a main stem and the rank of the tributary on which each gaging station is situated.

The order of listing used before the publication of the 1951 report listed first all stations on the main stem from headwaters toward mouth, then all stations on the uppermost tributary to the main stem from the tributary's source to mouth, and then all stations from source to mouth of the uppermost tributary to the tributary.

As an added means of identification, each gaging station and partial-record station has been assigned a station number. The numbers have been assigned in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and regular gaging stations, so that the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the numbers to allow for new stations that may be established; hence the numbers are not consecutive. The complete number for each station includes the part number, but the station number shown in this report, just to the left of the station name, consists of only the essential digits of the complete number. For example, for a station with the complete number 14-0110.00, the station number shown in this report is 110. The notation to the left of the hyphen is the part number; it is 14 for all stations in this report and is therefore omitted.

EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage and measurements of discharge. In addition, observations of factors affecting the stage-discharge relation, weather records, and other information are used to supplement base data in determining the daily flow. The records of stage are obtained either from direct readings on a nonrecording gage or from a water-stage recorder that gives a continuous record of fluctuations. Measurements of discharge are made with a current meter by the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in Water-Supply Paper 888 and are also outlined in standard textbooks on the measurement of stream discharge.

Rating tables giving the discharge for any stage are prepared from stage-discharge relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs, and by other methods), velocity-area studies, and logarithmic plotting. The application of the daily mean gage height to those rating tables gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is essentially the shifting-control method.

At some gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in determining discharge. Information requisite for determining the slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage. If so, the rate of change of stage is used as a factor in the determination of discharge.

At most gaging stations in the northern part of the United States and at some in the mountainous regions of other parts the stage-discharge relation is affected by ice during the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and engineers, and comparable records of discharge for other stations in the same or nearby basins. If the stage-discharge relation is affected by ice, this information is given in a note to the table. No mention is made of occasional days of ice effect if the degree of accuracy of daily records is not changed.

The data herein presented generally comprise a description of the station, a skeleton rating table, and a table showing the daily discharge and monthly and yearly discharge of the stream. Records are published for the water year which begins on October 1 and ends on September 30. A calendar for the water year 1959 is shown on page IV for the purpose of finding the day of the week for any date.

The description of the station gives the location, drainage area, records available, type and history of gages, average discharge, extremes of discharge, general remarks, and notations of revisions of the previously published record. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "Location" for some stations, is that determined and used by the Corps of Engineers unless otherwise noted. Under "Records available" are given the periods for which there are published records generally equivalent to those at present site. Under "Gage" are given the type of gage currently in use and the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums

of previous gages used during the period of records available. Under "Average discharge" is given the average discharge for the number of years indicated. It is not given for stations having fewer than five complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. Under "Extremes" are given the maximum discharge and gage height; the minimum discharge if there is little or no regulation; the minimum daily discharge if there is extensive regulation (also the minimum discharge if useful); and the minimum gage height (unless it is of no importance). In the first paragraph, the data given are for the complete current water year unless otherwise specified. In the second paragraph, the data given are for the periods of record within the calendar year dates in the heading (not necessarily those for the complete years indicated by the heading dates). Reliable information concerning major floods that have occurred outside the period of record are given in the third or last paragraph under "Extremes." Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder, a crest-stage indicator, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur at the same time as the maximum discharge, it is given separately. Information pertaining to the accuracy of the records and conditions which affect the natural flow at the gaging station is given under "Remarks."

Previously published records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual reports. In order to make it easier to find such revised records, a paragraph headed "Revisions (water years)" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1933 stands for the water year October 1, 1932 to September 30, 1933. If no daily, monthly, or annual figures of discharge are concerned in the revision, that fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

Skeleton rating tables are published for all stations except those at which the daily discharge for the greater part of the open-water period was determined by the shifting-control method, the slope method, or other special methods involving an equivalent adjustment to the gage height of more than one-tenth foot. Skeleton rating tables are generally not published for stations on canals.

For stations equipped with water-stage recorders, except those on streams subject to sudden or rapid fluctuation, the daily table gives the discharge corresponding to the

daily mean gage height. For stations subject to such fluctuation the daily mean gage height may not indicate the true daily mean discharge, which must be obtained by averaging the discharge for parts of the day or by using the discharge integrator, an instrument for obtaining the daily mean discharge from a continuous gage-height graph and containing, as an essential element, a curve representing the stage-discharge relation at the station. For stations equipped with nonrecording gages, the table of daily discharge gives the discharge corresponding to once-daily readings of the gage, or to the mean of twice-daily readings, or to the mean gage height determined from gage-height graphs based on gage readings. For periods of rapidly changing stage, the daily mean discharge is determined from gage-height graphs based on gage readings, the frequency of which is stated in the station description.

In the table of daily discharge, the figures for the maximum day and the minimum day for each month are underlined. If the figure is repeated, it is underlined only on the first day of its occurrence.

In the monthly summary below the daily table, the line headed "Total" gives the sum of the daily figures; it is the total cfs-days for the month. The line headed "Mean" gives the average flow in cubic feet per second during the month. Discharge for the month may be expressed in cubic feet per second per square mile (line headed "Cfsm"), or in inches (line headed "In."), or in acre-feet (line headed "Ac-ft"). Figures for cubic feet per second per square mile and runoff in inches are omitted if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches.

In the yearly summary below the monthly summary, the figures of maximum are the maximum daily discharges, not the momentary discharges when the water was at crest stage. Likewise, the minimums in this summary are the minimum daily discharges.

Peak discharges and the times of their occurrence and corresponding gage heights of most stations are listed below the table of daily and monthly discharge. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man.

Footnotes to the table of daily discharge indicate periods when discharge was computed or estimated by unusual or special methods during periods of no gage-height record and ice effect, or by other effects that reduce the degree of accuracy of the records. Days on which discharge measurements were made are indicated by asterisk and footnote unless they were made at frequent regular intervals, in which instance the general frequency of discharge measurements is given under "Remarks" in the station description.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published each year for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

At many gaging stations water samples are collected from the streams for the purpose of making chemical analyses, computing dissolved solids, suspended sediment loads, and

particle-size distribution, or measuring water temperatures. For most of these samples the results are published in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States" which is issued in four volumes. In this report under "Remarks" a reference is made to quality-of-water records collected at gaging stations on a regular basis and published in the quality-of-water reports. At many other gaging stations quality-of-water data are obtained at irregular intervals and published as "miscellaneous analyses" in quality-of-water reports; such records are not referred to in "Remarks" paragraph in this report. At many gaging stations water temperature is obtained also at the time a discharge measurement is made; such temperature readings are not reported in the quality-of-water annual reports.

Data collected at partial-record stations and at miscellaneous sites are given at the end of each report. Partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements at miscellaneous sites are given in a third table. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are given in special tables after the list of measurements at miscellaneous sites.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretation of records.

The station description states the degree of accuracy of the records. "Excellent" indicates that, in general, the error in the daily records is believed to be less than 5 percent; "good," less than 10 percent; "fair," less than 15 percent; and "poor," probably more than 15 percent. The records of monthly and yearly mean discharge and runoff are, in general, more nearly accurate than the daily records.

Discharge at some stations, as indicated by the monthly mean, may vary widely from natural runoff, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur when relatively large negative adjustments are made or when evaporation is large in comparison with the observed discharge.

Many gaging stations on streams in the irrigated areas of the United States are situated above most of the diversions from those streams, and therefore the discharge recorded does not actually show the water supply available at the stations for further development, because water must first be supplied to existing irrigation systems.

PUBLICATIONS

Basic data for gaging stations are published in an annual series of reports consisting of 20 volumes, including one each for the States of Alaska and Hawaii. The area of the other 48 States is divided into 14 parts whose boundaries coincide with certain natural drainage lines. Formerly, the annual series of reports on surface-water supply consisted of 14 volumes, one for each of the 14 parts. Beginning with the reports for 1951, the records for the 48 States were published in 18 volumes, there being 2 volumes each for Parts 1, 2, 3, and 6. The boundaries of the various parts are indicated by the following list and the map in figure 1.

- Part 1. North Atlantic slope basins, in two volumes:
 A, North Atlantic slope basins, Maine to Connecticut.
 B, North Atlantic slope basins, New York to York River.
2. South Atlantic slope and eastern Gulf of Mexico basins, in two volumes:
 A, South Atlantic slope basins, James River to Savannah River.
 B, South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River.
3. Ohio River basin, in two volumes:
 A, Ohio River basin except Cumberland and Tennessee River basins.
 B, Cumberland and Tennessee River basins.
4. St. Lawrence River basin.
5. Hudson Bay and upper Mississippi River basins.
6. Missouri River basin, in two volumes:
 A, Missouri River basin above Sioux City, Iowa.
 B, Missouri River basin below Sioux City, Iowa.
7. Lower Mississippi River basin.
8. Western Gulf of Mexico basins.
9. Colorado River basin.
10. The Great Basin.
11. Pacific slope basins in California.
12. Pacific slope basins in Washington and upper Columbia River basin.
13. Snake River basin.
14. Pacific slope basins in Oregon and lower Columbia River basin.

Water-supply papers and other publications of the Geological Survey containing data on the water resources of the United States may be purchased or consulted as follows:

1. Copies may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., who will, on application, furnish lists giving prices. A list of Geological Survey publications may also be obtained by applying to the Director, Geological Survey, Washington, D. C.

2. Sets of the reports may be consulted in the libraries of the principal cities in the United States.

3. Sets are available for consultation in the offices of the Water Resources Division of the Geological Survey. Addresses of the offices in the area covered by this report are given on page 2.

Early records of the flow of streams in the United States are published in the reports listed below. In many of these reports records for years earlier than those indicated have been included for some streams.

Streamflow data for the years 1884-1901, in reports of the Geological Survey

(A = Annual Report; B = Bulletin)

Report	Character of data	Year
10th A, pt. 2	Descriptive information only.	
11th A, pt. 2	Monthly discharge and descriptive information.....	1884 to September 1890.
12th A, pt. 2	do.....	1884 to June 30, 1891.
13th A, pt. 3	do.....	1884-92.
14th A, pt. 2	Monthly discharge.....	1888-93.
B 131.....	Descriptions, measurements, gage heights, and ratings.....	1893-94.
16th A, pt. 2	Descriptive information only.	
B 140.....	Descriptions, measurements, gage heights, ratings, and monthly discharge.	1895.
WSP 11.....	Gage heights.....	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge..	1895-96.
WSP 15.....	Descriptions, measurements, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries above Kansas River.	1895-96. 1897.

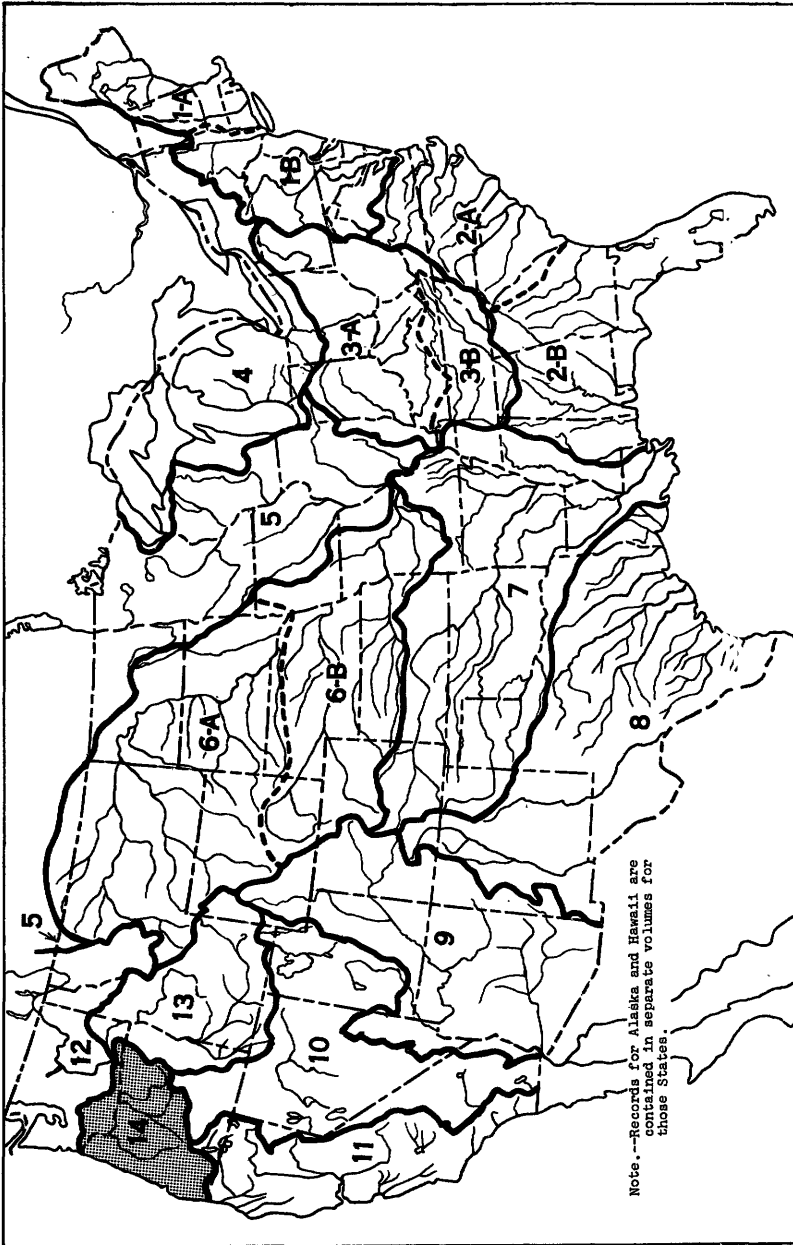


Figure 1.--Map of contiguous United States showing areas covered by 18 of the 20 volumes on surface water supply. The area covered by this report is shaded.

Streamflow data for the years 1884-1901, in reports of the Geological Survey--Continued

(A = Annual Report; B = Bulletin)

Report	Character of data	Year
WSP 16.....	Descriptions, measurements, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries above Kansas River.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge..	1897.
WSP 27.....	Measurements, ratings, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries.	1898.
WSP 28.....	Measurements, ratings, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries.	1898.
20th A, pt. 4	Monthly discharge.....	1898.
WSP 35 to 39.	Descriptions, measurements, gage heights, and ratings.....	1899.
21st A, pt. 4	Monthly discharge.....	1899.
WSP 47 to 52.	Descriptions, measurements, gage heights, and ratings.....	1899.
22d A, pt. 4.	Monthly discharge.....	1900.
WSP 55, 56.....	Descriptions, measurements, gage heights, and ratings.....	1901.
WSP 76.....	Monthly discharge.....	1901.

Note.--Records for all stations in Oregon are contained in WSP 370, superseding all reports in this table for these stations.

Reports on surface-water supply containing records from 1899 to date for drainage basins in this report are listed below. The data for any particular gaging station will, in general, be found in the reports covering the years during which the station was maintained.

Numbers of water-supply papers containing results of stream measurements in Pacific slope basins in Oregon and lower Columbia River basin, 1899-1959

Year	WSP	Year	WSP	Year	WSP	Year	WSP	Year	WSP
1899	38	1912	332-C	1925	614	1937	834	1949	1154
1900	51	1913	362-C	1926	634	1938	864	1950	1184
1901	66, 75	1914	394	1927	654	1939	884	1951	1218
1902	85	1915	414	1928	674	1940	904	1952	1248
1903	100	1916	444	1929	694	1941	934	1953	1288
1904	135	1917	464	1930	709	1942	964	1954	1348
1905	a177, 178	1918	484	1931	724	1943	984	1955	1398
1906	214	1919-20	514	1932	739	1944	1014	1956	1448
1907-8	252	1921	534	1933	754	1945	1044	1957	1518
1909	272	1922	554	1934	769	1946	1064	1958	1568
1910	292	1923	574	1935	784	1947	1094	1959	1633
1911	312	1924	594	1936	814	1948	1124		

a Rogue, Umpqua, and Siletz Rivers only.

Note.--Records for all stations in Oregon through September 1910 are contained in WSP 370, superseding all earlier reports for these stations.

A compilation of records for the area covered by this report through September 1950 has been published as Water-Supply Paper 1318. That report contains a summary of monthly and annual discharges for all previously published records as well as some records not contained in the annual series of water-supply papers. All records were reexamined and revised where warranted. Estimates of discharge were made to fill short gaps whenever practical.

The reports listed in the foregoing tables contain the customary records of discharge collected during the systematic operation of gaging stations. Detailed information on the stage and discharge of many streams during major floods has been included in special reports on these floods published by the Geological Survey. The more recent of these special reports also contain other pertinent hydrologic information and analyses and compilations of data relating to earlier notable floods. The following list gives the numbers and titles of these reports:

Report

- WSP 96: Destructive floods in the United States in 1903.
WSP 771: Floods in the United States, magnitude and frequency.
WSP 1080: Floods of May-June 1948 in Columbia River basin.
WSP 1137-E: Floods of 1950 in Southwestern Oregon and Northwestern California.
WSP 1137-I: Summary of floods in the United States during 1950.
WSP 1227-D: Summary of floods in the United States during 1951.
WSP 1260-F: Summary of floods in the United States during 1952.
Cir. 191: Floods in western Washington, frequency and magnitude in relation to drainage-area characteristics.
WSP 1320-D: Floods of January 1953 in western Oregon and northwestern California.
WSP 1320-E: Summary of floods in the United States during 1953.

RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The table below contains a list of gaging stations for the area covered by this report, at which records of discharge were collected during the water year October 1953 to September 1959 by agencies other than the Geological Survey. The records of these stations are not contained in publications of the Geological Survey except as noted. The records on many canals and drainage ditches, not here listed, have been collected by the Oregon State engineer and the Bureau of Reclamation in connection with the water supply for irrigation projects.

Records of discharge collected by agencies other than the Geological Survey			
Stream	Location	Period	Collected by
Big Butte Creek, South Fork (known locally as Rancheria Creek), Blue River.....	SE $\frac{1}{4}$ sec.17 (revised), T.35 S., R.3 E., 4 miles east of Butte Falls, Oreg. T.15 S., R.5 E. (unsurveyed), 1 $\frac{1}{2}$ miles upstream from Quentin Creek, 7 miles north of town of McKenzie Bridge, Oreg.	1935-50, 1951-59 1955-59*	Oregon State engineer. U. S. Forest Service.
Deschutes River.....	SW $\frac{1}{4}$ sec.23, T.21 S., R.9 E., $\frac{1}{2}$ mile upstream from bridge at Pringle Falls and 7 miles northwest of Lapine, Oreg.	1915-17, 1922-59*	Oregon State engineer.
Fish Lake Dam, tunnel at.	SE $\frac{1}{4}$ sec.4, T.37 S., R.4 E., 14 miles east of Lakecreek, Oreg.	1929-59	Do.
Fivemile Creek.....	SW $\frac{1}{4}$ sec.27, T.4 S., R.29 E., 12 miles northwest of Ukiah, Oreg.	1928-30, 1932-33, 1935-44, 1948-47, 1949-52, 1953-59	Do.
Fourbit Creek.....	SE $\frac{1}{4}$ sec.22, T.35 S., R.3 E., 7 miles southeast of Butte Falls, Oreg.	1949-59	Do.
Little Butte Creek.....	SE $\frac{1}{4}$ sec.19, T.38 S., R.2 E., at Lakecreek, Oreg.	1922-24, 1927-47, 1949-59	Do.
Little Butte Creek, North Fork.	SE $\frac{1}{4}$ sec.20, T.36 S., R.2 E., above Rogue River Valley Canal intake, near Lakecreek, Oreg.	1932-59*	Do.
Little Butte Creek, South Fork.	NE $\frac{1}{4}$ sec.21, T.37 S., R.4 E., 1 mile south of Big Elk ranger station, near Lakecreek, Oreg.	1932-59*	Do.
Little Walla Walla River.	NE $\frac{1}{4}$ sec.12, T.5 N., R.35 E., near George St., in Milton, Oreg.	1932-59*	Do.
Lookout Creek.....	T.15 or 16 S., R.5 E. (unsurveyed), 0.4 mile upstream from mouth and 6 miles northeast of town of Blue River Oreg.	1955-59*	U. S. Forest Service.
Lookout Creek tributary a/	NE $\frac{1}{4}$ sec.31, T.15 S., R.5 E., 600 ft above mouth and 6.8 miles northeast of town of Blue River, Oreg.	1952-59	Do.
Do.....	SE $\frac{1}{4}$ sec.31, T.15 S., R.5 E., 0.5 mile above mouth and 6.5 miles northeast of town of Blue River Oreg.	1952-59	Do.
Do b/.....	NW $\frac{1}{4}$ sec.6, T.16 S., R.5 E., 0.3 mile above mouth and 6 miles northeast of town of Blue River Oreg.	1952-59	Do.
Ochoco Creek.....	NE $\frac{1}{4}$ sec.6, T.15 S., R.17 E., below Ochoco Reservoir, 6 miles east of Prineville, Oreg.	1920-59	Oregon State engineer.
Ochoco Reservoir.....	NW $\frac{1}{4}$ sec.5, T.15 S., R.17 E., 6 miles east of Prineville, Oreg.	1918-59	Do.
Willow Creek.....	Sec.34, T.35 S., R.3 E., 6 miles southeast of Butte Falls, Oreg.	1949-59	Do.
Willow Creek (known locally as Big Butte Springs).	NE $\frac{1}{4}$ sec.20, T.35 S., R.3 E., 4 miles east of Butte Falls, Oreg.	1930-59	Do.

* Records for some earlier years contained in water-supply papers published by the Geological Survey either in annual reports or in WSP 1318.

b Also operated as a crest-stage partial-record station by the Geological Survey (see p. 288).

Note.—Records through 1941 collected by the Oregon State engineer (some in cooperation with the Bureau of Reclamation of the U. S. Department of the Interior) are contained in bulletins published by that officer.

HYDROLOGIC CONDITIONS

Runoff was generally above median during the water year except for March to July when it was below median in eastern and southwestern Oregon. Excessive runoff occurred throughout the area during September as a result of heavy rains. No noteworthy floods occurred during the water year. For the two key gaging stations in the area covered by this report, a comparison of monthly discharge during the 1959 water year with the median discharge for the 25-year period (1921-45) is shown below.

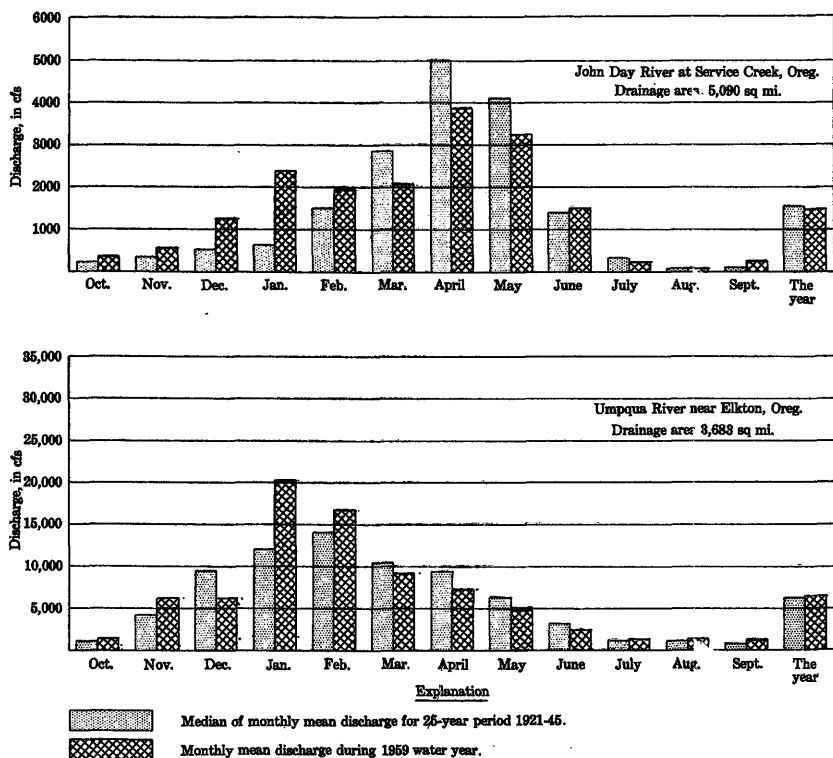


Figure 2. Comparison of discharge at two key gaging stations during 1959 water year with median discharge for 25-year period.

LOWER COLUMBIA RIVER BASIN

WALLA WALLA RIVER BASIN

100. South Fork Walla Walla River near Milton, Oreg.

Location.--Lat 45°50', long 118°10', in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.15, T.4 N., R.37 E., on right bank 1 mile upstream from Pacific Power & Light Co.'s penstock intake, 1 mile downstream from Elbow Creek, and 13 miles southeast of Milton.

Drainage area.--63 sq mi, approximately.

Records available.--February to October 1903, August 1906 to November 1917, May 1931 to September 1959. Monthly discharge only for some periods, published in WSP 1318. Published as "12 miles above Milton" 1903 and as "above Pacific Power & Light Co.'s intake, near Milton" 1907-10.

Gage.--Water-stage recorder. Altitude of gage is 2,050 ft (from river-profile map). Prior to Mar. 23, 1934, water-stage recorder or staff gage at several sites within $\frac{1}{2}$ miles of present site at various datums.

Average discharge.--38 years (1907-17, 1931-59), 176 cfs (127,400 acre-ft per year).

Extremes.--Maximum discharge during year, 830 cfs Dec. 11 (gage height, 3.00 ft); minimum, 99 cfs Oct. 1.

1903, 1906-17, 1931-59: Maximum discharge recorded, 2,430 cfs Dec. 12, 1946 (gage height, 4.20 ft), from rating curve extended above 240 cfs; minimum, 72 cfs Feb. 14, 1932.

Maximum stage known, about 6 ft Mar. 31, 1931, present site and datum.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 964: Drainage area. WSP 1398: 1912, 1940, drainage area at former site.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.4	90	2.5	500
1.7	157	3.0	830
2.0	265		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	101	103	a140	332	225	310	365	541	237	133	117	119
2	101	106	138	281	214	318	460	314	253	130	117	119
3	101	110	341	235	214	273	400	293	261	128	117	119
4	101	117	269	a220	218	241	350	277	257	128	117	123
5	103	121	221	a210	a18	225	336	257	277	135	117	141
6	103	133	199	206	214	210	336	241	289	130	117	144
7	104	176	293	195	203	210	*293	245	253	141	117	123
8	135	297	297	218	192	203	273	257	229	130	117	121
9	110	195	253	289	182	199	253	257	233	128	117	119
10	117	172	277	297	179	192	245	241	218	128	*117	119
11	110	149	645	305	169	188	253	233	214	126	117	119
12	106	149	574	395	*163	195	269	245	210	126	119	117
13	104	221	410	*350	157	195	265	285	206	123	119	119
14	104	182	323	281	157	188	241	336	203	126	119	123
15	103	157	273	249	157	179	237	390	195	126	119	128
16	104	144	241	241	218	176	225	341	185	123	117	123
17	104	135	225	a240	269	185	218	336	176	123	117	121
18	108	135	225	a250	245	199	210	346	169	123	117	119
19	121	157	218	a250	229	203	199	323	166	121	119	123
20	112	203	206	a210	225	192	199	293	163	121	126	130
21	108	229	210	a205	229	192	214	281	157	119	130	133
22	104	225	203	a220	225	188	253	285	154	119	121	126
23	104	261	192	a350	210	185	269	289	152	*117	119	126
24	104	253	188	a400	*192	*185	273	289	152	117	119	123
25	104	*218	195	a380	199	185	253	289	149	117	119	123
26	104	195	218	a300	221	214	261	269	144	117	119	244
27	104	166	318	350	221	218	253	249	141	*117	123	425
28	*104	157	273	370	218	218	269	233	138	117	119	314
29	104	a150	233	318	-	214	314	225	138	117	119	*245
30	103	a145	289	277	-----	237	341	225	*135	117	119	210
31	101	-----	336	249	-----	265	-----	229	-----	117	119	-----
Total	3,296	5,161	8,423	8,653	5,763	6,582	8,327	8,714	5,854	3,838	3,685	4,538
Mean	106	172	272	279	206	212	278	281	195	124	119	151
Cfsm	1.68	2.73	4.32	4.43	3.27	3.37	4.41	4.46	3.10	1.97	1.89	2.40
In.	1.95	3.05	4.97	5.11	3.40	3.89	4.92	5.14	3.46	2.27	2.18	2.68
Ac-ft	6,540	10,240	16,710	17,160	11,430	13,060	16,520	17,280	11,610	7,610	7,310	9,000

Calendar year 1958: Max 820 Min 101 Mean 203 Cfsm 3.22 In. 43.79 Ac-ft 147,100
 Water year 1958-59: Max 645 Min 101 Mean 200 Cfsm 3.17 In. 43.02 Ac-ft 144,500

Peak discharge (base, 600 cfs).--Dec. 11 (8 p.m.) 830 cfs (3.00 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records at Pendleton and records for North Fork Walla Walla River near Milton and Umatilla River above Meacham Creek, near Gibbon.

WALLA WALLA RIVER BASIN

110. North Fork Walla Walla River near Milton, Oreg.

Location.--Lat 45°54', long 118°17', in NW $\frac{1}{4}$ sec.23, T.5 N., R.36 E., on right bank $\frac{1}{4}$ miles upstream from confluence with South Fork and 5 miles southeast of Milton.

Drainage area.--42 sq mi, approximately.

Records available.--January 1930 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Altitude of gage is 1,470 ft (from river-profile map). Prior to Oct. 23, 1948, at several sites 0.7 mile downstream at various datums.

Average discharge.--29 years, 49.5 cfs (35,840 acre-ft per year).

Extremes.--Maximum discharge during year, 715 cfs Dec. 11 (gage height, 4.69 ft), from rating curve extended above 220 cfs; minimum, 1.7 cfs Aug. 11.
1930-59: Maximum discharge observed, 1,960 cfs Dec. 12, 1946 (gage height, 6.97 ft, site and datum then in use), from rating curve extended above 220 cfs; minimum, 0.9 cfs Aug. 17, 1955.

Remarks.--Records good. No regulation. Diversions above station for irrigation of about 150 acres, of which 20 acres is below station.

Revisions (water years).--WSP 1398: 1942, 1947, drainage area (present and former sites).

Rating tables, water year 1958-59 (gage height, in feet, and discharge,
in cubic feet per second)
(Shifting-control method used Feb. 2-16)

Oct. 1 to Dec. 11

Dec. 12 to Sept. 30

1.9	3.8	3.0	95	1.9	1.0	2.7	41
2.0	5.8	3.5	215	2.0	2.4	3.0	8'
2.2	13	4.0	390	2.1	4.4	3.5	210
2.5	32	4.5	620	2.3	11	4.0	390
2.7	53			2.5	22		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.8	7.1	25	123	128	177	171	186	29	7.8	2.8	4.7
2	5.6	7.7	24	104	110	183	296	171	30	8.9	2.6	4.4
3	5.6	8.0	98	90	108	138	268	156	30	8.9	2.8	4.4
4	5.4	10	88	80	125	110	213	138	28	8.2	2.6	4.7
5	5.2	11	68	70	123	92	183	117	36	8.2	2.8	6.6
6	5.0	14	57	67	114	79	171	98	44	7.8	3.2	14
7	5.2	22	89	60	104	79	*145	86	36	8.2	2.4	10
8	5.4	23	117	78	98	73	128	82	32	8.2	2.3	8.9
9	6.1	24	92	104	88	73	112	81	34	7.2	2.4	8.2
10	7.1	22	95	110	81	67	104	74	31	6.9	*2.3	8.2
11	8.0	19	493	114	73	64	104	68	28	6.0	2.0	7.5
12	7.4	18	377	162	*65	67	106	64	25	5.3	2.4	6.9
13	7.1	45	201	*174	58	71	104	67	22	4.7	3.0	6.0
14	6.4	41	121	135	55	65	94	82	21	4.2	2.8	6.6
15	6.1	34	88	108	55	58	88	128	18	4.0	2.8	10
16	6.1	27	70	102	65	54	81	121	*17	3.8	3.0	12
17	6.1	23	58	100	108	60	78	125	16	3.6	3.4	11
18	5.8	21	58	96	104	70	74	148	15	3.8	3.2	10
19	6.8	28	58	88	90	71	70	138	15	3.8	3.2	9.6
20	7.4	50	54	79	84	64	68	117	13	3.6	4.7	14
21	7.4	60	53	68	88	62	71	100	11	3.6	6.6	17
22	7.4	59	46	70	88	60	84	88	11	3.4	6.6	15
23	7.4	65	41	119	79	60	96	79	11	*3.8	6.0	13
24	7.1	71	39	258	*70	60	104	70	11	3.8	5.6	12
25	7.1	*61	40	234	90	58	100	64	11	3.4	4.7	11
26	7.1	52	46	168	130	76	114	62	11	2.8	4.4	35
27	7.1	43	138	186	110	86	114	55	11	*3.0	5.0	198
28	*7.4	35	110	289	98	94	130	50	11	3.4	5.3	148
29	7.1	30	*82	250	-	98	168	44	10	4.0	5.3	*94
30	7.1	27	96	183	-----	100	189	39	*8.2	4.0	5.3	68
31	7.1	-----	125	150	-----	110	-----	30	-----	3.2	5.3	-----
Total	202.9	957.8	3,147	4,017	2,589	2,579	3,828	2,928	626.2	161.5	116.8	778.7
Mean	6.55	31.9	102	130	82.5	83.2	128	94.5	20.9	5.21	3.77	26.0
Ac-ft	402	1,900	6,240	7,970	5,140	5,120	7,590	5,810	1,240	320	232	1,540

Calendar year 1958: Max 640 Min 2.4 Mean 63.5 Ac-ft 45,990
Water year 1958-59: Max 493 Min 2.0 Mean 60.1 Ac-ft 43,500

Peak discharge (base, 300 cfs).--Dec. 11 (8 p.m.) 715 cfs (4.69 ft); Jan. 28 (12:30 p.m.) 334 cfs (3.86 ft); Apr. 2 (7 p.m.) 330 cfs (3.85 ft).

* Discharge measurement made on this day.

130. Mill Creek near Walla Walla, Wash.

Location.--Lat 46°00'30", long 118°07'00", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.12, T.6 N., R.37 E., or left bank 4 miles downstream from city of Walla Walla diversion dam, $4\frac{1}{2}$ miles upstream from Blue Creek, and $11\frac{1}{2}$ miles southeast of Walla Walla.

Drainage area.--60 sq mi, approximately.

Records available.--August 1913 to September 1917, April to September 1938, October 1939 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 2,000 ft above mean sea level, unadjusted. Prior to Oct. 1, 1938, staff gages at about same site at different datums.

Average discharge.--24 years (1913-17, 1939-59), 98.8 cfs (71,530 acre-ft per year).

Extremes.--Maximum discharge during year, 924 cfs Dec. 11 (gage height, 16.98 ft); minimum, 31 cfs Aug. 16, 17; minimum gage height, 14.93 ft Oct. 6.
1913-17, 1938, 1939-59: Maximum discharge, 2,610 cfs Dec. 28, 1945 (gage height, 17.85 ft), from rating curve extended above 620 cfs by logarithmic plotting; minimum observed, 16 cfs Oct. 11-15, 1939.

Remarks.--Records fair except those for period of ice effect, which are poor. City of Walla Walla diverts about 22 cfs 4 miles above station for municipal use. No regulation.

Cooperation.--Gage-height record and 14 discharge measurements furnished by Corps of Engineers.

Revisions (water years).--WSP 1288: Drainage area. WSP 1398: 1946-48(M), 1950(M).

Rating tables, water year 1958-59, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 4-12, Jan. 28 to Feb. 1)

Oct. 1 to Jan. 27

Jan. 28 to Sept. 30

14.9	25	16.0	295	15.0	28	16.0	230
15.0	36	16.5	560	15.2	52	16.5	410
15.2	66	17.0	940	15.4	84	17.0	640
15.5	129			15.7	150		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		33	66	263	182	323	274	200	86	49	37	34
2	*35	35	58	216	148	267	*468	185	90	48	37	34
3	34	36	*438	b145	150	*203	362	172	88	47	37	34
4	34	44	267	b120	148	165	278	*162	*84	47	42	36
5	34	*37	182	b110	*145	145	236	148	97	47	*37	47
6	34	80	145	b100	145	128	218	132	101	46	36	52
7	35	61	196	120	138	125	185	125	90	46	36	39
8	64	75	220	150	128	118	165	125	82	*46	36	38
9	40	70	176	230	118	116	150	123	94	46	35	*37
10	39	66	182	259	114	114	140	114	84	44	35	37
11	35	56	*716	271	107	107	138	105	79	43	35	36
12	33	92	609	390	99	138	140	112	79	43	34	35
13	33	291	345	345	94	160	138	110	78	43	34	35
14	32	139	238	263	95	142	123	138	74	42	34	37
15	32	94	182	210	92	125	121	165	72	42	32	47
16	32	75	152	188	110	118	110	145	70	42	32	39
17	32	61	134	179	158	140	107	145	67	40	*32	38
18	35	56	131	173	162	160	99	162	66	39	32	37
19	44	122	124	164	155	150	95	158	64	38	35	38
20	40	220	117	*152	150	125	94	145	62	38	43	42
21	36	234	119	137	150	123	95	135	61	38	44	39
22	35	192	115	139	148	*121	105	125	60	38	37	39
23	34	196	112	252	140	121	114	123	58	37	36	38
24	34	176	107	708	150	178	118	118	60	37	35	38
25	33	142	110	470	135	114	116	114	58	37	35	38
26	33	115	184	322	145	138	130	112	56	37	35	78
27	33	88	430	446	148	145	145	99	55	37	37	121
28	33	77	295	*565	148	158	155	94	54	37	36	107
29	33	66	216	374	-----	160	192	90	52	37	35	84
30	34	60	238	270	-----	178	212	86	49	37	34	72
31	36	-----	279	215	-----	203	-----	84	-----	37	35	-----
Total	1,105	3,089	6,881	7,946	3,782	4,648	5,023	4,051	2,170	1,286	1,110	1,426
Mean	35.6	103	222	256	135	150	167	131	72.3	41.5	35.8	47.5
Ac-ft	2,190	6,130	13,650	15,760	7,500	9,220	9,960	8,040	4,300	2,550	2,200	2,830

Calendar year 1958: Max 928 Min 32 Mean 123 Ac-ft 88,940
Water year 1958-59: Max 716 Min 32 Mean 116 Ac-ft 84,330

Peak discharge (base, 700 cfs).--Dec. 11 (5:30 p.m.) 924 cfs (16.98 ft); Jan. 24 (8 a.m.) 828 cfs (16.86 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

135. Blue Creek near Walla Walla, Wash.

Location.--Lat 46°03'30", long 118°08'10", in SW 1/4 sec. 25, T. 7 N., R. 37 E., on right bank 1 mile upstream from mouth and 10 miles east of Walla Walla.

Drainage area.--17.0 sq mi.

Records available.--October 1939 to September 1959.

Gage.--Water-stage recorder. Concrete control since July 25, 1948. Datum of gage is 1,700 ft above mean sea level, unadjusted. Prior to Oct. 1, 1950, at datum 1,700 ft lower.

Average discharge.--20 years, 15.9 cfs (11,510 acre-ft per year).

Extremes.--Maximum discharge during year, 222 cfs Jan. 27 (gage height, 42.16 ft); minimum daily, 0.7 cfs Aug. 13-17; minimum gage height, 40.33 ft Sept. 25.

1939-59: Maximum discharge, 725 cfs Dec. 28, 1945 (gage height, 43.35 ft, present datum), from rating curve extended above 400 cfs; minimum observed, 0.1 cfs Oct. 14, 1939, but may have been less during periods of no gage-height record Oct. 1-11, 15, 1939.

Remarks.--Records fair except those for periods of ice effect, no gage-height record, or indefinite stage-discharge relation, which are poor. No known regulation or diversion.

Cooperation.--Gage-height record and 15 discharge measurements furnished by Corps of Engineers.

Revisions (water years).--WSP 984: 1942. WSP 1348: 1941, 1942(M), 1945.

Rating table, water year 1958-59, except periods of ice effect or indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 10, May 25 to July 7)

40.3	0.7	40.8	18.5
40.4	1.9	41.0	36
40.5	4.2	41.4	83
40.6	7.7	42.0	200

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	1.4	6.1	47	64	73	64	32	8.5	1.7	0.9	1.1
2	*1.4	1.6	4.5	43	54	64	93	36	8.1	1.7	.9	*1.2
3	1.3	1.8	30	b30	50	52	94	37	7.3	1.6	.9	1.3
4	1.3	*2.0	31	b20	50	41	82	*36	*6.9	1.5	1.0	1.4
5	1.3	1.9	23	b18	*48	36	62	34	9.4	1.5	*1.0	1.6
6	1.3	3.6	19.5	b20	48	32	53	29	9.4	1.4	.9	2.1
7	1.4	3.1	34	b25	48	32	46	25	7.7	1.3	.9	1.7
8	2.2	2.7	36	36	45	28	38	23	7.3	*1.3	.8	1.5
9	2.0	2.8	28	50	41	28	32	22	9.4	1.3	.8	1.4
10	1.9	3.1	29	56	38	29	30	20	8.1	1.2	.8	1.3
11	1.8	2.7	93	65	37	29	28	18.5	7.7	1.2	.8	1.2
12	1.8	8.0	86	73	33	38	22	16.5	6.9	1.2	.8	1.1
13	1.6	31	59	70	29	42	23	14.5	6.1	1.1	.7	1.1
14	1.4	16	42	58	33	39	22	14.5	5.7	1.1	.7	1.5
15	1.4	11.5	32	48	35	35	22	22	4.8	1.1	.7	2.1
16	1.4	8.5	26	45	36	31	19.5	22	4.5	1.0	.7	1.8
17	1.4	b7.5	21	43	37	33	20	24	4.1	1.0	*.7	1.6
18	1.4	6.5	22	40	38	34	19.5	30	3.8	1.0	.8	1.4
19	1.9	32	19.5	37	38	32	18.5	31	3.5	1.0	.9	1.5
20	1.6	43	18	*32	37	29	20	29	3.4	.9	1.5	1.9
21	1.4	30	17.5	27	38	26	21	26	3.2	.9	2.0	1.7
22	1.4	18.5	16	28	34	*24	21	23	3.0	.9	1.4	1.5
23	1.4	18	14	54	32	23	20	20	2.8	.9	1.3	*1.5
24	1.4	14.5	13.5	108	31	22	21	18	2.6	.9	1.2	1.4
25	1.6	13	13.5	91	33	22	20	16	2.4	.9	1.1	1.4
26	1.6	11.5	19	72	37	28	22	16	2.3	.9	1.1	12.5
27	1.4	8.9	67	104	36	31	22	14	2.2	.9	1.1	7.3
28	1.4	7.7	63	*149	34	38	23	12.5	2.0	.9	1.1	7.3
29	1.4	6.9	53	114	-	42	30	11.5	1.9	.9	1.1	7.7
30	1.4	6.5	50	93	-----	49	31	10.5	1.8	.9	1.1	4.8
31	1.4	-----	53	77	-----	52	-----	8.9	-----	.9	1.1	-----
Total	47.0	326.2	1,039.1	1,773	1,114	1,114	1,039.5	692.4	156.8	35.0	30.8	76.9
Mean	1.52	10.9	33.5	57.2	39.8	35.9	34.6	22.3	5.23	1.13	0.99	2.56
Cfsm	0.089	0.641	1.97	3.56	2.34	2.11	2.04	1.31	0.508	0.066	0.058	0.151
In.	0.10	0.71	2.27	3.88	2.44	2.44	2.27	1.51	0.34	0.08	0.07	0.17
Ac-ft	93	647	2,060	3,520	2,210	2,210	2,060	1,370	311	69	61	153

Calendar year 1958: Max 180 Min 0.8 Mean 19.4 Cfsm 1.14 In. 15.48 Ac-ft 14,040
Water year 1958-59: Max 149 Min 0.7 Mean 20.4 Cfsm 1.20 In. 16.28 Ac-ft 14,760

Peak discharge (base, 200 cfs).--Jan. 27 (7:30 p.m.) 222 cfs (42.16 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record June 16 to July 7; indefinite stage-discharge relation July 8 to Sept. 23; discharge estimated on basis of 5 discharge measurements, weather records, and records for nearby stations.

150. Mill Creek at Walla Walla, Wash.

Location.--Lat 46°04'40", long 118°16'10", in NE¼NW¼ sec.23, T.7 N., R.36 E., on left bank 400 ft downstream from diversion dam and 1.5 miles east of Walla Walla.

Drainage area.--96 sq mi, approximately.

Records available.--April 1941 to September 1959.

Gage.--Water-stage recorder and artificial control. Datum of gage is 1,165.49 ft above mean sea level (Corps of Engineers bench mark). April 1941 to June 11, 1941, staff gage and June 11, 1941, to Jan. 22, 1957, water-stage recorder, at sites 0.8 mile downstream at different datum.

Extremes.--Maximum discharge during year, 908 cfs Jan. 27 (gage height, 3.76 ft); minimum, 0.2 cfs Oct. 23-29 (gage height, 1.72 ft).

1941-59: Maximum discharge, 2,760 cfs Dec. 28, 1945 (gage height, 4.0 ft, site and datum then in use); no flow Nov. 2, 1954, Oct. 3-5, 1957, and part of each day Oct. 15, 18-20, Oct. 29 to Nov. 1, Nov. 3, 1954, Feb. 19, 20, 1958.

Remarks.--Records good except those below 20 cfs or those for period of ice effect, which are poor. Some regulation at diversion dam 400 ft above station where water is diverted into Yellowhawk and Garrison Creeks for stock and irrigation. Water is diverted 1 mile upstream into Mill Creek Reservoir for flood control with release of stored waters after flood into Russell Creek and is also diverted as required to replenish losses from seepage and evaporation from small recreation pool maintained in the reservoir. City of Walla Walla diverts water for municipal supply several miles upstream. Other small diversions above station for irrigation.

Cooperation.--Gage-height record and 13 discharge measurements furnished by Corps of Engineers.

Revisions (water years).--WSP 1288: Drainage area. WSP 1348: 1943, 1945-46.

Rating table, water year 1958-59, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.68	0.2	1.9	15	2.5	175
1.7	.4	2.0	32	3.0	400
1.8	4.1	2.2	78	3.6	780

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.6	0.3	7.5	255	239	342	370	138	30	1.6	1.0	1.2
2	*1.2	.3	6.5	211	199	326	*668	179	19.5	1.6	1.2	**1.2
3	1.2	5.6	*292	b170	164	*296	503	160	19.5	1.6	1.0	1.2
4	1.0	15.5	291	b140	164	227	395	*149	*19.5	1.6	1.0	1.2
5	1.0	*1.6	164	b120	*160	187	315	125	45	1.6	1.2	1.6
6	.7	2.0	119	b120	156	153	273	116	60	1.6	1.2	1.6
7	.7	1.2	199	b120	145	156	223	98	34	1.6	1.2	1.2
8	.7	1.0	231	138	135	138	187	92	30	**1.2	1.0	1.0
9	.4	1.2	195	203	122	135	156	92	42	1.0	1.0	1.0
10	.4	1.2	172	247	112	135	135	84	34	1.0	1.0	1.0
11	1.0	1.0	*679	260	109	132	128	68	28	1.0	1.0	1.0
12	1.6	1.0	585	370	100	168	125	63	26	1.0	1.0	1.0
13	1.2	258	400	360	89	207	122	60	26	1.2	1.2	1.0
14	.7	145	268	286	92	191	116	78	24	1.2	1.2	1.0
15	.6	89	191	219	92	164	116	135	19.5	1.2	1.2	1.6
16	.6	60	138	199	109	145	100	125	15	1.2	1.2	1.2
17	.6	16.5	119	183	187	156	98	119	15	1.2	**1.2	1.0
18	1.0	6.5	112	175	199	183	92	142	8.6	1.2	1.2	.7
19	2.9	98	100	160	187	179	81	135	4.8	1.2	1.6	1.6
20	1.2	223	95	*138	183	149	47	122	2.0	1.2	2.0	1.0
21	.3	231	100	116	183	132	32	106	2.0	1.2	2.0	1.0
22	.3	187	86	112	179	*128	30	95	2.0	1.2	1.6	1.0
23	.2	175	76	217	168	125	30	89	2.0	1.2	1.6	**1.0
24	.2	158	73	703	145	122	34	84	2.0	1.2	1.2	1.0
25	.2	100	73	557	145	112	32	68	2.0	1.2	1.2	1.0
26	.2	63	92	313	160	145	73	70	2.0	1.2	1.2	25
27	.2	40	433	474	160	164	106	58	1.6	1.2	1.2	76
28	.2	22	355	*773	160	187	125	51	1.6	1.2	1.2	51
29	.3	12.5	239	545	---	203	153	42	1.6	1.2	1.2	40
30	.3	12.5	219	395	---	231	149	34	1.6	1.2	1.2	24
31	.3	---	255	296	---	264	---	36	---	1.0	1.2	---
Total	23.0	1,908.9	6,365.0	8,575	4,243	5,582	5,014	3,013	520.8	39.0	38.4	243.4
Mean	0.74	63.6	205	277	152	180	167	97.2	17.4	1.26	1.24	8.11
Ac-ft	46	3,790	12,620	17,010	8,420	11,070	9,950	5,980	1,030	77	76	483
Calendar year 1958:	Max	964		Min	0.2		Mean	103		Ac-ft	74,760	
Water year 1958-59:	Max	773		Min	0.2		Mean	97.4		Ac-ft	70,550	

* Discharge measurement made on this day.

** Field estimate made on this day.

b Stage-discharge relation affected by ice.

WALLA WALLA RIVER BASIN

160. Dry Creek near Walla Walla, Wash.

Location.--Lat 46°07'20", long 118°14'10", on south line of SW¹ sec.31, T.8 N., R.37 E., on right bank 1 mile downstream from Spring Creek and 6 miles northeast of Walla Walla.

Drainage area.--48.4 sq mi.

Records available.--January 1949 to September 1959.

Gage.--Water-stage recorder. Concrete control since July 25, 1959. Altitude of gage is 1,200 ft (from topographic map).

Average discharge.--10 years, 24.2 cfs (17,520 acre-ft per year).

Extremes.--Maximum discharge during year, 528 cfs Apr. 1 (gage height, 5.45 ft); minimum, 1.3 cfs Aug. 4 (gage height, 3.10 ft).
1949-59: Maximum discharge, 3,340 cfs Feb. 22, 1949 (gage height, 11.6 ft, from high-water mark in well), from rating curve extended above 310 cfs on basis of slope-area and contracted-opening measurements of peak flows at gage heights 9.0 and 11.6 ft; minimum, 0.2 cfs Aug. 4, 1949.

Remarks.--Records good except those for periods of ice effect or doubtful or no gage-height record, which are poor. Several small diversions above station for irrigation. No regulation.

Rating table, water year 1958-59, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

3.1	1.3	3.4	10	4.1	70
3.2	3.2	3.6	22	4.5	134
3.3	6.2	3.8	38	5.0	340

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.5	3.7	9.6	51	67	110	153	36	12	5.2	2.3	3.0
2	2.5	3.7	8.8	42	60	89	137	37	11	4.9	2.0	3.0
3	2.3	4.5	27	b23	60	71	97	34	10.5	4.7	1.8	2.7
4	2.3	3.2	18	b20	58	60	78	34	10.5	4.5	1.8	3.0
5	2.1	4.0	15	b18	56	54	68	31	15.5	4.0	2.0	4.0
6	2.1	7.3	13	b17	55	47	62	27	17.5	3.8	2.0	6.2
7	2.1	9.6	22	b20	50	58	54	25	*12.5	3.5	1.8	4.0
8	4.0	6.6	21	*b40	48	46	46	24	12.5	3.3	2.0	3.4
9	*4.3	7.2	20	45	45	47	40	23	27	3.2	2.1	3.4
10	4.3	8.4	30	52	42	44	36	22	17	3.0	2.0	3.2
11	4.3	6.6	131	60	40	41	34	20	15	2.9	1.8	2.7
12	4.3	6.6	105	83	36	47	31	17.5	13.5	2.8	2.0	2.5
13	4.0	30	*69	70	34	49	29	15.5	12.5	2.7	2.1	2.5
14	4.0	22	49	58	36	47	27	16.5	11.5	2.7	2.1	3.0
15	3.7	18.5	38	49	34	45	29	32	11	2.6	2.0	6.6
16	3.7	*13.5	*33	51	58	43	28	27	10.5	2.6	2.0	5.5
17	4.0	6.9	28	49	59	43	27	32	10	2.5	2.0	4.3
18	4.0	6.9	31	46	59	46	27	42	9.2	2.5	*2.1	3.4
19	4.9	8.4	27	42	57	45	26	41	8.8	2.5	2.1	3.4
20	5.2	30	26	36	56	44	28	35	7.6	2.5	5.2	4.6
21	4.3	23	27	30	56	*44	27	37	7.2	2.5	6.6	4.0
22	4.0	19.5	25	34	57	42	27	29	6.6	2.5	4.0	*4.0
23	3.7	22	24	90	60	40	28	25	5.5	*2.5	3.2	3.7
24	4.0	22	23	200	51	39	28	24	5.5	2.5	2.7	3.7
25	4.3	20	23	100	60	36	29	21	5.8	2.5	2.7	3.7
26	4.3	18.5	31	60	63	51	*28	21	6.2	2.1	2.5	2.4
27	4.0	14.5	87	150	60	49	26	19.5	5.8	2.1	3.0	16
28	4.0	10.5	62	292	62	75	27	17.5	6.2	2.7	3.0	15.5
29	4.0	16.5	48	*125	-	58	33	15.5	5.8	3.0	2.7	10
30	4.0	13	51	*91	-----	75	35	14	5.5	2.7	2.7	7.2
31	3.7	-----	55	79	-----	64	-----	13	-----	2.5	3.2	-----
Total	114.9	387.1	1,177.4	2,123	1,479	1,649	1,343	808.0	3 5.7	94.0	79.5	168.2
Mean	3.71	12.9	38.0	69.5	52.8	53.2	44.8	26.1	10.5	3.0	2.56	5.61
Ac-ft	228	768	2,340	4,210	2,930	3,270	2,660	1,600	628	186	158	334

Calendar year 1958: Max 268

Min 1.2

Mean 28.5

Ac-ft 20,670

Water year 1958-59: Max 292

Min 1.8

Mean 26.7

Ac-ft 19,310

Peak discharge (base, 400 cfs).--Jan. 27 (8 p.m.) 438 cfs (5.18 ft); Apr. 1 (5 p.m.) 528 cfs (5.45 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Doubtful or no gage-height record Nov. 23, 24, Dec. 4-10, Jan. 24-27, July 1-23; discharge estimated on basis of recorder record, weather records, and records for nearby stations.

165. East Fork Touchet River near Dayton, Wash.

Location.--Lat 46°16'45", long 117°54'05", in NW 1/4 sec. 11, T.9 N., R.39 E., 50 ft upstream from Dayton water-supply headworks, three-quarters of a mile downstream from mouth of Wolf Creek, 3 miles upstream from confluence with South Fork, and 4 miles southeast of Dayton.

Drainage area.--102 sq mi.

Records available.--April 1941 to September 1951, September 1956 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,868.3 ft above mean sea level (river-profile survey). April 1941 to September 1951 at site 200 ft upstream at same datum.

Average discharge.--13 years (1941-51, 1956-59), 125 cfs (90,500 acre-ft per year).

Extremes.--Maximum discharge during year, 1,010 cfs Dec. 11 (gage height, 2.84 ft); minimum, 42 cfs Oct. 1-5; minimum gage height, 0.96 ft July 6, 7.
1941-51, 1956-59: Maximum discharge, 1,530 cfs about Jan. 7, 1948 (gage height, 5.28 ft, from recorded range in stage); minimum daily, 27 cfs Jan. 25-28, 1957.

Remarks.--Records fair except those for periods of no gage-height record, ice effect, or indefinite stage-discharge relation, which are poor. No regulation. Small diversions above station for irrigation during summer months. City of Dayton diverts about 1.2 mgd in summer and 0.4 mgd in winter for municipal water supply at station.

Rating table, water year 1958-59, except periods of ice effect or indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 8-18, July 19 to Sept. 30)

0.9	42	1.5	260
1.0	84	2.0	475
1.2	156	2.6	830

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Avg.	Sept.
1	42	46	121	a240	239	250	267	200	115	61	55	59
2	42	50	d124	b190	225	260	380	183	120	80	55	55
3	42	50	d274	b160	222	242	311	170	130	58	50	55
4	42	67	236	b140	218	225	284	163	135	57	50	59
5	42	59	204	b120	204	211	270	159	150	56	50	63
6	46	113	183	b120	200	187	264	156	130	54	50	71
7	50	121	239	*b130	183	183	242	149	*128	53	50	59
8	*90	152	242	197	176	166	225	149	140	52	50	59
9	71	149	218	214	170	166	208	149	130	51	50	55
10	63	149	d236	228	*166	163	190	146	125	50	50	50
11	59	106	4795	242	159	159	180	146	120	49	50	50
12	55	*125	*4750	323	152	176	146	118	48	50	50	50
13	50	222	452	307	149	166	180	142	115	48	50	46
14	46	173	340	274	152	166	173	149	110	47	50	55
15	46	*142	*292	250	152	163	166	250	105	47	50	63
16	46	110	250	239	159	159	163	230	100	47	50	59
17	46	95	222	225	180	170	159	210	97	46	*50	55
18	55	91	214	214	173	187	156	190	95	46	50	50
19	84	173	197	208	170	190	152	170	90	46	55	50
20	76	225	180	187	173	*180	149	160	87	46	67	55
21	63	239	176	156	180	176	146	150	84	46	67	*50
22	59	222	146	156	173	170	149	145	81	*50	59	50
23	55	222	132	232	a160	170	152	145	78	55	59	50
24	55	214	124	380	a170	166	152	150	75	59	55	50
25	56	204	124	340	a180	163	152	150	72	59	55	50
26	55	187	156	288	a170	173	*156	140	70	59	55	76
27	50	163	267	307	a170	173	163	135	68	55	59	71
28	50	146	253	376	197	194	170	130	66	55	59	67
29	50	128	232	323	--	187	176	120	64	55	55	63
30	46	121	228	261	---	214	190	110	55	55	55	65
31	46	---	230	260	---	222	---	110	---	55	55	---
Total	1,677	4,264	7,817	7,307	5,022	5,767	5,901	4,902	3,061	1,625	1,669	1,708
Mean	54.1	142	252	236	179	186	197	158	102	52.4	53.8	56.9
Cfs/m	0.530	1.39	2.47	2.31	1.75	1.82	1.93	1.55	1.00	0.514	0.527	0.558
In.	0.61	1.55	2.85	2.66	1.83	2.10	2.15	1.79	1.12	0.59	0.61	0.62
Ac-ft	3,530	8,460	15,500	14,490	9,980	11,440	11,700	9,720	6,070	3,220	3,310	3,390
Calendar year 1958: Max	795			MIn 40	Mean 147			Cfs/m 1.44	In. 19.61	Ac-ft 106,700		
Water year 1958-59: Max	795			MIn 42	Mean 139			Cfs/m 1.36	In. 18.48	Ac-ft 100,600		

Peak discharge (base, 700 cfs).--Dec. 11 (about 7 p.m.), 1,010 cfs (2.84 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for nearby stations.

b Stage-discharge relation affected by ice.

d Doubtful gage-height record; discharge computed from reconstructed gage-height graph.

Note.--Stage-discharge relation indefinite May 15 to July 18; discharge estimated on basis of 1 discharge measurement and records for nearby stations.

170. Touchet River at Bolles, Wash.

Location.--Lat 46°16'30", long 118°13'15", on line between secs.7 and 8, T.9 N., R.37 E., on right bank just downstream from bridge on State Highway 3 E, a quarter of a mile southeast of Bolles and 3 miles west of Waitsburg.

Drainage area.--372 sq mi.

Records available.--February 1924 to October 1929, April 1951 to September 1959. Monthly discharge only for February and March 1929, published in WSP 1318.

Average discharge.--13 years (1924-29, 1951-59), 223 cfs (161,400 acre-ft per year).

Gage.--Water-stage recorder. Altitude of gage is 1,150 ft (from topographic map). Prior to Oct. 5, 1929, water-stage recorder at site half a mile upstream at different datum. Apr. 1 to May 6, 1951, staff gage at present site and datum.

Extremes.--Maximum discharge during year, 2,790 cfs Jan. 27 (gage height, 8.78 ft); minimum, 32 cfs July 23, 25 (gage height, 4.06 ft).
1924-29, 1951-59: Maximum discharge, 4,470 cfs Jan. 13, 1928 (gage height, 7.04 ft, site and datum then in use); minimum, 1.4 cfs July 30, 1926 (gage height, 0.42 ft, site and datum then in use).

Remarks.--Records good except those for periods of ice affect or fragmentary gage-height record, which are fair. Diurnal fluctuation and some regulation at low flow caused by operation of flour mill at Waitsburg. Numerous small diversions for municipal and domestic use and for irrigation.

Revisions (water years).--WSP 1448: 1952-53(M), drainage area.

Rating tables, water year 1958-59, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 7-19)

Oct. 1 to Dec. 10		Dec. 11 to May 15		May 16 to Sept. 30	
4.5	41	4.7	114	4.0	24
4.7	77	5.0	215	4.2	53
4.9	132	5.5	445	4.4	96
5.2	265	6.0	690	4.7	177
5.5	415	7.0	1,300	5.0	280
6.0	690	8.0	2,090	5.5	490

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	55	162	550	540	785	600	296	160	61	39	43
2	43	55	151	490	481	730	988	296	157	59	37	42
3	43	59	f598	b350	468	640	850	260	157	57	39	43
4	44	67	558	b240	505	525	725	239	154	57	39	47
5	44	69	442	b230	445	450	630	223	187	57	39	57
6	46	77	360	b250	445	395	570	196	*233	57	39	73
7	46	170	619	b300	414	380	490	178	*190	57	39	61
8	*92	140	618	b400	400	350	427	171	162	61	37	55
9	84	162	508	454	390	325	370	175	236	55	37	51
10	69	174	448	f520	*370	310	325	168	193	50	39	50
11	65	136	f1,800	f580	350	286	297	154	171	49	34	48
12	63	123	f1,440	f790	320	345	278	141	157	43	36	47
13	57	574	*f994	710	296	365	268	138	148	47	36	47
14	55	360	*700	580	310	340	255	168	143	47	36	48
15	54	260	555	481	305	300	264	286	134	43	36	71
16	54	*188	*490	472	366	305	243	336	126	42	34	67
17	54	151	414	450	463	325	239	300	121	40	*36	61
18	55	147	400	452	458	375	223	344	114	40	36	57
19	75	397	365	409	395	204	312	104	33	39	57	57
20	90	564	330	395	422	345	182	292	98	39	59	65
21	73	586	320	335	432	*330	171	276	91	37	80	63
22	67	492	291	355	432	310	175	273	84	*35	59	*65
23	63	459	268	f710	427	296	182	254	78	34	48	63
24	63	437	255	f1,490	375	278	189	243	80	37	47	61
25	63	395	255	382	414	264	193	240	75	34	42	59
26	63	320	355	760	505	305	204	236	75	37	40	82
27	61	255	826	f1,080	440	330	*208	219	71	39	42	145
28	55	206	695	f1,300	520	404	223	203	69	42	40	114
29	54	184	565	*f946	-----	395	247	190	75	42	40	94
30	54	179	555	750	-----	476	282	180	69	42	40	87
31	55	-----	550	640	-----	468	-----	165	-----	40	42	-----
Total	1,847	7,441	16,887	18,431	11,720	12,127	10,501	7,152	3,912	1,421	1,286	1,923
Mean	59.6	248	545	595	419	391	350	231	130	45.8	41.5	64.1
Ac-ft	3,660	14,760	33,490	36,560	23,250	24,050	20,830	14,190	7,760	2,820	2,550	3,810
Calendar year 1958:	Max 1,800			Min 25		Mean 257		Ac-ft 185,900				
Water year 1958-59:	Max 1,800			Min 34		Mean 259		Ac-ft 187,700				

Peak discharge (base, 5.00 cfs).--Dec. 11 (8 a.m.), 2,140 cfs (8.05 ft); Jan. 24 (about 3 a.m.), 1,800 cfs (7.65 ft); Jan. 27 (10 p.m.), 2,790 cfs (8.78 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

f Fragmentary gage-height record; discharge computed from partly estimated gage heights.

185. Walla Walla River near Touchet, Wash.

Location.--Lat 46°01'45", long 118°43'40", in NW¹/₄ sec. 6, T. 6 N., R. 33 E., on left bank 2¹/₂ miles southwest of Touchet and 3 miles downstream from Touchet River.

Drainage area.--1,660 sq mi, approximately.

Records available.--October 1951 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 405 ft (from topographic map). Prior to Nov. 27, 1951, staff gage at same site and datum.

Average discharge.--7 years, 609 cfs (440,900 acre-ft per year).

Extremes.--Maximum discharge during year, 5,950 cfs Jan. 28 (gage height, 9.28 ft); minimum, 4.8 cfs Aug. 18 (gage height, 1.73 ft).

1951-59: Maximum discharge, 16,300 cfs Feb. 2, 1952 (gage height, 12.10 ft), from rating curve extended above 6,000 cfs on basis of contracted-opening measurement at gage height 13.81 ft; minimum, 3.3 cfs Aug. 27, 28, 1958 (gage height 1.69 ft). Maximum stage known, 13.81 ft in February 1949, from floodmarks (discharge, 23,800 cfs).

Remarks.--Records good except those below 25 cfs or those for period of ice effect, which are fair. Many diversions above station for irrigation. Records of chemical analyses and water temperatures for the water year 1959 are given in WSP 1644.

Rating table, water year 1958-59, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.7	3.5	2.5	92	5.0	1,240
1.8	8.0	3.0	202	6.0	2,100
2.0	24	3.5	370	7.0	3,100
2.2	47	4.0	800	9.0	5,540

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	84	72	366	1,850	1,890	2,160	1,690	999	396	54	12.5	24
2	58	73	350	1,500	1,660	2,460	2,840	1,080	295	50	9.0	29
3	60	73	83	bl, 000	1,500	2,170	3,110	985	257	46	8.0	36
4	51	112	1,420	1,700	1,820	1,810	2,550	860	254	46	8.0	39
5	40	103	1,020	b650	1,540	1,360	2,110	808	*295	47	9.5	43
6	41	106	814	b700	1,460	1,400	1,910	712	515	46	8.0	64
7	37	159	901	b800	1,380	1,350	1,700	650	460	47	8.0	92
8	41	251	1,530	1,430	1,260	1,290	1,450	585	382	45	8.0	86
9	*77	292	1,240	1,640	1,170	1,160	1,280	545	390	48	8.0	74
10	82	284	1,030	1,690	1,100	1,170	1,100	545	432	41	7.6	70
11	70	227	2,730	1,840	*1,030	1,100	1,010	500	366	35	7.6	62
12	64	199	4,080	2,370	957	1,110	943	419	312	29	8.0	62
13	61	478	2,870	2,570	880	1,270	922	394	264	24	7.6	67
14	58	820	1,940	2,060	844	1,210	862	446	213	24	7.6	87
15	54	540	1,440	1,720	894	1,100	862	730	184	24	7.6	116
16	51	*419	1,170	1,610	901	1,040	832	978	152	24	7.6	174
17	50	330	*1,010	1,570	1,820	1,030	766	844	130	19	6.6	162
18	51	306	887	1,570	1,660	1,120	760	978	124	17.5	5.8	152
19	68	410	894	1,380	1,560	1,190	706	936	112	17.5	8.0	152
20	120	820	826	1,260	1,520	1,100	660	862	97	17.5	10	159
21		1,060	808	1,120	1,520	1,020	595	790	89	15.5	41	166
22	108	957	798	1,080	1,520	999	560	760	73	15.5	68	181
23	70	844	748	1,390	1,490	*929	575	706	68	14	47	181
24	67	850	712	3,670	1,460	915	605	660	66	18	34	*179
25	67	808	712	3,570	1,330	862	*615	640	64	13	30	176
26	72	670	706	2,620	1,760	915	600	605	61	13	24	194
27	73	560	2,270	2,460	1,600	1,100	650	555	60	11	19	598
28	78	460	2,200	4,620	1,580	1,110	660	500	61	12	17.5	850
29	73	402	1,640	3,360	-	1,330	784	455	57	13	19	660
30	68	386	1,470	2,670	-----	1,380	929	398	61	15	21	505
31	68	-----	1,640	2,250	-----	1,540	-----	362	-----	14	23	-----
Total	2,013	13,071	40,833	58,520	38,886	39,900	34,616	21,307	6,210	855.5	506.5	5,440
Mean	64.9	436	1,317	1,868	1,369	1,287	1,154	687	207	27.6	16.3	181
Ac-ft	3,990	25,930	80,990	116,100	77,130	79,140	68,660	42,260	12,320	1,700	1,000	10,790
Calendar year 1958:	Max	5,610	Min	3.5	Mean	735	Ac-ft	532,500				
Water year 1958-59:	Max	4,620	Min	5.8	Mean	718	Ac-ft	520,000				

Peak discharge (base, 3,000 cfs).--Dec. 12 (12 m.) 4,540 cfs (8.25 ft); Jan. 24 (3:30 p.m.) 4,400 cfs (8.13 ft); Jan. 28 (5 a.m.) 5,950 cfs (9.28 ft); Apr. 2 (11 p.m.) 3,360 cfs (7.24 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Springs in the Walla Walla River basin, Oreg.-Wash.

Ground-water overflow through many springs on the alluvial fan of the Walla Walla River near Milton-Freewater, Oreg., amounts to about 50,000 acre-ft a year. During the irrigation season practically all the overflow is used to water crops on land not served by diversion from the river. A survey made in 1933 listed 57 springs or spring groups in the area, arranged in "inner," "intermediate," and "outer" zones concentric about the apex of the alluvial fan.¹

The inner zone is 3 to 3½ miles below Milton-Freewater and extends from the vicinity of Nicholas Spring, which is about half a mile east of the Walla Walla River at McCoy Bridge, to springs in the vicinity of Dugger Creek. Within this zone are fully three-fourths of the springs in the Walla Walla River basin. The intermediate and outer zones, each of which contains only a few springs, are about 2 miles and 4 miles, respectively, beyond the inner zone.

In order to bring about a more effective use of the available water supply through a better understanding of the relation between surface- and ground-water supplies in the basin, discharge measurements of each of the principal springs and measurements of ground-water levels in representative wells have been made and the results published periodically since 1932.

Discharge measurements, in cubic feet per second, of springs in Walla Walla River basin, Oreg.-Wash., during water year October 1958 to September 1959†

Springs of the inner zone			
Date	Spring	Location	Discharge (cfs)
Nov. 25	Big Spring Branch (west prong), Oreg.	SE¼NW¼ sec.24, T.6 N., R.35 E., at Ballou residence, 75 ft above bridge on county road.	6.58
Apr. 3	do.....	do.....	6.54
June 3	do.....	do.....	10.7
Aug. 15	do.....	do.....	5.34
Dec. 1	Big Spring Branch (east prong), Oreg.	NE¼SW¼ sec.24, T.6 N., R.35 E., above flow line of small reservoir supplying two diversion pumps.	3.18
Apr. 3	do.....	do.....	2.96
June 3	do.....	do.....	3.62
Aug. 15	do.....	do.....	1.81
Dec. 3	Engle Spring, Oreg.....	NW¼SE¼ sec.23, T.6 N., R.35 E., total flow at diversion dam.	3.13
Apr. 13	do.....	do.....	2.52
June 3	do.....	do.....	3.63
Aug. 15	do.....	do.....	2.64
Nov. 25	Downing Spring, Oreg...	SE¼SW¼ sec.23, T.6 N., R.35 E., at weir, 200 ft below spring orifice.	.35
Apr. 3	do.....	do.....	.26
June 3	do.....	do.....	2.61
Aug. 15	do.....	do.....	1.62
Nov. 25	Haun Spring, Oreg.....	NW¼SE¼ sec.23, T.6 N., R.35 E., at Haun farm. 200 ft above highway crossing.	1.06
Apr. 3	do.....	do.....	1.06
June 3	do.....	do.....	1.67
Aug. 15	do.....	do.....	1.67
Springs of the intermediate and outer zones			
Dec. 1	McEvoy Spring, Wash....	SE¼NW¼ sec.10, T.6 N., R.35 E., at McEvoy farm, 200 ft above Walla Walla Railway.	2.41
Apr. 6	do.....	do.....	2.25
June 3	do.....	do.....	3.35
Aug. 15	do.....	do.....	3.96
Nov. 25	Lewis Spring, Oreg.....	NW¼NW¼ sec.23, T.6 N., R.35 E., below road crossing.	1.75
Apr. 3	do.....	do.....	1.56
June 3	do.....	do.....	2.32
Aug. 15	do.....	do.....	1.99
Dec. 1	Unnamed Spring, Wash...	NW¼NE¼ sec.16, T.6 N., R.35 E., at small diversion structure.	1.92
Apr. 6	do.....	do.....	1.65
June 3	do.....	do.....	2.61
Aug. 17	do.....	do.....	1.96
Dec. 3	East Mud Creek (west prong), Oreg.	SW¼SW¼ sec.22, T.6 N., R.35 E., at two weirs.....	1.58
Apr. 6	do.....	do.....	.61
June 4	do.....	do.....	1.81
Aug. 17	do.....	do.....	1.74
Dec. 3	East Mud Creek (east prong), Oreg.	SE¼SW¼ sec.22, T.6 N., R.35 E., in diversion ditch, 150 ft below diversion dam.	.85
Apr. 6	do.....	do.....	.57
June 4	do.....	do.....	.94
Aug. 17	do.....	do.....	.91

† Measurements by Umatilla County deputy watermaster.

¹Piper, A. M., Robinson, T. W., and Thomas, H. E., Ground Water in the Walla Walla River Basin, Oreg.-Wash.: Supreme Court of the United States, October term 1935, State of Washington vs. State of Oregon, transcript of record, p. 132A, October 14, 1935.

Springs in the Walla Walla River basin, Oreg.-Wash.--Continued

Discharge measurements, in cubic feet per second, of springs in Walla Walla River basin, Oreg.-Wash., during water year October 1958 to September 1959†--Continued

Springs of the intermediate and outer zones--Continued

Date	Spring	Location	Discharge (cfs)
Dec. 1	East Mud Creek (branch of), Oreg.	SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.16, T.6 N., R.35 E., near Lockwood dwelling.	3.18
Apr. 6	do.....	do.....	1.71
June 5	do.....	do.....	2.96
Aug. 17	do.....	do.....	1.10
Dec. 3	South Mud Creek, Oreg..	SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.28, T.6 N., R.35 E., at Von Der Ahe farm.	4.07
Apr. 6	do.....	do.....	1.92
June 5	do.....	do.....	4.19
Aug. 18	do.....	do.....	1.57
Nov. 26	Johnson Creek, Oreg....	SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.29, T.6 N., R.35 E., at two weirs....	3.81
Apr. 6	do.....	do.....	1.97
June 4	do.....	do.....	3.49
Aug. 17	do.....	do.....	1.71
Dec. 3	Dugger Creek, Oreg....	NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.32, T.6 N., R.35 E., at two weirs....	12.14
Apr. 8	do.....	do.....	5.48
June 4	do.....	do.....	7.70
Aug. 17	do.....	do.....	3.6
Nov. 26	Schwartz Spring Branch (south prong), Oreg.	SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.23, T.6 N., R.34 E., at weirs.....	1.53
Apr. 8	do.....	do.....	5.22
June 4	do.....	do.....	5.95
Aug. 17	do.....	do.....	2.10
Nov. 26	Schwartz Spring Branch (north prong), Oreg.	NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.23, T.6 N., R.34 E., in ditch diverting from spring.	3.18
Apr. 8	do.....	do.....	4.91
Aug. 17	do.....	do.....	2.27
Dec. 3	South Mud Creek, Oreg..	SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.13, T.6 N., R.34 E., at Krumbaugh farm.	4.78
Apr. 8	do.....	do.....	7.18
June 4	do.....	do.....	8.45
Aug. 17	do.....	do.....	2.98

† Measurements by Umatilla County deputy watermaster.

192. Columbia River below McNary Dam, near Umatilla, Oreg.

Location.--Lat 45°56', long 119°20', in NW¼ sec.9, T.5 N., R.28 E., on right bank 1.2 miles downstream from McNary Dam, 2 miles northeast of Umatilla, 2.3 miles upstream from Umatilla River, and at mile 290.8.

Drainage area.--214,000 sq mi, approximately.

Records available.--October 1950 to September 1959. Gage-height records collected at Umatilla since 1876 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 240.04 ft above mean sea level, datum of 1929, supplementary adjustment of 1947 (Corps of Engineers bench mark).

Average discharge.--9 years, 192,700 cfs (139,500,000 acre-ft per year).

Extremes.--Maximum and minimum discharges for the water years 1951-59 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1951	May 29, 1951	587,000	31.54	Sept. 28, 1951	†88,000	-
1952	May 27, 1952	543,000	30.52	Sept. 30, 1952	71,100	10.22
1953	June 16, 1953	591,000	31.64	Jan. 6, 1953	62,100	9.58
1954	May 27, 1954	552,000	30.62	Feb. 5, 1954	51,900	8.84
1955	June 26, 1955	549,000	30.72	Dec. 16, 1954	79,500	10.88
1956	June 2, 1956	818,000	36.97	Oct. 9, 1955	83,600	11.22
1957	May 21, 1957	710,000	34.60	Jan. 29, 1957	50,600	8.74
1958	May 29, 1958	579,000	31.48	Dec. 17, 1957	74,600	10.58
1959	June 22, 1959	558,000	30.95	Oct. 16, 1958	86,800	11.52

† Minimum daily.

1950-59: Maximum discharge, 818,000 cfs June 2, 1956 (gage height, 36.97 ft); minimum, 50,600 cfs Jan. 29, 1957 (gage height, 8.74 ft).

Flood of June 5, 1894, reached a stage of 44.2 ft and that of May 31, 1948, reached a stage of about 40 ft, from information by Corps of Engineers.

Remarks.--Records excellent except those prior to October 1955, which are good. Some regulation by Franklin D. Roosevelt Lake and by reservoirs in Kootenai, Flathead, Pend Oreille, Spokane, Chelan, Yakima, and Snake River basins. Diurnal fluctuation caused by powerplant and gates at McNary Dam since April 1953. Many diversions for irrigation above station.

Cooperation.--Gage-height record and discharge measurements furnished by Corps of Engineers.

Discharge, in thousands of cubic feet per second, water year October 1950 to September 1951

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	99.4	159.0	126.0	178.0	115.0	159.0	157.0	280.0	532.0	396.0	249.0	126.0
2	97.7	145.0	122.0	180.0	117.0	157.0	153.0	278.0	514.0	389.0	241.0	126.0
3	92.8	150.0	129.0	182.0	117.0	151.0	157.0	274.0	497.0	385.0	234.0	124.0
4	94.4	153.0	120.0	178.0	115.0	149.0	163.0	275.0	477.0	386.0	232.0	122.0
5	101.0	149.0	122.0	178.0	115.0	145.0	174.0	274.0	466.0	371.0	224.0	124.0
6	97.7	149.0	117.0	172.0	115.0	147.0	194.0	280.0	461.0	381.0	219.0	122.0
7	94.4	147.0	117.0	153.0	115.0	145.0	206.0	291.0	463.0	383.0	213.0	117.0
8	94.4	141.0	122.0	135.0	122.0	135.0	219.0	324.0	455.0	374.0	215.0	115.0
9	97.7	135.0	126.0	139.0	135.0	139.0	229.0	365.0	445.0	365.0	224.0	104.0
10	96.0	133.0	124.0	135.0	161.0	141.0	231.0	398.0	428.0	357.0	225.0	104.0
11	94.4	129.0	120.0	122.0	211.0	141.0	226.0	436.0	411.0	363.0	224.0	103.0
12	99.4	122.0	115.0	118.0	243.0	141.0	213.0	463.0	400.0	355.0	206.0	97.7
13	96.0	120.0	111.0	118.0	263.0	137.0	217.0	485.0	395.0	353.0	186.0	106.0
14	99.4	117.0	117.0	126.0	246.0	139.0	216.0	493.0	404.0	350.0	169.0	101.0
15	96.0	113.0	122.0	129.0	231.0	141.0	235.0	501.0	420.0	341.0	169.0	103.0
16	96.0	111.0	122.0	133.0	216.0	145.0	252.0	494.0	432.0	333.0	163.0	103.0
17	92.8	111.0	122.0	141.0	209.0	159.0	264.0	485.0	456.0	335.0	147.0	101.0
18	97.7	115.0	117.0	141.0	216.0	167.0	278.0	504.0	475.0	333.0	131.0	99.4
19	104.0	120.0	115.0	145.0	213.0	163.0	298.0	532.0	477.0	331.0	126.0	96.0
20	111.0	118.0	117.0	141.0	202.0	161.0	315.0	551.0	475.0	323.0	117.0	101.0
21	113.0	108.0	118.0	135.0	200.0	161.0	325.0	538.0	465.0	322.0	122.0	89.6
22	108.0	110.0	122.0	139.0	195.0	167.0	305.0	536.0	457.0	323.0	128.0	91.2
23	113.0	110.0	124.0	137.0	186.0	169.0	291.0	536.0	452.0	316.0	133.0	92.8
24	108.0	108.0	128.0	139.0	182.0	170.0	279.0	558.0	439.0	365.0	124.0	89.6
25	110.0	111.0	145.0	126.0	182.0	163.0	268.0	570.0	434.0	297.0	122.0	91.2
26	108.0	106.0	157.0	122.0	178.0	163.0	252.0	571.0	436.0	291.0	124.0	89.6
27	111.0	120.0	169.0	133.0	176.0	159.0	242.0	570.0	426.0	286.0	130.0	92.8
28	115.0	122.0	176.0	141.0	169.0	155.0	246.0	560.0	418.0	281.0	124.0	88.0
29	118.0	137.0	182.0	145.0	-	157.0	255.0	578.0	414.0	270.0	122.0	94.4
30	120.0	126.0	182.0	129.0	-----	155.0	266.0	568.0	406.0	262.0	126.0	96.0
31	135.0	-----	182.0	118.0	-----	153.0	-----	543.0	-----	253.0	126.0	-----
Total	3,211.2	3,775.0	4,098.0	4,406.0	4,945.0	4,734.0	7,124.0	14,111.0	13,430.0	10,424.0	5,295.0	3,110.3
Mean	103.6	125.8	131.9	142.1	176.6	152.7	237.5	455.2	447.7	326.3	170.8	103.7
Ac-ft	6,369	7,488	8,108	8,739	9,808	9,390	14,130	27,990	26,640	20,680	10,500	6,169

Calendar year 1950: Max - Min - Mean - Ac-ft -
Water year 1950-51: Max 578 Min 88 Mean 215.5 Ac-ft 156,000

Note.--All figures are expressed in thousands. No gage-height record Oct. 1 to Feb. 10, Feb. 24 to Apr. 5, Aug. 13 to Sept. 30; discharge estimated on basis of unpublished records for U. S. Weather Bureau station 1.5 miles downstream.

192. Columbia River below McNary Dam, near Umatilla, Oreg.--Continued

Discharge, in thousands of cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	96.0	113.0	106.0	104.0	126.0	124.0	185.0	314.0	479.0	330.0	171.0	105.0
2	89.6	113.0	108.0	103.0	128.0	123.0	179.0	296.0	463.0	336.0	167.0	96.7
3	99.4	115.0	120.0	106.0	126.0	120.0	172.0	289.0	464.0	339.0	167.0	87.7
4	106.0	117.0	128.0	105.0	126.0	117.0	169.0	311.0	463.0	337.0	167.0	93.7
5	120.0	108.0	129.0	116.0	133.0	116.0	172.0	353.0	470.0	330.0	161.0	102.0
6	129.0	106.0	131.0	117.0	135.0	122.0	181.0	352.0	468.0	322.0	161.0	100.0
7	133.0	103.0	128.0	113.0	136.0	121.0	196.0	374.0	459.0	314.0	159.0	94.9
8	126.0	110.0	117.0	110.0	129.0	123.0	219.0	387.0	454.0	310.0	149.0	90.4
9	113.0	108.0	117.0	111.0	125.0	119.0	232.0	404.0	445.0	300.0	146.0	87.1
10	106.0	108.0	110.0	114.0	126.0	121.0	222.0	430.0	438.0	290.0	157.0	88.0
11	108.0	108.0	96.0	115.0	121.0	124.0	213.0	429.0	429.0	280.0	157.0	93.1
12	106.0	110.0	97.7	111.0	118.0	126.0	212.0	433.0	424.0	276.0	142.0	90.1
13	111.0	101.0	110.0	112.0	113.0	132.0	212.0	442.0	419.0	267.0	135.0	91.9
14	117.0	103.0	113.0	109.0	122.0	125.0	213.0	448.0	416.0	264.0	137.0	92.2
15	115.0	106.0	111.0	108.0	119.0	132.0	224.0	475.0	402.0	254.0	123.0	86.5
16	115.0	108.0	106.0	113.0	118.0	129.0	235.0	495.0	391.0	251.0	127.0	84.7
17	117.0	110.0	103.0	116.0	116.0	125.0	240.0	502.0	384.0	244.0	127.0	82.9
18	117.0	108.0	96.0	118.0	116.0	125.0	244.0	483.0	369.0	238.0	127.0	89.5
19	115.0	106.0	92.8	117.0	111.0	129.0	257.0	479.0	353.0	232.0	124.0	90.7
20	118.0	97.7	109.0	117.0	113.0	133.0	272.0	491.0	342.0	229.0	123.0	89.5
21	118.0	91.2	109.0	114.0	123.0	133.0	274.0	520.0	339.0	219.0	125.0	88.9
22	124.0	104.0	112.0	108.0	121.0	135.0	262.0	535.0	331.0	216.0	124.0	87.1
23	128.0	104.0	111.0	111.0	114.0	133.0	255.0	530.0	328.0	215.0	124.0	83.6
24	126.0	103.0	108.0	119.0	116.0	133.0	252.0	521.0	325.0	212.0	122.0	82.0
25	128.0	92.8	96.6	120.0	117.0	139.0	256.0	514.0	315.0	198.0	117.0	85.6
26	133.0	101.0	91.8	119.0	110.0	160.0	269.0	524.0	312.0	200.0	117.0	88.6
27	124.0	99.4	88.8	118.0	110.0	181.0	291.0	541.0	314.0	199.0	115.0	86.5
28	118.0	94.4	84.8	122.0	118.0	192.0	314.0	538.0	317.0	185.0	118.0	85.0
29	115.0	94.4	103.0	117.0	120.0	198.0	310.0	525.0	321.0	184.0	118.0	83.8
30	113.0	106.0	110.0	117.0	119.0	199.0	311.0	511.0	325.0	184.0	115.0	79.2
31	113.0	-----	109.0	133.0	-----	193.0	-----	496.0	-----	175.0	114.0	-----
Total	3,597.0	3,142.9	3,350.5	3,536.0	3,506.0	4,282.0	7,084.0	13,925.0	11,765.0	7,925.0	4,214.0	2,686.8
Mean	116	104.8	108.1	114.1	120.9	138.1	236.1	449.2	392.2	255.6	135.9	89.56
Ac-ft	7,135	6,234	6,646	7,014	6,954	8,493	14,050	27,620	23,340	15,720	8,358	5,329
Calendar year 1951: Max 578 Min 84.8 Mean 212.8 Ac-ft 154,100												
Water year 1951-52: Max 541 Min 79.2 Mean 188.6 Ac-ft 136,900												

Note.--All figures are expressed in thousands. No gage-height record Oct. 1 to Dec. 19; discharge estimated on basis of unpublished records for U. S. Weather Bureau station 1.5 miles downstream.

Discharge, in thousands of cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75.6	82.8	72.5	78.4	116.0	117.0	141.0	223.0	405.0	370.0	210.0	134.0
2	83.2	82.3	72.2	76.7	122.0	118.0	144.0	201.0	409.0	370.0	200.0	135.0
3	82.3	79.8	77.8	76.4	136.0	111.0	143.0	190.0	410.0	368.0	198.0	128.0
4	83.2	75.3	80.6	70.0	143.0	115.0	141.0	170.0	441.0	361.0	190.0	127.0
5	82.9	77.8	80.6	68.7	160.0	122.0	137.0	155.0	462.0	361.0	180.0	126.0
6	81.4	80.9	80.3	63.8	161.0	117.0	134.0	159.0	476.0	371.0	192.0	125.0
7	75.8	81.7	78.9	69.7	154.0	112.0	133.0	181.0	482.0	361.0	180.0	119.0
8	76.7	78.5	75.8	76.1	150.0	114.0	133.0	216.0	490.0	358.0	170.0	113.0
9	85.0	83.8	74.7	75.0	139.0	110.0	140.0	223.0	510.0	357.0	170.0	110.0
10	83.5	78.5	73.6	75.8	128.0	108.0	136.0	219.0	522.0	355.0	159.0	117.0
11	83.5	75.0	75.6	78.1	134.0	111.0	132.0	194.0	522.0	345.0	153.0	118.0
12	81.2	74.4	75.8	76.1	132.0	122.0	130.0	173.0	530.0	330.0	155.0	115.0
13	79.5	79.2	76.1	77.5	128.0	127.0	127.0	170.0	554.0	327.0	153.0	114.0
14	76.7	78.5	75.8	79.2	125.0	133.0	124.0	170.0	573.0	317.0	124.0	110.0
15	76.1	85.5	71.9	89.8	124.0	130.0	124.0	173.0	582.0	322.0	136.0	101.0
16	80.0	83.8	72.2	95.5	117.0	128.0	124.0	182.0	586.0	321.0	135.0	105.0
17	84.1	81.2	73.6	104.0	114.0	124.0	129.0	194.0	582.0	317.0	134.0	107.0
18	84.7	77.0	76.7	108.0	119.0	124.0	130.0	197.0	579.0	314.0	131.0	108.0
19	85.0	75.3	74.4	121.0	122.0	129.0	128.0	197.0	582.0	311.0	125.0	110.0
20	83.2	77.5	78.1	133.0	117.0	128.0	130.0	215.0	575.0	301.0	126.0	104.0
21	75.8	77.8	80.0	144.0	117.0	131.0	132.0	264.0	562.0	295.0	126.0	103.0
22	75.3	82.8	77.8	153.0	116.0	135.0	140.0	277.0	541.0	289.0	129.0	104.0
23	81.4	75.3	80.3	141.0	109.0	135.0	140.0	299.0	511.0	294.0	130.0	95.3
24	81.2	76.1	75.6	137.0	105.0	133.0	114.0	320.0	490.0	270.0	134.0	108.0
25	83.8	71.1	78.1	135.0	108.0	139.0	127.0	356.0	474.0	248.0	133.0	109.0
26	84.7	75.0	76.7	130.0	114.0	144.0	168.0	353.0	449.0	242.0	129.0	107.0
27	82.9	87.7	72.5	116.0	113.0	149.0	190.0	339.0	399.0	240.0	136.0	107.0
28	77.2	83.8	65.2	112.0	112.0	149.0	190.0	350.0	371.0	230.0	136.0	104.0
29	77.0	80.9	69.7	112.0	109.0	145.0	220.0	355.0	354.0	224.0	130.0	95.3
30	82.9	75.0	70.5	109.0	-----	144.0	-----	382.0	-----	210.0	131.0	95.5
31	83.5	-----	74.3	112.0	-----	143.0	-----	386.0	-----	220.0	134.0	-----
Total	2,509.3	2,375.3	2,331.9	3,093.8	3,537.0	3,947.0	4,327.0	7,443.0	14,763.0	9,585.0	4,672.0	3,362.8
Mean	80.95	79.18	75.22	99.8	126.3	127.3	144.2	240.1	492.1	309.2	150.7	112.1
Ac-ft	4,977	4,711	4,625	6,136	7,016	7,829	8,582	14,760	29,280	19,010	9,267	6,670
Calendar year 1952: Max 541 Min 65.2 Mean 180.7 Ac-ft 131,200												
Water year 1952-53: Max 586 Min 63.8 Mean 169.7 Ac-ft 122,900												

Note.--All figures are expressed in thousands. No gage-height record July 27 to Aug. 9; discharge estimated on basis of records for station near The Dalles.

192. Columbia River below McNary Dam near Umatilla, Oreg.--Continued

Discharge, in thousands of cubic feet per second, water year October 1953 to September 1954

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	100.0	100.0	89.2	118.0	115.0	114.0	117.0	172.0	506.0	453.0	289.0	178.0
2	98.2	90.6	90.1	115.0	115.0	109.0	119.0	166.0	507.0	433.0	263.0	167.0
3	95.8	83.2	95.4	98.8	122.0	109.0	119.0	171.0	509.0	437.0	251.0	171.0
4	93.2	91.4	95.0	89.8	134.0	112.0	119.0	186.0	510.0	432.0	252.0	174.0
5	92.8	98.2	92.5	94.0	116.0	110.0	117.0	184.0	501.0	426.0	239.0	172.0
6	92.2	103.0	98.4	100.0	108.0	108.0	120.0	182.0	502.0	424.0	238.0	180.0
7	92.5	105.0	97.3	104.0	118.0	104.0	144.0	205.0	498.0	429.0	230.0	173.0
8	91.9	109.0	93.8	106.0	107.8	109.0	142.0	218.0	489.0	448.0	233.0	177.0
9	92.5	105.0	98.2	105.0	108.0	115.0	145.0	245.0	488.0	465.0	232.0	165.0
10	94.8	103.0	105.0	103.0	109.0	115.0	146.0	262.0	484.0	463.0	222.0	159.0
11	97.8	99.7	99.1	102.0	108.0	135.0	142.0	309.0	473.0	462.0	205.0	154.0
12	95.2	100.0	96.1	92.5	105.0	157.0	126.0	335.0	490.0	466.0	203.0	145.0
13	91.0	101.0	94.6	102.0	105.0	151.0	116.0	351.0	496.0	465.0	205.0	144.0
14	95.8	98.2	98.0	108.0	139.0	139.0	139.0	355.0	496.0	464.0	205.0	129.0
15	99.2	98.5	87.2	109.0	110.0	131.0	160.0	373.0	499.0	469.0	201.0	143.0
16	101.0	97.3	88.2	110.0	113.0	124.0	169.0	379.0	511.0	463.0	198.0	140.0
17	100.0	97.3	103.0	103.0	116.0	122.0	165.0	396.0	514.0	443.0	196.0	133.0
18	97.0	95.8	102.0	101.0	113.0	126.0	158.0	433.0	518.0	437.0	192.0	141.0
19	92.5	100.0	103.0	98.0	110.0	130.0	170.0	440.0	503.0	422.0	189.0	135.0
20	87.2	98.2	95.6	98.0	112.0	126.0	186.0	484.0	495.0	426.0	189.0	136.0
21	85.4	109.0	104.0	111.0	113.0	122.0	178.0	525.0	484.0	432.0	182.0	136.0
22	84.2	103.0	119.0	109.0	100.0	122.0	165.0	514.0	485.0	409.0	182.0	133.0
23	85.0	91.8	104.0	109.0	108.0	116.0	161.0	513.0	504.0	385.0	184.0	131.0
24	84.2	83.2	103.0	101.0	114.0	120.0	159.0	513.0	505.0	379.0	180.0	128.0
25	89.0	92.6	100.0	101.0	114.0	122.0	163.0	517.0	505.0	369.0	187.0	130.0
26	99.2	99.1	88.4	104.0	110.0	122.0	163.0	531.0	487.0	352.0	182.0	127.0
27	100.0	84.1	83.2	104.0	118.0	120.0	158.0	540.0	466.0	349.0	184.0	124.0
28	99.2	84.6	74.7	107.0	116.0	121.0	172.0	526.0	474.0	328.0	186.0	117.0
29	102.0	89.6	81.0	118.0	-	121.0	176.0	519.0	474.0	316.0	186.0	119.0
30	101.0	90.4	92.5	115.0	-----	116.0	172.0	509.0	458.0	316.0	187.0	122.0
31	100.0	-----	112.0	118.0	-----	113.0	-----	506.0	-----	298.0	180.0	-----
Total	2,929.8	2,896.8	2,975.1	3,248.1	3,146.0	3,761.0	4,478.0	11,559.0	14,827.0	12,860.0	6,450.0	4,383.0
Mean	94.51	96.56	95.97	104.8	112.4	121.3	149.3	372.9	494.2	414.8	208.1	146.1
Ac-ft	5,811	5,746	5,901	6,443	6,240	7,460	8,882	22,930	29,410	25,510	12,790	8,694
Calendar year 1953:	Max	586	Min	63.8	Mean	174.1	Ac-ft	126,000				
Water year 1953-54:	Max	540	Min	74.7	Mean	201.4	Ac-ft	145,800				

Note.--All figures are expressed in thousands. No gage-height record Jan. 16-21; discharge estimated on basis of recorded range in stage and records for station near the Dalles.

Discharge, in thousands of cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	112.0	102.0	116.0	101.0	92.6	109.0	123.0	139.0	238.0	523.0	275.0	128.0
2	116.0	97.8	108.0	94.2	104.0	113.0	123.0	146.0	223.0	510.0	269.0	114.0
3	118.0	103.0	104.0	95.8	103.0	115.0	125.0	159.0	230.0	478.0	254.0	113.0
4	110.0	98.8	103.0	85.7	103.0	111.0	122.0	163.0	275.0	463.0	231.0	107.0
5	104.0	102.0	104.0	87.9	103.0	111.0	122.0	162.0	295.0	443.0	233.0	110.0
6	107.0	105.0	107.0	93.2	104.0	108.0	122.0	161.0	*326.0	435.0	232.0	101.0
7	103.0	106.0	107.0	97.2	101.0	110.0	123.0	175.0	357.0	417.0	210.0	98.8
8	99.1	103.0	108.0	101.0	98.5	112.0	125.0	182.0	393.0	428.0	218.0	101.0
9	106.0	96.6	104.0	99.6	107.0	111.0	127.0	*179.0	*422.0	417.0	216.0	101.0
10	95.5	103.0	103.0	96.4	104.0	110.0	127.0	180.0	*450.0	402.0	204.0	98.5
11	98.2	101.0	104.0	97.8	106.0	113.0	131.0	180.0	460.0	399.0	188.0	98.2
12	94.0	101.0	104.0	97.4	107.0	118.0	138.0	186.0	458.0	396.0	185.0	102.0
13	97.9	100.0	98.6	95.0	105.0	117.0	137.0	196.0	492.0	412.0	185.0	105.0
14	101.0	100.0	94.9	90.3	101.0	115.0	139.0	206.0	504.0	411.0	172.0	106.0
15	101.0	102.0	90.6	94.8	91.3	113.0	138.0	200.0	507.0	406.0	157.0	105.0
16	110.0	102.0	80.5	102.0	97.0	112.0	136.0	186.0	502.0	396.0	149.0	109.0
17	105.0	110.0	87.2	98.5	100.0	112.0	134.0	168.0	483.0	394.0	160.0	108.0
18	106.0	110.0	89.6	90.6	101.0	113.0	129.0	167.0	475.0	401.0	148.0	112.0
19	89.5	112.0	91.6	93.6	105.0	110.0	128.0	168.0	488.0	394.0	137.0	111.0
20	112.0	113.0	93.7	94.6	104.0	111.0	132.0	168.0	478.0	395.0	145.0	109.0
21	104.0	113.0	91.4	100.0	102.0	113.0	134.0	199.0	*480.0	392.0	142.0	109.0
22	106.0	113.0	91.2	102.0	99.1	117.0	*141.0	241.0	505.0	372.0	131.0	107.0
23	104.0	116.0	91.2	98.2	100.0	118.0	143.0	257.0	508.0	359.0	121.0	105.0
24	104.0	119.0	91.0	95.8	103.0	113.0	155.0	234.0	516.0	345.0	123.0	106.0
25	100.0	115.0	89.5	90.6	105.0	113.0	158.0	*224.0	531.0	336.0	133.0	104.0
26	93.6	114.0	87.5	91.9	108.0	112.0	152.0	215.0	533.0	332.0	122.0	103.0
27	102.0	116.0	90.3	97.3	112.0	114.0	145.0	211.0	522.0	323.0	115.0	103.0
28	105.0	110.0	91.3	102.0	111.0	115.0	140.0	205.0	527.0	307.0	117.0	105.0
29	102.0	108.0	92.6	103.0	-	119.0	138.0	214.0	525.0	290.0	129.0	102.0
30	104.0	113.0	94.8	102.0	-----	120.0	137.0	231.0	525.0	280.0	131.0	102.0
31	109.0	-----	99.6	98.6	-----	119.0	-----	241.0	-----	272.0	129.0	-----
Total	3,216.8	3,205.2	3,009.1	2,978.0	2,877.5	3,515.0	4,021.0	5,942.0	13,262.0	12,126.0	5,361.0	3,183.5
Mean	103.8	106.8	97.07	96.06	102.8	113.4	134	191.7	442.1	391.2	172.9	106.1
Ac-ft	6,380	6,357	5,968	5,907	5,707	6,972	7,976	11,780	26,300	24,060	10,630	6,314
Calendar year 1954:	Max	540	Min	80.5	Mean	203.1	Ac-ft	147,100				
Water year 1954-55:	Max	533	Min	80.5	Mean	171.8	Ac-ft	124,400				

* Discharge measurement made on this day.

Note.--All figures are expressed in thousands.

192. Columbia River below McNary Dam, near Umatilla, Oreg.--Continued

Discharge, in thousands of cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	97.6	107.0	116.0	149.0	120.0	126.0	231.0	443.0	761.0	407.0	220.0	132.0
2	97.6	116.0	113.0	144.0	114.0	123.0	220.0	430.0	798.0	373.0	279.0	128.0
3	98.1	115.0	105.0	140.0	113.0	127.0	225.0	413.0	792.0	360.0	276.0	120.0
4	99.2	108.0	116.0	148.0	112.0	128.0	226.0	401.0	787.0	359.0	194.0	126.0
5	102.0	106.0	106.0	146.0	104.0	132.0	231.0	405.0	782.0	355.0	188.0	127.0
6	103.0	114.0	112.0	141.0	106.0	126.0	232.0	414.0	782.0	348.0	186.0	124.0
7	99.2	118.0	108.0	139.0	116.0	131.0	215.0	412.0	764.0	332.0	182.0	114.0
8	94.6	118.0	116.0	133.0	117.0	132.0	209.0	423.0	754.0	325.0	180.0	108.0
9	94.4	121.0	110.0	132.0	118.0	130.0	207.0	443.0	728.0	316.0	173.0	106.0
10	93.4	120.0	102.0	132.0	117.0	117.0	206.0	454.0	725.0	308.0	165.0	108.0
11	97.4	118.0	97.6	131.0	104.0	108.0	215.0	477.0	736.0	314.0	152.0	107.0
12	102.0	126.0	103.0	131.0	110.0	127.0	230.0	477.0	718.0	310.0	149.0	105.0
13	102.0	122.0	118.0	129.0	120.0	127.0	251.0	456.0	*682.0	313.0	139.0	*96.3
14	102.0	123.0	131.0	125.0	123.0	126.0	263.0	432.0	658.0	309.0	140.0	98.9
15	99.3	123.0	130.0	117.0	123.0	127.0	274.0	424.0	634.0	309.0	144.0	98.2
16	93.4	117.0	118.0	129.0	121.0	122.0	291.0	422.0	613.0	294.0	133.0	103.0
17	93.4	106.0	112.0	146.0	119.0	108.0	306.0	422.0	594.0	288.0	130.0	104.0
18	90.3	102.0	113.0	156.0	118.0	118.0	337.0	438.0	561.0	286.0	124.0	103.0
19	90.6	113.0	100.0	151.0	104.0	133.0	322.0	480.0	512.0	283.0	126.0	106.0
20	90.9	111.0	106.0	140.0	126.0	139.0	317.0	527.0	527.0	279.0	132.0	107.0
21	89.9	117.0	122.0	131.0	131.0	143.0	320.0	576.0	550.0	278.0	125.0	103.0
22	89.3	121.0	141.0	134.0	131.0	167.0	385.0	597.0	522.0	272.0	135.0	103.0
23	89.6	117.0	173.0	137.0	180.0	475.0	605.0	507.0	507.0	263.0	123.0	98.3
24	91.3	116.0	257.0	130.0	128.0	186.0	528.0	610.0	495.0	266.0	132.0	98.0
25	96.8	121.0	217.0	139.0	114.0	198.0	541.0	652.0	493.0	258.0	127.0	103.0
26	98.8	123.0	198.0	132.0	105.0	220.0	525.0	674.0	486.0	251.0	129.0	105.0
27	99.2	117.0	168.0	125.0	127.0	252.0	528.0	672.0	446.0	246.0	131.0	104.0
28	100.0	126.0	172.0	124.0	125.0	252.0	523.0	686.0	440.0	248.0	126.0	105.0
29	99.2	123.0	171.0	119.0	125.0	252.0	502.0	637.0	443.0	237.0	135.0	107.0
30	99.8	118.0	159.0	118.0	-----	224.0	470.0	695.0	428.0	229.0	140.0	102.0
31	99.8	-----	151.0	108.0	-----	238.0	-----	713.0	-----	225.0	132.0	-----
Total	2,994.1	3,503.0	4,233.6	4,146.0	3,428.0	4,792.0	9,803.0	15,974.0	18,718.0	9,241.0	4,707.0	3,240.0
Mean	96.58	116.8	136.6	133.7	118.2	154.6	326.8	515.3	623.9	298.1	151.8	108
Ac-ft	5,939	6,948	8,397	8,223	6,799	9,505	19,440	31,680	37,130	18,330	9,336	6,426
Calendar year 1955: Max 533 Min 85.7 Mean 175.3 Ac-ft 126,900												
Water year 1955-56: Max 798 Min 89.3 Mean 231.6 Ac-ft 168,200												

* Discharge measurement made on this day.

Note.--All figures are expressed in thousands.

Discharge, in thousands of cubic feet per second, water year October 1956 to September 1957

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	105.0	119.0	96.3	83.3	88.2	163.0	148.0	229.0	591.0	271.0	159.0	107.0
2	100.0	121.0	92.0	81.7	97.8	140.0	154.0	231.0	600.0	262.0	147.0	96.9
3	104.0	117.0	104.0	102.0	97.5	132.0	159.0	258.0	615.0	245.0	128.0	94.4
4	105.0	104.0	110.0	*110.0	109.0	137.0	146.0	315.0	627.0	252.0	127.0	98.1
5	104.0	104.0	116.0	94.6	128.0	*140.0	148.0	347.0	605.0	242.0	132.0	*99.3
6	105.0	102.0	127.0	93.1	110.0	140.0	151.0	371.0	606.0	236.0	135.0	94.8
7	108.0	*102.0	115.0	107.0	116.0	147.0	186.0	406.0	604.0	221.0	151.0	91.0
8	104.0	102.0	96.9	92.0	121.0	153.0	172.0	436.0	584.0	208.0	126.0	90.4
9	101.0	108.0	95.2	95.8	96.2	105.0	176.0	449.0	556.0	205.0	123.0	94.5
10	99.3	107.0	103.0	107.0	96.0	145.0	172.0	488.0	549.0	*209.0	118.0	81.9
11	*104.0	103.0	114.0	105.0	108.0	153.0	176.0	485.0	549.0	198.0	144.0	79.1
12	104.0	102.0	107.0	110.0	104.0	149.0	177.0	485.0	546.0	195.0	137.0	79.8
13	102.0	103.0	118.0	93.0	94.5	144.0	*161.0	485.0	*498.0	193.0	133.0	87.8
14	99.4	107.0	112.0	94.4	101.0	151.0	177.0	506.0	508.0	188.0	130.0	88.5
15	97.8	110.0	106.0	98.8	103.0	139.0	182.0	532.0	488.0	181.0	126.0	*88.2
16	104.0	102.0	110.0	119.0	*108.0	*134.0	207.0	549.0	458.0	181.0	104.0	78.5
17	103.0	99.6	112.0	122.0	97.5	119.0	192.0	*576.0	428.0	171.0	104.0	81.9
18	100.0	96.3	110.0	123.0	105.0	126.0	185.0	579.0	417.0	*177.0	104.0	94.5
19	98.2	99.8	111.0	120.0	103.0	119.0	174.0	578.0	401.0	184.0	105.0	93.4
20	99.8	106.0	120.0	90.2	111.0	133.0	*178.0	621.0	*377.0	185.0	*113.0	92.7
21	101.0	110.0	109.0	118.0	121.0	128.0	158.0	676.0	362.0	186.0	117.0	94.5
22	104.0	100.0	101.0	97.6	110.0	133.0	176.0	*659.0	354.0	185.0	112.0	91.4
23	106.0	96.3	88.2	119.0	*97.2	*132.0	186.0	623.0	333.0	181.0	116.0	90.9
24	*109.0	91.3	88.5	118.0	97.6	123.0	175.0	626.0	310.0	174.0	106.0	86.1
25	114.0	91.3	88.2	142.0	131.0	127.0	182.0	623.0	*308.0	*184.0	104.0	*91.4
26	111.0	99.3	109.0	131.0	161.0	123.0	181.0	621.0	310.0	183.0	104.0	93.8
27	105.0	106.0	*97.5	83.4	183.0	123.0	*182.0	615.0	298.0	159.0	128.0	90.6
28	105.0	*103.0	98.7	111.0	*198.0	124.0	180.0	617.0	274.0	142.0	103.0	86.8
29	113.0	105.0	93.4	111.0	-----	120.0	172.0	*608.0	279.0	167.0	113.0	86.1
30	114.0	102.0	84.7	109.0	-----	*127.0	170.0	598.0	275.0	165.0	108.0	86.1
31	120.0	-----	84.1	86.7	-----	133.0	-----	597.0	-----	174.0	116.0	-----
Total	3,249.5	3,118.9	3,217.7	3,278.6	3,193.5	4,182.0	5,182.0	15,789.0	13,730.0	6,108.0	3,687.0	2,710.4
Mean	104.8	104	103.8	105.8	114.1	134.3	172.7	509.3	457	197	118.9	90.35
Ac-ft	6,445	6,186	6,392	6,503	6,334	8,295	10,280	31,320	27,190	12,120	7,313	5,376
Calendar year 1956: Max 798 Min 84.1 Mean 228.5 Ac-ft 165,900												
Water year 1956-57: Max 676 Min 78.5 Mean 184.7 Ac-ft 133,700												

* Discharge measurement made on this day.

Note.--All figures are expressed in thousands.

192. Columbia River below McNary Dam, near Umatilla, Oreg.--Continued

Discharge, in thousands of cubic feet per second, water year October 1957 to September 1958

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	86.4	90.9	86.4	86.4	102.0	173.0	151.0	212.0	557.0	290.0	144.0	95.7
2	87.5	92.4	87.5	86.1	102.0	173.0	152.0	207.0	532.0	*273.0	140.0	87.5
3	91.7	87.5	86.1	72.7	96.8	127.0	151.0	189.0	537.0	277.0	139.0	91.7
4	91.7	86.0	89.2	79.4	93.4	157.0	149.0	204.0	*525.0	266.0	*140.0	91.7
5	102.0	*91.7	91.4	87.5	92.0	149.0	140.0	229.0	529.0	256.0	142.0	91.1
6	97.5	93.8	96.8	84.0	92.0	150.0	140.0	245.0	529.0	250.0	134.0	91.1
7	97.5	96.0	86.4	87.5	92.1	158.0	151.0	246.0	513.0	243.0	133.0	90.4
8	97.5	91.0	86.1	95.4	95.6	132.0	158.0	260.0	498.0	232.0	127.0	90.7
9	98.0	87.5	86.4	97.5	99.0	127.0	151.0	271.0	*485.0	*215.0	118.0	90.6
10	99.0	85.4	86.4	92.0	101.0	140.0	161.0	282.0	470.0	202.0	104.0	*90.6
11	*95.7	85.8	97.2	91.8	104.0	136.0	*148.0	287.0	485.0	199.0	108.0	90.6
12	92.8	86.1	86.4	91.7	107.0	131.0	158.0	300.0	467.0	201.0	106.0	92.4
13	93.1	86.4	96.9	87.2	115.0	136.0	162.0	321.0	464.0	195.0	104.0	92.4
14	94.6	91.0	85.4	89.2	117.0	140.0	159.0	*322.0	478.0	191.0	101.0	91.7
15	91.7	91.7	80.5	100.0	128.0	142.0	165.0	326.0	482.0	190.0	106.0	87.8
16	96.0	92.4	75.6	*99.8	125.0	141.0	178.0	349.0	459.0	180.0	110.0	88.2
17	99.9	94.2	74.9	94.5	*130.0	139.0	182.0	375.0	444.0	166.0	110.0	88.5
18	99.3	87.8	84.0	87.5	131.0	138.0	203.0	407.0	424.0	164.0	117.0	90.3
19	94.5	86.9	93.4	86.7	141.0	138.0	240.0	423.0	*394.0	162.0	117.0	88.6
20	94.8	87.5	93.7	100.0	159.0	132.0	241.0	449.0	376.0	160.0	112.0	90.3
21	89.6	90.3	94.5	91.4	163.0	128.0	254.0	481.0	368.0	164.0	113.0	91.7
22	91.7	*87.2	98.7	90.9	170.0	117.0	289.0	504.0	350.0	165.0	112.0	91.8
23	93.9	90.3	97.2	97.8	169.0	113.0	281.0	510.0	351.0	157.0	111.0	93.5
24	85.4	89.6	95.7	93.4	165.0	110.0	264.0	514.0	339.0	157.0	109.0	90.6
25	96.6	88.9	97.8	94.8	168.0	111.0	220.0	505.0	326.0	156.0	107.0	91.7
26	87.2	87.8	87.5	88.6	188.0	120.0	231.0	*514.0	327.0	155.0	107.0	92.8
27	88.9	88.2	86.4	87.2	184.0	132.0	219.0	528.0	315.0	150.0	105.0	92.4
28	86.9	86.4	81.6	85.8	176.0	139.0	223.0	550.0	325.0	145.0	102.0	94.5
29	86.9	86.1	80.8	92.0	-----	131.0	225.0	567.0	288.0	141.0	100.0	96.0
30	88.9	86.1	91.7	101.0	-----	146.0	*214.0	564.0	288.0	140.0	98.6	93.8
31	93.1	-----	86.4	104.0	-----	150.0	-----	561.0	-----	138.0	98.1	-----
Total	2,890.3	2,672.9	2,749.0	2,828.8	3,605.9	4,296.0	5,776.0	11,711.0	12,920.0	5,979.0	5,574.7	2,750.7
Mean	93.24	89.1	88.68	91.25	128.8	158.6	192.5	377.9	436.7	195.5	171.69	91.69
Ac-ft	5,733	5,302	5,453	5,611	7,152	8,521	11,460	23,230	26,650	11,860	7,090	5,456
Calendar year 1957: Max	676				Min 74.9		Mean 181.2		Ac-ft 151,200			
Water year 1957-58: Max	567				Min 74.9		Mean 169.2		Ac-ft 122,500			

* Discharge measurement made on this day.

Note.--All figures are expressed in thousands.

Discharge, in thousands of cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	91.8	90.0	108.0	112.0	164.0	146.0	157.0	247.0	410.0	495.0	247.0	124.0
2	91.4	90.0	102.0	125.0	160.0	148.0	168.0	300.0	410.0	477.0	227.0	119.0
3	93.5	91.3	102.0	118.0	149.0	166.0	188.0	327.0	432.0	456.0	226.0	127.0
4	90.1	92.1	104.0	112.0	144.0	155.0	190.0	310.0	436.0	422.0	215.0	124.0
5	89.7	94.2	116.0	100.0	130.0	148.0	198.0	303.0	437.0	421.0	201.0	122.0
6	90.6	93.1	117.0	97.1	146.0	147.0	198.0	305.0	459.0	405.0	196.0	122.0
7	90.4	92.7	118.0	107.0	137.0	147.0	200.0	294.0	496.0	401.0	184.0	121.0
8	90.6	102.0	111.0	121.0	134.0	152.0	204.0	288.0	503.0	394.0	183.0	127.0
9	*90.3	107.0	112.0	103.0	134.0	152.0	198.0	288.0	507.0	381.0	183.0	124.0
10	90.4	108.0	117.0	102.0	132.0	151.0	190.0	302.0	511.0	*367.0	180.0	119.0
11	90.4	111.0	120.0	102.0	122.0	148.0	178.0	302.0	493.0	354.0	178.0	123.0
12	90.1	112.0	131.0	104.0	118.0	144.0	180.0	300.0	482.0	343.0	166.0	132.0
13	90.4	110.0	164.0	123.0	120.0	142.0	179.0	310.0	484.0	326.0	160.0	136.0
14	90.4	106.0	156.0	138.0	115.0	142.0	*187.0	296.0	521.0	327.0	*160.0	133.0
15	92.4	118.0	155.0	142.0	115.0	148.0	190.0	321.0	*551.0	323.0	152.0	134.0
16	92.1	115.0	*136.0	145.0	116.0	145.0	201.0	357.0	529.0	324.0	151.0	139.0
17	92.4	107.0	137.0	142.0	117.0	143.0	200.0	380.0	519.0	316.0	147.0	157.0
18	90.7	102.0	136.0	143.0	*120.0	142.0	198.0	367.0	515.0	317.0	148.0	172.0
19	92.1	102.0	136.0	144.0	124.0	153.0	196.0	354.0	511.0	313.0	137.0	176.0
20	90.7	102.0	134.0	149.0	135.0	152.0	188.0	*344.0	515.0	316.0	135.0	180.0
21	102.0	102.0	123.0	146.0	137.0	152.0	180.0	336.0	522.0	306.0	131.0	179.0
22	108.0	96.8	111.0	*139.0	144.0	150.0	188.0	330.0	538.0	302.0	129.0	185.0
23	107.0	96.4	110.0	141.0	149.0	152.0	198.0	339.0	540.0	302.0	127.0	183.0
24	102.0	105.0	113.0	149.0	143.0	*152.0	210.0	351.0	535.0	292.0	128.0	176.0
25	102.0	*113.0	109.0	176.0	140.0	154.0	218.0	366.0	530.0	293.0	124.0	167.0
26	101.0	123.0	108.0	193.0	145.0	153.0	232.0	386.0	522.0	287.0	123.0	163.0
27	97.2	116.0	106.0	177.0	140.0	156.0	234.0	384.0	524.0	287.0	133.0	161.0
28	96.6	109.0	102.0	171.0	142.0	155.0	238.0	394.0	529.0	281.0	123.0	173.0
29	96.5	109.0	108.0	183.0	-	156.0	243.0	393.0	522.0	267.0	119.0	*186.0
30	93.1	109.0	107.0	175.0	-----	156.0	249.0	400.0	514.0	263.0	121.0	187.0
31	90.3	-----	114.0	165.0	-----	153.0	-----	393.0	-----	249.0	122.0	-----
Total	2,916.2	5,124.6	5,723.0	4,242.1	3,780.0	4,645.0	5,978.0	10,384.0	14,977.0	10,804.0	4,959.0	4,475.0
Mean	94.07	104.2	120.1	136.8	135	149.8	199.3	335	499.2	342.1	160	149.2
Ac-ft	5,784	6,198	7,384	8,414	7,498	9,213	11,860	20,600	29,710	21,030	9,836	8,876
Calendar year 1958: Max	567				Min 77.7		Mean 173.2		Ac-ft 125,400			
Water year 1958-59: Max	540				Min 89.7		Mean 202.2		Ac-ft 146,400			

* Discharge measurement made on this day.

Note.--All figures are expressed in thousands.

200. Umatilla River above Meacham Creek, near Gibbon, Oreg.

Location.--Lat 45°43', long 118°20', in SW $\frac{1}{4}$ sec. 21, T.3 N., R.36 E., on right bank 0.8 mile downstream from Ryan Creek, $2\frac{1}{4}$ miles upstream from Meacham Creek, and $2\frac{1}{2}$ miles northeast of Gibbon.

Drainage area.--125 sq mi.

Records available.--April 1933 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,854.81 ft above mean sea level, datum of 1923, supplementary adjustment of 1947. Prior to June 27, 1939, at site 1 mile downstream at datum 43.94 ft lower.

Average discharge.--26 years, 226 cfs (163,600 acre-ft per year).

Extremes.--Maximum discharge during year, 3,410 cfs Dec. 11 (gage height, 6.89 ft); minimum, 42 cfs Aug. 9-11, 14-16.

1933-59: Maximum discharge, 6,660 cfs Dec. 12, 1946 (gage height, 8.84 ft), from rating curve extended above 2,000 cfs by logarithmic plotting; minimum, 28 cfs Sept. 27, 1935, Jan. 9, 1937.

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Revisions (water years).--WSP 1398: 1933, drainage area at former site.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11

Dec. 12 to Sept. 30

2.0	43	3.5	425	2.0	36	3.5	440
2.2	60	4.0	690	2.2	55	4.0	700
2.5	102	5.0	1,480	2.5	102	5.0	1,480
2.7	140	6.0	2,400	2.7	150	6.0	2,400
3.0	225			3.0	235		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Avg.	Sept.
1	49	51	107	455	390	505	555	510	199	71	46	45
2	49	54	102	404	358	555	942	500	211	70	45	45
3	49	56	355	3350	318	483	335	480	217	70	45	45
4	49	59	394	a320	364	382	781	440	211	68	45	50
5	49	64	291	a290	372	334	688	395	232	67	45	63
6	49	91	231	a270	354	*298	688	350	256	67	45	64
7	49	102	462	260	318	290	*575	330	214	73	45	53
8	51	100	550	280	286	270	500	330	199	71	45	50
9	52	97	394	*303	263	263	445	334	214	65	44	48
10	54	92	448	346	258	252	408	306	193	63	43	47
11	a54	82	2,320	386	217	238	404	298	178	62	43	46
12	a52	82	1,740	610	199	260	422	270	*175	59	44	46
13	a50	290	809	610	181	270	422	302	172	*58	*44	45
14	a50	213	550	500	178	256	377	364	162	56	44	50
15	49	155	413	408	170	235	359	440	155	56	44	63
16	49	124	334	390	261	226	318	390	148	55	43	56
17	49	106	282	400	400	242	306	390	135	54	44	52
18	50	*99	260	422	368	274	286	404	125	53	45	53
19	56	179	246	408	358	282	266	364	120	53	47	56
20	54	402	226	368	358	260	263	330	116	52	54	65
21	51	434	223	322	346	256	282	314	111	51	63	63
22	50	377	208	314	334	249	359	306	104	50	54	*59
23	49	323	193	445	298	252	408	306	*98	51	51	55
24	49	331	184	1,030	260	256	418	298	102	50	50	54
25	49	271	190	942	263	256	382	294	93	48	48	53
26	49	213	187	646	326	314	404	278	89	48	48	132
27	49	165	294	830	318	342	386	249	84	48	47	242
28	50	329	302	1,190	308	250	390	259	*48	50	45	45
29	50	124	266	1,809	-	342	426	214	79	47	45	223
30	50	115	298	*600	-----	408	480	205	74	47	45	170
31	50	-----	395	480	-----	500	-----	199	-----	47	46	-----
Total	1,558	4,939	13,264	15,368	8,342	9,682	13,875	10,419	4,545	1,778	1,443	2,447
Mean	50.3	165	428	498	298	312	462	336	152	57.4	46.5	81.6
Cfs/m	0.402	1.32	3.42	3.97	2.38	2.50	3.70	2.69	1.22	0.469	0.372	0.653
In.	0.46	1.47	3.95	4.57	2.48	2.88	4.13	3.10	1.35	0.53	0.43	0.73
Ac-ft	3,090	9,800	26,310	30,480	16,550	19,200	27,520	20,670	9,010	3,530	2,860	4,850

Calendar year 1958: Max 2,750 Min 45 Mean 282 Cfs/m 2.26 In. 30.63 Ac-ft 204,300
 Water year 1958-59: Max 2,320 Min 45 Mean 240 Cfs/m 1.92 In. 26.08 Ac-ft 173,900

Peak discharge (base, 1,400 cfs).--Dec. 11 (7 p.m.) 3,410 cfs (6.89 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records from station at Pendleton and South Fork Walla Walla River near Milton.

210. Umatilla River at Pendleton, Oreg.

Location.--Lat 45°40'30", long 118°46'50", in SW¼ sec.2, T.2 N., R.32 E., on left bank at downstream side of SE 8th Street bridge at Pendleton, 7/8 mile downstream from Wildhorse Creek and 3½ miles upstream from McKay Creek. Oct. 1 to Dec. 11, 1958, at site 900 ft downstream and Dec. 12, 1958, to Apr. 23, 1959, at Main Street bridge, half a mile downstream, at different datums.

Drainage area.--637 sq mi.

Records available.--February 1891 to July 1892, May 1903 to June 1905 (gage heights and discharge measurements only June to December 1904), October 1934 to September 1959. Monthly discharge only February 1891 to July 1892, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 1,067.01 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. February 1891 to July 1892 and May 22, 1903, to June 11, 1905, staff gage; May 16 to July 2, 1958, and Dec. 12, 1958, to Apr. 23, 1959, wire-weight gage; all at Main Street bridge half a mile downstream at different datums.

Average discharge.--25 years (1934-59), 505 cfs (365,600 acre-ft per year).

Extremes.--Maximum discharge during year, about 8,500 cfs Dec. 12; minimum recorded, 20 cfs Aug. 12. 1891-92, 1903-5, 1934-59: Maximum discharge, 15,400 cfs Feb. 22, 1949 (gage height, 9.01 ft); minimum, 10 cfs July 13-16, 1940. Maximum flood known, 17,000 cfs Dec. 14, 1882 (date and discharge from data furnished by Corps of Engineers). Flood of May 30-31, 1906, reached a stage of 11.0 ft, present site and datum, but before channel was improved (discharge, 15,500 cfs, estimated by Corps of Engineers).

Remarks.--Records fair except those for periods of no gage-height record and those above 1,000 cfs, which are poor. No regulation. Many diversions for irrigation above station.

Revisions (water years).--WSP 1398: 1904, 1937.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	58	230	1,150	1,380	1,180	1,630	1,070	310	86	33	33
2	45	60	*210	1,130	1,120	1,430	*2,360	*1,060	306	*83	24	34
3	45	66	336	885	990	1,360	2,800	1,050	310	83	27	33
4	45	70	784	736	975	1,120	2,400	988	310	77	25	38
5	45	78	672	700	1,020	975	2,060	956	324	76	24	47
6	45	82	552	655	990	855	1,970	900	400	77	26	68
7	45	118	684	622	900	788	1,610	799	368	78	*23	64
8	46	116	*1,270	*762	814	677	1,310	785	316	88	26	53
9	48	129	1,040	749	749	677	1,150	757	302	76	23	47
10	51	126	863	840	688	666	*990	674	310	66	26	42
11	52	120	a4,500	930	633	611	930	626	*271	68	23	41
12	52	113	a6,000	1,310	570	622	930	566	254	e2	20	40
13	51	267	3,400	1,710	520	622	930	566	243	e9	27	40
14	51	355	1,880	1,430	482	622	840	668	a220	e9	25	44
15	52	282	1,260	1,180	491	a600	801	799	209	54	a25	60
16	52	230	990	1,010	500	570	a740	757	188	*54	a25	70
17	52	198	827	1,040	960	560	a700	680	180	48	25	64
18	52	a190	699	1,090	960	633	a650	750	*170	46	25	58
19	58	210	655	1,120	930	710	a620	662	156	37	28	60
20	64	584	600	1,040	930	666	a600	614	142	38	a40	71
21	a63	854	570	900	945	655	a650	572	138	37	56	77
22	62	768	540	814	945	666	a800	*536	*132	33	62	76
23	60	664	491	915	885	655	a900	548	120	36	a50	71
24	58	736	464	2,480	814	666	*884	518	124	37	42	66
25	58	656	464	3,160	749	666	806	506	118	33	40	*66
26	60	534	446	2,360	945	788	799	480	118	32	34	80
27	60	426	1,150	900	930	813	430	111	*32	*32	162	162
28	58	340	1,010	5,100	970	975	806	400	100	28	33	356
29	60	286	814	*2,860	-	1,010	844	*368	97	32	34	316
30	60	250	762	2,190	-----	1,170	948	340	97	32	34	250
31	60	-----	945	1,730	-----	1,460	-----	316	-----	25	32	-----
Total	1,656	8,966	35,128	44,348	23,655	25,585	34,271	20,741	6,444	1,672	969	2,537
Mean	53.4	299	1,133	1,431	845	825	1,142	669	215	53.9	31.3	84.6
Ac-ft	3,280	17,780	69,580	87,960	46,920	50,750	67,980	41,140	12,780	3,320	1,920	5,030
Calendar year 1958: Max 8,020 Min 24 Mean 677 Ac-ft 490,300												
Water year 1958-59: Max 6,000 Mean 564 Ac-ft 408,500												

Peak discharge (base, 3,500 cfs, revised).--Dec. 12 (about 4 a.m.) about 8,500 cfs; Jan. 28 (12:30 a.m.) about 6,000 cfs.

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records at Pendleton and records for stations above Meacham Creek and at Yakum.

225. McKay Creek near Pilot Rock, Oreg.

Location.--Lat 45°33'10", long 118°46'20" in NE¹ sec.23, T.1 N., R.32 E., on left bank 400 ft downstream from county road bridge, three-quarters of a mile upstream from maximum flow line (altitude, 1,322 ft) of McKay Reservoir, 6 miles northeast of Pilot Rock, and 8 miles south of Pendleton.

Drainage area.--178 sq mi.

Records available.--May to August 1921, October 1926 to June 1928, December 1928 to July 1929, October 1929 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 1,335.68 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. May 7 to Aug. 14, 1921, staff gage near present site at different datum. Nov. 19, 1926, to Sept. 15, 1932, and Sept. 16, 1932, to Apr. 8, 1941, water-stage recorder at site 400 ft upstream at datums 1.4 and 4.4 ft higher, respectively.

Average discharge.--31 years (1926-27, 1929-59), 100 cfs (72,400 acre-ft per year).

Extremes.--Maximum discharge during year, 3,010 cfs Dec. 11 (gage height, 6.08 ft); minimum, 0.3 cfs Aug. 9, 10, 11, 1921, 1926-59: Maximum discharge, 6,000 cfs Apr. 1, 1931 (gage height, 10.4 ft, site and datum then in use), from rating curve extended above 1,000 cfs by logarithmic plotting; no flow at times.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No regulation. Many small diversions for irrigation above station.

Revisions (water years).--WSP 1398: 1928-29, 1933, 1940.

Rating tables, water year 1958-59, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 10

Dec. 11 to Sept. 30

1.7	1.3	1.0	0.2	2.2	71
1.8	5.0	1.1	.5	2.5	125
2.0	16	1.2	1.3	3.0	270
2.2	37	1.4	5.0	3.5	520
2.5	85	1.6	13	4.0	950
2.7	125	1.8	26	5.0	1,700
3.1	260	2.0	45	6.0	2,900

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.3	3.2	25	200	360	427	508	196	*31	4.0	0.9	1.1
2	1.3	3.6	*37	b150	306	422	*624	238	29	3.6	.7	1.6
3	1.3	3.6	120	140	286	355	630	274	27	3.6	.7	1.1
4	1.3	4.5	192	130	332	294	520	260	24	3.4	.7	1.5
5	1.3	6.5	152	130	319	256	427	256	30	3.6	.5	1.8
6	1.3	7.0	115	140	294	223	375	249	46	3.6	.4	2.5
7	1.3	7.5	182	150	263	211	310	*226	36	4.2	.4	2.7
8	1.3	8.0	240	b160	238	199	263	205	31	4.6	.4	2.7
9	1.3	7.5	192	190	214	184	229	196	30	4.0	.4	2.5
10	1.5	6.0	209	196	*193	172	199	162	29	*3.8	.4	2.3
11	1.5	6.0	*2,180	205	175	158	*184	142	24	3.6	.4	2.2
12	1.5	6.5	*1,390	252	150	158	170	123	*17	3.4	.5	1.8
13	1.5		611	270	130	158	158	109	15	3.2	.5	1.8
14	1.5	*23	375	249	125	148	142	100	14	3.0	.5	1.5
15	1.5	22	270	220	125	138	145	100	13	2.7	.4	2.3
16	1.5	21	220	223	142	132	138	87	12	2.2	.4	3.0
17	1.5	20	200	229	238	135	160	87	12	1.6	.5	3.2
18	1.7	20	180	229	246	142	170	94	10	1.5	.5	3.2
19	2.0	25	160	217	229	152	170	84	9.8	1.3	.6	3.4
20	2.0	60	140	202	246	142	178	77	9.0	1.3	.7	4.4
21	1.7	40	130	178	252	145	175	77	8.2	1.3	.8	5.4
22	1.7	30	119	184	235	150	172	76	7.4	1.2	.9	*5.7
23	1.7	25	110	290	226	158	170	73	*4.6	1.2	1.0	5.4
24	2.0	25	105	496	217	162	160	67	4.6	1.2	1.3	5.0
25	2.0	25	100	438	238	165	150	63	4.6	1.1	1.5	4.8
26	2.4	23	100	355	319	211	162	61	4.8	1.2	1.3	8.2
27	2.4	22	180	530	306	*256	172	56	4.4	1.1	1.3	17
28	2.4	21	200	864	324	274	175	52	4.4	*1.2	1.6	25
29	2.8	20	200	618	---	319	175	47	4.4	1.3	1.5	22
30	2.8	20	*217	466	---	400	175	42	4.2	1.2	1.3	19
31	3.2	---	250	422	---	478	---	36	---	1.0	1.2	---
Total	54.5	523.9	8,901	8,723	6,728	6,924	7,386	3,915	500.4	75.2	24.2	164.1
Mean	1.76	17.5	287	281	240	223	246	126	16.7	2.43	0.78	5.47
Ac-ft	108	1,040	17,650	17,300	13,340	13,730	14,650	7,770	993	149	48	325

Calendar year 1958: Max 2,400 Min 0 Mean 179 Ac-ft 129,900
 Water year 1958-59: Max 2,180 Min 0.4 Mean 120 Ac-ft 87,100

Peak discharge (base, 840 cfs, revised).--Dec. 11 (7 p.m.) 3,010 cfs (6.08 ft); Jan. 27 (10 p.m.) 1,210 cfs (4.47 ft).

* Discharge measurement made on this day.

a No gage-height record Nov. 17 to Dec. 1, Dec. 16-21, 23-29, 31, Jan. 1, 3-7; discharge estimated on basis of weather records at Pendleton and records for Birch Creek at Rieth and Butter Creek near Pine City.

b Stage-discharge relation affected by ice.

230. McKay Reservoir near Pendleton, Oreg.

Location.--Lat 45°36'30", long 118°47'40", in SE¹ sec.34, T.2 N., R.32 E., near right end of McKay Dam on McKay Creek, 4 miles south of Pendleton and 5 miles upstream from mouth.

Drainage area.--186 sq mi.

Records available.--December 1927 to September 1959.

Gage.--Staff gage. Datum of gage is 0.16 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum contents observed during year, 70,820 acre-ft May 20-23 (gage height, 1,319.6 ft); minimum observed, 4,960 acre-ft Sept. 20 (gage height, 1,233.9 ft). 1927-59: Maximum contents observed, 73,840 acre-ft June 9, 1950 (gage height, 1,322.0 ft); minimum observed, 3,050 acre-ft Oct. 1, Nov. 1, Dec. 1, 1935 (gage height, 1,217.6 ft).

Remarks.--Reservoir is formed by gravel-fill dam with concrete facing, completed in 1926; storage began in 1927. Usable capacity, 73,830 acre-ft, between gage heights 1,182.0 ft (floor of trashrack structure) and 1,322.0 ft (top of spillway gates). Dead storage, about 6 acre-ft, included in records. Water is used for irrigation of lands along Umatilla River near Echo, Stanfield, and Hermiston.

Cooperation.--Gage heights and capacity table furnished by Bureau of Reclamation.

Revisions.--WSP 1154: Drainage area.

Month-end gage height and contents, water year October 1958 to September 1959

Date	Gage height (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	1,224.5	5,160	-
Oct. 31.....	1,224.7	5,230	+70
Nov. 30.....	1,231.0	7,490	+2,260
Dec. 31.....	1,267.2	25,100	+17,610
Calendar year 1958.....	-	-	+7,010
Jan. 31.....	1,293.0	43,620	+18,520
Feb. 28.....	1,307.4	57,100	+13,480
Mar. 31.....	1,317.7	68,540	+11,440
Apr. 30.....	1,318.5	69,500	+960
May 31.....	1,319.5	70,700	+1,200
June 30.....	1,311.7	61,720	-8,980
July 31.....	1,285.4	37,490	-24,230
Aug. 31.....	1,244.3	12,920	-24,570
Sept. 30.....	1,224.6	5,190	-7,730
Water year 1958-59.....	-	-	+30

† Gage height at 4 p.m.

235. McKay Creek near Pendleton, Oreg.

Location.--Lat 45°36'40", long 118°48'00", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.34, T.2 N., R.34 E., on right bank 35 ft upstream from irrigation diversion dam, a quarter of a mile downstream from McKay Dam, and 4 miles south of Pendleton.

Drainage area.--186 sq mi.

Records available.--November 1918 to May 1919, October 1919 to September 1923, October 1924 to September 1927, November 1927 to September 1943, April 1944 to October 1947 (irrigation seasons only), March 1948 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder and, since Mar. 23, 1928, concrete control. Datum of gage is 1,163.71 ft above mean sea level (Bureau of Reclamation bench mark). Prior to Apr 16, 1919, staff gage at site 2 miles upstream at different datum. Apr. 16, 1919, to Sept. 30, 1923, staff gage at site a quarter of a mile upstream at different datum. Oct. 1, 1924, to Jan. 14, 1927, staff gage and Jan. 15, 1927, to Nov. 15, 1948, water-stage recorder, at several sites within 220 ft of present site at various datums.

Average discharge.--22 years (1932-43, 1948-59), 95.2 cfs (68,920 acre-ft per year).

Extremes.--Maximum discharge during year, 465 cfs Aug. 20 (gage height, 1.73 ft); no flow Oct. 1 to Dec. 15, Sept. 23-30.
1918-23, 1924-59: Maximum discharge observed, 3,250 cfs Feb. 10, 1921 (gage height, 4.4 ft, site and datum then in use), from rating curve extended above 1,200 cfs; no flow at times each year.

Remarks.--Records good above 1.0 cfs and poor below. Flow completely regulated since 1927 by McKay Reservoir (see preceding page). Many diversions for irrigation above station. Since 1932, records have excluded flow in Elder ditch which, since 1953, has diverted not over 3 cfs at station for irrigation during season and up to 1 cfs (seepage from reservoir) for stock water at other times.

Revisions (water years).--WSP 1154: Drainage area. WSP 1398: 1923.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

-0.1	0	0.5	55
0.0	.2	.7	93
.1	3.8	1.0	170
.2	12	1.5	350
.3	23	2.0	630

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						2.1	400	277	*41	346	420	310
2						*2.1	*410	380	30	342	415	278
3						2.1	430	274	22	342	415	266
4						2.1	445	214	45	342	415	274
5						*2.6	445	188	*47	338	410	249
6						2.6	350	173	40	338	410	232
7						2.6	198	*173	30	334	405	*232
8			0			2.6	140	125	20	326	405	210
9					1	3.2	140	102	20	318	338	194
10						*3.2	140	102	20	355	326	194
11						47	*174	71	20	348	405	191
12						75	218	33	15	346	430	235
13						57	218	21	38	342	*415	242
14						44	218	21	53	375	400	158
15						44	204	21	104	395	395	138
16				0.5		34	210	21	149	*390	350	128
17					1.3	*12	210	50	176	390	*207	104
18					1.7	7.1	210	69	*238	395	336	95
19					2.1	5.4	176	68	235	400	415	83
20					2.1	4.6	106	68	252	390	450	29
21					2.6	4.6	79	104	270	395	420	.5
22					2.6	4.6	119	97	302	415	390	.5
23					2.6	4.6	143	83	*346	435	380	0
24					2.6	4.6	143	64	442	430	370	0
25			0.2		2.6	3.8	146	31	346	425	380	0
26					2.6	3.8	149	23	326	420	400	0
27					2.6	4.6	179	23	318	*415	390	0
28					2.6	4.6	194	24	318	415	390	0
29						4.6	218	34	314	356	360	0
30						185	218	41	318	405	358	0
31						385		41		415	310	0
Total	0	0	3.2	15.5	44 0	965.1	6,630	3,016	4,795	11,676	11,890	3,843.0
Mean	0	0	0.10	0.50	1.57	51.1	221	97.3	160	377	384	128
Ac-ft	0	0	6.3	31	87	1,310	13,150	5,980	9,510	23,160	23,580	7,620
Calendar year 1958: Max	2,420			Min	0	Mean	155	Ac-ft	112,100			
Water year 1958-59: Max	450			Min	0	Mean	117	Ac-ft	85,030			

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1 to Feb. 16, Sept. 22-30; discharge estimated.

UMATILLA RIVER BASIN

250. Birch Creek at Rieth, Oreg.

Location.--Lat 45°39'10", long 118°52'45", in SE $\frac{1}{4}$ sec.13, T.2 N., R.31 E., on right bank 600 ft downstream from highway bridge, a quarter of a mile upstream from mouth, and half a mile southwest of Rieth.

Drainage area.--291 sq mi.

Records available.--May to August 1921, March to July 1922, April to September 1923, April to September 1927, January to June 1928, November 1928 to August 1929, October 1929 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 951.04 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Apr. 4, 1927, staff gage at several sites within 1,400 ft upstream at various datums. Apr. 4, 1927, to Jan. 29, 1928, water-stage recorder and Feb. 3, 1928, to Dec. 16, 1931, staff gage, at site 600 ft upstream at different datum. Dec. 17, 1931, to Dec. 29, 1939, water-stage recorder at site 300 ft upstream at datum 1.64 ft higher and Dec. 30, 1939, to July 24, 1957, at datum 0.78 ft higher.

Average discharge.--30 years (1929-59), 48.1 cfs (34,820 acre-ft per year).

Extremes.--Maximum discharge during year, 624 cfs Dec. 12 (gage height, 3.28 ft); no flow part of each day July 8, 9, 10.

1921-23, 1927-59: Maximum discharge, 1,860 cfs June 17, 1950 (gage height, 7.2 ft, from floodmark, site and datum then in use), from rating curve extended above 570 cfs by logarithmic plotting; no flow at times.

Remarks.--Records fair except those below 5 cfs and those for periods of ice effect, which are poor. No regulation. Many diversions for irrigation of 4,000 acres above station.

Revisions (water years).--WSP 984: 1939. WSP 1398: 1929, 1932-33, 1938-39, 1940(M).

Rating table, water year 1958-59, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.1	0	0.7	28	2.0	245
.2	.6	1.0	58	2.5	390
.3	3.5	1.2	83	3.0	540
.5	14	1.5	133		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	1.7	9.6	110	182	149	188	143	35	0.4	0.2	0.6
2	.6	.9	22	105	185	189	242	147	27	.2	.4	.6
3	.6	1.4	22	b50	160	173	279	143	23	.2	.4	.6
4	.4	2.7	*25	b35	157	155	276	137	23	.2	.4	.9
5	.4	4.5	27	b35	155	141	268	139	36	.2	.6	1.1
6	.4	6.0	46	b40	147	129	*279	131	64	.1	.4	1.4
7	.4	5.0	14	b50	131	120	238	*131	56	.1	.4	1.4
8	.4	5.0	32	b60	126	110	204	128	50	.1	.4	1.7
9	.4	5.0	35	b60	112	103	171	122	49	.1	.4	1.4
10	.6	5.0	39	96	103	98	143	112	46	.1	.4	1.4
11	.6	5.0	299	115	95	89	131	96	43	.1	.4	1.1
12	.9	5.5	*471	168	82	88	131	79	39	.1	.4	.9
13	.9	*6.5	268	215	74	86	129	66	31	.1	.6	.8
14	.9	10	177	190	73	76	126	68	26	.1	.6	.9
15	.9	13	131	160	69	70	124	71	20	.1	.6	1.1
16	.6	17	109	155	76	74	115	70	15	.1	.6	1.1
17	.4	16	94	145	86	74	119	71	11	.2	.8	1.4
18	1.1	16	84	143	79	75	132	82	7.0	.2	.8	1.1
19	.8	18	75	137	79	84	106	76	2.7	.2	.8	.9
20	1.1	45	73	131	92	82	89	70	1.4	.2	.8	.9
21	1.4	32	68	119	89	79	73	78	.9	.2	.8	.8
22	2.0	27	*62	112	92	86	95	84	.4	.2	.8	.8
23	4.0	28	59	112	105	95	110	80	.2	.2	.6	.9
24	5.0	27	55	135	106	96	119	83	.4	.2	.4	.8
25	5.5	b25	52	155	112	98	115	79	.4	.2	.6	.6
26	6.0	b23	50	*153	129	120	126	74	.4	.2	.6	.6
27	6.5	b21	120	191	119	*131	137	64	.4	.2	.4	.6
28	6.0	b20	120	228	144	143	131	*62	.4	.2	.4	.6
29	3.5	b20	105	213	-	160	122	55	.4	.4	.4	.6
30	1.7	20	100	199	-----	173	120	55	.4	.2	.4	.6
31	2.0	-----	108	206	-----	179	-----	46	-----	.2	.6	-----
Total	56.6	432.2	2,951.6	4,043	3,140	3,524	4,638	2,842	609.4	5.5	16.4	26.2
Mean	1.83	14.4	95.2	130	112	114	155	91.7	20.3	0.18	0.53	0.94
Ac-ft	112	857	5,850	8,020	6,230	6,990	9,200	5,640	1,210	11	53	56
Calendar year 1958: Max	674			Min	0.1	Mean	87.7	Ac-ft	63,470			
Water year 1958-59: Max	471			Min	0.1	Mean	61.1	Ac-ft	44,210			

Peak discharge (base, 300 cfs).--Dec. 12 (2 a.m.) 624 cfs (3.28 ft); Jan. 27 (10 p.m.) 390 cfs (2.50 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

260. Umatilla River at Yoakum, Oreg.

Location.--Lat 45°40'40", long 119°02'00", in SW¹ sec.2, T.2 N., R.30 E., at left bank on downstream side of highway bridge, half a mile northeast of Yoakum, 2½ miles downstream from abandoned Furnish Reservoir, and 11 miles downstream from Birch Creek.

Drainage area.--1,280 sq mi, approximately.

Records available.--May 1903 to September 1959. Published as "above Furnish Reservoir, near Yoakum" October 1916 to September 1934.

Gage.--Water-stage recorder. Datum of gage is 768.21 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. May 5, 1903, to Sept. 30, 1916, staff gage at site 500 ft upstream at different datum. Oct. 1, 1916, to Sept. 30, 1934, water-stage recorder at site 5 miles upstream at different datum. Oct. 1, 1934, to Oct. 20, 1948, water-stage recorder at present site at datum 2.0 ft higher.

Average discharge.--56 years, 678 cfs (490,900 acre-ft per year).

Extremes.--Maximum discharge during year, 8,680 cfs Dec. 12 (gage height, 9.29 ft); minimum, 37 cfs Oct. 1.

1903-59: Maximum discharge, 20,000 cfs May 30, 1906 (gage height, about 15.0 ft, site and datum then in use from floodmarks), from rating curve extended above 6,600 cfs; minimum, 12 cfs Aug. 10-12, 1908, Aug. 4, 1910.

Remarks.--Records good except those for periods of ice effect or doubtful or no gage-height record, which are poor. Slight regulation by Furnish Reservoir 1910-34 (capacity, 3,900 acre-ft prior to filling with silt). Flow regulated to some extent since 1927 by McKay Reservoir (see p. 32). Many small diversions for irrigation above station.

Revisions (water years).--WSP 794: 1906(M). WSP 1398: 1904-6, 1908-9, 1922-23, 1926, 1936.

Rating table, water year 1958-59, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 20 to Nov. 24)

1.1	27	3.0	720
1.3	64	4.0	1,400
1.5	115	5.0	2,300
2.0	285	7.0	4,700
2.5	475	9.0	8,100

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	60	232	1,140	1,500	1,300	2,170	1,540	398	426	448	355
2	54	58	226	1,160	1,270	*1,620	2,760	1,540	380	426	444	341
3	52	69	250	a1,000	1,160	1,550	3,450	1,460	369	426	439	306
4	56	76	715	a900	1,160	1,330	3,050	1,320	362	422	430	334
5	56	86	660	a800	1,180	1,150	2,610	1,240	426	422	434	320
6	54	93	590	a850	1,140	1,020	2,490	1,140	498	422	434	313
7	*54	99	560	b700	1,040	954	2,090	1,080	475	422	430	313
8	56	136	*1,250	b750	942	894	1,690	1,010	406	422	430	285
9	56	133	1,090	798	870	834	1,490	942	390	386	390	254
10	62	136	864	858	798	810	*1,340	900	383	410	334	246
11	62	130	3,460	974	720	762	1,260	804	348	410	406	*236
12	58	*124	6,680	1,270	650	786	1,320	690	*313	406	439	240
13	60	182	3,110	1,710	590	798	1,310	645	296	398	452	320
14	58	372	1,900	*1,470	555	768	1,240	695	313	410	430	232
15	58	310	1,360	1,210	550	710	1,190	810	320	439	430	204
16	60	260	1,060	1,110	590	690	1,120	816	348	439	426	222
17	60	222	870	1,090	660	774	1,080	774	362	439	248	184
18	60	198	744	1,140	1,120	715	1,070	852	418	430	298	173
19	58	204	690	1,150	1,070	810	967	792	410	434	414	142
20	*58	470	630	1,090	1,070	774	858	726	410	422	475	124
21	62	762	585	936	1,080	744	780	720	430	418	484	a85
22	62	710	545	888	1,090	750	864	726	426	430	462	a80
23	64	625	502	967	1,090	756	1,050	685	466	452	430	a70
24	64	675	466	1,910	1,070	774	1,100	665	475	457	418	a75
25	60	650	466	2,640	948	774	1,060	630	*475	452	414	a75
26	60	540	452	2,050	1,200	906	1,060	590	462	448	439	a85
27	62	470	1,040	2,100	1,090	1,090	1,120	540	430	444	430	130
28	60	362	1,040	4,320	1,100	1,130	1,120	511	422	439	430	328
29	62	327	864	3,010	-	1,190	1,160	470	414	398	418	366
30	60	271	798	2,190	-----	1,420	1,210	457	406	430	394	288
31	60	-----	954	1,820	-----	1,970	-----	426	-----	*434	362	-----
Total	1,810	8,810	34,653	44,001	27,683	30,439	45,079	25,996	12,031	13,213	12,908	6,736
Mean	58.4	294	1,118	1,419	989	982	1,503	839	401	426	416	225
Ac-ft	3,590	17,470	68,730	87,270	54,910	60,370	89,410	51,560	23,860	26,210	25,600	13,360

Calendar year 1958: Max 10,100 Min 36 Mean 924 Ac-ft 669,200
Water year 1958-59: Max 6,680 Min 42 Mean 722 Ac-ft 522,300

Peak discharge (base, 3,600 cfs).--Dec. 12 (9 a.m.) 8,680 cfs (9.29 ft); Jan. 28 (3 a.m.) 5,750 cfs (7.71 ft); Apr. 3 (8 a.m.) 3,600 cfs (6.12 ft).

* Discharge measurement made on this day.

a Doubtful or no gage-height record; discharge estimated on basis of weather records at Pendleton and records for stations above Meacham Creek, at Pendleton, and near Umatilla.

b Stage-discharge relation affected by ice.

UMATILLA RIVER BASIN

315. Butter Creek near Pine City, Oreg.
(Called North Fork Butter Creek on some maps)

Location.--Lat 45°32'40", long 119°18'40", in SW¹/₄ sec.22, T.1 N., R.28 E., on right bank half a mile downstream from Mattlock Canyon, 6 miles southeast of settlement of Pine City, and 20 miles south of Hermiston.

Drainage area.--291 sq mi.

Records available.--April to June 1928, November 1928 to June 1929, October 1929 to September 1930, January 1931 to September 1932, February to June 1933, October 1933 to September 1941, January to June 1942, October 1942 to September 1959. Prior to October 1945 monthly discharge only, published in WSP 1318.

Gage.--Water-stage recorder. Altitude of gage is 1,400 ft (by barometer). Prior to Oct. 1, 1944, at datum 1.1 ft higher and Oct. 1, 1944, to Sept. 6, 1949, at datum 1.0 ft higher.

Average discharge.--27 years (1929-30, 1931-32, 1933-41, 1942-59), 24.3 cfs (17,590 acre-ft per year).

Extremes.--Maximum discharge during year, 385 cfs Jan. 12 (gage height, 3.82 ft); minimum, 0.2 cfs July 25, 27-31, Aug. 11, 12, 16-19.
1928-59: Maximum gage height, 12.4 ft, present datum, Feb. 21, 1949 (discharge not determined); no flow at times.

Remarks.--Records good except those for periods of ice effect, which are poor. No regulation. A few small diversions for irrigation above station. Water is diverted into headwaters of Butter Creek from Fivemile Creek, a tributary of Camas Creek in John Day River basin, for irrigation of 345 acres below station; at times almost 40 cfs is diverted.

Revisions (water years).--WSP 1218: 1950(M).

Rating tables, water year 1958-59, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 12

Jan. 13 to Sept. 30

0.9	0.5	1.7	27	0.8	0.1	1.5	18
1.0	1.8	2.0	52	.9	.4	1.7	31
1.1	3.5	2.5	116	1.0	1.5	2.0	80
1.3	8.5	3.0	210	1.1	3.5	2.5	125
1.5	16			1.3	9.5	3.0	210

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.8	4.2	7.4	40	68	172	*116	53	15	2.9	0.7	0.6
2	1.8	4.2	7.4	33	*57	140	128	57	12	3.5	.4	.7
3	1.6	4.6	8.0	b25	57	114	131	52	10	4.1	.4	.6
4	1.6	4.6	8.2	b22	64	*94	120	46	11	4.1	.3	.7
5	1.5	5.1	8.5	b20	63	83	114	43	12	3.8	.3	1.0
6	1.3	5.1	8.5	b20	57	72	112	45	18	3.8	.3	1.3
7	1.5	4.9	9.6	b22	48	68	101	40	23	4.1	.3	1.4
8	1.8	4.9	9.6	b25	48	63	90	*37	18	3.5	.3	1.4
9	1.8	5.3	10	27	43	59	*80	36	16	3.3	.4	1.3
10	2.1	5.3	11	51	*40	56	74	36	*17	2.5	.3	1.2
11	2.8	5.3	16	73	40	51	70	36	15	2.5	.3	1.1
12	2.9	5.6	64	196	30	54	69	33	14	2.3	.3	1.0
13	2.8	6.9	45	192	29	57	67	31	13	2.3	.3	.8
14	2.8	7.7	31	116	b28	50	64	32	13	2.1	.3	.7
15	2.7	7.4	25	86	b28	50	63	36	12	2.1	.3	1.0
16	2.5	6.6	22	74	34	52	64	31	12	1.5	.3	1.5
17	2.7	b6	*20	76	43	51	61	29	11	.7	.2	1.7
18	2.8	6.1	20	71	50	54	58	35	10	.6	.2	1.9
19	2.8	6.9	18	63	52	56	54	27	9.5	.5	.3	2.1
20	2.8	*9.2	16	55	62	53	50	26	8.9	.4	.6	1.9
21	3.1	9.9	16	46	70	60	49	26	7.7	.4	1.0	2.1
22	3.5	8.8	15	48	68	65	48	30	*7.4	.3	1.0	2.5
23	3.5	8.2	15	50	66	70	51	28	6.5	.3	.8	2.5
24	*3.5	8.0	14	71	63	80	50	25	6.5	.3	.8	2.9
25	3.7	8.0	14	78	*67	90	51	22	6.5	.3	.7	3.1
26	4.0	b7	14	68	116	94	49	21	6.8	.4	.5	3.5
27	4.0	b6	20	76	95	124	52	21	6.2	.3	*.6	4.1
28	4.2	b6	33	120	132	119	46	19	6.2	.2	.6	5.0
29	4.2	b6.5	29	95	-	119	47	17	6.5	.3	.5	4.1
30	4.2	7.4	28	80	-----	113	48	18	4.1	.3	.5	4.1
31	4.4	-----	*45	74	-----	131	-----	15	-----	.7	.6	-----
Total	86.7	192.4	608.2	2,093	1,618	2,514	2,177	1,003	334.8	54.4	14.4	57.8
Mean	2.80	6.41	19.6	67.5	57.8	81.1	72.6	32.4	11.2	1.75	0.46	1.93
Ac-ft	172	382	1,210	4,150	3,210	4,990	4,320	1,990	664	108	29	115
Calendar year 1958: Max	333			Min	0	Mean	45.5	Ac-ft	32,960			
Water year 1958-59: Max	196			Min	0.2	Mean	29.5	Ac-ft	21,340			
Peak discharge (base, 200 cfs).--Jan. 12 (8 p.m.)	385 cfs (3.82 ft); Mar. 1 (5 a.m.)	206 cfs (2.98 ft).										

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Principal diversions from Umatilla River between Yoakum and Umatilla gaging stations, Oreg.

The following canals divert water from Umatilla River between Yoakum and Umatilla:

270. Furnish Canal, from right bank of Umatilla River in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.31, T.3 N., R.30 E.
290. Umatilla project feed canal, from right bank of Umatilla River in SW $\frac{1}{4}$ sec.22, T.3 N., R.29 E., to feed Cold Springs Reservoir of Bureau of Reclamation.
300. Western Land Canal, from left bank of Umatilla River in NE $\frac{1}{4}$ sec.21, T.3 N., R.29 E.; gage is 1 mile downstream from intake.
305. Allen Canal, from right bank of Western Land Canal, half a mile downstream from headgate of that canal.
320. Maxwell Canal, from right bank of Umatilla River in SW $\frac{1}{4}$ sec.28, T.4 N., R.28 E.; at times it receives water from Cold Springs Reservoir.
325. West Division main canal, from left bank of Umatilla River in SW $\frac{1}{4}$ sec.28, T.5 N., R.28 E.

Water diverted by all of these canals is used for irrigation of lands on both sides of Umatilla River near and below Echo, except that diverted by West Division main canal which is applied to land along Columbia River in vicinity of Irrigon.

Several smaller canals also divert water between Yoakum and Umatilla, but no records for them were obtained.

Records available for 1921-59 water years (incomplete). Monthly discharge only for some periods, published in WSP 1318. Revised figures of discharge for Maxwell Canal (water year 1921) and West Division main canal (water year 1923) published in WSP 1398.

Diversions, in acre-feet, water year October 1958 to September 1959

Month	Furnish Canal	Umatilla project feed canal	Western Land Canal	Allen Canal	Maxwell Canal	West Division main canal
October.....	0	0	1,110	656	1,260	7,150
November.....	0	5,970	37	-	0	0
December.....	0	12,880	0	-	0	0
January.....	0	9,920	0	-	0	0
February.....	0	11,650	0	-	0	0
March.....	188	8,810	3,790	-	1,520	3,720
April.....	6,420	10,070	12,400	894	4,690	11,420
May.....	6,810	12,060	14,460	434	5,640	12,630
June.....	7,990	140	13,480	674	3,660	10,990
July.....	8,570	0	15,470	759	2,420	12,590
August.....	7,910	0	14,970	639	2,340	13,270
September.....	2,460	0	8,730	338	1,580	9,190
Water year 1958-59.....	40,350	71,500	84,450	-	23,110	80,960

Note.--No gage-height record for months of little or no flow and for a few days and short periods at other times. Discharge for some periods interpolated or computed on basis of information furnished by watermaster.

335. Umatilla River near Umatilla, Oreg.

Location.--Lat 45°54'20", long 119°19'40", in NW¼ sec.21, T.5 N., R.28 E., on left bank 1½ miles downstream from West Division main canal of Umatilla project, 1¼ miles south-east of Umatilla, and 2 miles upstream from mouth.

Drainage area.--2,290 sq mi, approximately.

Records available.--October 1903 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 330.47 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Jan. 26, 1931, staff gage at same site and datum.

Average discharge.--32 years (1927-59), 451 cfs (326,500 acre-ft per year). Years prior to 1927 not included in computation of average discharge owing to increased diversion since 1927.

Extremes.--Maximum discharge during year, 6,220 cfs Dec. 12 (gage height, 6.45 ft); minimum, 3.3 cfs May 31.

1903-59: Maximum discharge, 19,600 cfs May 31, 1906 (gage height, 11.0 ft), from rating curve extended above 11,000 cfs by logarithmic plotting; no flow at times.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Regulation since 1927 by McKay Reservoir (see p. 32). Many diversions above station for irrigation of lands above and below station; Brownell Canal diverts below station. Diversions since 1908 to Cold Springs Reservoir, an off-channel reservoir (capacity, 50,000 acre-ft).

Revisions (water years).--WSP 794: Drainage area. WSP 1398: 1909, 1911, 1914, 1928, 1935.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 12				Dec. 12 to Sept. 30			
1.8	6.0	3.5	600	1.6	3.0	2.6	115
2.0	13	4.0	1,070	1.7	4.5	3.0	290
2.2	29	5.0	2,810	1.8	7.0	3.5	630
2.4	58	6.0	5,110	1.9	10	4.0	1,140
2.6	110	7.0	7,600	2.0	16	5.0	2,810
3.0	290			2.2	34	6.0	5,110
				2.4	67		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.1	230	230	965	1,650	1,130	1,910	648	3.9	11	9.4	*42
2	8.1	215	210	a1,100	1,360	1,580	2,160	830	4.5	9.4	9.5	53
3	8.1	230	190	a1,000	1,180	*1,600	3,220	910	4.2	11	11	53
4	8.1	235	314	a900	*1,100	1,380	2,920	774	5.3	17	7.3	67
5	8.1	250	600	a850	1,130	1,180	2,400	711	16	30	12	65
6	8.1	260	544	a800	1,090	1,030	2,120	622	110	30	16	63
7	8.1	265	492	910	1,040	910	1,840	518	178	14	37	60
8	*8.1	280	775	932	943	850	*1,400	*456	154	19	21	54
9	8.1	295	*1,020	850	860	792	1,130	400	102	22	94	58
10	8.1	295	833	830	783	765	921	518	100	23	92	108
11	7.8	295	1,640	970	720	729	711	388	85	18	31	275
12	7.8	290	5,380	1,240	657	792	675	182	36	22	6.0	240
13	7.8	285	3,990	a1,600	574	801	*639	74	13	28	4.5	95
14	7.8	380	2,120	a1,500	518	830	614	12	11	10	6.2	88
15	7.5	450	1,460	1,270	502	820	614	82	10	9.4	7.6	98
16	7.5	375	1,090	1,100	502	756	590	230	10		9.7	140
17	7.5	255	880	1,070	835	657	526	250	10	7.2	9.7	166
18	7.2	220	765	1,060	1,060	622	494	382	10	17	12	150
19	7.2	205	893	1,090	1,090	639	421	346	10	26	21	162
20	*7.2	200	622	1,040	976	675	330	330	11	31	20	146
21	7.2	502	566	965	998	606	215	290	11	25	36	122
22	23	640	526	860	998	590	140	300	*11	17	49	100
23	26	592	486	850	998	598	255	220	11	17	43	100
24	23	*544	449	1,320	998	590	346	154	14	25	42	100
25	19	560	442	a2,500	880	558	382	117	12	14	30	95
26	81	513	442	a2,000	1,080	806	364	65	12	15	24	95
27	250	432	664	a2,200	1,060	870	463	32	17	17	26	85
28	245	375	1,040	4,510	1,030	943	510	7.9	16	25	15	92
29	245	315	*890	a3,500	-	1,040	526	5.8	28	*14	18	290
30	245	270	774	a2,500	-----	1,090	590	5.5	28	37	19	285
31	245	-----	*620	*1,980	-----	1,680	-----	3.6	-----	19	23	-----
Total	1,565.5	10,253	30,947	44,262	26,542	27,709	29,426	9,863.8	1,043.9	587.9	761.9	3,547
Mean	50.5	342	998	1,428	948	894	981	318	34.8	19.0	24.6	118
Ac-ft	3,110	20,340	61,380	87,790	52,650	54,960	58,370	19,560	2,070	1,170	1,510	7,040
Calendar year 1958: Max	8,450				Min 3.0	Mean 731		Ac-ft 529,500				
Water year 1958-59: Max	5,380				Min 3.6	Mean 511		Ac-ft 370,000				

Peak discharge (base, 3,100 cfs, revised).--Dec. 12 (10 p.m.) 6,220 cfs (6.45 ft); Jan. 28 (1 p.m.) 5,180 cfs (6.03 ft); Apr. 3 (5:30 p.m.) 3,420 cfs (5.28 ft).

* Discharge measurement made on this day.

No gage-height record; discharge estimated on basis of weather records at Pendleton and records for station at Yaakum.

345. Willow Creek at Heppner, Oreg.

Location.--Lat 45°21', long 119°32', in SE $\frac{1}{4}$ sec.35, T.2 S., R.26 E., on right bank at Heppner, 100 ft upstream from Court Street bridge, 800 ft southeast of Morrow County courthouse, and a third of a mile downstream from Balm Fork.

Drainage area.--87 sq mi, approximately.

Records available.--May 1951 to September 1959.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,952.73 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--8 years, 22.1 cfs (16,000 acre-ft per year).

Extremes.--Maximum discharge during year, 134 cfs Mar. 1 (gage height, 2.46 ft); maximum gage height, 2.49 ft Jan. 5 (backwater from ice); no flow for part of many days in August and September.

1951-59: Maximum discharge, 812 cfs May 10, 1957 (gage height, 6.15 ft), from rating curve extended above 230 cfs by logarithmic plotting; no flow at times.

Maximum discharge known, about 36,000 cfs June 14, 1903, by slope-area method.

Remarks.--Records good. Many diversions for irrigation of about 500 acres above station. Part of flow of Ditch Creek (John Day River basin) is diverted to Willow Creek above station.

Rating table, water year 1958-59, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.7	0	1.3	16
.8	.4	1.6	37
.9	1.9	2.0	76
1.0	4.2	2.5	137
1.1	7.4		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.9	3.5	8.6	20	51	127	73	42	10	3.2	0.3	0.1
2	.8	3.7	8.2	18	44	108	*93	41	9.0	3.0	.3	.1
3	.6	3.7	9.4	b16	47	87	93	39	8.2	2.8	.3	*.1
4	.6	5.4	10	b13	53	70	86	35	8.4	2.1	.2	.2
5	.6	4.5	8.6	b15	52	61	83	34	8.2	3.2	.3	.2
6	.8	4.8	9.0	b16	*49	54	81	35	18	5.4	.3	.3
7	.8	4.8	11	b18	42	50	73	31	16	6.0	.3	.3
8	1.0	4.2	12	19	40	50	63	27	14	6.0	.1	.4
9	1.9	4.2	11	18	35	*46	57	28	16	4.8	.1	.4
10	2.3	4.2	12	20	31	41	51	29	15	2.6	.2	.3
11	2.6	4.2	45	23	30	37	48	29	14	1.2	.2	.3
12	2.6	5.4	88	43	24	41	46	28	14	.6	.2	.1
13	2.6	11	57	57	24	42	44	27	9.0	1.0	.2	.1
14	2.6	9.9	42	50	24	39	*42	31	8.2	1.4	.1	.3
15	2.8	8.2	34	42	24	39	44	32	8.6	1.4	.2	.3
16	2.8	6.4	28	42	24	42	41	28	7.4	1.4	.2	.3
17	1.9	5.4	25	39	30	42	41	30	8.2	1.2	.2	.5
18	1.9	7.4	22	36	31	46	39	34	7.0	.9	.2	.5
19	2.8	13	21	34	31	50	37	32	5.7	.8	.3	.5
20	3.7	18	20	31	34	47	35	29	6.0	.6	.3	.5
21	3.5	15	18	28	35	50	35	28	7.0	.4	.1	.6
22	*3.2	12	18	29	36	51	31	*26	8.2	.3	.1	.8
23	2.8	11	16	31	36	54	32	24	*7.0	.3	.1	1.5
24	2.8	11	16	34	35	56	36	22	7.4	.6	.1	1.9
25	2.8	9.9	16	35	43	57	36	22	7.8	.5	.2	1.9
26	2.8	*8.2	16	35	65	74	39	20	8.2	.5	.1	5.6
27	2.3	b7.0	21	42	65	87	37	19	8.2	.4	.1	5.1
28	2.1	b7.5	18	38	100	84	19	7.8	.5	.1	.1	3.0
29	2.8	b8.5	18	64	83	34	17	6.7	.4	.1	.1	2.6
30	2.8	9.0	19	57	-----	78	35	15	4.0	*.3	.1	3.5
31	3.0	-----	*20	55	-----	73	-----	14	-----	.3	.1	-----
Total	67.5	231.0	677.8	1,048	1,137	1,869	1,519	867	281.2	54.1	5.7	32.3
Mean	2.18	7.70	21.9	33.8	40.6	60.3	50.6	28.0	9.37	1.75	0.18	1.08
Ac-ft	134	458	1,340	2,080	2,280	3,710	3,010	1,720	558	107	11	64
Calendar year 1958: Max	248			Min 0		Mean 35.3		Ac-ft 25,550				
Water year 1958-59: Max	127			Min 0.1		Mean 21.3		Ac-ft 15,450				

Peak discharge (base, 170 cfs, revised).--No peak above base.

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

375. Strawberry Creek above Slide Creek, near Prairie City, Oreg.

Location.--Lat 44°20', long 118°39', in SW $\frac{1}{4}$ sec.20, T.14 S., R.34 E., on left bank 100 ft upstream from Slide Creek and $8\frac{1}{2}$ miles south of Prairie City.

Drainage area.--7.2 sq mi, approximately.

Records available.--October 1930 to September 1959. Prior to October 1944, published as "above South Fork, near Prairie City."

Gage.--Water-stage recorder and since Nov. 3, 1948, log control. Datum of gage is 4,909.57 ft above mean sea level, datum of 1929.

Average discharge.--29 years, 12.8 cfs (9,270 acre-ft per year).

Extremes.--Maximum discharge during year, 83 cfs June 7 (gage height, 2.00 ft); minimum, 2.8 cfs Nov. 1, 2 (gage height, 1.13 ft).

1930-59: Maximum discharge, 172 cfs June 8, 1948; maximum gage height, 3.23 ft
May 24, 1956 (backwater from logs); minimum discharge, 1.0 cfs Mar. 20, 1955.

Remarks.--Records good. Some natural regulation by Strawberry Lake. No diversion above station.

Revisions (water years).--WSP 1488: 1932-33.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.1	2.1	1.5	20
1.2	4.7	1.7	41
1.3	8.5	2.0	83
1.4	14		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.4	3.1	4.1	6.1	5.0	3.8	4.1	18	32	26	8.1	4.1
2	4.4	3.1	4.4	5.7	5.0	3.8	*5.0	17	*34	24	7.7	3.8
3	4.4	3.1	4.4	5.5	5.0	3.8	6.1	17	41	22	7.3	3.8
4	4.4	3.1	4.4	5.0	4.7	3.8	6.9	17	48	21	7.3	3.8
5	4.4	3.1	4.1	5.4	4.7	3.8	8.1	16	58	20	6.9	3.8
6	4.4	*3.8	4.4	5.4	4.7	3.8	9.3	*15	71	20	6.9	3.8
7	4.4	3.6	4.4	5.4	4.4	3.8	9.7	15	78	19	6.5	3.8
8	4.4	3.3	4.7	5.4	4.1	3.8	8.9	15	76	17	6.5	3.6
9	4.4	3.8	4.7	5.4	4.1	3.8	8.9	16	64	17	6.1	3.6
10	4.4	3.6	4.7	5.4	4.1	3.8	8.5	16	58	15	6.1	3.6
11	4.1	3.3	6.9	5.4	4.1	3.8	8.9	16	54	15	6.1	3.6
12	4.1	3.3	8.1	5.7	3.8	3.8	9.7	17	57	15	5.7	3.6
13	4.1	3.3	8.1	5.7	3.6	3.8	10	20	61	*14	5.4	3.6
14	3.8	3.3	8.1	5.7	3.8	3.8	10	26	67	13	5.4	3.6
15	3.8	3.3	*8.1	5.7	3.8	3.8	10	28	67	12	5.0	3.8
16	3.8	3.3	8.1	5.4	3.8	3.8	10	28	61	12	5.0	3.6
17	3.8	3.2	7.7	5.4	3.8	3.8	10	28	55	11	*5.0	3.6
18	3.8	3.3	7.7	5.4	3.8	3.8	9.7	28	51	11	5.0	5.0
19	4.7	3.8	7.7	*5.4	3.8	3.8	9.7	29	51	11	4.7	5.0
20	3.6	4.1	7.7	5.4	3.6	3.8	9.7	29	51	11	5.0	4.7
21	3.3	3.8	7.7	5.0	3.6	3.8	9.7	29	50	11	4.7	4.7
22	3.3	3.8	7.3	5.0	3.6	3.8	11	29	48	10	4.7	4.7
23	3.3	3.8	7.3	5.0	3.6	3.8	11	29	44	9.7	4.7	*4.7
24	3.3	4.1	7.3	6.1	*3.8	3.8	12	29	40	9.3	4.7	4.7
25	3.3	4.1	7.3	5.4	3.8	3.8	12	29	34	8.9	4.4	4.7
26	3.3	4.1	7.3	5.4	3.8	3.8	13	29	33	8.9	4.4	5.7
27	3.3	3.8	6.9	5.7	3.8	3.8	13	30	32	8.5	4.4	5.4
28	3.3	4.1	6.9	5.7	3.8	3.8	14	30	31	8.5	4.1	5.4
29	3.1	4.1	6.9	5.4	3.8	3.8	14	30	29	8.5	4.1	5.4
30	3.1	4.1	6.9	5.4	3.8	3.8	16	30	28	8.5	4.1	5.7
31	3.1	---	6.9	5.4	---	3.8	---	30	---	8.1	4.1	---
Total	119.3	107.6	201.2	169.4	113.5	117.8	297.9	735	1,504	425.9	170.1	128.9
Mean	3.85	3.59	6.49	5.46	4.05	3.80	9.93	23.7	50.1	13.7	5.49	4.30
Cfsm	0.535	0.499	0.901	0.758	0.562	0.528	1.38	3.29	6.96	1.90	0.762	0.597
In.	0.62	0.56	1.04	0.87	0.59	0.61	1.54	3.80	7.77	2.20	0.98	0.67
Ac-ft	257	213	399	336	225	234	591	1,460	2,980	845	337	256

Calendar year 1958: Max 148 Min 2.2 Mean 15.9 Cfsm 2.21 In. 30.07 Ac-ft 11,540
Water year 1958-59: Max 78 Min 3.1 Mean 11.2 Cfsm 1.56 In. 21.15 Ac-ft 8,110

* Discharge measurement made on this day.

385. John Day River at Prairie City, Oreg.

Location.--Lat 44°27', long 118°43', in NE $\frac{1}{4}$ sec.10, T.13 S., R.33 E., on right bank 600 ft upstream from outlet of Prairie power canal, a third of a mile downstream from Dixie Creek, and three-quarters of a mile southwest of Prairie City.

Drainage area.--231 sq mi.

Records available.--October 1916 to September 1917 (gage heights only), March 1925 to September 1959. Monthly discharge only March 1925, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 3,496.66 ft above mean sea level, datum of 1929 supplementary adjustment of 1947. Prior to Mar. 30, 1926, staff gage at site 600 ft downstream, just below outlet of Prairie power canal, at different datum. Mar. 30, 1926 to Aug. 23, 1943, staff gages at various sites and datums just above outlet of Prairie power canal.

Average discharge.--28 years (1925-53), 113 cfs, including flow of Prairie power canal (81,810 acre-ft per year).

Extremes.--Maximum discharge during year, 309 cfs June 6 (gage height, 2.13 ft); minimum, 12 cfs Aug. 16.

1925-59: Maximum discharge, 2,100 cfs Mar. 25, 1952 (gage height, 6.27 ft, from floodmark), from rating curve extended above 450 cfs; minimum, 2 cfs Dec. 8, 21, 22, 1932, Aug. 10, 1934.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good. No regulation. Many diversions for irrigation above station. Prairie power canal (not used for power since February 1952) diverts water above station in SE $\frac{1}{4}$ sec.7, T.13 S., R.34 E.; water is used for irrigation below former canal gaging station in sec.11, T.13 S., R.33 E., where the following discharge measurements, in cubic feet per second, were made in the 1959 water year:

Nov. 6.....	3.50	July 13.....	14.5
May 6.....	16.5	Aug. 17.....	5.18
June 2.....	9.67	Sept. 23.....	6.23

Revisions (water years).--WSP 1448: 1926-27, 1929-32, 1944, 1950.

Rating tables, water year 1958-59, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11		Dec. 12 to Sept. 30	
1.0	53	0.6	12
1.2	85	.8	27
1.5	150	1.0	50
		1.5	140
		2.0	270

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	a80	78	87	150	106	151	194	136	53	a44	24
2	70	a80	76	b70	121	106	*184	194	*119	52	37	32
3	70	a80	82	b60	119	108	215	176	125	47	31	31
4	70	a80	80	b50	132	106	232	164	147	42	37	30
5	70	a85	75	b55	121	104	246	158	172	42	36	35
6	66	*85	80	b80	115	102	264	*151	264	38	33	32
7	68	96	82	95	110	104	243	142	226	50	32	31
8	71	87	80	89	106	102	220	121	209	56	27	30
9	75	83	82	102	98	102	204	134	199	47	24	30
10	75	83	82	113	104	100	194	136	169	41	18	33
11	68	80	140	117	102	95	186	127	144	38	17	35
12	73	78	151	125	98	98	194	113	132	38	16	32
13	70	91	a110	115	b85	96	191	102	132	*40	15	31
14	70	87	a100	106	98	96	181	95	138	38	15	42
15	70	82	*91	100	98	93	179	125	142	37	15	121
16	73	73	89	106	111	96	167	136	138	34	14	98
17	73	75	89	104	132	100	162	181	119	32	*15	80
18	82	85	87	100	121	106	153	226	102	31	14	87
19	98	87	87	*100	123	110	144	218	96	29	16	119
20	87	91	86	96	119	104	132	184	91	36	20	108
21	82	87	86	93	111	108	111	209	80	a34	25	106
22	82	85	84	98	110	110	106	189	77	a34	24	96
23	a80	83	80	108	108	111	91	191	70	a34	20	*89
24	a75	82	82	162	*100	115	96	189	70	a36	17	84
25	a80	80	84	136	106	113	115	199	74	a44	16	79
26	a80	75	80	123	104	121	142	229	75	a48	16	123
27	a80	73	98	155	102	130	169	220	74	a46	18	98
28	a75	75	89	174	100	151	158	209	70	a48	21	96
29	a75	76	86	153	---	169	151	186	67	a48	21	89
30	a80	78	89	138	---	157	160	172	60	a65	20	87
31	a80	---	93	138	---	153	---	162	---	a50	21	---
Total	2,336	2,452	2,778	3,548	3,076	3,482	5,141	5,240	3,717	1,308	695	2,008
Mean	75.4	81.7	89.6	108	110	112	171	169	124	42.2	22.4	66.9
Ac-ft	4,630	4,860	5,510	6,640	6,100	6,910	10,200	10,390	7,370	2,590	1,380	3,980
Calendar year 1948: Max	632				Min 16	Mean 154	Ac-ft 111,300					
Water year 1958-59: Max	264				Min 14	Mean 97.5	Ac-ft 70,560					

Peak discharge (base, 240 cfs).--Apr. 6 (5 a.m.) 276 cfs (2.02 ft); May 18 (5:30 p.m.) 249 cfs (1.93 ft); May 26 (5 a.m.) 267 cfs (1.99 ft); June 6 (4 a.m.) 309 cfs (2.13 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for station at Picture Gorge, near Dayville.
b Stage-discharge relation affected by ice.

405. John Day River at Picture Gorge, near Dayville, Oreg.

Location.--Lat 44°31'15", long 119°37'30", in SW $\frac{1}{4}$ sec.17, T.12 S., R.26 E., on right bank 0.7 mile upstream from Rock Creek and $5\frac{1}{2}$ miles northwest of Dayville.

Drainage area.--1,680 sq mi, approximately.

Records available.--April 1926 to September 1959. Monthly discharge only for April 1926, published in WSP 1318.

Gage.--Water-stage recorder. Concrete control since Sept. 1, 1934. Datum of gage is 2,231.84 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 11, 1926, staff gage and Oct. 11, 1926, to Sept. 30, 1930, water-stage recorder, at same site at datum 0.50 ft higher.

Average discharge.--33 years, 461 cfs (333,800 acre-ft per year).

Extremes.--Maximum discharge during year, 1,190 cfs Apr. 6 (gage height, 5.73 ft); minimum, 6.0 cfs Aug. 17, 18 (gage height, 0.92 ft).

1926-59: Maximum discharge, 6,800 cfs Mar. 19, 1932 (gage height, 14.0 ft); minimum, 1 cfs for several days in August and September 1930, Aug. 8, 9, 1936.

Remarks.--Records excellent except those for period of ice effect, which are good. No regulation. Many diversions for irrigation above station.

Revisions (water years).--WSP 1218: 1950. WSP 1348: Drainage area. WSP 1448: 1926, 1928, 1932(M), 1936.

Rating tables, water year 1958-59, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 13-24)

Oct. 1 to Apr. 6

Apr. 7 to Sept. 30

1.9	113	0.9	5.0	2.2	151
3.0	305	1.1	16	3.0	310
4.0	550	1.3	30	4.0	570
6.0	1,300	1.7	73	6.0	1,300

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	155	189	236	327	614	452	715	615	408	85	21	19
2	156	192	234	313	529	475	813	750	365	76	19	17
3	158	192	232	b190	517	480	1,030	705	*342	67	16	15
4	155	196	243	b120	523	460	1,080	633	355	63	15	15
5	152	*201	234	b130	520	450	1,100	*603	368	58	14	12
6	145	206	236	b280	485	440	1,160	615	585	56	15	14
7	133	214	247	339	460	440	1,100	570	618	56	15	16
8	130	226	258	325	445	432	984	522	564	52	15	17
9	138	219	262	351	400	420	876	489	513	44	16	19
10	147	215	266	435	395	420	785	486	480	40	16	19
11	140	212	276	465	405	392	726	470	430	37	14	19
12	138	208	562	517	365	402	720	420	370	31	12	18
13	139	224	517	586	329	410	735	375	340	28	12	17
14	139	256	408	514	365	400	708	378	326	*26	12	17
15	132	256	368	462	375	378	669	445	316	24	13	21
16	128	239	*351	445	410	398	639	492	292	21	12	52
17	132	203	337	448	505	398	597	564	270	16	11	99
18	136	214	325	432	505	418	576	657	249	14	*7.0	93
19	148	247	319	*432	502	438	537	666	226	15	7.5	100
20	158	264	313	420	511	415	504	639	224	15	8.5	164
21	172	277	307	398	480	420	452	588	212	13	9.5	196
22	172	270	303	398	485	430	418	627	170	13	13	202
23	175	266	325	418	458	438	425	582	140	14	14	*216
24	175	260	289	508	*435	450	408	567	118	15	15	210
25	192	251	311	652	432	448	428	546	97	20	15	190
26	197	234	303	568	435	455	472	528	97	21	17	210
27	196	215	343	592	422	490	558	525	99	20	22	288
28	187	210	351	552	428	511	564	549	103	21	21	286
29	182	217	325	774	-----	595	540	495	99	20	21	258
30	187	234	315	666	-----	634	531	462	96	26	21	250
31	192	-----	325	624	-----	*746	-----	440	-----	22	20	-----
Total	4,896	6,807	9,679	14,061	12,715	14,135	20,850	17,003	8,871	1,029	459.5	3,049
Mean	158	227	312	454	454	456	695	548	296	33.2	14.8	102
Ac-ft	9,710	13,500	19,200	27,890	25,220	28,040	41,360	33,720	17,600	2,040	911	6,050
Calendar year 1958: Max			3,520		Min	40	Mean	729	Ac-ft	527,800		
Water year 1958-59: Max			1,160		Min	7.0	Mean	311	Ac-ft	225,200		

Peak discharge (base, 1,300 cfs).--No peak above base.

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

420. Camas Creek near Lehman Oreg.

Location.--Lat 45°10', long 118°44', in SW $\frac{1}{4}$ sec.33, T.4 S., R.33 E., on left bank 2 miles downstream from Bowman Creek and $3\frac{1}{2}$ miles northwest of Lehman.

Drainage area.--61 sq mi, approximately.

Records available.--October 1950 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 3,969.53 ft above mean sea level (levels by Oregon State Highway Department).

Average discharge.--9 years, 49.9 cfs (36,130 acre-ft per year).

Extremes.--Maximum discharge during year, 1,020 cfs Dec. 11 (gage height, 3.40 ft); minimum, 0.6 cfs Aug. 30, 31.

1950-59: Maximum discharge, 1,860 cfs Dec. 21, 1955 (gage height, 4.56 ft), from rating curve extended above 900 cfs by logarithmic plotting; minimum, 0.4 cfs Sept. 1, 2, 5-8, 1955.

Remarks.--Records excellent except those for periods of ice effect, which are fair. A few small diversions for irrigation above station.

Rating tables, water year 1958-59, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11

Dec. 12 to Sept. 30

0.2	1.6	1.2	65	0.1	0.4	0.7	16
.3	3.0	1.5	122	.2	1.1	1.0	41
.5	7.5	2.0	260	.3	2.4	1.3	84
.7	15	2.5	470	.5	7.0	1.7	180
.9	27	3.0	760	.6	11	2.2	350

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.0	2.6	12	51	67	86	160	96	23	4.4	1.0	0.9
2	1.8	3.2	11	b30	60	88	244	96	27	4.2	.9	.9
3	1.8	*3.5	b11	b16	59	72	231	98	20	3.9	.9	.9
4	1.8	3.7	b12	b18	56	61	207	*90	*17	3.7	.9	1.0
5	1.8	5.5	13	b22	49	56	201	90	21	3.5	1.0	1.3
6	1.8	6.5	15	b26	46	52	186	86	33	4.2	1.0	1.6
7	1.8	6.0	46	b30	b32	52	152	77	25	4.4	1.0	1.4
8	2.4	5.8	46	51	b34	51	130	74	19	4.2	1.0	1.6
9	2.6	5.8	37	45	b34	47	111	76	21	3.5	.9	1.2
10	2.4	6.0	68	61	32	43	100	69	18	3.1	1.1	1.0
11	2.4	5.2	648	102	29	42	96	63	15	2.9	.9	1.1
12	2.2	5.0	*342	234	b22	54	96	57	14	2.6	.8	.9
13	2.2	7.8	147	160	b24	52	94	53	13	2.7	.9	.9
14	2.4	7.5	94	104	25	48	86	56	12	2.1	.9	1.0
15	2.0	6.5	69	79	24	44	84	61	11	2.0	.9	1.6
16	2.0	b6.0	59	94	24	49	82	54	10	2.1	.9	1.7
17	2.1	b5.0	51	98	25	61	82	57	9.5	*1.8	.9	1.6
18	2.6	7.0	46	98	24	66	74	61	8.7	1.7	*.9	1.6
19	3.7	b10	42	84	25	63	66	59	7.9	1.6	1.0	2.4
20	3.2	b30	58	72	25	59	63	56	7.3	1.6	1.4	3.5
21	2.7	36	42	*b60	26	66	61	60	6.7	1.4	2.0	*2.7
22	2.6	26	36	66	27	74	70	61	6.7	1.3	1.8	2.6
23	2.7	24	32	79	26	77	74	56	5.9	1.3	1.6	2.1
24	2.6	24	30	155	23	74	76	51	5.6	1.4	1.7	1.7
25	2.7	19	29	132	26	74	72	46	5.9	1.3	1.2	1.7
26	2.7	16	27	106	*26	100	84	43	5.9	1.1	1.1	9.5
27	2.7	b15	30	120	27	109	90	41	5.4	1.3	1.0	4.9
28	2.6	b14	26	137	45	116	82	39	5.2	1.1	1.0	4.9
29	2.6	12	26	109	-	118	77	34	5.2	1.1	1.0	4.4
30	2.4	13	31	90	-----	*111	79	30	4.9	1.2	.8	4.9
31	2.6	-----	41	79	-----	120	-----	26	-----	1.1	.8	-----
Total	73.9	337.6	2,157	2,588	942	2,185	3,310	1,916	380.8	73.8	33.2	67.5
Mean	2.38	11.3	69.6	83.5	33.6	70.5	110	61.8	12.7	2.38	1.07	2.25
Ac-ft	147	670	4,280	5,130	1,870	4,330	6,570	3,800	755	146	66	134
Calendar year 1958: Max	648				Min 1.4	Mean 62.7	Ac-ft 45,400					
Water year 1958-59: Max	648				Min 0.8	Mean 38.5	Ac-ft 27,900					

Peak discharge (base, 420 cfs, revised).--Dec. 11 (8 p.m.) 1,020 cfs (3.40 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

JOHN DAY RIVER BASIN

425. Camas Creek near Ukiah, Oreg.

Location.--Lat 45°09', long 118°49', in SE $\frac{1}{4}$ sec.3, T.5 S., R.32 E., on right bank 1.2 miles upstream from Cable Creek and 6 miles east of Ukiah.

Drainage area.--121 sq mi.

Records available.--May 1914 to September 1917, November 1919 to July 1920, November 1920 to June 1924, March 1932 to June 1940 (fragmentary), November 1940 to September 1959. Monthly discharge only for some periods, published in WSP 1318. Published as "above Cable Creek, near Ukiah" 1914-17, 1919-24.

Gage.--Water-stage recorder. Datum of gage is 3,588.61 ft above mean sea level (levels by Oregon State Highway Department). May 1, 1914, to June 30, 1924, staff gage and Mar. 1, 1932, to July 2, 1940, water-stage recorder, at site 1.2 miles downstream at different datum.

Average discharge.--23 years (1914-17, 1921-23, 1941-59), 104 cfs (75,290 acre-ft per year).

Extremes.--Maximum discharge during year, 1,430 cfs Dec. 11 (gage height, 4.32 ft); minimum, 2.5 cfs July 31 (gage height, 1.30 ft).
1914-17, 1919-24, 1932-59: Maximum discharge, 2,600 cfs Mar. 18, 1932 (gage height, 5.20 ft, from floodmark), from rating curve extended above 740 cfs; minimum recorded, 1 cfs Aug. 9, 1932, June 24 to July 2, 1940.

Remarks.--Records excellent except those for periods of ice effect, which are fair.
Divisions for irrigation of 80 acres above station.

Revisions (water years).--WSP 1448: 1916, 1920, 1922(M), 1924.

Rating tables, water year 1958-59, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 1

Apr. 2 to Sept. 30

1.4	4.5	2.3	125	1.3	2.5	1.9	47
1.5	9.0	2.7	260	1.4	6.0	2.2	100
1.6	15	3.2	490	1.5	10	2.6	220
1.8	33	3.9	1,000	1.7	25	3.1	440
2.0	60						

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.6	6.9	b34	102	146	182	264	284	64	13	3.3	3.3
2	5.6	8.4		35	b70	120	182	390	64	12	3.3	3.0
3	5.6	*10	32	b36	b120	155	410	240	71	12	3.3	3.0
4	5.2	10	34	b42	115	128	390	*216	*67	10	3.3	3.3
5	5.2	14	46	b48	100	115	395	213	69	10	3.3	4.3
6	5.2	16	37	b50	91	105	390	206	98	11	3.6	5.1
7	5.2	17	66	b55	b65	100	332	185	78	13	3.6	5.1
8	6.0	15	73	56	b70	98	280	179	62	12	3.6	5.1
9	6.9	14	60	91	91	244	196	59	10	3.6	4.7	
10	7.4	16	117	149	71	82	224	188	52	9.6	4.0	4.0
11	6.9	14	973	220	60	78	224	173	45	9.2	3.6	4.3
12	6.9	12	*634	410	b46	98	232	155	40	8.7	3.6	4.3
13	6.4	17	309	318	b48	98	232	155	39	8.2	3.3	4.3
14	6.0	17	196	216	b48	87	213	196	36	8.2	3.3	5.1
15	5.6	17	149	167	b48	80	202	228	34	7.4	3.3	6.9
16	5.2	b16	122	185	46	87	192	185	31	6.9	3.3	7.4
17	5.2	b14	105	188	51	105	185	179	28	*6.4	3.3	6.9
18	6.4	b20	91	192	50	118	167	173	25	6.0	*3.6	6.4
19	9.6	*b26	82	170	57	115	149	158	23	6.0	4.0	9.2
20	9.6	b60	74	146	64	105	145	146	23	5.6	4.7	13
21	7.9	65	74	*b110	65	122	146	152	20	5.1	6.9	*11
22	7.4	50	67	134	64	134	176	152	20	4.7	6.9	9.2
23	7.4	44	64	161	60	137	196	146	19	5.1	5.6	8.2
24	7.9	44	54	272	52	134	210	140	18	4.7	5.6	6.9
25	6.9	b46	51	252	60	134	206	137	17	4.3	4.3	6.9
26	6.9	b44	48	210	*60	179	224	134	17	4.0	3.6	31
27	6.9	b40	57	228	65	206	224	122	16	3.6	3.6	19
28	6.9	b38	51	284	115	213	206	112	15	3.6	3.6	17
29	6.9	b36	48	228	-	220	202	94	15	3.6	3.6	15
30	8.4	b38	87	185	-----	*216	220	82	15	3.6	3.3	15
31	6.4	-----	87	167	-----	220	-----	73	-----	3.3	3.3	-----
Total	205.6	785.3	3,935	5,142	2,026	4,124	7,271	5,231	1,180	230.8	121.2	247.9
Mean	6.63	26.2	127	166	72.4	4,133	242	169	39.3	7.45	3.91	8.26
Ac-ft	408	1,560	7,800	10,200	4,020	8,180	14,420	10,380	2,340	458	240	492
Calendar year 1958: Max 894 Min 4.2 Mean 129 Ac-ft 93,250												
Water year 1958-59: Max 973 Min 3.0 Mean 83.6 Ac-ft 60,500												

Peak discharge (base, 550 cfs).--Dec. 11 (9 p.m.) 1,430 cfs (4.32 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

440. Middle Fork John Day River at Ritter, Oreg.

Location.--Lat 44°53'20", long 119°08'25", in SW 1/4 sec. 8, T.8 S., R.30 E., on left bank a quarter of a mile south of Ritter and three-quarters of a mile downstream from Twelvemile Creek.

Drainage area.--515 sq mi.

Records available.--October 1929 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 2,544.56 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--30 years, 241 cfs (174,500 acre-ft per year).

Extremes.--Maximum discharge during year, 1,090 cfs Dec. 12 (gage height, 4.89 ft); minimum, 15 cfs Aug. 12, 16, 19 (gage height, 1.77 ft).
1929-59: Maximum discharge, 4,000 cfs Mar. 19, 1932 (gage height, 7.78 ft) from rating curve extended above 2,200 cfs; maximum gage height, 8.50 ft Feb. 18, 1949 (ice jam); minimum discharge, 1.0 cfs Dec. 10, 1932 (result of freezeup); minimum daily, 2 cfs Dec. 10, 11, 1932.

Remarks.--Records excellent except those for periods of ice effect, which are good. No regulation. Many small diversions for irrigation of 2,700 acres above station.

Revisions (water years).--WSP 739: 1931. WSP 1218: 1950. WSP 1448: 1930-32, 1937, drainage area.

Rating tables, water year 1958-59, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 15

May 16 to Sept. 30

1.8	15	3.5	295	1.8	16	2.8	132
2.0	26	4.0	480	2.0	29	3.4	285
2.4	64	4.5	780	2.4	68	4.1	550
3.0	163	5.0	1,180				

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	43	89	192	316	302	505	545	318	84	23	21
2	38	46	72	145	253	334	700	540	329	76	22	20
3	38	54	80	b65	288	316	878	500	*346	72	21	19
4	39	*53	90	b60	280	286	836	*456	350	69	22	19
5	38	62	65	b90	259	268	812	432	357	68	21	25
6	38	90	79	b130	241	256	900	432	484	67	21	32
7	38	100	90	155	202	250	748	404	410	71	22	32
8	38	90	113	153	200	244	658	400	364	78	19	28
9	45	79	101	195	176	235	580	432	336	69	18	25
10	46	85	101	230	185	230	525	412	309	61	18	22
11	45	80	597	238	183	195	520	366	282	54	16	20
12	43	69	788	570	147	247	540	376	273	51	16	19
13	42	79	379	578	126	244	565	424	264	48	16	21
14	40	93	262	372	159	228	530	530	252	48	18	20
15	38	82	215	283	161	200	510	570	228	47	18	36
16	38	63	195	262	172	241	472	525	205	*44	18	60
17	39	b40	*178	265	235	256	456	525	195	41	16	47
18	39	52	165	256	241	289	428	540	175	38	16	45
19	55	84	159	241	250	302	393	476	166	36	*16	62
20	66	104	151	220	247	265	372	444	162	35	18	94
21	55	117	149	195	232	298	354	424	151	33	29	*88
22	48	95	145	212	247	286	390	420	152	31	54	73
23	46	87	115	277	235	286	436	413	122	31	26	64
24	45	86	132	386	202	283	468	406	113	36	28	57
25	44	87	132	464	*220	289	476	420	108	35	23	52
26	45	61	122	376	218	340	480	413	106	31	21	114
27	45	b34	151	396	208	400	510	392	104	28	20	218
28	45	b19	147	555	222	393	468	374	98	28	20	145
29	44	b25	130	448	-----	472	456	346	94	27	20	108
30	43	b70	167	372	-----	*495	480	329	92	27	20	93
31	42	-----	215	351	-----	505	-----	312	-----	23	20	-----
Total	1,343	2,124	5,574	8,732	6,083	9,235	16,444	13,598	6,925	1,487	636	1,679
Mean	43.3	70.8	180	282	217	298	548	439	231	48.0	20.5	56.0
Ac-ft	2,680	4,210	11,060	17,320	12,070	18,320	32,620	26,970	13,740	2,950	1,260	3,330
Calendar year 1958: Max 1,790 Min 19 Mean 366 Ac-ft 246,800												
Water year 1958-59: Max 900 Min 16 Mean 202 Ac-ft 146,500												

Peak discharge (base, 760 cfs).--Dec. 12 (12:30 a.m.) 1,090 cfs (4.89 ft); Jan. 12 (9 p.m.) 940 cfs (4.70 ft); Apr. 6 (8 a.m.) 948 cfs (4.71 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

460. North Fork John Day River at Monument, Oreg.

Location.--Lat 44°48'50", long 119°25'50", in SE $\frac{1}{4}$ sec.2, T.9 S., R.27 E., on right bank just downstream from entrance to canyon, 0.7 mile downstream from Cottonwood Creek and three-quarters of a mile west of Monument.

Drainage area.--2,520 sq mi, approximately.

Records available.--March 1925 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 1,959.64 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Nov. 24, 1925, staff gage and Nov. 24, 1925, to Oct. 16, 1928, water-stage recorder at datum 1.10 ft higher. Oct. 17, 1928, to Sept. 30, 1930, water-stage recorder 1.00 ft higher.

Average discharge.--34 years, 1,211 cfs (876,700 acre-ft per year).

Extremes.--Maximum discharge during year, 6,380 cfs Dec. 12 (gage height, 8.04 ft); maximum gage height, 8.49 ft Jan. 6 (ice jam); minimum discharge, 76 cfs Aug. 12, 18, 19, (gage height, 2.94 ft).
1925-59: Maximum discharge, 22,000 cfs Mar. 18, 1932 (gage height, 14.8 ft), from rating curve extended above 12,000 cfs by logarithmic plotting; minimum, 6 cfs some time during period Nov. 2-13, 1936 (result of freezeup); minimum daily, 17 cfs Dec. 12, 1932.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good. Very slight regulation by small reservoirs upstream. Many small diversions for irrigation above station.

Revisions (water years).--WSP 754: 1932(M). WSP 1448: 1927, 1929, 1931(M), 1949.

Rating tables, water year 1958-59, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 30 to June 5)

Oct. 1 to Dec. 11

Dec. 12 to Sept. 30

3.1	100	4.5	890	2.9	68	5.0	1,360
3.4	190	5.2	1,630	3.2	137	6.0	2,660
3.8	380			3.6	285	8.0	6,300
				4.2	635		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	120	158	392	1,080	1,890	1,770	2,480	3,280	1,520	404	114	81
2	118	158	330	897	1,480	1,860	2,990	3,280	1,560	370	106	81
3	118	183	342	b420	1,410	1,710	3,800	2,930	*1,670	350	101	83
4	118	*190	416	b280	1,590	1,480	3,800	2,620	1,660	330	97	83
5	120	210	374	b300	1,400	1,350	3,850	*2,390	1,700	321	94	83
6	120	239	285	b500	1,300	1,270	4,280	2,390	2,320	312	94	89
7	120	325	374	b850	1,100	1,230	3,780	2,200	2,170	316	92	116
8	122	448	488	790	1,100	1,170	5,310	2,160	1,770	350	89	116
9	128	336	528	1,050	950	1,120	2,940	2,450	1,610	335	87	104
10	155	336	482	1,960	1,000	1,080	2,690	2,450	1,460	290	85	94
11	169	352	1,560	2,200	1,000	980	2,650	2,280	1,310	264	81	89
12	162	300	4,660	4,080	800	1,010	2,830	2,170	1,260	239	79	87
13	158	295	2,410	3,700	700	1,090	3,020	2,310	1,250	227	79	83
14	155	342	1,530	2,310	850	1,010	2,850	2,930	1,230	212	79	85
15	149	330	1,190	1,720	900	942	2,690	3,700	1,130	*204	79	87
16	143	266	*1,050	1,520	1,200	970	2,480	3,230	1,060	194	81	127
17	137	166	951	1,660	1,600	1,040	2,370	2,960	980	183	79	166
18	131	152	838	1,550	1,800	1,110	2,160	3,100	888	176	*78	156
19	140	252	774	1,430	1,900	1,180	1,940	2,730	822	166	78	163
20	166	404	718	*1,290	1,800	1,000	1,820	2,480	838	159	81	239
21	222	500	695	1,110	1,600	1,200	1,770	2,320	790	150	97	316
22	183	494	680	1,150	1,400	1,200	1,970	2,310	702	147	124	*277
23	158	422	586	1,360	1,300	1,200	2,410	2,240	642	147	129	231
24	152	392	532	2,260	1,100	1,300	2,650	2,160	593	143	114	212
25	146	392	621	2,580	*1,230	1,300	2,760	2,180	558	147	104	194
26	143	315	607	2,100	1,230	1,470	2,790	2,160	532	150	97	220
27	146	183	830	2,360	1,160	1,900	2,910	2,060	513	137	89	582
28	149	122	838	4,160	1,240	1,840	2,630	1,970	482	127	85	500
29	152	108	726	2,950	-	2,060	2,560	1,820	446	124	83	366
30	155	290	774	2,280	-	2,250	2,730	1,700	434	119	83	330
31	158	-	1,090	2,090	-	*2,660	-	1,580	-	119	81	-
Total	4,513	8,658	27,871	53,967	36,030	42,752	83,890	76,410	33,900	6,892	2,839	5,458
Mean	146	289	899	1,741	1,287	1,378	2,796	2,465	1,135	222	91.6	182
Ac-ft	8,950	17,170	55,280	107,000	71,460	84,800	166,400	151,600	67,240	13,670	5,630	10,830
Calendar year 1958: Max			10,600		Min 108	Mean 1,957		Ac-ft 1,417,000				
Water year 1958-59: Max			4,860		Min 78	Mean 1,050		Ac-ft 760,000				

Peak discharge (base, 5,300 cfs, revised).--Dec. 12 (8 a.m.) 6,380 cfs (8.04 ft); Jan. 12 (10:30 p.m.) 5,680 cfs (7.69 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Feb. 6-24, Mar. 20-25; discharge estimated on basis of recorded range in stage, weather records, and records for nearby stations.

465. John Day River at Service Creek, Oreg.

Location.--Lat 44°47'40", long 120°00'30", in N½ sec.18, T.9 S., R.23 E., on left bank 0.2 mile downstream from bridge on State Highway 207, half a mile downstream from Service Creek, and three-quarters of a mile southwest of town of Service Creek.

Drainage area.--5,090 sq mi, approximately.

Records available.--March 1925 to September 1926, October 1929 to September 1959. Monthly discharge only March 1925 to September 1926, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 1,632.42 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Nov. 6, 1929, staff gage at site 12 miles downstream at different datum. Nov. 6-22, 1929, staff gage and Nov. 23, 1929, to Sept. 25, 1930, water-stage recorder, at site 1,000 ft upstream at datum 4.01 ft higher. Sept. 26, 1930, to Feb. 6, 1956, water-stage recorder at site 1,000 ft upstream at datum 3.21 ft higher. Feb. 7, 1956, to Feb. 23, 1957, wire-weight gage at site 500 ft upstream at datum 0.76 ft higher.

Average discharge.--31 years, 1,816 cfs (1,315,000 acre-ft per year).

Extremes.--Maximum discharge during year, 6,600 cfs Dec. 12 (gage height, 7.20 ft); minimum, 68 cfs Aug. 13, 14 (gage height, 2.81 ft).
1925-26, 1929-59: Maximum discharge, 28,900 cfs Mar. 19, 1932 (gage height, 16.75 ft, site and datum then in use), from rating curve extended above 11,000 cfs; minimum, 20 cfs Sept. 6, 1931.

Remarks.--Records good. Very slight regulation by several small reservoirs above station. Many small diversions for irrigation above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Jan. 3-6)

Oct. 1 to Jan. 12

Jan. 13 to Sept. 30

3.4	305	5.0	2,300	2.8	66	4.2	1,080
3.8	645	6.4	5,000	3.0	123	5.0	2,380
4.4	1,310			3.3	257	6.8	5,800
				3.7	530		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	335	397	609	1,500	2,920	2,310	*3,600	3,930	1,990	530	138	88
2	328	388	675	1,450	2,560	2,700	3,860	4,440	1,960	498	127	*91
3	328	414	627	950	2,110	2,560	5,100	4,100	1,970	450	110	91
4	335	422	636	460	2,280	2,330	3,680	5,420	2,020	422	107	88
5	328	456	702	480	*2,350	2,110	5,420	3,370	2,060	401	94	88
6	320	474	645	900	2,110	2,020	5,780	3,320	2,470	387	94	91
7	312	537	618	1,280	2,010	1,940	5,640	3,120	3,170	374	91	91
8	305	627	702	1,240	1,720	1,870	4,920	2,940	2,630	380	88	117
9	305	683	840	1,260	1,720	1,800	4,340	3,060	2,330	387	91	123
10	320	600	810	2,070	1,530	*1,730	3,950	3,230	2,160	380	88	120
11	365	627	830	2,740	1,560	1,670	3,750	3,100	1,970	334	86	117
12	350	636	4,890	3,610	1,500	1,510	3,840	2,880	1,780	298	81	113
13	342	609	3,930	5,450	1,250	1,750	4,060	2,830	1,720	274	71	107
14	335	618	2,360	3,480	1,160	1,700	4,020	3,190	1,650	252	71	97
15	328	683	1,740	2,630	1,560	1,550	3,780	4,040	1,600	*242	71	101
16	312	645	1,540	2,240	1,360	1,480	3,590	4,160	1,470	237	71	107
17	320	537	1,410	2,300	1,920	1,630	3,300	3,730	1,310	211	71	134
18	320	448	1,280	2,240	2,380	1,700	3,140	3,960	1,220	211	71	280
19	328	465	1,180	2,140	2,630	1,820	2,880	3,750	1,120	192	71	280
20	358	618	1,160	*1,990	2,740	1,800	2,690	3,420	1,070	184	71	292
21	*422	740	1,100	1,800	2,600	1,670	2,560	*3,140	1,090	166	74	429
22	456	862	1,070	1,620	2,330	1,890	2,560	3,100	976	157	86	*506
23	414	790	1,030	1,770	2,190	1,900	3,030	2,990	*854	146	117	458
24	397	730	884	2,280	2,080	1,990	3,300	2,900	797	150	127	458
25	388	*702	950	3,660	1,850	2,010	3,500	2,830	710	138	120	429
26	397	683	1,020	3,080	1,920	2,040	3,550	2,790	660	146	110	436
27	397	555	1,110	2,830	1,890	2,520	3,750	2,760	640	146	101	490
28	397	431	1,280	5,040	1,890	2,630	3,640	2,650	620	146	91	878
29	397	414	1,210	4,560	-	2,790	3,420	2,510	602	142	88	670
30	397	406	*1,130	3,590	-----	2,990	3,480	2,240	566	*138	88	575
31	397	-----	1,280	3,080	-----	3,730	-----	2,110	-----	134	88	-----
Total	11,033	17,197	39,246	73,710	55,900	64,120	115,870	100,280	45,185	8,253	2,653	7,969
Mean	356	573	1,266	2,378	1,896	2,068	3,862	3,235	1,506	266	92.0	266
Ac-ft	21,880	34,110	77,840	146,200	110,900	127,200	229,800	198,900	89,620	16,370	5,680	15,810
Calendar year 1958:	Max	15,700	Min	149	Mean	2,900	Ac-ft	2,100,000				
Water year 1958-59:	Max	5,780	Min	71	Mean	1,484	Ac-ft	1,074,000				

Peak discharge (base, 7,300 cfs, revised).--No peak above base.

* Discharge measurement made on this day.

480. John Day River at McDonald Ferry, Oreg.

Location--Lat 45°35'20", long 120°24'30", in NW $\frac{1}{4}$ sec.11, T.1 N., R.19 E., on left bank at McDonald Ferry, three-quarters of a mile downstream from Rock Creek and 10 miles east of Klondike.

Drainage area--7,580 sq mi, approximately.

Records available--December 1904 to September 1959. Prior to Oct. 1, 1930, published as "at McDonald."

Gage--Water-stage recorder. Datum of gage is 392.27 ft above mean sea level, datum of 1929. Prior to Aug. 30, 1930, staff gage at same site and datum.

Average discharge--54 years (1905-59), 2,021 cfs (1,463,000 acre-ft per year).

Extremes--Maximum discharge during year, 6,250 cfs Jan. 29 (gage height, 5.38 ft); maximum gage height, 5.75 ft Jan. 8 (ice jam); minimum discharge, 62 cfs Aug. 22 (gage height, 0.99 ft).

1904-59: Maximum discharge, 27,800 cfs Feb. 6, 1907 (gage height, 10.8 ft); maximum gage height, 13.2 ft Feb. 8, 1950, from floodmark (ice jam); minimum discharge, 4 cfs Aug. 31, 1931 (gage height, 0.68 ft).

Maximum discharge known, 39,100 cfs, from rating curve extended above 22,000 cfs, probably occurred in 1894 (gage height, 12.8 ft, from floodmarks).

Remarks--Records excellent. No appreciable regulation. Many diversions for irrigation above station.

Revisions (water years)--WSP 1094: 1894(M), 1907, 1932(M). WSP 1448: 1908-9, 1912, 1916, 1920(M), 1922, 1932.

Rating table, water year 1958-59, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.0	64	2.0	540	4.0	3,200
1.3	148	2.5	1,000	5.0	5,500
1.6	275	3.0	1,630	6.0	8,100

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	390	411	446	1,310	3,460	2,600	3,980	3,360	2,210	596	122	86
2	384	418	460	1,630	3,250	2,710	3,900	3,780	2,080	540	113	*83
3	366	425	580	1,630	2,950	3,160	4,040	4,330	2,000	492	102	81
4	366	432	719	b1,300	2,520	2,990	5,110	4,080	1,980	460	94	81
5	366	432	674	b700	*2,540	2,760	5,450	3,740	2,080	418	108	81
6	366	439	701	b500	2,630	2,520	5,400	3,420	2,120	397	113	86
7	366	446	782	b500	2,380	2,360	5,690	3,250	2,320	372	108	86
8	360	484	710	b900	2,260	2,270	5,600	3,180	2,200	360	96	91
9	354	548	674	1,640	2,020	2,210	4,970	2,920	2,780	342	88	91
10	348	638	773	1,550	1,920	*2,100	4,490	2,920	2,420	330	74	88
11	348	710	930	2,020	1,810	2,030	4,080	3,220	2,260	330	69	91
12	348	638	910	3,160	1,730	1,940	3,860	3,070	2,090	330	76	94
13	360	665	3,360	3,760	1,670	1,840	3,920	2,880	1,900	292	78	110
14	364	683	4,100	5,520	1,550	1,850	4,080	2,760	1,790	275	83	108
15	366	656	2,710	3,540	1,360	1,910	*4,060	2,990	1,710	246	81	108
16	354	647	2,090	3,020	1,480	1,830	3,820	3,860	1,660	232	81	108
17	354	701	1,810	2,570	1,630	1,760	3,620	4,290	1,560	214	74	110
18	354	665	1,630	2,440	1,830	1,800	3,330	3,860	1,460	202	69	116
19	348	620	1,490	2,470	2,520	1,900	3,200	3,960	1,350	189	66	122
20	342	540	1,390	2,340	2,750	1,960	2,940	3,860	1,240	185	69	119
21	*348	508	1,300	2,180	2,940	2,030	2,710	*3,540	1,150	166	66	178
22	354	596	1,240	2,030	2,850	1,940	2,570	3,200	*1,090	163	64	265
23	372	782	1,180	1,880	2,630	2,040	2,490	3,130	1,070	155	66	297
24	439	880	1,160	1,940	2,520	2,160	2,820	3,060	950	152	66	460
25	425	*820	1,110	2,240	2,380	2,320	3,160	2,940	860	159	69	476
26	418	764	990	3,600	2,340	2,490	3,400	2,850	773	145	69	460
27	411	728	1,100	3,440	2,360	2,580	3,480	2,850	710	142	81	445
28	411	728	1,150	3,600	2,500	2,780	3,680	2,820	685	135	108	418
29	418	692	1,330	5,180	-	3,020	3,620	2,700	638	*158	108	460
30	418	540	*1,450	4,860	-----	3,070	3,380	2,580	638	132	102	890
31	418	-----	1,320	3,980	-----	3,400	-----	2,380	-----	132	94	-----
Total	11,656	18,236	40,269	77,730	64,780	72,330	116,840	101,780	48,744	8,421	2,657	6,292
Mean	376	608	1,289	2,507	2,314	2,333	3,695	3,283	1,625	272	85.7	210
Ac-ft	23,120	36,170	79,870	154,200	128,500	143,500	231,700	201,900	96,680	16,700	5,270	12,480
Calendar year 1958: Max	15,400	Min	174	Mean	3,077	Ac-ft	2,228,000					
Water year 1958-59: Max	5,680	Min	64	Mean	1,561	Ac-ft	1,130,000					

Peak discharge (base, 6,900 cfs, revised)--No peak above base.

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

500. Deschutes River below Snow Creek, near Lapine, Oreg.

Location.--Lat 43°48'50", long 121°46'40", in NW¹ sec.28, T.20 S., R.8 E., on left bank just upstream from Crane Prairie Reservoir, 50 ft downstream from Snow Creek, 300 ft upstream from road bridge, and 17 miles northwest of Lapine.

Drainage area.--132 sq mi including Sparks, Elk, and Mud Lake basins, which have no surface outlet to Deschutes River; hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--October 1937 to September 1959. Monthly discharge only October 1937, published in WSP 1318.

Gage.--Water-stage recorder. Altitude of gage is 4,445 ft (from elevation of Crane Prairie Reservoir when slack water extended to gage). Prior to Sept. 10, 1938, at site 450 ft downstream at different datum.

Average discharge.--22 years, 156 cfs (112,900 acre-ft per year).

Extremes.--Maximum peak discharge during year, 210 cfs Oct. 19 (gage height 1.68 ft); a higher discharge occurred at 12:01 a.m. Oct. 1 (218 cfs, 1.71 ft) stage falling from peak of Aug. 11, 1958; maximum gage height, 1.80 ft Jan. 4 (ice jam); minimum discharge, 109 cfs May 24 to June 1 (gage height, 1.29 ft).
1937-59: Maximum discharge, 444 cfs July 13, 1956 (gage height, 3.13 ft); maximum gage height, 4.12 ft Jan. 21, 1943 (ice jam); minimum discharge, 43 cfs Dec. 27, 1941 (gage height, 1.12 ft).

Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation. Crater Creek Canal diverts water to Tumalo Creek basin from tributaries to Soda Creek. Stream is spring fed and peak discharge may occur several months after the precipitation which caused it.

Revisions (water years).--WSP 1248: 1951.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.2	82
1.5	165
1.8	240

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	218	185	155	165	150	*142	134	140	109	123	a125	123
2	215	185	158	165	150	140	134	140	112	123	a125	120
3	215	185	*158	162	150	137	134	140	112	120	a125	118
4	212	185	158	160	148	134	134	137	112	120	a125	118
5	212	185	155	155	148	132	134	140	115	120	a125	118
6	210	192	155	152	148	129	134	137	118	120	a125	118
7	208	190	152	148	145	129	134	137	118	118	a125	118
8	208	188	158	152	150	129	134	137	120	a118	a125	118
9	208	185	158	155	155	129	134	137	123	118	a125	118
10	205	182	160	155	158	126	134	137	126	118	a125	118
11	205	182	162	158	155	123	134	137	129	118	a125	120
12	205	180	162	158	152	123	137	137	129	118	a125	120
13	205	190	162	155	152	123	137	*137	129	118	a125	120
14	202	185	160	152	158	120	140	137	129	120	a125	123
15	202	182	160	152	160	120	*140	134	129	123	a130	126
16	202	182	160	155	160	120	140	132	129	123	a130	129
17	200	178	160	155	160	120	140	129	129	123	a135	*129
18	200	182	160	152	160	120	140	126	129	126	a140	132
19	208	182	160	152	158	120	140	123	129	126	*145	132
20	202	178	160	152	155	120	140	120	129	126	145	132
21	200	172	160	152	155	120	137	118	129	129	142	132
22	200	168	160	152	155	123	137	115	129	129	140	129
23	195	168	160	*152	150	126	137	112	*126	129	140	129
24	192	165	162	160	145	126	137	109	126	126	137	129
25	190	162	162	158	145	129	140	109	126	126	134	126
26	188	162	165	155	145	132	142	109	126	123	132	137
27	185	158	165	162	142	129	142	109	126	123	132	134
28	185	155	165	160	142	132	140	109	123	a123	129	134
29	185	158	168	158	-	132	137	109	123	a123	129	132
30	*185	155	168	152	-----	137	140	109	123	a125	129	132
31	185	-----	165	152	-----	134	-----	109	-----	a125	126	-----
Total	6,232	5,309	4,981	4,827	4,254	3,956	4,117	3,911	3,712	3,800	4,045	3,764
Mean	201	177	161	156	152	128	137	126	124	123	130	125
Ac-ft	12,360	10,530	9,880	9,570	8,440	7,850	8,170	7,760	7,360	7,540	8,020	7,470
Calendar year 1958: Max	347				Min 89		Mean 184		Ac-ft 133,100			
Water year 1958-59: Max	218				Min 109		Mean 145		Ac-ft 105,000			

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for Cultus Creek above Crane Prairie Reservoir, near Lapine.

DESCHUTES RIVER BASIN

505. Cultus River above Cultus Creek, near Lapine, Oreg.

Location.--Lat 43°49'10", long 121°47'50", near line between secs.20 and 29, T.20 S., R.8 E., on left bank at road crossing, 2 miles upstream from Cultus Creek and 18 miles northwest of Lapine.

Drainage area.--16.5 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--October 1922 to September 1925, October 1937 to September 1959. Monthly discharge only October 1937, published in WSP 1318.

Gage.--Water-stage recorder. Altitude of gage is 4,450 ft (by barometer). Oct. 1, 1922, to Sept. 30, 1925, staff gage at site half a mile upstream at different datum.

Average discharge.--25 years, 65.5 cfs (47,420 acre-ft per year).

Extremes.--Maximum discharge during year, 78 cfs Oct. 1, Oct. 15 to Nov. 8; maximum gage height, 0.86 ft Nov. 21-26; minimum discharge, 26 cfs May 26-31.
1922-25, 1937-59: Maximum discharge, 178 cfs May 31, 1956 (gage height, 1.04 ft); maximum gage height, 1.23 ft Oct. 30, 1952 (backwater from culvert installation); minimum discharge, that of May 26-31, 1959.

Remarks.--Records poor. No regulation or diversion above station.

Revisions (water years).--WSP 1448: 1923-25, 1947.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	78	78	68	61	55	*55	58	36	28	58	58	55
2	75	78	68	61	55	55	58	36	30	58	55	55
3	75	78	*68	61	55	52	58	36	33	58	52	55
4	75	78	68	61	58	52	58	39	36	58	49	52
5	75	78	68	61	58	49	58	43	39	58	49	52
6	71	78	68	61	58	49	55	43	39	61	46	52
7	71	78	68	61	58	46	58	43	43	61	46	52
8	71	78	68	61	58	43	55	43	49	*61	43	52
9	71	75	68	61	58	43	55	46	52	64	43	52
10	71	75	68	61	58	39	55	49	58	64	43	52
11	71	75	68	61	58	39	55	52	61	64	43	52
12	71	75	68	61	58	39	58	55	61	68	46	55
13	75	75	68	58	58	39	58	*58	61	71	49	55
14	75	75	64	58	58	39	58	58	61	71	46	55
15	78	75	64	58	58	39	*58	58	61	75	52	58
16	78	75	64	58	58	43	58	55	61	75	55	58
17	78	75	64	58	58	43	55	52	61	75	58	*58
18	78	75	64	58	58	43	55	49	61	75	58	58
19	78	75	64	58	58	46	52	46	61	75	*61	58
20	78	75	64	58	58	49	52	43	61	75	61	58
21	78	75	64	58	58	52	49	39	61	71	61	58
22	78	75	64	58	55	52	49	36	61	68	61	58
23	78	75	64	*58	55	52	46	33	*61	68	61	58
24	78	75	64	58	55	52	43	30	61	68	61	58
25	78	75	64	58	55	55	43	28	61	68	61	61
26	78	75	64	58	55	58	39	26	61	68	61	61
27	78	71	64	58	55	58	39	26	61	68	61	61
28	78	71	64	55	55	58	39	26	61	68	58	61
29	78	71	64	55	-	58	39	26	58	64	58	61
30	*78	68	64	55	-	58	39	26	58	64	58	61
31	78	-	61	55	-	58	-	26	-	64	58	-
Total	2,351	2,255	2,033	1,822	1,594	1,513	1,552	1,262	1,621	2,064	1,672	1,692
Mean	75.8	75.2	65.6	58.8	56.9	48.8	51.7	40.7	54.0	66.6	53.9	56.4
Ac-ft	4,660	4,470	4,030	3,610	3,160	3,000	3,080	2,500	3,220	4,090	3,320	3,360
Calendar year 1958: Max	112			Min 49		Mean 72.4		Ac-ft 52,400				
Water year 1958-59: Max	78			Min 26		Mean 58.7		Ac-ft 42,500				

* Discharge measurement made on this day.

510. Cultus Creek above Crane Prairie Reservoir, near Lapine, Oreg.

Location.--Lat 43°49'30", long 121°49'30", in SW $\frac{1}{4}$ sec.19, T.20 S., R.8 E., on left bank 1,000 ft upstream from road bridge, three-quarters of a mile downstream from Cultus Lake, and 19 miles northwest of Lapine.

Drainage area.--33.2 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--March to September 1924 (published as "above Crane Prairie, near Lapine"), October 1937 to September 1959. Monthly discharge only October 1937 to September 1949, published in WSP 1318. Records for October 1923 to February 1924, published in WSP 594, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Altitude of gage is 4,545 ft (by barometer). Mar. 1 to Sept. 30, 1924, staff gage at site 100 ft upstream at different datum.

Average discharge.--22 years (1937-59), 23.5 cfs (17,010 acre-ft per year).

Extremes.--Maximum discharge during year, 44 cfs Dec. 13 (gage height, 1.41 ft); maximum gage height, 1.59 ft Jan. 3 (anchor ice); no flow at times.
1924, 1937-59: Maximum discharge, 219 cfs May 26, 1958 (gage height, 2.67 ft); maximum gage height, 2.76 ft June 15, 1950 (backwater from trees); no flow at times.

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation or diversion above station.

Revisions (water years).--WSP 1568: 1957. See also Records available.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 13				Dec. 14 to Sept. 30			
0.3	0	0.8	6.5	0.3	0	0.8	7.5
.4	.2	1.0	16	.4	.2	1.0	17
.5	.8	1.2	28	.5	.8	1.2	30
.6	1.6	1.4	43	.6	2.0	1.4	44
.7	3.2			.7	4.0		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.2	18	27	24	16	12	27	42	12	0.6	0
2	.2	.2	18	26	22	16	12	28	40	11	.5	0
3	.2	.2	*18	23	22	15	12	27	40	10	.4	0
4	.2	.5	19	24	23	15	12	28	38	9.5	.4	0
5	.2	.6	18	24	22	14	12	29	39	9.1	.3	0
6	.2	1.1	18	24	22	14	12	30	40	8.3	.3	0
7	.2	2.4	21	23	21	13	12	30	40	7.9	.2	0
8	.2	3.2	23	22	21	13	13	30	39	*7.5	.2	0
9	.2	4.5	25	22	21	13	13	30	38	7.5	.2	0
10	.2	5.8	28	22	21	12	14	30	37	7.2	.2	0
11	.2	6.2	32	23	21	12	14	30	36	6.8	.2	0
12	.1	7.0	42	24	21	12	15	30	36	6.4	.2	0
13	.1	11	43	24	20	12	15	*30	34	6.1	.2	0
14	.1	14	42	23	21	12	16	32	33	5.8	.2	0
15	**1	15	38	23	23	12	*17	33	31	5.4	.2	0
16	.1	14	36	23	24	12	17	34	30	5.0	.1	0
17	.1	14	34	23	24	11	18	34	29	4.7	.1	0
18	.2	14	33	23	24	11	17	34	27	4.4	.1	.1
19	.4	18	32	24	24	11	17	34	26	4.0	*0	.2
20	.4	20	31	23	23	11	17	34	26	3.8	0	.2
21	.4	22	31	22	22	11	17	34	25	3.5	0	.1
22	.4	23	30	22	22	11	18	34	24	3.2	0	.1
23	.2	29	*21	22	21	11	18	34	*22	3.0	0	.1
24	.3	22	27	22	21	11	19	34	20	2.6	0	.1
25	.2	21	27	22	19	*11	19	34	18	2.4	0	.3
26	.2	21	28	22	19	12	21	34	16	2.0	0	.7
27	.2	20	28	25	18	12	23	34	16	1.8	0	.5
28	.2	20	28	26	18	12	24	34	14	1.5	0	.3
29	.2	19	28	26	2	12	24	34	13	1.2	0	.2
30	.2	18	28	24	-----	13	26	38	13	1.0	0	.2
31	.2	-----	27	25	-----	12	-----	43	-----	.8	0	-----
Total	6.6	359.9	880	727	605	385	496	1,001	882	165.4	4.6	3.1
Mean	0.21	12.0	28.4	23.5	21.6	12.4	16.5	32.3	29.4	5.34	0.15	0.10
Ac-ft	15	714	1,750	1,440	1,200	764	984	1,990	1,750	328	9.1	6.1

Calendar year 1958: Max 215 Min 0.1 Mean 33.5 Ac-ft 24,240
Water year 1958-59: Max 43 Min 0 Mean 15.1 Ac-ft 10,950

* Discharge measurement or observation of no flow made on this day.

** Field estimate made on this day.

Note.--No gage-height record May 6-12, July 21, 22, July 24 to Aug. 18, Aug. 20 to Sept. 16, Sept. 18-30; discharge estimated on basis of records for Deer Creek above Crane Prairie Reservoir, near Lapine and Odell Creek near Crescent.

520. Deer Creek above Crane Prairie Reservoir, near Lapine, Oreg.

Location.--Lat 43°48'20", long 121°50'20", in NW¼NW¼ sec.36, T.20 S., R.7 E., on right bank 150 ft downstream from road bridge, 1½ miles downstream from Little Cultus Lake, and 19 miles northwest of Lapine.

Drainage area.--21.5 sq mi.

Records available.--February to September 1924 (published as "above Crane Prairie, near Lapine"), October 1937 to September 1959. Monthly discharge only October 1937 to September 1949, published in WSP 1318. Records for October 1923 to January 1924, published in WSP 594, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder and, since Oct. 11, 1938, log control. Altitude of gage is 4,520 ft (by barometer). Feb. 1 to Sept. 30, 1924, staff gage at site 75 ft upstream at various datums. Oct. 1, 1937, to Sept. 30, 1938, water-stage recorder at road bridge 150 ft upstream at different datum.

Average discharge.--22 years (1937-59), 7.82 cfs (5,660 acre-ft per year).

Extremes.--Maximum discharge during year, 21 cfs Apr. 30 (gage height, 1.02 ft); maximum gage height, 1.39 ft sometime during period Jan. 2-22 (ice jam); no flow at times. 1924, 1937-59: Maximum discharge, 97 cfs Nov. 30, 1942 (gage height, 1.95 ft); maximum gage height, 3.14 ft sometime during period Jan. 25 to Apr. 2, 1956 (ice jam); no flow at times.

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation or diversion above station.

Revisions.--See Records available.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 14				Dec. 15 to Sept. 30			
0.3	0.1	0.7	7.5	0.2	0	0.7	8.2
.4	1.2	.9	15	.3	.3	.9	15
.5	3.0			.4	1.4	1.1	25
				.5	3.1		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.2	3.8	7.0	12	5.5	6.2	20	7.0	0.8	0.2	0.1
2	.1	.2	4.0	6.5	11	5.5	7.0	20	6.5	.7	.2	.1
3	.1	.3	*4.0	6.5	10	5.5	7.3	19	5.9	.6	.2	.1
4	.1	.8	3.6	5	9.8	5	7.9	18	5.3	.5	.2	.1
5	.1	.5	3.6	5	9.2	5	8.5	18	5.6	.4	.2	.2
6	.1	1.0	3.6	6.5	8.9	5	9.2	18	5.3	.4	.2	.2
7	.1	1.7	4.6	6.5	8.5	5	9.5	17	5.1	.4	.2	.1
8	.1	2.6	5.2	6	8.2	5	9.8	16	4.9	*.4	.2	.1
9	.1	3.0	6.5	6	8.2	5	11	15	4.6	.4	.2	.1
10	.1	3.0	7.2	6.5	8.2	5	11	15	4.6	.4	.2	.1
11	.1	3.0	8.7	7	8.5	5	11	15	4.6	.4	.2	.1
12	.1	2.8	10	8	8	4.5	11	15	4	.3	.2	.1
13	.1	4.6	13	9	7.0	4.5	11	*15	3.5	.3	.2	.1
14	.1	4.8	14	9	8.2	5	9.8	15	3.5	.2	.2	.1
15	.1	4.4	13	8.5	8.9	5	*7.3	15	3	.2	.2	.2
16	.1	4.2	12	8.5	8.9	4.5	8.5	16	3	.2	.2	.2
17	.1	4.2	11	8	8.2	4.5	9.5	16	2.5	.2	.2	**2
18	.2	4.2	10	8	8.5	4.5	9.8	16	2.5	.2	.2	.2
19	.5	6.2	9.5	8.5	8.2	5	11	15	2	.2	**2	.4
20	.4	6.0	8.9	9	7.6	5	12	15	2	.2	.4	.4
21	.2	6.0	8.5	8.5	7.6	4.5	12	14	2	.2	.2	.3
22	.3	5.5	7.9	8	7.0	4.5	12	14	1.5	.2	.2	.2
23	.3	5.2	7.6	*7.9	6.8	4.5	13	13	*1.5	**2	.2	.2
24	.3	4.2	7.3	8.5	6.5	4.5	14	12	1.5	.2	.2	.2
25	.3	3.4	7.3	8.9	6.5	*4.4	15	11	1.4	.2	.1	.2
26	.2	3.4	7.3	9.2	6	4.9	17	9.8	1.4	.2	.1	.7
27	.2	3.2	7.6	12	6	4.9	19	9.5	1.2	.2	.1	.3
28	.2	3.4	7.3	13	5.5	4.9	20	8.9	1.2	.2	.1	.2
29	.2	3.4	7.6	13	5	5.1	20	8.5	1.0	.2	.1	.2
30	**2	3.6	7.6	13	-----	5.9	21	8.2	.9	.2	.1	.2
31	.2	-----	7.6	12	-----	5.9	-----	7.6	-----	.2	.1	-----
Total	5.4	99.0	239.8	281.0	227.9	153.0	351.3	445.5	99.0	9.6	5.7	5.9
Mean	0.17	3.30	7.74	8.42	8.14	4.94	11.7	14.4	3.30	0.31	0.18	0.20
Ac-ft	11	196	476	518	452	303	697	884	196	19	11	12
Calendar year 1958: Max	80			Min	0.1	Mean	10.1	Ac-ft	7,290			
Water year 1958-59: Max	21			Min	0.1	Mean	5.21	Ac-ft	3,780			

* Discharge measurement made on this day.

** Field estimate made on this day.

Note.--No gage-height record Jan. 2-22, Feb. 24 to Mar. 24, June 12-22, July 17-22, July 25 to Aug. 18; discharge estimated on basis of weather records at Wickiup and records for Cultus Creek above Crane Prairie Reservoir, near Lapine and Odell Creek near Crescent.

525. Quinn River near Lapine, Oreg.

Location.--Lat 43°47'10", long 121°50'10", in NW¼ sec.1, T.21 S., R.7 E., on left bank just upstream from Crane Prairie Reservoir, 150 ft downstream from springs at head of river and 18 miles northwest of Lapine.

Records available.--June 1922 to September 1925 (published as "above Crane Prairie, near Lapine"), October 1937 to September 1959. Monthly discharge only October 1937, published in WSP 1318.

Gage.--Water-stage recorder and, since Sept. 13, 1938, log control. Datum of gage is 4,442.1 ft above mean sea level, based on elevation of Crane Prairie Reservoir when slack water reached station. June 1, 1922, to Sept. 30, 1925, staff gage at site 150 ft downstream at different datum.

Average discharge.--25 years, 24.6 cfs (17,810 acre-ft per year).

Extremes.--Maximum daily discharge during year, 29 cfs Apr. 9-18; maximum gage height, 2.70 ft Apr. 2, 3 (backwater from reservoir); minimum daily discharge, 16 cfs Sept. 27-30.

1922-25, 1937-59: Maximum discharge, 59 cfs July 4, 1949 (gage height, 1.97 ft); maximum gage height, 3.92 ft June 25, 1943 (backwater from reservoir); practically no flow Nov. 14, 1941.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1448: 1939, 1941.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from Crane Prairie Reservoir Feb. 13 to Apr. 19)

1.7	16
1.8	27
1.9	41

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	25	25	25	26	27	28	27	25	28	25	23
2	27	24	25	25	26	27	28	26	25	27	25	23
3	27	24	*25	25	26	27	28	26	25	27	25	23
4	27	23	25	25	26	27	28	26	26	27	25	23
5	27	23	25	25	26	27	28	26	27	27	25	23
6	27	23	25	25	27	27	28	26	27	27	25	23
7	27	23	25	25	27	27	28	26	27	27	25	23
8	27	23	25	25	27	27	28	26	27	*27	25	23
9	27	23	25	25	27	27	29	26	28	27	25	23
10	27	23	25	25	28	27	29	26	28	27	25	23
11	27	23	25	25	28	27	29	26	28	27	25	23
12	27	24	25	25	28	27	29	26	28	27	25	23
13	26	24	25	25	28	27	29	*26	28	27	25	23
14	26	24	25	25	28	27	29	26	28	27	25	23
15	26	24	25	25	28	27	*29	26	28	27	25	23
16	26	25	25	25	28	27	29	25	28	27	25	22
17	25	25	25	25	28	27	29	25	28	27	25	*20
18	25	25	25	25	28	27	29	25	28	27	25	20
19	25	25	25	25	27	27	28	25	26	27	*25	19
20	25	25	25	25	27	27	28	25	26	27	25	18
21	24	25	25	25	27	27	28	24	28	27	24	17
22	24	25	25	25	27	27	28	24	28	27	24	17
23	24	25	25	*25	27	27	28	24	*28	27	23	17
24	24	25	25	25	27	27	27	24	28	26	23	17
25	24	25	25	25	27	*27	27	24	28	26	23	17
26	24	25	25	26	27	27	27	25	28	26	23	17
27	25	25	25	26	27	27	27	25	28	25	23	16
28	25	25	25	26	27	27	27	25	28	25	23	16
29	25	25	25	26	-	27	27	25	28	25	23	16
30	*25	25	25	26	-----	27	27	25	28	25	23	16
31	25	-----	25	26	-----	27	-----	25	-----	25	23	-----
Total	797	728	775	781	760	837	843	786	826	825	755	610
Mean	25.7	24.3	25.0	25.2	27.1	27.0	28.1	25.4	27.5	26.6	24.4	20.3
Ac-ft	1,580	1,440	1,540	1,550	1,510	1,660	1,670	1,560	1,640	1,640	1,500	1,210
Calendar year 1958: Max	50				Min 22		Mean 32.3		Ac-ft 23,360			
Water year 1958-59: Max	29				Min 16		Mean 25.5		Ac-ft 18,500			

* Discharge measurement made on this day.

Note.--No gage-height record Feb. 13 to Apr. 19; discharge interpolated.

530. Charlton Creek above Crane Prairie Reservoir, near Lapine, Oreg.

Location.--Lat 43°47'00", long 121°50'00", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.1, T.21 S., R.7 E., on left bank 3 miles northwest of Crane Prairie Dam and 18 miles northwest of Lapine.

Drainage area.--15.6 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--May, June 1923, October 1937 to September 1951, May to September 1952, May to September 1953, May 1954 to September 1955, May 1956 to September 1959. Monthly discharge only prior to October 1949, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 4,458.70 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. May 1 to June 30, 1923, staff gage at about same site at different datum.

Average discharge.--18 years (1937-51, 1954-55, 1956-59), 1.45 cfs (1,050 acre-ft per year).

Extremes.--Maximum discharge during year, 6.6 cfs June 6 (gage height, 1.00 ft); no flow most of year.

1923, 1937-59: Maximum discharge, 54 cfs June 12, 1950 (gage height, 1.53 ft), from rating curve extended above 22 cfs; maximum gage height, 2.39 ft Mar. 9, 1957 (ice jam); no flow for many months each year.

Remarks.--Records good Apr. 15 to June 11, others poor. No regulation or diversion above station.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

0.4	0	0.8	1.2
.6	.2	.9	3.2
.7	.4	1.0	6.6

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							0	3.9	0			
2							0	2.6	0			
3							0	2.2	0			
4							0	1.8	0			
5							0	2.0	3.5			
6							0	3.0	6.3			
7							0	2.8	4.2			
8							1	3.0	2.6			
9							1.5	3.0	2.2			
10							2	2.6	2.4			
11							2	2.6	.3			
12							2	2.6	0			
13							2	*3.2	0			
14							1.5	4.6	0			
15							*1.0	3.9	0			
16							.9	3.0	0			
17							.2	3.2	0			
18							0	3.2	0			
19							0	3.0	0			
20							.5	2.4	0			
21							1.0	2.2	0			
22							2.0	2.2	0			
23							2.8	2.2	0			
24							3.0	2.4	0			
25							3.0	2.6	0			
26							2.4	3.2	0			
27							2.2	3.2	0			
28							2.4	2.8	0			
29							2.6	1.2	0			
30							3.5	0	0			
31		-----			-----		-----	0	-----			-----
Total	0	0	0	0	0	0	39.5	80.6	21.5	0	0	0
Mean	0	0	0	0	0	0	1.32	2.60	0.72	0	0	0
Ac-ft	0	0	0	0	0	0	78	160	43	0	0	0

Calendar year 1958: Max 36 Min 0 Mean 2.59 Ac-ft 1,880

Water year 1958-59: Max 6.3 Min 0 Mean 0.39 Ac-ft 281

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1 to Apr. 14, June 24 to Sept. 30; discharge estimated on basis of records for Deer Creek above Crane Prairie Reservoir, near Lapine.

540. Deschutes River below Crane Prairie Reservoir, near Lapine, Oreg.

Location.--Lat 43°45'10", long 121°46'50", in NW¼ sec.16, T.21 S., R.8 E., on left bank 600 ft downstream from Crane Prairie Dam and 15 miles northwest of Lapine.

Drainage area.--254 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--August 1907 to November 1908 and August 1912 to September 1913 (fragmentary), October 1913 to September 1917, February 1922 to September 1959. Monthly discharge only for some periods, published in WSP 1318. Prior to October 1949, published as "at Crane Prairie, near Lapine."

Gage.--Water-stage recorder. Datum of gage is 4,419.78 ft above mean sea level (Pacific Power & Light Co. bench mark). Aug. 15, 1907, to Sept. 30, 1917, and Feb. 23 to June 8, 1922, staff gages at site half a mile upstream at different datums. June 9, 1922, to May 9, 1932, staff gage or water-stage recorder at present site and datum.

Average discharge.--41 years (1913-17, 1922-59), 211 cfs (152,800 acre-ft per year).

Extremes.--Maximum discharge during year, 538 cfs Oct. 1 (gage height, 2.27 ft); minimum, 1.4 cfs Oct. 14 (gage height, 0.12 ft).
1913-17, 1922-59: Maximum discharge, 1,170 cfs July 28, 1947 (gage height, 3.34 ft) minimum, that of Oct. 14, 1958.

Remarks.--Records good. Flow regulated since 1922 by Crane Prairie Reservoir (see p. 62). No diversion above station.

Revisions (water years).--WSP 1218: Drainage area. WSP 1318: 1929(M).

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

0.5	24	1.5	242
.7	50	2.0	422
1.0	106		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	420	68	79	84	82	*30	55	414	289	282	242	226
2	321	68	79	84	82	30	53	414	286	282	242	226
3	321	68	79	84	82	30	106	418	286	282	242	226
4	321	68	79	84	82	30	249	422	286	278	242	226
5	321	68	79	84	82	30	255	422	286	278	242	226
6	321	70	79	82	82	30	255	422	286	278	239	226
7	321	70	79	82	82	30	258	422	286	258	239	226
8	321	70	79	82	82	30	258	422	286	*236	239	226
9	321	70	79	82	82	30	*258	422	286	220	239	226
10	321	71	79	82	82	30	258	418	286	220	236	226
11	321	71	79	82	82	30	255	418	286	220	236	226
12	321	71	79	82	82	30	255	414	286	220	236	226
13	321	73	79	80	82	30	252	414	286	220	233	226
14	192	73	79	*80	64	30	255	414	286	233	233	226
15	289	73	79	80	47	30	255	342	286	242	233	255
16	289	75	80	80	46	30	255	292	286	242	233	278
17	289	75	80	80	46	30	255	292	286	258	233	278
18	289	75	80	80	46	30	346	292	286	275	233	278
19	289	75	80	80	46	30	418	292	286	275	233	278
20	289	75	80	80	46	30	414	292	286	275	233	278
21	289	75	82	80	46	30	414	289	286	275	230	255
22	289	75	82	80	42	30	414	289	282	275	230	205
23	289	75	82	80	30	30	414	289	282	272	230	191
24	289	75	82	80	30	30	418	289	282	272	226	182
25	289	75	82	80	30	30	422	289	282	272	226	179
26	289	75	82	80	30	30	422	289	282	272	226	177
27	289	75	82	82	30	30	422	289	282	272	226	168
28	289	75	82	82	30	43	422	289	282	258	226	168
29	175	77	82	82	-	55	418	289	282	245	226	148
30	*68	77	84	82	-	55	418	289	282	245	226	120
31	68	-	84	82	-	55	-	289	-	242	226	-
Total	8,821	2,181	2,491	2,524	1,675	1,018	9,149	10,837	8,547	7,974	7,236	6,602
Mean	285	72.7	80.4	81.4	59.8	32.8	305	350	285	257	233	220
Ac-ft	17,500	4,330	4,940	5,010	3,320	2,020	18,150	21,490	16,950	15,820	14,350	13,090
Calendar year 1958: Max	600			Min	52		Mean	263		190,700		
Water year 1958-59: Max	422			Min	30		Mean	189		Ac-ft	137,000	

* Discharge measurement made on this day.

545. Brown Creek near Lapine, Oreg.

Location.--Lat 43°43'30", long 121°48'40", in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.30, T.21 S., R.8 E., on left bank $\frac{1}{2}$ miles upstream from mouth and 16 miles northwest of Lapine.

Drainage area.--19.7 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--May 1922 to September 1925, July 1938 to September 1959. Monthly discharge only July 1938 to September 1949, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 4,372.94 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. May 24, 1922, to Sept. 30, 1925, staff gage and July 1, 1938, to Nov. 1, 1945, water-stage recorder, at site $\frac{1}{4}$ miles downstream at different datums.

Average discharge.--24 years, 40.3 cfs (29,180 acre-ft per year).

Extremes.--Maximum discharge during year, 57 cfs Oct. 1-5 (gage height, 1.14 ft); minimum, 34 cfs July 8-13.

1922-25, 1938-59: Maximum discharge, 104 cfs Aug. 4, 1956 (gage height, 1.64 ft); minimum, 16 cfs July 22-25, 1941, and at times December 1941 to March 1942.

Remarks.--Records fair. No regulation or diversion above station.

Revisions (water years).--WSP 1448: 1922-24.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

0.8	29
1.0	43
1.2	58

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57	52	49	47	46	*43	42	40	40	37	37	40
2	57	52	49	47	46	43	42	40	40	37	37	40
3	57	52	49	47	45	43	42	40	40	37	37	40
4	57	52	49	47	45	43	42	40	40	36	37	40
5	57	52	49	46	45	43	42	39	40	35	38	40
6	56	52	49	46	45	43	42	39	40	35	38	40
7	56	52	49	46	45	43	42	39	40	35	38	40
8	56	52	49	46	45	43	42	39	40	*34	38	40
9	56	52	49	46	44	43	*42	39	40	34	38	40
10	56	52	49	46	44	43	42	39	40	34	39	40
11	55	52	49	46	44	43	42	38	40	34	39	40
12	55	52	49	46	44	43	42	38	40	34	39	40
13	55	53	49	46	44	43	42	*38	40	34	39	40
14	55	52	48	a46	44	43	42	38	40	35	39	40
15	54	52	48	a46	44	42	42	38	40	35	40	40
16	54	52	48	a45	44	42	42	38	40	35	40	40
17	54	52	48	a45	44	42	42	38	41	35	40	*40
18	54	52	48	a45	44	42	42	38	41	35	40	40
19	54	52	48	a45	44	42	42	38	41	35	*40	40
20	53	52	48	a45	43	42	41	38	41	35	40	40
21	53	51	48	a44	43	42	41	39	41	36	40	40
22	53	50	47	a44	43	42	41	39	41	36	40	40
23	53	50	47	*44	43	42	40	39	*41	36	40	40
24	52	50	47	45	43	42	40	39	41	36	40	40
25	52	49	47	46	43	42	40	39	40	36	40	40
26	52	49	47	46	43	42	40	39	40	36	40	40
27	52	49	47	46	43	42	40	39	40	36	40	40
28	52	49	47	46	43	42	40	40	40	37	40	40
29	52	49	47	46	-	42	42	40	39	37	40	40
30	*52	49	47	46	-	42	40	40	38	37	40	40
31	52	-----	47	46	-----	42	-----	40	-----	37	40	-----
Total	1,683	1,536	1,491	1,418	1,233	1,316	1,241	1,207	1,205	1,101	1,213	1,200
Mean	54.3	51.2	48.1	45.7	44.0	42.5	41.4	38.9	40.2	35.5	39.1	40.0
Ac-ft	3,340	3,050	2,960	2,810	2,450	2,610	2,460	2,390	2,390	2,180	2,410	2,380
Calendar year 1958: Max 59 Min 41 Mean 47.9 Ac-ft 34,670												
Water year 1958-59: Max 57 Min 34 Mean 43.4 Ac-ft 31,430												

* Discharge measurement made on this day.

a No gage-height record; discharge interpolated.

555. Odell Creek near Crescent, Oreg.

Location.--Lat 43°32'50", long 121°57'40", in SW $\frac{1}{4}$ sec.25, T.23 S., R.6 E., on left bank 1,000 ft downstream from Odell Lake, $3\frac{1}{2}$ miles north of Crescent Lake, and 14 miles northwest of Crescent.

Drainage area.--39.0 sq mi.

Records available.--August, September 1911, August, September 1912, January, February, May to November 1913, April to August 1914, December 1923 to June 1924, May 1933 to September 1959. Gage heights and discharge measurements only August, September 1911, January 1913. Published as Odell Lake outlet near Crescent 1911-12. Records for January to July 1912, published in WSP 332, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Datum of gage is 4,779.05 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Aug. 5 to Sept. 18, 1911, Aug. 14, 1912, to Aug. 12, 1914, and Nov. 18, 1923, to June 7, 1924, staff gages at several sites within 700 ft of present site at various datums.

Average discharge.--26 years (1933-59), 82.5 cfs (59,730 acre-ft per year).

Extremes.--Maximum discharge during year, 157 cfs Nov. 14 (gage height, 0.79 ft); minimum, 26 cfs Aug. 19 (gage height, 0.28 ft).

1912-14, 1923-24, 1933-59: Maximum discharge, 416 cfs Nov. 24, 1953 (gage height, 1.44 ft); maximum gage height, 2.03 ft Jan. 5, 1947 (ice jam); minimum discharge, 9 cfs sometime during period Sept. 7-30, 1934.

Remarks.--Records good. Flow affected occasionally in winter by ice jams at outlet of Odell Lake, and slightly affected at times by seiches on Odell Lake. No diversion above station.

Revisions (water years).--WSP 754: Drainage area. WSP 794: 1933-34. WSP 1448: 1924, 1934(m). See also Records available.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 14

Nov. 15 to Sept. 30

0.4	48	0.2	17
.5	69	.3	28
.6	97	.4	44
.8	160	.6	92
		.8	155

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	61	84	107	110	74	92	101	87	62	38	31
2	58	61	82	101	104	71	92	98	87	59	36	31
3	58	63	84	84	101	71	89	98	89	57	36	31
4	61	80	84	82	95	66	87	95	89	55	34	28
5	61	77	82	87	89	66	87	98	101	53	33	28
6	61	89	82	87	89	64	84	98	113	51	31	31
7	61	103	89	84	89	64	82	95	113	48	31	33
8	65	109	101	84	87	64	82	92	110	46	33	31
9	50	116	104	87	87	69	79	95	110	*48	33	31
10	50	122	104	95	92	66	79	92	107	48	33	33
11	52	116	119	98	89	64	79	92	101	48	31	33
12	52	109	125	107	89	64	79	89	101	48	31	33
13	52	131	125	107	82	76	76	89	98	46	28	33
14	52	150	122	104	92	69	79	98	95	46	28	31
15	52	138	116	101	110	66	79	101	89	44	28	31
16	52	129	113	101	110	66	74	101	89	44	28	30
17	54	119	110	101	107	66	76	107	87	44	30	30
18	58	113	104	104	104	69	74	110	84	44	28	34
19	75	132	98	107	101	71	71	110	84	44	27	41
20	75	132	95	98	95	69	71	107	84	44	33	44
21	69	129	95	92	95	69	71	101	84	44	34	46
22	67	122	92	92	89	71	71	98	82	44	33	44
23	65	119	87	89	87	71	74	95	79	44	33	44
24	58	116	87	101	82	74	74	95	76	44	33	64
25	56	107	87	104	79	71	76	95	74	42	34	46
26	58	101	95	104	76	76	82	95	71	41	34	71
27	61	95	98	116	*76	76	89	92	69	39	33	74
28	61	89	95	122	74	79	89	*92	66	34	33	69
29	61	87	98	119	-	84	89	92	62	33	33	64
30	61	84	*98	116	95	85	95	89	62	33	33	*62
31	*61	---	98	113	---	*92	---	87	---	*34	33	---
Total	1,835	3,199	3,053	3,088	2,580	2,213	2,421	2,997	2,643	1,411	997	1,212
Mean	59.2	107	98.5	99.6	92.1	71.4	80.7	96.7	88.1	45.5	32.2	40.4
Cfs/m	1.52	2.74	2.53	2.55	2.36	1.83	2.07	2.48	2.26	1.17	0.826	1.04
In.	1.75	3.05	2.91	2.94	2.46	2.11	2.31	2.86	2.52	1.35	0.95	1.16
Ac-ft	3,640	6,350	6,060	6,120	5,120	4,390	4,800	5,940	5,240	2,800	1,980	2,400
Calendar year 1958: Max	190	190	190	190	190	190	190	190	190	190	190	190
Water year 1958-59: Max	150	150	150	150	150	150	150	150	150	150	150	150
Min	50	50	50	50	50	50	50	50	50	50	50	50
Mean	95.8	95.8	95.8	95.8	95.8	95.8	95.8	95.8	95.8	95.8	95.8	95.8
Cfs/m	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46
In.	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86
Ac-ft	69,340	69,340	69,340	69,340	69,340	69,340	69,340	69,340	69,340	69,340	69,340	69,340

* Discharge measurement made on this day.

565. Deschutes River below Wickiup Reservoir, near Lapine, Oreg.

Location.--Lat 43°41'20", long 121°41'00", near line between secs.7 and 8, T.22 S., R.9 E., on left bank 2,000 ft downstream from Wickiup Dam and 9 miles west of Lapine.

Drainage area.--483 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--June 1938 to September 1959. Monthly discharge only June 1938, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 4,257.41 ft above mean sea level (levels by Bureau of Reclamation).

Average discharge.--21 years, 759 cfs (549,500 acre-ft per year).

Extremes.--Maximum discharge during year, 2,090 cfs July 21, 22 (gage height, 7.09 ft); minimum, 122 cfs Oct. 31.
1938-59: Maximum discharge, 2,280 cfs July 28 to Aug. 1, 1956 (gage height, 7.92 ft); minimum, 6 cfs Oct. 20, 1948 (gage height, 0.56 ft), when gage was closed for outlet inspection and repair; minimum daily, 10 cfs Jan. 17, 1952.

Remarks.--Records good except those below 400 cfs, which are fair. Flow regulated by Crane Prairie Reservoir and, since Dec. 24, 1942, by Wickiup Reservoir (see p. 62). Some leakage from Crane Prairie and Wickiup Reservoirs does not pass station. Some spill bypassed station in 1955.

Revisions (water years).--WSP 1448: 1944(m), 1947-51(m).

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 18)

Oct. 1 to Apr. 2

Apr. 3 to Sept. 30

1.8	108	4.0	720
2.0	150	6.0	1,420
3.0	420		

3.5	580
4.0	730
5.0	1,090
7.1	2,100

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,120	124	141	148	154	423	471	1,250	1,760	1,720	1,940	1,370
2	1,120	126	141	148	154	429	486	1,190	1,990	1,720	1,940	1,370
3	1,120	*126	141	148	154	429	604	1,170	1,990	1,720	1,900	1,370
4	1,120	126	141	148	154	429	865	1,150	1,970	1,780	1,840	1,370
5	1,120	126	141	148	154	429	*865	1,120	1,970	1,780	1,830	1,370
6	1,110	126	141	148	154	423	865	1,050	1,970	1,780	1,810	1,370
7	1,090	128	141	148	154	423	865	1,040	1,960	*1,780	1,800	1,360
8	1,080	128	141	148	154	423	865	1,050	1,860	1,780	1,770	1,360
9	1,080	128	141	148	154	423	862	1,080	1,630	1,780	1,650	1,360
10	1,080	128	143	148	154	423	862	1,080	1,660	1,790	1,600	1,340
11	1,080	130	143	148	215	423	862	1,090	1,660	1,790	1,600	1,340
12	1,080	130	143	150	251	426	862	1,090	1,640	1,800	1,640	1,340
13	1,080	130	143	150	*251	423	862	1,320	1,540	1,870	*1,640	1,290
14	1,080	130	143	*150	253	316	858	1,440	1,540	1,940	1,620	1,290
15	1,080	130	143	150	278	240	865	1,370	1,540	1,940	1,590	1,110
16	1,080	132	143	152	354	229	872	1,330	1,440	1,940	1,580	1,110
17	1,080	132	143	152	378	229	872	1,330	1,410	1,950	1,580	1,100
18	1,080	132	143	152	393	229	998	1,190	1,440	1,950	1,580	1,040
19	1,080	132	143	152	414	229	1,090	1,090	1,540	1,950	1,580	952
20	1,080	132	146	152	414	229	1,090	1,070	1,660	1,950	1,580	938
21	1,080	135	146	152	414	229	1,090	1,070	1,740	2,000	1,580	*907
22	1,080	135	146	152	414	229	1,190	1,080	*1,810	2,090	1,580	830
23	1,080	135	146	154	414	229	1,280	1,070	1,860	2,080	1,580	792
24	1,080	137	146	154	414	272	1,340	1,070	1,860	2,060	1,440	792
25	1,080	137	146	154	414	294	1,350	1,210	1,860	2,070	1,520	795
26	1,080	139	146	154	414	354	1,350	1,380	1,850	2,070	1,520	795
27	1,080	139	146	154	414	375	1,340	1,460	1,760	2,070	1,520	798
28	1,080	139	146	154	414	360	1,350	1,480	1,720	2,060	1,450	781
29	891	139	146	154	-	354	1,310	1,640	1,720	2,040	1,440	787
30	442	141	148	154	-	426	1,270	1,720	1,860	2,010	1,440	703
31	132	-----	148	154	-----	471	-----	1,710	-----	1,930	1,400	-----
Total	31,945	3,952	4,453	4,678	8,053	10,820	29,711	38,380	52,070	59,190	50,650	32,930
Mean	1,030	132	144	151	288	349	990	1,238	1,736	1,909	1,634	1,098
Ac-ft	63,360	7,840	8,830	9,280	15,970	21,460	58,930	76,130	103,500	117,400	100,500	65,320
Calendar year 1958: Max			2,010	Min	101	Mean	850	Ac-ft	615,500			
Water year 1958-59: Max			2,090	Min	124	Mean	895	Ac-ft	648,300			

* Discharge measurement made on this day.

575. Fall River near Lapine, Oreg.

Location.--Lat 43°47'50", long 121°34'20", in SE $\frac{1}{4}$ sec.31, T.20 S., R.10 E., on left bank 50 ft downstream from pond spillway at State fish hatchery and 9 miles northwest of Lapine.

Drainage area.--45.1 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--July 1938 to September 1959. Records for May to September 1912 at site 3 miles downstream not equivalent owing to difference in drainage area.

Gage.--Water-stage recorder. Altitude of gage is 4,220 ft (by barometer).

Average discharge.--21 years, 156 cfs (112,900 acre-ft per year).

Extremes.--Maximum discharge during year, 212 cfs sometime during period Feb. 8 to Mar. 10 (gage height, 1.71 ft); minimum daily, 140 cfs Sept. 7-9.

1938-59: Maximum discharge, 250 cfs July 28, 1952 (gage height, 1.94 ft); minimum, 68 cfs Apr. 6, 1942.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Water diverted only to ponds at fish hatchery 50 ft above station, from which water returns to river above station. Momentary extremes are caused by operation of fish hatchery.

Revisions (water years).--WSP 984: 1938-42(M,m).

Rating table, water year 1958-59 (gage height, in feet,
and discharge, in cubic feet per second)

1.3 132
1.6 185

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	171	172	165	167	165	169	167	176	171	160	162	142
2	171	172	165	167	165	169	167	176	171	160	160	142
3	172	172	165	167	167	169	167	178	171	160	160	142
4	172	172	165	167	*167	169	169	178	171	160	160	142
5	174	172	167	167	167	169	171	180	171	160	158	142
6	174	172	167	167	169	169	169	180	171	160	158	142
7	176	171	*169	167	169	169	169	180	171	160	158	140
8	176	171	167	167	169	169	169	180	171	*162	158	140
9	176	171	167	167	169	169	167	180	171	162	158	140
10	176	169	167	167	169	169	167	180	171	163	158	142
11	176	169	167	167	169	*169	165	180	171	163	158	142
12	176	169	167	167	169	169	165	180	171	163	158	144
13	176	171	167	167	169	169	165	180	171	163	158	144
14	176	169	167	167	169	169	163	178	171	163	158	144
15	176	169	167	165	169	169	163	178	171	163	158	146
16	176	167	167	165	169	167	163	178	171	163	156	146
17	176	167	167	163	169	167	163	178	*171	163	154	147
18	176	167	167	163	169	167	163	176	171	163	154	149
19	178	167	167	163	169	167	163	174	171	165	154	149
20	176	167	167	163	169	167	163	172	169	165	154	149
21	176	167	167	162	169	167	163	172	167	165	154	149
22	174	167	167	162	169	167	163	174	165	165	153	149
23	174	167	167	162	169	165	165	174	165	165	151	149
24	174	167	167	162	169	165	165	172	165	165	149	151
25	174	167	167	163	169	165	167	172	165	165	149	151
26	174	167	167	163	169	165	167	172	163	165	149	153
27	174	165	167	165	169	165	167	172	163	165	147	153
28	174	165	167	165	169	165	169	172	163	163	146	153
29	174	165	167	165	-	165	171	172	162	163	144	153
30	*174	165	167	165	-----	165	174	171	162	162	144	151
31	174	-----	167	165	-----	167	-----	171	-----	162	142	-----
Total	5,416	5,058	5,171	5,119	4,718	5,191	4,989	5,456	5,058	5,046	4,780	4,386
Mean	175	169	167	165	168	167	166	176	169	163	154	146
Ac-ft	10,740	10,030	10,260	10,150	9,360	10,300	9,900	10,820	10,030	10,010	9,480	8,700
Calendar year 1958: Max	198				Min 163	Mean 177				Ac-ft 128,400		
Water year 1958-59: Max	180				Min 140	Mean 165				Ac-ft 119,800		

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 11 to Jan. 11, Feb. 8 to Mar. 10, June 4-16; discharge interpolated.

600. Crescent Creek at Crescent Lake, near Crescent, Oreg.

Location.--Lat 43°30'00", long 121°58'20", in SE1SW1/4 sec.11, T.24 S., R.6 E., on left bank 400 ft downstream from Crescent Lake Dam, three-quarters of a mile south of town of Crescent Lake, and 14 miles west of Crescent.

Drainage area.--60.7 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--January to September 1911 (gage heights and discharge measurements only), January 1912 to July 1915, July to September 1927, May 1928 to September 1959. Published as Crescent Lake outlet near Crescent January 1911 to September 1912 and as Crescent Creek at outlet of Crescent Lake, near Crescent October 1913 to July 1915.

Gage.--Water-stage recorder and since Sept. 11, 1956, Parshall flume. Datum of gage is 4,819.96 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Jan. 11, 1911, to July 31, 1915, staff gages near present site at different datums. July 19, 1927, to June 1936 water-stage recorder near present site at different datum. June 1936 to July 14, 1955, water-stage recorder and Parshall flume at site 100 ft upstream at datum 6.76 ft higher. July 15, 1955, to Sept. 10, 1956, water-stage recorder at site 150 ft downstream at different datum.

Average discharge.--33 years (1912-14, 1928-59), 57.3 cfs (41,480 acre-ft per year).

Extremes.--Maximum discharge during year, 253 cfs Aug. 21 (gage height, 2.82 ft); minimum, 5.0 cfs Oct. 16.

1912-15, 1927-59: Maximum discharge, 313 cfs July 9, 1929, Aug. 9, 1936; no flow at times.

Remarks.--Records good. Flow regulated since 1922 by Crescent Lake (see p.62). No diversion above station.

Revisions.--WSP 1218: Drainage area.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from rocks in flume July 9 to Sept. 4)

0.4	12	1.5	92
.6	21	2.0	148
1.0	46	3.0	295

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	14	16	13	13	12	12	151	187	a192	238	238
2	72	14	15	13	13	12	12	151	187	a192	236	236
3	72	14	15	13	13	12	12	151	187	a190	235	234
4	72	14	15	13	13	12	12	149	187	a190	235	128
5	72	15	14	13	13	12	12	149	187	a190	235	34
6	72	15	14	13	13	12	12	149	187	a188	235	34
7	72	15	14	13	13	12	12	149	187	a188	234	34
8	72	15	14	13	13	12	12	148	187	a187	234	35
9	72	15	14	13	13	12	12	148	187	*193	148	35
10	72	15	12	13	13	12	12	148	187	205	65	36
11	72	15	13	13	13	12	12	148	187	204	154	36
12	72	15	14	13	13	12	12	148	187	202	242	36
13	72	15	14	13	13	12	12	147	187	202	241	36
14	53	15	14	13	13	12	47	147	187	202	240	36
15	14	16	13	13	13	12	111	147	186	200	238	36
16	13	16	13	13	13	12	111	147	186	216	236	36
17	14	16	13	13	13	12	111	147	186	244	235	36
18	14	16	14	13	12	12	111	146	186	244	234	36
19	14	16	14	13	12	12	111	146	186	242	232	36
20	14	16	13	13	12	12	111	146	186	242	230	36
21	14	16	13	13	12	12	110	146	186	242	241	36
22	14	16	13	13	12	12	109	146	186	242	252	32
23	14	16	13	13	12	12	109	146	186	242	250	28
24	14	16	13	13	12	12	109	146	186	241	249	28
25	14	16	13	13	12	12	109	146	186	241	248	28
26	14	16	13	13	12	12	109	146	184	240	247	28
27	14	16	13	13	12	12	109	146	187	240	246	a28
28	14	16	13	13	12	12	109	166	194	238	244	a29
29	14	16	13	13	12	12	109	186	a194	236	241	a30
30	14	16	13	13	12	12	109	187	a192	236	240	22
31	14	16	13	13	12	12	109	187	236	236	238	22
Total	1,226	462	422	403	355	372	1,980	4,710	5,613	6,747	7,072	1,693
Mean	39.5	15.4	13.6	13.0	12.7	12.0	66.0	152	187	218	228	56.4
Ac-ft	2,430	916	837	799	704	738	3,930	9,340	11,130	13,380	14,030	3,360

Calendar year 1958: Max 295 Min 11 Mean 95.0 Ac-ft 68,740
Water year 1958-59: Max 252 Min 12 Mean 85.1 Ac-ft 61,590

* Discharge measurement made on this day.

a No gage-height record; discharge interpolated.

630. Little Deschutes River near Lapine, Oreg.

Location.--Lat 43°41'30", long 121°30'10", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.2, T.22 S., R.10 E., on right bank just downstream from bridge at former town of Rosland, 1 $\frac{1}{4}$ miles north of Lapine.

Drainage area.--859 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--September 1910 to January 1911, March, April, August 1911, March to September 1912, June to October 1913, June to November 1918, August to October 1920, May 1924 to September 1959. Monthly discharge only for some periods, published in WSP 1318. Published as Deschutes River near Lapine 1910-12 and as East Fork near Lapine 1913-20.

Gage.--Water-stage recorder. Datum of gage is 4,192.81 ft above mean sea level, datum of 1929. Sept. 1, 1910, to Aug. 31, 1911, staff gage at present site at different datum. Mar. 1 to Sept. 30, 1912, staff gage at site 1 $\frac{1}{4}$ miles downstream at different datum. June 1, 1913, to Sept. 28, 1928, staff gage and Sept. 29, 1928, to Sept. 30, 1931, water-stage recorder, at present site at different datums.

Average discharge.--35 years (1924-59), 201 cfs (145,500 acre-ft per year).

Extremes.--Maximum discharge during year, 400 cfs May 4 (gage height, 4.30 ft); minimum, 76 cfs Sept. 15, 16, 1910-13, 1918, 1920, 1924-59: Maximum discharge, 1,320 cfs June 13, 1950, May 9, 1956 (gage height, 7.25 ft); minimum, 8 cfs Sept. 2, 3, 1931 (gage height, 0.71 ft).

Remarks.--Records good. Flow regulated since 1922 to Crescent Lake (see following page). Diversions for irrigation of 13,700 acres above station.

Revisions (water years).--WSP 1218: 1950.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 8 to Aug. 9)

Oct. 1 to Nov. 20

Nov. 21 to Sept. 30

2.1	77	2.0	73	4.0	*343
3.0	164	2.5	123	4.3	400
4.0	278	3.0	186		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	119	83	145	147	212	170	196	328	302	240	224	248
2	117	83	143	139	200	181	227	368	294	233	224	245
3	115	90	150	120	183	180	236	392	290	230	221	240
4	113	99	154	110	*180	169	236	396	292	234	216	242
5	112	117	143	118	180	156	232	384	300	238	220	238
6	114	124	133	131	176	150	232	378	318	230	226	115
7	113	133	137	147	169	146	238	392	340	244	212	99
8	112	149	156	160	156	142	238	372	340	262	210	*94
9	113	142	196	166	141	142	236	352	334	*216	210	90
10	113	142	226	186	159	141	236	345	333	203	206	89
11	113	145	214	230	150	135	236	346	329	209	124	86
12	112	133	202	254	151	133	238	333	312	209	*109	82
13	111	134	206	277	139	141	234	311	299	199	193	79
14	114	180	209	*258	130	154	202	300	287	194	218	79
15	111	211	196	208	125	143	193	311	284	193	220	79
16	89	171	181	197	131	135	264	334	282	182	218	78
17	80	135	183	199	145	141	306	355	284	174	218	82
18	79	135	172	196	160	152	297	352	*280	197	216	84
19	87	154	164	183	159	159	295	346	270	202	218	90
20	117	235	155	166	156	159	289	340	277	203	234	95
21	132	348	152	156	155	151	*285	326	268	209	284	100
22	109	294	151	150	148	152	278	312	254	209	282	99
23	99	233	146	163	142	157	287	304	250	221	297	94
24	95	197	128	170	135	157	269	294	248	236	274	84
25	85	172	142	210	134	156	292	284	248	236	258	82
26	85	160	145	234	139	156	312	280	250	232	258	88
27	85	156	156	218	142	165	333	282	248	232	254	90
28	86	148	161	264	154	161	348	284	246	230	256	90
29	86	127	148	321	-	157	346	282	248	230	252	91
30	85	142	143	248	-	174	334	312	245	227	251	87
31	*84	-	146	221	-	187	-	311	-	226	250	-
Total	3,185	4,772	5,083	5,947	4,358	4,802	7,965	10,306	8,552	6,780	7,053	3,439
Mean	103	159	164	192	156	155	266	332	285	219	228	115
Ac-ft	6,320	9,470	10,080	11,800	8,640	9,520	15,800	20,440	16,960	13,450	13,990	6,820
Calendar year 1958: Max	718			Min 79		Mean 298		Ac-ft 215,700				
Water year 1958-59: Max	396			Min 78		Mean 198		Ac-ft 143,300				

* Discharge measurement made on this day.

Reservoirs in Deschutes River basin above Bend, Oreg.

535. Crane Prairie Reservoir.--Lat 43°45'20", long 121°46'50", in NW $\frac{1}{4}$ sec.16, T.21 S., R.8 E., on control structure at Crane Prairie Dam on Deschutes River, 15 miles north-west of Lapine. Drainage area, 254 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange. Records available, November 1922 to November 1935, April to December 1936, April 1937 to September 1959. Staff gage read daily during summer and once or twice a week during winter. Datum of gage 18 4,400.0 ft above mean sea level (levels by Bureau of Reclamation). Prior to July 13, 1940, at site 150 ft upstream at same datum. Gage readings have been reduced to elevations above mean sea level. Maximum contents observed during year, 54,350 acre-ft Apr. 3 (elevation, 4,444.80 ft); minimum observed, 17,580 acre-ft Sept. 23 (elevation, 4,436.03 ft). Maximum contents observed during period 1922-59, 60,500 acre-ft June 5-7, 1943 (elevation, 4,446.0 ft); no usable contents at times.

Reservoir originally formed by earth-fill dam completed in 1922, reconstructed as rock-faced, earth-fill dam in 1940. Capacity, 55,340 acre-ft between elevations 4,424.0 (lip of fish-screen structure) and 4,445.0 ft (crest of spillway). Some dead storage in isolated pools in reservoir at stages below 4,428 ft and natural flow passing through reservoir when outlet gates are open prevents withdrawal of remaining storage to elevation of sill of gates. Water is diverted below station for irrigation near Bend and Redmond.

Revisions (water years).--WSP 1218: Drainage area. WSP 1318: 1925, 1940-41, 1950. WSP 1448: 1925(M,m), 1940(m), 1950(m).

560. Wickiup Reservoir.--Lat 43°41'10", long 121°41'10", in NE $\frac{1}{4}$ sec.7, T.22 S., R.9 E., in gate chamber structure at Wickiup Dam on Deschutes River, 9 miles west of Lapine. Drainage area, 482 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange. Records available, December 1942, when storage began, to September 1959. Tape gage read daily. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Prior to Jan. 15, 1945, staff gages at nearby sites at same datum. Maximum contents observed during year, 200,800 acre-ft Apr. 3 (elevation, 4,337.74 ft); minimum observed, 18,520 acre-ft Sept. 18 (elevation, 4,293.44 ft); Maximum contents observed during period 1942-59, 201,500 acre-ft May 8, 1956 (elevation, 4,337.80 ft); minimum observed since reservoir first filled in March 1949, 523 acre-ft Oct. 18, 1952 (elevation, 4,270.86 ft).

Reservoir is formed by rock-faced, earth-fill dam completed in 1949. Capacity, 182,100 acre-ft between elevations 4,265.0 (no storage) and 4,336.0 ft (crest of spillway, with earth soft plug to elevation 4,339.0 ft). Water is diverted from Deschutes River at Bend for irrigation near Madras. Daily elevations and capacity table furnished by Bureau of Reclamation.

595. Crescent Lake.--Lat 43°30'00", long 121°58'20", in SW $\frac{1}{4}$ sec.11, T.24 S., R.6 E., on outlet works at dam on Crescent Creek, three-quarters of a mile south of town of Crescent Lake and 14 miles west of Crescent. Drainage area, 60.7 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange. Records available, August 1922 to September 1959. Wire-weight gage read 1 or 2 times a month. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Prior to Oct. 1, 1956, staff gage at nearby site at datum 4,825.16 ft above mean sea level. Oct. 1, 1956, to Oct. 17, 1957, staff gage at present site and datum. Maximum contents observed during year, 70,450 acre-ft Apr. 14 (elevation, 4,841.30 ft); minimum observed, 35,500 acre-ft Aug. 31 (elevation, 4,832.00 ft). Maximum contents observed during period 1922-59, 79,970 acre-ft Mar. 8, 1957 (elevation, 4,843.76 ft); minimum observed, 3,640 acre-ft Oct. 21, 1931 (elevation, 4,827.91 ft).

Reservoir originally formed by dam of earth and logs completed in 1922, reconstructed as earth-fill dam in 1956. Capacity, 117,200 acre-ft between elevations 4,821.5 (sill of outlet gate) and 4,853.0 ft (crest of spillway). Dead storage not known; records given herein represent usable contents. Water surface probably cannot be lowered below elevation 4,823.4 ft due to natural flow through reservoir. Water is diverted from Deschutes River at Bend for irrigation near Tumalo.

Revisions (water years).--WSP 1218: Drainage area. WSP 1318: 1922-31. WSP 1448: 1923-31(M,m).

Month-end elevation and contents, water year October 1958 to September 1959

Date	Elevation (feet)*	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)‡	Contents (acre-feet)	Change in contents (acre-feet)
Crane Prairie Reservoir			Wickiup Reservoir			Crescent Lake			
Sept.30.....	4,436.80	20,300	-	4,323.03	87,160	-	4,834.80	45,810	-
Oct. 31.....	4,436.91	20,690	+390	4,323.14	87,640	+480	4,835.50	48,410	+2,600
Nov. 30.....	4,439.97	32,540	+11,850	4,328.92	120,100	+32,460	-	45,600	+6,190
Dec. 31.....	4,442.06	41,510	+8,970	4,332.47	148,100	+28,000	-	46,000	+5,400
Calendar year 1958.....	-	-	-4,990	-	-	+600	-	-	+5,060
Jan. 31.....	4,443.36	47,450	+5,940	4,335.36	175,500	+27,400	-	46,800	+4,900
Feb. 28.....	-	451,500	+4,050	4,336.81	190,600	+15,100	-	46,700	+2,500
Mar. 31.....	4,444.74	54,060	+2,560	4,337.71	200,500	+9,900	4,841.00	69,290	+1,890
Apr. 30.....	4,442.32	42,680	-11,380	4,336.48	187,200	-13,300	4,840.85	68,700	-590
May 31.....	4,440.12	33,160	-9,520	4,334.16	163,600	-23,600	-	63,900	-4,800
June 30.....	4,438.75	27,630	-5,530	4,328.21	115,300	-48,300	-	45,730	-6,800
July 31.....	4,437.42	22,560	-5,070	4,316.15	64,470	-50,830	4,835.00	46,550	-10,750
Aug. 31.....	4,436.60	19,580	-2,980	4,300.35	29,100	-35,370	4,832.00	35,500	-11,050
Sept.30.....	4,436.23	18,270	-1,310	4,294.78	20,390	-8,710	4,832.08	35,790	+290
Water year 1958-59.....	-	-	-2,030	-	-	-66,770	-	-	-10,020

* Gage usually read between 7 and 8 a.m.

† Gage read at 8 a.m.

‡ Gage read at irregular times.

Δ No gage-height record; contents interpolated.

645. Deschutes River at Benham Falls, near Bend, Oreg.

Location.--Lat 43°55'50", long 121°24'30", in NE¹/₄ sec.16, T.19 S., R.11 E., on right bank 1,700 ft upstream from head of Benham Falls, 1¹/₂ miles downstream from damsite for proposed Benham Falls Reservoir, 10 miles southwest of Bend, and at mile 181.4. Prior to Nov. 20, 1958, at site 1,500 ft downstream.

Drainage area.--1,759 sq mi.

Records available.--April 1906 to September 1913, April to September 1914, August to December 1920, April to September 1921, February 1924 to September 1959. Monthly discharge only for some periods, published in WSP 1318. Published as "at West's ranch, near Lava" April 1906 to February 1909, April to September 1914. Records for January 1905 to March 1906 and October 1913 to September 1914, published under present name in WSP 370 and 394, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Datum of gage is 4,142.10 ft above mean sea level (Bureau of Reclamation bench mark). Apr. 1, 1906, to Feb. 28, 1909, and Apr. 1 to Sept. 30, 1914, staff gage at site 8 miles upstream at various datums. Mar. 1, 1909, to Sept. 30, 1913, and Aug. 27, 1920, to Sept. 30, 1921, staff gages at two different sites within 1,000 ft downstream from present site at various datums. Feb. 12, 1924, to Nov. 12, 1947, water-stage recorder at site 1,500 ft downstream at datum 2.00 ft higher and Nov. 13, 1947, to Nov. 19, 1958, at datum 1.00 ft higher.

Average discharge.--42 years (1906-13, 1924-59), 1,411 cfs (1,022,000 acre-ft per year).

Extremes.--Maximum discharge during year, 2,760 cfs about June 7 (gage height, 6.32 ft); minimum, 735 cfs Jan. 3 (gage height, 2.50 ft).

1906-14, 1920-21, 1924-59: Maximum discharge, 5,000 cfs (estimated) Nov. 27, 1909 (gage height not determined); minimum, 448 cfs sometime during period Jan. 11 to Feb. 3, 1950 (from recorded range in stage); minimum daily, 480 cfs Feb. 12, 1948.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated since 1922 by Crane Prairie Reservoir and Crescent Lake, and since 1942, by Wickiup Reservoir (see preceding page). Diversions for irrigation of over 14,000 acres above station.

Revisions.--See Records available.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 19		Nov. 20 to Sept. 30	
1.3	870	2.6	775
3.1	1,800	3.0	950
		5.0	1,980
		6.3	2,750

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,780	1,000	914	928	1,020	1,230	1,300	2,200	2,450	2,480	2,640	2,200
2	1,780	920	928	928	1,010	1,260	1,310	2,170	2,500	2,470	2,620	2,180
3	1,750	900	928	808	1,000	1,280	1,340	2,130	2,550	2,460	2,620	2,170
4	1,750	900	928	775	985	1,260	1,460	2,120	2,600	2,480	2,610	2,160
5	1,750	900	928	910	975	1,250	1,640	2,120	2,650	2,480	2,560	2,160
6	1,740	900	923	914	975	1,240	1,650	2,090	2,660	2,500	2,530	2,160
7	1,720	920	923	905	970	1,230	*1,680	2,030	2,680	2,500	2,530	2,120
8	1,720	920	932	918	960	1,220	1,700	2,020	2,650	2,500	2,510	2,060
9	1,700	920	950	950	946	1,220	1,700	2,020	2,640	*2,520	2,500	2,040
10	1,700	920	985	985	918	1,220	1,700	2,030	2,620	2,510	2,430	2,020
11	1,700	920	1,010	985	936	1,220	1,700	2,020	2,600	2,500	2,350	2,010
12	1,700	920	1,000	1,030	975	*1,200	1,700	2,020	*2,520	2,500	2,310	1,990
13	1,700	940	985	*1,040	1,020	1,200	1,700	2,020	2,500	2,500	2,280	1,980
14	1,700	940	980	1,050	1,050	1,200	1,700	2,150	2,440	2,530	2,310	1,950
15	1,700	950	985	1,060	975	1,120	1,700	2,280	2,410	2,600	2,340	1,810
16	1,700	1,020	975	1,020	1,100	1,030	1,680	2,260	2,390	2,610	2,320	1,760
17	1,700	969	965	1,000	1,180	1,000	1,700	2,240	2,340	2,610	2,320	1,750
18	1,680	946	960	1,000	1,200	1,010	1,750	2,240	2,290	2,610	2,320	1,750
19	1,680	992	955	995	1,220	1,020	1,850	2,160	2,310	2,620	2,320	1,720
20	1,700	970	946	985	1,220	1,020	1,940	2,040	2,340	2,640	2,320	1,660
21	1,700	1,020	941	960	1,220	1,020	1,970	2,010	2,410	2,630	2,340	*1,630
22	1,700	1,080	936	950	1,220	1,020	1,970	2,000	2,480	2,650	2,340	1,600
23	1,700	*1,080	928	941	1,210	1,030	2,030	1,990	2,520	2,700	2,350	1,540
24	1,700	1,020	918	960	1,200	1,040	2,110	1,970	2,570	2,710	2,350	1,500
25	1,700	985	914	985	1,190	1,070	2,180	1,960	2,580	2,720	2,350	1,500
26	1,680	960	923	1,000	1,190	1,100	2,210	2,000	2,580	2,730	2,320	1,500
27	1,660	936	941	1,060	1,200	1,140	2,220	2,100	2,580	2,730	2,310	1,500
28	1,650	918	936	1,060	1,210	1,180	2,220	2,200	2,550	2,720	2,300	1,500
29	1,630	914	946	1,060	-	1,160	2,240	2,250	2,490	2,710	2,260	1,480
30	1,600	910	941	1,120	-	1,180	2,230	2,300	2,490	2,700	2,230	1,460
31	1,400	-	932	1,060	-	1,260	-	2,400	-	2,690	2,230	-
Total	52,470	28,590	29,356	30,332	30,275	35,610	54,280	65,540	75,370	80,290	74,130	54,860
Mean	1,693	953	947	978	1,081	1,149	1,809	2,114	2,512	2,590	2,391	1,829
Ac-ft	104,100	56,710	58,230	60,160	60,050	70,630	107,700	130,000	149,500	159,300	147,000	108,800
Calendar year 1958: Max	2,940						Mean	1,786	Ac-ft	1,293,000		
Water year 1958-59: Max	2,730						Mean	1,784	Ac-ft	1,212,000		

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1 to Nov. 15, Nov. 18, 19, Apr. 6-19, May 26 to June 11; discharge estimated on basis of records for station below Lava Island, near Bend.

DESCHUTES RIVER BASIN

660. Deschutes River below Lava Island, near Bend, Oreg.

Location.--Lat 44°00'00", long 121°22'30", in SW $\frac{1}{4}$ sec.23, T.18 S., R.11 E., on right bank three-quarters of a mile downstream from Lava Island, $\frac{1}{2}$ miles downstream from intake of Arnold Canal, 5 miles southwest of Bend, and at mile 173.0.

Drainage area.--1,829 sq mi.

Records available.--March 1926 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 3,825 ft (by barometer). Prior to May 4, 1927, at site a quarter of a mile upstream at different datum. May 4, 1927, to Nov. 11, 1947, at present site at datum 1.00 ft higher.

Average discharge.--33 years, 1,229 cfs (889,800 acre-ft per year).

Extremes.--Maximum discharge during year, 2,590 cfs about June 7 (gage height, 3.40 ft); minimum, 738 cfs Jan. 3, 4 (gage height, 1.38 ft).
1926-59: Maximum discharge, 2,940 cfs May 10, 1956 (gage height, 3.78 ft); minimum, 416 cfs Jan. 18, 1950 (gage height, 0.79 ft).

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow regulated by Crescent Lake and Crane Prairie Reservoir and, since 1942, by Wickiup Reservoir (see p.62). Arnold Canal diverts water above station for irrigation (see following page).

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-29, June 22 to Aug. 29)

Oct. 1-31		Nov. 1 to Sept. 30	
1.9	1,100	1.4	750
2.5	1,640	2.0	1,220
		3.5	2,700

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,630	900	900	884	996	1,140	1,160	2,050	2,290	2,180	2,380	1,980
2	1,630	884	916	884	980	1,170	1,190	2,020	2,300	2,170	2,350	1,960
3	1,630	868	916	813	972	1,200	1,200	1,990	2,360	2,180	2,320	1,950
4	1,630	868	916	750	964	1,200	1,300	1,950	2,440	2,150	2,320	1,950
5	1,630	*884	916	888	956	1,190	1,540	1,960	2,430	2,160	2,290	1,940
6	1,620	892	908	900	948	1,170	1,560	1,930	2,540	2,180	2,260	1,940
7	1,610	916	916	884	948	1,160	*1,570	1,870	2,540	*2,190	2,240	1,920
8	1,610	916	916	900	940	1,160	1,580	1,850	2,550	2,190	2,230	1,880
9	1,590	932	924	916	932	1,160	1,580	1,840	2,540	2,200	2,220	1,850
10	1,580	924	956	956	900	1,150	1,580	1,850	2,490	2,210	2,180	1,830
11	1,580	924	972	964	908	1,150	1,580	1,840	*2,360	2,200	2,130	1,810
12	1,580	916	980	996	932	1,140	1,580	1,840	2,350	2,190	2,090	1,800
13	1,580	932	984	*1,010	956	1,130	1,580	1,830	2,330	2,180	2,040	1,790
14	1,580	940	964	1,010	964	1,140	1,580	1,910	2,270	2,190	2,040	1,780
15	1,580	940	964	1,020	940	1,080	1,570	2,060	2,230	2,240	2,070	1,650
16	1,580	972	956	996	1,020	996	1,550	2,080	2,210	2,280	2,080	*1,600
17	1,570	932	948	980	1,120	*924	1,560	2,070	2,180	2,280	2,070	1,600
18	1,570	916	948	948	1,130	972	1,610	2,060	2,110	2,280	2,060	1,600
19	1,580	948	940	916	1,150	980	1,690	2,010	2,100	2,250	2,060	1,580
20	1,590	956	932	900	1,160	980	1,790	1,890	2,120	2,310	2,060	1,510
21	1,590	980	924	892	1,160	980	1,810	1,830	2,140	2,280	2,080	1,470
22	1,600	1,040	916	892	1,160	980	1,810	1,810	2,170	2,300	2,080	1,440
23	1,600	1,050	884	916	1,150	980	1,850	1,810	2,210	2,360	2,090	1,580
24	1,580	996	852	940	1,140	988	1,930	1,800	2,260	2,330	2,100	1,340
25	1,580	924	844	948	1,140	1,010	2,000	1,790	2,270	2,360	2,100	1,330
26	1,570	916	844	956	1,120	1,050	2,050	1,820	2,280	2,360	2,080	1,330
27	1,560	924	876	1,010	1,120	1,080	2,050	1,850	2,290	2,370	2,060	1,330
28	1,560	892	916	1,020	1,120	1,120	2,060	2,040	2,280	2,400	2,050	1,330
29	1,550	860	916	1,020	-	1,100	2,070	2,090	2,200	2,410	2,030	1,310
30	1,500	860	916	1,050	-----	1,090	2,070	2,130	2,180	2,400	2,020	1,290
31	1,150	-----	900	1,030	-----	1,130	-----	2,240	-----	2,390	2,000	-----
Total	48,790	27,802	28,540	29,169	28,928	33,700	50,070	60,220	69,100	70,150	66,180	49,470
Mean	1,574	927	921	941	1,035	1,087	1,669	1,943	2,303	2,263	2,135	1,649
Ac-ft	96,770	55,140	56,610	57,860	57,370	66,840	99,310	119,400	137,100	139,100	131,300	98,120
Calendar year 1958:	Max	2,700		Min	768		Mean	1,630	Ac-ft	1,180,000		
Water year 1958-59:	Max	2,550		Min	750		Mean	1,540	Ac-ft	1,115,000		

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for station at Benham Falls, near Bend.

Diversions from Deschutes River near Bend, Oreg.

The following six canals, which are equipped with water-stage recorders, are the only diversions from Deschutes River between gaging stations at Benham Falls and below Bend.

655. Arnold Canal diverts from right bank at head of Lava Island, in SW $\frac{1}{4}$ sec.27, T.18 S., R.11 E.; water used for irrigation southeast of Bend.

665. Central Oregon Canal diverts from right bank in NE $\frac{1}{4}$ sec.13, T.18 S., R.11 E.; water used for irrigation east of Bend. Beginning Oct. 1, 1932, record obtained upstream from intake of Pilot Butte Canal.

685. Deschutes County Municipal Improvement District Canal diverts from left bank in NE $\frac{1}{4}$ sec.32, T.17 S., R.12 E., at Bend; water stored in Crescent Lake for Tumalo project is diverted by this canal and supplements flow in Tumalo project feed canal for irrigation near Tumalo.

690. North Unit main canal diverts water from right bank in NE $\frac{1}{4}$ sec.29, T.17 S., R.12 E.; water used for irrigation near Madras.

695. North Canal diverts from right bank in NE $\frac{1}{4}$ sec.29, T.17 S., R.12 E.; water used for irrigation north of Bend, mostly near Redmond.

700. Swalley Canal diverts from right bank in NE $\frac{1}{4}$ sec.29, T.17 S., R.12 E.; water used for irrigation north of Bend, mostly near Redmond.

Records of monthly discharge of these canals, published as a group, are available from October 1926 to September 1959; records for each canal published separately prior to 1926.

Diversions, in acre-feet, water year October 1958 to September 1959

Month	Arnold Canal	Central Oregon Canal	Deschutes County Municipal Improvement District Canal	North Unit main canal	North Canal	Swalley Canal	Total
October.....	4,510	23,790	4,930	24,970	23,820	4,700	86,720
November.....	460	1,520	0	0	1,450	430	3,860
December.....	403	2,910	0	0	2,170	343	5,830
January.....	420	2,060	0	0	1,520	315	4,320
February.....	301	1,100	0	0	1,170	649	3,220
March.....	298	1,010	0	0	682	571	2,560
April.....	3,810	25,300	1,450	25,850	23,840	4,010	84,250
May.....	5,910	30,060	5,030	39,630	28,670	6,120	115,400
June.....	6,420	34,140	5,250	51,360	31,440	6,780	135,400
July.....	6,620	36,600	7,860	53,380	34,020	7,010	145,500
August.....	6,240	36,040	7,080	43,780	33,330	6,650	133,900
September.....	5,410	27,130	2,780	31,030	27,140	5,460	99,030
Water year 1958-59..	40,800	221,700	34,380	270,000	209,900	43,240	820,000

705. Deschutes River below Bend, Oreg.

Location.--Lat 44°05'00", long 121°18'20", in SE $\frac{1}{4}$ sec.20, T.17 S., R.12 E., on right bank half a mile downstream from North Canal, half a mile north of Bend city limits, and at mile 164.4.

Drainage area.--1,899 sq mi.

Records available.--October 1914 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 3,503.96 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 1, 1931, at site 200 ft downstream at datum 1.00 ft higher.

Average discharge.--45 years, 591 cfs (427,900 acre-ft per year).

Extremes.--Maximum discharge during year, 1,330 cfs Mar. 3 (gage height, 3.35 ft); minimum, 6.8 cfs June 15 (gage height, 0.77 ft).

1914-59: Maximum discharge, 2,500 cfs Mar. 31, 1918, Dec. 7, 1921 (gage height, 3.9 ft, present datum); maximum gage height (corrected), 5.38 ft Dec. 15, 1932 (back-water from ice); minimum discharge, 1 cfs Aug. 25, 1930.

Maximum discharge known near this site since 1905, 4,820 cfs Nov. 27, 1909.

Remarks.--Records good. Flow regulated by hydroelectric plant at Bend, since 1922 by Crescent Lake and Crane Prairie Reservoir, and since 1942 by Wickiup Reservoir (see p. 62). Six large canals (see preceding page) and several small ditches divert water above station for irrigation.

Revisions (water years).--WSP 1318: 1916-18(M), 1926(M), 1931(M).

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.0	22	2.0	325
1.2	47	2.5	630
1.4	88	3.0	1,010
1.7	190	3.5	1,480

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	126	866	391	858	954	547	914	140	115	88	*51	99
2	122	842	914	858	962	794	547	112	107	81	65	69
3	126	842	898	858	954	1,180	514	88	107	72	60	43
4	132	842	898	866	946	1,190	540	60	102	56	80	43
5	150	866	914	866	938	1,170	756	*67	99	70	56	43
6	146	866	898	866	938	1,150	*502	72	112	83	70	47
7	129	890	898	834	938	1,150	235	71	132	157	61	46
8	140	890	898	886	938	1,150	208	72	140	79	62	32
9	110	906	914	850	922	1,140	208	63	146	85	118	76
10	102	906	930	890	906	1,140	204	67	122	60	83	65
11	102	898	954	906	898	1,140	182	65	118	54	60	52
12	104	898	970	954	906	1,140	174	56	86	63	63	43
13	102	922	914	970	938	1,140	146	54	76	56	79	40
14	102	930	890	978	946	1,140	129	94	67	56	79	51
15	107	930	890	*994	946	1,100	115	132	80	76	122	61
16	102	962	890	962	1,000	986	96	143	63	56	76	67
17	121	930	890	954	1,110	962	99	122	56	52	52	56
18	122	858	914	922	1,140	962	143	112	70	51	49	65
19	182	882	906	890	1,140	970	174	96	72	60	58	55
20	307	890	906	882	1,140	970	136	91	79	60	70	73
21	325	898	898	866	1,130	978	81	104	51	51	81	122
22	365	978	890	866	1,110	970	79	107	60	54	93	99
23	399	994	866	882	1,100	970	91	99	74	67	107	63
24	381	978	834	914	1,090	978	117	88	83	74	107	61
25	387	906	522	922	1,090	962	112	72	86	81	110	74
26	417	882	282	621	954	978	217	81	93	81	96	76
27	618	818	289	417	595	994	208	113	74	86	144	79
28	528	484	325	393	508	1,050	174	83	65	83	93	79
29	826	340	657	508	-	1,040	182	81	76	81	86	66
30	834	302	890	994	-----	1,030	174	99	83	67	107	91
31	657	-----	874	970	-----	1,060	-----	96	-----	65	102	-----
Total	8,210	25,396	24,984	26,397	27,137	32,131	7,457	2,800	2,694	2,203	2,518	1,936
Mean	265	847	806	852	969	1,036	249	90.3	89.8	71.1	81.2	64.5
Ac-ft	16,280	50,370	49,560	52,360	53,830	63,730	14,790	5,550	5,340	4,370	4,990	3,840
Calendar year 1958: Max		1,770			Min 67		Mean 528		Ac-ft 382,000			
Water year 1958-59: Max			1,190		Min 32		Mean 449		Ac-ft 325,000			

* Discharge measurement made on this day.

730. Tumalo Creek near Bend, Oreg.

Location.--Lat 44°05'20", long 121°22'20", near center of sec.23, T.17 S., R.11 E., on left bank a quarter of a mile upstream from Tumalo feed canal, 3 miles upstream from mouth, and 4 miles northwest of Bend.

Drainage area.--47.3 sq mi.

Records available.--October 1913 to December 1921, February, April to November 1922, March 1923 to September 1959. Published as "below Bend" 1949-50.

Gage.--Water-stage recorder. Datum of gage is 3,566.82 ft above mean sea level, datum of 1929. Prior to Apr. 27, 1915, staff gage and Apr. 27, 1915, to Sept. 30, 1918, water-stage recorder or staff gage, at same site and datum.

Average discharge.--41 years (1913-14, 1916-21, 1923-35, 1936-59), 104 cfs (75,290 acre-ft per year).

Extremes.--Maximum discharge during year, 590 cfs Nov. 6; minimum daily, 37 cfs Aug. 9. 1913-59: Maximum discharge, 1,000 cfs about Jan. 6, 1923 (no flow in canal), from rating curve extended above 450 cfs; minimum daily, 25 cfs Jan. 3, 1924.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. All records presented herein include flow in Columbia Southern Canal, which diverts 8 miles above station for irrigation of lands near Tumalo. No flow in canal Nov. 12 to Apr. 25; Aug. 10-14. Crater Creek Canal diverts flow of tributaries to Soda Creek into head of Tumalo Creek.

Revisions (water years).--WSP 864: 1937. WSP 1218: Drainage area. WSP 1448: 1923(M), 1927-29(M), 1932(M), 1935-38(M), 1942(M).

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62	61	69	81	81	67	85	129	156	103	*58	50
2	60	62	72	75	79	65	101	116	178	112	55	48
3	60	69	152	70	79	67	101	109	187	97	55	51
4	60	121	115	70	*79	67	99	102	195	94	52	50
5	60	112	85	72	75	67	101	100	287	98	51	73
6	60	248	75	75	73	65	101	96	269	92	51	85
7	62	140	129	80	72	65	91	94	205	83	49	82
8	65	190	104	83	70	65	87	101	182	78	50	56
9	63	121	92	83	70	65	87	106	161	80	37	53
10	63	105	134	87	70	64	89	109	135	*81	58	53
11	61	*63	400	85	72	62	93	105	163	84	56	53
12	62	79	289	125	70	*82	95	108	220	88	56	53
13	63	85	168	99	70	62	93	136	224	84	56	54
14	60	59	142	87	70	64	91	168	195	77	*55	55
15	62	56	128	*83	67	64	91	153	161	74	63	56
16	60	53	120	89	67	65	87	139	164	74	53	55
17	60	52	109	93	65	69	83	143	166	74	*52	53
18	66	55	103	91	64	70	85	134	177	74	52	64
19	72	70	99	89	62	70	81	119	209	74	51	77
20	87	90	95	86	59	69	83	115	226	73	54	73
21	64	82	93	85	59	69	89	118	232	68	52	63
22	63	75	91	85	58	69	95	115	184	68	50	54
23	62	70	87	85	59	67	111	136	176	71	51	58
24	63	63	85	85	59	67	122	148	171	75	50	58
25	61	61	83	89	62	65	128	155	138	66	48	61
26	63	59	85	83	62	67	109	136	114	63	50	226
27	61	58	81	93	59	64	*101	123	103	61	49	109
28	63	55	79	89	64	62	107	*113	101	58	50	80
29	63	58	79	85	-	*65	117	107	95	56	53	72
30	61	65	89	83	-----	65	141	114	98	55	48	69
31	62	-----	81	81	-----	67	-----	129	-----	58	53	-----
Total	1,934	2,537	3,613	2,656	1,896	2,041	2,942	3,778	5,272	2,393	1,616	2,024
Mean	62.4	84.6	117	85.7	67.7	65.8	98.1	122	176	77.2	52.1	67.5
Ac-ft	3,840	5,030	7,170	5,270	3,760	4,050	5,840	7,490	10,460	4,750	3,210	4,010
Calendar year 1958: Max 453 Min 52 Mean 119 Ac-ft 85,970												
Water year 1958-59: Max 400 Min 37 Mean 89.6 Ac-ft 64,680												

* Discharge measurement made on this day.

Note.--No creek gage-height record Nov. 17-20, 22, 23; discharge estimated on basis of records for Squaw Creek near Sisters and Little Deschutes River near Lapine. No gage-height record on canal Nov. 9, 10, Apr. 26, May 2, 3, 9, 10, 20; discharge estimated on basis of records for Tumalo Creek near Bend. Stage-discharge relation affected by ice Nov. 16, 27, 28, Jan. 3-7, 20, 21, Feb. 7-10, 12, 13.

750. Squaw Creek near Sisters, Oreg.

Location (revised).--Lat 44°14'02", long 121°33'57", in SE $\frac{1}{4}$ sec. 29, T.15 S., R.10 E., on right bank 600 ft upstream from intake of McAllister ditch and 4 miles south of Sisters.

Drainage area.--54.8 sq mi.

Records available.--July 1906 to October 1918, June to August 1919, October 1919 to September 1920, May 1921 to September 1924 (no winter records), April 1925 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Altitude of gage is 3,490 ft (by barometer). July 1, 1906, to May 29, 1913, staff gage at site 800 ft downstream at different datum below intake of McAllister ditch (records include flow in McAllister ditch). May 30, 1913, to Sept. 2, 1915, staff gage and Mar. 24, 1916, to Oct. 5, 1928, water-stage recorder, at site 100 ft downstream at different datum.

Average discharge.--47 years (1906-18, 1919-20, 1925-59), 106 cfs (76,740 acre-ft per year).

Extremes.--Maximum discharge during year, 914 cfs Nov. 6 (gage height, 3.39 ft); minimum, 48 cfs sometime between Oct. 17 and Nov. 9 (gage height, 1.14 ft).
1906-59: Maximum gage height, about 8.75 ft (over top of gage) Nov. 22, 1909, site and datum then in use (discharge not determined); maximum discharge since 1909, 1,130 cfs Dec. 2, 1941 (gage height, 3.33 ft); minimum, 19 cfs Dec. 6, 1922.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No regulation. A canal near mouth of Pole Creek, a tributary above station, diverts entire flow of that creek for irrigation of lands near Sisters.

Revisions.--WSP 1218: Drainage area.

Rating tables, water year 1958-59, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 12-19)

Oct. 1 to Nov. 7

Nov. 8 to Sept. 30

1.1	42	2.0	260
1.3	75	2.5	450
1.5	120	3.0	690

1.3	46	2.0	220
1.5	80	2.5	440
1.7	125	3.0	690

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	55	128	86	32	71	92	108	131	137	96	71
2	75	80	152	84	90	68	102	94	146	137	94	71
3	65	100	280	73	90	69	96	88	155	125	92	71
4	65	200	176	70	88	67	94	86	164	120	90	75
5	65	220	146	75	86	67	96	86	264	110	88	112
6	66	500	143	80	84	66	92	82	216	105	86	122
7	70	250	224	85	88	66	86	86	179	100	86	84
8	75	200	151	86	86	66	82	92	161	100	86	80
9	64	*232	152	86	84	64	82	92	143	105	84	71
10	64	150	189	92	86	64	82	*90	122	*108	84	73
11	62	170	465	96	*82	*64	84	94	164	120	84	73
12	61	200	296	167	78	64	84	102	210	128	82	71
13	59	180	185	125	84	62	82	120	210	125	78	73
14	59	140	158	105	78	64	82	143	188	118	78	67
15	57	120	146	*100	80	60	80	125	175	115	82	60
16	57	110	154	120	80	62	78	118	*179	112	88	57
17	58	118	*125	115	76	64	76	118	176	118	82	57
18	60	122	122	105	76	64	75	105	185	118	*78	75
19	65	176	118	98	73	62	75	96	213	122	73	86
20	60	210	112	94	71	62	76	98	236	125	73	71
21	58	164	110	94	71	60	82	98	232	120	69	62
22	56	154	102	90	71	62	92	94	216	120	71	57
23	55	122	100	82	71	60	98	102	213	120	73	56
24	55	120	96	112	73	59	105	120	206	118	75	57
25	55	108	94	94	71	59	102	131	173	108	75	59
26	55	108	98	92	71	62	94	112	155	105	75	434
27	55	105	94	120	69	62	88	100	143	100	78	137
28	55	100	90	105	71	60	84	94	128	94	76	98
29	55	100	98	98	-	*64	96	94	122	90	73	88
30	55	110	102	96	-----	66	125	102	128	90	75	80
31	55	-----	92	94	-----	73	-----	112	-----	92	75	-----
Total	1,676	4,684	4,688	3,029	2,220	1,984	2,682	3,182	5,331	3,505	2,499	2,648
Mean	60.5	156	151	97.7	73.3	64.0	88.7	103	178	113	80.6	88.3
Ac-ft	3,720	9,290	9,300	6,010	4,400	3,940	5,280	6,310	10,570	6,950	4,960	5,250

Calendar year 1958: Max 500 Min 55 Mean 136 Ac-ft 98,370
Water year 1958-59: Max 500 Min 55 Mean 105 Ac-ft 75,980

Peak discharge (base, 470 cfs, revised)--Nov. 6 (time unknown) 914 cfs (3.39 ft); Dec. 11 (5 p.m.) 645 cfs (2.91 ft); Sept. 26 (8 a.m.) 860 cfs (3.25 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-7, Oct. 17 to Nov. 8, Nov. 10-15, July 5-9; discharge estimated on basis of records for Tumalo Creek near Bend, Lake Creek near Sisters, and Little Deschutes River near Lapine. Stage-discharge relation affected by ice Nov. 27-29, Jan. 4-7.

765. Deschutes River near Culver, Oreg.

Location.--Lat 44°32'30", long 121°17'10", in SW¼ sec.10, T.12 S., R.12 E., on right bank 0.7 mile downstream from bridge on Cove-Grandview road, 2½ miles upstream from Crooked River, 4 miles northwest of Culver, and at mile 116.5.

Drainage area.--2,723 sq mi.

Records available.--July 1952 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,755 ft above mean sea level (river-profile survey).

Average discharge.--7 years, 1,044 cfs (755,800 acre-ft per year).

Extremes.--Maximum discharge during year, 2,190 cfs Dec. 12 (gage height, 4.29 ft); minimum, 482 cfs Aug. 3 (gage height, 1.32 ft).

1952-59: Maximum discharge, 3,040 cfs Dec. 22, 1955 (gage height, 5.18 ft); minimum, 446 cfs Aug. 21, 1955 (gage height, 1.24 ft).

Remarks.--Records excellent. Slight regulation by Crescent Lake and Crane Prairie and Wickiup Reservoirs (see p. 62). Many diversions for irrigation above station.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.3	475
2.5	995
3.5	1,630
4.5	2,360

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	580	1,210	905	1,440	1,450	1,010	1,590	619	538	520	517	556
2	580	1,290	*1,100	1,420	1,460	1,050	1,210	594	559	524	503	556
3	587	1,290	1,530	1,410	1,460	*1,510	1,020	573	556	517	503	545
4	584	1,330	1,540	1,260	1,440	1,720	973	548	556	517	503	517
5	580	1,350	1,430	1,340	1,400	1,720	1,110	531	559	503	503	514
6	601	1,360	1,500	1,500	1,440	1,660	1,190	528	643	503	500	514
7	590	1,280	1,560	1,480	1,440	1,640	800	534	618	524	503	514
8	595	1,560	1,650	1,390	1,420	1,630	*722	520	590	570	503	524
9	601	1,520	1,570	1,360	1,480	1,640	696	538	587	*524	520	510
10	587	1,420	1,600	1,370	1,480	1,640	651	528	584	528	562	534
11	576	1,370	1,940	1,350	1,440	1,630	651	524	562	517	534	545
12	580	1,420	2,050	1,490	1,440	1,640	627	524	566	496	503	528
13	580	1,480	1,690	*1,550	1,490	1,630	625	517	562	510	*506	510
14	580	1,460	1,550	1,500	1,510	1,620	601	520	548	506	520	510
15	576	1,440	1,560	1,510	1,530	1,630	590	548	542	506	520	510
16	580	1,440	1,550	1,590	1,500	1,520	580	580	542	520	573	520
17	580	1,490	1,520	1,560	1,620	1,460	566	590	506	510	545	531
18	598	1,480	1,480	1,560	1,670	1,440	562	570	506	500	510	520
19	601	1,480	1,480	1,490	1,660	1,460	590	*559	506	492	510	528
20	673	1,560	1,430	1,460	1,690	1,460	627	545	520	503	514	528
21	754	1,570	1,420	1,440	1,660	1,480	598	545	552	506	531	517
22	776	1,570	1,410	1,440	1,660	1,480	548	552	520	500	542	576
23	*845	1,600	1,470	1,480	1,630	1,460	542	548	514	496	552	*559
24	855	1,590	1,430	1,440	1,590	1,460	552	542	514	510	559	545
25	840	1,500	1,410	1,450	1,580	1,460	590	538	528	510	566	510
26	855	1,480	920	1,490	1,590	1,500	635	524	517	517	566	627
27	910	1,460	820	1,040	1,330	1,500	736	517	534	514	562	718
28	935	1,240	845	1,060	995	1,500	686	559	524	517	590	590
29	1,060	910	905	973	-	1,510	635	538	517	528	556	566
30	1,370	885	1,470	1,250	-	1,500	623	524	510	517	545	552
31	1,180	-	1,480	1,500	-	1,500	-	538	-	517	556	-
Total	22,202	42,415	44,195	43,623	42,055	47,060	22,124	16,915	16,381	15,922	16,477	16,274
Mean	716	1,414	1,426	1,407	1,502	1,518	737	546	546	514	532	542
Ac-ft	44,040	84,130	87,660	86,520	83,410	93,340	43,880	33,550	32,490	31,580	32,680	32,280
Calendar year 1958:	Max	2,320		Min	590	Mean	1,036	Ac-ft	750,400			
Water year 1958-59:	Max	2,050		Min	420	Mean	947	Ac-ft	685,600			

* Discharge measurement made on this day.

780. Beaver Creek near Paulina, Oreg.

Location.--Lat 44°09'50", long 119°55'20", in NE $\frac{1}{4}$ sec.26, T.16 S., R.23 E., on right bank three-quarters of a mile downstream from Paulina Creek, 1 $\frac{1}{2}$ miles downstream from Wolf Creek, and 3 miles northeast of Paulina.

Drainage area.--450 sq mi, approximately.

Records available.--October 1942 to September 1959. Prior to October 1945 monthly discharge only, published in WSP 1318.

Gage.--Water-stage recorder. Altitude of gage is 3,690 ft (by barometer).

Average discharge.--17 years, 99.4 cfs (71,960 acre-ft per year).

Extremes.--Maximum discharge during year, 312 cfs Jan. 27 (gage height, 2.15 ft); minimum, 0.5 cfs Aug. 17.

1942-59: Maximum discharge, 3,620 cfs Dec. 28, 1945 (gage height, 10.2 ft), from rating curve extended above 900 cfs on basis of slope-area measurement at gage height 8.7 ft, and shape of later curves; maximum gage height, 10.38 ft Mar. 26, 1952; no flow Oct. 13-29, 1945.

Remarks.--Records good except those for periods of shifting control or no gage-height record, which are fair. No regulation. Diversions for irrigation of about 6,400 acres above station. Two small ditches divert above station for irrigation of about 250 acres below.

Revisions (water years).--WSP 1348: Drainage area. WSP 1448: 1946, 1948, 1949-50(M), 1951-52.

Rating tables, water year 1958-59, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 20

Nov. 21 to Sept. 30

0.5	6.5	0.18	0.6	0.7	16
.6	10	.2	.8	.9	32
.8	22	.3	2.1	1.1	55
		.4	4.1	1.5	123
		.5	7.0	1.9	228
		.6	11		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.3	8.5	18	35	92	101	82	6.4	1.3	1.1	0.9	0.7
2	7.7	8.9	18	29	63	99	80	12	1.2	1.1	.8	.7
3	7.7	9.3	19	17	59	85	92	13	1.1	1.1	.8	.7
4	7.7	9.7	*19	19	63	72	105	7.4	1.1	1.1	.8	.6
5	7.7	9.7	18	18	56	*69	107	5.6	1.3	1.1	.8	.6
6	7.7	10	18	20	56	63	109	10	1.5	1.1	.8	.6
7	7.7	10	20	23	47	63	105	12	1.6	1.1	.8	.6
8	7.7	10	20	28	43	53	92	13	1.8	*1.1	.8	.6
9	6.9	10	22	39	39	47	*80	34	1.7	.8	.8	.6
10	8.5	10	23	85	36	40	74	30	1.7	.8	.8	.6
11	8.5	10	26	83	42	33	69	29	1.6	.9	.9	.6
12	8.5	9.7	30	113	30	63	69	28	1.6	.9	.9	.6
13	8.5	11	29	75	29	38	69	9.3	1.5	.9	.9	.6
14	8.5	12	23	49	36	35	69	.7	1.4	.8	*.9	.6
15	8.5	13	21	*43	38	34	63	.7	1.4	.7	.9	.6
16	8.5	13	22	42	42	34	58	.8	1.3	.7	.9	3.9
17	8.5	12	23	45	55	33	38	2.1	1.3	.7	.8	5.6
18	8.5	14	23	45	62	35	24	3.5	1.3	.8	.6	5.3
19	8.1	18	23	41	75	38	23	2.7	1.2	.8	.6	5.3
20	7.7	20	23	34	80	32	19	1.6	1.2	.8	.6	5.3
21	*7.5	20	23	30	79	36	16	*1.7	1.2	.7	.7	5.3
22	6.9	20	20	32	82	29	8.4	1.7	1.2	.7	.7	5.3
23	6.5	19	17	35	79	28	7.7	1.6	1.2	.7	.7	5.0
24	6.5	18	18	41	62	29	1.7	1.6	1.2	.7	.7	5.0
25	6.5	18	19	65	61	28	1.7	1.4	1.2	.7	.7	*4.7
26	6.5	16	21	56	55	29	7.4	1.4	1.3	.7	.7	5.0
27	6.5	15	25	141	55	30	13	1.4	1.3	.7	.7	4.7
28	6.5	14	25	216	74	32	12	1.4	1.2	.7	.7	4.7
29	7.3	15	24	137	32	32	11	1.6	1.2	.8	.7	4.7
30	7.7	17	25	98	-----	48	5.3	1.6	1.2	.8	.7	4.7
31	8.1	-----	29	94	-----	68	-----	1.4	-----	.9	.7	-----
Total	236.9	400.8	684	1,826	1,590	1,429	1,506.2	238.7	40.3	26.5	24.0	83.8
Mean	7.64	13.4	22.1	58.9	56.8	46.1	50.2	7.70	1.34	0.85	0.77	2.79
Ac-ft	470	795	1,360	3,620	3,150	2,850	2,990	473	80	53	48	166

Calendar year 1958: Max 2,020 Min 0.6 Mean 150 Ac-ft 108,600
 Water year 1958-59: Max 216 Min 0.6 Mean 22.2 Ac-ft 16,040

Peak discharge (base, 700 cfs, revised).--No peak above base.

* Discharge measurement made on this day.

Note.--Shifting-control method used Oct. 18-21, May 8-28, July 15 to Sept. 16. No gage-height record May 29 to July 7; discharge estimated on basis of weather records, recorded range in stage, and records for Crooked River near Post.

795. Crooked River near Post, Oreg.

Location.--Lat 44°07'00", long 120°15'50", in NW $\frac{1}{4}$ sec. 7, T.17 S., R.21 E., on right bank 1 mile downstream from North Fork and 11 $\frac{1}{2}$ miles southeast of Post.

Drainage area.--2,160 sq mi, approximately, of which 500 sq mi is probably noncontributing.

Records available.--November 1908 to May 1911, December 1939 to September 1959. Records for June to August 1911, published in WSP 312, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Datum of gage is 3,461.60 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Nov. 9, 1908, to May 31, 1911, staff gage at site half a mile upstream at different datum.

Average discharge.--19 years (1940-59), 338 cfs (244,700 acre-ft per year).

Extremes.--Maximum discharge during year, 1,480 cfs Jan. 12 (gage height, 3.75 ft); minimum daily, 5 cfs Aug. 7-9.
1908-11, 1939-59: Maximum discharge, 7,550 cfs Mar. 26, 1952 (gage height, 7.31 ft), from rating curve extended above 3,800 cfs; minimum, 4 cfs Aug. 21-31, 1909, Aug. 20, 1953.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No regulation. Many diversions for irrigation above station. One small ditch diverts above station for irrigation of about 60 acres below. Records of suspended sediment loads and water temperatures for the water year 1959 are given in WSP 1644.

Revisions (water years).--WSP 1448: 1909-11. See also Records available.

Rating tables, water year 1958-59, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 15 to Sept. 30)

Oct. 1 to Jan. 12

Jan. 13 to Sept. 30

0.8	21	2.0	265	0.5	4.7	1.5	117
9	30	2.5	470	.6	8.2	2.0	250
1.1	53	3.0	780	.7	13	2.5	425
1.5	125	3.5	1,220	.9	28	3.0	700
				1.1	49	3.5	1,130

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	26	62	80	106	324	324	548	244	56	23	6.5	17
2	26	68	80	94	244	445	786	244	42	16	6.5	18
3	26	68	80	b70	196	377	895	229	36	17	6	17
4	26	68	*76	b50	241	304	868	211	32	18	6	16
5	26	68	78	b70	211	*277	877	202	36	18	6	17
6	26	68	87	b90	182	259	940	256	53	18	6	18
7	26	70	89	b110	153	220	700	214	83	18	5	18
8	28	70	89	b130	137	226	581	182	63	*17	5	15
9	28	70	96	b140	132	214	*536	179	55	17	5	13
10	28	70	94	200	111	187	520	176	43	16	5.5	13
11	44	68	106	258	141	163	542	163	38	14	5.5	13
12	44	68	130	1,010	185	178	581	151	32	13	6	13
13	44	71	112	547	121	223	542	139	30	11	6	13
14	45	76	87	317	135	168	475	128	27	9.2	*6	13
15	46	80	89	*232	139	163	430	126	27	8.7	7.2	13
16	46	80	100	196	139	193	377	128	28	7.8	7.5	15
17	45	70	98	199	156	274	349	176	25	7.8	8.2	16
18	44	85	94	247	171	265	307	223	24	7.8	8.2	18
19	48	95	96	214	193	244	265	179	26	8.2	9.2	26
20	54	95	94	156	202	223	250	151	24	9.2	13	25
21	*52	95	94	141	205	235	250	*137	24	9.6	16	24
22	50	95	82	144	205	232	274	132	24	8.2	14	22
23	52	90	71	149	199	232	285	113	28	7.5	14	21
24	56	85	82	199	166	256	289	105	28	7.8	15	20
25	58	80	93	320	166	256	274	90	28	9.2	12	*18
26	60	75	89	268	163	286	298	83	30	9.6	11	20
27	60	70	100	432	168	256	304	77	30	8.7	12	22
28	60	65	96	728	208	244	274	77	28	11	13	24
29	59	75	96	480	--	247	238	79	27	7.5	13	22
30	59	80	98	361	-----	271	226	74	26	7	13	22
31	59	-----	100	320	-----	434	-----	65	-----	7	15	-----
Total	1,351	2,280	2,856	7,978	4,923	7,875	14,079	4,751	1,053	367.8	280.3	542
Mean	43.6	76.0	92.1	257	176	254	469	153	35.1	11.9	9.04	18.1
Ac-ft	2,680	4,520	5,660	15,820	9,760	15,620	27,930	9,580	2,090	730	556	1,080

Calendar year 1958: Max 5,410 Min 14 Mean 493 Ac-ft 356,700

Water year 1958-59: Max 1,010 Min 5 Mean 132 Ac-ft 95,830

Peak discharge (base, 2,000 cfs).--No peak above base.

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Nov. 15 to Dec. 3, July 30 to Aug. 14; discharge estimated on basis of weather records, recorded range in stage, and records for station above Hoffman Dam, near Prineville, and Beaver Creek near Paulina.

805. Crooked River above Hoffman Dam, near Prineville, Oreg.

Location.--Lat 44°08'40", long 120°49'40", in NE $\frac{1}{4}$ sec.32, T.16 S., R.16 E., on right bank 0.9 mile upstream from Hoffman diversion dam and 11 miles south of Prineville.

Drainage area.--2,760 sq mi, approximately, of which 500 sq mi is probably noncontributing.

Records available.--November 1908 to September 1914, March 1941 to September 1959. published as "near Prineville" 1908-12 and as "at Hoffman's ranch, near Prineville" 1913-14. The estimate of monthly mean discharge for October 1908, published in WSP 370, has been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Datum of gage is 2,981.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Jan. 1, 1913, staff gage at Stearn's ranch 8 miles downstream at different datum. January 1913 to September 1914, staff gage at Hoffman's ranch 3 miles downstream at different datum.

Average discharge.--23 years (1909-14, 1941-59), 385 cfs (278,700 acre-ft per year).

Extremes.--Maximum discharge during year, 1,320 cfs Jan. 13 (gage height, 3.89 ft); no flow Aug. 13-21.

1908-14, 1941-59: Maximum discharge, 8,410 cfs Mar. 26, 1952 (gage height, 8.2 ft, from floodmarks); no flow Aug. 13-21, 1959.

Remarks.--Records excellent except those for periods of ice effect or shifting control, which are good. No regulation. Diversions for irrigation of over 20,000 acres above station.

Revisions (water years).--WSP 1448: 1909-13, 1914(M), drainage area (present and former sites). See also Records available.

Rating tables, water year 1958-59, except periods of ice effect or shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 12

Jan. 13 to Sept. 30

1.3	22	0.55	0	1.2	14
1.5	48	.6	.1	1.3	22
2.0	140	.7	.4	1.5	46
2.5	310	.8	1.1	2.0	136
3.0	570	.9	2.3	2.5	297
		1.0	4.5	3.0	550
		1.1	7.7	4.0	1,440

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	67	94	120	367	240	496	229	57	22	3.2	2.2
2	34	70	94	120	344	425	638	247	53	22	2.6	3.4
3	34	77	*94	75	244	455	894	247	42	18	2.0	3.2
4	34	84	94	50	229	*385	903	229	32	14	1.4	2.4
5	34	82	*87	64	251	315	903	222	31	14	1.0	3.4
6	34	82	85	100	222	306	975	222	36	14	.7	3.2
7	34	85	88	100	196	274	840	222	41	14	.5	2.8
8	33	84	100	140	187	247	673	216	63	*16	.5	3.4
9	32	84	100	140	151	251	*598	190	68	17	.4	3.0
10	34	84	104	155	140	244	544	181	57	17	.2	2.3
11	34	84	110	226	130	209	544	178	50	19	.1	2.2
12	35	82	120	468	140	190	631	167	40	20	.1	2.4
13	48	87	136	308	130	209	580	146	34	18	0	3.2
14	48	100	122	*457	130	240	538	136	29	16	*0	3.8
15	53	98	102	336	150	193	479	125	29	14	0	3.8
16	53	95	100	262	167	187	440	121	27	13	0	4.6
17	54	85	110	229	167	219	395	134	24	12	0	4.6
18	53	82	108	244	178	289	372	170	25	9.6	0	4.8
19	54	100	106	285	193	281	331	209	22	7.7	0	7.3
20	59	110	108	244	206	247	274	178	20	6.9	0	4.6
21	66	112	108	190	219	226	258	146	20	6.5	0	5.4
22	*67	112	106	176	222	244	254	*129	19	6.5	.8	6.5
23	66	112	94	178	222	244	274	127	16	6.2	2.6	11
24	64	108	94	178	212	247	281	108	16	5.8	2.3	7.7
25	70	102	102	266	184	270	285	100	20	4.8	2.3	*8.6
26	72	98	112	340	190	281	285	89	25	3.6	3.4	11
27	74	90	110	297	184	323	306	78	26	2.3	3.0	12
28	74	80	116	646	187	278	301	80	25	1.6	4.3	11
29	72	80	118	624	-	266	266	76	25	1.2	4.0	9.6
30	67	98	116	446	-----	278	236	76	24	1.0	3.8	10
31	66	-----	114	385	-----	323	-----	71	-----	1.5	3.0	-----
Total	1,586	2,714	3,257	8,489	5,522	8,369	14,794	4,889	996	345.2	42.2	163.4
Mean	51.2	90.5	105	274	197	270	493	158	33.2	11.1	1.36	5.45
Ac-ft	3,150	5,380	6,460	16,840	10,950	16,600	29,340	9,700	1,960	685	84	324

Calendar year 1958: Max 5,300 Min 3.2 Mean 584 Ac-ft 422,900

Water year 1958-59: Max 975 Min 0 Mean 140 Ac-ft 101,500

Peak discharge (base, 2,500 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

Note.--Stage-discharge relation affected by ice Nov. 16, 17, 27, 28, Feb. 10-15. Shifting-control method used Nov. 28 to Jan. 6, June 28 to July 17, Sept. 26-28.

875. Crooked River near Culver, Oreg.

Location.--Lat 44°33'40", long 121°16'10", in sec.3 (50 ft west of $\frac{1}{4}$ -corner on line between secs.2 and 3), T.12 S., R.12 E., on right bank 1 mile upstream from mouth, 1.2 miles downstream from Cove powerplant, and 4 miles northwest of Culver.

Drainage area.--4,330 sq mi, approximately, of which 500 sq mi is probably noncontributing.

Records available.--October 1917 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,664.86 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Aug. 2, 1945, staff gages at several sites within 1.2 miles of present site at various datums.

Average discharge.--42 years, 1,549 cfs (1,121,000 acre-ft per year).

Extremes.--Maximum discharge during year, 2,650 cfs Apr. 7 (gage height, 4.24 ft); minimum, 1,280 cfs July 22; minimum daily, 1,350 cfs June 3-5, 1917-59. Maximum discharge observed, 8,260 cfs Mar. 30, 31, 1943 (gage height, 6.70 ft, site and datum then in use); minimum recorded, 920 cfs Oct. 14, 1945; minimum daily, 970 cfs July 12 to Sept. 5, 1921.

Remarks.--Records excellent. Flow slightly regulated by Ochoco Reservoir (capacity, 47,500 acre-ft); occasional diurnal fluctuation caused by powerplant 1.2 miles above station. Water is diverted for irrigation of land above station. The area served increased from about 30,000 acres in 1918 to 37,000 acres in 1946. Several hundred cubic feet per second of water diverted from Deschutes River for irrigation of other lands above station. Opal Springs and several other springs within about 17 miles above station contribute about 1,000 cfs to the flow.

Revisions (water years).--WSP 864: 1922, 1925, 1928, 1932, 1936-37. WSP 1318: 1924-25(M).

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 13			Jan. 14 to Sept. 30		
2.7	1,400		2.5	1,320	
3.0	1,600		3.0	1,630	
3.4	1,900		4.0	2,430	

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,430	1,500	1,500	1,480	1,750	1,590	1,710	1,540	1,380	1,400	1,370	1,410
2	1,440	1,480	1,510	1,480	1,740	1,700	1,880	1,550	1,360	1,380	1,360	1,400
3	1,440	1,470	*1,490	1,460	1,720	1,870	2,110	1,550	1,350	1,380	1,360	1,410
4	1,460	1,480	1,470	1,420	1,640	*1,840	2,280	1,560	1,350	1,380	1,360	1,410
5	1,470	1,480	1,470	1,410	1,620	1,780	2,250	1,550	1,350	1,390	1,370	1,410
6	1,480	1,480	1,470	1,410	1,640	1,720	2,240	1,580	1,400	1,390	1,370	1,410
7	1,480	1,490	1,460	1,450	1,610	1,700	*2,340	1,550	1,420	1,390	1,360	1,420
8	1,480	1,500	1,480	1,500	1,590	1,680	2,250	1,550	1,410	1,390	1,360	1,420
9	1,490	1,530	1,490	1,500	1,560	1,640	2,020	1,550	1,430	*1,380	1,360	1,400
10	1,480	1,500	1,490	1,500	1,540	1,640	1,930	1,520	1,440	1,370	1,370	1,400
11	1,480	1,500	1,490	1,500	1,510	1,620	1,870	1,530	1,440	1,360	1,370	1,400
12	1,470	1,500	1,490	1,580	1,510	1,600	1,880	1,530	1,420	1,360	1,370	1,400
13	1,460	1,510	1,490	1,900	1,510	1,570	1,910	1,510	1,420	1,360	*1,370	1,400
14	1,460	1,520	1,500	*2,120	1,520	1,590	1,900	1,500	1,400	1,360	1,380	1,420
15	1,460	1,530	1,510	1,610	1,540	1,610	1,840	1,500	1,410	1,360	1,380	1,420
16	1,460	1,540	1,500	1,700	1,550	1,570	1,770	1,500	1,420	1,360	1,380	1,420
17	1,460	1,520	1,480	1,640	1,560	1,560	1,720	1,530	1,410	1,360	1,390	1,420
18	1,470	1,500	1,480	1,620	1,570	1,600	1,680	1,550	1,400	1,380	1,380	1,420
19	1,500	1,510	1,480	1,630	1,570	1,650	1,680	*1,620	1,400	1,380	1,390	1,430
20	1,500	1,510	1,480	1,660	1,570	1,640	1,620	1,690	1,400	1,380	1,390	1,440
21	1,500	1,520	1,480	1,620	1,580	1,620	1,570	1,610	1,390	1,380	1,400	1,440
22	*1,500	1,530	1,480	1,570	1,600	1,600	1,530	1,540	1,390	1,370	1,400	1,440
23	1,490	1,520	1,480	1,560	1,590	1,610	1,520	1,490	1,400	1,370	1,400	1,430
24	1,480	1,510	1,470	1,560	1,600	1,610	1,520	1,440	1,400	1,370	1,400	*1,420
25	1,500	1,500	1,460	1,560	1,580	1,620	1,520	1,440	1,410	1,360	1,400	1,410
26	1,540	1,500	1,470	1,480	1,570	1,640	1,530	1,430	1,400	1,360	1,390	1,410
27	1,540	1,490	1,500	1,720	1,570	1,660	1,510	1,410	1,400	1,360	1,390	1,420
28	1,540	1,480	1,540	1,720	1,590	1,690	1,530	1,390	1,420	1,360	1,400	1,420
29	1,540	1,470	1,570	2,150	-	1,660	1,540	1,390	1,420	1,370	1,400	1,420
30	1,530	1,470	1,580	2,050	-	1,650	1,540	1,390	1,420	1,380	1,400	1,430
31	1,520	-	1,500	1,850	-	1,650	-	1,380	-	1,380	1,400	-
Total	46,050	45,040	46,240	50,750	44,500	51,160	54,150	46,850	42,060	42,570	42,810	42,500
Mean	1,485	1,501	1,492	1,637	1,589	1,650	1,805	1,511	1,402	1,373	1,381	1,417
Ac-ft	91,340	89,340	91,720	100,700	88,260	101,500	107,400	92,930	83,420	84,440	84,910	84,500
Calendar year 1958:	Max 7,310			Min 1,330			Mean 2,015		Ac-ft 1,459,000			
Water year 1958-59:	Max 2,340			Min 1,350			Mean 1,520		Ac-ft 1,100,000			

* Discharge measurement made on this day.

880. Lake Creek near Sisters, Oreg.

Location.--Lat 44°25'40", long 121°43'30", in SW $\frac{1}{4}$ sec.24, T.13 S., R.8 E., on left bank a quarter of a mile downstream from Suttle Lake and 13 miles northwest of Sisters.

Drainage area.--22.2 sq mi.

Records available.--June to November 1911, March to September 1912, May to October 1913, April 1915 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Altitude of gage is 3,430 ft (from topographic map). June 1, 1911, to Oct. 31, 1913, and Apr. 1, 1915, to Mar. 31, 1916, staff gage at two sites 1,000 ft upstream at different datums. Apr. 1, 1916, to Oct. 12, 1928, staff gage or water-stage recorder at site 40 ft downstream at different datum.

Average discharge.--44 years (1915-59), 52.1 cfs (37,720 acre-ft per year).

Extremes.--Maximum discharge during year, 117 cfs Dec. 15 (gage height, 2.04 ft); minimum, 24 cfs Aug. 26, 27.
1911-13, 1915-59: Maximum discharge, 380 cfs Dec. 24, 1955 (gage height, 3.65 ft); minimum, 1.0 cfs Nov. 4, 5, 1940; minimum daily, 8 cfs Nov. 5, 1940, Oct. 6, 1942.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Occasional regulation by storage in Suttle Lake. No diversion above station.

Revisions (water years).--WSP 1124: 1943, 1947. WSP 1218: Drainage area. WSP 1448: 1916(M), 1925.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

0.8	21
1.0	31
1.5	66
2.0	113

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	28	57	55	98	52	54	72	52	36	36	33
2	35	29	56	55	90	44	55	74	52	36	34	33
3	35	30	56	a52	83	36	56	76	47	36	33	32
4	35	30	54	a50	78	38	57	76	44	36	35	32
5	35	36	55	a52	75	40	60	84	46	36	32	32
6	35	58	57	a52	74	42	64	86	46	*36	30	33
7	34	66	62	a52	a72	42	65	80	46	36	28	33
8	34	61	64	a52	a70	43	68	74	46	36	28	32
9	33	57	66	52	a68	44	73	71	47	37	28	32
10	33	46	67	54	65	44	72	69	53	37	28	32
11	33	39	72	56	*64	*44	72	59	54	37	27	32
12	32	39	72	61	64	46	70	55	52	36	28	32
13	32	44	77	64	63	46	69	58	49	36	31	31
14	32	46	81	66	68	46	69	67	48	36	36	30
15	33	46	95	*68	68	46	69	68	46	37	37	30
16	35	45	101	68	72	44	68	67	42	37	35	30
17	35	44	*88	68	68	45	67	66	39	37	33	32
18	36	45	79	70	67	46	65	64	40	37	30	33
19	47	54	72	72	65	47	64	64	42	36	28	35
20	58	65	68	71	62	46	64	59	47	36	28	39
21	52	72	65	68	61	48	55	55	45	35	28	42
22	48	66	56	65	59	49	52	53	44	35	28	40
23	44	67	53	64	57	49	46	49	43	34	36	38
24	42	76	54	67	56	48	47	52	42	33	41	34
25	40	77	55	67	56	47	54	55	42	33	34	32
26	39	72	56	68	54	49	59	55	42	38	24	35
27	39	68	56	75	53	49	67	55	42	39	24	35
28	38	64	56	82	52	49	73	54	41	35	28	35
29	31	61	56	85	-	49	71	53	38	30	32	34
30	26	59	56	89	-----	54	72	52	35	30	*30	33
31	26	-----	56	100	-----	53	-----	52	-----	32	35	-----
Total	1,144	1,590	2,017	2,020	1,880	1,425	1,897	1,974	1,352	1,101	965	1,006
Mean	36.9	53.0	65.1	65.2	67.1	46.0	63.2	63.7	45.1	35.5	31.1	32.5
Ac-ft	2,270	3,150	4,000	4,010	3,730	2,830	3,760	3,920	2,680	2,180	1,910	2,000

Calendar year 1958: Max 162 Min 26 Mean 61.3 Ac-ft 44,410
Water year 1958-59: Max 101 Min 24 Mean 50.3 Ac-ft 36,440

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for Tumalo Creek near Bend.

915. Metolius River near Grandview, Oreg.

Location.--Lat 44°36'40", long 121°27'10", in NE 1/4 sec. 19, T. 11 S., R. 11 E., on right bank three-quarters of a mile upstream from Street Creek, 7½ miles northwest of Grandview, and 13 miles northwest of Culver.

Drainage area.--324 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--April 1910 to February 1912 (gage heights and discharge measurements only), March 1912 to December 1913, October 1921 to September 1959. Published as "at Hubbard's ranch, near Sisters" 1910, and as "at Hubbard's ranch, near Grandview" 1910-13.

Gage.--Water-stage recorder. Datum of gage is 1,910 ft above mean sea level (river-profile survey). Prior to Dec. 31, 1913, staff gage at site 5 miles upstream at different datum. Oct. 1, 1921, to May 3, 1949, staff gage at site 20 ft downstream at present datum.

Average discharge.--39 years (1912-13, 1921-59), 1,475 cfs (1,068,000 acre-ft per year).

Extremes.--Maximum discharge during year, 2,480 cfs Dec. 11 (gage height, 1.42 ft); minimum, 1,380 cfs Sept. 24, 30.
1912-13, 1921-59: Maximum discharge, 5,780 cfs Jan. 7, 1923 (gage height, 3.32 ft), from rating curve extended above 2,200 cfs; minimum, 1,080 cfs Feb. 17, 1932, Oct. 2-31, Nov. 6, 7, 10-14, 1942.

Remarks.--Records excellent. No regulation. Many small diversions for irrigation of about 670 acres above station. Stream is spring fed.

Revisions (water years).--WSP 1448: 1913.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

0.5	1,310
1.0	1,940
1.5	2,560

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,450	1,400	1,580	1,620	1,750	1,620	1,650	1,680	1,580	1,500	1,460	1,440
2	1,450	1,400	*1,600	1,600	1,720	1,620	1,750	1,650	1,610	1,510	1,460	1,440
3	1,450	1,410	1,970	1,550	1,710	*1,600	1,720	1,620	1,620	1,500	1,460	1,440
4	1,450	1,520	1,710	1,520	1,700	1,580	1,710	1,610	1,640	1,480	1,460	1,450
5	1,440	1,500	1,620	1,510	1,680	1,570	1,710	1,640	1,610	1,500	1,450	1,510
6	1,450	1,750	1,620	1,580	1,670	1,560	1,680	1,640	1,750	1,500	1,440	1,600
7	1,440	1,670	1,820	1,570	1,660	1,560	1,670	1,610	1,660	1,500	1,440	1,560
8	1,480	1,840	1,740	1,580	1,650	1,560	*1,660	1,610	1,640	1,480	1,420	1,480
9	1,450	1,750	1,710	1,600	1,650	1,560	1,650	1,600	1,650	*1,480	1,420	1,450
10	1,440	1,640	1,750	1,650	1,640	1,550	1,640	1,580	1,610	1,480	1,420	1,450
11	1,420	1,480	2,260	1,700	1,620	1,540	1,640	1,570	1,620	1,510	*1,440	1,460
12	1,420	1,510	2,020	1,880	1,600	1,550	1,640	1,560	1,680	1,520	1,440	1,450
13	1,420	1,660	1,610	*1,770	1,610	1,560	1,620	1,570	1,670	1,520	1,420	1,450
14	1,420	1,560	1,760	1,720	1,640	1,540	1,620	1,640	1,640	1,510	1,440	1,440
15	1,420	1,500	1,740	1,700	1,640	1,540	1,610	1,620	1,580	1,500	1,440	1,420
16	1,420	1,470	1,740	1,700	1,640	1,540	1,600	1,600	1,610	1,500	1,450	1,420
17	1,420	1,460	1,710	1,700	1,610	1,550	1,600	1,610	1,600	1,500	1,450	1,410
18	1,460	1,550	1,670	1,700	1,600	1,560	1,580	1,600	1,610	1,500	1,440	1,460
19	1,520	1,840	1,660	1,680	1,580	1,550	1,570	*1,570	1,640	1,510	1,440	1,460
20	1,500	1,950	1,640	1,660	1,580	1,540	1,560	1,560	1,670	1,510	1,440	1,480
21	1,460	1,620	1,640	1,640	1,570	1,550	1,560	1,560	1,670	1,510	1,420	1,460
22	1,440	1,710	1,610	1,640	1,560	1,550	1,570	1,560	1,640	1,510	1,440	1,440
23	*1,440	1,660	1,600	1,650	1,550	1,560	1,580	1,570	1,610	1,520	1,440	*1,410
24	1,420	1,660	1,600	1,780	1,550	1,540	1,580	1,580	1,610	1,510	1,450	1,400
25	1,410	1,640	1,600	1,720	1,550	1,550	1,580	1,610	1,570	1,480	1,450	1,400
26	1,410	1,610	1,640	1,710	1,560	1,570	1,600	1,580	1,550	1,470	1,440	1,760
27	1,410	1,570	1,640	1,620	1,560	1,550	1,600	1,560	1,520	1,470	1,450	1,510
28	1,410	1,560	1,600	1,850	1,560	1,560	1,610	1,550	1,510	1,460	1,450	1,440
29	1,410	1,560	1,600	1,600	-	1,570	1,620	1,540	1,510	1,450	1,440	1,410
30	1,400	1,550	1,660	1,770	-----	1,620	1,700	1,550	1,500	1,450	1,440	1,400
31	1,400	-----	1,640	1,760	-----	1,610	-----	1,550	-----	1,450	1,450	-----
Total	44,530	48,200	52,960	52,130	45,430	48,480	48,880	49,350	48,580	46,290	44,700	43,840
Mean	1,436	1,607	1,708	1,682	1,622	1,564	1,629	1,592	1,619	1,493	1,442	1,461
Ac-ft	88,320	95,600	105,000	103,400	90,110	96,160	96,950	97,880	96,360	91,810	88,660	86,960
Calendar year 1958:	Max	2,450		Min	1,400		Mean	1,681		Ac-ft	1,217,000	
Water year 1958-59:	Max	2,260		Min	1,400		Mean	1,571		Ac-ft	1,137,000	

* Discharge measurement made on this day.

DESCHUTES RIVER BASIN

925. Deschutes River near Madras, Oreg.

Location.--Lat 44°43'40", long 121°14'50", in SW $\frac{1}{4}$ sec. 1, T.10 S., R.12 E., on right bank 400 ft downstream from the reregulating dam, 2 $\frac{1}{2}$ miles downstream from Pelton Dam, 3 miles upstream from Shitike Creek, 8 $\frac{1}{2}$ miles northwest of Madras, and at mile 100.1.

Drainage area.--7,820 sq mi, approximately.

Records available.--October 1923 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,390.25 ft above mean sea level, datum of 1929, supplementary adjustment of 1947 (levels by Portland General Electric Co.). Prior to May 6, 1924, staff gage and May 6, 1924, to June 14, 1933, water-stage recorder, at site 2 $\frac{1}{2}$ miles upstream at different datum. June 15, 1933, to Nov. 30, 1956, water-stage recorder and Dec. 1, 1956, to Nov. 22, 1957, staff gage, at site 1 $\frac{1}{2}$ miles upstream at different datum.

Average discharge.--36 years, 4,430 cfs (3,207,000 acre-ft per year).

Extremes.--Maximum discharge during year, 7,640 cfs Jan. 14 (gage height, 4.17 ft); minimum, 3,440 cfs July 20 (gage height, 2.64 ft); minimum daily, 3,750 cfs July 12, Aug. 14.

1923-59: Maximum discharge, 13,300 cfs Jan. 1, 1943 (gage height, 6.89 ft, site and datum then in use); minimum, 1,200 cfs Dec. 13, 1957 (gage height, 1.44 ft); minimum daily, 2,440 cfs Dec. 3, 4, 1957.

Remarks.--Records excellent. Flow regulated by Lake Simtustus and reregulating dam since Nov. 23, 1957. Large diversions in upper river basin for irrigation. Some winter and spring runoff stored in Ochoco Reservoir (capacity, 47,500 acre-ft) and in Crescent Lake, Crane Prairie, and Wickiup Reservoirs (see p. 62).

Revisions.--WSP 1398: Drainage area.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 8

Nov. 9 to Sept. 30

2.8
3.6

3,710
5,800

2.7
3.9

3,560
6,750

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,060	4,150	4,500	5,150	5,490	4,770	5,460	4,370	4,050	3,930	3,860	3,820
2	3,940	4,710	4,800	5,100	5,490	5,070	5,460	4,270	4,050	3,950	3,860	3,840
3	3,960	4,540	5,800	4,960	5,460	5,520	5,490	4,240	4,170	3,950	3,840	3,860
4	3,990	4,850	5,320	4,770	5,290	5,820	5,660	4,270	4,140	3,950	3,840	3,930
5	4,050	4,770	*5,240	4,820	5,260	5,600	5,540	4,120	4,050	3,930	3,860	3,950
6	4,060	4,850	5,120	5,100	5,260	*5,600	5,800	4,290	4,400	3,910	3,790	4,000
7	4,100	5,650	5,320	5,240	5,260	5,380	5,430	4,140	4,270	3,910	3,840	4,020
8	4,060	4,900	5,570	4,990	5,260	5,120	4,190	4,190	3,930	3,860	3,860	
9	4,060	5,490	5,400	5,040	5,180	5,400	5,100	4,170	4,190	4,020	3,860	3,910
10	4,120	5,240	5,460	5,010	5,100	5,380	*4,930	4,120	4,190	3,950	3,840	3,910
11	3,960	4,850	5,960	5,150	5,180	5,380	4,820	4,140	4,170	*3,860	3,840	3,880
12	4,050	5,100	6,720	*5,460	5,070	5,320	4,820	4,100	4,140	3,750	3,770	3,950
13	3,990	5,150	5,210	5,660	5,070	5,320	4,770	4,050	4,100	3,840	*5,770	3,910
14	4,100	5,180	5,490	6,250	5,240	5,320	4,820	4,140	4,100	4,000	3,750	3,880
15	4,150	5,150	5,380	5,380	5,240	5,380	4,580	4,190	4,100	3,950	3,790	3,910
16	4,030	5,040	5,350	5,710	5,320	5,240	4,500	4,170	4,050	3,860	3,880	3,910
17	3,940	5,040	5,210	5,400	5,380	5,120	4,450	4,240	4,070	3,860	3,930	3,930
18	3,920	5,100	5,210	5,380	5,400	5,290	4,290	4,240	4,000	3,880	3,860	3,930
19	4,150	5,320	5,100	5,400	5,380	5,260	4,370	4,270	4,000	3,910	3,840	3,950
20	4,310	5,550	5,100	5,320	5,400	5,290	4,420	*4,290	4,020	3,860	3,790	3,930
21	4,310	5,490	5,040	5,210	5,400	5,180	4,290	4,290	4,100	3,860	3,860	3,880
22	4,310	5,320	5,120	5,240	5,400	5,210	4,240	4,190	4,170	3,860	3,840	*3,910
23	4,340	5,350	5,040	5,180	5,350	5,180	4,120	4,140	4,070	3,860	3,910	3,950
24	*4,170	5,240	4,990	5,210	5,350	5,320	4,190	4,140	3,980	3,860	3,930	3,930
25	4,220	5,320	5,070	5,260	5,320	5,210	4,240	4,070	3,950	3,930	3,910	3,880
26	4,460	5,070	4,610	5,380	5,320	5,260	4,190	4,050	3,980	3,910	3,910	4,050
27	4,510	5,180	4,500	5,210	5,040	5,380	4,500	4,050	4,050	3,880	3,910	4,580
28	4,540	4,770	4,610	5,120	4,770	5,260	4,240	4,070	4,050	3,860	3,910	3,980
29	4,480	4,550	4,550	5,520	-	5,380	4,290	4,050	3,950	3,820	3,930	3,820
30	4,850	4,450	5,260	5,570	-----	5,350	4,370	4,050	3,950	3,820	3,910	3,950
31	4,960	-----	5,180	5,660	-----	5,320	-----	4,020	-----	3,840	3,880	-----
Total	130,110	151,480	161,230	165,850	147,680	165,030	142,500	129,130	122,700	120,700	119,570	118,210
Mean	4,197	5,049	5,201	5,285	5,274	5,324	4,750	4,165	4,090	3,894	3,857	3,940
Ac-ft	258,100	300,500	319,800	325,000	292,900	327,300	282,600	256,100	243,400	239,400	237,200	234,500

Calendar year 1958: Max 12,700 Min 3,870 Mean 5,336 Ac-ft 3,863,000
 Water year 1958-59: Max 6,720 Min 3,750 Mean 4,581 Ac-ft 3,317,000

* Discharge measurement made on this day.

1015. White River below Tygh Valley, Oreg.

Location.--Lat 45°14'30", long 121°05'40" in NE¹/₄NE¹/₄ sec.7, T.4 S., R.14 E., on left bank 200 ft below Pacific Power & Light Co.'s powerplant at White River Falls, 2 miles upstream from mouth, and 4 miles east of Tygh Valley.

Drainage area.--368 sq mi.

Records available.--October 1917 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 870.15 ft above mean sea level, datum of 1929, supplementary adjustment of 1947 (levels by Pacific Power & Light Co.). Prior to July 28, 1931, at site 750 ft downstream at different datum. July 28, 1931, to Sept. 30, 1954, at site 700 ft downstream at different datums.

Average discharge.--42 years, 435 cfs (314,900 acre-ft per year).

Extremes.--Maximum discharge during year, 1,630 cfs Dec. 12 (gage height, 4.49 ft); minimum, 60 cfs Oct. 30 (gage height, 1.32 ft); minimum daily, 124 cfs Sept. 12, 13, 15, 1917-59: Maximum discharge, 13,300 cfs Jan. 6, 1923 (gage height, about 13.3 ft), from rating curve extended above 5,000 cfs; minimum, 10 cfs Dec. 11-14, 1919, Aug. 9, 1931 (estimated by observer); minimum daily, 71 cfs Aug. 31, 1941.

Remarks.--Records good. Some regulation at low flow by powerplant. Diversions above station for irrigation.

Revisions (water years).--WSP 1448: 1920, 1923, 1927-28, drainage area.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 27

Jan. 28 to Sept. 30

1.7	125	3.5	895	1.7	116	3.0	575
2.0	197	4.0	1,240	2.0	185	3.5	870
2.5	365	4.5	1,640	2.5	350	4.0	1,230
3.0	595						

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	127	159	*397	575	800	692	814	821	414	200	139	175
2	129	159	418	530	722	*642	961	740	422	197	139	180
3	132	157	644	446	652	600	982	669	426	197	139	175
4	129	214	555	389	680	545	926	590	418	194	170	170
5	127	228	477	432	630	510	905	575	448	194	175	194
6	129	343	459	477	615	490	*856	625	480	191	178	200
7	125	436	595	486	585	475	800	580	452	191	209	168
8	171	468	644	505	570	466	746	565	406	182	172	165
9	174	432	565	575	550	452	710	540	414	172	153	160
10	159	441	622	678	535	452	680	545	390	168	146	133
11	145	345	1,320	753	500	430	680	525	350	168	142	126
12	145	353	1,320	1,360	466	444	674	505	326	162	*137	124
13	143	530	1,040	1,120	452	448	652	525	318	158	165	124
14	140	436	869	882	466	430	825	674	303	*158	160	129
15	138	369	753	810	475	422	595	704	296	155	131	124
16	136	318	678	*759	475	422	550	647	289	180	133	126
17	136	294	639	723	466	430	520	615	289	245	135	129
18	143	318	600	717	462	475	500	*590	282	206	133	139
19	174	741	575	672	452	505	475	565	269	185	131	155
20	*225	810	530	622	430	475	466	550	251	170	155	160
21	184	882	540	580	414	480	470	530	254	215	160	160
22	169	723	510	590	418	490	475	510	239	200	135	155
23	166	666	477	639	430	500	500	525	233	194	131	146
24	161	672	464	778	457	515	550	535	230	188	131	178
25	159	595	446	856	560	495	540	555	224	178	160	185
26	159	530	454	804	704	570	525	565	245	172	168	*412
27	159	480	486	974	580	540	565	525	227	158	139	430
28	161	420	450	1,220	615	525	692	480	224	158	139	292
29	164	400	446	1,040	-	525	849	466	215	155	137	233
30	161	390	570	940	-----	585	863	444	203	153	133	227
31	161	-----	585	856	-----	652	-----	430	-----	146	137	-----
Total	4,731	13,289	19,128	22,788	15,161	15,682	20,146	17,175	9,537	5,590	4,612	5,474
Mean	153	443	617	735	541	506	672	571	318	180	149	182
Ac-ft	9,380	26,360	37,940	45,200	30,070	31,100	39,960	35,140	18,920	11,090	9,150	10,860

Calendar year 1958: Max 2,640 Min 111 Mean 510 Ac-ft 369,300

Water year 1958-59: Max 1,360 Min 124 Mean 422 Ac-ft 305,200

Peak discharge (base, 1,200 cfs).--Dec. 12 (1 a.m.) 1,630 cfs (4.49 ft); Jan. 12 (12 m.) 1,500 cfs (4.32 ft); Jan. 27 (11:30 p.m.) 1,450 cfs (4.26 ft).

* Discharge measurement made on this day.

DESCHUTES RIVER BASIN

1030. Deschutes River at Moody, near Biggs, Oreg.

Location.--Lat 45°37'20", long 120°54'05", in SE $\frac{1}{4}$ sec.26, T.2 N., R.15 E., on right bank at Moody, 1 mile upstream from mouth and 4 miles southwest of Biggs.

Drainage area.--10,500 sq mi, approximately.

Records available.--October 1897 to December 1899 (published as "near Moro"); July 1906 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 167.54 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Oct. 19, 1897, to Dec. 31, 1899, staff gage at site 10 miles upstream at different datum. July 22, 1906, to July 18, 1930, staff gage at site 300 ft downstream at datum 0.5 ft lower.

Average discharge.--55 years, 5,867 cfs (4,248,000 acre-ft per year).

Extremes.--Maximum discharge during year, 9,640 cfs Dec. 12 (gage height, 4.06 ft); minimum, 4,250 cfs Oct. 18 (gage height, 2.44 ft).
1897-99, 1906-59: Maximum discharge, 43,600 cfs Jan. 7, 1923 (gage height, 10.2 ft, site and datum then in use), from rating curve extended above 15,000 cfs; minimum, 2,400 cfs Dec. 5, 1957 (gage height, 1.78 ft).

Remarks.--Records excellent. Some fluctuation caused by regulation at Lake Simtustus, 99 miles upstream. Many diversions for irrigation in upper river basin. Some winter and spring runoff stored in Ochoco Reservoir (capacity, 47,500 acre-ft) and in Crescent Lake, Crane Prairie, and Wickiup Reservoirs (see p. 62).

Revisions.--WSP 754: Drainage area.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 7

Nov. 8 to Sept. 30

2.5 4,420
3.0 5,860
3.5 7,550

2.4 4,120
3.0 5,810
4.0 9,400

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,500	5,560	5,310	6,120	7,360	6,910	6,870	5,960	5,000	4,630	4,390	4,360
2	4,620	4,780	5,480	6,030	6,970	6,770	7,390	5,900	4,970	4,610	4,390	4,280
3	4,500	5,270	6,000	5,870	5,940	6,840	7,280	5,660	5,020	4,610	4,390	4,310
4	4,580	5,270	6,900	5,800	6,840	7,110	7,320	5,540	5,140	4,810	4,390	4,360
5	4,500	5,500	6,220	5,540	6,540	6,940	7,390	5,510	5,160	4,610	4,360	4,390
6	4,500	5,590	6,090	5,660	6,540	6,770	7,390	5,570	5,250	4,580	4,360	4,440
7	*4,560	6,300	6,310	5,870	6,510	6,840	7,360	5,660	5,540	4,580	4,360	4,550
8	4,700	6,180	6,870	6,150	6,380	6,570	6,910	5,450	5,510	4,550	4,390	*4,500
9	4,750	6,470	6,700	6,060	6,410	6,540	6,570	5,420	5,180	4,580	4,420	4,340
10	4,750	6,220	6,440	6,150	6,280	6,380	6,570	5,560	5,160	4,610	4,420	4,390
11	4,730	5,930	7,320	6,380	6,150	6,380	6,380	*5,310	5,140	4,580	4,390	4,360
12	4,560	5,860	8,920	7,790	6,150	6,340	6,250	5,280	5,080	4,500	4,390	4,390
13	4,640	6,000	7,830	8,290	5,960	6,340	6,180	5,220	5,020	4,360	4,360	4,420
14	4,590	6,120	6,910	7,980	6,030	6,280	6,180	5,310	5,000	4,420	4,340	4,360
15	4,530	5,900	6,600	7,530	6,220	6,310	6,060	5,540	*4,970	4,580	4,340	4,390
16	4,640	5,750	6,600	6,940	*6,310	6,280	5,810	5,570	4,940	4,500	4,360	4,390
17	4,620	*5,660	6,510	6,910	6,340	6,090	5,690	5,540	4,880	4,420	4,470	4,420
18	4,670	5,690	6,280	6,800	6,510	6,090	5,570	5,570	4,860	4,390	4,500	4,500
19	4,640	6,380	6,220	6,600	6,440	6,250	5,450	5,510	4,860	4,420	4,390	4,520
20	5,070	7,140	6,030	6,540	6,340	6,280	5,510	5,510	4,830	4,440	4,360	4,550
21	5,100	7,640	6,060	6,470	6,410	6,280	5,510	5,510	4,830	4,390	4,340	4,580
22	5,040	7,010	6,000	6,310	6,340	6,280	5,360	5,450	4,880	4,390	4,340	4,550
23	5,070	6,670	6,000	6,340	6,380	6,280	5,310	5,340	4,910	4,420	4,340	4,550
24	4,870	6,600	5,960	6,470	6,510	6,340	5,250	5,340	4,800	4,470	4,420	4,520
25	5,040	6,510	5,840	6,940	6,470	6,340	5,360	5,310	4,740	4,500	4,420	4,520
26	4,900	6,340	5,840	6,800	7,530	6,410	5,420	5,220	4,720	4,520	4,420	4,470
27	5,150	6,030	5,390	7,180	7,010	6,540	5,420	5,140	4,720	4,470	4,420	5,160
28	5,180	6,030	5,390	8,560	6,970	6,540	5,720	5,110	4,740	*4,420	4,420	5,140
29	5,180	5,540	5,450	7,680	-	6,510	5,810	5,080	4,740	4,390	4,420	4,610
30	5,180	5,340	*5,630	7,720	-----	6,700	5,810	5,050	4,660	4,360	4,440	4,440
31	5,470	-----	6,310	7,640	-----	*6,770	-----	5,020	-----	4,390	4,420	-----
Total	148,740	181,080	195,110	208,920	182,840	200,900	185,100	187,960	149,030	139,300	136,170	134,760
Mean	4,798	6,058	6,294	6,739	6,530	6,481	6,170	5,418	4,968	4,494	4,393	4,492
Ac-ft	295,000	369,200	397,000	414,400	362,700	398,500	367,100	333,100	295,600	276,500	270,100	267,300
Calendar year 1958:	Max 17,000			Min 4,500		Mean 6,681		Ac-ft 4,822,000				
Water year 1958-59:	Max 8,920			Min 4,280		Mean 5,561		Ac-ft 4,026,000				

* Discharge measurement made on this day.

1057. Columbia River at The Dalles, Oreg.

Location.--Lat 45°36'10", long 121°10'40", in NW $\frac{1}{4}$ sec.3, T.1 N., R.13 E., at upstream end of Port of The Dalles dock at The Dalles, 3.2 miles downstream from The Dalles Dam and at mile 189.3.

Drainage area.--237,000 sq mi, approximately.

Records available.--June 1878 to September 1959. Published as "near The Dalles" 1936-56. Maximum discharge only for each year in period 1858-77 at Lower Cascades Landing, published in WSP 1318.

Gage.--Water-stage recorder. Auxiliary water-stage recorder 19.3 miles downstream at Hood River. Datum of both gages is at mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 1, 1931, records based on staff gage near present site at datum 46.98 ft higher, supplemented for a few short periods by gage-height records at Umatilla and Cascade Locks. Oct. 1, 1931, to May 1, 1935, staff gage in entrance to Celilo Canal 11.6 miles upstream at datum 37.71 ft higher. May 2, 1935, to Mar. 15, 1957, water-stage recorder at site 11.7 miles upstream at datum 0.12 ft higher.

Average discharge.--81 years, 195,300 cfs (141,400,000 acre-ft per year).

Extremes.--Maximum discharge during year, 555,000 cfs June 23 (gage height, 91.19 ft); minimum daily, 94,200 cfs Oct. 6.
1858-1959: Maximum discharge, 1,240,000 cfs June 6, 1894 (gage height, 59.6 ft, site and datum then in use); minimum observed, 35,000 cfs Jan. 12, 1937 (gage height, 126.0 ft, site and datum then in use).

Remarks.--Records excellent. Some regulation by Franklin D. Roosevelt Lake and by reservoirs in Kootenai Flathead, Pend Oreille, Spokane, Chelan, Yakima, and Snake River basins. Diurnal fluctuations caused by powerplant and gates at The Dalles Dam. Many diversions for irrigation above station. Records of chemical analyses and water temperatures for the water year 1959 are given in WSP 1644.

Revisions (water years).--WSP 534: 1920(m). WSP 1094: 1894. WSP 1248: 1886, 1888, 1899, 1909. WSP 1518: 1876(M).

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	97,000	96,500	114,000	120,000	180,000	156,000	166,000	274,000	415,000	514,000	249,000	126,000
2	96,000	95,400	112,000	127,000	172,000	157,000	175,000	292,000	436,000	494,000	245,000	150,000
3	96,800	97,800	108,000	127,000	169,000	160,000	159,000	324,000	437,000	484,000	231,000	125,000
4	99,000	96,800	110,000	122,000	156,000	170,000	206,000	336,000	456,000	436,000	223,000	132,000
5	94,800	99,200	116,000	116,000	150,000	162,000	211,000	312,000	454,000	429,000	214,000	123,000
6	94,200	99,100	126,000	104,000	143,000	156,000	220,000	310,000	468,000	423,000	201,000	128,000
7	95,700	99,400	128,000	108,000	152,000	156,000	218,000	309,000	496,000	411,000	199,000	127,000
8	95,800	101,000	125,000	128,000	148,000	180,000	216,000	308,000	526,000	399,000	182,000	124,000
9	95,500	114,000	119,000	123,000	140,000	162,000	215,000	311,000	525,000	393,000	187,000	130,000
10	94,700	114,000	120,000	*109,000	142,000	180,000	204,000	312,000	525,000	375,000	186,000	*125,000
11	95,300	115,000	128,000	111,000	136,000	159,000	193,000	314,000	*520,000	371,000	182,000	124,000
12	95,500	118,000	138,000	112,000	121,000	154,000	186,000	305,000	501,000	367,000	174,000	131,000
13	94,900	119,000	160,000	125,000	128,000	153,000	188,000	318,000	494,000	357,000	170,000	141,000
14	95,400	113,000	179,000	146,000	124,000	151,000	194,000	330,000	520,000	339,000	159,000	137,000
15	95,700	118,000	168,000	156,000	124,000	151,000	196,000	326,000	534,000	337,000	163,000	139,000
16	98,400	120,000	158,000	156,000	124,000	152,000	207,000	346,000	539,000	336,000	155,000	141,000
17	99,400	113,000	143,000	156,000	124,000	152,000	210,000	388,000	529,000	331,000	153,000	148,000
18	95,600	110,000	146,000	152,000	127,000	160,000	212,000	394,000	521,000	329,000	154,000	169,000
19	96,200	109,000	146,000	155,000	130,000	157,000	206,000	*385,000	519,000	330,000	147,000	178,000
20	96,700	109,000	143,000	157,000	140,000	165,000	*202,000	367,000	509,000	334,000	140,000	184,000
21	97,600	110,000	139,000	159,000	147,000	162,000	194,000	359,000	538,000	334,000	139,000	184,000
22	111,000	107,000	125,000	151,000	148,000	162,000	188,000	344,000	552,000	318,000	133,000	188,000
23	115,000	104,000	117,000	149,000	158,000	159,000	201,000	346,000	551,000	323,000	132,000	188,000
24	111,000	104,000	118,000	155,000	*156,000	159,000	215,000	369,000	549,000	318,000	132,000	187,000
25	107,000	120,000	120,000	163,000	150,000	160,000	222,000	382,000	*542,000	310,000	131,000	178,000
26	107,000	127,000	117,000	*204,000	151,000	161,000	233,000	395,000	541,000	315,000	129,000	170,000
27	104,000	120,000	114,000	159,000	157,000	163,000	247,000	415,000	532,000	319,000	132,000	169,000
28	102,000	110,000	112,000	185,000	156,000	184,000	244,000	420,000	535,000	*299,000	136,000	174,000
29	102,000	115,000	112,000	193,000	-	165,000	256,000	410,000	539,000	280,000	127,000	182,000
30	102,000	116,000	115,000	199,000	-----	170,000	266,000	412,000	528,000	271,000	119,000	199,000
31	96,400	-----	121,000	182,000	-----	163,000	-----	407,000	-----	266,000	130,000	-----
Total	*3077.6	*3,298	*3,992	*4,547	*4,052	*4,941	*6,280	*10,820	*15,345	*11,142	*5,154	*4,581
Mean	99,280	105,900	127,800	147,700	144,700	159,400	209,300	340,000	511,500	359,400	186,300	152,700
Ac-ft	*6,104	*6,541	*7,918	*9,019	*8,037	*9,800	*12,460	*21,460	*30,440	*22,100	*10,220	*9,086
Calendar year 1958: Max 584,000 Min 88,000 Mean 184,700 Ac-ft 133,700,000												
Water year 1958-59: Max 552,000 Min 94,200 Mean 211,600 Ac-ft 153,200,000												

* Discharge measurement made on this day.

* Expressed in thousands.

1070. Klickitat River above West Fork, near Glenwood, Wash.

Location.--Lat 46°15'40", long 121°14'30", in S½ sec.18, T.9 N., R.13 E., on right bank half a mile upstream from Swamp Creek, 1½ miles upstream from West Fork, and 17 miles north of Glenwood.

Drainage area.--151 sq mi.

Records available.--October 1944 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Altitude of gage is 2,720 ft (from river-profile map).

Average discharge.--15 years, 346 cfs (250,500 acre-ft per year).

Extremes.--Maximum discharge during year, 1,100 cfs Dec. 3 (gage height, 2.78 ft); minimum, 83 cfs Oct. 3-7 (gage height, 1.02 ft).
1944-59: Maximum discharge, 3,280 cfs May 27, 1948 (gage height, 4.28 ft); minimum, 4.4 cfs Feb. 1, 1957 (result of freezeup, discharge measurement); minimum gage height recorded, 0.89 ft Nov. 21, 1957.

Remarks.--Records good. No regulation or diversion above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 30		May 1 to Sept. 30	
1.0	78	1.1	97
1.3	160	1.5	225
1.6	275	2.0	475
2.0	490	3.0	1,320
3.0	1,320		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	87	104	284	394	*302	207	318	881	743	395	150	105	
2	87	104	424	340	288	192	454	751	845	406	147	*102	
3	85	124	949	259	288	184	424	679	917	385	144	*97	
4	83	207	618	*251	288	174	442	827	917	358	141	110	
5	83	211	484	306	271	178	478	557	944	348	138	147	
6	83	716	418	335	267	178	460	531	908	333	135	160	
7	100	518	424	311	255	178	436	557	881	308	132	141	
8	297	630	370	370	251	181	418	591	727	290	129	141	
9	160	472	335	525	247	181	412	605	695	281	126	126	
10	167	376	382	478	239	181	418	591	635	295	123	120	
11	144	325	772	436	215	178	448	557	649	308	120	115	
12	128	494	820	511	195	184	466	571	679	318	123	110	
13	120	460	602	454	243	181	478	657	727	318	120	107	
14	114	350	504	406	235	170	460	872	664	299	118	107	
15	114	284	442	382	215	174	424	335	588	281	115	107	
16	109	251	400	370	215	174	412	845	585	267	115	105	
17	106	251	370	370	207	184	*406	793	551	263	115	102	
18	114	*259	382	370	195	199	406	*759	544	254	115	115	
19	167	360	365	355	188	192	394	695	620	250	115	138	
20	141	406	345	330	181	181	412	657	719	242	113	153	
21	120	574	365	316	178	188	454	649	695	229	110	147	
22	112	504	330	311	174	188	532	657	649	217	110	135	
23	109	511	306	345	170	188	616	743	*598	210	107	126	
24	106	484	298	504	164	184	651	819	551	206	105	123	
25	104	394	293	484	164	192	623	802	551	195	102	120	
26	104	330	288	430	164	199	609	735	494	187	102	220	
27	104	302	275	430	*160	192	588	679	458	180	110	233	
28	104	345	263	400	167	199	616	627	434	170	110	191	
29	101	306	259	360	-	199	772	827	423	160	107	173	
30	101	263	325	345	-----	203	332	635	401	*156	102	156	
31	101	-----	345	330	-----	211	-----	664	-----	153	105	-----	
Total	3,655	10,915	13,035	11,808	6,126	5,794	14,959	21,348	19,802	8,262	3,704	4,032	
Mean	118	364	420	381	219	187	499	689	660	267	119	134	
Cfsm	0.781	2.41	2.78	2.52	1.45	1.24	3.30	4.56	4.37	1.77	0.788	0.887	
In.	0.90	2.69	3.21	2.91	1.51	1.45	3.68	5.26	4.88	2.03	0.91	0.99	
Ac-ft	7,250	21,650	25,850	23,420	12,150	11,490	29,670	42,340	39,280	16,390	7,350	8,000	
Calendar year 1958: Max	1,750			Min	78	Mean	348	Cfsm	2.28	In.	30.95	Ac-ft	249,300
Water year 1958-59: Max	949			Min	83	Mean	338	Cfsm	2.24	In.	30.40	Ac-ft	244,800

Peak discharge (base, 1,300 cfs, revised).--No peak above base.

* Discharge measurement made on this day.

1100. Klickitat River near Glenwood, Wash.

Location.--Lat 46°05'20", long 121°15'30", in SE¼ sec.14, T.7 N., R.12 E., on left bank half a mile downstream from Dairy Creek, 5 miles north of Glenwood, and 7 miles upstream from Trout Creek.

Drainage area.--360 sq mi.

Records available.--June to September 1905 and July 1907 to June 1908 (discharge measurements only), October 1909 to October 1956, November 1956 to June 1957 (monthly discharge only), July 1957 to September 1959. Monthly discharge only for some periods, published in WSP 1318. Prior to Oct. 29, 1909, published as "above and below Big Muddy River, near Klickitat."

Gage.--Water-stage recorder. Datum of gage is 1,703 ft above mean sea level, datum of 1929. Prior to July 19, 1910, staff gages and July 19 to Dec. 16, 1910, water-stage recorder, at site 1½ miles upstream at different datum. Dec. 17, 1910, to Sept. 30, 1918, water-stage recorder at datum 1.50 ft higher and Oct. 1, 1918, to Nov. 6, 1928, water-stage recorder at datum 0.50 ft higher, at site 50 ft downstream. Nov. 7, 1928, to Sept. 30, 1934, at present site at datum 1 ft higher.

Average discharge.--50 years (1909-59), 848 cfs (613,900 acre-ft per year).

Extremes.--Maximum discharge during year, 2,230 cfs Dec. 3 (gage height, 4.94 ft); minimum, 376 cfs Oct. 6, 7 (gage height, 2.64 ft).

1909-59: Maximum discharge, 9,870 cfs Dec. 22, 1933 (gage height, 7.9 ft, present datum), from rating curve extended above 2,000 cfs; minimum, 204 cfs Nov. 28, 1931.

Revisions.--The maximum discharge for water year 1920 has been revised to 1,960 cfs Jan. 26, 1920 (gage height, 2.80 ft), superseding figures published in WSP 514 and 1318.

Remarks.--Records excellent. All low-water flow of Hellroaring Creek, a tributary of Big Muddy Creek, is diverted for irrigation of about 7,000 acres below station in the vicinity of Glenwood. No regulation.

Revisions (water years).--WSP 1398: 1927.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 6		Nov. 7 to Sept. 30	
2.6	360	2.7	370
3.0	540	3.3	650
3.5	840	4.0	1,180
4.2	1,450	5.0	2,310

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*400	418	752	946	*922	634	858	1,910	1,520	922	530	402
2	404	418	1,120	858	890	606	1,070	1,670	1,700	906	515	*386
3	392	450	2,030	674	874	590	1,030	1,520	1,810	862	495	390
4	388	618	1,430	*650	858	575	1,040	1,430	1,850	845	500	430
5	388	651	1,160	745	822	575	1,100	1,320	1,910	836	482	505
6	376	1,400	1,020	773	815	575	1,080	1,260	1,830	808	482	550
7	388	1,290	1,060	780	780	575	1,040	1,270	1,610	773	505	482
8	702	1,350	946	946	759	580	1,020	1,330	1,470	731	515	459
9	510	1,200	858	1,290	752	575	1,020	1,370	1,440	717	486	434
10	515	1,010	1,020	1,250	738	570	1,020	1,360	1,350	738	468	426
11	486	836	1,740	1,250	686	560	1,070	1,280	1,430	773	464	434
12	472	1,140	1,800	1,540	639	570	1,090	1,270	1,510	808	450	422
13	458	1,070	1,400	1,320	680	575	1,120	1,390	1,560	801	450	426
14	445	858	1,180	1,180	686	560	1,090	1,790	1,440	759	442	426
15	432	731	1,070	1,090	668	*555	1,040	1,240	1,320	738	442	418
16	427	644	986	1,050	668	580	*1,000	1,790	1,280	717	454	410
17	427	595	922	1,010	650	560	994	1,580	1,230	710	446	406
18	450	*704	946	986	628	600	594	*1,610	1,200	710	426	442
19	515	930	922	930	612	595	978	1,500	1,300	704	422	595
20	500	1,130	930	882	600	575	1,000	1,430	1,430	692	418	505
21	463	1,310	922	850	585	585	1,070	1,410	1,450	680	414	464
22	445	1,200	858	829	580	580	1,190	1,410	1,380	674	414	442
23	436	1,190	858	895	575	595	1,310	1,550	1,280	668	414	434
24	422	1,150	794	1,350	560	590	1,390	1,710	*1,250	662	406	430
25	422	994	780	1,280	565	612	1,350	1,700	1,190	622	398	426
26	427	836	794	1,190	560	639	1,310	1,590	1,090	600	414	634
27	422	738	759	1,250	555	617	1,300	1,500	1,030	570	446	580
28	418	724	724	1,150	560	639	1,320	1,420	970	530	418	525
29	414	704	1,070	1,070	639	639	1,610	1,380	954	520	398	495
30	414	698	808	1,030	674	674	1,950	1,390	822	*515	390	472
31	418	-----	850	970	686	686	1,410	1,410	525	398	-----	472
Total	13,776	26,987	32,099	32,081	19,267	18,441	34,454	46,590	41,686	22,134	13,902	13,850
Cfsm	444	900	1,035	1,035	688	595	1,148	1,503	1,390	714	448	462
Mean	1.23	2.50	2.88	2.88	1.91	1.65	3.19	4.18	3.86	1.98	1.24	1.28
In.	2.42	2.79	3.32	3.31	1.99	1.91	3.56	4.81	4.31	2.29	1.44	1.45
Ac-ft	27,320	53,530	63,670	63,630	38,220	36,580	68,340	92,410	82,680	43,900	27,570	27,470
Calendar year 1958: Max	3,520	Min	364	Mean	933	Cfsm	2.59	In.	35.20	Ac-ft	675,700	
Water year 1958-59: Max	2,030	Min	376	Mean	864	Cfsm	2.40	In.	32.58	Ac-ft	625,300	

* Discharge measurement made on this day.

1120. Little Klickitat River near Goldendale, Wash.

Location.--Lat 45°48'45", long 120°46'50", in SW $\frac{1}{4}$ sec.10, T.4 N., R.16 E., on left bank 150 ft (revised) upstream from highway bridge, 2 $\frac{1}{2}$ miles northeast of Goldendale, 7 $\frac{1}{2}$ miles downstream from Emerson Creek, and 13 miles upstream from mouth. Prior to Oct. 1, 1958, at site 136 ft downstream.

Drainage area.--78 sq mi, approximately.

Records available.--October 1910 to June 1912, October 1946 to September 1951. October 1957 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 1,690 ft (by altimeter). Prior to July 1, 1912, staff gage 40 ft upstream from present highway bridge at different datum. Oct. 21, 1946, to Feb. 11, 1951, water-stage recorder at site 250 ft downstream at different datum, destroyed by flood of Feb. 11, 1951. Apr. 11 to Sept. 30, 1951, staff gage just downstream from highway bridge at different datum. Oct. 27, 1957, to Sept. 30, 1958, staff gage just upstream from highway bridge at same datum.

Average discharge.--8 years (1910-11, 1946-51, 1957-59), 68.0 cfs (49,230 acre-ft per year).

Extremes.--Maximum discharge during year, 526 cfs Jan. 11 (gage height, 6.07 ft); minimum, 0.9 cfs Aug. 31 (gage height, 1.92 ft).
1910-12, 1946-51, 1957-59: Maximum discharge, 1,760 cfs Jan. 7, 1948 (gage height, 5.55 ft, site and datum then in use), from rating curve extended above 665 cfs; minimum, 0.6 cfs Aug. 28, 1947.

Remarks.--Records good except those for periods of ice effect or doubtful gage-height record, which are fair. Several small diversions for domestic use and irrigation above station. No regulation.

Revisions (water years).--WSP 1318: 1911.

Rating tables, water year 1958-59, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 11				Jan. 12 to Sept. 30			
2.45	2.5	3.5	36	2.0	1.0	3.5	38
2.8	6.9	4.0	83	2.3	2.0	4.0	83
3.1	14.5	5.0	240	2.7	7.2	5.0	240
				3.1	18.5	5.7	415

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.6	44.4	25	88	136	113	205	64	25	8.4	1.4	*1.3
2	2.6	44.8	51	75	122	113	222	58	25	8.0	1.4	1.1
3	2.6	46.7	57	38	115	104	167	53	28	7.6	1.7	1.0
4	2.6	48.0	44	b37	104	95	180	51	28	7.4	1.4	1.3
5	2.6	11	39	*b50	94	90	164	48	30	7.6	1.4	2.8
6	2.5	12	37	b55	87	84	147	44	28	7.2	1.7	3.2
7	2.7	11.5	65	b60	76	79	132	40	26	6.4	1.4	3.0
8	4.4	9.8	60	b65	73	75	120	39	24	6.1	1.4	2.3
9	4.8	10.5	53	68	70	72	108	39	25	5.8	1.3	1.9
10	4.9	11.5	65	107	68	68	100	37	24	5.4	1.2	1.8
11	4.0	9.0	173	208	62	64	94	35	22	4.7	1.3	1.6
12	3.9	9.5	132	413	55	64	90	33	21	4.4	1.3	1.3
13	3.8	22	105	272	*56	62	85	33	20	4.3	1.5	1.2
14	3.7	14.5	85	212	56	58	*81	37	19	4.3	1.3	1.2
15	3.6	11	73	174	52	55	76	39	18.5	3.8	1.3	1.9
16	3.6	9.8	66	166	53	*54	71	38	18	3.6	1.2	2.0
17	3.6	*10	61	142	51	55	67	*38	17	3.2	1.2	2.2
18	4.2	30	56	131	50	59	63	37	15.5	2.8	1.6	4.3
19	4.8	*83	52	114	48	58	58	34	14.5	2.5	1.8	7.6
20	5.1	146	49	98	47	56	55	33	12.5	2.3	1.9	6.1
21	4.6	117	46	85	47	55	52	32	13	2.2	1.9	4.7
22	4.3	77	42	87	48	54	52	31	12.5	1.9	1.5	3.9
23	4.4	61	38	143	58	63	52	32	*12	2.1	1.1	3.8
24	4.3	52	37	298	60	67	51	32	12	2.3	1.1	3.4
25	4.3	44	38	238	87	74	51	33	11.5	2.3	1.1	3.3
26	4.3	38	57	210	79	114	50	32	11	2.1	1.1	3.6
27	4.4	b53	67	308	78	96	48	31	10.5	2.1	1.3	3.6
28	4.4	b29	242	59	96	96	30	28	10.5	2.1	1.3	3.3
29	4.4	b26	58	207	9	99	51	28	11.5	2.2	1.0	3.2
30	4.2	b23	81	180	-----	132	63	26	9.6	1.8	1.1	3.2
31	4.3	-----	84	161	-----	147	-----	25	-----	*1.8	1.1	-----
Total	120.5	935.0	1,932	4,730	2,019	2,478	2,834	1,162	553.1	128.9	42.1	85.1
Mean	3.89	31.2	62.3	153	72.1	79.9	94.5	37.5	18.4	4.16	1.36	2.84
Cfsm	0.050	0.400	0.799	1.96	0.924	1.02	1.21	0.481	0.236	0.053	0.017	0.036
In.	0.06	0.45	0.92	2.26	0.96	1.18	1.35	0.55	0.26	0.06	0.02	0.04
Ac-ft	239	1,850	3,830	9,380	4,000	4,920	5,620	2,300	1,100	256	84	169

Calendar year 1958: Max 572 Min 1.3 Mean 71.7 Cfsm 0.919 In. 12.49 Ac-ft 51,880
Water year 1958-59: Max 413 Min 1.0 Mean 46.6 Cfsm 0.597 In. 8.11 Ac-ft 33,750

Peak discharge (base, 500 cfs).--Jan. 11 (9:45 p.m.) 526 cfs (6.07 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

d Doubtful gage-height record; discharge estimated on basis of records for nearby stations.

1125. Little Klickitat River near Wahkiacus, Wash.

Location.--Lat 45°50'30", long 121°03'20", in SE $\frac{1}{4}$ sec.9, T.4 N., R.14 E., on right bank half a mile downstream from Bowman Creek, three-quarters of a mile upstream from mouth, and 2 miles northeast of Wahkiacus.

Drainage area.--280 sq mi, approximately.

Records available.--November 1944 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 576.2 ft above mean sea level (river-profile survey). Prior to Dec. 29, 1950, staff gage and crest-stage indicator at same site and datum.

Average discharge.--14 years (1945-59), 197 cfs (142,600 acre-ft per year).

Extremes.--Maximum discharge during year, 1,910 cfs Jan. 12 (gage height, 6.13 ft); minimum, 18 cfs Aug. 2, 3 (gage height, 2.38 ft).
1944-59: Maximum discharge, 7,000 cfs Jan. 7, 1948 (gage height, 9.4 ft, from high-water mark), from rating curve extended above 2,600 cfs; minimum observed, 17 cfs Aug. 3-6, 11, 16-27, Aug. 29 to Sept. 3, 1945, Aug. 30, 1947, Sept. 5, 6, 1955; minimum gage height observed, 1.24 ft Aug. 25, 26, 27, 1945.

Remarks.--Records excellent. Small diversions above station for irrigation. No regulation.

Revisions (water years).--WSP 1248: Drainage area. WSP 1348: 1945(M), 1946, 1947(M), 1948.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

2.39	18.5	4.0	290
2.6	32	4.5	505
3.0	74	5.0	810
3.5	156	6.0	1,760

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	40	71	176	329	297	365	152	62	38	19	*22
2	30	41	80	154	290	297	410	140	60	33	18.5	19.5
3	31	45	125	99	274	274	370	131	80	34	19	19.5
4	31	58	99	88	254	248	337	127	60	34	19.5	21
5	30	62	88	108	231	231	311	125	65	34	20	24
6	28	59	83	*123	220	220	287	118	65	34	21	27
7	29	57	155	144	202	207	260	112	62	32	21	26
8	33	56	151	152	200	197	240	107	59	31	21	26
9	36	60	110	197	197	190	223	105	58	30	22	24
10	36	59	128	314	192	183	210	105	59	29	21	24
11	36	51	349	590	180	171	205	104	58	28	21	23
12	36	51	260	1,420	163	167	197	98	56	28	21	23
13	36	75	197	719	*160	163	192	93	54	25	21	24
14	35	75	167	510	183	156	185	94	55	26	21	24
15	34	59	146	419	185	152	*183	99	54	26	20	26
16	34	52	136	414	185	*148	169	98	53	24	21	27
17	34	*46	132	349	205	148	163	*96	52	25	21	27
18	37	67	123	308	220	150	156	96	47	24	20	34
19	39	187	116	270	207	150	150	90	45	23	19.5	44
20	39	212	112	240	197	142	142	86	43	22	21	40
21	37	212	108	212	197	142	138	83	43	21	22	37
22	38	150	102	210	212	142	136	80	41	19	21	36
23	40	122	96	392	284	146	134	78	*41	20	21	35
24	36	105	93	954	276	163	136	77	41	21	22	34
25	39	96	107	572	283	163	134	78	41	20	21	34
26	40	80	218	490	270	270	134	77	40	20	19.5	36
27	40	68	218	740	251	210	151	73	37	19.5	21	35
28	39	73	158	582	257	205	129	73	36	19.5	22	35
29	39	70	152	470	-	205	151	71	45	21	22	35
30	39	74	183	410	-----	353	142	65	41	21	22	36
31	39	-----	180	374	-----	322	-----	64	-----	*19	23	-----
Total	1,104	2,462	4,423	12,200	6,304	6,212	6,100	2,995	1,536	800.0	645.0	878.0
Mean	35.6	82.1	143	394	225	200	203	96.8	51.2	25.8	20.8	29.3
Ac-ft	2,190	4,880	8,770	24,200	12,500	12,320	12,100	5,940	3,050	1,590	1,280	1,740
Calendar year 1958: Max	1,630			Min	23			Mean	188	Ac-ft	136,300	
Water year 1958-59: Max	1,420				Min	18.5		Mean	125	Ac-ft	90,560	

Peak discharge (base, 1,600 cfs).--Jan. 12 (3 to 4 a.m.) 1,910 cfs (6.13 ft).

* Discharge measurement made on this day.

1130. Klickitat River near Pitt, Wash.

Location.--Lat 45°45'30", long 121°12'30", in SW $\frac{1}{4}$ sec.8, T.3 N., R.13 E., on left bank $\frac{3}{4}$ miles south of Pitt, 5 miles upstream from Silvias Creek, and 7 miles upstream from mouth at Lyle.

Drainage area.--1,290 sq mi, approximately.

Records available.--July 1909 to January 1912, October 1928 to September 1959. Published as "at Klickitat" 1909-12 and as "at Pitt" 1928-35.

Gage.--Water-stage recorder. Datum of gage is 288.9 ft above mean sea level (river-profile survey). July 3, 1909, to Jan. 31, 1912, staff gage at Klickitat just downstream from Snider Creek, 7 miles upstream at different datum. Oct. 1, 1928, to Sept. 30, 1935, staff gage at site 175 ft downstream from highway bridge at Pitt, 3.5 miles upstream from present site at different datum.

Average discharge.--33 years (1909-11, 1928-59), 1,596 cfs (1,155,000 acre-ft per year).

Extremes.--Maximum discharge during year, 6,470 cfs Jan. 12 (gage height, 7.40 ft); minimum, 702 cfs Oct. 6, 7 (gage height, 3.89 ft).
1909-12, 1928-59: Maximum discharge, 25,500 cfs Dec. 22, 1933 (gage height, 12.50 ft, site and datum then in use, from graph based on gage readings), from rating curve extended above 3,400 cfs on basis of velocity-area study and gage-height curve of relation; minimum, 466 cfs Feb. 4, 1937.

Remarks.--Records excellent except those for periods of no gage-height record, which are good. Several small diversions above station for irrigation of about 7,500 acres mostly in vicinity of Glenwood. Measured flow of Hellroaring Irrigation Canal, 73.2 cfs Aug. 25, 1948. No regulation.

Revisions (water years).--WSP 1218: Drainage area. WSP 1348: 1910(M), 1929-33(M), 1934, 1935-38(M), 1940(M), 1942-43(M), 1946(M), 1948(M).

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

3.9	710
5.0	1,900
6.0	3,460
7.5	6,710

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	746	764	1,160	1,690	2,420	2,040	2,540	2,700	1,970	1,380	920	730
2	746	755	1,310	1,620	2,260	2,070	2,890	2,470	2,140	1,340	880	*730
3	737	773	2,490	1,310	2,180	1,940	2,730	2,250	2,280	1,320	870	728
4	746	980	2,190	1,220	2,100	1,850	2,650	2,140	2,320	1,280	*872	764
5	737	1,040	1,770	1,360	2,000	1,770	2,620	2,030	2,380	1,260	863	890
6	719	1,450	1,580	*1,470	1,910	1,720	2,560	1,900	2,400	1,240	870	935
7	719	2,040	1,670	1,420	1,820	1,650	2,410	1,870	2,210	1,190	890	935
8	980	1,770	1,630	1,530	1,640	2,290	1,940	2,030	1,150	900	900	881
9	962	1,760	1,480	2,070	1,760	1,620	2,220	1,980	1,960	1,120	850	854
10	872	1,630	1,500	2,540	1,730	1,580	2,150	2,000	1,890	1,120	830	827
11	845	1,360	2,540	3,180	1,630	1,530	2,140	1,900	1,890	1,150	820	827
12	827	1,330	2,880	5,790	1,530	1,530	2,140	1,850	2,000	1,180	800	827
13	809	1,670	2,340	4,610	1,540	1,530	2,150	1,900	2,100	1,200	800	827
14	791	1,460	1,980	3,640	*1,600	1,460	2,110	2,240	2,000	1,170	780	809
15	773	1,260	1,770	3,140	1,590	1,440	*2,040	2,500	1,840	1,140	790	809
16	773	1,120	1,650	2,910	1,590	1,410	1,940	*2,410	1,770	1,120	810	800
17	764	*1,040	1,580	2,670	1,590	*1,440	1,900	2,290	1,730	1,090	790	791
18	791	1,110	1,540	2,500	1,600	1,480	1,870	2,220	1,640	1,090	770	845
19	854	1,670	1,540	2,340	1,570	1,500	1,800	2,110	1,700	1,080	760	980
20	872	1,740	1,480	2,180	1,530	1,450	1,780	2,000	1,860	1,080	750	1,000
21	827	2,100	1,500	2,010	1,510	1,460	1,840	1,980	1,910	1,060	750	908
22	820	1,870	1,460	1,940	1,510	1,470	1,930	1,930	1,870	1,050	750	872
23	782	1,800	1,380	2,300	1,640	1,500	2,070	1,900	*1,780	1,040	740	845
24	773	1,770	1,340	3,930	1,670	1,500	2,180	2,220	1,670	1,060	730	845
25	755	1,650	1,360	3,640	1,730	1,540	2,150	2,280	1,670	1,020	720	836
26	755	1,370	1,600	3,260	1,810	1,890	2,100	2,180	1,570	1,000	760	971
27	746	1,200	1,720	3,830	1,800	1,740	2,040	2,100	1,500	962	800	1,080
28	746	1,170	1,530	3,550	1,800	1,760	2,010	1,980	1,440	926	750	980
29	737	1,120	1,570	2,130	1,700	1,500	2,100	1,890	1,420	890	770	0.75
30	737	1,160	1,580	2,860	-----	2,280	2,590	1,870	1,390	881	720	935
31	737	-----	1,640	2,640	-----	2,410	-----	1,870	-----	900	740	-----
Total	24,458	42,002	52,690	82,300	49,200	51,970	66,040	65,070	56,290	34,489	24,795	26,005
Mean	789	1,400	1,700	2,655	1,757	1,676	2,201	2,099	1,876	1,113	800	867
Cfs/m	0.612	1.09	1.32	2.06	1.36	1.30	1.71	1.63	1.45	0.863	0.620	0.672
In.	0.71	1.26	1.52	2.37	1.42	1.50	2.10	1.88	1.42	0.89	0.71	0.75
Ac-ft	48,510	83,310	104,500	163,200	97,590	103,100	131,000	129,100	111,600	66,410	49,180	51,580
Calendar year 1958	Max	6,080	Min	702	Mean	1,840	Cfs/m	1.43	In.	19.37	Ac-ft	1,332,000
Water year 1958-59	Max	5,790	Min	719	Mean	1,576	Cfs/m	1.22	In.	16.58	Ac-ft	1,141,000

Peak discharge (base, 4,000 cfs).--Jan. 12 (5:30 a.m.) 6,470 cfs (7.40 ft); Jan. 24 (2 p.m.) 4,230 cfs (6.40 ft); Jan. 27 (8:30 a.m.) 4,030 cfs (6.30 ft).

* Discharge measurement made on this day.

Note.--No gage-height record July 31 to Aug. 3, Aug. 5 to Sept. 2; discharge estimated on basis of recorded range in stage, 1 discharge measurement, and records for station near Glenwood.

1185. West Fork Hood River near Dee, Oreg.

Location.--Lat 45°36'00", long 121°38'05", in SE $\frac{1}{4}$ sec.1, T.1 N., R.9 E., on left bank a quarter of a mile upstream from Dead Point Creek, half a mile upstream from mouth, and 1 mile northwest of Dee.

Drainage area.--96 sq mi, approximately.

Records available.--September 1913 to February 1916 (incomplete), June 1932 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 802.1 ft above mean sea level, datum of 1929. Sept. 1, 1913, to Feb. 12, 1916, staff gage at site half a mile upstream at different datum.

Average discharge.--28 years (1913-14, 1932-59), 556 cfs (402,500 acre-ft per year).

Extremes.--Maximum discharge during year, 6,380 cfs Nov. 18 (gage height, 8.56 ft); minimum, 148 cfs Aug. 21-23.

1913-16, 1932-59: Maximum discharge, 12,900 cfs Dec. 22, 1933 (gage height, 12.4 ft), from rating curve extended above 5,300 cfs; minimum, 93 cfs Aug. 22, 1941 (gage height, 1.37 ft).

Remarks.--Records excellent. No regulation. Dee Irrigation District canal diverts from right bank about 6 miles above station for irrigation above station and in Middle Fork basin. Diversions from Green Point Creek basin above station for irrigation near Oak Grove; water from two of these diversions is carried in Hood River Irrigation District canal.

Revisions (water years).--WSP 1448: 1914-16, 1939.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 6

Nov. 7 to Sept. 30

1.3	146	3.0	770	1.3	140	3.0	745
1.6	218	5.0	2,150	1.6	220	5.0	2,010
2.0	335	6.0	3,050	2.0	345	7.0	4,140

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	168	180	514	850	840	995	*2,420	1,120	502	280	192	165
2	170	175	350	727	736	820	2,370	900	518	283	184	158
3	170	208	1,600	602	704	709	1,490	781	502	274	181	152
4	159	366	951	460	727	614	1,150	740	518	262	181	223
5	157	645	758	480	655	578	1,020	772	655	280	178	498
6	153	2,310	682	480	722	554	890	718	550	280	168	768
7	166	1,160	1,210	500	642	550	776	673	474	302	168	466
8	*524	1,760	962	518	594	578	700	668	462	271	168	443
9	255	1,680	805	660	574	566	646	750	637	259	168	*322
10	224	1,330	1,320	1,090	538	530	610	732	628	256	165	280
11	200	978	3,310	1,450	502	598	598	668	582	256	165	259
12	187	1,540	2,030	2,310	470	598	570	*632	554	259	162	235
13	182	2,030	1,250	1,580	450	566	538	709	498	250	160	226
14	175	1,270	946	1,100	454	514	526	850	458	238	156	209
15	170	890	790	880	432	490	498	815	436	235	155	200
16	168	691	709	830	429	494	474	704	*432	226	155	198
17	170	578	628	781	412	606	462	696	412	226	162	206
18	190	*2,660	650	840	401	820	446	722	408	238	160	250
19	433	2,840	602	786	394	825	432	696	415	232	155	394
20	433	3,410	574	700	376	682	432	619	408	220	150	408
21	293	2,190	664	624	366	768	446	586	387	220	148	462
22	260	1,360	624	696	356	740	478	582	352	220	148	390
23	263	1,080	570	1,170	359	691	506	586	335	235	148	325
24	232	1,100	542	2,420	345	696	516	490	348	226	156	290
25	218	855	590	1,580	*401	745	494	628	319	209	150	280
26	205	704	800	1,200	462	962	586	664	312	203	150	956
27	197	606	855	2,310	450	820	1,150	806	309	*198	168	880
28	190	534	745	1,560	570	951	1,590	558	306	189	195	722
29	187	502	758	1,170	-	870	1,460	522	286	187	162	534
30	185	486	1,096	1,000	-----	995	1,450	490	280	184	156	446
31	180	-----	*895	962	-----	1,510	-----	482	-----	183	152	-----
Total	6,864	36,128	29,344	32,316	14,361	22,289	25,724	21,259	13,283	7,384	5,061	11,345
Mean	221	1,204	947	1,042	513	719	857	686	443	238	163	378
Ac-ft	13,610	71,680	58,200	64,100	28,480	44,210	51,020	42,170	26,350	14,650	10,040	22,500

Calendar year 1958: Max 6,000 Min 136 Mean 594 Ac-ft 430,200
 Water year 1958-59: Max 3,410 Min 148 Mean 617 Ac-ft 447,000

Peak discharge (base, 4,100 cfs).--Nov. 18 (8:30 p.m.) 6,380 cfs (8.56 ft); Dec. 11 (5 p.m.) 4,630 cfs (7.37 ft).

* Discharge measurement made on this day.

1210. Hood River near Hood River, Oreg.

Location.--Lat 45°42'00", long 121°30'30", in NW¼SE¼ sec.36, T.3 N., R.10 E., on right bank at Powerdale, 0.5 mile upstream from Pacific Power & Light Co. powerplant and 0.8 mile southeast of town of Hood River.

Drainage area.--329 sq mi.

Records available.--March 1913 to September 1959. Published as "at Powerdale, near Hood River" 1913-26.

Gage.--Water-stage recorder. Datum of gage is 106.37 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Nov. 13, 1934, staff gage or water-stage recorder at several sites within half a mile of present site at various datums.

Average discharge.--46 years, 1,101 cfs (797,100 acre-ft per year).

Extremes.--Maximum discharge during year, 5,920 cfs Nov. 19; minimum daily, 393 cfs Oct. 7. 1913-59: Maximum discharge, 34,000 cfs Jan. 6, 1923 (gage height, 11.1 ft, present datum, site then in use), no diversion by power conduit; minimum daily, 165 cfs Aug. 5, 1941.

Remarks.--Records good. Many diversions for irrigation above station. Daily discharge regulated by pondage at sawmill at Dee. All records presented herein include flow in Pacific Power & Light Co.'s conduit which diverts 2.7 miles above station and returns water to river 0.5 mile below station.

Cooperation.--Water-stage recorder inspected by employees of Pacific Power & Light Co.

Revisions (water years).--WSP 1448: For conduit: 1931-32; for river: 1915-16(M), 1918(M), 1920(M), 1924-25, 1931, 1934-37(M), 1938, 1939-40(M), 1943, 1945(M), 1946-48, 1949(P).

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	423	478	1,080	1,600	1,880	1,820	*3,440	2,000	979	618	589	487
2	429	465	1,310	1,400	1,690	1,590	3,620	1,720	1,040	856	550	446
3	436	466	2,760	1,180	1,630	1,440	2,630	1,500	1,050	838	529	434
4	411	805	1,880	1,080	1,640	1,300	2,180	1,440	1,080	612	523	498
5	401	1,050	1,530	1,080	1,500	1,240	1,960	1,510	1,410	636	550	950
6	398	2,900	1,350	1,120	1,590	1,180	1,780	1,450	1,210	637	526	1,450
7	393	1,840	2,120	1,120	1,460	1,170	1,590	1,360	1,040	647	494	1,180
8	*1,010	2,470	1,860	1,130	1,360	1,220	1,470	1,340	991	595	503	843
9	598	2,170	1,590	1,330	1,320	1,180	1,380	1,460	1,260	572	494	*698
10	551	1,930	1,730	2,000	1,270	1,140	1,340	1,410	1,220	582	497	698
11	493	1,490	4,230	2,450	1,190	1,060	1,320	1,330	1,210	588	494	696
12	468	1,750	3,780	3,720	1,190	1,180	1,290	*1,250	1,160	607	483	673
13	464	2,690	2,640	2,890	1,110	1,180	1,240	1,360	1,110	610	504	658
14	443	1,930	2,080	2,240	1,140	1,070	1,170	1,650	1,020	580	475	634
15	436	1,430	1,740	1,900	1,100	1,050	1,170	1,570	963	548	457	579
16	430	1,180	1,590	1,790	1,130	1,040	1,080	1,400	*950	533	493	570
17	441	1,030	1,440	1,680	1,080	1,170	1,060	1,380	955	532	515	565
18	481	2,370	1,420	1,700	1,070	1,470	1,040	1,390	885	564	478	638
19	764	4,000	1,360	1,620	1,030	1,500	1,000	1,330	925	565	454	767
20	803	4,460	1,270	1,460	988	1,310	992	1,300	945	555	437	765
21	625	3,460	1,370	1,350	965	1,400	1,010	1,180	940	517	438	740
22	559	2,420	1,320	1,400	943	1,400	1,050	1,140	864	541	452	713
23	563	2,020	1,240	1,830	933	1,340	1,080	1,190	803	582	464	698
24	524	1,980	1,180	3,480	910	1,260	1,090	1,190	840	606	464	695
25	518	1,680	1,220	2,860	*968	1,380	1,050	1,260	786	528	465	693
26	499	1,390	1,470	2,330	1,100	1,780	1,210	1,270	725	496	462	1,640
27	492	1,230	1,620	1,976	1,080	1,540	1,350	1,180	712	*480	544	1,400
28	476	1,130	1,450	3,100	1,230	1,740	2,480	1,070	702	441	585	1,180
29	471	1,070	1,400	2,560	-	1,650	2,360	1,010	681	480	495	917
30	467	1,060	1,840	2,220	-----	1,920	2,480	982	661	570	480	805
31	461	-----	*1,640	2,080	-----	2,540	-----	972	-----	533	469	-----
Total	15,926	54,344	54,510	61,270	34,497	43,280	48,492	41,594	29,097	17,629	15,313	23,710
Mean	514	1,811	1,758	1,976	1,132	1,395	1,616	1,342	970	544	480	750
Ac-ft	31,590	107,800	108,100	121,500	68,420	85,800	96,180	82,500	57,710	34,970	30,370	47,030

Calendar year 1958: Max 7,060 Min 334 Mean 1,239 Ac-ft 896,800
 Water year 1958-59: Max 4,460 Min 393 Mean 1,204 Ac-ft 872,000

Peak discharge (base, 4,600 cfs).--Nov. 6 (4 p.m.) 4,710 cfs; Nov. 19 (12:30 a.m.) 5,920 cfs
 Dec. 11 (10 to 11 p.m.) 5,110 cfs.

* Discharge measurement made on this day.

1213. White Salmon River below Cascades Creek, near Trout Lake, Wash.

Location.--Lat 46°06'10", long 121°36'10", in SW $\frac{1}{4}$ sec. 7, T.7 N., R.10 E., on right bank 100 ft downstream from Cascades Creek and $7\frac{1}{2}$ miles northwest of Trout Lake.

Drainage area.--32.4 sq mi (revised).

Records available.--July 1957 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 3,080 ft (from topographic map).

Extremes.--Maximum discharge during year, 452 cfs Dec. 2 (gage height, 2.94 ft); minimum, 71 cfs Oct. 31 (gage height, 1.39 ft).
1957-59: Maximum discharge, 551 cfs May 26, 1958 (gage height, 3.27 ft); minimum, 60 cfs Nov. 29, 1957; minimum gage height, that of Oct. 31, 1958.

Remarks.--Records excellent. No regulation or diversion above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 6		Nov. 7 to Sept. 30	
1.4	72	1.5	83
1.8	142	2.0	183
2.4	290	2.6	350

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*88	73	171	173	173	113	146	212	201	191	152	101
2	92	73	277	*150	164	97	150	193	217	196	141	103
3	91	95	308	161	159	94	133	176	225	183	141	*103
4	89	113	222	244	157	91	133	166	226	176	141	148
5	88	142	201	269	148	91	133	155	252	176	133	164
6	82	268	191	204	148	89	127	152	236	176	133	183
7	99	148	222	166	137	89	125	157	231	169	135	125
8	160	186	188	225	133	89	125	159	209	159	133	117
9	89	201	171	266	129	88	125	161	228	164	131	103
10	83	150	244	241	125	85	131	152	204	169	131	101
11	79	137	332	266	121	85	141	148	241	178	127	104
12	79	239	260	347	*117	89	139	155	241	188	117	103
13	78	183	228	266	115	86	135	217	236	181	119	108
14	76	*148	209	236	113	82	129	241	217	169	119	101
15	76	129	199	214	110	*83	121	236	204	164	127	97
16	76	117	188	214	110	85	*119	214	214	164	133	93
17	75	113	178	212	106	93	119	212	201	166	123	89
18	82	204	204	206	104	96	117	201	204	173	117	112
19	131	199	181	186	103	88	115	191	228	176	110	204
20	97	344	176	171	99	85	121	*183	247	171	104	146
21	85	291	204	164	99	89	129	176	241	171	106	127
22	80	255	173	159	97	86	139	178	228	169	112	112
23	79	233	199	222	96	88	150	188	214	188	113	104
24	76	247	155	320	94	86	148	199	*231	169	113	101
25	76	201	155	239	94	93	141	191	214	152	112	103
26	76	176	161	217	93	97	148	193	201	150	117	226
27	75	159	152	288	94	89	171	183	201	141	123	164
28	73	155	144	231	103	93	183	176	191	131	106	139
29	72	152	146	209	-	89	214	176	186	133	99	125
30	72	150	183	196	-----	94	250	176	188	*141	101	117
31	73	-----	176	183	-----	106	-----	183	-----	150	104	-----
Total	2,647	5,281	6,158	6,845	3,341	2,808	4,257	5,700	6,559	5,184	3,773	3,723
Mean	85.4	176	199	221	119	90.6	142	184	219	167	122	124
Cfsm	2.64	5.43	6.14	6.82	3.67	2.80	4.38	5.68	6.76	5.15	3.77	3.83
In.	3.04	6.06	7.07	7.96	3.83	3.22	4.99	6.54	7.53	5.96	4.33	4.37
Ac-ft	5,250	10,470	12,210	13,580	6,630	5,570	8,440	11,310	13,010	10,280	7,480	7,380
Calendar year 1958: Max	419			Min 72		Mean 166		Cfsm 5.12	In. 69.63	Ac-ft 120,300		
Water year 1958-59: Max	347			Min 72		Mean 154		Cfsm 4.75	In. 64.59	Ac-ft 111,600		

Peak discharge (base, 300 cfs).--Nov. 6 (1:15 p.m.) 401 cfs (2.77 ft); Nov. 12 (3:30 p.m.) 329 cfs (2.53 ft); Nov. 18 (7:45 p.m.) 356 cfs (2.62 ft); Nov. 20 (11:30 a.m.) 389 cfs (2.73 ft); Nov. 24 (7:15 a.m.) 306 cfs (2.45 ft); Dec. 2 (8 and 9:30 p.m.) 452 cfs (2.94 ft); Dec. 11 (3 p.m.) 362 cfs (2.64 ft); Jan. 11 (11 p.m.) 416 cfs (2.82 ft); Jan. 24 (10 a.m.) 356 cfs (2.02 ft); Jan. 27 (5:30 a.m.) 353 cfs (2.61 ft); Sept. 26 (9:30 a.m.) 306 cfs (2.45 ft).

* Discharge measurement made on this day.

WHITE SALMON RIVER BASIN

1214. White Salmon River above Trout Lake Creek, near Trout Lake, Wash.

Location.--Lat 46°01'50", long 121°31'50", in SE $\frac{1}{4}$ sec.3, T.6 N., R.10 E., on right bank 2 miles north of town of Trout Lake, 2 $\frac{1}{2}$ miles downstream from Wicky Creek, and 3 miles upstream from Trout Lake Creek.

Drainage area.--64.9 sq mi.

Records available.--June to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 2,050 ft (from topographic map).

Extremes.--Maximum discharge during period, 393 cfs Sept. 26 (gage height, 2.71 ft); minimum, 168 cfs Sept. 17 (gage height, 1.92 ft).

Remarks.--Records excellent. No regulation or diversion above station.

Rating table, June 17 to Sept. 30, 1959 (gage height, in feet,
and discharge, in cubic feet per second)

1.9	163
2.2	238
2.5	325

Discharge, in cubic feet per second, June to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									-	257	225	180
2									-	252	220	180
3									-	252	217	*192
4									-	246	215	217
5									-	243	*210	246
6									-	241	210	260
7									-	238	215	204
8									-	228	212	197
9									-	230	210	180
10									-	233	210	177
11									-	243	207	182
12									-	249	197	185
13									-	246	197	187
14									-	235	197	185
15									-	233	204	175
16									-	233	212	173
17									271	233	202	170
18									277	241	197	192
19									300	243	187	282
20									316	238	187	228
21									310	238	185	207
22									294	233	192	192
23									288	252	194	185
24									*297	243	194	180
25									285	225	192	182
26									271	225	197	297
27									268	215	207	241
28									262	207	187	215
29					-				254	207	177	202
30					-----				254	212	177	194
31		-----			-----		-----		-----	220	182	-----
Total									-	7,301	6,215	6,077
Mean									-	236	200	203
Cfsm									-	3.64	3.08	3.13
In.									-	4.18	3.56	3.48
Ac-ft									-	14,480	12,330	12,050

Calendar year	: Max	Min	Mean	Cfsm	In.	Ac-ft
Water year	: Max	Min	Mean	Cfsm	In.	Ac-ft

* Discharge measurement made on this day.

1215. Trout Lake Creek near Trout Lake, Wash.
(Formerly published as Trout Creek at Guler)

Location.--Lat 46°00'20", long 121°32'20", in SW $\frac{1}{4}$ sec.15, T.6 N., R.10 E., on right bank a quarter of a mile downstream from Trout Lake and 1 mile northwest of town of Trout Lake.

Drainage area.--69.3 sq mi (revised).

Records available.--September 1909 to October 1911 (published as Trout Creek at Guler), June to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 2,000 ft (from river-profile map).
Sept. 16, 1909, to Oct. 31, 1911, staff gage at about same site at different datum.

Extremes.--Maximum discharge during period June to September, 290 cfs June 17 (gage height, 2.19 ft); minimum, 40 cfs Aug. 25, 26, Sept. 2, 3, 4 (gage height, 0.85 ft).
1909-11, 1959: Maximum discharge, 1,580 cfs Nov. 25, 1909 (gage height, 7.31 ft, from graph based on gage readings, datum then in use); minimum, that of Aug. 25, 26, Sept. 2, 3, 4, 1959.

Remarks.--Records excellent. No regulation or diversion above station.

Revisions.--WSP 1318: Drainage area.

Discharge, in cubic feet per second, June to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									-	138	50	42
2									-	138	50	41
3									-	134	49	*40
4									-	127	49	50
5									-	123	49	85
6									-	123	49	104
7									-	129	47	104
8									-	127	46	85
9									-	114	46	73
10									-	109	46	59
11									-	106	45	52
12									-	102	45	49
13									-	99	45	46
14									-	93	45	45
15									-	86	44	44
16									261	82	44	46
17									278	78	44	49
18									251	73	45	58
19									254	69	45	106
20									258	66	45	174
21									256	65	45	134
22									235	63	44	107
23									222	62	44	86
24									*209	62	42	74
25									200	60	41	69
26									182	59	40	106
27									168	56	44	218
28									160	55	47	186
29									152	*55	44	136
30									144	52	42	111
31										51	41	
Total									-	2,756	1,402	2,579
Mean									-	88.9	45.2	86.0
Cfsm									-	1.28	0.652	1.24
In.									-	1.48	0.75	1.38
Ac-ft									-	5,470	2,780	5,120
Calendar year	: Max		Min		Mean		Cfsm		In.	Ac-ft		
Water year	: Max		Min		Mean		Cfsm		In.	Ac-ft		

* Discharge measurement made on this day.

1220. White Salmon River near Trout Lake, Wash.

Location.--Lat 45°59'30", long 121°29'30", in SE $\frac{1}{4}$ sec. 24, T.6 N., R.10 E., on left bank a quarter of a mile downstream from Trout Lake Creek and 2 miles southeast of town of Trout Lake.

Drainage area.--185 sq mi (revised).

Records available.--July to September 1918 (published as "near Guler"), October 1928 to September 1931, August 1957 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 1,870 ft (from river-profile map). July 17 to Sept. 30, 1918, chain gage at site half a mile downstream at different datum. Oct. 14, 1928, to Sept. 30, 1931, staff gage at site 250 ft upstream at different datum.

Average discharge.--5 years (1928-31, 1957-59), 330 cfs (238,900 acre-ft per year).

Extremes.--Maximum discharge during year, 1,540 cfs Nov. 21 (gage height, 5.82 ft); minimum, 77 cfs Oct. 6 (gage height, 1.41 ft).

1918, 1928-31, 1957-59: Maximum discharge observed, 3,000 cfs Apr. 1, 1931 (gage height, 5.2 ft, site and datum then in use); minimum observed, 35 cfs Aug. 26, 1931 (gage height, -0.06 ft, site and datum then in use).

Remarks.--Records excellent. Very slight regulation. Diversions above station for irrigation of about 3,100 acres of farm land.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 20				Nov. 21 to Sept. 30			
1.4	76	4.0	710	1.4	83	4.0	700
2.0	165	5.5	1,370	2.0	164	5.6	1,420
3.0	390			3.0	380		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	97	142	466	630	752	414	570	1,060	450	240	118	93
2	*94	142	642	*567	696	395	760	876	486	242	111	92
3	93	169	1,060	465	662	362	756	732	519	232	109	91
4	93	278	840	441	644	342	700	658	532	216	112	*120
5	86	352	668	483	616	335	668	612	637	212	*105	179
6	83	610	592	532	592	325	630	550	598	205	104	228
7	95	734	682	522	556	320	598	525	513	208	105	201
8	225	696	693	637	525	322	574	536	456	201	106	181
9	185	776	598	836	*513	318	567	532	498	192	104	156
10	159	880	668	976	498	310	567	532	510	190	104	144
11	136	626	1,180	980	468	300	592	492	546	190	107	142
12	130	747	1,200	1,420	444	312	620	468	550	186	100	139
13	127	1,040	936	1,380	429	318	606	536	510	181	111	140
14	124	759	776	1,120	426	300	578	686	465	166	112	142
15	124	570	682	960	426	295	553	760	426	161	101	133
16	121	477	592	892	414	295	*525	704	426	151	106	126
17	120	408	574	852	398	*312	507	654	435	146	102	123
18	128	531	595	852	388	350	501	620	405	146	98	145
19	230	*1,160	584	796	372	350	483	564	392	145	94	276
20	251	1,270	532	720	362	335	462	*519	400	140	94	315
21	205	1,420	602	668	355	342	435	510	398	142	95	268
22	177	1,080	596	644	348	348	459	489	385	139	104	250
23	163	956	522	760	340	355	495	516	360	150	105	205
24	153	924	489	1,340	332	350	532	539	*350	146	102	192
25	151	844	466	1,380	332	362	525	536	335	133	104	190
26	144	682	513	1,130	330	400	510	522	305	132	104	322
27	142	578	513	1,240	328	380	592	495	293	126	109	375
28	145	516	471	1,180	350	395	676	459	277	112	99	322
29	142	468	465	1,000	392	441	522	441	257	110	92	268
30	139	468	532	896	-----	435	1,040	429	244	114	94	258
31	139	-----	581	828	-----	477	-----	432	-----	119	98	-----
Total	4,401	20,321	20,352	27,137	12,896	10,846	17,913	17,964	12,958	5,173	3,210	5,776
Mean	142	677	657	875	461	350	597	580	432	167	104	193
Ac-ft	6,730	40,310	40,370	53,830	25,580	21,510	35,530	35,670	25,700	10,260	6,570	11,460
Calendar year 1958: Max 2,080 Min 83 Mean 477 Ac-ft 345,400												
Water year 1958-59: Max 1,420 Min 83 Mean 436 Ac-ft 315,300												

* Discharge measurement made on this day.

1229. White Salmon River at B-Z Corner, Wash.

Location.--Lat 45°51'45", long 121°30'15", in NW¼SW¼ sec.1, T.4 N., R.10 E., on left bank 0.8 mile north of B-Z Corner and 1¼ miles downstream from Wieberg Creek.

Drainage area.--269 sq mi.

Records available.--July 1958 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 705.30 ft above mean sea level (levels by Klickitat County Public Utility District No. 1.

Extremes.--1958: Maximum discharge during period July to September, 630 cfs July 17 (gage height, 1.85 ft); minimum, 381 cfs Sept. 12, 30 (gage height, 1.12 ft).
1958-59: Maximum discharge during water year, 2,410 cfs Jan. 12 (gage height, 4.26 ft), from rating curve extended above 1,100 cfs; minimum, 320 cfs Oct. 6 (gage height, 0.88 ft).

Remarks.--Records good except those for periods of no gage-height record, which are fair. Diversions for irrigation of about 4,500 acres above station. No regulation.

Cooperation.--Water-stage recorder furnished by Klickitat County Public Utility District No. 1.

Rating table, July 16, 1958, to Sept. 30, 1959 (gage height, in feet, and discharge, in cubic feet per second)

0.9	325	3.0	1,280
1.5	500	4.2	2,350
2.0	695		

Discharge, in cubic feet per second, 1958

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	-	507	441	9	-	514	393	17	590	468	426
2	-	504	429	10	-	510	393	18	590	472	417
3	-	514	417	11	-	510	390	19	574	465	417
4	-	507	417	12	-	490	384	20	570	468	420
5	-	507	414	13	-	476	390	21	563	468	432
6	-	507	402	14	-	472	402	22	570	465	432
7	-	504	402	15	-	468	420	23	582	462	429
8	-	514	393	16	578	472	420	24	560	459	423
Total											8,919
Mean											479
Runoff in acre-feet											29,440

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	384	345	760	1,030	1,420	1,010	1,130	1,550	870	695	450	362
2	372	342	865	968	1,350	986	1,340	1,300	890	695	438	365
3	372	352	1,450	855	1,300	944	1,350	1,200	938	682	441	370
4	365	453	1,160	790	1,260	908	1,250	1,100	956	654	440	396
5	360	524	938	830	1,220	890	1,200	1,050	1,080	630	*440	*493
6	335	742	835	885	1,190	885	1,140	1,000	1,080	614	430	542
7	335	914	902	*896	1,140	875	1,080	950	998	626	430	528
8	507	860	926	1,010	1,100	875	1,050	980	938	638	440	504
9	459	974	835	1,240	*1,080	865	1,030	980	986	626	440	479
10	420	1,100	880	1,540	1,050	850	1,030	950	1,020	610	432	465
11	393	850	1,510	1,620	1,020	835	1,030	920	1,060	614	435	465
12	375	896	1,600	2,300	992	845	1,060	880	1,080	598	438	462
13	368	1,350	1,290	2,220	980	850	1,050	940	1,050	578	453	456
14	360	1,050	1,100	1,870	974	830	1,020	1,050	1,010	556	456	453
15	358	815	998	1,650	968	815	*992	1,150	926	560	438	444
16	355	690	932	1,550	950	805	956	1,100	885	549	444	432
17	350	630	880	1,500	938	*815	944	1,050	896	538	438	426
18	360	728	896	1,500	926	860	926	1,000	860	535	408	456
19	441	1,520	902	1,430	914	865	920	*950	845	532	390	574
20	456	1,640	850	1,320	902	830	900	920	860	500	381	614
21	426	1,900	926	1,230	896	840	880	926	850	496	378	563
22	396	1,500	938	1,180	896	845	900	902	825	493	393	521
23	381	1,310	860	1,300	890	845	920	926	795	500	396	482
24	370	1,230	835	2,020	885	835	920	938	785	510	384	459
25	365	1,140	845	2,120	880	845	940	938	*785	496	378	447
26	358	968	890	1,820	880	902	920	932	765	493	381	563
27	355	850	914	2,000	875	875	1,000	920	755	500	393	654
28	352	795	870	1,950	902	890	1,100	890	745	490	387	602
29	350	760	855	1,740	-	896	1,200	870	731	479	368	538
30	348	745	920	1,600	-----	938	1,500	870	713	476	365	496
31	345	-----	974	1,510	-----	1,040	-----	865	-----	465	368	-----
Total	11,771	27,973	30,316	45,474	28,778	27,189	31,678	30,997	26,977	17,428	12,853	14,611
Mean	380	932	978	1,467	1,028	877	1,056	1,000	899	562	415	487
Ac-ft	23,350	55,480	60,130	90,200	57,080	53,930	62,830	61,480	53,510	34,570	25,490	28,980

Calendar year 1958: Max - Min - Mean - Ac-ft -
Water year 1958-59: Max 2,300 Min 335 Mean 838 Ac-ft 607,000

* Discharge measurement made on this day.

Note.--No gage-height record Feb. 10, 11, Apr. 20 to May 19, Aug. 4-9; discharge estimated on basis of 2 discharge measurements and records for station at Husum.

WHITE SALMON RIVER BASIN

1230. White Salmon River at Husum, Wash.

Location.--Lat 45°47'50", long 121°29'00", in SW $\frac{1}{4}$ sec.30, T.4 N., R.11 E., on right bank at Husum, 500 ft upstream from Rattlesnake Creek.

Drainage area.--294 sq mi (revised).

Records available.--September 1909 to October 1919, October 1929 to October 1941, August 1957 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 360 ft (from river-profile map). Sept. 23, 1909, to Oct. 11, 1912, and Feb. 21, 1915, to Oct. 31, 1919, staff gages and Oct. 12, 1912, to Feb. 20, 1915, water-stage recorder, at sites within a quarter of a mile at different datums.

Average discharge.--24 years, 968 cfs (700,800 acre-ft per year).

Extremes.--Maximum discharge during year, 2,730 cfs Jan. 12 (gage height, 5.23 ft); minimum, 522 cfs Oct. 6, 7 (gage height, 1.57 ft).
1909-19, 1929-41, 1957-59: Maximum discharge, 10,800 cfs Dec. 22, 1933 (gage height, 11.0 ft), from rating curve extended above 2,500 cfs; minimum, 340 cfs Dec. 30, 1930 (gage height, 0.64 ft).

Remarks.--Records excellent. Several diversions for irrigation of about 4,500 acres above station. No regulation.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.6	530	4.0	1,650
2.0	662	5.0	2,500
3.0	1,090	6.0	3,500

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	576	536	924	1,240	1,550	1,250	1,410	1,710	1,060	892	644	573
2	*563	533	1,040	1,200	1,490	1,240	1,570	1,500	1,080	897	637	573
3	563	548	1,470	1,100	1,430	1,190	1,560	1,350	1,120	888	640	573
4	554	648	1,300	1,040	1,400	1,150	1,470	1,280	1,130	875	*640	*592
5	551	728	1,150	1,080	1,370	1,140	1,410	1,240	1,220	836	637	592
6	533	937	1,080	1,110	1,350	1,130	1,340	1,190	1,230	819	633	744
7	530	1,110	1,150	1,120	1,310	1,110	1,300	1,170	1,170	823	637	728
8	700	1,080	1,190	*1,200	1,280	1,110	1,260	1,180	1,120	840	644	692
9	658	1,170	1,110	1,370	1,280	1,110	1,250	1,180	1,140	823	640	666
10	616	1,250	1,140	1,680	1,260	1,090	1,240	1,170	1,170	810	633	651
11	595	1,080	1,680	1,660	1,230	1,080	1,240	1,130	1,200	815	633	651
12	576	1,100	1,820	2,630	1,200	1,080	1,260	1,080	1,210	802	637	651
13	570	1,440	1,510	2,490	1,200	1,080	1,240	1,100	1,190	773	655	640
14	557	*1,230	1,320	2,100	*1,200	1,060	1,220	1,240	1,150	752	655	640
15	557	1,050	1,220	1,830	1,200	1,040	1,200	1,310	1,100	756	640	630
16	551	932	1,170	1,690	1,200	1,030	1,160	1,280	1,090	744	648	623
17	548	849	1,120	1,610	1,180	*1,040	1,140	1,240	1,100	732	640	616
18	557	952	1,120	1,570	1,180	1,090	1,140	1,200	1,060	724	612	655
19	630	1,610	1,130	1,500	1,170	1,090	*1,120	1,160	1,050	720	595	776
20	662	1,740	1,070	1,410	1,160	1,070	1,100	*1,120	1,060	696	582	819
21	619	1,990	1,130	1,340	1,140	1,080	1,080	1,120	1,040	692	586	773
22	592	1,600	1,140	1,310	1,140	1,080	1,090	1,110	1,020	685	599	724
23	576	1,430	1,070	1,410	1,130	1,090	1,110	1,120	996	692	599	689
24	566	1,360	1,040	2,140	1,120	1,080	1,110	1,140	991	704	589	682
25	557	1,290	1,050	2,300	1,120	1,090	1,120	1,140	*986	689	586	655
26	554	1,140	1,130	2,000	1,120	1,140	1,110	1,130	964	689	586	771
27	551	1,040	1,170	2,210	1,120	1,120	1,170	1,120	955	692	599	866
28	548	978	1,130	2,180	1,150	1,140	1,260	1,090	946	681	595	819
29	542	942	1,110	1,940	-	1,140	1,410	1,080	932	673	576	744
30	536	919	1,180	1,770	-----	1,250	1,070	910	670	578	704	-----
31	533	-----	1,200	1,660	-----	1,330	-----	1,060	-----	658	576	-----
Total	17,821	33,212	37,044	51,090	34,680	34,720	37,730	37,010	32,390	23,542	19,149	20,592
Mean	575	1,107	1,195	1,648	1,239	1,120	1,258	1,194	1,080	759	618	686
Ac-ft	35,350	65,880	73,480	101,300	68,790	68,870	74,840	73,410	64,240	46,690	37,890	40,840
Calendar year 1958: Max	3,270				Min 530		Mean 1,133		Ac-ft 820,500			
Water year 1958-59: Max	2,630				Min 530		Mean 1,038		Ac-ft 751,700			

Peak discharge (base, 2,000 cfs).--Nov. 21 (5:30 a.m.) 2,100 cfs (4.56 ft); Jan. 12 (10:30 p.m.) 2,730 cfs (5.23 ft); Jan. 25 (2 a.m.) 2,390 cfs (4.68 ft).

* Discharge measurement made on this day.

1235. White Salmon River near Underwood, Wash.

Location.--Lat 45°45'00", long 121°31'30", in NW 1/4 sec. 14, T.3 N., R.10 E., on right bank 300 ft downstream from bridge, 1,000 ft downstream from Pacific Power & Light Co.'s Condit powerplant, and 2 miles north of Underwood and mouth.

Drainage area.--386 sq mi (revised).

Records available.--October 1912 to February 1913 (published as "at Condit Dam, near Underwood"), March 1915 to September 1930, September 1935 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 112.96 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to March 1913, reference point at dam, 1 mile upstream at different datum. March 1915 to July 16, 1918, water-stage recorder at site 200 ft upstream at datum 3.24 ft higher and July 17, 1918, to Sept. 30, 1930, at datum 2.24 ft higher than present datum.

Average discharge.--39 years (1915-30, 1935-59), 1,105 cfs (800,000 acre-ft per year).

Extremes.--Maximum discharge during year, 4,780 cfs Jan. 12 (gage height, 7.32 ft); minimum, 61 cfs Mar. 16 (gage height, 1.66 ft); minimum daily, 485 cfs Sept. 1, 1912-13, 1915-30, 1935-59; Maximum discharge, 9,700 cfs Dec. 29, 1917 (gage height, 9.5 ft, site and datum then in use), from rating curve extended above 2,700 cfs; practically no flow at times when powerplant is shut down.

Remarks.--Records excellent. Water diverted to irrigate about 4,500 acres in the Trout Lake area. Low and medium flows regulated by powerplant of the Pacific Power & Light Co.

Revisions (water years).--WSP 484: 1915-17. WSP 1218: Drainage area. WSP 1348: 1936-41(m).

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

3.3	480	5.0	1,650
3.6	625	6.0	2,770
4.0	865	7.0	4,250

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	580	582	970	1,470	1,920	1,660	2,040	1,900	1,120	1,010	636	485
2	*603	568	1,040	1,390	1,820	1,630	2,170	1,670	1,130	865	615	653
3	581	566	1,670	1,300	1,700	1,570	2,080	1,510	1,180	972	674	696
4	595	716	1,480	1,200	1,660	1,470	1,920	1,440	1,190	906	*874	*527
5	573	816	1,310	1,170	1,620	1,400	1,840	1,400	1,310	920	709	790
6	598	958	1,230	1,200	1,630	1,370	1,700	1,320	1,320	865	669	676
7	555	1,250	1,240	*1,280	1,550	1,380	1,580	1,310	1,270	840	728	794
8	600	1,090	1,380	1,360	1,530	1,360	1,550	1,300	1,160	808	616	741
9	893	1,190	1,280	1,620	1,530	1,320	1,490	1,310	1,200	864	664	676
10	590	1,390	1,280	2,080	1,440	1,300	1,470	1,310	1,250	810	664	724
11	674	1,270	2,060	2,440	1,410	1,300	1,470	1,270	1,270	879	664	620
12	568	1,060	2,220	3,760	1,390	1,290	1,480	1,170	1,270	843	664	722
13	596	1,580	1,780	3,430	1,370	1,290	1,440	1,150	1,270	812	669	623
14	586	1,370	1,570	2,770	*1,390	1,290	1,420	1,350	1,220	752	723	678
15	614	1,230	1,420	2,410	1,390	1,200	*1,360	1,450	1,160	738	664	626
16	568	952	1,320	2,170	1,390	1,170	1,310	1,420	1,130	788	664	618
17	622	922	1,280	2,030	1,390	1,170	1,290	1,370	1,160	762	664	634
18	608	970	1,280	1,850	1,360	1,290	1,290	1,320	1,090	740	658	729
19	685	*1,900	1,270	1,850	1,360	1,290	1,250	*1,270	1,120	756	630	776
20	768	2,050	1,190	1,730	1,320	1,240	1,250	1,200	1,070	732	620	852
21	702	2,300	1,180	1,620	1,290	1,290	1,140	1,170	1,100	694	615	806
22	590	1,820	1,310	1,570	1,300	1,280	1,200	1,200	1,050	863	630	748
23	610	1,640	1,230	2,690	1,290	1,270	1,210	1,200	1,040	666	636	702
24	591	1,530	1,180	2,600	1,290	1,290	1,240	1,200	1,040	617	630	598
25	614	1,450	1,150	2,620	1,240	1,220	1,140	1,220	*1,040	722	610	679
26	534	1,290	1,280	2,510	1,320	1,380	1,210	1,220	1,010	680	620	757
27	680	1,220	1,450	2,640	1,350	1,360	1,300	1,170	1,010	852	630	927
28	572	1,080	1,380	2,740	1,450	1,400	1,410	1,170	1,000	798	642	799
29	538	1,020	1,340	2,420	-	1,440	1,560	1,090	972	662	610	851
30	560	970	1,390	2,260	-----	1,790	1,820	1,140	958	642	615	764
31	568	-----	1,460	2,060	-----	1,990	-----	1,090	-----	791	796	-----
Total	19,016	36,770	42,620	63,740	40,700	42,700	44,630	40,270	34,110	24,659	20,303	21,341
Mean	613	1,226	1,375	2,056	1,454	1,377	1,488	1,299	1,137	795	655	711
Ac-ft	37,720	72,930	84,540	126,400	80,730	84,690	88,520	79,870	67,660	48,910	40,270	42,330
Calendar year 1958: Max	4,030			Min	534			Mean	1,295			Ac-ft 937,700
Water year 1958-59: Max	3,760			Min	485			Mean	1,180			Ac-ft 854,600

* Discharge measurement made on this day.

1245. Little White Salmon River at Willard, Wash.

Location.--Lat 45°46'50", long 121°37'30", in NW¼ sec.1, T.3 N., R.9 E., on right bank a quarter of a mile downstream from Lava Creek at Willard.

Drainage area.--114 sq mi.

Records available.--November 1903 to March 1905 (fragmentary), August 1905 to August 1906 (fragmentary), December 1944 to September 1959. Published as "below Lava Creek, near Cooks" 1903-6.

Gage.--Water-stage recorder. Altitude of gage is 1,230 ft (from river-profile map). Prior to Aug. 6, 1906, nonrecording gage near present site at different datum.

Average discharge.--14 years (1945-59), 452 cfs (327,200 acre-ft per year).

Extremes.--Maximum discharge during year, 2,240 cfs Jan. 12 (gage height, 8.05 ft); minimum, 4.6 cfs Oct. 17 (gage height, 0.88 ft). 1903-6, 1944-59: Maximum discharge, 4,140 cfs Dec. 15, 1946 (gage height, 9.50 ft), from rating curve extended above 2,500 cfs; minimum daily, 1.5 cfs Nov. 7, 1957.

Remarks.--Records excellent. Broughton Lumber Co. diversion, a quarter of a mile upstream, may at times carry as much as 30 cfs out of the basin to Columbia River. Slight regulation. Other diversions for water supply, irrigation, and hatchery purposes above station.

Revisions (water years).--WSP 1318: 1945(M). WSP 1568: Drainage area.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18

Nov. 19 to Sept. 30

0.9	4.8	3.0	170	1.9	47	5.0	565
1.1	9.0	4.0	340	2.4	88	6.0	850
1.5	24	5.0	570	3.0	160	7.0	1,210
2.0	57			4.0	339	8.0	2,180

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11.5	5.7	441	757	898	610	1,050	477	339	277	170	70
2	11	5.4	484	712	874	632	1,010	450	337	273	165	67
3	*10	11.5	695	658	838	600	886	430	331	272	160	64
4	*9.6	54	618	630	805	568	784	427	333	272	157	73
5	8.5	71	570	628	784	545	715	432	337	268	152	*77
6	8.0	182	540	602	772	532	664	425	327	270	148	77
7	9.8	190	625	592	739	525	620	427	321	270	142	72
8	51	199	620	*602	724	540	592	425	321	262	139	64
9	24	351	600	649	712	550	572	432	337	258	134	80
10	18.5	332	618	941	691	540	555	430	331	257	131	56
11	14.5	220	665	1,170	664	522	540	427	333	253	127	53
12	11.5	270	955	2,070	649	518	528	423	325	249	124	50
13	10.5	432	850	1,610	638	520	510	423	317	248	120	49
14	8.8	368	751	1,220	632	496	498	430	311	244	117	48
15	7.3	301	679	1,040	*612	477	480	427	310	240	114	48
16	6.2	268	632	979	602	461	452	416	310	237	110	48
17	5.2	254	600	895	585	484	447	416	306	233	108	48
18	24	495	592	859	572	*558	*432	412	300	228	106	51
19	49	1,090	568	817	548	595	421	401	296	224	103	70
20	31	976	558	781	525	558	405	390	292	221	101	92
21	22	*961	580	748	513	578	390	*386	292	216	98	79
22	16	748	575	727	493	585	384	382	290	212	95	65
23	13.5	608	568	790	486	585	380	378	289	209	93	56
24	11	562	560	1,200	475	560	372	376	290	206	89	50
25	9.3	513	582	1,160	475	570	363	374	*287	200	85	49
26	7.8	484	697	1,020	473	646	363	372	287	197	84	64
27	7.1	466	871	1,230	473	646	403	361	283	*192	84	66
28	6.2	454	850	1,170	496	679	432	355	283	187	83	60
29	5.5	443	811	1,050	684	684	450	351	281	182	79	56
30	5.2	436	796	973	-----	805	484	349	281	179	75	53
31	4.8	-----	787	931	-----	991	-----	345	-----	178	73	-----
Total	438.3	11,751.6	20,528	29,211	17,748	18,164	16,182	12,549	9,277	7,214	3,565	1,835
Mean	14.1	392	662	942	634	586	539	405	309	233	115	61.2
Ac-ft	869	23,310	40,720	57,940	35,200	36,030	32,100	24,890	18,400	14,310	7,070	3,640

Calendar year 1958: Max 1,760 Min 4.8 Mean 439 Ac-ft 318,100
 Water year 1958-59: Max 2,070 Min 4.8 Mean 407 Ac-ft 294,500

Peak discharge (base, 1,500 cfs).--Nov. 19 (1 a.m.) 1,570 cfs (7.42 ft); Jan. 12 (8 a.m.) 2,240 cfs (8.05 ft).

* Discharge measurement made on this day.

1250. Little White Salmon River above Lapham Creek, near Willard, Wash.

Location.--Lat 45°46'00", long 121°37'40", on line between secs.11 and 12, T.3 N., R.9 E., on right bank 0.2 mile upstream from Lapham Creek and 1.2 miles south of Willard.

Drainage area.--117 sq mi.

Records available.--September 1949 to September 1959. Prior to October 1957, published as "below Lapham Creek, near Willard."

Gage.--Water-stage recorder. Altitude of gage is 980 ft (from river-profile map).

Average discharge.--10 years, 542 cfs (392,400 acre-ft per year).

Extremes.--Maximum discharge during year, 2,180 cfs Jan. 12 (gage height, 5.04 ft); minimum, 28 cfs Oct. 29 (gage height, 1.40 ft).

1949-59: Maximum discharge, 3,610 cfs Jan. 9, 1953 (gage height, 5.98 ft); minimum, that of Oct. 29, 1958; minimum gage height, 1.35 ft Oct. 31, 1952.

Remarks.--Records good. Broughton Lumber Co. diversion, 1½ miles upstream, may at times carry as much as 30 cfs out of basin to Columbia River. Other diversions above station for water supply, irrigation, and hatchery operation. Possibly some regulation.

Revisions.--WSP 1568: Drainage area.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 11

Jan. 12 to Sept. 30

1.5	44	4.0	1,150	1.7	84	4.0	1,170
2.0	154	5.0	2,130	2.2	230	5.0	2,130
3.0	540			3.0	570		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	66	60	535	932	1,130	774	1,340	600	430	364	244	132
2	66	60	585	880	1,080	822	1,280	570	425	360	237	130
3	*66	68	868	820	1,030	756	1,120	545	420	360	234	127
4	64	118	784	784	1,010	705	988	550	425	356	230	138
5	64	136	700	766	974	670	906	550	425	352	226	144
6	62	246	650	748	974	655	840	545	416	356	*220	144
7	66	258	772	730	930	645	786	545	408	352	212	135
8	111	270	778	*735	900	665	744	545	412	344	209	127
9	82	445	742	796	894	680	715	545	425	340	206	122
10	76	422	766	1,150	864	665	685	545	420	336	202	*116
11	72	288	1,080	1,420	840	640	670	545	420	332	198	111
12	68	347	1,190	2,080	610	635	655	540	408	328	195	108
13	64	540	1,050	1,810	798	645	640	535	400	324	192	106
14	62	476	932	1,490	792	610	625	545	400	320	189	103
15	60	388	844	1,270	*762	590	605	545	396	316	183	101
16	62	344	790	1,180	750	575	585	535	396	312	180	101
17	58	328	742	1,100	720	805	575	530	392	308	177	101
18	76	648	718	1,060	700	*695	*550	520	388	304	174	108
19	106	1,340	684	1,010	670	762	530	515	384	300	171	132
20	91	1,230	672	967	645	700	515	505	380	296	168	159
21	80	*1,200	706	924	630	726	505	*495	380	293	165	147
22	74	945	706	900	615	750	495	490	380	290	162	127
23	70	748	684	974	605	744	490	485	380	286	159	119
24	66	678	672	1,500	590	705	480	480	380	282	156	111
25	62	612	712	1,460	585	720	475	475	376	279	150	108
26	62	580	868	1,280	595	840	480	470	*368	272	150	130
27	60	560	1,090	1,530	600	840	520	460	368	268	150	130
28	58	545	1,070	1,470	615	876	560	450	368	265	147	124
29	58	535	1,010	1,320	-	894	575	445	364	258	144	119
30	58	530	990	1,230	-	1,030	615	440	372	254	138	113
31	58	-	978	1,180	-	1,260	-	435	-	254	135	-
Total	2,148	14,946	25,368	35,497	22,118	22,879	20,549	15,980	11,906	9,661	5,703	3,673
Mean	69.3	498	818	1,145	790	738	685	515	397	312	184	122
Ac-ft	4,260	29,640	50,320	70,410	43,870	45,380	40,760	31,700	23,620	19,160	11,310	7,290
Calendar year 1958: Max	1,870			Min 58		Mean 553		Ac-ft 400,000				
Water year 1958-59: Max	2,080			Min 58		Mean 522		Ac-ft 377,700				

Peak discharge (base, 1,500 cfs).--Nov. 19 (1 a.m.) 1,740 cfs (4.66 ft); Jan. 12 (7:30 a.m.) 2,180 cfs (5.04 ft); Jan. 24 (3:30 p.m.) 1,670 cfs (4.59 ft).

* Discharge measurement made on this day.

LITTLE WHITE SALMON RIVER BASIN

1255. Little White Salmon River near Cook, Wash.

Location.--Lat 45°43'30", long 121°38'05", in NE¹NE¹ sec.26, T.3 N., R.9 E., on left bank 1 mile upstream from mouth and 1½ miles northeast of Cook.

Drainage area.--134 sq mi.

Records available.--September 1956 to September 1959. Records for October to November 1909, published as "near Cooks" in WSP 253, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Altitude of gage is 150 ft (from topographic map). Oct. 4 to Nov. 10, 1909, staff gage at hatchery half a mile downstream at different datum.

Extremes.--Maximum discharge during year, 2,110 cfs Jan. 12 (gage height, 5.70 ft); minimum, 98 cfs Oct. 29 (gage height, 0.58 ft).
1909, 1956-59: Maximum discharge, 2,330 cfs Feb. 26, 1957 (gage height, 5.98 ft); minimum, that of Oct. 29, 1958.

Remarks.--Records excellent except those for period of no gage-height record, which are good. Broughton Lumber Co. diversion above station may, at times, carry as much as 30 cfs out of basin into Columbia River. Other diversions above station for water supply, irrigation, and hatchery purposes. Slight regulation.

Revisions.--WSP 1568: Drainage area. See also Records available.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

0.6	100	3.0	625
1.0	154	4.0	1,010
2.0	340	6.0	2,350

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	120	109	604	936	1,120	820	1,390	670	491	412	293	185
2	118	109	653	892	1,080	870	1,320	639	485	408	289	182
3	118	118	888	844	1,040	820	1,150	611	482	408	283	179
4	*117	163	812	820	1,010	770	1,040	618	485	402	279	190
5	116	183	748	816	980	740	952	622	491	402	*277	199
6	113	317	712	786	985	720	900	611	473	405	273	201
7	117	325	800	768	944	720	860	611	464	408	269	190
8	163	340	808	779	924	740	828	611	464	400	263	182
9	133	517	779	*824	912	760	796	611	485	398	259	175
10	126	494	793	1,130	900	760	776	611	479	392	255	*171
11	121	358	1,060	1,420	868	720	758	604	482	390	251	166
12	118	427	1,170	2,010	848	720	744	597	467	388	246	163
13	116	636	1,020	1,790	832	720	723	594	458	382	242	162
14	113	572	920	1,390	832	700	712	600	449	380	238	157
15	113	467	860	1,330	*812	670	688	597	446	375	234	156
16	113	410	816	1,200	800	660	667	587	446	372	231	154
17	109	392	779	1,100	786	700	*653	584	440	368	227	153
18	125	618	762	1,050	768	*768	622	575	435	362	225	183
19	158	1,370	737	1,000	748	824	604	569	432	358	222	185
20	141	*1,250	726	960	723	776	584	560	428	352	218	208
21	130	1,200	751	928	706	796	575	*554	428	348	216	195
22	125	936	748	912	688	808	566	548	425	340	213	179
23	121	790	730	976	684	800	560	542	425	338	210	168
24	116	740	726	1,480	674	776	548	539	425	332	206	162
25	114	681	754	1,460	674	790	536	536	422	328	201	158
26	113	650	876	1,280	678	880	545	536	*418	322	199	185
27	110	628	1,060	1,510	674	880	608	521	418	315	201	182
28	109	608	1,040	1,470	700	920	642	512	418	311	199	175
29	109	594	990	1,340	-	944	656	506	415	307	195	171
30	109	587	970	1,240	-	1,080	684	500	418	305	191	166
31	109	-----	956	1,180	-----	1,320	-----	494	-----	301	187	-----
Total	3,733	16,589	26,048	35,620	23,390	24,972	22,697	17,870	13,494	11,307	7,292	5,262
Mean	120	553	840	1,143	835	806	756	576	450	365	235	175
Ac-ft	7,400	32,900	51,670	70,650	46,390	49,530	45,000	35,440	26,760	22,430	14,460	10,440

Calendar year 1958: Max 1,900

Min 109

Mean 596

Ac-ft 431,700

Water year 1958-59: Max 2,010

Min 109

Mean 571

Ac-ft 413,100

Peak discharge (base, 1,600 cfs).--Nov. 19 (1 a.m.) 1,740 cfs (5.20 ft); Jan. 12 (8 a.m.) 2,110 cfs (5.70 ft); Jan. 24 (5 p.m.) 1,640 cfs (5.06 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Feb. 28 to Mar. 17; discharge estimated on basis of recorded range in stage and records for stations at and near Willard.

1270. Wind River above Trout Creek, near Carson, Wash.

Location.--Lat 45°48'30", long 121°54'30", in NE $\frac{1}{4}$ sec. 26, T. 4 N., R. 7 E., on left bank 30 ft downstream from bridge, three-quarters of a mile upstream from Trout Creek, and 7 miles northwest of Carson.

Drainage area.--108 sq mi.

Records available.--October 1944 to September 1959.

Gage.--Staff gage and crest-stage indicator; gage read twice daily. Datum of gage is 890.3 ft (from river-profile survey).

Average discharge.--15 years, 591 cfs (427,900 acre-ft per year).

Extremes.--Maximum discharge during year, 4,480 cfs Jan. 12 (gage height, 11.20 ft); minimum observed, 62 cfs Oct. 6 (gage height, 1.50 ft).

1944-59: Maximum discharge, 8,880 cfs Feb. 8, 1945 (gage height, 15.5 ft, from high-water mark), from rating curve extended above 5,000 cfs; minimum observed, 52 cfs Oct. 27-30, 1945.

Remarks.--Records good except those for periods of doubtful gage-height record, which are poor. Very small regulation by fish hatchery dam above station. Upstream diversions returned to stream above station.

Revisions (water years).--WSP 1318: 1946(M).

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 2

Apr. 3 to Sept. 30

1.5	62	5.0	710	1.7	74	4.0	407
2.0	107	6.0	1,080	2.0	102	5.0	680
3.0	237	8.0	2,100	3.0	227	6.0	1,080
4.0	430	10.5	3,900				

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	32	540	*1,100	1,040	632	2,250	1,390	270	228	111	85
2	69	100	720	950	976	647	2,116	1,090	270	222	112	84
3	68	139	1,550	800	928	602	1,780	924	265	220	111	82
4	66	350	1,080	700	868	560	1,430	788	270	214	109	105
5	64	500	870	650	820	533	1,180	736	340	211	109	200
6	62	1,190	790	572	794	525	1,030	668	300	205	*108	230
7	192	1,000	1,090	644	770	518	900	584	270	199	107	*168
8	141	1,250	984	960	*695	536	832	575	260	192	105	162
9	120	1,630	820	1,640	674	590	752	575	380	185	102	130
10	114	1,300	1,000	2,400	632	581	692	569	480	180	101	120
11	108	1,040	2,200	2,470	617	575	660	480	538	164	99	115
12	95	1,740	1,750	3,750	566	566	620	440	508	159	98	110
13	84	*1,890	1,260	2,610	548	593	600	440	421	157	96	113
14	82	1,200	1,020	2,190	522	528	590	500	385	152	95	103
15	79	1,090	896	1,880	490	528	563	530	370	150	94	100
16	77	692	820	1,280	472	512	532	470	362	145	93	100
17	74	590	746	1,110	458	958	497	440	354	142	92	96
18	83	1,840	680	1,090	452	880	459	440	344	140	92	115
19	228	2,760	611	956	430	*864	*432	415	334	138	92	280
20	204	3,280	560	884	395	836	425	380	325	135	90	520
21	175	2,670	700	852	372	758	428	370	311	133	92	460
22	156	1,600	700	824	368	928	449	*350	303	131	94	365
23	141	1,250	640	1,290	385	848	452	340	296	126	90	280
24	128	1,060	600	3,120	398	785	454	335	288	124	82	235
25	118	890	730	3,220	402	884	462	330	277	122	83	210
26	107	760	1,950	2,680	402	1,350	518	360	263	120	84	480
27	104	660	1,740	2,420	420	1,200	776	260	230	119	86	570
28	102	590	1,560	2,040	445	1,250	1,100	305	248	116	87	445
29	100	540	1,400	1,760	-	1,220	1,420	290	*236	115	88	350
30	98	510	1,310	1,510	-----	1,450	1,580	280	232	114	88	290
31	96	-----	1,240	1,100	-----	1,850	-----	270	-----	112	87	-----
Total	3,406	34,203	32,557	49,452	16,399	25,085	25,973	15,994	9,758	4,870	2,977	6,703
Mean	110	1,140	1,050	1,595	584	809	866	516	325	157	96.0	223
Cfs/m	1.02	10.6	9.72	14.8	5.41	7.49	8.02	4.78	3.01	1.45	0.889	2.06
In.	1.17	11.78	11.21	17.03	5.63	8.64	8.94	5.51	3.36	1.68	1.03	2.31
Ac-ft	6,760	67,840	64,580	98,090	32,410	49,780	51,520	31,720	19,350	9,660	5,900	13,300

Calendar year 1958: Max 3,780 Min 62 Mean 648 Cfs/m 6.00 In. 81.51 Ac-ft 469,400

Water year 1958-59: Max 3,750 Min 62 Mean 623 Cfs/m 5.77 In. 78.29 Ac-ft 450,900

Peak discharge (base, 3,000 cfs).--Probably Nov. 18 (time unknown) 3,890 cfs (10.49 ft); Jan. 12 (time unknown) 4,480 cfs (11.20 ft); Jan. 24 (time unknown) 3,920 cfs (10.53 ft).

* Discharge measurement made on this day.

Note.--Doubtful gage-height record Nov. 8-12, Nov. 24 to Dec. 6, Dec. 9-12, 20-25, Dec. 31 to Jan. 5, Mar. 26 to Apr. 1, Apr. 11-13, May 11 to June 10, Sept. 3-6, 9-12, 15-30; discharge estimated on basis of 2 discharge measurements and records for nearby stations.

1285. Wind River near Carson, Wash.

Location.--Lat 45°44'10", long 121°48'10", in SW¼NE¼ sec.21, T.3 N., R.8 E., on right bank three-quarters of a mile upstream from Little Wind River, 1 mile northeast of Carson, and 2½ miles upstream from mouth. Records include flow of Little Wind River.

Drainage area.--225 sq mi, includes that of Little Wind River.

Records available.--October 1934 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 112.6 ft above mean sea level (from river-profile survey).

Average discharge.--25 years, 1,171 cfs (847,800 acre-ft per year).

Extremes.--Maximum discharge during year, 9,500 cfs Jan. 12 (gage height, 13.10 ft); minimum, 161 cfs Oct. 6, 7 (gage height, 5.06 ft).
1934-59: Maximum discharge, 20,000 cfs Dec. 29, 1937 (gage height, 17.30 ft), from rating curve extended above 15,000 cfs by logarithmic plotting; minimum, 123 cfs Nov. 30, 1952; minimum gage height, 2.21 ft Nov. 29, Dec. 1, 1936.

Remarks.--Records good except those for periods of doubtful or no gage-height record, which are fair. Low flow occasionally affected by pondage at Forest Service power-plant on Trout Creek. No diversion above station.

Revisions (water years).--WSP 964: Drainage area. WSP 1348: 1935-37, 1938(M), 1942-43(M), 1945-46(M).

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 12

Jan. 13 to Sept. 30

5.0	147	8.0	1,850	5.3	170	8.0	1,800
5.5	282	10.0	4,110	6.0	375	10.0	4,110
6.0	465	12.5	8,270	7.0	920	11.5	6,420
7.0	1,030						

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	168	257	1,200	2,410	2,350	1,700	4,700	2,690	606	414	257	192
2	168	251	1,590	2,060	2,090	1,630	4,600	2,110	611	406	254	190
3	168	319	5,320	1,750	1,870	1,380	3,340	1,710	600	403	251	188
4	168	780	2,340	1,530	1,720	1,220	2,630	1,510	611	400	248	247
5	165	1,090	1,890	1,420	1,560	1,140	2,260	1,480	767	389	222	450
6	163	2,570	1,640	1,350	1,570	1,090	1,990	1,350	673	406	*238	515
7	178	2,180	2,160	1,320	1,450	1,130	1,770	1,230	611	446	238	*406
8	500	2,720	2,080	1,700	*1,350	1,250	1,590	1,140	584	414	230	358
9	342	3,450	1,800	*2,940	1,310	1,300	1,450	1,150	848	386	228	308
10	295	2,810	2,160	5,020	1,250	1,280	1,370	1,130	1,070	378	225	278
11	257	2,210	4,610	5,050	1,170	1,170	1,320	1,070	1,140	368	222	266
12	239	3,270	3,880	7,840	1,090	1,210	1,280	990	1,060	368	222	251
13	225	4,190	2,720	5,500	1,050	1,220	1,170	990	927	364	220	245
14	217	2,890	2,180	3,880	d1,350	1,160	1,130	1,110	836	361	220	238
15	208	2,070	1,850	2,990	d1,150	1,130	1,060	1,170	748	354	218	232
16	203	1,550	1,620	2,550	*1,050	1,090	983	1,050	741	344	215	232
17	200	1,240	1,450	2,210	1,050	1,210	920	990	715	336	215	225
18	217	3,520	1,440	2,010	1,010	1,700	*885	976	650	330	218	263
19	548	5,910	1,320	1,860	d1,050	*2,030	836	920	622	322	215	643
20	546	*6,230	1,230	1,740	d1,000	1,660	801	857	600	312	215	1,150
21	389	5,500	1,530	1,520	d950	1,810	815	822	567	305	210	1,010
22	343	3,440	1,530	1,440	d860	1,940	850	*780	540	302	210	808
23	346	2,620	1,400	1,750	850	1,840	829	760	520	302	202	633
24	315	2,280	1,310	5,290	878	1,680	850	748	500	299	198	525
25	289	1,930	1,590	a6,340	913	1,750	815	734	482	290	195	477
26	276	1,660	2,680	a3,820	1,010	2,880	843	794	*464	287	192	1,080
27	260	1,450	3,710	5,440	998	2,620	1,420	734	454	278	200	1,250
28	254	1,290	3,100	4,360	1,170	2,690	2,530	685	450	278	210	990
29	242	1,180	2,680	3,370	-	2,630	3,040	650	442	275	198	774
30	236	1,120	2,780	2,840	-----	3,120	3,180	635	430	269	192	655
31	234	-----	2,640	2,640	-----	3,920	-----	511	-----	263	192	-----
Total	8,359	71,977	67,210	95,920	35,119	53,580	51,257	33,574	19,869	10,649	6,770	15,079
Mean	270	2,399	2,168	3,094	1,254	1,728	1,709	1,083	662	344	218	503
Cfsm	1.20	10.7	9.64	13.8	5.57	7.68	7.60	4.81	2.94	1.53	0.969	2.24
In.	1.58	11.90	11.11	15.85	5.80	8.88	8.47	5.55	3.28	1.76	1.12	2.48
Ac-ft	16,580	142,800	135,300	190,300	69,660	106,300	101,700	66,590	39,410	21,120	13,430	29,910

Calendar year 1958: Max 8,230 Min 163 Cfsm 5.86 In. 79.58 Ac-ft 955,100
Water year 1958-59: Max 7,840 Min 163 Cfsm 5.72 In. 77.57 Ac-ft 931,100

Peak discharge (base, 5,700 cfs).--Nov. 18 (10:30 and 12 p.m.), 8,980 cfs (12.85 ft); Jan. 12 (6 a.m.) 9,500 cfs (13.10 ft); Jan. 25 (about 1 a.m.) about 7,700 cfs.

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for nearby stations.

d Doubtful gage-height record; discharge estimated on basis of weather records and records for nearby stations.

1340. Salmon River near Government Camp, Oreg.

Location.--Lat 45°16'00", long 121°43'00" in N $\frac{1}{2}$ sec.31, T.3 S., R.9 E., on right bank near lower end of Red Top Meadows, 3 miles southeast of Government Camp.

Drainage area.--8.7 sq mi, approximately.

Records available.--May 1910 to May 1912, April 1926 to September 1959. Published as "near Rowe" 1910-12.

Gage.--Water-stage recorder. Datum of gage is 3,446.53 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Nov. 21, 1910, staff gage at site a quarter of a mile upstream at different datum. Nov. 21, 1910, to May 31, 1912, and Apr. 21, 1926, to Sept. 30, 1933, water-stage recorder at site 75 ft upstream from former site at different datums.

Average discharge.--34 years (1910-11, 1926-59), 44.0 cfs (31,850 acre-ft per year).

Extremes.--Maximum discharge during year, 364 cfs Dec. 11 (gage height, 2.85 ft); minimum, 16 cfs Oct. 3-6.
1910-12, 1926-59: Maximum discharge, 682 cfs Dec. 11, 1956 (gage height, 3.95 ft); minimum, 10 cfs Nov. 27, 1952.

Remarks.--Records good except those above 120 cfs and those for periods of no gage-height record or shifting control, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 769: Drainage area. WSP 1398: 1911-12, 1926-27, 1933(M), 1949.

Rating tables, water year 1958-59, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 10

Dec. 11 to Sept. 30

-0.2	16	0.6	56	-0.1	20	1.5	148
-.1	20	1.0	86	.2	32	2.0	212
.2	32	1.5	128	.6	58	2.5	292
				1.0	95		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	20	*52	62	58	55	93	87	73	43	28	22
2	17	20	77	56	54	*44	97	74	74	42	28	21
3	17	28	103	50	58	40	73	66	72	41	28	22
4	17	32	63	a48	67	38	68	62	77	40	27	29
5	17	36	54	a48	55	37	65	72	82	42	26	50
6	16	98	57	a50	54	36	*60	72	72	42	25	51
7	18	53	102	a50	49	36	56	68	68	44	25	32
8	51	86	66	a55	47	36	56	70	64	39	25	32
9	25	66	64	a65	47	34	56	77	74	38	25	26
10	23	52	114	a75	45	34	59	72	68	36	25	25
11	20	49	228	a90	43	35	61	67	64	*36	25	25
12	19	69	153	*115	41	39	56	70	63	36	*25	25
13	18	61	98	74	41	35	52	95	61	36	24	25
14	18	47	83	64	41	34	49	114	59	36	24	25
15	17	41	77	60	39	34	47	102	56	34	24	25
16	17	36	72	71	39	36	44	85	56	34	24	25
17	17	34	65	69	38	40	44	85	54	34	24	24
18	20	81	72	69	38	42	43	*83	55	33	23	27
19	43	88	60	60	37	39	44	81	54	32	23	25
20	*36	100	56	56	36	37	46	76	54	32	23	30
21	25	89	60	53	35	41	52	73	52	31	23	32
22	23	75	55	68	34	39	58	77	50	32	24	*25
23	23	73	51	87	34	39	62	80	49	32	23	24
24	22	89	50	107	33	38	58	80	49	30	23	25
25	21	66	49	78	38	42	56	87	48	29	23	29
26	20	56	60	71	37	47	62	89	48	29	23	147
27	19	50	53	98	37	40	78	80	48	29	25	87
28	19	47	48	73	46	41	114	74	48	28	25	55
29	19	45	71	65	-	38	108	72	44	28	22	39
30	19	47	93	62	---	41	107	70	43	28	21	34
31	19	---	66	62	---	62	---	71	---	28	23	---
Total	672	1,734	2,352	2,111	1,221	1,229	1,924	2,431	1,779	1,074	756	1,068
Mean	21.7	57.8	75.9	68.1	43.6	39.6	64.1	78.4	59.3	34.6	24.4	35.6
Cfsm	2.49	6.64	8.72	7.83	5.01	4.55	7.37	9.01	6.82	3.98	2.80	4.09
In.	2.87	7.41	10.05	9.02	5.22	5.25	8.22	10.39	7.60	4.59	3.23	4.57
Ac-ft	1,350	3,440	4,670	4,190	2,420	2,440	3,820	4,820	3,530	2,130	1,500	2,120

Calendar year 1958: Max 234 Min 16 Mean 48.8 Cfsm 5.61 In. 76.20 Ac-ft 35,370
Water year 1958-59: Max 228 Min 16 Mean 50.3 Cfsm 5.78 In. 78.42 Ac-ft 36,410

Peak discharge (base, 150 cfs).--Nov. 18 (8:30 p.m.) 177 cfs (1.92 ft); Dec. 2 (12 p.m.) 174 cfs (1.90 ft); Dec. 7 (9 a.m.) 161 cfs (1.80 ft); Dec. 11 (1:30 a.m.) 364 cfs (2.85 ft); Jan. 12 (time unknown) 154 cfs (1.55 ft); Sept. 26 (4 a.m.) 211 cfs (1.99 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for White River below Tugh Valley.

Note.--Shifting-control method used Sept. 5-30.

1370. Sandy River near Marmot, Oreg.

Location.--Lat 45°23'30", long 122°07'40", in SE $\frac{1}{4}$ sec.13, T.2 S., R.5 E., on right bank 0.7 mile southwest of Marmot, 0.8 mile upstream from Sandy River Dam of Portland General Electric Co., and 6.5 miles downstream from Salmon River. Prior to Oct. 1, 1958, at site 0.6 mile upstream.

Drainage area.--262 sq mi.

Records available.--August 1911 to September 1959. Published as "at Marmot" October 1912 to September 1913. Records for January 1916 to June 1919, published as "below dam, near Marmot," obtained by combining records for Sandy River below dam, near Marmot with records for Sandy River Canal near Marmot.

Gage.--Water-stage recorder. Altitude of gage is 730 ft (from river-profile map). Aug. 15, 1911, to Dec. 20, 1915, and July 2, 1919, to Oct. 19, 1933, at site 1 mile upstream at different datum. Oct. 20, 1933, to Sept. 30, 1958, at site 0.6 mile upstream at different datum.

Average discharge.--48 years, 1,354 cfs (980,300 acre-ft per year).

Extremes.--Maximum discharge during year, 15,100 cfs Dec. 11 (gage height, 9.47 ft); minimum, 300 cfs Oct. 7 (gage height, 1.70 ft).
1911-59: Maximum discharge, 29,200 cfs Jan. 6, 1923 (gage height, 17.5 ft, site and datum then in use), by computation of peak flow over dam; minimum, 195 cfs Nov. 27, 28, 1952.

Remarks.--Records excellent except those for period of no gage-height record, which are fair. No regulation or diversion above station. Records of chemical analyses for the water year 1959 are given in WSP 1644.

Revisions (water years).--WSP 594: Drainage area. WSP 1288: 1912(M), 1915, 1922, 1924, 1934(M). WSP 1318: 1932 (M).

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.7	300	4.0	2,100
2.0	440	6.0	5,420
3.0	1,150	9.0	13,500

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	328	360	1,290	2,150	2,580	2,760	5,040	3,090	1,340	746	507	400
2	332	360	1,430	1,830	2,120	2,210	5,920	2,480	1,360	753	490	380
3	332	375	3,970	1,550	1,900	1,800	3,760	2,100	1,290	725	473	370
4	320	627	2,410	1,450	2,000	1,540	2,910	1,940	1,300	683	473	430
5	312	800	1,870	1,380	1,790	1,410	2,500	2,640	1,700	732	468	974
6	308	4,200	1,750	1,320	1,880	1,300	2,170	2,880	1,460	718	462	1,490
7	308	3,300	3,420	1,290	1,710	1,300	1,880	2,360	1,310	788	456	910
8	1,260	4,500	2,800	1,530	1,580	1,350	1,720	2,140	1,250	711	456	950
9	732	3,800	2,230	*1,880	1,490	1,330	1,620	2,280	1,540	669	451	676
10	*568	3,600	3,000	2,700	1,390	1,270	1,570	2,100	1,640	669	440	574
11	462	2,700	11,600	2,980	1,290	1,190	1,560	1,980	1,480	669	435	*562
12	415	2,800	8,800	4,820	1,210	1,490	1,470	1,820	1,420	676	425	519
13	395	6,000	4,070	3,380	1,170	1,480	1,390	2,100	1,300	662	415	495
14	375	4,000	2,880	2,550	1,250	1,310	1,350	2,460	1,210	614	410	451
15	370	2,600	2,310	2,060	1,130	1,230	1,320	*2,640	1,130	607	410	440
16	350	2,000	2,040	1,970	1,230	1,260	1,240	2,250	1,110	588	430	430
17	340	1,800	1,760	1,840	1,230	1,500	1,230	2,110	1,050	594	425	400
18	375	3,800	1,840	1,870	1,370	1,970	1,180	2,120	*1,010	614	405	456
19	952	*7,700	1,740	1,870	1,170	2,000	1,150	2,090	1,030	614	395	662
20	1,270	6,600	1,580	1,740	1,160	1,650	1,170	1,870	1,050	588	390	753
21	854	5,170	1,590	1,970	1,090	1,840	1,230	1,760	990	574	390	1,010
22	676	3,540	1,480	1,940	1,060	1,860	1,330	1,650	934	588	400	878
23	620	3,020	1,370	2,940	1,050	1,860	1,370	1,640	885	620	410	711
24	537	3,140	1,500	5,170	1,010	1,580	1,420	1,590	902	600	400	627
25	495	2,610	1,270	3,930	1,150	1,710	1,360	1,690	854	537	395	594
26	462	2,020	1,410	2,860	1,450	2,520	1,510	1,810	830	531	395	5,290
27	440	1,670	1,500	5,720	*1,360	2,110	2,350	1,710	795	519	425	3,590
28	415	1,470	1,380	*4,830	1,570	2,280	3,280	1,580	862	484	507	2,780
29	390	1,360	1,610	3,470	-	2,110	3,410	1,470	788	473	405	2,100
30	360	1,300	2,800	2,970	-	2,420	3,520	1,390	753	*478	365	1,790
31	370	-----	2,310	3,020	-----	3,440	-----	1,350	-----	495	395	-----
Total	15,743	86,822	78,810	80,280	40,190	54,880	62,930	63,090	34,574	19,319	13,323	31,692
Mean	508	2,894	2,542	2,590	1,435	1,770	2,098	2,035	1,152	623	430	1,056
Cfs/m	1.94	11.0	9.70	9.89	5.48	6.76	8.01	7.77	4.40	2.38	1.64	4.03
In.	2.23	12.32	11.19	11.40	5.70	7.79	8.93	8.96	4.91	2.74	1.89	4.50
Ac-ft	31,230	172,200	156,300	159,200	79,720	108,900	124,800	125,100	68,580	38,270	26,430	62,860

Calendar year 1958: Max 15,700 Min 308 Mean 1,467 Cfs/m 5.60 In. 76.01 Ac-ft 1,062,000
Water year 1958-59: Max 11,600 Min 308 Mean 1,594 Cfs/m 6.08 In. 82.56 Ac-ft 1,154,000

Peak discharge (base, 7,700 cfs).--Nov. 18 (about 12 p.m.) about 11,300 cfs; Dec. 11 (4 a.m.) 15,100 cfs (9.47 ft); Sept. 26 (8:30 a.m.) 10,400 cfs (7.97 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 5-18; discharge estimated on basis of records for nearby stations.

1390. Lake Ben Morrow near Bull Run, Oreg.

Location.--Lat 45°29'00", long 122°04'50", in SW $\frac{1}{4}$ sec.16, T.1 S., R.6 E., in control house at Bear Creek Dam on Bull River and 8 $\frac{1}{2}$ miles northeast of Bull Run.

Drainage area.--74 sq mi, approximately.

Records available.--October 1928 to September 1959. Prior to October 1937, published as Bull Run Reservoir near Bull Run.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Portland Water Bureau). Prior to Oct. 9, 1930, staff gage at same site and datum.

Extremes.--Maximum contents during year, 30,280 acre-ft July 10 (elevation, 1,044.33 ft); minimum, 8,780 acre-ft Feb. 25 (elevation, 973.80 ft).
1928-59: Maximum contents, 31,600 acre-ft Mar. 31, 1931 (elevation, 1,047.40 ft); minimum after first filling, that of Feb. 25, 1959.

Remarks.--Records excellent. Lake is formed by concrete dam completed in March 1929 for water supply of city of Portland. Storage began about Apr. 29, 1929; first filling occurred May 15, 1929. Capacity of reservoir, 26,930 acre-ft at crest of spillway (elevation, 1,036.0 ft); capacity increased to 30,140 acre-ft at elevation of 1,044.0 ft by installation of three 40- by 8-foot gates in October 1954. Dead storage, 213 acre-ft below elevation 890.0 ft (center of outlet valves).

Cooperation.--Water-stage recorder inspected and capacity table furnished by Portland Water Bureau.

Revisions (water years).--WSP 814: 1935(M).

Month-end elevation and contents, water year October 1958 to September 1959			
Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	1,013.28	18,980	-
Oct. 31.....	1,004.21	16,210	-2,770
Nov. 30.....	1,017.45	20,330	+4,120
Dec. 31.....	1,006.10	16,770	-3,560
Calendar year 1958.....	-	-	-10,710
Jan. 31.....	1,036.87	27,270	+10,500
Feb. 28.....	981.50	10,390	-16,880
Mar. 31.....	1,024.90	22,860	+12,470
Apr. 30.....	1,039.30	28,220	+5,360
May 31.....	1,036.25	27,030	-1,190
June 30.....	1,040.82	28,600	+1,570
July 31.....	1,038.82	28,030	-570
Aug. 31.....	1,023.28	22,300	-5,730
Sept. 30.....	1,035.51	26,740	+4,440
Water year 1958-59.....	-	-	+7,760

† Elevation at 12 p.m.

SANDY RIVER BASIN

1400. Bull Run River near Bull Run, Oreg.

Location.--Lat 45°27'00", long 122°08'20", in SW¼ sec. 25, T.1 S., R.5 E., on left bank three-quarters of a mile upstream from intake of pipeline for water supply of city of Portland and 5 miles east of Bull Run.

Drainage area.--102 sq mi.

Records available.--September 1907 to September 1959. Records for January 1895 to August 1907, published in WSP 370, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Datum of gage is 759 ft above mean sea level (topographic survey of 1954). Prior to July 27, 1909, staff gage at site 1 mile downstream at different datum. July 27, 1909, to July 25, 1916, water-stage recorder at present site at datum 1.0 ft lower, July 26, 1916, to July 21, 1924, at datum 1.0 ft higher, and July 22, 1924, to Aug. 24, 1928, at datum 0.5 ft higher.

Average discharge.--52 years, 753 cfs (545,100 acre-ft per year), adjusted for storage since 1929.

Extremes.--Maximum discharge during year, 6,920 cfs Dec. 11 (gage height, 7.35 ft); minimum, 111 cfs Oct. 1.

1907-59: Maximum discharge, 20,600 cfs Mar. 31, 1931 (gage height, 13.8 ft), by computation of peak flow over dam; minimum, 63 cfs Aug. 13-16, 1926.

Remarks.--Records excellent. Flow regulated by Bull Run Lake and by Lake Ben Morrow (see p. 101); adjustment applied only for storage in Lake Ben Morrow. During 1957 outlet works at Bull Run Lake were repaired to provide usable storage capacity of several thousand acre-feet, but during 1959, as in past years, flow from lake was not artificially regulated, reaching river through surface and underground channels. During 1958, a small earth-fill dam was constructed on North Fork Bull Run River to provide several hundred acre-feet of storage capacity. No diversions above station.

Revisions (water years).--WSP 1288: 1910-11, 1913, 1920-23, 1926, 1929. WSP 1318: 1919(M). WSP 1568: 1952. See also Records available.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	168	424	1,310	1,450	1,790	1,010	2,010	2,040	490	160	239	142
2	268	424	1,350	1,380	1,560	600	2,900	1,640	454	146	195	178
3	265	352	1,730	1,310	1,490	295	2,180	1,500	358	140	198	182
4	265	424	1,510	1,260	1,470	566	1,620	1,110	421	147	215	135
5	265	820	1,410	1,220	1,440	958	1,500	1,120	838	156	200	242
6	262	2,090	1,380	1,190	1,460	820	1,450	1,320	735	126	220	520
7	274	2,090	1,530	*1,170	1,410	1,230	1,400	1,020	625	144	260	1,040
8	1,060	2,380	1,470	1,160	1,370	1,210	1,350	962	490	160	225	975
9	1,280	3,410	1,430	1,250	1,360	851	895	1,200	886	205	192	645
10	*1,180	3,110	1,690	1,530	1,310	605	571	1,210	1,120	220	230	468
11	591	2,280	4,390	1,610	1,290	585	562	1,050	942	210	212	385
12	202	2,440	3,840	1,830	1,230	861	544	890	796	205	192	323
13	304	4,180	2,100	1,650	1,220	848	540	838	686	195	198	312
14	304	2,620	1,600	1,490	1,210	1,190	481	*935	595	200	220	*326
15	274	1,750	1,480	1,410	1,160	1,160	441	1,380	540	195	228	360
16	215	1,540	1,440	1,370	1,160	841	437	1,220	504	205	185	330
17	212	1,460	1,390	1,340	1,040	335	445	1,080	481	245	185	300
18	260	2,240	1,430	1,350	814	240	441	1,170	397	257	185	250
19	973	4,180	1,350	1,360	778	345	433	1,180	*385	239	192	433
20	1,280	3,980	1,360	1,320	722	677	429	1,030	358	257	178	716
21	811	*3,200	1,370	1,290	705	1,380	429	868	354	236	180	1,800
22	620	2,060	1,340	1,370	688	1,360	433	752	334	270	178	1,370
23	600	1,760	1,310	1,480	620	680	397	675	316	218	174	930
24	514	1,750	1,280	1,800	541	428	354	620	278	156	202	685
25	404	1,620	1,260	1,700	532	914	358	620	228	178	210	675
26	396	1,500	1,320	1,540	528	1,520	401	762	144	202	202	2,270
27	314	1,430	1,360	1,930	*615	1,580	838	774	144	205	166	2,270
28	265	1,390	1,350	1,860	802	1,600	2,280	724	142	168	172	1,750
29	200	1,370	1,370	1,730	-	1,550	2,750	640	133	230	168	1,200
30	184	1,340	1,480	1,730	-----	*1,640	2,340	571	162	*239	222	1,010
31	242	-----	1,440	2,050	-----	1,810	-----	522	-----	260	185	-----
Total	14,472	60,134	50,120	46,130	30,315	29,503	31,209	31,414	14,316	6,172	6,188	22,223
Mean	467	2,004	1,617	1,488	1,083	952	1,040	1,013	477	199	200	741
Ac-ft	28,700	119,300	99,410	91,500	60,130	58,520	61,900	62,510	28,400	12,240	12,270	44,080

Adjusted for change in contents in Lake Ben Morrow

Mean	422	2,074	1,559	1,659	779	1,155	1,130	994	504	190	106	815
Cfs/m	4.14	20.3	15.3	16.3	7.64	11.3	11.1	9.75	4.94	1.86	1.04	7.99
In.	4.77	22.68	17.62	18.75	7.95	13.05	12.36	11.24	5.51	2.15	1.20	8.92
Ac-ft	25,930	123,400	95,850	102,000	43,250	70,990	67,260	61,120	29,970	11,670	6,540	48,520

Observed

Calendar year 1958: Max	9,530	Min	118	Mean	846	Ac-ft	612,800
Water year 1958-59: Max	4,700	Min	126	Mean	938	Ac-ft	678,800

Adjusted

Calendar year 1958: Mean	832	Cfs/m	8.16	In.	110.68	Ac-ft	602,100
Water year 1958-59: Mean	948	Cfs/m	9.29	In.	126.20	Ac-ft	686,600

Peak discharge (base, 6,300 cfs, revised).--Nov. 19 (2 a.m.) 6,330 cfs (7.02 ft); Dec. 11 (7 p.m.) 6,920 cfs (7.35 ft).

* Discharge measurement made on this day.

1415. Little Sandy River near Bull Run, Oreg.

Location--Lat 45°25'00", long 122°10'20", in NE¹ sec.10, T.2 S., R.5 E., on right bank three-eighths of a mile upstream from Portland General Electric Co.'s dam and tunnel from Sandy River and 3 miles east of Bull Run.

Drainage area--22.3 sq mi.

Records available--May to July 1911, October 1911 to March 1912, June 1912 to April 1913, July 1919 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage--Water-stage recorder. Datum of gage is 712 ft above mean sea level (topographic survey of 1954). May 23, 1911, to Apr. 29, 1913, staff gage at site three-quarters of a mile downstream at different datum. July 1, 1919, to Sept. 30, 1931, water-stage recorder at present site at datum 0.28 ft higher.

Average discharge--40 years (1919-59), 144 cfs (104,300 acre-ft per year).

Extremes--Maximum discharge during year, 2,830 cfs Sept. 26 (gage height, 6.30 ft), from rating curve extended above 700 cfs; minimum, 17 cfs Aug. 25-27, 1911-13, 1919-59: Maximum discharge, 5,320 cfs Nov. 20, 1921 (gage height, 9.18 ft, present datum), from rating curve extended above 2,200 cfs by logarithmic plotting; minimum, 8 cfs Aug. 20, Sept. 16, 17, 1940.

Remarks--Records good except those for periods of shifting control, which are fair. No regulation or diversion above station.

Cooperation--Water-stage recorder inspected by employee of Portland General Electric Co.

Revisions (water years)--WSP 1154: 1949. WSP 1248: Drainage area. WSP 1288: 1912, 1920-21(M), 1922-23, 1931, 1945. WSP 1318: 1920.

Rating tables, water year 1958-59, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 10

Dec. 11 to Sept. 30

1.0	17	3.3	217	1.8	14	3.3	217
2.0	27	3.9	440	2.0	24	3.9	440
2.3	50	4.5	840	2.3	46	4.5	780
2.7	99	5.0	1,300	2.7	96	5.1	1,370

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	26	39	107	302	344	465	*724	255	81	42	22	23
2	25	38	135	214	245	295	617	207	76	44	22	20
3	23	46	449	168	248	234	352	188	72	41	21	18
4	22	83	223	140	288	181	251	179	86	39	21	25
5	21	162	168	130	220	158	217	261	194	46	21	185
6		*21	804	168	125	231	192	237	146	46	21	310
7	24	599	338	123	190	149	180	192	117	70	20	148
8	324	716	231	142	170	150	140	174	109	57	20	150
9	122	565	204	190	160	138	130	234	177	46	19	86
10	93	628	643	336	128	125	121	204	179	41	18	64
11	69	412	1,370	377	130	116	117	181	144	39	18	*56
12	56	467	558	549	117	194	109	152	126	38	18	46
13	49	744	329	412	114	170	101	150	109	36	18	41
14	43	394	225	288	121	142	96	190	98	35	18	37
15	39	248	181	*234	112	130	98	*365	92	34	18	36
16	37	183	166	239	140	130	90	255	89	32	18	40
17	35	146	136	212	154	150	93	231	82	31	18	35
18	38	715	190	239	146	212	93	234	74	30	18	41
19	227	*848	185	245	156	207	90	231	*68	50	18	110
20	248	680	156	220	156	170	93	185	62	29	18	121
21	136	502	170	194	146	234	98	160	57	28	18	344
22	102	332	152	281	134	217	104	140	56	27	18	194
23	104	325	132	423	126	194	106	128	52	26	18	123
24	78	302	125	634	117	197	106	116	55	25	18	93
25	64	220	121	431	138	264	99	125	50	25	18	79
26	56	170	166	284	*181	450	160	152	52	24	17	1,080
27	49	145	190	652	188	317	408	138	48	24	18	573
28	46	124	166	*540	245	340	386	119	55	24	34	348
29	41	115	203	390	-	277	284	104	50	23	21	204
30	40	110	403	390	-----	332	336	95	46	*23	18	146
31	38	-----	277	465	-----	500	-----	86	-----	23	19	-----
Total	2,296	10,662	8,275	9,569	4,845	6,979	5,971	5,668	2,702	1,078	602	4,776
Mean	74.1	355	267	309	173	225	199	183	90.1	34.8	19.4	159
Cfsm	3.32	15.9	12.0	13.9	7.76	10.1	8.92	8.21	4.04	1.56	0.870	7.13
In.	3.83	17.78	13.80	15.96	8.08	11.64	9.96	9.45	4.51	1.80	1.00	7.96
Ac-ft	4,550	21,150	16,410	18,980	9,610	13,840	11,840	11,240	5,360	2,140	1,190	9,470
Calendar year 1958: Max			2,060	Min 16	Mean 149	Cfsm 6.68	In. 90.52	Ac-ft 107,600				
Water year 1958-59: Max			1,370	Min 17	Mean 174	Cfsm 7.80	In. 105.77	Ac-ft 125,800				

Peak discharge (base, 1,400 cfs).--Nov. 18 (11 p.m.) 1,620 cfs (5.30 ft); Dec. 10 (12 p.m.) 2,270 cfs (5.85 ft); Sept. 26 (8 a.m.) 2,830 cfs (6.30 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used Oct. 1-8, Jan. 12-23.

1425. Sandy River below Bull Run River, near Bull Run, Ore.

Location.--Lat 45°27'20", long 122°15'00", in NW $\frac{1}{4}$ sec.30, T.1 S., R.5 E., on left bank 1 mile downstream from Bull Run River and 2 miles northwest of Bull Run.

Drainage area.--440 sq mi.

Records available.--April 1910 to September 1914, October 1929 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Altitude of gage is 200 ft (from river-profile map). Apr. 27, 1910, to Sept. 30, 1914, staff gage at site three-quarters of a mile upstream at different datum.

Average discharge.--34 years, 2,343 cfs (1,696,000 acre-ft per year).

Extremes.--Maximum discharge during year, 21,000 cfs Dec. 11 (gage height, 12.43 ft); minimum, 168 cfs Aug. 26; minimum daily, 211 cfs Oct. 5.
1910-14, 1929-59: Maximum discharge, 58,000 cfs Mar. 31, 1931 (gage height, 20.6 ft); minimum, 53 cfs Oct. 4, 1931 (gage height, 0.53 ft); minimum daily, 63 cfs Oct. 12, Nov. 9, 1952.

Remarks.--Records excellent. Flow slightly regulated by Bull Run Lake and Lake Ben Morrow of Portland Water Bureau, with considerable diurnal fluctuation from Bull Run powerplant of Portland General Electric Co. No diversion above station for irrigation during year; 163,000 acre-ft was diverted from Bull Run River by Portland Water Bureau, of which 67,270 acre-ft was used for power generation by Portland General Electric Co. and returned to Bull Run River.

Revisions (water years).--WSP 1288: 1910-12, 1914(M), 1948. A revised figure of discharge for the supplemental peak of Jan. 31, 1953, superseding that published in WSP 1288, is given herewith:

Revised peak discharge.--1952-53: Jan. 31 (11 to 12 p.m.) 17,200 cfs (11.36 ft).

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.2	190	5.0	2,950
1.5	288	7.0	6,020
2.5	740	9.0	10,700
3.5	1,430	12.0	19,500

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	562	612	2,820	4,240	5,360	4,450	*7,660	5,870	1,880	870	568	486	
2	582	360	2,910	3,830	4,530	3,600	10,200	4,640	1,890	857	501	480	
3	550	796	6,490	3,480	4,160	2,740	7,190	4,060	1,780	830	604	446	
4	322	1,050	4,590	3,240	4,240	2,480	5,350	3,580	1,760	799	508	550	
5	211	1,530	3,810	2,990	3,840	2,800	4,720	4,060	2,790	806	508	930	
6	*596	6,470	3,590	2,740	3,990	2,430	4,350	4,790	2,490	853	542	2,360	
7	626	5,480	5,380	2,710	3,930	2,860	3,840	3,850	2,140	912	500	2,080	
8	2,290	8,060	4,980	2,920	3,680	2,860	3,520	3,500	1,890	825	524	1,980	
9	2,060	7,730	4,240	*3,510	3,280	2,530	3,030	3,810	2,580	884	486	1,400	
10	1,750	8,050	4,930	4,870	3,240	2,160	2,450	3,830	3,160	797	464	1,100	
11	1,160	5,570	17,100	5,300	3,000	1,980	2,420	3,530	2,700	774	508	884	
12	518	5,860	13,200	7,440	2,790	2,450	2,270	3,100	2,420	749	487	701	
13	769	11,800	7,420	5,940	2,700	2,670	2,150	3,110	2,160	727	474	744	
14	685	7,470	5,200	4,750	2,890	2,860	1,970	3,610	1,940	736	523	*708	
15	648	4,810	4,430	4,190	2,710	2,670	1,980	*4,610	1,780	705	481	700	
16	602	3,760	4,020	4,070	2,890	2,330	1,850	4,060	1,680	704	452	725	
17	688	3,270	3,650	3,760	2,880	2,220	1,800	3,690	1,620	714	483	694	
18	570	6,440	3,750	3,800	2,490	2,580	1,760	3,920	*1,460	712	492	658	
19	1,440	14,400	3,660	3,860	2,440	2,880	1,710	3,810	1,390	654	446	1,040	
20	2,680	*12,100	3,340	3,620	2,380	2,720	1,660	3,400	1,390	706	446	1,480	
21	1,780	9,840	3,340	3,410	2,230	3,700	1,750	3,080	1,320	691	481	3,150	
22	1,350	6,460	3,210	3,800	2,120	3,830	1,880	2,780	1,260	581	463	2,540	
23	1,300	5,450	3,030	4,690	2,040	2,990	1,910	2,550	1,180	682	490	1,850	
24	1,200	5,620	2,940	7,930	1,870	2,470	1,920	2,400	1,160	707	468	1,380	
25	860	4,950	2,740	6,720	1,910	3,130	1,850	2,560	1,030	684	484	1,260	
26	404	4,060	3,030	5,190	*2,390	5,000	1,950	2,860	995	574	461	8,650	
27	889	3,480	3,340	8,410	2,310	4,520	3,570	2,800	922	644	462	7,800	
28	782	3,200	3,170	8,290	2,770	4,720	5,700	2,570	984	557	546	5,430	
29	663	3,030	3,350	6,400	-	4,490	7,060	2,280	934	*534	519	3,560	
30	618	2,850	4,960	5,930	-----	4,820	6,390	2,110	872	576	488	2,640	
31	624	-----	4,370	6,120	-----	6,100	-----	1,990	-----	564	474	-----	
Total	29,779	164,558	146,990	148,150	85,060	100,040	105,860	106,810	51,537	22,412	15,333	58,406	
Mean	961	5,485	4,742	4,779	3,038	3,227	3,529	3,445	1,718	723	495	1,947	
Cfs/m	2.18	12.5	10.8	10.9	6.90	7.33	8.02	7.83	3.90	1.64	1.12	4.42	
In.	2.52	13.91	12.42	12.52	7.19	8.46	8.95	9.03	4.36	1.89	1.30	4.94	
Ac-ft	59,070	326,400	291,600	293,900	168,700	198,400	210,000	211,900	102,200	44,450	30,410	115,800	
Calendar year 1958: Max	26,800			Min	140	Mean	2,534	Cfs/m	5.76	In.	78.17	Ac-ft	1,834,000
Water year 1958-59: Max	17,100			Min	211	Mean	2,835	Cfs/m	6.44	In.	87.49	Ac-ft	2,053,000

Peak discharge (base, 17,000 cfs).--Nov. 19 (12:30 a.m.) 19,200 cfs (11.91 ft); Dec. 11 (9:30 p.m.) 21,000 cfs (12.43 ft).

* Discharge measurement made on this day.

1435. Washougal River near Washougal, Wash.

Location.--Lat 45°37'20", long 122°18'00", in SE $\frac{1}{4}$ sec.27, T.2 N., R.4 E., on right bank half a mile upstream from Cougar Creek and 4 miles northeast of Washougal.

Drainage area.--108 sq mi.

Records available.--September 1944 to September 1959.

Gage.--Staff gage and crest-stage indicator; gage read twice daily. Altitude of gage is 175 ft (from topographic map).

Average discharge.--15 years, 904 cfs (654,500 acre-ft per year).

Extremes.--Maximum discharge during year, 12,500 cfs probably Nov. 19 (gage height, 12.51 ft); minimum observed, 55 cfs Aug. 24 (gage height, 1.50 ft).
1944-59: Maximum discharge, 17,700 cfs Dec. 9, 1953 (gage height, 15.56 ft); minimum observed, 41 cfs Sept. 10, 1958; minimum gage height observed, 1.38 ft Oct. 7, 1952, Sept. 10, 1958.

Revisions.--The maximum discharge for the water year 1948 has been revised to 8,900 cfs Jan. 7, 1948 (gage height, 10.2 ft, from graph based on gage readings), superseding figures published in WSP 1248 and 1318.

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 1248: 1945-47, 1949-50, 1951(P).

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.4	44	3.0	600
1.7	104	4.0	1,260
2.0	182	6.0	3,270
2.5	355	9.0	7,160

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	225	677	2,000	1,850	2,350	3,790	1,640	389	218	95	72
2	72	280	770	1,500	1,430	1,660	3,030	1,140	*368	215	95	62
3	69	339	2,190	1,200	1,220	1,280	1,850	897	355	209	95	58
4	*68	1,170	1,500	1,100	1,100	1,040	1,380	960	426	209	91	123
5	68	1,810	1,060	950	981	960	1,140	1,010	740	218	91	1,270
6	66	6,760	1,210	850	1,240	872	1,000	946	644	218	89	1,430
7	104	3,470	1,900	900	1,120	939	830	818	563	319	*84	758
8	1,420	4,520	1,800	1,300	995	1,020	764	788	505	251	82	547
9	688	2,780	1,400	2,000	960	1,040	710	699	1,180	212	78	394
10	439	2,050	3,000	*3,360	890	967	650	699	1,300	206	76	289
11	389	2,150	6,400	2,500	788	830	616	611	1,160	194	74	*271
12	308	3,660	4,500	4,220	782	1,040	584	558	1,030	188	78	218
13	254	5,060	2,500	2,500	694	1,050	542	536	812	179	78	206
14	244	2,610	2,000	1,700	812	925	494	611	682	168	74	185
15	176	1,750	1,500	1,300	710	806	499	1,060	606	165	70	176
16	171	1,200	1,200	1,280	*854	758	435	860	574	162	70	176
17	165	960	1,000	1,100	946	872	439	860	499	154	74	157
18	176	5,840	1,300	1,100	868	1,240	426	932	444	146	74	185
19	251	6,170	1,100	1,100	806	*1,460	403	953	398	141	74	802
20	600	5,760	1,000	1,030	699	1,030	394	848	364	133	74	1,820
21	484	*3,920	1,300	878	655	1,420	*398	752	347	128	74	2,300
22	444	2,500	1,200	1,340	655	1,340	403	655	331	128	74	1,160
23	412	1,800	1,100	2,060	722	1,210	394	589	308	126	72	746
24	345	1,520	1,000	4,440	746	1,030	376	531	308	123	60	574
25	300	1,700	1,200	2,450	788	1,020	351	510	278	121	64	611
26	271	1,100	1,500	1,800	1,040	2,830	484	552	268	116	60	2,560
27	244	890	2,300	4,980	974	1,920	1,750	552	268	114	60	1,950
28	225	740	2,000	3,050	1,520	1,870	2,630	579	271	114	60	1,220
29	203	716	2,000	2,100	-----	1,650	2,400	526	251	102	60	751
30	194	672	3,000	1,780	-----	2,080	3,050	469	*234	102	60	655
31	200	-----	2,500	2,610	-----	3,380	-----	426	-----	100	68	-----
Total	9,123	74,122	57,107	60,468	26,843	41,889	32,212	23,567	15,903	5,177	2,328	21,805
Mean	294	2,471	1,842	1,951	959	1,351	1,074	760	530	167	75.1	727
Cfsm	2.72	22.9	17.1	18.1	8.88	12.5	9.94	7.04	4.91	1.55	0.895	6.73
In.	3.14	25.52	19.68	20.82	9.24	14.42	11.09	8.12	5.48	1.78	0.80	7.51
Ac-ft	18,100	147,000	113,300	119,900	53,240	85,090	63,890	46,740	31,540	10,270	4,820	43,250

Calendar year 1958: Max 7,990 Min 42 Mean 925 Cfsm 8.56 In. 116.28 Ac-ft 669,900
Water year 1958-59: Max 6,760 Min 58 Mean 1,015 Cfsm 9.40 In. 127.58 Ac-ft 734,900

Peak discharge (base, 8,000 cfs, revised).--Probably Nov. 19 (time unknown) 12,500 cfs (12.51 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-3, Nov. 2, 22, 25, 28, Dec. 4, Dec. 7 to Jan. 9; discharge estimated on basis of records for nearby stations.

WILLAMETTE RIVER BASIN

1448. Middle Fork Willamette River near Oakridge, Oreg.

Location.--Lat 43°35'35", long 122°27'10", in NE¼ sec.9, T.23 S., R.3 E., on right bank 0.2 mile downstream from Cone Creek, 1.1 miles upstream from Hills Creek Reservoir, and 10 miles south of Oakridge. Records include flow of Gold and Buck Creeks, 0.3 and 0.6 mile downstream, respectively.

Drainage area.--258 sq mi, includes that of Gold and Buck Creeks.

Records available.--October 1958 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,584.28 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Extremes.--Maximum discharge during year, 5,660 cfs Jan. 27 (gage height, 7.68 ft); minimum, 226 cfs Sept. 12, 13.

Remarks.--Records good except those for periods of no gage-height record or shifting control, which are fair. No regulation or diversion above station. Records of water temperatures for the water year 1959 are given in WSP 1644.

Rating table, water year 1958-59, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

3.2	230	6.0	2,720
4.0	650	7.0	4,300
5.0	1,480		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*280	270	464	853	1,160	884	1,500	972	614	355	266	239
2	280	270	458	797	*1,030	868	1,600	892	650	345	266	239
3	280	284	492	705	940	818	1,500	825	664	340	*262	239
4	280	464	475	656	876	769	1,400	*776	657	330	262	244
5	280	497	448	644	811	720	1,300	825	846	325	262	257
6	280	650	442	626	783	685	1,200	832	956	325	257	284
7	280	734	560	596	741	657	1,100	804	762	320	257	266
8	280	713	818	632	692	650	1,000	818	671	316	252	248
9	280	741	1,120	727	644	1,000	839	644	306	252	239	
10	280	713	956	1,240	664	620	950	811	626	302	252	230
11	275	554	1,100	1,450	638	596	950	790	578	298	257	234
12	275	480	1,400	*2,820	602	620	900	797	566	298	262	230
13	275	1,370	1,080	1,870	584	650	850	900	554	298	257	230
14	266	1,210	892	1,320	734	626	800	1,050	530	293	257	230
15	266	832	776	1,080	853	602	750	972	*514	288	252	262
16	266	650	*685	988	1,050	590	700	853	536	284	252	252
17	270	578	626	908	1,240	638	700	839	502	280	252	*234
18	302	644	578	846	1,100	678	650	832	480	280	252	270
19	542	3,000	548	811	1,100	*720	650	797	480	280	252	350
20	405	2,100	514	762	1,030	678	600	755	475	275	270	395
21	330	1,300	548	713	940	727	600	713	458	270	266	330
22	306	1,000	502	678	876	748	650	692	426	266	252	320
23	298	832	480	664	818	748	700	685	415	270	248	257
24	288	734	475	1,140	769	734	750	692	405	270	244	252
25	280	644	548	1,170	727	748	800	713	395	270	239	252
26	275	590	664	1,060	713	1,040	850	706	390	270	239	497
27	275	536	1,080	*3,740	827	956	950	685	385	270	239	431
28	270	502	876	3,550	769	900	900	650	375	270	239	345
29	270	480	825	2,210	-	1,000	850	626	370	270	239	302
30	266	458	964	1,630	-----	1,600	900	602	365	270	239	275
31	266	-----	924	1,310	-----	1,500	-----	590	-----	266	239	-----
Total	9,066	23,830	22,288	38,191	23,652	24,414	28,050	24,313	16,289	9,100	7,634	8,433
Mean	292	769	719	1,232	845	788	935	784	543	294	255	281
Cfsm	1.13	3.08	2.79	4.78	3.28	3.05	3.62	3.04	2.10	1.14	0.961	1.09
In.	1.31	3.44	3.21	5.51	3.41	3.52	4.04	3.50	2.35	1.31	1.13	1.22
Ac-ft	17,980	47,270	44,210	75,750	46,910	48,420	55,640	48,220	32,310	18,050	15,540	16,750

Calendar year 1958: Max - Min - Mean - Cfsm - In. - Ac-ft -
 Water year 1958-59: Max 3,740 Min 230 Mean 645 Cfsm 2.50 In. 33.95 Ac-ft 467,000

Peak discharge (base, 3,500 cfs).--Nov. 19 (8:30 a.m.) 3,530 cfs (6.55 ft); Jan. 12 (8:30 a.m.) 3,660 cfs (6.63 ft); Jan. 27 (4:30 p.m.) 5,660 cfs (7.68 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 2-7, Mar. 28 to Apr. 30; discharge estimated on basis of recorded range in stage when available and records for station above Salt Creek, near Oakridge. Shifting-control method used June 5 to July 29.

1449. Hills Creek above Hills Creek Reservoir, near Oakridge, Oreg.

Location.--Lat 43°40'50", long 122°22'10", in NW¼ sec. 8, T.22 S., R.4 E., on right bank 0.2 mile downstream from Tufti Creek, 0.7 mile upstream from Hills Creek Reservoir, and 6½ miles southeast of Oakridge.

Drainage area.--52.7 sq mi.

Records available.--October 1958 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,630.80 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Extremes.--Maximum discharge during year, 1,220 cfs Nov. 19 (gage height, 5.60 ft); minimum, 14 cfs Nov. 1, affected by bridge construction upstream.

Remarks.--Records excellent except those for periods of no gage-height record, which are good. No regulation or diversion above station.

Rating table, water year 1958-59 (gage height, in feet,
and discharge, in cubic feet per second)

1.9	18	3.5	272
2.1	31	4.5	625
2.4	62	5.5	1,160
3.0	158		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	20	80	162	202	162	303	174	129	47	25	20
2	*20	270	76	145	*176	158	381	154	138	45	25	19
3	a20	21	87	124	153	145	354	140	133	44	*25	19
4	a20	60	80	112	144	131	321	*129	127	43	25	19
5	a20	50	72	117	129	122	280	138	196	42	25	20
6	20	102	69	114	124	114	242	154	242	42	25	23
7	a19	104	85	111	114	108	207	154	187	41	24	21
8	a22	96	128	127	106	103	180	166	156	40	23	22
9	21	119	180	153	103	100	162	195	147	38	23	20
10	a20	*138	153	283	100	93	154	170	136	37	23	19
11	a20	92	207	324	93	89	147	156	124	36	22	19
12	a20	72	278	*554	87	93	138	162	117	36	22	18
13	a20	346	211	384	84	101	127	196	111	35	22	18
14	19	247	172	270	119	95	119	215	103	34	22	18
15	a19	151	142	215	147	95	111	193	*93	34	21	*20
16	18	109	*119	198	234	101	103	170	111	33	21	22
17	18	87	104	178	264	119	96	172	96	31	21	20
18	a26	207	95	160	220	124	92	189	89	31	21	27
19	a55	386	86	153	207	*133	87	191	84	30	21	43
20	*45	565	77	142	189	127	86	178	80	30	28	62
21	36	360	83	131	172	135	90	162	75	30	25	44
22	31	254	72	127	160	140	101	156	69	29	22	30
23	29	200	66	129	149	138	114	149	65	29	22	25
24	25	168	88	298	135	131	129	144	61	29	21	23
25	25	140	80	270	124	138	136	140	60	28	20	24
26	24	120	116	224	117	198	154	133	60	28	20	111
27	23	104	176	*778	126	182	151	133	58	28	20	90
28	22	93	140	398	133	191	136	129	54	27	20	62
29	22	84	147	420	-	209	136	144	52	27	20	45
30	21	80	182	300	---	339	164	129	50	27	20	37
31	20	---	172	242	---	294	---	124	---	26	20	---
Total	740	5,195	3,799	7,641	4,111	4,408	5,001	4,929	3,203	1,057	692	960
Mean	23.9	173	123	246	147	142	167	159	107	34.1	22.3	32.0
Cfs/m	0.454	3.28	2.33	4.67	2.79	2.69	3.17	3.02	2.03	0.647	0.423	0.607
In.	0.52	3.67	2.68	5.59	2.90	3.11	3.53	3.48	2.26	0.75	0.49	0.68
Ac-ft	1,470	10,300	7,540	15,160	8,150	8,740	9,920	9,780	6,350	2,100	1,370	1,900

Calendar year 1958: Max - Min - Mean - Cfs/m - In. - Ac-ft -
Water year 1958-59: Max 986 Min 18 Mean 114 Cfs/m 2.16 In. 29.48 Ac-ft 82,780

Peak discharge (base, 700 cfs).--Nov. 19 (3:30 a.m.) 1,220 cfs (5.60 ft); Jan. 12 (7:30 a.m.) 720 cfs (4.71 ft); Jan. 27 (4:30 p.m.) 1,180 cfs (5.54 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Middle Fork Willamette River near Oakridge and Salmon Creek near Oakridge.

1455. Middle Fork Willamette River above Salt Creek, near Oakridge, Oreg.

Location.--Lat 43°43'30", long 122°26'20", in NE¼ sec.27, T.21 S., R.3 E., on left bank 400 ft upstream from Salt Creek and 2 miles southeast of Oakridge.

Drainage area.--392 sq mi.

Records available.--October 1913 to September 1914, September 1935 to September 1959. Monthly discharge only for September 1935, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 1,202.8 ft above mean sea level (river-profile survey). Oct. 3, 1913, to Sept. 30, 1914, staff gage at site 600 ft upstream at different datum.

Average discharge.--25 years, 1,143 cfs (827,500 acre-ft per year).

Extremes.--Maximum discharge during year, 8,590 cfs Jan. 27 (gage height, 6.93 ft); minimum, 244 cfs July 16, affected by construction work on Hills Creek Dam.

1913-14, 1935-59: Maximum discharge, 34,000 cfs Dec. 28, 1945 (gage height, 12.06 ft), from rating curve extended above 13,000 cfs by logarithmic plotting; maximum gage height, 12.71 ft Dec. 22, 1955; minimum discharge, 201 cfs Nov. 27 to Dec. 2, 1936 (gage height, 1.53 ft).

Remarks.--Records excellent except those for period of shifting control, which are good. Slight regulation at times resulting from construction work on Hills Creek Dam. No diversion above station.

Revisions (water years).--WSP 1248: 1914.

Rating table, water year 1958-59, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

2.1	240	4.0	1,740
2.5	420	5.0	3,400
3.0	730	6.0	5,800
3.5	1,150	7.0	8,800

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	312	302	578	1,300	1,660	1,270	2,580	1,150	730	415	294	256
2	307	302	572	1,170	1,430	1,270	2,680	1,080	765	415	294	248
3	307	307	625	1,020	*1,290	1,160	2,420	1,010	779	415	294	248
4	307	512	611	934	1,190	1,040	2,180	934	765	400	*294	252
5	307	572	578	934	1,090	970	1,950	*1,010	988	395	294	264
6	*302	776	566	925	1,030	916	1,770	1,100	1,270	395	294	284
7	298	1,130	681	907	979	872	1,520	1,020	1,020	390	289	276
8	302	997	988	988	907	840	1,360	1,030	898	385	289	260
9	302	1,050	1,610	1,240	916	816	1,240	1,090	848	375	284	256
10	298	*1,080	1,410	2,340	898	786	1,160	1,020	816	366	276	252
11	294	779	1,640	2,840	848	744	1,120	970	744	366	276	256
12	294	646	2,290	4,970	793	758	1,070	970	723	361	276	252
13	294	2,020	1,700	3,500	779	816	1,010	1,100	695	356	276	248
14	289	2,030	1,370	2,240	1,130	786	943	1,270	667	352	276	248
15	289	1,290	1,130	1,750	1,530	751	898	1,210	*632	348	276	*260
16	284	943	*979	1,540	1,990	765	840	1,080	674	348	276	256
17	284	779	880	1,400	2,350	840	800	1,050	639	348	276	252
18	307	916	800	1,270	1,850	898	758	1,090	597	338	276	276
19	642	5,250	737	1,210	1,820	*997	723	1,090	584	334	276	338
20	542	3,640	695	1,130	1,680	934	709	1,020	560	330	294	430
21	420	2,190	723	1,050	1,480	970	716	943	554	325	294	390
22	366	1,560	667	997	1,360	1,040	907	530	320	280	316	284
23	343	1,230	625	988	1,250	1,030	800	880	512	320	276	284
24	325	1,010	618	2,090	1,110	1,020	872	856	500	320	272	276
25	325	889	737	2,190	1,020	1,020	934	856	476	316	272	276
26	320	779	928	1,820	988	1,600	1,080	840	470	307	272	570
27	316	709	1,740	5,990	1,020	1,520	1,120	816	470	302	264	560
28	312	639	1,440	6,290	1,090	1,490	1,060	786	460	302	264	560
29	307	590	1,280	3,640	1,660	1,020	786	455	302	260	366	560
30	302	566	1,490	2,510	-----	2,690	1,100	737	430	302	260	325
31	302	-----	1,410	1,980	-----	2,620	-----	716	-----	298	256	-----
Total	10,199	35,483	32,098	63,143	35,478	34,889	37,184	30,417	20,251	10,846	8,650	9,230
Mean	329	1,183	1,035	2,037	1,267	1,125	1,239	981	675	350	279	308
Cfs/m	0.659	3.02	2.64	5.20	3.23	2.87	3.16	2.50	1.60	0.893	0.712	0.786
In.	0.97	3.37	2.05	6.98	3.37	3.31	3.33	2.89	1.92	1.03	0.82	0.88
Ac-ft	20,230	70,380	63,670	125,200	70,370	69,200	73,750	60,330	40,170	21,510	17,160	18,310

Calendar year 1958: Max 13,100 Min 284 Mean 1,205 Cfs/m 3.07 In. 41.75 Ac-ft 872,600
Water year 1958-59: Max 6,280 Min 248 Mean 898 Cfs/m 2.29 In. 31.13 Ac-ft 650,300

Peak discharge (base, 5,500 cfs, revised).--Nov. 19 (10:30 a.m.) 6,280 cfs (6.16 ft); Jan. 12 (12:30 p.m.) 5,980 cfs (6.06 ft); Jan. 27 (8:30 p.m.) 8,590 cfs (6.93 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used Aug. 10 to Sept. 19.

1465. Salmon Creek near Oakridge, Oreg.

Location.--Lat 43°45'30", long 122°23'00", in SW $\frac{1}{4}$ sec. 7, T.21 S., R.4 E., on right bank a quarter of a mile upstream from Slide Creek and 4 miles east of Oakridge.

Drainage area.--117 sq mi., at cable a quarter of a mile above gage, where all discharge measurements are made.

Records available.--October to November 1909 (gage heights and one discharge measurement only), February 1913 to October 1919, October 1933 to September 1959. Monthly discharge only for some periods, published in WSP 1318. Published as Kelsey River near Hazeldell and Salmon Creek near Hazeldell, 1909.

Gage.--Water-stage recorder. Datum of gage is 1,421.83 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 1, 1914, staff gages at several sites within 3 miles of present site at various datums. Oct. 1, 1914, to Oct. 14, 1919, water-stage recorder at site 1 mile downstream at different datum.

Average discharge.--32 years (1913-19, 1933-59), 422 cfs (305,500 acre-ft per year).

Extremes.--Maximum discharge during year, 2,120 cfs Dec. 11 (gage height, 4.17 ft); minimum, 132 cfs Sept. 13, 14, 16, 17.

1913-19, 1933-59: Maximum discharge, 10,400 cfs Dec. 11, 1956 (gage height, 11.18 ft), from rating curve extended above 4,000 cfs on basis of slope-area measurement of peak flow; minimum, 63 cfs Jan. 8, 1937 (gage height, 0.87 ft).

Remarks.--Records excellent. No regulation above station. About 1,100 acre-ft diverted above station during year by city of Oakridge. Tunnel and control gates that were built to divert part of outflow from Waldo Lake into Salmon Creek basin were not used during year but there is leakage under control gates; 12.3 cfs measured July 19, 1957.

Revisions (water years).--WSP 794: 1934(M). WSP 814: Drainage area. WSP 1124: 1935, 1942(M), 1943, 1946(M). WSP 1248: 1915, 1918.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.4	135
1.7	225
2.0	345
2.5	580
3.0	940
4.0	1,900

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	150	148	369	535	689	412	900	540	345	204	160	138
2	150	148	365	495	610	421	1,020	520	349	205	158	138
3	148	152	441	440	*560	412	972	585	345	194	*158	135
4	148	226	408	412	525	394	900	*470	337	190	158	138
5	148	293	365	416	485	381	812	565	440	194	155	148
6	*145	485	377	398	470	369	717	622	505	190	155	169
7	142	675	480	381	440	357	622	592	421	197	152	150
8	160	971	570	390	416	349	555	592	385	190	150	145
9	152	660	717	412	403	349	515	592	377	184	150	142
10	148	682	703	550	394	341	495	560	377	181	150	138
11	145	520	1,360	628	373	329	475	520	349	178	148	135
12	142	*440	1,710	940	353	361	450	500	337	178	148	135
13	142	1,030	1,160	836	345	373	430	535	329	175	148	135
14	140	972	876	682	445	361	412	586	317	175	148	135
15	140	669	*696	580	510	357	394	550	*301	175	145	*138
16	140	535	568	586	610	361	373	495	321	175	145	135
17	140	450	520	540	654	373	365	520	297	175	145	135
18	155	*527	465	515	575	390	349	540	285	172	145	140
19	314	1,590	426	515	540	398	333	545	277	169	145	152
20	257	1,370	394	495	510	*381	325	510	265	169	150	184
21	194	1,080	390	465	480	398	333	480	257	166	150	166
22	175	796	357	445	455	394	341	455	245	166	148	150
23	169	724	333	440	430	394	361	435	237	166	145	142
24	163	628	329	570	403	421	381	421	229	166	142	140
25	160	565	333	640	385	445	394	416	225	163	142	145
26	158	500	373	640	381	586	455	416	225	163	140	518
27	158	445	400	1,380	381	565	500	398	188	163	140	369
28	155	398	403	1,450	385	560	495	381	214	160	140	273
29	152	381	450	1,130	-	565	465	373	211	160	138	214
30	150	373	616	916	-----	759	520	357	208	160	138	194
31	148	-----	570	768	-----	780	-----	345	-----	160	138	-----
Total	4,988	18,653	17,582	19,610	13,207	13,336	15,659	15,326	9,228	5,458	4,574	5,176
Mean	161	622	567	635	472	430	522	494	308	176	148	173
Cfs/m	1.38	5.32	4.85	5.41	4.03	3.68	4.46	4.22	2.63	1.50	1.26	1.48
In.	1.59	5.93	5.59	6.23	4.20	4.24	4.98	4.87	2.93	1.73	1.45	1.65
Ac-ft	9,890	37,000	34,870	38,900	26,200	26,450	31,060	30,400	18,300	10,630	9,070	10,270

Calendar year 1958: Max 3,600 Min 140 Mean 490 Cfs/m 4.19 In. 56.90 Ac-ft 355,100
 Water year 1958-59: Max 1,700 Min 135 Mean 391 Cfs/m 3.34 In. 45.39 Ac-ft 283,200

Peak discharge (base, 1,700 cfs, revised).--Nov. 19 (6:30 a.m.) 1,700 cfs (3.83 ft); Dec. 11 (10 p.m.) 2,120 cfs (4.17 ft); Jan. 27 (5 p.m.) 1,740 cfs (3.66 ft).

* Discharge measurement made on this day.

1475. North Fork of Middle Fork Willamette River near Oakridge, Oreg.

Location (revised).--Lat 43°45'30", long 122°30'30", in SW $\frac{1}{4}$ sec.7, T.21 S., R.3 E., on left bank 1 mile upstream from mouth and 2 $\frac{1}{2}$ miles northwest of Oakridge.

Drainage area.--246 sq mi.

Records available.--October 1909 to March 1916, September 1935 to September 1959. Monthly discharge only for some periods, published in WSP 1318. Prior to October 1912, published as "near Hazeldell."

Gage.--Water-stage recorder. Datum of gage is 1,029.6 ft above mean sea level (river-profile survey). Prior to Feb. 26, 1916, water-stage recorder or staff gages at several sites within three-quarters of a mile of present site at various datums. Sept. 16, 1935, to Oct. 3, 1938, staff gage at present site and datum.

Average discharge.--30 years (1909-15, 1935-59), 785 cfs (568,300 acre-ft per year).

Extremes.--Maximum discharge during year, 5,400 cfs Jan. 27 (gage height, 8.75 ft); minimum, 46 cfs Oct. 15, affected by log-pond operation upstream.
1909-16, 1935-59: Maximum discharge, 17,000 cfs Dec. 28, 1945 (gage height, 16.6 ft), from rating curve extended above 8,000 cfs by logarithmic plotting; minimum, 26 cfs Oct. 14, 1939.

Remarks.--Records excellent. Tunnel and control gates built to divert part of outflow from Waldo Lake into Salmon Creek basin not used during year. Occasional diurnal fluctuations during low-water periods caused by logponds above station.

Revisions (water years).--WSP 1248: 1914-16.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 19

Nov. 20 to Sept. 30

1.9	107	4.0	900	2.0	120	4.0	870
2.1	143	5.0	1,640	2.5	229	6.0	2,510
2.5	235	7.0	3,470	3.0	385	8.0	4,500
3.0	400			3.5	590		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	143	155	586	954	1,510	822	1,890	900	424	268	154	136
2	141	155	581	870	1,280	852	2,090	858	416	260	152	133
3	139	161	706	768	*1,130	816	1,940	786	406	257	150	133
4	139	334	712	678	1,040	762	1,750	706	399	249	*150	134
5	139	436	640	678	978	728	1,560	*906	518	254	150	148
6	*139	821	600	656	924	690	1,380	1,110	554	251	148	219
7	138	1,320	855	620	864	656	1,200	1,010	500	251	144	176
8	155	1,720	1,060	651	792	620	1,050	966	452	243	142	152
9	157	1,460	1,230	717	756	615	948	954	468	229	140	157
10	145	1,180	1,240	1,010	739	610	888	900	504	224	140	140
11	143	870	2,400	1,210	684	568	846	810	468	213	140	142
12	141	*695	3,200	1,840	635	635	798	739	440	208	140	140
13	138	2,250	2,120	1,660	605	695	750	768	424	203	142	138
14	136	2,130	1,560	1,320	822	651	706	834	402	201	138	*131
15	127	1,410	*1,230	1,110	966	625	668	834	385	198	138	150
16	123	1,020	1,030	1,060	1,190	615	620	728	*408	186	138	156
17	125	798	894	984	1,270	640	586	734	385	192	138	146
18	143	840	786	924	1,110	695	564	768	371	187	136	150
19	359	3,300	712	948	1,060	768	527	796	360	185	142	185
20	416	3,250	646	900	1,010	*712	496	734	340	171	142	211
21	256	2,330	625	822	966	750	496	668	326	178	154	219
22	208	1,790	568	774	894	762	504	620	309	176	138	171
23	292	1,390	532	774	834	756	522	576	306	178	140	156
24	181	1,180	514	1,080	762	816	564	558	303	178	131	148
25	170	1,040	532	1,280	722	846	572	540	294	171	136	156
26	167	906	558	1,250	717	1,240	662	540	294	169	134	719
27	165	768	739	3,830	750	1,170	804	536	291	165	135	500
28	157	673	673	3,880	750	1,160	840	518	285	162	136	568
29	159	600	804	2,860	---	1,210	780	492	285	162	136	291
30	155	586	1,170	2,070	---	1,800	852	468	277	178	131	249
31	153	---	1,040	1,760	---	1,780	---	444	---	156	134	---
Total	5,249	35,568	30,543	39,738	25,760	26,065	27,833	22,791	11,592	6,293	4,375	6,049
Mean	169	1,186	985	1,282	920	841	928	735	386	203	141	202
Cfs/m	0.687	4.82	4.00	5.21	3.74	3.42	3.77	2.99	1.57	0.825	0.573	0.821
In.	0.79	5.38	4.62	6.01	3.89	3.94	4.21	3.45	1.75	0.95	0.66	0.91
Ac-ft	10,410	70,550	60,580	78,820	51,090	51,700	55,210	45,210	22,990	12,480	8,680	12,000
Calendar year 1958: Max	7,320	Min	123	Mean	860	Cfs/m	3.50	In.	47.43	Ac-ft	622,300	
Water year 1958-59: Max	3,880	Min	123	Mean	663	Cfs/m	2.70	In.	36.56	Ac-ft	479,700	

Peak discharge (base, 3,500 cfs).--Nov. 19 (10 p.m.), 3,900 cfs (7.43 ft); Dec. 11 (11:30 p.m.), 3,830 cfs (7.36 ft); Jan. 27 (4 p.m.), 5,400 cfs (8.75 ft).

* Discharge measurement made on this day.

1480. Middle Fork Willamette River below North Fork, near Oakridge, Oreg.

Location.--Lat 43°48'05", long 122°33'35", in SW¹/₄ sec.27, T.20 S., R.2 E., on left bank 0.5 mile downstream from Whitehead Creek, 4.2 miles (revised) downstream from North Fork of Middle Fork Willamette River, and 7 miles northwest of Oakridge.

Drainage area.--924 sq mi.

Records available.--March 1911 to September 1912, July 1923 to September 1959. Monthly discharge only for some periods, published in WSP 1318. Published as "near Hazeldell" 1911-12 and as "at Eula" 1923-50.

Gage.--Water-stage recorder. Datum of gage is 934.76 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Mar. 22, 1911, to Sept. 30, 1912, staff gage at site 4 miles upstream, just below North Fork, at different datum. July 1, 1923, to Aug. 11, 1935, staff gage and Aug. 12, 1935, to Sept. 30, 1950, water-stage recorder, at site 4 miles downstream at different datum.

Average discharge.--37 years (1911-12, 1923-58), 2,727 cfs (1,974,000 acre-ft per year).

Extremes.--Maximum discharge during year, 17,900 cfs Jan. 27 (gage height, 6.78 ft); minimum, 604 cfs Oct. 15.

1911-12, 1923-59: Maximum discharge, 81,800 cfs Dec. 28, 1945 (gage height, 18.8 ft, from floodmark, site and datum then in use), from rating curve extended above 39,000 cfs by logarithmic plotting; minimum observed, 450 cfs Nov. 24, 25, Dec. 5, 6, 1929, Sept. 4-6, 16, 17, 1931.

Maximum stage known since 1861 and prior to beginning of record, 17.0 ft in February 1890 at site used 1923-50, from information by local resident (discharge, about 55,000 cfs).

Revisions.--The maximum discharge for the water year 1936 has been revised to 19,200 cfs Jan. 4, 1936 (gage height, 10.45 ft), superseding figure published in WSP 814, and 1318.

Remarks.--Records excellent. Slight regulation by logponds. No diversion above station. Records of water temperatures for the water year 1959 are given in WSP 1644.

Revisions (water years).--WSP 694: 1925-28. WSP 814: Drainage area for site at Eula. WSP 1248: 1924, 1925(M), 1926-28, 1929(M), 1930, 1933, 1946(M). WSP 1398: 1927(M).

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 27

Jan. 28 to Sept. 30

1.1	620	3.0	3,540	1.1	630	3.0	3,610
1.5	1,030	4.0	6,200	1.5	1,020	4.0	6,200
2.0	1,690	6.0	14,200	2.0	1,700	6.0	14,200

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	740	760	1,870	3,210	4,550	2,950	6,080	3,170	1,910	1,120	756	675
2	730	770	1,870	2,940	4,000	3,020	6,440	2,990	1,950	1,090	756	666
3	710	790	2,110	2,630	3,540	2,850	6,020	2,830	1,960	1,080	756	666
4	710	1,430	2,140	2,590	3,300	2,650	5,490	2,590	1,910	1,040	*756	675
5	710	1,620	1,970	2,410	3,040	2,480	4,960	*2,950	2,460	1,040	756	711
6	710	2,270	1,870	2,380	*2,870	2,350	4,450	3,410	3,080	1,040	747	810
7	710	3,720	2,300	2,270	2,750	2,240	3,930	3,170	2,550	1,040	738	765
8	750	3,970	3,080	2,430	2,570	2,150	3,480	3,100	2,260	1,010	729	720
9	780	3,950	4,200	2,760	2,510	2,150	3,170	3,170	2,150	976	720	720
10	740	3,560	3,900	4,330	2,460	2,140	2,990	3,020	2,170	943	711	684
11	750	2,680	6,420	5,320	2,330	2,010	2,890	2,810	1,990	921	711	675
12	720	*2,200	8,840	8,750	2,210	2,120	2,770	2,670	1,910	910	711	675
13	710	6,100	5,870	6,800	2,120	2,320	2,630	2,690	1,870	890	711	666
14	710	6,240	4,460	5,030	2,960	2,240	2,510	3,260	1,760	890	702	*666
15	701	4,100	*3,640	4,070	3,900	2,150	2,390	3,190	1,680	880	702	702
16	683	3,040	3,120	3,800	4,750	2,170	2,240	2,870	*1,740	860	702	720
17	692	2,470	2,760	3,450	5,240	2,300	2,170	2,870	1,660	850	702	702
18	720	2,570	2,480	3,170	4,410	2,420	2,060	3,060	1,560	840	693	729
19	1,900	11,800	2,270	3,140	4,190	2,670	1,960	3,100	1,520	830	711	840
20	1,500	9,960	2,110	3,020	3,880	*2,500	1,900	2,890	1,490	810	738	1,060
21	1,150	6,580	2,110	2,800	3,540	2,570	1,900	2,670	1,440	801	747	1,030
22	953	4,980	1,970	2,680	3,260	2,730	1,990	2,510	1,350	801	720	830
23	898	4,020	1,820	2,610	3,040	2,710	2,060	2,390	1,310	801	711	765
24	843	3,410	1,760	4,200	2,790	2,790	2,190	2,350	1,300	810	702	729
25	810	3,040	1,940	4,800	2,590	2,810	2,320	2,500	1,260	792	693	758
26	800	2,680	2,100	4,310	2,510	4,120	2,690	2,260	1,240	792	684	2,100
27	790	2,380	3,320	12,200	2,610	4,000	2,950	2,230	1,240	783	684	1,960
28	780	2,140	2,920	13,600	2,670	3,900	2,890	2,150	1,200	783	684	1,450
29	770	2,000	2,900	8,580	---	4,210	2,750	2,100	1,200	783	684	1,150
30	760	---	3,780	6,300	---	5,050	2,950	1,990	1,150	783	675	1,010
31	750	---	3,470	5,290	---	8,020	---	1,910	---	765	675	---
Total	25,660	107,130	95,370	141,610	90,590	89,790	95,220	84,870	52,280	27,754	22,167	26,289
Mean	828	3,571	3,076	4,568	3,235	2,896	3,174	2,738	1,743	895	715	876
Cfs/m	0.896	3.96	3.33	4.94	3.55	3.13	3.44	2.96	1.89	0.969	0.774	0.948
In.	1.03	4.81	3.84	5.70	3.65	3.61	3.83	3.42	2.10	1.12	0.89	1.06
Ac-ft	50,900	212,500	189,200	280,900	179,700	178,100	188,900	168,300	103,700	55,050	43,970	52,140
Calendar year 1958: Max	29,700	Min	683	Mean	3,080	Cfs/m	3.33	In.	45.24	Ac-ft	2,230,000	
Water year 1958-59: Max	13,600	Min	666	Mean	2,353	Cfs/m	2.55	In.	34.56	Ac-ft	1,703,000	

Peak discharge (base, 12,000 cfs, revised).--Nov. 19 (10 a.m.) 13,500 cfs (5.84 ft); Jan. 27 (8 to 9 p.m.) 17,900 cfs (6.78 ft).

* Discharge measurement made on this day.

1490. Lookout Point Reservoir near Lowell, Oreg.

Location.--Lat 43°54'50", long 122°45'00", in SE $\frac{1}{4}$ sec.13, T.19 S., R.1 W., in elevator house at right end of spillway section of dam across Middle Fork Willamette River, $\frac{1}{2}$ miles east of Lowell.

Drainage area.--991 sq mi.

Records available.--November 1953 to September 1959.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers). Nov. 7, 1953, to Dec. 4, 1954, approximate elevations obtained from reference marks and Dec. 5, 1954, to Feb. 4, 1955, staff gage, at same site and datum.

Extremes.--Maximum contents during year, 448,300 acre-ft June 5 (elevation, 927.22 ft); minimum, 112,300 acre-ft Dec. 22 (elevation, 821.85 ft).
1953-59: Maximum contents, 451,100 acre-ft June 9, 1958 (elevation, 927.86 ft); minimum observed, 91,200 acre-ft Dec. 1, 1954 (elevation, 811 ft).

Remarks.--Reservoir is formed by earth-fill dam with concrete gate and spillway section, completed in 1954 by Corps of Engineers. Planned storage began in November 1953. Total capacity is 456,000 acre-ft and usable capacity is 349,400 acre-ft between elevations 819 (proposed lower limit of operation) and 929 ft (top of spillway gates). Reservoir used for flood control, improvement of navigation, power generation, pollution abatement, and other purposes. Capacity table computed by Corps of Engineers. Figures given herein represent total contents.

Capacity table, water year 1958-59 (elevation, in feet, and contents, in acre-feet)

821	110,600	880	267,800
830	129,600	890	302,300
840	152,600	900	336,800
850	178,000	910	377,300
860	205,700	920	417,800
870	235,600	930	460,300

Contents, in thousands of acre-feet, at 12 p.m., water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	287.0	161.5	116.5	125.0	178.5	219.1	343.2	429.6	443.8	444.0	416.8	367.4
2	282.4	158.8	115.3	123.0	163.8	222.6	352.0	433.8	445.1	442.9	418.1	365.2
3	277.9	154.3	114.7	123.9	159.6	225.8	357.3	437.2	446.4	442.4	416.2	362.7
4	273.7	152.6	115.3	124.2	154.7	228.5	361.1	438.6	447.4	444.3	414.4	360.4
5	269.4	150.8	115.5	121.0	149.4	230.9	363.5	441.3	446.6	444.1	412.4	358.8
6	264.1	152.0	116.8	119.8	144.1	233.3	364.7	443.0	446.3	442.9	410.6	358.8
7	259.7	153.8	118.9	119.6	145.9	236.0	368.1	442.5	446.8	441.9	408.9	358.3
8	255.4	156.1	120.5	119.7	147.6	238.4	370.4	442.0	446.3	440.6	408.0	356.0
9	251.3	158.2	123.7	117.9	148.4	240.1	373.2	442.1	445.6	439.4	409.1	353.4
10	247.1	157.5	122.6	119.6	151.1	241.7	375.6	441.8	444.9	438.2	407.1	350.6
11	244.2	150.9	125.9	123.2	153.3	243.7	378.9	441.1	443.6	437.4	404.8	347.9
12	241.2	140.1	135.2	136.0	155.2	245.7	382.1	440.0	443.2	439.1	402.7	346.0
13	237.1	139.7	137.8	140.7	157.2	248.1	383.9	439.5	443.9	437.8	400.7	347.3
14	233.0	138.7	137.1	142.7	162.9	250.8	386.5	440.0	444.5	436.6	398.7	344.4
15	228.6	132.5	134.3	143.1	172.6	253.4	388.9	440.1	444.8	435.3	393.1	341.8
16	224.3	124.8	125.5	142.7	179.5	255.2	391.0	439.5	445.1	433.3	398.2	339.1
17	219.9	117.4	122.0	143.1	183.4	257.2	392.8	439.2	445.2	431.7	395.6	336.9
18	217.5	116.9	120.3	142.8	184.6	259.7	394.7	439.1	444.8	431.4	393.2	335.1
19	214.3	113.0	117.2	140.8	187.0	262.7	396.3	439.3	444.2	431.8	390.9	333.4
20	212.1	138.8	115.5	140.4	188.6	265.2	397.9	438.8	443.8	431.5	388.7	335.6
21	207.6	129.0	114.0	139.6	194.2	268.8	399.4	438.4	444.6	430.1	386.9	333.7
22	203.5	127.0	112.6	138.2	199.1	272.6	401.2	438.8	444.2	428.7	385.1	331.4
23	199.4	123.0	112.8	136.7	201.3	275.7	403.2	440.0	444.3	427.6	386.3	328.8
24	195.0	118.3	113.0	140.7	203.0	278.8	405.1	441.2	444.5	426.5	383.9	326.3
25	190.9	118.5	113.6	146.3	205.7	282.4	407.4	441.9	444.5	425.3	381.5	324.7
26	186.9	117.9	114.5	148.7	208.4	288.8	410.7	443.0	444.0	426.6	379.1	325.8
27	181.8	119.3	118.3	171.6	211.2	295.3	414.1	444.4	444.1	424.8	376.4	329.7
28	177.6	117.5	120.9	201.6	214.8	302.3	417.3	444.7	446.3	423.0	374.0	327.0
29	173.5	118.3	123.4	211.3	-	310.0	420.4	444.8	445.6	421.2	372.3	322.7
30	169.0	119.0	126.1	202.6	-	321.5	425.6	444.6	444.8	419.5	371.6	317.6
31	164.1	-	125.0	191.9	-	332.4	-	445.9	-	417.8	369.5	-
(†)	844.63	825.09	827.93	855.10	863.14	898.27	921.85	926.64	926.40	920.00	908.00	894.26
(‡)	-127,300	-45,100	+6,000	+66,900	+22,900	+117,600	+93,200	+20,300	-1,100	-27,000	-48,300	-51,900

Calendar year 1958..... † -127,700
Water year 1958-59..... ‡ +26,200

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

1500. Middle Fork Willamette River near Dexter, Oreg.

Location.--Lat 43°56'40", long 122°50'10", near center of sec.5, T.19 S., R.1 W., on right bank 0.6 mile (revised) upstream from Lost Creek, 2 miles northwest of Dexter, and 2.7 miles downstream from Dexter Dam.

Drainage area.--1,001 sq mi.

Records available.--October 1946 to September 1954 (published as "at Lowell"), June 1955 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 600 ft (from river-profile map). Prior to Aug. 23, 1950, staff gage and Aug. 23, 1950, to Sept. 30, 1954, water-stage recorder, at site 4 miles upstream at datum 668 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--12 years, 3,523 cfs (2,551,000 acre-ft per year), adjusted for storage.

Extremes.--Maximum discharge during year, 12,900 cfs Jan. 30 (gage height, 7.27 ft); minimum daily, 1,120 cfs June 30.

1946-54, 1955-59: Maximum discharge, 62,600 cfs Jan. 18, 1953 (gage height, 12.46 ft, site and datum then in use), from rating curve extended above 33,000 cfs by logarithmic plotting; minimum daily, 200 cfs Dec. 20, 21, 1957, Feb. 16, 17, 1958.

Maximum stage known, 13.9 ft Dec. 28, 1945 (former site and datum).

Remarks.--Records excellent. Flow regulated since November 1953 by Lookout Point Reservoir (see preceding page). Records of water temperatures for the water year 1959 are given in WSP 1644.

Revisions.--The supplemental peak discharge for Nov. 16, 1947, has been revised to Nov. 16 (about 3 a.m.) 12,000 cfs, superseding that published in WSP 1124.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 29				Jan. 30 to Sept. 30			
2.0	1,420	5.0	6,400	1.7	1,100	5.0	6,100
3.0	2,620	7.0	12,000	3.0	2,500	7.0	12,000
4.0	4,300			4.0	4,060		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,960	2,330	2,260	4,010	11,800	1,220	1,240	1,270	1,990	1,470	1,390	1,660
2	2,980	2,100	2,880	3,650	12,000	1,240	2,220	1,230	1,590	1,400	1,350	1,670
3	2,980	2,820	2,540	2,700	6,280	1,240	3,860	1,150	1,340	1,320	1,330	1,670
4	3,000	2,420	2,140	2,680	5,920	1,260	3,950	*1,320	1,350	1,270	1,390	1,670
5	2,960	2,150	1,850	*3,600	5,920	1,250	4,010	1,580	2,510	1,240	*1,410	1,660
6	2,920	2,100	1,670	3,340	5,730	1,240	3,950	2,600	3,400	1,350	1,420	1,640
7	2,950	3,070	1,730	2,570	2,480	1,240	2,460	3,540	2,940	1,480	1,410	1,660
8	2,890	3,390	1,900	2,620	2,300	1,210	2,320	3,380	2,710	1,560	1,410	1,670
9	2,900	3,510	2,200	3,900	2,060	1,190	1,860	3,650	2,610	1,410	1,420	1,670
10	2,710	3,630	4,560	4,660	1,350	1,190	1,790	3,040	2,580	1,320	1,420	1,650
11	2,440	6,120	5,140	4,380	*1,150	1,200	1,380	3,230	2,500	1,400	1,480	1,660
12	2,320	8,200	5,240	4,520	1,220	1,230	1,450	3,320	2,110	1,410	1,490	1,680
13	2,360	7,450	5,200	4,580	1,240	1,240	1,500	3,340	1,550	1,390	1,520	1,630
14	2,610	8,080	5,600	4,840	1,430	1,220	1,280	3,340	1,430	1,390	1,470	1,650
15	2,880	8,020	5,660	4,460	1,330	1,190	1,240	3,320	1,570	1,390	1,480	1,640
16	2,740	7,750	8,080	4,480	1,540	1,250	1,220	3,220	1,310	1,400	1,480	*1,690
17	3,000	6,710	4,800	3,880	3,600	1,200	1,220	3,350	1,400	1,410	1,560	1,800
18	2,660	3,280	3,720	3,790	4,260	1,210	1,230	3,180	1,490	1,260	1,590	1,760
19	2,830	4,320	3,880	4,260	3,620	1,220	1,240	3,110	1,650	1,140	1,580	1,660
20	2,920	9,300	3,510	3,700	2,900	1,230	1,250	3,220	1,730	1,140	1,610	1,670
21	2,950	*10,900	3,310	3,670	1,610	1,230	1,250	2,610	1,690	1,150	1,610	1,660
22	2,980	6,820	2,930	3,600	1,480	1,230	1,240	2,230	1,500	1,320	1,630	1,740
23	3,020	6,850	1,710	3,100	1,760	1,240	1,190	1,810	1,340	1,400	1,630	1,680
24	3,000	6,650	1,660	2,660	1,770	1,230	1,190	1,880	*1,320	1,400	1,610	1,670
25	2,950	3,440	1,660	2,760	1,230	1,230	1,190	1,610	1,330	1,420	1,610	1,660
26	2,960	2,880	1,790	3,090	1,270	*1,250	1,270	1,820	1,320	1,420	1,680	1,690
27	3,010	2,330	1,700	2,230	1,230	1,300	1,180	1,590	1,350	1,400	1,690	1,640
28	2,980	2,330	1,660	1,480	1,230	1,250	1,200	1,930	1,240	1,390	1,690	1,980
29	2,950	2,200	1,780	4,330	-	1,210	1,220	1,760	1,160	1,420	1,660	2,980
30	2,940	1,980	2,160	11,600	-----	1,240	1,220	1,900	1,120	1,400	1,660	3,650
31	2,920	-----	3,610	11,400	-----	1,350	-----	1,960	-----	1,390	1,660	-----
Total	88,670	142,930	98,750	127,140	89,710	38,230	52,810	76,900	53,130	42,260	47,400	53,810
Mean	2,860	4,764	3,185	4,101	3,204	1,233	1,760	2,481	1,771	1,363	1,529	1,794
Ac-ft	175,900	283,500	195,900	252,200	177,900	75,830	104,700	152,500	105,400	83,820	94,020	106,700

Adjusted for change in contents in Lookout Point Reservoir

	Mean	790	4,006	3,284	5,190	3,616	3,145	3,326	2,610	1,753	924	744	921
Cfsm	0.789	4.00	3.28	5.18	3.61	3.14	3.32	2.81	1.75	0.923	0.743	0.920	
In.	0.31	4.47	3.78	5.98	3.76	3.62	3.71	3.24	1.95	1.06	0.86	1.03	
Ac-ft	48,600	238,400	201,900	319,100	200,800	193,400	197,900	172,800	104,300	56,820	45,720	54,800	

observed

Calendar year 1958: Max	14,600	Min	200	Mean	3,437	Ac-ft	2,488,000
Water year 1958-59: Max	12,000	Min	1,120	Mean	2,498	Ac-ft	1,808,000

Adjusted

Calendar year 1958: Mean	3,260	Cfsm	3.26	In.	44.21	Ac-ft	2,360,000
Water year 1958-59: Mean	2,533	Cfsm	2.53	In.	34.35	Ac-ft	1,834,000

* Discharge measurement made on this day.

WILLAMETTE RIVER BASIN

1510. Fall Creek below Winberry Creek, near Fall Creek, Oreg.

Location (revised).--Lat 43°56'40", long 122°46'30", near center of sec.2, T.19 S., R.1 W., on left bank 10 ft upstream from highway bridge, 1.6 miles downstream from Winberry Creek, 2.3 miles southeast of town of Fall Creek, and 6.1 miles upstream from mouth.

Drainage area.--186 sq mi.

Records available.--October to December 1911 (gage heights and discharge measurements only), September 1935 to September 1959. Published as Big Fall Creek near Fall Creek 1911.

Gage.--Water-stage recorder. Datum of gage is 637.80 ft above mean sea level, datum of 1929. Oct. 1 to Dec. 31, 1911, staff gage at site a quarter of a mile downstream at different datum. Sept. 9, 1935, to Aug. 3, 1950, staff gage at present site and datum.

Average discharge.--24 years, 581 cfs (420,600 acre-ft per year).

Extremes.--Maximum discharge during year, 8,810 cfs Jan. 27 (gage height, 11.32 ft); minimum, 28 cfs Oct. 7.

1935-59: Maximum discharge, 24,700 cfs Dec. 11, 1956 (gage height, 18.80 ft), from rating curve extended above 10,000 cfs by logarithmic plotting; minimum observed, 19 cfs Dec. 1, 1936.

Remarks.--Records excellent. No regulation or diversion above station. Records of water temperatures for the water year 1959 are given in WSP 1644.

Revisions (water years).--WSP 1094: 1946(M). WSP 1248: Drainage area.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 27

Jan. 28 to Sept. 30

1.2	22	3.3	650	1.2	29	3.3	650
1.4	43	5.0	1,800	1.4	50	5.0	1,800
1.7	93	7.0	3,500	1.7	93	7.0	3,500
2.5	295	9.0	5,700	2.5	295	9.0	5,700

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	44	244	640	1,240	625	1,620	510	212	101	47	31
2	30	44	208	570	992	585	1,480	530	202	97	47	31
3	29	53	306	473	824	510	1,200	555	190	93	44	31
4	29	247	289	424	710	450	950	*473	182	91	43	32
5	29	416	256	*492	610	402	794	1,210	351	99	*44	41
6	29	1,080	241	510	645	370	650	1,520	394	107	43	120
7	29	1,380	561	473	650	346	545	1,020	306	103	42	81
8	48	2,370	692	520	615	326	468	746	256	101	41	60
9	79	1,580	710	698	595	326	410	645	274	91	41	52
10	44	1,520	692	1,640	585	402	378	545	382	86	39	43
11	39	914	2,570	1,950	*530	350	346	468	306	81	39	42
12	35	570	3,000	2,650	464	428	316	402	265	76	39	40
13	32	3,370	1,580	1,900	437	620	289	358	244	76	39	38
14	32	3,300	1,010	1,220	1,600	605	271	424	222	73	39	37
15	31	1,650	734	884	2,060	550	268	610	205	72	38	40
16	30	968	570	764	3,040	525	244	520	202	69	38	*56
17	30	674	460	640	2,260	515	235	590	188	68	37	48
18	33	686	394	610	1,560	491	225	944	172	65	37	58
19	222	4,680	346	728	1,240	692	212	1,090	162	62	38	70
20	382	2,930	309	776	1,030	590	205	866	152	61	38	152
21	145	*1,610	312	674	878	680	200	645	142	60	38	148
22	93	1,050	268	615	752	902	192	520	135	57	38	83
23	89	752	247	575	868	806	190	428	128	56	38	190
24	70	610	235	824	585	926	188	366	*128	56	36	52
25	59	496	262	890	525	944	188	330	122	55	36	55
26	51	410	316	818	530	*1,960	265	354	124	55	34	1,080
27	49	350	580	5,190	595	1,770	382	309	122	51	34	455
28	44	306	468	4,890	590	1,480	370	292	113	50	34	271
29	44	274	515	2,580	---	1,570	316	282	116	50	34	196
30	41	256	968	1,780	---	2,280	241	109	50	30	34	142
31	39	---	764	1,460	---	1,940	---	225	---	49	31	---
Total	1,966	34,590	20,107	38,848	26,810	24,966	13,834	17,998	6,103	2,261	1,200	3,639
Mean	63.4	1,153	649	1,253	958	805	461	581	203	72.9	38.7	121
Cfs/m	0.341	6.20	3.49	6.74	5.15	4.33	2.48	3.12	1.09	0.392	0.208	0.651
In.	0.33	6.92	4.02	7.77	5.36	4.99	2.77	3.60	1.22	0.45	0.24	0.73
Ac-ft	3,900	68,610	39,890	77,050	53,180	49,520	27,440	35,700	12,110	4,480	2,380	7,220
Calendar year 1958: Max	7,740	Min	29	Mean	560	Cfs/m 3.01	In.	40.85	Ac-ft	405,200		
Water year 1958-59: Max	5,190	Min	29	Mean	527	Cfs/m 2.83	In.	38.46	Ac-ft	381,500		

Peak discharge (base, 6,300 cfs, revised).--Jan. 27 (4:30 p.m.) 8,810 cfs (11.32 ft).

* Discharge measurement made on this day.

1520. Middle Fork Willamette River at Jasper, Oreg.

Location.--Lat 43°59'50", long 122°54'20", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.14, T.18 S., R.2 W., on right bank 25 ft downstream from highway bridge at Jasper, 650 ft downstream from Hills Creek, and 7 $\frac{1}{2}$ miles southeast of Springfield.

Drainage area.--1,340 sq mi.

Records available.--September 1905 to February 1912, July 1913 to March 1917, October 1952 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 513.45 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. September 1905 to February 1912 and July 1913 to March 1917, staff gages at approximately same site at different datum. Oct. 22, 1952, to Oct. 1, 1953, wire-weight gage at site 25 ft upstream at same datum.

Average discharge.--16 years (1905-11, 1913-16, 1952-59), 4,066 cfs (2,944,000 acre-ft per year).

Extremes.--Maximum discharge during year, 16,300 cfs Jan. 27 (gage height, 8.07 ft); minimum, 1,100 cfs July 21.
1905-12, 1913-17, 1952-59: Maximum discharge, 94,000 cfs Nov. 23, 1909 (gage height, 17.4 ft, datum then in use, from graph based on gage readings), from rating curve extended above 10,000 cfs by logarithmic plotting; minimum, 366 cfs Dec. 5, 1954.

Remarks.--Records excellent. Flow regulated by Lookout Point Reservoir (see p. 112). Records of water temperatures for the water year 1959 are given in WSP 1644.

Revisions (water years).--WSP 1288: 1907-8, 1910-12, 1914-16, drainage area.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18

Nov. 19 to Sept. 30

3.1	2,260	6.0	9,000	2.1	1,120	6.0	8,800
4.0	3,850	8.0	16,700	3.0	2,170	8.0	16,000
5.0	6,100			4.0	3,850		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,110	2,620	2,770	5,020	13,500	2,510	4,010	2,280	2,530	1,580	1,440	1,710
2	3,090	2,260	3,350	4,730	13,500	2,450	4,370	2,270	2,170	1,560	1,390	1,710
3	3,110	2,910	3,180	3,810	7,780	2,370	5,950	2,230	1,820	1,470	1,440	1,720
4	3,140	2,980	2,800	3,570	6,920	2,270	5,600	*2,250	1,850	1,380	*1,450	1,720
5	3,120	2,910	2,460	*4,430	6,850	2,160	5,420	3,310	3,120	1,400	1,460	1,740
6	*3,050	3,400	2,230	4,370	6,700	2,070	5,220	4,950	4,250	1,520	1,460	1,860
7	3,070	5,120	2,510	3,630	4,170	1,990	3,850	5,220	3,590	1,670	1,450	1,850
8	3,030	6,620	2,980	3,850	3,710	1,950	3,550	4,770	3,330	1,780	1,450	1,780
9	3,120	5,980	3,310	5,450	3,330	1,930	2,880	4,950	3,210	1,600	1,440	1,740
10	2,890	5,850	5,180	7,900	2,740	2,020	2,710	4,230	3,370	1,460	1,460	1,730
11	2,560	7,110	8,200	8,290	*2,340	1,830	2,240	4,250	3,140	1,540	1,550	1,740
12	2,450	8,820	9,610	9,920	2,280	2,070	2,230	4,250	2,700	1,540	1,550	1,760
13	2,450	12,500	7,350	7,930	2,240	2,370	2,240	4,190	2,090	1,530	1,580	1,720
14	2,690	13,800	6,920	6,900	4,730	2,390	1,940	4,270	1,860	1,530	1,530	1,750
15	2,980	10,800	6,600	6,100	5,500	2,250	1,860	4,490	1,950	1,520	1,510	1,740
16	2,840	9,000	8,430	5,850	6,780	2,270	1,780	4,310	1,710	1,520	1,520	*1,780
17	3,070	7,740	5,600	5,180	7,630	2,180	1,760	4,530	1,770	1,500	1,590	1,880
18	2,790	4,490	4,530	4,880	7,200	2,170	1,740	5,000	1,860	1,350	1,640	1,850
19	3,120	12,200	4,490	5,350	6,180	2,560	1,740	5,050	1,950	1,200	1,650	1,780
20	3,550	*14,200	4,150	5,000	5,150	2,390	1,740	4,850	2,070	1,200	1,670	1,900
21	3,230	*13,900	3,990	4,770	3,650	2,560	1,730	4,210	2,000	1,150	1,660	1,950
22	3,200	8,140	3,710	4,630	3,120	2,840	1,700	3,390	1,820	1,350	1,670	1,900
23	3,250	7,500	2,420	4,170	3,210	2,770	1,620	2,760	1,610	1,460	1,670	1,790
24	3,230	7,420	2,250	4,070	3,140	2,970	1,610	2,740	*1,550	1,510	1,660	1,780
25	3,160	4,700	2,320	4,210	2,460	3,000	1,610	2,600	1,540	1,520	1,650	1,800
26	3,180	3,810	2,510	4,370	2,460	*4,650	1,850	2,640	1,520	1,520	1,720	2,900
27	3,210	3,180	3,040	10,800	2,530	4,450	1,900	2,370	1,580	1,460	1,780	2,350
28	3,160	3,020	2,740	11,200	2,490	3,930	1,900	2,590	1,420	1,420	1,740	2,390
29	3,120	2,850	2,840	8,620	-	3,990	1,860	2,450	1,330	1,500	1,730	3,210
30	3,140	2,590	3,550	14,100	-----	4,980	2,030	2,520	1,250	1,470	1,720	3,890
31	3,090	-----	4,850	13,500	-----	4,590	-----	2,550	-----	1,450	1,700	-----
Total	94,200	198,220	130,870	196,600	141,990	84,930	80,620	112,670	65,940	45,660	48,890	59,360
Mean	3,039	6,807	4,222	6,342	5,071	2,740	2,687	3,635	2,198	1,473	1,577	1,979
Ac-ft	186,800	393,200	259,600	390,000	281,600	168,500	159,900	223,500	130,800	90,570	96,970	117,700
Calendar year 1958:	Max	16,300		Min	1,170		Mean	4,387	Ac-ft	3,176,000		
Water year 1958-59:	Max	14,200		Min	1,150		Mean	3,452	Ac-ft	2,499,000		

* Discharge measurement made on this day.

1525. Coast Fork Willamette River at London, Oreg.

Location.--Lat 43°38'30", long 123°05'05", in SW $\frac{1}{4}$ sec.20, T.22 S., R.3 W., on left bank 0.6 mile north of London and 11 miles south of Cottage Grove.

Drainage area.--69 sq mi, approximately.

Records available.--September 1935 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 852.58 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Oct. 17, 1935, staff gage at same site and datum.

Average discharge.--24 years, 210 cfs (152,000 acre-ft per year).

Extremes.--Maximum discharge during year, 2,480 cfs Feb. 14 (gage height, 6.35 ft); minimum, 13 cfs Oct. 1, 2, 4, 6, 7.
1935-59: Maximum discharge, 8,800 cfs Dec. 28, 1945 (gage height, 13.25 ft), from rating curve extended above 4,000 cfs; minimum, 10 cfs for several days in 1936, 1938-40.

Remarks.--Records excellent except those for periods of backwater from debris or no gage-height record, which are good. No regulation or diversion above station.

Rating tables, water year 1958-59, except periods of backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 12

Jan. 13 to Sept. 30

1.1	13	2.0	120	1.1	16	2.0	120
1.3	23	2.4	240	1.3	28	2.4	240
1.5	40	3.5	740	1.5	44	3.5	740
1.7	67	6.0	2,230	1.7	67	6.0	2,230

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	c14	c36	73	a190	a360	256	510	108	64	37	20	16
2	c14	c24	*66	a160	a280	233	409	158	60	36	20	16
3	c14	c24	70	140	a240	205	336	157	58	35	20	16
4	c14	122	67	130	a200	181	280	135	58	34	19	17
5	c14	130	63	151	a190	163	233	190	108	37	19	17
6	c14	163	59	145	212	148	202	190	96	*37	19	23
7	c14	178	68	135	205	138	*181	151	78	37	18	20
8	c16	276	116	326	193	a130	163	132	70	36	18	19
9	c18	288	205	892	240	a130	151	a120	76	33	18	18
10	c17	248	160	1,330	308	a150	138	a110	78	32	17	17
11	15	135	232	1,030	244	a130	132	a95	70	30	17	18
12	c15	96	332	*1,810	205	a120	118	87	66	30	17	18
13	*c14	550	230	874	212	a120	112	82	64	30	18	18
14	c14	645	169	565	1,670	a160	106	110	59	30	18	18
15	c15	352	132	418	1,110	a150	102	132	58	29	18	21
16	c15	196	112	340	1,040	a130	93	116	55	28	17	20
17	c15	138	96	276	770	a130	91	175	53	26	17	19
18	c22	195	89	236	665	a140	89	244	50	26	*17	19
19	c139	1,480	82	244	600	169	84	*272	48	25	18	31
20	72	735	80	240	520	142	80	212	47	24	19	50
21	c43	409	108	a220	436	202	78	169	45	24	20	42
22	c34	268	87	a200	380	230	76	140	45	23	19	27
23	c29	196	82	187	344	233	74	122	43	23	19	25
24	c24	151	a75	430	*300	316	73	106	42	23	c18	21
25	c21	125	a150	414	264	352	74	98	40	24	c17	20
26	c19	106	a300	372	252	685	96	95	41	23	c16	89
27	c19	91	575	1,420	260	560	100	89	42	23	c16	c51
28	18	84	a400	1,290	256	486	93	86	40	23	c16	c34
29	18	76	a300	735	-	515	86	78	39	23	c16	*c28
30	c19	72	a260	a550	-	898	102	72	38	23	c16	c26
31	c23	-	a220	a460	-	670	-	58	-	21	16	-
Total	752	7,589	5,058	15,910	11,956	8,272	4,462	4,079	1,731	885	553	774
Mean	24.3	253	163	513	427	267	149	132	57.7	28.5	17.8	25.8
Cfs/m	0.352	3.67	2.36	7.43	6.19	3.87	2.16	1.91	0.836	0.413	0.258	0.374
In.	0.41	4.09	2.73	8.58	6.44	4.46	2.40	2.20	0.93	0.48	0.30	0.42
Ac-ft	1,490	15,050	10,030	31,560	23,710	16,410	8,850	8,090	3,430	1,760	1,100	1,540
Calendar year 1958: Max	2,730	Min	13	Mean	190	Cfs/m	2.75	In.	37.44	Ac-ft	137,700	
Water year 1958-59: Max	1,810	Min	14	Mean	170	Cfs/m	2.46	In.	33.44	Ac-ft	123,000	
Peak discharge (base, 2,100 cfs, revised).	--Jan. 12 (5 a.m.) 2,410 cfs (6.26 ft); Jan. 27 (5 p.m.) 2,120 cfs (5.81 ft); Feb. 14 (11 a.m.) 2,480 cfs (6.35 ft).											

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for Fall Creek below Winberry Creek, near Fall Creek and Mosby Creek at mouth, near Cottage Grove.
c Backwater from debris.

1530. Cottage Grove Reservoir near Cottage Grove, Oreg.

Location.--Lat 43°43'00", long 123°02'55". in NE $\frac{1}{4}$ sec.28, T.21 S., R.3 W., in east abutment of dam on Coast Fork Willamette River, $5\frac{1}{2}$ miles south of Cottage Grove.

Drainage area.--104 sq mi.

Records available.--October 1942 to September 1959.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

Extremes.--Maximum contents during year, 32,760 acre-ft June 10 (elevation, 790.85 ft); minimum, 2,720 acre-ft Jan. 18 (elevation, 749.44 ft).
1942-59: Maximum contents, 34,750 acre-ft May 3, 1949 (elevation, 792.42 ft); minimum since first filling, about 580 acre-ft Nov. 13, 1950 (elevation, about 738.2 ft), from graph based on records of inflow and outflow.

Remarks.--Reservoir is formed by earth-fill dam with concrete spillway completed by Corps of Engineers in 1942; storage began Oct. 31, 1942. Capacity, 32,940 acre-ft between elevations 719.0 (outlet conduit) and 791.0 ft (crest of spillway). Dead storage negligible. Reservoir used for flood control and improvement of navigation below Albany.

Revisions (water years).--WSP 1218: 1950.

Capacity table, water year 1958-59 (elevation, in feet,
and contents, in acre-feet)

749	2,800	775	16,970
750	2,880	780	21,380
755	4,590	785	26,330
760	6,960	790	31,790
765	9,820	795	37,700
770	13,120		

Contents, in acre-feet, at 12 p.m., water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10,430	3,140	2,880	2,980	5,020	10,560	22,370	27,410	32,380	32,060	30,340	8,660
2	10,000	3,030	2,910	2,920	3,610	10,810	22,690	27,620	32,370	32,020	30,270	8,550
3	9,570	2,960	2,940	2,930	3,560	11,090	23,040	27,870	32,360	31,990	30,150	8,430
4	9,150	3,130	2,950	3,040	3,830	11,360	23,370	28,080	32,360	31,960	30,080	8,320
5	8,740	3,250	2,960	3,130	4,120	11,580	23,770	28,410	32,560	31,950	29,990	8,220
6	8,300	3,360	2,950	3,090	4,440	11,830	24,070	28,740	32,650	31,900	29,910	8,130
7	7,870	3,520	2,980	2,960	4,770	12,070	24,400	28,990	32,680	31,870	29,490	8,020
8	7,480	3,870	3,110	3,150	5,070	12,290	24,690	29,220	32,720	31,830	28,640	7,910
9	7,070	4,030	3,390	4,630	5,590	12,530	24,930	29,360	32,740	31,800	27,640	7,800
10	6,660	3,820	3,570	7,370	5,880	12,710	25,160	29,480	32,750	31,770	26,610	7,690
11	6,260	3,410	3,800	8,540	5,770	12,880	25,360	29,580	32,700	31,700	25,630	7,580
12	5,850	3,140	3,940	11,000	5,840	13,050	25,540	29,680	32,670	31,660	24,650	7,460
13	5,550	4,120	3,840	10,490	6,280	13,290	25,690	29,720	32,640	31,610	23,650	7,350
14	5,360	5,150	3,590	8,530	11,540	13,480	25,840	29,940	32,610	31,550	22,690	7,240
15	5,190	4,510	3,260	6,010	15,160	13,650	25,960	30,170	32,590	31,510	21,680	7,130
16	5,010	3,580	3,040	4,060	16,260	13,820	26,060	30,330	32,560	31,450	20,650	7,030
17	4,830	3,060	3,010	3,060	14,450	14,010	26,170	30,770	32,510	31,390	19,640	6,920
18	4,690	3,260	2,940	2,750	11,530	14,230	26,260	31,310	32,460	31,330	18,630	6,830
19	4,790	7,000	2,930	2,810	9,450	14,560	26,330	31,630	32,420	31,290	17,640	6,760
20	4,740	7,350	2,990	2,850	8,510	14,810	26,410	32,100	32,410	31,220	16,610	6,730
21	4,610	5,750	3,120	2,840	8,540	15,270	26,470	32,150	32,370	31,150	15,560	6,690
22	4,460	3,660	3,170	2,870	8,710	15,780	26,530	32,240	32,360	31,080	14,540	6,610
23	4,330	3,270	3,130	2,900	8,940	16,260	26,560	32,350	32,330	31,020	13,510	6,510
24	4,190	3,020	3,120	3,150	9,280	16,910	26,580	32,410	32,280	30,950	12,530	6,420
25	4,050	2,990	3,210	3,130	9,560	17,750	26,660	32,450	32,240	30,870	11,430	6,330
26	3,910	2,960	3,500	3,000	9,830	19,520	26,800	32,480	32,220	30,800	10,260	6,380
27	3,750	2,970	3,630	6,410	10,100	20,890	26,930	32,520	32,190	30,710	9,420	6,400
28	3,620	2,960	3,820	9,700	10,330	22,110	27,020	32,520	32,150	30,630	9,140	6,340
29	3,490	2,930	2,970	9,870	-	23,310	27,080	32,500	32,130	30,540	9,030	6,280
30	3,350	2,880	2,970	8,500	-	24,500	27,240	32,450	32,080	30,460	8,900	6,190
31	3,240	-	3,000	6,860	-	23,150	-	32,410	-	30,410	8,800	-
(+)	751.18	750.00	750.40	759.82	765.82	781.85	785.86	790.54	790.26	788.78	763.30	758.52
(*)	-7,630	-360	+120	+3,860	+3,470	+12,820	+4,090	+5,170	-330	-1,670	-21,610	-2,610

Calendar year 1958..... + -3,830

Water year 1958-59..... + -4,680

+ Elevation, in feet, at end of month.

* Change in contents, in acre-feet.

1535. Coast Fork Willamette River below Cottage Grove Dam, Oreg.

Location.--Lat 43°43'15", long 123°02'55", in NE $\frac{1}{4}$ sec.28, T.21 S., R.3 W., on right bank at bridge, a quarter of a mile downstream from Cottage Grove Dam and $\frac{5}{8}$ miles south of Cottage Grove.

Drainage area.--104 sq mi.

Records available.--January 1939 to September 1959. Prior to October 1944, published as "near Cottage Grove."

Gage.--Water-stage recorder. Datum of gage is 711.00 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark). Jan. 1 to Oct. 12, 1939, staff gage and Oct. 13, 1939, to Sept. 30, 1944, water-stage recorder, at several sites and datums 0.8 mile downstream.

Average discharge.--20 years, 289 cfs (209,200 acre-ft per year), adjusted for storage.

Extremes.--Maximum discharge during year, 2,560 cfs Feb. 17 (gage height, 8.36 ft); minimum, 35 cfs Aug. 2.

1939-59: Maximum discharge, 3,460 cfs May 4, 1949 (gage height, 9.75 ft); practically no flow July 5-7, 1945, Aug. 24, 1947.

Remarks.--Records excellent except those for period of backwater from brush, which are good. Flow regulated since 1942 by Cottage Grove Reservoir (see preceding page). No diversion above station.

Revisions (water years).--WSP 1448: 1949(M).

Rating table, water year 1958-59, except period of backwater from brush (gage height, in feet, and discharge, in cubic feet per second)

2.8	44	4.0	295
3.0	69	6.0	1,120
3.5	155	9.0	2,980

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	224	99	99	274	1,390	215	1,020	79	94	50	45	68
2	224	99	*86	274	1,130	175	390	79	83	46	50	68
3	221	79	88	185	392	135	274	79	83	46	51	68
4	218	45	88	127	167	115	202	79	83	46	46	66
5	215	83	88	161	135	115	119	79	83	46	46	66
6	215	133	88	239	135	94	119	79	83	*46	46	66
7	212	133	88	270	135	82	*94	79	83	46	222	66
8	209	133	105	384	137	82	79	80	85	46	432	66
9	206	278	123	595	137	82	79	80	88	46	531	66
10	203	424	125	651	322	82	79	80	99	46	523	66
11	200	418	251	1,100	424	82	79	80	110	46	519	66
12	200	300	414	1,550	268	82	79	80	109	46	507	66
13	*163	141	410	1,560	141	82	79	80	94	46	507	66
14	104	408	404	1,790	141	82	79	80	85	46	503	66
15	102	818	396	1,860	155	82	79	80	85	46	523	66
16	102	791	306	1,480	807	82	79	80	83	46	523	66
17	102	495	165	950	2,060	82	79	82	83	46	523	66
18	102	173	165	518	2,400	82	79	82	83	46	*519	65
19	101	192	135	*323	1,830	82	79	*82	76	46	515	65
20	101	800	102	323	1,150	82	79	136	64	46	*527	65
21	101	1,330	102	323	583	82	79	188	62	46	547	65
22	101	1,440	112	278	456	83	79	145	62	46	539	65
23	101	653	139	248	348	83	79	110	62	46	535	65
24	101	192	139	450	*242	83	79	110	62	46	527	65
25	101	192	225	571	209	83	79	112	62	46	567	64
26	101	161	330	571	209	85	79	112	61	46	807	64
27	101	125	562	407	212	85	79	112	60	46	414	65
28	101	125	751	200	215	85	79	112	60	46	146	65
29	99	125	651	900	-	86	79	112	60	46	68	*65
30	99	125	344	1,470	-	587	79	112	60	46	68	65
31	99	-	274	1,410	-	1,350	-	112	-	46	68	-
Total	4,529	10,510	7,355	21,422	15,929	4,899	4,035	2,992	2,347	1,430	11,244	1,970
Mean	146	350	237	691	569	158	134	96.5	78.2	46.1	363	65.7
Ac-ft	8,980	20,850	14,590	42,490	31,590	9,720	8,000	5,930	4,680	2,840	22,500	3,910

Adjusted for change in contents in Cottage Grove Reservoir

	Mean	22.0	344	239	754	631	367	203	181	72.8	19.0	11.2	21.8
Cfsm	0.212	3.31	2.30	7.25	6.07	3.53	1.95	1.74	0.700	0.183	0.108	0.210	
In.	0.24	3.69	2.65	8.36	6.32	4.06	2.18	2.00	0.78	0.21	0.12	0.23	
Ac-ft	1,350	20,490	14,710	46,350	35,060	22,540	12,090	11,100	4,330	1,170	690	1,300	

observed

Calendar year 1958: Max	2,850	Min	45	Mean	267	Ac-ft	193,000
Water year 1958-59: Max	2,400	Min	45	Mean	243	Ac-ft	175,900

Adjusted

Calendar year 1958: Mean	261	Cfsm	2.51	In.	34.10	Ac-ft	189,200
Water year 1958-59: Mean	236	Cfsm	2.27	In.	30.84	Ac-ft	171,200

* Discharge measurement made on this day.

Note.--Backwater from brush June 16 to Sept. 30.

1545. Row River above Pitcher Creek, near Dorena, Ore.

Location.--Lat 43°44'10", long 122°52'20", in NE $\frac{1}{4}$ sec.24, T.21 S., R.2 W., on right bank 0.5 mile upstream from Pitcher Creek and 1.2 miles (revised) northwest of Dorena.

Drainage area.--211 sq mi.

Records available.--September 1935 to September 1959. Prior to October 1949, published as Row River at Star.

Gage.--Water-stage recorder. Datum of gage is 856.16 ft above mean sea level, datum of 1929. Prior to Oct. 18, 1938, staff gage at site 450 ft upstream at datum 1.00 ft higher.

Average discharge.--24 years, 600 cfs (434,400 acre-ft per year).

Extremes.--Maximum discharge during year, 7,700 cfs Jan. 27 (gage height, 9.59 ft); minimum, 10 cfs Oct. 7, 8.

1935-59: Maximum discharge, 19,600 cfs Dec. 28, 1945 (gage height, 14.33 ft), from rating curve extended above 9,300 cfs; minimum, 10 cfs Sept. 24, 25, 1951, Oct. 7, 8, 1958.

Remarks.--Records excellent except those for period of shifting control, which are fair. Slight regulation at times by logponds. No diversion above station.

Rating tables, water year 1958-59, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 27

Jan. 28 to Sept. 30

1.6	10	3.5	350	1.7	16	4.0	520
1.7	15	4.0	520	2.0	46	5.0	1,080
1.9	33	5.0	1,080	2.5	109	6.0	1,880
2.2	67	6.0	1,880	3.0	195	7.0	3,050
2.5	109	7.0	3,050	3.5	330	9.0	6,500
3.0	195	9.0	6,500				

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	36	169	615	984	984	1,760	388	163	68	24	19
2	17	35	160	506	804	*864	1,590	367	158	65	22	19
3	37	35	174	403	660	700	1,260	360	150	78	25	19
4	17	225	172	354	580	585	1,010	318	140	68	27	20
5	14	330	*154	392	498	495	822	537	272	61	29	29
6	14	589	143	435	484	439	*655	660	419	63	29	29
7	11	820	209	411	467	399	520	511	303	62	28	34
8	12	1,080	454	633	431	384	431	427	243	59	26	30
9	23	846	912	1,430	427	370	381	427	233	*58	26	29
10	21	840	675	2,910	451	357	357	378	230	55	26	25
11	21	475	1,830	2,420	415	315	333	333	200	50	25	25
12	21	306	2,180	*4,680	374	342	300	297	178	49	24	21
13	21	2,040	1,140	2,230	367	451	262	297	169	48	25	21
14	19	2,060	744	1,280	2,080	443	243	336	154	49	26	21
15	18	960	540	900	2,060	419	226	395	140	46	25	22
16	*18	570	415	744	3,050	484	204	357	135	45	22	29
17	17	407	339	615	2,250	565	195	411	126	44	21	27
18	21	744	291	530	1,690	545	*670	118	43	21	28	
19	307	5,530	256	600	1,510	695	167	816	109	38	*22	44
20	243	2,560	230	660	1,230	620	161	650	104	36	24	112
21	104	1,320	246	585	996	665	165	498	96	35	25	132
22	66	852	206	565	894	852	178	403	93	33	25	63
23	61	600	206	565	786	822	184	345	85	35	24	45
24	48	455	189	1,540	655	872	193	300	82	35	25	36
25	42	374	321	1,420	580	1,030	189	270	80	35	22	36
26	37	309	606	1,080	565	2,190	238	251	82	34	20	443
27	34	259	1,200	5,160	792	1,680	330	243	82	33	20	306
28	32	226	804	4,370	846	1,470	500	236	77	32	20	*169
29	30	197	738	2,270	---	1,650	256	209	80	31	20	112
30	27	178	1,050	1,550	---	2,540	327	191	74	59	20	82
31	28	---	774	1,180	---	1,960	---	172	---	27	19	---
Total	1,401	25,258	17,327	43,013	26,936	26,285	13,417	12,053	4,575	1,474	735	2,027
Mean	45.2	842	559	1,388	962	848	447	389	152	47.5	23.7	67.6
Cfsm	0.214	3.99	2.65	6.58	4.56	4.02	2.12	1.84	0.720	0.225	0.112	0.320
In.	0.25	4.45	3.05	7.58	4.75	4.63	2.36	2.12	0.81	0.26	0.13	0.36
Ac-ft	2,780	50,100	34,370	85,320	53,430	52,140	26,610	23,910	9,070	2,920	1,460	4,020
Calendar year 1958: Max	8,600	Min	11	Mean	548	Cfsm	2.60	In.	35.22	Ac-ft	396,400	
Water year 1958-59: Max	5,530	Min	11	Mean	478	Cfsm	2.27	In.	30.75	Ac-ft	346,100	

Peak discharge (base, 7,000 cfs, revised).--Nov. 19 (6 a.m.) 7,240 cfs (9.37 ft); Jan. 27 (5 p.m.) 7,700 cfs (9.59 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used Mar. 31 to May 5.

1550. Dorena Reservoir near Cottage Grove, Oreg.

Location.--Lat 43°47', long 122°57', in SE¹/₄ sec.32, T.20 S., R.2 W., on left side of Dorena Dam on Row River, 5 miles east of Cottage Grove.

Drainage area.--265 sq mi.

Records available.--October 1949 to September 1959.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

Extremes.--Maximum contents during year, 75,060 acre-ft June 13 (elevation, 833.70 ft); minimum, 1,420 acre-ft Oct. 1 (elevation, 754.3 ft), reservoir drawn far below minimum operating level to facilitate poisoning of trash fish.
1949-59: Maximum contents, 84,060 acre-ft Dec. 23, 1955 (elevation, 838.37 ft); minimum since first filling, 635 acre-ft Sept. 23, 1958 (elevation, 749.00 ft).

Remarks.--Reservoir is formed by earth-fill dam with concrete outlet and spillway, completed in 1949 by Corps of Engineers; storage began Oct. 11, 1949. Capacity, 77,510 acre-ft between elevations 739.0 (sill of outlet gates) and 835.0 ft (crest of spillway). Dead storage, 8 acre-ft below elevation 739.0 ft. Reservoir used for flood control and improvement of navigation. Capacity table computed by Corps of Engineers. Figures given herein represent total contents.

Capacity table, water year 1958-59 (elevation, in feet, and contents, in acre-feet)

754	1,360	800	28,400
760	2,800	810	39,320
765	4,510	820	52,310
770	6,730	830	68,320
780	12,330	840	87,300
790	19,450		

Contents, in acre-feet, at 12 p.m., water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,530	3,940	6,990	7,680	15,620	27,240	53,610	62,770	72,910	72,230	45,900	16,550
2	1,630	3,930	6,920	7,200	10,710	27,350	52,320	63,510	72,910	72,080	43,870	16,360
3	1,760	3,950	6,940	7,130	8,950	27,080	51,950	64,1 ^c	72,830	71,930	41,640	16,200
4	1,860	4,410	6,970	7,230	9,110	26,830	52,860	64,700	72,850	71,840	39,870	16,020
5	1,940	5,200	6,940	7,480	9,670	26,950	53,580	65,900	73,290	71,750	37,910	15,880
6	2,020	6,620	6,880	7,810	10,360	27,600	54,190	67,320	73,940	71,640	36,020	15,740
7	2,060	7,880	7,000	7,960	10,980	28,180	54,990	68,250	74,320	71,580	34,420	15,600
8	2,120	9,440	7,430	8,100	11,470	28,730	55,700	69,030	74,580	71,480	33,230	15,460
9	2,190	10,420	7,920	10,090	12,230	29,270	56,270	69,760	74,750	71,420	32,220	15,300
10	2,230	10,460	7,470	15,270	13,020	29,780	56,820	70,320	74,910	71,290	31,190	15,160
11	2,240	8,800	9,400	18,010	13,710	30,170	57,360	70,750	74,990	71,150	30,190	15,000
12	2,260	7,360	10,460	26,780	14,270	30,660	57,790	71,150	75,030	71,000	29,190	14,850
13	2,270	10,980	8,540	30,090	14,890	31,400	58,140	71,460	75,060	70,880	28,210	14,670
14	2,280	13,520	7,060	27,220	20,030	32,130	58,430	71,820	75,050	70,040	27,240	14,490
15	2,280	11,670	7,000	20,270	25,330	32,790	58,690	72,060	74,970	69,220	26,260	14,320
16	2,290	8,930	7,120	14,770	30,020	33,570	58,860	72,150	74,910	68,440	25,280	14,160
17	2,290	7,860	7,210	11,040	29,420	34,490	59,020	72,590	74,820	67,610	24,300	13,990
18	2,310	8,550	7,150	8,980	26,830	35,380	59,160	73,050	74,690	66,570	23,330	13,840
19	3,090	20,280	7,190	8,760	23,940	36,570	59,270	73,200	74,520	65,400	22,390	13,750
20	3,730	22,360	7,270	6,670	21,460	37,200	59,330	72,650	74,370	64,160	21,660	13,610
21	3,970	18,820	7,320	6,390	20,320	37,620	59,430	72,460	74,220	62,910	21,060	13,690
22	4,070	13,850	7,220	6,180	20,450	38,390	59,530	72,650	74,040	61,670	20,470	13,830
23	4,140	10,110	7,150	6,180	20,970	39,620	59,650	72,890	73,850	60,420	19,880	13,750
24	4,160	8,470	7,020	9,740	21,460	41,620	59,760	72,980	73,660	59,190	19,290	13,620
25	4,140	7,430	7,220	9,510	22,310	43,920	59,940	73,040	73,440	57,780	18,650	13,500
26	4,120	7,160	7,910	8,260	23,330	48,840	60,280	73,040	73,280	56,300	18,490	14,330
27	4,080	7,080	9,840	17,910	24,830	51,190	60,780	73,040	73,070	54,780	18,140	14,810
28	4,060	7,030	10,700	27,610	26,380	51,850	61,170	72,940	72,870	53,180	17,610	14,860
29	4,030	7,060	10,560	28,800	-	52,910	61,480	72,890	72,650	51,460	17,480	14,870
30	3,980	7,040	10,090	24,870	-----	55,010	62,030	72,940	72,370	49,770	17,130	14,830
31	3,950	-----	8,750	20,420	-----	54,640	-----	72,940	-----	47,920	16,810	-----
(†)	763.51	770.62	773.85	791.20	797.93	821.73	826.31	832.56	832.25	816.64	786.55	783.76
(‡)	+2,530	+3,090	+1,710	+11,670	+5,960	+28,460	+7,190	+10,910	-570	-24,450	-31,110	-1,980

Calendar year 1958..... ‡ -31,930

Water year 1958-59..... ‡ +13,410

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

1555. Row River near Cottage Grove, Oreg.

Location (revised).--Lat 43°47'35", long 122°59'25", in NE $\frac{1}{4}$ sec.36, T.20 S., R.3 W., on right bank 1.7 miles upstream from Mosby Creek, 2.1 miles downstream from Dorena Dam, and 3.5 miles east of Cottage Grove.

Drainage area.--270 sq mi.

Records available.--January 1939 to September 1959. Prior to October 1947, published as "near Dorena."

Gage.--Water-stage recorder. Datum of gage is 685.24 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Oct. 13, 1939, staff gage at site 180 ft upstream at datum 1.00 ft higher.

Average discharge.--20 years, 766 cfs (554,600 acre-ft per year), adjusted for storage.

Extremes.--Maximum discharge during year, 4,920 cfs Jan. 15 (gage height, 8.35 ft); minimum daily, 0.2 cfs Oct. 1-7.

1939-59: Maximum discharge, 21,400 cfs Dec. 28, 1945 (gage height, 18.20 ft); minimum daily, 0.2 cfs Sept. 25 to Oct. 7, 1958.

Remarks.--Records excellent except those for period of backwater from debris, which are good. Flow regulated since October 1949 by Dorena Reservoir (see preceding page). No diversion above station.

Rating tables, water year 1958-59, except period of backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 14

Jan. 15 to Sept. 30

0.7	0.2	1.3	7.2	2.5	310	1.8	80	4.0	1,120
.8	.4	1.4	12	3.0	530	2.0	135	5.0	1,750
.9	.8	1.5	21	4.0	1,080	2.5	320	7.0	3,450
1.0	1.5	1.6	36	5.0	1,750	3.0	560	9.0	5,800
1.1	2.6	1.8	80	6.0	2,500				
1.2	4.5	2.0	135	8.0	4,500				

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	c.2	62	246	1,240	3,750	733	2,640	214	221	165	1,080	150
2	c.2	59	246	846	3,550	*994	2,620	207	221	141	1,110	113
3	c.2	59	224	557	1,780	994	1,750	207	218	141	1,100	113
4	c.2	59	214	408	695	838	814	207	207	141	1,080	113
5	c.2	62	*214	408	596	545	695	207	204	141	1,070	113
6	*c.2	64	214	408	316	267	*565	207	204	127	1,050	113
7	c.2	357	210	458	320	200	320	207	204	115	892	110
8	c.3	535	339	730	324	200	259	210	204	115	840	107
9	c.3	560	830	900	255	200	255	214	204	*115	560	107
10	c6.6	971	1,020	1,000	207	200	221	218	204	115	555	107
11	21	1,440	1,250	1,720	207	204	207	218	204	115	550	107
12	22	1,090	2,240	1,180	207	204	204	218	204	115	545	107
13	22	725	2,400	1,210	210	207	204	218	204	198	540	104
14	22	1,320	1,670	2,990	284	207	204	342	204	342	535	110
15	22	2,270	730	4,700	298	207	204	455	204	440	530	113
16	*23	2,140	508	*3,910	1,400	207	204	455	204	440	520	113
17	*24	1,090	415	2,730	3,040	210	204	460	204	435	520	113
18	25	615	415	1,720	3,360	210	204	*665	204	580	515	113
19	30	740	322	910	3,290	214	200	982	204	665	*505	113
20	26	2,130	278	910	2,760	385	200	1,100	204	660	401	113
21	26	3,580	302	904	1,830	645	200	745	200	660	329	110
22	40	3,800	310	814	1,070	645	200	455	200	655	329	107
23	53	2,720	310	705	740	410	200	338	200	655	329	107
24	62	1,390	310	992	630	224	204	338	196	650	324	107
25	68	966	310	1,750	347	228	204	338	196	735	259	107
26	66	526	354	1,860	235	251	207	338	196	778	196	107
27	66	372	494	1,300	239	970	210	338	196	772	196	107
28	66	606	512	630	239	1,550	214	338	196	856	*110	196
29	66	246	876	2,270	-----	1,550	214	267	214	922	196	115
30	66	246	1,410	3,880	-----	1,940	218	221	218	952	196	115
31	64	-----	1,550	3,750	-----	2,460	-----	221	-----	1,000	196	-----
Total	888.6	30,500	20,719	47,790	31,999	18,299	14,245	11,148	6,143	13,923	17,044	3,344
Mean	28.7	1,017	668	1,542	1,143	590	475	360	205	449	550	111
Ac-ft	1,760	60,500	41,100	94,790	65,470	36,300	28,250	22,110	12,180	27,620	33,810	6,630

Adjusted for change in contents in Dorena Reservoir

Mean	69.8	1,069	696	1,732	1,250	1,053	596	537	195	51.6	43.9	78.1
Cfsm	0.259	3.96	2.58	6.41	4.63	3.90	2.21	1.99	0.722	0.191	0.163	0.289
In.	0.30	4.42	2.97	7.40	4.82	4.50	2.46	2.29	0.81	0.22	0.19	0.32
Ac-ft	4,290	63,590	42,810	106,500	69,430	64,760	35,440	33,020	11,610	3,170	2,700	4,650

Observed

Calendar year 1958: Max	4,800	Min	0.2	Mean	724	Ac-ft	523,800
Water year 1958-59: Max	4,700	Min	0.2	Mean	592	Ac-ft	428,500

Adjusted

Calendar year 1958: Mean	679	Cfsm	2.51	In.	34.17	Ac-ft	491,900
Water year 1958-59: Mean	610	Cfsm	2.26	In.	30.70	Ac-ft	441,900

* Discharge measurement made on this day.

c Backwater from debris.

1565. Mosby Creek at mouth, near Cottage Grove, Oreg.

Location (revised).--Lat 43°46'35", long 122°59'55", in N $\frac{1}{2}$ sec.1, T.21 S., R.3 W., on left bank 1.0 mile upstream from mouth and 3.5 miles southeast of Cottage Grove.

Drainage area.--96 sq mi, approximately.

Records available.--September 1946 to September 1959. Monthly discharge only September 1946, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 676.62 ft above mean sea level, datum of 1929, supplementary adjustment of 1947 (Corps of Engineers bench mark).

Average discharge.--13 years, 258 cfs (186,800 acre-ft per year).

Extremes.--Maximum discharge during year, 3,270 cfs Jan. 27 (gage height, 6.51 ft); minimum, 5.2 cfs Oct. 2-4, Sept. 3.
1946-59: Maximum discharge, 7,160 cfs Oct. 28, 1950 (gage height, 10.82 ft), from rating curve extended above 4,100 cfs by logarithmic plotting; minimum, 4 cfs Sept. 13-15, 1951.

Remarks.--Records excellent except those for periods of shifting control or backwater from cobblestone dam, which are good. No regulation. Small diversions for irrigation above station.

Rating table, water year 1958-59, except periods of shifting control or backwater from cobblestone dam (gage height, in feet, and discharge, in cubic feet per second)

1.0	5.2	2.0	182
1.1	10	2.5	385
1.2	18	3.0	660
1.4	39	4.0	1,310
1.6	75	6.0	2,860

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.4	19	55	227	371	265	612	114	52	26	13	6.4
2	5.6	19	*53	196	298	238	479	119	49	25	13	6.0
3	5.2	19	57	161	249	206	371	135	47	24	12	5.6
4	5.2	103	59	141	213	173	298	119	44	23	12	6.4
5	7.4	149	53	155	179	152	246	206	102	25	13	7.9
6	6.4	193	50	173	182	138	206	231	124	*26	13	13
7	6.9	246	61	164	182	127	*173	167	93	26	12	13
8	7.9	304	124	332	176	119	152	138	75	26	11	12
9	9.7	316	312	1,090	196	116	135	124	73	24	11	11
10	9.1	294	258	1,780	274	116	121	108	77	23	10	9.7
11	9.1	158	376	1,350	257	101	111	96	69	23	8.5	9.1
12	9.1	101	630	2,300	220	101	103	86	61	22	8.5	9.1
13	9.1	671	380	1,070	206	119	96	80	57	22	8.5	9.7
14	8.5	918	253	618	1,530	138	89	98	52	22	9.1	6.9
15	9.1	490	182	415	1,530	127	86	127	47	21	9.1	7.4
16	8.5	253	138	*326	1,520	119	80	116	44	21	8.5	15
17	*7.9	167	114	268	1,030	124	75	152	42	21	7.9	12
18	9.7	198	98	223	762	127	73	227	37	20	7.4	11
19	118	1,880	86	231	648	199	67	*278	37	20	*8.5	17
20	80	879	80	269	518	176	63	227	34	19	9.1	47
21	34	435	98	249	400	223	61	170	32	19	10	52
22	24	285	84	234	334	294	57	141	32	18	11	28
23	21	189	77	213	290	290	55	116	31	18	10	18
24	18	141	73	578	*249	367	53	98	30	17	9.7	16
25	15	114	179	600	223	390	55	86	29	17	7.9	15
26	14	96	419	446	213	886	75	82	29	17	7.4	61
27	13	80	750	2,110	242	768	96	77	30	15	6.9	55
28	12	69	490	1,860	246	606	96	77	29	14	7.4	30
29	12	348	348	976	630	82	67	28	14	14	7.9	*22
30	12	55	321	654	-----	1,050	96	61	27	14	7.4	17
31	12	-----	265	479	-----	828	-----	55	-----	14	6.4	-----
Total	525.8	8,884	6,503	19,885	12,738	9,313	4,362	3,978	1,513	636	297.1	549.2
Mean	17.0	296	210	641	455	300	145	128	50.4	20.5	9.58	18.3
Cfsm	0.177	3.08	2.19	6.68	4.74	3.12	1.51	1.33	0.525	0.214	0.100	0.191
In.	0.20	3.64	2.52	7.70	4.93	3.61	1.69	1.54	0.59	0.25	0.11	0.21
Ac-ft	1,040	17,620	12,900	39,440	25,270	18,470	8,650	7,890	3,000	1,260	589	1,090
Calendar year 1958: Max	3,760	Min	5.2	Mean	215	Cfsm	2.24	In.	30.32	Ac-ft	155,300	
Water year 1958-59: Max	2,300	Min	5.2	Mean	190	Cfsm	1.98	In.	26.79	Ac-ft	137,200	

Peak discharge (base, 2,500 cfs).--Jan. 12 (8 a.m.) 3,200 cfs (6.43 ft); Jan. 27 (5 p.m.) 3,270 cfs (6.51 ft); Feb. 14 (2:30 p.m.) 2,800 cfs (5.93 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used Nov. 20 to Dec. 26, Aug. 14 to Sept. 30. Backwater from cobblestone dam July 12 to Aug. 13.

1575. Coast Fork Willamette River near Goshen, Oreg.

Location.--Lat 43°58'40", long 122°58'00", in NW¼ sec.29, T.18 S., R.2 W., on right bank at downstream side of highway bridge, 2.5 miles southeast (revised) of Goshen and 6½ miles upstream from confluence with Middle Fork Willamette River.

Drainage area.--642 sq mi.

Records available.--August 1905 to February 1912, October 1950 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 473.80 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Feb. 7, 1912, staff gage at site 600 ft upstream at different datum.

Average discharge.--15 years (1905-11, 1950-59), 1,781 cfs (1,289,000 acre-ft per year).

Extremes.--Maximum discharge during year, 14,100 cfs Jan. 27 (gage height, 12.44 ft); minimum, 150 cfs Oct. 14, Sept. 2.

1905-12, 1950-59: Maximum discharge, 58,500 cfs Nov. 22, 1909 (gage height, 19.5 ft, site and datum then in use, from graph based on gage readings), from rating curve extended above 15,000 cfs by logarithmic plotting; minimum, 36 cfs Sept. 29, 30, Oct. 11, 12, 1908.

Remarks.--Records excellent except those for periods of backwater from moss, which are good. Flow regulated by Cottage Grove Reservoir (see p. 117) and Dorena Reservoir (see p. 120). Only small diversions for irrigation above station.

Revisions (water years).--WSP 1218: Drainage area. WSP 1248: 1905-12.

Rating tables, water year 1958-59, except periods of backwater from moss (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 27

Jan. 28 to Sept. 30

1.9	150	4.0	1,250	2.0	150	5.0	2,200
2.1	210	6.0	3,120	2.5	380	7.0	4,370
2.5	355	8.0	5,760	3.0	650	10.0	8,940
3.0	600	12.0	13,000				

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	234	183	530	2,270	6,440	1,380	5,630	510	470	305	1,060	255
2	234	183	495	*1,690	6,060	1,810	4,340	525	450	235	1,140	182
3	231	180	495	1,350	3,750	1,690	3,370	542	440	222	1,130	182
4	224	186	475	921	1,780	1,520	2,020	515	430	222	1,130	182
5	224	252	450	1,040	1,300	1,250	1,530	578	495	235	1,120	186
6	*224	308	440	1,310	1,120	867	1,390	720	542	230	*1,100	190
7	224	638	450	1,280	1,200	826	979	*584	500	206	1,090	194
8	231	928	606	2,240	1,080	596	762	542	460	198	1,090	166
9	231	1,190	1,330	5,450	1,130	578	699	566	460	194	1,110	186
10	228	1,580	1,690	7,140	1,760	590	632	525	455	186	1,090	178
11	234	2,070	2,080	7,180	1,640	542	566	500	445	182	1,080	178
12	238	1,800	3,980	11,200	1,370	542	542	480	420	170	1,070	170
13	238	1,820	3,880	6,510	*1,130	590	520	465	410	170	1,070	174
14	171	3,000	3,190	5,880	6,060	826	510	560	370	330	1,060	*174
15	159	4,380	1,700	8,010	6,200	584	500	874	365	455	1,060	182
16	156	3,660	1,350	7,470	5,700	560	485	818	350	470	1,080	194
17	156	2,570	935	5,130	7,630	560	470	979	350	470	1,070	190
18	159	1,180	870	3,860	8,120	578	465	1,310	345	520	1,060	190
19	204	5,190	786	2,050	7,390	727	450	1,610	340	671	1,050	202
20	228	5,050	630	1,980	5,980	699	440	1,690	320	678	1,010	218
21	204	6,090	780	1,880	3,930	1,330	420	1,510	315	678	909	235
22	189	8,420	720	1,770	2,770	1,430	420	1,060	*305	671	895	214
23	189	5,010	708	1,510	2,060	1,340	410	741	295	671	881	198
24	183	*2,160	702	2,320	1,770	*1,270	405	685	295	671	867	194
25	192	1,720	882	3,520	1,420	1,240	400	650	295	741	860	194
26	192	1,150	1,040	3,490	1,150	2,270	440	644	305	818	832	206
27	180	804	2,720	8,202	1,260	2,350	470	644	305	811	748	285
28	180	702	2,420	7,980	1,160	3,140	460	644	305	818	465	228
29	177	582	2,340	5,170	-	3,140	450	602	305	951	295	218
30	177	552	2,490	7,420	-----	4,650	470	490	320	944	295	214
31	177	-----	2,490	6,840	-----	5,840	-----	485	-----	1,020	270	-----
Total	6,320	61,538	43,654	133,881	92,360	45,095	30,645	23,048	11,462	15,145	28,987	5,977
Mean	204	2,051	1,408	4,319	3,299	1,455	1,022	743	382	488	935	199
Cfs/m	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	12,540	122,100	86,590	265,500	183,200	89,440	60,780	45,720	22,730	30,040	57,490	11,860
Calendar year 1958:	Max	14,000	Min	156	Mean	1,532	Cfs/m	2.39	In.	32.40	Ac-ft	1,109,000
Water year 1958-59:	Max	11,200	Min	156	Mean	1,365	Cfs/m	2.13	In.	28.85	Ac-ft	988,000

* Discharge measurement made on this day.

Note.--Backwater from moss Oct. 1 to Nov. 6, Aug. 21 to Sept. 30

1585. McKenzie River at outlet of Clear Lake, Oreg.

Location.--Lat 44°21'40", long 121°59'40", in SE $\frac{1}{4}$ sec. 8, T.14 S., R.7 E., on west bank of Clear Lake in narrow channel, 150 ft upstream from outlet and at mile 85.9 (river-profile survey).

Drainage area.--101 sq mi.

Records available.--June 1912 to September 1915, October 1947 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 3,015.32 ft above mean sea level (levels by Eugene Water and Electric Board). June 20, 1912, to July 31, 1915, float gage at site 1 mile north at different datum.

Average discharge.--15 years, 496 cfs (359,100 acre-ft per year).

Extremes.--Maximum discharge during year, 1,160 cfs Dec. 12 (gage height, 5.22 ft); minimum, 213 cfs Nov. 3.
1912-15, 1947-59: Maximum discharge, 2,970 cfs Dec. 22, 1955 (gage height, 7.66 ft), from rating curve extended above 1,500 cfs by logarithmic plotting; minimum daily, 160 cfs Sept. 29, 30, 1915.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by natural storage in lake. At high stages an undetermined flow enters numerous sinkholes in lava rock along south edge of lake above station.

Revisions (water years).--WSP 1124: Drainage area. WSP 1288: 1949. WSP 1318: (1915(m).

Rating tables, water year 1958-59 (gage height, in feet, and discharge,
in cubic feet per second)
(Shifting-control method used Feb. 8 to Apr. 2)

Oct. 1 to Nov. 5		Nov. 6 to Sept. 30	
1.4	205	1.6	215
1.6	241	3.0	475
		5.0	1,070

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	239	216	550	500	692	384	492	746	446	360	264	233
2	237	214	500	480	662	382	619	719	444	356	263	235
3	236	213	550	460	638	382	725	695	446	352	262	232
4	234	221	550	460	612	380	728	680	444	348	260	234
5	234	221	550	450	585	378	725	686	452	344	260	236
6	232	226	500	440	570	378	725	719	462	340	258	234
7	230	233	550	430	552	378	719	725	460	338	257	232
8	232	257	550	424	525	378	713	731	448	332	256	235
9	230	287	600	432	508	378	710	740	444	328	256	233
10	227	318	650	540	490	376	710	728	*438	324	254	235
11	227	342	800	695	475	374	704	695	436	320	252	233
12	227	364	1,000	982	462	374	698	662	430	316	252	233
13	225	*400	950	951	444	376	680	668	426	314	251	232
14	223	406	850	803	444	374	656	704	422	308	250	232
15	221	412	700	743	432	374	642	698	418	304	250	230
16	220	420	*659	749	422	372	618	653	414	300	250	*228
17	220	420	642	761	416	372	590	628	408	298	248	228
18	223	460	618	770	412	376	565	620	402	280	248	230
19	230	550	590	761	412	378	542	605	398	280	248	230
20	227	700	555	728	408	380	525	585	394	280	246	234
21	227	750	528	689	404	386	515	568	390	280	245	232
22	230	650	492	653	400	390	515	552	388	280	244	233
23	230	600	460	625	396	390	522	540	384	280	240	236
24	228	600	446	674	392	392	538	538	382	280	239	238
25	227	650	438	716	*390	400	548	535	380	280	239	238
26	227	600	430	689	390	416	558	530	378	280	238	254
27	225	600	436	765	398	416	*592	512	376	280	238	254
28	220	430	642	842	384	426	620	492	372	280	236	272
29	221	550	428	779	---	434	640	475	368	*266	236	290
30	218	550	440	757	-----	452	704	460	362	264	234	302
31	218	-----	475	716	-----	468	-----	450	-----	264	234	-----
Total	7,046	13,033	17,919	20,464	13,303	12,114	18,838	19,339	12,412	9,456	7,708	7,192
Mean	227	434	578	660	475	391	628	624	414	305	249	240
Cfsm	2.25	4.30	5.32	6.53	4.70	3.87	6.22	6.19	4.10	3.02	2.47	2.39
In.	2.59	4.80	6.60	7.54	4.90	4.46	6.94	7.12	4.57	3.48	2.84	2.65
Ac-ft	13,980	25,850	35,540	40,590	26,390	24,030	37,360	38,360	24,620	18,760	15,290	14,270
Calendar year 1958: Max	1,340	Min	214	Mean	508	Cfsm	5.03	In.	68.26	Ac-ft	367,700	
Water year 1958-59: Max	1,000	Min	214	Mean	435	Cfsm	4.31	In.	58.49	Ac-ft	315,000	

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 16 to Dec. 15, Jan. 1-4, July 18-28; discharge estimated on basis of recorded range in stage and records for station near Belknap Springs.

1587 (corrected). McKenzie River near Belknap Springs, Oreg.

Location.--Lat 44°20'15", long 122°00'20", in SW $\frac{1}{4}$ sec.20, T.14 S., R.7 E., on left bank at outlet of Beaver Marsh, 2 miles upstream from Lower Falls, 10 miles north of Belknap Springs, and at mile 84.0.

Drainage area.--143 sq mi.

Records available.--October 1957 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 2,602.36 ft above mean sea level (levels by Eugene Water and Electric Board).

Extremes.--Maximum discharge during year, 1,290 cfs Dec. 12 (gage height, 2.68 ft); minimum, 359 cfs Nov. 3.

1957-59: Maximum discharge, 1,620 cfs Feb. 16, 1958 (gage height, 3.34 ft), from rating curve extended above 820 cfs; minimum, that of Nov. 3, 1958.

Remarks.--Records excellent. No regulation or diversion above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11		Dec. 12 to Sept. 30	
0.6	345	0.7	395
1.0	500	1.0	510
2.1	1,000	2.6	1,250

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	388	362	714	678	830	558	638	870	630	546	434	398
2	384	362	696	670	805	550	738	850	626	542	434	398
3	384	366	714	654	780	550	840	825	626	542	430	395
4	384	366	718	646	760	546	810	830	638	538	426	398
5	380	366	696	642	734	542	840	820	638	538	426	406
6	380	388	678	630	722	542	840	845	646	534	423	402
7	376	392	696	622	702	542	835	850	642	530	423	398
8	380	424	736	618	682	542	825	845	634	522	423	398
9	376	448	750	630	670	546	820	855	634	518	420	398
10	376	476	755	706	662	542	820	840	*630	514	420	398
11	376	492	990	840	650	538	815	815	618	510	416	398
12	373	516	1,240	1,140	638	542	810	785	614	506	416	398
13	373	*556	1,020	1,090	622	546	795	785	614	498	416	398
14	373	560	900	940	622	542	780	815	610	494	416	398
15	370	560	845	885	610	538	765	815	606	490	412	398
16	366	564	*820	890	602	538	742	780	606	486	412	*395
17	366	572	800	900	598	538	730	760	594	482	412	395
18	370	592	780	905	594	546	718	750	590	474	409	398
19	376	*700	750	895	594	546	698	742	582	474	409	398
20	373	930	722	860	586	542	686	730	578	466	409	402
21	370	960	702	825	582	550	682	714	574	466	409	398
22	373	885	692	790	578	554	682	702	574	462	409	398
23	373	810	658	770	574	558	686	698	570	462	409	402
24	373	810	642	825	570	558	694	690	570	458	406	402
25	373	840	638	850	570	566	698	690	566	454	406	406
26	370	835	630	830	*566	578	710	686	562	454	402	426
27	370	815	634	945	562	578	*738	678	562	450	402	423
28	370	790	626	990	552	586	760	662	558	450	402	442
29	366	765	622	925	-	590	775	650	554	446	402	462
30	366	736	634	880	-----	610	825	642	550	*446	398	474
31	362	-----	662	855	-----	618	-----	634	-----	442	398	-----
Total	11,590	18,238	23,150	25,326	18,027	17,222	22,830	23,633	17,988	15,194	12,829	12,200
Mean	374	608	747	817	644	556	761	762	600	490	414	407
Cfsm	2.62	4.25	5.22	5.71	4.50	3.89	5.32	5.33	4.20	3.43	2.90	2.85
In.	5.03	4.74	6.02	6.59	4.62	4.48	5.94	6.15	4.68	3.95	3.34	5.17
Ac-ft	22,990	36,170	45,920	50,230	35,750	34,160	45,280	46,880	35,680	30,140	25,450	24,200
Calendar year 1958: Max	1,520	Min	362	Mean	673	Cfsm	4.711	In.	63.86	Ac-ft	487,200	
Water year 1958-59: Max	1,240	Min	362	Mean	598	Cfsm	4.18	In.	56.76	Ac-ft	432,900	

* Discharge measurement made on this day.

1588. Smith River near Belknap Springs, Oreg.

Location.--Lat 44°16'35", long 122°02'55", T.15 S., R.6 E. (unsurveyed), on right bank 1,000 ft upstream from mouth and 6 miles north of town of Belknap Springs.

Drainage area.--23.7 sq mi.

Records available.--October 1957 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 2,040.42 ft above mean sea level (levels by Eugene Water and Electric Board).

Extremes.--Maximum discharge during year, 1,100 cfs Jan. 12 (gage height, 3.59 ft); minimum, 15 cfs Oct. 1-8, 15-17.
1957-59: Maximum discharge, 3,120 cfs Dec. 20, 1957 (gage height, 5.12 ft), from rating curve extended above 930 cfs by logarithmic plotting; minimum, 12 cfs Nov. 3-9, 1957.

Remarks.--Records good except those for periods of shifting-control, which are fair.
No regulation or diversion above station.

Rating tables, water year 1958-59, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 11				Jan. 12 to Sept. 30			
0.5	12	2.0	225	0.6	16	1.7	138
.7	21	2.5	410	.8	24	2.2	280
.9	34	3.0	670	1.1	48	2.8	555
1.2	63	3.5	1,050	1.4	84	3.2	805
1.6	125						

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*15	17	112	222	170	105	336	*324	89	35	20	16
2	15	18	127	190	146	116	446	233	97	33	19	16
3	15	23	225	162	128	107	387	195	90	33	19	16
4	15	50	175	143	*126	98	332	170	87	31	19	20
5	15	61	141	133	114	97	308	191	143	33	19	36
6	15	209	137	123	113	100	259	230	114	31	19	38
7	15	168	246	121	102	92	212	215	95	36	18	23
8	22	396	231	152	92	92	185	215	83	32	18	22
9	17	337	240	235	89	92	168	212	98	30	18	19
10	16	255	266	450	83	83	166	193	105	28	18	18
11	16	165	701	500	76	83	168	170	*94	28	18	18
12	16	176	572	791	71	100	163	168	89	27	18	18
13	16	392	345	446	68	105	150	202	80	26	18	18
14	16	*249	249	296	71	94	138	224	75	26	18	17
15	15	170	198	221	69	90	126	193	68	26	18	19
16	15	131	168	199	71	*94	114	163	76	25	18	*18
17	15	107	*141	180	78	116	107	163	66	24	18	18
18	21	320	127	173	77	140	98	163	62	24	18	22
19	49	805	112	156	90	136	94	150	59	24	18	27
20	40	828	102	134	94	128	95	134	56	23	18	50
21	25	550	112	120	89	150	113	124	53	22	18	44
22	23	383	97	113	81	158	132	120	50	22	17	32
23	23	308	93	126	76	150	156	120	47	22	17	26
24	20	280	90	403	70	140	173	122	45	22	17	24
25	19	228	99	348	68	160	173	126	44	22	17	24
26	19	182	152	292	71	218	183	120	43	22	17	215
27	18	148	185	714	70	183	248	111	42	21	17	138
28	18	127	152	512	76	199	288	97	40	*21	17	97
29	18	112	178	328	-	196	276	89	38	21	17	69
30	17	105	269	245	-	215	374	84	37	20	17	56
31	17	-	243	202	-	245	-	83	-	20	16	-
Total	596	7,290	6,285	8,430	2,529	4,082	6,166	5,108	2,163	810	554	1,174
Mean	19.2	243	203	272	90.3	132	206	165	72.1	26.1	17.9	39.1
Cfs/m	0.810	10.3	8.57	11.5	3.81	5.57	8.69	6.96	3.04	1.10	0.755	1.65
In.	0.94	11.44	9.86	13.23	3.97	6.41	9.68	8.02	3.39	1.27	0.87	1.84
Ac-ft	1,180	14,460	12,470	16,720	5,020	8,100	12,230	10,130	4,290	1,610	1,100	2,330

Calendar year 1958: Max 1,160 Min 15 Mean 143 Cfs/m 6.03 In. 81.84 Ac-ft 103,400
Water year 1958-59: Max 828 Min 15 Mean 124 Cfs/m 5.23 In. 70.92 Ac-ft 89,640

Peak discharge (base, 800 cfs).--Nov. 19 (7 p.m.) 985 cfs (3.44 ft); Dec. 11 (7:30 p.m.) 895 cfs (3.32 ft); Jan. 12 (4:30 a.m.) 1,100 cfs (3.59 ft); Jan. 27 (8:30 a.m.) 835 cfs (3.24 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used Dec. 14 to Jan. 9, Feb. 12 to Mar. 31

1590. McKenzie River at McKenzie Bridge, Oreg.

Location (revised).--Lat 44°10'45", long 122°07'45", on line between NE $\frac{1}{4}$ and NW $\frac{1}{4}$ sec.18, T.16 S., R.6 E., on left bank 1.0 mile upstream from Glen Creek and 1.7 miles east of village of McKenzie Bridge.

Drainage area (revised).--348 sq mi at cableway 1.2 miles upstream, where all discharge measurements are made.

Records available.--August 1910 to September 1959. Monthly discharge only for some periods, published in WSP 1318. Published as "near McKenzie Bridge" August 1910 to September 1911 and October 1914 to September 1916.

Gage.--Water-stage recorder. Datum of gage is 1,419.04 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to June 12, 1932, staff gage at several sites within 2 miles of present site at various datums.

Average discharge.--49 years, 1,656 cfs (1,199,000 acre-ft per year).

Extremes.--Maximum discharge during year, 4,300 cfs Jan. 27 (gage height, 3.69 ft); minimum, 1,040 cfs Oct. 28 to Nov. 3.

1910-59: Maximum discharge, 16,500 cfs Jan. 6, 1923 (gage height, 8.3 ft, from floodmarks, site and datum then in use), from rating curve extended above 6,300 cfs by logarithmic plotting; minimum, 805 cfs Oct. 20, 1931.

Remarks.--Records excellent. No regulation or diversion above station. Records of chemical analyses and water temperatures for the water year 1959 are given in WSP 1644.

Revisions (water years).--WSP 814: Drainage area. WSP 1248: 1911-16, 1920-25. WSP 1448: 1919.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 27		Jan. 28 to Sept. 30	
1.1	1,000	1.1	1,040
2.0	1,930	2.0	1,930
4.0	4,840	4.0	4,840

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*1,090	1,040	1,730	2,010	2,460	1,730	2,420	*2,230	1,560	1,390	1,190	1,110
2	1,080	1,040	1,760	1,940	2,330	3,740	2,670	2,070	1,560	1,380	1,190	1,100
3	1,080	1,060	2,010	1,860	2,230	1,710	2,610	1,980	1,550	1,370	1,190	1,100
4	1,080	1,170	1,890	1,810	*2,150	1,670	2,510	1,920	1,540	1,360	1,180	1,110
5	1,070	1,200	1,790	1,780	2,070	1,650	2,420	2,010	1,680	1,370	1,180	1,170
6		1,060	1,510	1,770	1,740	2,040	2,330	2,110	1,640	1,360	1,180	1,190
7		1,060	1,480	2,030	1,710	1,990	2,210	2,090	1,590	1,370	1,180	1,140
8		1,080	1,980	2,040	1,760	1,910	2,120	2,070	1,560	1,360	1,180	1,130
9		1,070	1,830	2,090	1,920	1,880	2,070	2,060	1,610	1,350	1,170	1,120
10		1,060	1,710	2,180	2,390	1,830	2,050	2,010	1,620	1,340	1,170	1,110
11		1,060	1,530	3,270	2,610	1,780	2,040	1,950	*1,590	1,340	1,160	*1,110
12		1,060	1,540	3,300	3,410	1,740	2,010	1,920	1,560	1,330	1,160	1,110
13		1,060	2,310	2,750	2,950	1,720	1,970	1,980	1,550	1,320	1,160	1,100
14		1,060	*2,050	2,420	2,570	1,760	1,930	2,030	1,520	1,310	1,160	1,100
15		1,060	1,790	2,230	2,350	1,730	1,880	1,980	1,510	1,300	1,150	1,100
16		1,050	1,670	2,100	2,270	1,790	*1,560	1,820	1,880	1,540	1,290	1,150
17		1,050	1,590	*2,010	2,210	1,850	1,790	1,870	1,500	1,290	1,140	1,090
18		1,080	1,920	1,940	2,180	1,820	1,760	1,870	1,480	1,280	1,130	1,100
19		1,190	3,390	1,880	2,170	1,870	1,720	1,830	1,470	1,270	1,130	1,130
20		1,160	3,640	1,820	2,100	1,870	1,700	1,780	1,460	1,260	1,130	1,210
21		1,100	3,000	1,820	2,030	1,810	1,710	1,700	1,740	1,450	1,260	1,180
22		1,090	2,580	1,740	1,980	1,770	1,740	1,730	1,720	1,450	1,260	1,120
23		1,090	2,340	1,890	1,970	1,740	1,770	1,710	1,440	1,250	1,120	1,120
24		1,070	2,240	1,860	2,440	1,680	1,810	1,710	1,430	1,250	1,120	1,120
25		1,070	2,150	1,660	2,500	1,670	1,810	1,700	1,430	1,250	1,120	1,130
26		1,060	2,030	1,760	2,400	1,670	1,970	1,850	1,690	1,420	1,240	1,110
27		1,050	1,930	1,870	3,690	1,660	1,890	2,000	1,660	1,420	1,230	1,110
28		1,040	1,850	1,790	3,660	1,670	1,950	2,120	1,630	1,410	*1,220	1,110
29		1,040	1,750	1,760	3,700	1,680	1,890	2,110	1,600	1,400	1,210	1,110
30		1,040	1,740	2,070	2,790	1,670	2,120	2,250	1,570	1,400	1,200	1,110
31		1,040	-----	2,050	2,600	-----	2,220	-----	1,560	-----	1,200	1,110
Total	33,250	57,090	62,950	72,900	52,460	53,500	61,180	57,390	45,340	40,220	35,550	35,020
Mean	1,073	1,903	2,031	2,352	1,874	1,726	2,039	1,869	1,511	1,297	1,147	1,167
Cfam	3.08	5.47	5.84	6.76	5.39	4.96	5.86	5.37	4.34	3.73	3.30	3.35
In.	3.55	6.10	6.73	7.78	5.61	5.12	6.54	6.19	4.65	4.23	3.80	3.74
Ac-ft	65,950	115,200	124,900	144,600	104,100	106,100	121,300	114,900	89,930	79,780	70,510	69,460

Calendar year 1958: Max 5,940 Min 1,040 Mean 1,813 Cfam 5.21 In. 70.71 Ac-ft 1,313,000
 Water year 1958-59: Max 3,690 Min 1,040 Mean 1,664 Cfam 4.78 In. 64.92 Ac-ft 1,205,000

Peak discharge (base, 3,000 cfs).--Nov. 20 (2 a.m.) 3,990 cfs (3.50 ft); Dec. 11 (7 to 8 p.m.) 3,860 cfs (3.42 ft); Jan. 12 (7 a.m.) 3,750 cfs (3.35 ft); Jan. 27 (9:30 p.m.) 4,300 cfs (3.69 ft).

* Discharge measurement made on this day.

WILLAMETTE RIVER BASIN

1592. South Fork McKenzie River above Cougar Reservoir, near Rainbow, Oreg.

Location.--Lat 44°02'50", long 122°13'00", in T.17 S., R.5 E. (unsurveyed), on right bank 100 ft upstream from Tipsoo Creek, 8 miles south of Rainbow, and 9 miles south-east of town of Blue River. Records include flow of Tipsoo Creek.

Drainage area (revised).--160 sq mi at cableway 0.2 mile downstream, where all discharge measurements are made.

Records available.--October 1957 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,709.51 ft above mean sea level (Corps of Engineers bench mark).

Extremes.--Maximum discharge during year, 3,430 cfs Jan. 27 (gage height, 8.56 ft); minimum, 207 cfs Sept. 2, 3, 15 (gage height, 3.17 ft).
1957-59: Maximum discharge, 6,760 cfs Feb. 16, 1958 (gage height, 10.80 ft); minimum, that of Sept. 2, 3, 15, 1959.
Flood of Dec. 11, 1956, reached a stage of about 15 ft, from floodmarks.

Remarks.--Records excellent. No regulation or diversion above station. Records of water temperatures for the water year 1959 are given in WSP 1644.

Rating table, water year 1958-59 (gage height, in feet,
and discharge, in cubic feet per second)

3.1	194	5.0	730
3.5	270	6.0	1,210
4.0	385	7.0	1,680
4.5	530	8.0	2,800

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	217	221	515	746	380	754	1,270	895	440	286	226	212
2	*216	223	538	674	875	750	1,420	825	440	280	225	210
3	216	232	742	606	902	694	1,330	762	425	276	225	210
4	216	362	698	586	758	642	1,240	714	413	274	225	214
5	216	392	622	558	*710	610	1,180	815	594	278	225	240
6	216	840	598	524	694	574	1,080	975	586	276	225	268
7	214	868	850	515	650	558	965	905	500	280	223	238
8	225	1,130	925	550	606	542	870	875	461	274	221	*228
9	225	985	990	650	594	530	815	860	485	266	219	219
10	221	835	975	930	558	515	782	810	521	260	219	216
11	219	638	1,600	1,030	524	500	758	758	*479	260	219	214
12	217	602	1,800	1,280	497	550	726	738	452	256	219	212
13	216	1,480	1,340	1,130	491	570	694	786	428	254	219	212
14	216	1,180	1,080	950	598	530	670	850	410	252	219	212
15	214	630	905	830	634	521	634	806	392	250	217	219
16	214	642	790	815	786	542	594	730	440	248	217	219
17	212	*546	706	762	850	*602	566	738	400	244	217	216
18	232	698	*634	730	766	658	530	722	378	242	217	226
19	388	2,270	586	718	750	678	512	682	362	240	217	258
20	345	2,050	538	674	734	642	506	634	348	238	219	270
21	272	1,420	538	630	702	682	518	594	338	236	219	254
22	250	1,140	494	610	662	694	562	570	322	236	217	232
23	246	970	467	622	626	670	598	554	318	234	216	225
24	236	880	461	1,000	582	658	634	534	315	234	214	221
25	232	794	470	1,070	558	706	654	534	310	234	212	223
26	228	698	530	995	570	940	722	546	310	232	212	648
27	226	618	646	2,410	578	850	794	530	308	*230	212	494
28	226	550	582	2,310	630	850	810	515	300	230	212	392
29	223	509	662	1,550	-	855	790	488	296	230	212	330
30	221	509	870	1,230	-----	1,150	*895	464	290	228	212	300
31	221	-----	802	1,080	-----	1,160	-----	449	-----	226	212	-----
Total	7,236	25,130	23,954	28,745	18,765	21,177	24,119	659	12,061	7,784	6,763	7,833
Mean	233	833	773	927	670	683	804	898	402	251	218	261
Cfsm	1.46	5.24	4.83	5.79	4.19	4.27	5.02	4.37	2.51	1.57	1.36	1.63
In.	1.68	5.84	5.57	6.68	4.36	4.92	5.61	5.03	2.80	1.81	1.57	1.82
Ac-ft	14,350	49,840	47,510	57,010	37,220	42,000	47,840	42,960	23,920	15,440	13,410	15,540

Calendar year 1958: Max 5,640 Min 212 Mean 682 Cfsm 4.26 In. 57.90 Ac-ft 493,900
Water year 1958-59: Max 2,410 Min 210 Mean 562 Cfsm 3.51 In. 47.69 Ac-ft 407,000

Peak discharge (base, 2,500 cfs).--Nov. 19 (7 p.m.) 2,880 cfs (8.08 ft); Jan. 27 (6 p.m.) 3,430 cfs (8.56 ft).

* Discharge measurement made on this day.

1595. South Fork McKenzie River near Rainbow, Ore.

Location.--Lat 44°08'10", long 122°14'50", in NE $\frac{1}{4}$ sec.31, T.16 S., R.5 E., on right bank 0.2 mile upstream from Cougar Creek, 2 miles south of Rainbow, and 5 miles southeast of town of Blue River.

Drainage area.--208 sq mi (revised).

Records available.--October 1947 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,236.42 ft above mean sea level (Bureau of Public Roads bench mark). Prior to Nov. 4, 1947, staff gage at site 40 ft upstream at same datum.

Average discharge.--12 years, 945 cfs (684,200 acre-ft per year).

Extremes.--Maximum discharge during year, 5,560 cfs Jan. 27 (gage height, 4.98 ft); minimum, 215 cfs Sept. 2-4, 13, 14; minimum daily, 215 cfs Sept. 3, 14.
1947-59: Maximum discharge, 17,600 cfs Dec. 11, 1956 (gage height, 8.66 ft), from rating curve extended above 8,100 cfs by logarithmic plotting; maximum gage height, 8.90 ft Dec. 22, 1955 (backwater from debris); minimum discharge, 207 cfs Sept. 13, 14, 1957; minimum daily, 210 cfs Oct. 1, 1947.
Maximum discharge known, 24,500 cfs Dec. 28, 1945 (gage height, 8.8 ft, from flood-marks, at Corps of Engineers gage at site 40 ft upstream; corresponding gage height at present site and datum, about 9.3 ft), computed by Corps of Engineers.

Remarks.--Records excellent. No apparent regulation but construction work in progress at Cougar Dam, three-quarters of a mile above station. No diversion above station. Records of water temperatures for the water year 1959 are given in WSP 1644.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.0	195	3.0	1,880
1.5	440	4.0	3,500
2.0	800	5.0	5,600

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	240	253	696	960	1,300	1,020	1,990	1,210	549	330	235	219
2	*231	262	720	864	1,150	1,030	2,290	1,090	549	325	235	219
3	227	285	1,000	768	1,030	960	2,080	990	542	315	235	215
4	227	464	930	712	970	864	1,840	910	521	315	235	219
5	227	507	824	696	*910	816	1,660	1,170	736	320	235	244
6	227	1,260	816	656	872	776	1,460	1,490	752	315	235	300
7	227	1,290	1,110	640	816	736	1,260	1,300	633	325	255	253
8	240	1,840	1,260	696	776	728	1,120	1,220	591	315	231	*240
9	244	1,520	1,360	808	744	720	1,030	1,210	626	310	231	235
10	240	1,300	1,340	1,250	712	696	960	1,100	688	300	231	227
11	235	950	2,680	1,440	672	664	940	1,000	*612	295	227	223
12	235	864	3,100	1,990	633	728	872	950	577	290	227	223
13	231	2,620	1,990	1,620	619	784	832	1,030	563	280	223	219
14	235	1,960	1,460	1,290	768	744	800	1,120	535	276	223	215
15	235	1,280	1,180	1,070	824	712	752	1,020	514	276	223	227
16	231	950	1,000	1,020	1,190	736	696	920	570	271	219	231
17	251	*792	890	940	1,280	*800	672	940	521	271	219	223
18	253	1,000	*792	890	1,100	920	633	930	494	266	223	240
19	504	3,820	704	900	1,060	970	605	880	470	258	227	276
20	476	3,390	640	832	1,030	890	591	808	458	258	231	341
21	341	2,220	648	776	960	960	612	752	429	253	231	310
22	305	1,680	591	744	900	990	656	720	424	253	231	271
23	290	1,380	556	768	832	950	696	704	407	258	227	253
24	285	1,210	542	1,250	768	930	768	688	402	258	227	248
25	276	1,080	553	1,370	744	980	784	688	390	253	227	253
26	266	940	633	1,280	768	1,360	856	704	385	248	227	890
27	266	824	808	3,930	792	1,240	1,020	672	374	*244	227	784
28	253	760	728	3,820	840	1,220	1,050	648	352	244	227	584
29	258	688	848	2,307	4,48	1,230	1,010	619	356	240	227	452
30	258	688	1,230	1,750	-----	1,720	*1,170	591	336	235	223	390
31	248	-----	1,090	1,480	-----	1,750	-----	563	-----	235	223	-----
Total	8,242	38,077	32,729	39,540	25,060	29,624	31,705	28,637	15,352	8,632	7,077	9,224
Mean	266	1,269	1,056	1,275	895	956	1,057	924	512	278	228	307
Cfsm	1.28	6.10	5.08	6.13	4.30	4.60	5.08	4.44	2.46	1.34	1.10	1.48
In.	1.47	6.81	5.85	7.07	4.48	5.30	5.67	5.12	2.74	1.54	1.27	1.65
Ac-ft	16,350	75,520	64,920	78,430	49,710	58,760	62,890	56,800	30,450	17,120	14,040	18,300

Calendar year 1958: Max 7,520 Min 227 Mean 895 Cfsm 4.31 In. 58.49 Ac-ft 648,800
Water year 1958-59: Max 3,930 Min 215 Mean 750 Cfsm 3.61 In. 48.97 Ac-ft 543,300

Peak discharge (base, 5,000 cfs, revised).--Jan. 27 (5:30 p.m.) 5,560 cfs (4.98 ft).

* Discharge measurement made on this day.

1620. Blue River near Blue River, Oreg.

Location.--Lat 44°10'55", long 122°16'45", in NW $\frac{1}{4}$ sec.13, T.16 S., R.4 E., on right bank 3 miles upstream from Quartz Creek and $3\frac{1}{2}$ miles northeast of town of Blue River.

Drainage area.--75 sq mi, approximately.

Records available.--September 1935 to September 1959. Monthly discharge only September 1935, published in WSP 1318.

Gage.--Water-stage recorder. Altitude of gage is 1,220 ft (from river-profile map).

Average discharge.--24 years, 394 cfs (285,200 acre-ft per year).

Extremes.--Maximum discharge during year, 4,390 cfs Jan. 27 (gage height, 5.06 ft); minimum, 19 cfs Oct. 7.

1935-59: Maximum discharge, 13,300 cfs Dec. 28, 1945 (gage height, 9.80 ft), from rating curve extended above 7,400 cfs; minimum, 13 cfs Sept. 27, 28, Oct. 1, 2, 1938.

Remarks.--Records excellent except those for periods of shifting control or backwater from debris, which are good. No regulation or diversion above station.

Rating tables, water year 1958-59, except periods of shifting control or backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 27

Jan. 28 to Sept. 30

0.96	19	2.0	490	1.0	18	1.7	280
1.0	23	2.5	890	1.1	34	2.2	650
1.1	40	3.0	1,380	1.2	57	3.0	1,380
1.2	64	4.0	2,650	1.3	85	4.0	2,650
1.4	130	5.0	4,280				
1.6	220						

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*22	36	250	642	722	706	1,330	570	165	61	30	21
2	22	40	292	514	594	650	1,380	458	160	59	30	20
3	20	52	618	396	482	562	1,070	396	150	57	30	20
4	20	250	466	347	442	482	866	347	145	57	30	28
5	23	310	354	328	*426	426	730	522	225	61	30	93
6	22	717	340	316	410	396	602	770	210	59	30	175
7	19	594	666	354	396	375	506	594	175	70	28	82
8	32	1,230	674	562	340	368	434	522	160	61	28	55
9	30	953	690	926	334	368	396	474	215	57	28	47
10	24	802	770	1,680	304	334	361	410	258	57	28	36
11	23	490	1,730	1,600	274	316	354	347	215	55	28	*41
12	50	490	1,540	2,310	258	368	328	322	*195	52	28	32
13	23	1,730	926	1,310	247	396	310	347	170	52	28	30
14	23	1,120	666	858	292	347	280	347	150	55	28	28
15	22	650	506	666	324	322	269	328	135	52	28	30
16	22	426	389	570	682	334	242	280	150	49	26	32
17	20	*328	*328	498	730	*410	225	292	125	45	26	28
18	28	938	292	450	666	538	215	368	117	45	26	45
19	188	3,440	262	450	926	642	205	375	113	43	28	61
20	146	2,900	232	410	826	506	200	328	101	43	28	250
21	79	1,540	238	361	682	562	220	286	97	41	28	210
22	61	1,000	215	334	562	610	242	269	85	38	28	113
23	58	770	190	347	490	562	264	247	85	38	28	76
24	48	658	185	1,010	426	514	280	236	85	38	28	61
25	44	554	220	1,000	405	554	269	225	79	36	26	57
26	40	434	413	874	418	899	316	225	79	34	24	843
27	38	340	698	3,450	466	746	490	215	76	*36	24	458
28	38	298	578	2,270	562	794	*602	205	76	34	24	298
29	36	256	706	1,340	-	786	546	200	73	34	22	145
30	34	250	1,090	1,000	1,150	618	180	67	32	21	20	21
31	34	---	818	858	---	1,170	---	170	---	30	27	---
Total	1,289	23,596	17,342	28,031	13,684	17,193	14,150	10,855	4,136	1,461	840	3,615
Mean	41.6	787	559	904	498	555	472	350	138	47.8	27.1	120
Cfsm	0.585	10.5	7.45	12.1	6.52	7.40	6.29	4.67	1.84	0.637	0.361	1.60
In.	0.54	11.70	8.60	13.90	6.79	8.53	7.02	5.38	2.05	0.73	0.42	1.79
Ac-ft	2,560	46,800	34,400	55,600	27,140	34,100	28,070	21,530	8,200	2,940	1,670	7,170

Calendar year 1958: Max 3,770 Min 19 Mean 412 Cfsm 5.49 In. 74.60 Ac-ft 298,400
 Water year 1958-59: Max 3,450 Min 19 Mean 373 Cfsm 4.97 In. 67.55 Ac-ft 270,200

Peak discharge (base, 3,800 cfs, revised).--Nov. 19 (7:30 p.m.) 4,280 cfs (5.00 ft); Jan. 27 (11:50 a.m.) 4,390 cfs (5.06 ft).

* Discharge measurement made on this day.

Note.--Backwater from debris Oct. 1-19; shifting-control method used Apr. 3-8, Apr. 27 to May 2, May 5-9, Sept. 26, 27.

1625. McKenzie River near Vida, Oreg.

Location.--Lat 44°07'30", long 122°28'10", in NE $\frac{1}{4}$ sec.5, T.17 S., R.3 E., on left bank 1 mile upstream from head of Martin Rapids and 5 miles east of Vida.

Drainage area.--930 sq mi, at cableway 0.4 mile downstream where all discharge measurements are made.

Records available.--July 1910 to March 1911 (published as "at Martins Rapids, near Vida"), September 1924 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 855.56 ft above mean sea level, datum of 1929. July 1, 1910, to Mar. 31, 1911, staff gage at site 3 miles downstream at different datum. Sept. 1, 1924, to Nov. 16, 1928, staff gage at site 20 ft upstream at same datum.

Average discharge.--35 years (1924-59), 3,983 cfs (2,884,000 acre-ft per year).

Extremes.--Maximum discharge during year, 23,400 cfs Jan. 27 (gage height, 8.29 ft); minimum, 1,650 cfs Sept. 2, 3 (gage height, 0.78 ft).
1910-11, 1924-59: Maximum discharge, 64,400 cfs Dec. 28, 1945 (gage height, 17.70 ft) from rating curve extended above 32,000 cfs by logarithmic plotting; minimum, 1,260 cfs Nov. 7, 1930, Sept. 17, Oct. 4, 8, 9, 1931 (gage height, 0.36 ft).
Flood in January 1923 reached a stage of 17.2 ft, from floodmarks (discharge, 62,000 cfs).

Remarks.--Records excellent. No regulation or diversion above station.

Revisions (water years).--WSP 1124: 1943.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 27

Jan. 28 to Sept. 30

0.7	1,520	0.7	1,450
2.0	3,580	2.0	3,490
4.0	8,250	4.0	8,250
7.0	18,200	7.0	18,200

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,770	1,740	3,530	5,130	6,780	4,720	8,340	5,440	3,010	2,280	1,780	1,570
2	*1,760	1,730	3,470	4,690	5,960	4,720	9,180	4,920	3,020	2,250	1,780	1,570
3	1,770	1,780	4,690	4,230	5,410	4,430	8,190	4,570	2,990	2,200	1,780	1,560
4	1,770	2,580	4,400	3,960	5,140	4,170	7,280	4,240	2,940	2,150	1,780	1,800
5	1,760	2,780	3,920	3,940	4,870	3,950	6,650	5,180	3,650	2,180	1,750	1,830
6	1,760	4,380	3,780	3,860	*4,850	3,790	6,050	6,500	3,670	2,150	1,750	2,120
7	1,780	5,390	4,990	3,840	4,590	3,650	5,370	5,670	3,320	2,220	1,740	1,840
8	1,830	7,120	5,500	4,190	4,360	3,610	4,920	5,230	3,110	2,150	1,740	*1,730
9	1,830	6,180	5,590	5,020	4,240	3,570	4,640	5,070	3,300	2,060	1,730	1,660
10	1,770	5,630	5,760	7,590	4,150	3,530	4,470	4,760	3,590	2,040	1,730	1,640
11	1,740	4,190	10,400	8,190	3,910	3,380	4,380	4,430	3,300	2,000	1,710	1,620
12	1,740	3,700	11,800	11,200	3,710	3,530	4,200	4,240	*3,170	1,970	1,700	1,610
13	1,700	10,000	8,130	8,700	3,590	3,850	4,030	4,430	3,040	1,960	1,670	1,600
14	1,670	8,130	6,340	6,680	4,380	3,690	3,890	4,700	2,910	1,940	1,640	1,580
15	1,660	5,500	5,460	5,760	4,660	3,550	3,730	4,640	2,820	1,910	1,640	1,600
16	1,630	4,360	4,860	5,390	6,220	3,570	3,530	4,220	2,940	1,900	1,620	1,610
17	1,650	3,780	*4,490	5,080	6,350	3,770	3,430	4,220	2,820	1,890	1,620	1,610
18	1,690	*4,630	4,150	4,860	5,600	*4,200	3,300	4,400	2,720	1,860	1,620	1,670
19	2,450	16,100	3,900	4,990	5,760	4,610	3,190	4,320	2,680	1,840	1,620	1,780
20	2,450	14,500	3,680	4,800	5,530	4,320	3,130	4,030	2,630	1,840	1,620	2,280
21	2,000	9,570	3,700	4,440	5,090	4,490	3,190	3,810	2,580	1,840	1,620	2,150
22	1,820	7,220	3,490	4,230	4,700	4,700	3,540	3,670	2,540	1,830	1,610	1,840
23	1,820	6,070	3,310	4,230	4,430	4,550	3,470	3,590	2,470	1,830	1,610	1,700
24	1,770	5,540	3,240	6,290	4,150	4,450	3,630	3,510	2,460	1,820	1,610	1,640
25	1,740	5,130	3,350	6,800	3,970	4,550	3,690	3,510	2,420	1,800	1,600	1,660
26	1,730	4,600	3,720	6,250	4,030	6,500	3,970	3,530	2,440	1,800	1,580	4,750
27	1,740	4,150	4,880	16,800	4,130	5,840	4,590	3,450	2,410	1,790	1,580	3,750
28	1,740	3,840	4,400	16,800	4,240	5,740	5,070	3,360	2,380	1,780	1,580	2,940
29	1,740	3,580	4,750	10,700	-	5,840	4,830	3,240	2,360	1,780	1,580	2,460
30	1,740	3,510	6,290	8,320	-	7,800	*5,340	3,090	2,310	*1,790	1,580	2,200
31	1,730	-----	5,350	7,560	-----	7,740	3,020	3,020	-----	1,790	1,580	-----
Total	55,730	167,390	155,600	204,520	134,800	141,010	143,020	132,990	86,000	60,640	51,530	59,150
Mean	1,798	5,580	5,019	6,597	4,814	4,549	4,787	4,290	2,867	1,956	1,662	1,972
Cfsm	1.93	6.00	5.40	7.09	5.18	4.89	5.13	4.61	3.08	2.10	1.79	2.12
In.	2.23	6.69	6.22	8.18	5.39	5.64	5.72	5.32	3.44	2.42	2.06	2.37
Ac-ft	110,500	332,000	308,600	405,700	267,400	279,700	283,700	263,800	170,600	120,300	102,200	117,300

Calendar year 1958: Max 26,600 Min 1,630 Mean 4,376 Cfsm 4.71 In. 63.87 Ac-ft 3,168,000
Water year 1958-59: Max 16,800 Min 1,560 Mean 3,815 Cfsm 4.10 In. 55.68 Ac-ft 2,762,000

Peak discharge (base, 16,000 cfs).--Nov. 19 (9 p.m.) 18,800 cfs (7.15 ft); Jan. 27 (5 p.m.) 23,400 cfs (8.29 ft).

* Discharge measurement made on this day.

WILLAMETTE RIVER BASIN

1655. McKenzie River near Coburg, Oreg.

Location--Lat 44°06'45", long 123°02'45", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.9, T.17 S., R.3 W., on left bank at downstream side of Armitage Bridge, 2 miles southeast of Coburg and 3 miles upstream from mouth.

Drainage area--1,337 sq mi (revised).

Records available--October 1944 to September 1959.

Gage--Water-stage recorder. Datum of gage is 396.32 ft above mean sea level, datum of 1929, supplementray adjustment of 1947. Prior to Nov. 24, 1944, wire-weight gage at same site and datum.

Average discharge--15 years, 6,117 cfs (4,429,000 acre-ft per year).

Extremes--Maximum discharge during year, 39,600 cfs Jan. 28 (gage height, 11.43 ft); minimum, 1,510 cfs Aug. 31 (gage height, 1.46 ft).

1944-59: Maximum discharge, 88,200 cfs Dec. 29, 1945 (gage height, 17.36 ft), from rating curve extended above 59,000 cfs; minimum daily, 1,310 cfs Oct. 29, 1944.

Remarks--Records excellent except those for period of shifting control, which are fair. Slight diurnal fluctuation caused by logponds and powerplants upstream. Water supply for city of Eugene is diverted 10 miles upstream; small diversions for irrigation above station.

Rating tables, water year 1958-59, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 19

Nov. 20 to Sept. 30

1.4	1,670	6.0	11,500	1.6	1,660	6.0	8,200
2.0	2,510	8.0	19,800	2.0	2,120	7.0	15,400
4.0	6,000			3.0	3,520	11.0	37,000
				4.0	5,580		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,800		4,460	7,470	11,200	6,520	11,800	6,720	3,480	2,530	1,880	1,760
2	1,820	1,820	4,460	*6,880	9,710	6,870	12,400	6,180	3,570	2,450	1,870	1,700
3	1,830	2,100	5,270	6,180	8,560	6,250	11,500	5,920	3,520	2,420	1,860	1,730
4	1,770	2,480	5,770	5,680	7,840	5,890	10,200	5,470	3,410	2,400	1,850	1,720
5	1,790	3,200	5,120	5,960	7,300	5,560	9,150	e6,520	4,000	2,440	1,860	1,890
6	1,980	3,340	4,850	6,040	7,050	5,250	8,380	e9,710	4,360	2,490	1,860	2,320
7	1,820	7,250	5,450	5,960	6,910	5,050	7,530	e8,740	3,920	2,420	1,800	2,200
8	*1,600	7,280	7,250	6,440	6,440	4,940	6,860	*e8,000	3,680	*2,460	1,790	2,040
9	2,000	8,350	7,000	8,060	6,350	4,850	6,370	e7,050	3,520	2,360	1,880	1,920
10	1,950	7,520	7,420	12,900	6,570	4,880	6,010	e6,420	4,240	2,310	1,850	1,790
11	1,800	5,760	10,800	15,400	6,060	4,520	5,800	e5,800	3,940	2,260	1,800	1,820
12	1,830	4,680	16,800	21,400	5,650	4,660	5,600	5,320	3,700	2,250	1,770	1,790
13	1,990	10,900	12,100	17,400	5,430	5,100	5,580	5,270	3,580	2,280	1,780	1,780
14	1,910	12,000	9,380	12,700	7,490	5,050	5,140	5,650	3,410	2,160	1,780	1,780
15	1,830	8,620	7,840	10,300	8,710	4,790	5,050	5,690	3,280	2,190	1,740	1,780
16	1,830	6,550	6,800	9,280	11,200	4,720	4,790	5,430	3,240	2,200	1,740	1,820
17	1,800	5,440	6,160	8,410	11,800	4,810	4,550	5,290	3,240	2,180	1,730	1,820
18	1,770	5,180	5,700	7,840	10,100	5,160	4,360	5,680	3,060	2,100	1,760	1,820
19	2,300	18,900	5,290	7,720	9,780	6,400	4,200	5,920	3,120	2,080	1,750	1,940
20	3,320	*26,200	5,010	7,470	9,510	5,960	4,080	5,490	2,950	2,060	1,750	2,320
21	2,570	15,400	5,140	6,940	8,650	6,080	3,940	5,070	2,920	2,000	1,800	2,740
22	2,100	11,100	4,830	6,490	7,750	6,670	4,100	4,830	2,850	2,040	1,770	2,320
23	2,080	8,960	4,480	6,350	7,220	6,420	4,180	4,570	2,780	1,980	1,760	2,110
24	2,080	7,750	4,340	7,750	6,620	6,350	4,300	4,420	2,700	2,040	1,750	1,960
25	1,880	7,160	4,480	9,850	6,230	6,280	4,380	4,320	2,710	1,990	1,740	1,930
26	1,890	6,350	4,740	8,930	6,180	6,880	4,630	4,280	*2,710	1,980	1,730	3,800
27	2,020	5,700	7,000	20,200	6,320	*10,100	5,270	4,300	2,700	1,940	*1,700	5,070
28	1,830	5,230	6,830	*33,000	6,250	9,220	5,800	4,160	2,650	1,950	1,770	3,700
29	1,910	4,850	6,520	19,200	-	9,340	5,750	3,900	2,680	1,900	1,770	3,000
30	1,860	4,550	8,710	14,800	-----	11,700	6,010	3,770	2,520	1,930	1,750	*2,680
31	1,870	-----	8,410	12,800	-----	12,600	-----	3,630	-----	1,860	1,700	-----
Total	61,030	226,540	208,410	335,800	218,880	201,470	187,510	173,720	98,450	67,650	55,340	67,030
Mean	1,969	7,551	7,723	10,830	7,817	6,499	6,250	5,604	3,282	2,182	1,785	2,234
Cfsm	1,830	5,235	5,035	8,110	5,855	4,866	4,671	4,139	2,455	1,653	1,354	1,637
In.	1.70	6.30	5.80	9.34	6.09	5.60	5.22	4.83	2.74	1.88	1.54	1.86
Ac-ft	121,100	449,300	413,400	666,000	434,100	399,600	371,900	344,600	195,300	134,200	109,800	133,000
Calendar year 1958: Max	41,100											
Water year 1958-59: Max	33,000											
Min	1,730											
Mean	5,901											
Cfsm	4.41											
In.	59.91											
Ac-ft	4,272,000											
Ac-ft	3,772,000											

Peak discharge (base, 31,000 cfs, revised)--Jan. 28 (3 a.m.) 39,600 cfs (11.43 ft).

* Discharge measurement made on this day.

e Shifting-control method used.

1660. Willamette River at Harrisburg, Oreg.

Location.--Lat 44°16'05", long 123°10'20" (revised), in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.16, T.15 S., R.4 W., on right bank 10 ft downstream from bridge on U. S. Highway 99 at Harrisburg and at mile 162.9.

Drainage area.--3,420 sq mi, approximately.

Records available.--October 1944 to September 1959. Gage-height records collected at same site in 1927-28, 1931, 1934, are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 290.39 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Oct. 1 to Nov. 14, 1944, wire-weight gage on bridge 10 ft upstream at same datum.

Average discharge.--15 years, 12,960 cfs (9,383,000 acre-ft per year).

Extremes.--Maximum discharge during year, 62,700 cfs Jan. 28 (gage height, 13.10 ft); minimum, 3,240 cfs Sept. 4.

1944-59: Maximum discharge, 210,000 cfs Dec. 29, 1945 (gage height, 19.69 ft). from rating curve extended above 89,000 cfs; minimum, 1,990 cfs Oct. 30, 1944.

Flood of Dec. 4, 1861, reached a stage of about 21 ft (present site and datum), from information by local residents. Flood of Jan. 1, 1943, reached a stage of 19.1 ft (present datum), from U. S. Weather Bureau records.

Remarks.--Records fair. Flow regulated at times by Lookout Point, Cottage Grove, and Dorena Reservoirs (see elsewhere in this report). Many small diversions above station for irrigation; about 15 cfs diverted from McKenzie River for city of Eugene water supply.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,050	4,750	8,940	17,400	33,400	11,700	23,800	10,500	7,070	4,180	4,240	3,620
2	4,990	4,070	9,520	*15,800	31,700	12,600	22,500	10,100	6,660	4,320	4,320	3,510
3	5,020	4,460	9,920	13,700	*26,000	12,000	23,300	9,770	6,310	4,070	4,260	3,450
4	4,930	5,320	10,500	11,800	20,700	11,300	20,800	9,090	6,080	3,980	4,320	3,400
5	4,930	6,340	9,450	12,300	19,400	10,400	19,000	10,300	6,720	3,930	4,320	3,620
6	5,080	6,650	8,730	13,600	18,300	9,590	17,900	16,200	9,810	4,120	4,290	4,210
7	4,930	13,000	8,840	13,900	16,500	8,800	15,500	16,000	9,160	4,100	4,210	4,380
8	4,900	12,500	12,100	13,300	13,900	8,440	15,200	*14,400	8,220	4,350	4,150	4,040
9	5,170	16,600	12,500	19,600	13,100	8,260	11,800	13,900	7,860	4,240	4,290	3,870
10	*5,020	14,900	15,200	27,200	13,400	8,370	10,800	12,900	8,870	3,930	4,320	3,620
11	4,520	14,300	19,300	33,400	12,200	7,970	10,100	11,900	8,720	3,870	4,430	3,620
12	4,320	14,600	31,600	42,500	11,200	7,970	9,480	11,400	8,530	3,870	4,400	3,620
13	4,360	21,000	25,000	38,500	10,300	8,760	9,200	11,100	7,180	3,840	4,380	3,590
14	4,350	30,600	22,100	28,200	17,200	9,160	8,730	11,600	6,380	3,760	4,350	3,480
15	4,580	25,400	19,500	27,000	24,800	8,550	8,370	12,800	6,210	3,930	4,260	3,590
16	4,660	21,400	19,000	23,900	24,900	8,330	7,970	12,200	5,820	4,010	4,260	3,700
17	4,660	18,700	16,100	22,800	28,600	8,370	7,580	11,800	5,920	4,010	4,320	3,730
18	4,720	13,400	13,400	20,600	27,700	8,660	7,360	13,500	5,660	3,840	4,400	3,870
19	4,990	27,600	12,500	18,500	26,100	10,400	7,070	14,200	5,650	3,900	4,430	3,870
20	7,500	51,800	11,600	18,100	23,900	10,200	6,900	13,600	5,790	3,900	4,430	4,210
21	6,410	41,500	11,500	16,900	20,600	10,500	6,850	12,700	5,570	3,760	4,400	5,110
22	5,570	31,000	11,100	15,600	17,400	12,300	6,850	11,100	5,350	3,960	4,350	4,690
23	5,470	24,700	9,200	14,500	15,000	12,100	6,850	9,520	5,020	3,980	4,290	4,210
24	5,470	20,700	8,400	15,200	14,100	11,900	6,790	8,870	4,690	4,100	4,210	3,980
25	5,080	*18,000	8,620	20,200	12,400	11,800	6,860	8,510	4,720	4,120	4,180	3,800
26	5,050	14,000	9,200	19,800	11,400	17,400	7,320	8,440	*4,630	4,210	4,180	5,350
27	5,200	12,100	13,700	27,500	11,800	*19,800	8,150	8,220	4,720	4,150	*4,180	9,720
28	5,050	10,700	14,100	*57,500	11,500	18,800	8,800	8,120	4,490	4,120	4,070	6,410
29	5,050	9,950	13,000	*36,500	-	19,200	8,840	7,790	4,430	4,180	3,760	6,450
30	5,020	9,200	16,200	38,300	-----	21,100	8,870	7,430	4,120	*4,260	3,620	*6,620
31	4,990	-----	17,900	35,300	-----	24,800	-----	7,250	-----	4,150	3,540	-----
Total	157,060	519,240	429,320	728,400	527,500	369,530	336,940	345,210	190,340	125,140	131,160	131,440
Mean	5,066	17,310	13,850	23,500	18,840	11,920	11,230	11,140	6,345	4,037	4,231	4,381
Ac-ft	311,500	*1,030	851,500	*1,445	*1,046	733,000	668,300	684,700	377,500	248,200	260,200	260,700

Calendar year 1958: Max 79,200 Min 4,070 Mean 12,700 Ac-ft 9,191,000
 Water year 1958-59: Max 57,500 Min 3,400 Mean 10,940 Ac-ft 7,917,000

* Discharge measurement made on this day.

† Expressed in thousands.

1665. Long Tom River near Noti, Oreg.

Location (revised).--Lat 44°03'00", long 123°25'30", in sec.33, T.17 S., R.6 W., on left bank 0.2 mile upstream from Southern Pacific Railroad bridge, 0.9 mile downstream from Noti Creek, and 1.3 miles southeast of Noti.

Drainage area.--88 sq mi, approximately.

Records available.--October 1935 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 388.76 ft above mean sea level (levels by U. S. Weather Bureau). Prior to Nov. 6, 1940, staff gage at same site and datum.

Average discharge.--24 years, 245 cfs (177,400 acre-ft per year).

Extremes.--Maximum discharge during year, 3,770 cfs Jan. 12 (gage height, 16.53 ft); minimum, 9.9 cfs Aug. 25, Sept. 4.
1935-59: Maximum discharge, 6,990 cfs Dec. 22, 1955 (gage height, 20.17 ft); minimum observed, 7 cfs Sept. 25-27, 1939.

Remarks.--Records excellent except those for period of shifting control, which are good. Slight diurnal fluctuation caused by logpond above Noti. No diversion above station.

Revisions (water years).--WSP 1318: 1936(M).

Rating tables, water year 1958-59, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 12

Jan. 13 to Sept. 30

0.5	10	7.0	767	0.5	9.3	7.0	767
.8	23	10.0	1,230	.7	16	10.0	1,230
1.1	44	13.0	2,000	1.0	34	13.0	2,000
2.0	137	15.0	2,750	2.0	137	15.0	2,750
4.0	377	16.0	3,400	4.0	377		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	67	93	287	604	300	568	126	67	38	16	12
2	14	43	93	270	498	281	468	122	65	34	15	12
3	13	48	96	234	450	263	399	117	65	33	*14	11
4	13	64	97	211	408	246	351	117	64	31	14	12
5	13	95	93	209	370	235	312	*138	71	31	15	25
6	13	122	89	210	358	226	281	147	69	33	14	40
7	13	166	86	227	347	209	258	123	65	34	13	31
8	*14	142	97	227	348	199	240	115	61	38	21	21
9	17	227	101	2,030	348	212	226	114	73	33	12	17
10	17	278	107	2,190	*526	215	212	108	83	31	12	15
11	17	141	146	1,850	480	191	200	105	67	28	12	14
12	16	102	189	3,200	410	196	190	100	63	26	12	14
13	16	206	166	1,985	398	199	185	97	60	25	12	14
14	16	264	133	1,030	1,400	192	177	105	57	24	12	14
15	16	232	125	732	1,500	177	176	117	57	25	12	*16
16	16	161	110	664	1,250	168	166	102	56	24	11	22
17	16	*124	107	610	1,100	178	161	102	54	22	11	*21
18	20	123	104	508	890	188	155	104	51	22	11	21
19	53	817	107	465	944	236	149	103	47	20	12	49
20	58	1,050	103	411	845	211	144	95	45	18	12	55
21	32	524	139	367	698	224	139	91	41	17	12	38
22	25	318	130	335	567	232	134	88	42	16	13	27
23	22	239	118	313	502	271	130	82	41	16	12	21
24	20	196	117	442	443	313	124	80	41	17	12	19
25	20	164	179	462	391	*305	122	78	*40	17	11	19
26	20	140	340	426	370	452	126	78	42	17	11	24
27	19	124	863	1,380	359	445	151	78	43	16	11	33
28	18	111	824	2,270	324	408	148	76	41	16	11	27
29	18	103	558	1,240	-	410	130	73	44	16	12	22
30	18	97	*410	900	-----	647	127	71	40	16	12	21
31	33	-----	330	733	-----	693	-----	68	-----	16	12	-----
Total	630	6,488	6,250	26,885	17,096	8,722	6,348	3,120	1,653	750	384	687
Mean	20.3	216	202	867	811	281	212	101	55.1	24.2	12.4	22.9
Cfsm	0.231	2.45	2.30	9.85	6.94	3.19	2.41	1.15	0.626	0.275	0.141	0.260
In.	0.27	2.74	2.64	11.36	7.23	3.69	2.68	1.32	0.70	0.32	0.16	0.29
Ac-ft	1,250	12,870	12,400	53,330	33,910	17,300	12,590	6,190	3,280	1,490	762	1,360

Calendar year 1958: Max 2,400 Min 10 Mean 238 Cfsm 2.70 In. 36.66 Ac-ft 172,000
Water year 1958-59: Max 3,200 Min 11 Mean 216 Cfsm 2.45 In. 33.40 Ac-ft 156,700

Peak discharge (base, 1,600 cfs, revised).--Jan. 12 (1 p.m.) 3,770 cfs (16.53 ft); Jan. 28 (5 a.m.) 2,640 cfs (14.78 ft); Feb. 14 (9:30 p.m.) 1,890 cfs (12.63 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used July 3 to Sept. 4.

1670. Coyote Creek near Crow, Oreg.

Location.--Lat 44°01'19", long 123°15'17", in NE $\frac{1}{4}$ sec.11, T.18 S., R.5 W., on right bank just upstream from backwater of Fern Ridge Reservoir, 1 mile downstream from Spencer Creek and 5 miles northeast of Crow.

Drainage area.--94 sq mi, approximately.

Records available.--June 1940 to September 1959.

Gage.--Water-stage recorder and concrete control. Datum of gage is 374.0 ft above mean sea level (Corps of Engineers bench mark). Prior to Aug. 31, 1940, staff gages near same site at different datums.

Average discharge.--19 years, 191 cfs (138,300 acre-ft per year).

Extremes.--Maximum discharge during year, 6,330 cfs Jan. 12 (gage height, 13.21 ft); no flow Aug. 2 to Sept. 25.
1940-59: Maximum discharge, 10,100 cfs Dec. 21, 1955 (gage height, 14.32 ft, from floodmarks), from rating curve extended above 4,700 cfs by logarithmic plotting; no flow at times.

Remarks.--Records good except those for periods of no gage-height record, shifting control, or backwater from irrigation dam, which are fair.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.0	0.8	40	180	412	145	537	43	17	5.4	0.1	0
2	1.0	1.0	39	165	311	130	370	42	15	4.7	0	0
3	.9	1.6	38	138	253	114	280	41	14	4.4	0	0
4	.9	1.4	38	111	211	102	222	35	14	4.4	*0	0
5	.9	1.8	35	171	180	94	186	*37	15	3.2	0	0
6	1.0	3.2	33	253	167	87	158	40	21	2.9	0	0
7	1.0	3.4	34	347	175	82	139	35	18	3.2	0	0
8	.4	3.6	39	861	151	77	114	30	15	3.4	0	0
9	*.4	6.5	67	2,420	192	73	101	35	14	3.4	0	0
10	.4	44	83	2,570	*634	79	90	33	15	3.2	0	0
11	.4	22	93	2,100	600	67	82	29	15	2.0	0	0
12	.6	5.0	132	4,330	403	64	74	27	13	.2	0	0
13	.6	38	120	1,850	338	70	68	26	11	2.0	0	0
14	.6	119	98	1,080	3,100	75	63	33	11	1.3	0	*0
15	.6	158	82	640	2,620	63	60	54	10	1.5	0	0
16	.4	101	71	574	1,810	58	55	39	9.4	1.2	0	0
17	.4	55	62	a460	1,310	57	53	39	9.4	.8	0	0
18	.4	34	54	a380	1,000	65	50	42	9.4	.8	0	0
19	1.4	*441	50	a320	808	138	47	52	8.4	.6	0	0
20	4.1	781	a50	a260	614	99	45	39	7.8	.5	0	0
21	3.9	538	a70	217	498	122	43	32	6.5	.4	0	0
22	2.2	236	a60	183	373	142	42	29	*6.5	*.3	0	0
23	1.4	150	a54	170	298	170	40	26	6.1	.2	0	0
24	1.0	113	a50	312	245	274	39	24	5.7	.2	0	0
25	.7	94	a90	367	210	*267	37	22	5.0	.2	0	0
26	.7	75	a300	295	193	505	41	21	5.0	.2	0	3.0
27	.6	61	a1,100	1,510	203	506	45	21	5.4	.1	0	2.2
28	.6	51	a900	3,270	168	450	42	22	6.5	*.1	0	1.5
29	.7	45	467	1,500	-	398	39	21	6.5	.1	0	1.1
30	1.1	42	*298	925	-----	651	40	20	6.9	.1	0	1.0
31	1.0	-----	216	600	-----	684	-----	18	-----	.1	0	-----
Total	31.3	3,226.3	4,863	29,159	17,477	5,908	3,193	1,007	322.5	51.1	0.1	8.8
Mean	1.01	108	157	941	624	191	106	32.5	10.8	1.65	0.003	0.29
Ac-ft	62	6,400	9,650	57,840	34,670	11,720	6,330	2,000	640	101	0.2	17

Calendar year 1958: Max 4,280 Min 0 Mean 174 Ac-ft 126,200
Water year 1958-59: Max 4,930 Min 0 Mean 179 Ac-ft 129,400

Peak discharge (base, 1,600 cfs).--Dec. 27 (time unknown) 1,850 cfs (10.61 ft); Jan. 12 (9 a.m.) 6,330 cfs (13.21 ft); Jan. 28 (3 a.m.) 4,530 cfs (12.49 ft); Feb. 14 (4:30 p.m.) 5,070 cfs (12.73 ft).

* Discharge measurement or observation of no flow made on this day.

** Field estimate made on this day.

a No gage-height record; discharge estimated on basis of records for Long Tom River near Not1.

Note.--Shifting-control method used Oct. 7 to Nov. 21. Backwater from irrigation dam July 13 to Aug. 1, Sept. 26-30.

WILLAMETTE RIVER BASIN

1680. Fern Ridge Reservoir near Elmira, Oreg.

Location.--Lat 44°07'15", long 123°18'00", near center of sec.4, T.17 S., R.5 W., in control house at spillway section of dam across Long Tom River and Coyote Creek, 4½ miles northeast of Elmira.

Drainage area.--252 sq mi, not including Amazon Creek basin (see Remarks).

Records available.--October 1941 to September 1959.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

Extremes.--Maximum contents during year, 96,440 acre-ft June 8 (elevation, 372.98 ft); minimum, 6,390 acre-ft Nov. 24 (elevation, 352.59 ft).
1941-59: Maximum contents, 124,500 acre-ft Dec. 27, 1955 (elevation, 375.83 ft); minimum since first filling in 1942, 189 acre-ft Nov. 11, 1950 (elevation, 344.00 ft).

Remarks.--Reservoir is formed by earth-fill dam with concrete outlet and spillway, completed in 1941 by Corps of Engineers; storage began Nov. 13, 1941. Capacity, 101,200 acre-ft between elevations 340.0 (sill of outlet gate) and 373.5 ft (normal maximum operating pool level); dead storage, 23 acre-ft below elevation 340 ft. Reservoir used for flood control and improvement of navigation. Since November 1951, most of flow of Amazon Creek has been diverted in SE¼ sec.29, T.17 S., R.4 W., and discharged into Fern Ridge Reservoir; drainage area at point of diversion, 21.3 sq mi.

Capacity table, water year 1958-59 (elevation, in feet, and contents, in acre-feet)

352	5,600	365	41,760
353	6,980	370	71,980
355	10,320	375	115,900
360	22,620		

Contents, in acre-feet, at 12 p.m., water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59,080	26,480	7,480	7,130	25,220	37,350	74,960	91,630	96,080	94,280	88,510	73,310
2	58,320	25,620	7,500	7,190	21,950	38,190	77,260	91,890	95,990	93,920	88,250	71,040
3	57,390	24,510	7,470	7,210	18,290	38,950	78,970	92,150	95,990	93,840	88,080	70,240
4	56,580	23,400	7,420	7,080	14,630	39,780	80,400	92,330	96,170	93,750	87,830	67,960
5	55,730	22,250	7,350	7,270	13,460	40,430	81,440	92,600	96,170	93,660	87,570	66,500
6	54,890	21,410	7,270	7,680	14,050	41,040	82,170	93,040	96,170	93,570	87,400	64,920
7	53,930	20,470	7,280	8,260	15,130	41,760	82,900	93,300	95,990	93,300	87,060	63,370
8	52,700	19,670	7,350	12,510	16,080	42,240	83,640	93,570	96,170	93,300	86,890	61,780
9	51,490	19,420	7,670	22,620	17,490	42,930	84,470	93,750	96,080	93,210	86,640	60,480
10	50,410	17,910	7,900	35,010	20,180	43,630	84,880	93,750	96,080	93,040	86,390	58,890
11	49,190	15,030	7,950	47,880	21,860	44,230	85,380	93,920	95,990	93,040	86,140	57,390
12	48,050	12,590	7,920	68,710	22,900	44,740	85,890	94,100	95,900	92,770	85,890	55,910
13	46,870	10,280	7,810	73,240	25,160	45,250	86,220	94,100	95,900	92,510	85,720	54,350
14	45,660	8,360	7,510	70,380	37,180	45,770	86,730	94,640	95,720	92,330	85,550	53,280
15	44,530	7,180	7,100	63,570	45,040	46,290	86,960	94,820	95,720	92,150	85,300	51,830
16	43,380	7,060	7,090	57,880	47,780	46,920	87,400	94,820	95,630	91,980	85,130	50,410
17	43,340	7,000	7,190	51,200	46,970	47,190	87,740	95,270	95,540	91,720	84,800	48,860
18	41,520	7,700	7,270	42,830	44,840	47,880	88,000	95,630	95,450	91,630	84,720	47,720
19	40,760	10,350	7,320	34,970	41,570	48,700	88,250	95,720	95,360	91,450	84,470	46,390
20	39,730	11,440	7,590	28,200	38,460	49,410	88,680	95,900	95,180	91,280	84,300	45,100
21	38,640	11,080	7,780	22,160	35,050	50,250	88,770	95,720	95,090	91,190	83,890	43,630
22	37,610	9,220	7,680	17,100	34,640	51,200	89,110	95,900	95,000	90,840	83,150	42,150
23	36,400	7,010	7,410	12,720	36,270	52,820	89,280	96,080	95,000	90,410	82,740	40,800
24	35,300	6,690	7,320	9,410	37,920	54,110	89,460	95,990	94,820	90,230	82,170	39,450
25	34,110	8,980	7,450	7,410	39,270	56,220	89,630	95,990	94,820	90,060	81,770	38,230
26	32,940	7,250	8,890	7,480	38,950	58,640	90,060	96,080	94,820	89,800	81,200	36,830
27	31,810	7,380	11,620	15,340	36,480	60,940	90,410	96,170	94,550	89,540	80,720	35,550
28	30,680	7,450	11,400	27,370	36,310	63,440	90,580	96,170	94,550	89,280	79,680	34,510
29	29,620	7,470	9,680	31,090	-	66,020	90,840	96,170	94,460	89,110	78,270	33,820
30	28,440	7,470	9,410	30,270	-----	69,590	91,280	96,170	94,370	89,020	76,480	33,100
31	27,680	-----	7,350	28,270	-----	72,130	-----	96,170	-----	88,680	74,960	-----
(+)	361.55	353.32	353.24	361.72	363.80	370.02	372.40	372.95	372.75	372.10	370.40	363.02
(+)	-32,230	-20,210	-120	+20,920	+8,040	+35,820	+19,150	+4,890	-1,800	-5,690	-13,720	-41,860

Calendar year 1958..... + -35,350
Water year 1958-59..... + -26,810

+ Elevation, in feet, at end of month.

+ Change in contents, in acre-feet.

1690 Long Tom River below Fern Ridge Dam, near Smithfield, Oreg.

Location.--Lat 44°07'25", long 123°17'50", in SE $\frac{1}{4}$ sec.4, T.17 S., R.5 W., on left bank in canalized river channel, 1,000 ft downstream from Fern Ridge Dam, which impounds runoff of Long Tom River and Coyote Creek, and 2 $\frac{1}{2}$ miles south of Smithfield.

Drainage area.--252 sq mi, not including Amazon Creek basin.

Records available.--August 1939 to September 1959. Prior to October 1943, published as "at Smithfield."

Gage.--Water-stage recorder and masonry control. Datum of gage is 332.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Sept. 21, 1939, staff gage and Sept. 21, 1939, to Sept. 13, 1943, water-stage recorder, at site 2 $\frac{1}{2}$ miles downstream at datum 11.09 ft lower.

Average discharge.--20 years, 561 cfs (406,100 acre-ft per year), adjusted for diversion to Coyote Creek since 1943.

Extremes.--Maximum discharge during year, 5,620 cfs Jan. 18; minimum daily, 33 cfs July 26, Aug. 1.

1939-59: Maximum discharge, 11,500 cfs Jan. 1, 1943 (gage height, 15.12 ft, site and datum then in use); minimum daily, 2 cfs Aug. 7, 1941.

Remarks.--Records good. Flow regulated by Fern Ridge Reservoir since 1941 (see preceding page). A few small diversions above station. Records include diversion for irrigation and stockwater to Coyote Creek channel through 24-inch concrete pipe, records for which are based on daily staff-gage readings and occasional measurements. The diversion is several hundred feet upstream and point of return to Long Tom River about 2 $\frac{1}{2}$ miles downstream. Discharge not adjusted for storage or release from Fern Ridge Reservoir as evaporation from reservoir at times exceeds natural flow and diversions, and beginning in November 1951 most of flow of Amazon Creek has been diverted in SE $\frac{1}{4}$ sec.29, T.17 S., R.4 W., and discharged into Fern Ridge Reservoir; drainage area at point of diversion, 21.3 sq mi.

Revisions (water years).--WSP 1248: 1940-41, 1948.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	412	662	179	770	2,860	90	73	58	53	44	33	774
2	412	662	179	618	2,790	65	89	51	53	37	34	773
3	407	690	179	514	2,690	64	67	51	53	37	*35	773
4	407	740	180	507	2,550	63	67	50	53	37	40	766
5	407	734	180	508	1,460	62	67	50	51	37	49	759
6	407	727	180	616	437	62	67	*50	51	37	50	759
7	*507	728	180	865	213	62	67	50	51	37	50	759
8	597	721	180	1,010	215	59	67	50	51	37	50	752
9	598	722	180	811	216	54	65	49	51	36	50	745
10	598	1,190	236	136	*384	54	65	49	51	36	50	745
11	598	1,650	369	467	634	55	64	49	50	36	49	745
12	598	1,590	439	468	634	58	64	52	51	36	49	738
13	592	1,520	431	2,140	424	59	64	54	51	36	49	738
14	592	1,460	431	4,170	826	58	64	57	51	36	49	731
15	593	1,040	426	5,320	2,210	58	64	57	51	36	49	*724
16	587	409	241	4,890	2,980	58	64	57	51	36	47	717
17	587	*202	173	4,970	3,510	58	64	55	50	36	47	717
18	576	176	176	5,420	3,770	58	64	51	50	36	47	710
19	577	662	174	4,970	3,840	59	64	57	50	34	48	710
20	577	1,640	196	4,270	3,580	59	64	56	51	35	48	710
21	571	1,900	352	3,700	3,340	58	63	54	51	37	145	703
22	595	1,760	433	3,060	1,550	58	55	60	54	36	210	703
23	625	1,800	432	2,840	280	*58	55	53	*49	36	210	703
24	618	528	427	2,860	114	59	55	51	53	37	211	695
25	612	231	428	2,140	114	59	55	60	47	34	211	695
26	606	178	592	1,140	916	60	55	57	46	33	211	689
27	601	178	1,040	1,040	1,960	56	55	57	49	37	211	682
28	594	178	2,080	1,210	742	55	55	55	50	37	402	477
29	585	178	*2,370	2,270	-----	54	54	55	50	37	689	330
30	589	179	2,030	2,960	-----	54	54	54	50	35	774	329
31	625	-----	1,120	2,930	-----	529	-----	54	-----	34	774	-----
Total	17,260	24,835	16,213	69,230	45,239	2,315	1,869	1,683	1,523	1,125	4,971	20,851
Mean	557	828	523	2,233	1,616	74.7	62.3	54.3	50.8	36.3	160	695
Ac-ft	34,230	49,260	32,160	137,300	89,730	4,590	3,710	3,340	3,020	2,230	9,860	41,360
Calendar year 1958: Max	3,940			Min 41		Mean 608		Ac-ft 440,400				
Water year 1958-59: Max	5,420			Min 33		Mean 567		Ac-ft 410,800				

* Discharge measurement made on this day.

1695. Amazon Creek near Eugene, Oreg.

Location.--Lat 44°03'40", long 123°11'40", in SE $\frac{1}{4}$ sec.29, T.17 S., R.4 W., on right bank 250 ft upstream from diversion structure and 5 miles west of Eugene.

Drainage area.--21.3 sq mi.

Records available.--October 1954 to September 1959.

Gage.--Water-stage recorder and concrete control. Datum of gage is 372.41 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--5 years, 31.4 cfs (22,730 acre-ft per year).

Extremes.--Maximum discharge during year, 2,380 cfs Jan. 12 (gage height, 8.91 ft); no flow at times during several months
1954-59: Maximum discharge, 3,000 cfs Dec. 20, 1957 (gage height, 9.52 ft); no flow at times each year.

Remarks.--Records good above 10 cfs, fair from 1.0 to 10 cfs, and poor below. During summer and fall natural flow (if any) may be augmented slightly by return flow from irrigation in and below the city of Eugene. Records include diversion at station to Fern Ridge Reservoir; diversion in 1959 water year amounted to 18,480 acre-ft.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	2.8	1.9	18	33	12	42	4.0	0.4	0.2	0.2	0.1
2	0	1.3	2.1	24	27	11	33	4.0	.4	.1	.3	0
3	0	2.6	3.2	11	20	9.3	22	3.6	.5	.1	*.3	0
4	0	2.1	3.6	19.2	18	8.7	18	2.4	.6	0	.2	0
5	.1	3.2	2.7	63	14	8.2	11	*4.8	5.0	.3	.4	0
6	.1	2.5	1.9	76	18	7.7	9.6	3.6	2.4	.6	.2	0
7	*.1	5.7	3.2	81	24	7.2	8.2	3.1	.6	.4	.1	.1
8	.2	4.7	6.3	452	18	6.7	7.7	1.8	.6	.4	0	.2
9	.3	26	22	378	70	9.5	7.2	4.2	.6	.2	0	.2
10	.3	8.7	27	349	168	9.6	6.3	3.0	1.3	.1	.1	.1
11	.4	2.8	34	462	51	7.2	6.7	1.3	.7	.1	.1	0
12	.3	1.3	32	794	32	8.2	8.2	.7	.5	.2	0	.1
13	.3	46	29	111	*103	8.7	5.9	.4	.5	.4	0	.1
14	.3	34	9.3	65	1,280	7.7	5.6	14	.5	.2	0	*0
15	.3	19	7.2	42	288	6.3	6.0	14	.5	.1	0	.1
16	.4	5.9	7.2	128	222	6.0	5.0	5.0	.2	.2	0	.1
17	.4	4.0	6.7	65	87	7.2	4.7	7.2	.3	.1	.1	.4
18	.4	3.0	6.3	46	83	9.3	5.3	11	.3	.1	.1	.2
19	12	352	5.9	36	60	29	3.6	30	.2	.2	.1	.2
20	5.0	74	7.7	30	37	8.7	2.9	6.3	.2	.3	.1	.2
21	1.3	24	55	22	41	42	2.7	4.7	.3	.1	0	.7
22	.7	9.6	19	19	26	29	1.9	3.1	*.4	0	.1	.5
23	.5	7.7	13	19	22	34	1.3	1.8	.2	.1	.1	.5
24	.6	6.3	22	89	15	29	1.2	1.0	.2	.2	.2	.3
25	.3	*6.3	33	42	12	*60	1.4	.6	.1	.3	.1	.3
26	.4	5.0	115	35	18	128	5.7	.6	.1	.4	.1	.2
27	.3	3.2	130	799	27	51	4.5	.8	.1	.3	0	.8
28	.3	2.8	50	250	15	76	3.4	1.0	.3	.1	0	.4
29	.3	2.5	36	94	-	63	3.3	.6	.3	.1	0	.4
30	.3	2.0	*28	63	147	5.3	.6	.2	0	.1	.1	.3
31	.3	---	18	46	---	63	---	.5	---	.1	.2	---
Total	26.2	671.0	737.2	4,717.2	2,829	910.0	249.6	139.7	18.4	6.0	3.2	6.5
Mean	0.85	22.4	23.8	152	101	29.4	8.32	4.51	0.61	0.19	0.10	0.22
Cfsm	0.040	1.05	1.12	7.14	4.74	1.38	0.391	0.212	0.029	0.0089	0.0047	0.010
In.	0.05	1.17	1.29	8.24	4.94	1.59	0.44	0.24	0.03	0.01	0.006	0.01
Ac-ft	52	1,330	1,460	9,360	5,610	1,800	495	277	36	12	6.3	13

Calendar year 1958: Max 1,000 Min 0 Mean 27.5 Cfsm 1.29 In. 17.50 Ac-ft 19,880
Water year 1958-59: Max 1,280 Min 0 Mean 28.3 Cfsm 1.33 In. 18.02 Ac-ft 20,450

Peak discharge (base, 400 cfs).--Nov. 19 (12:30 p.m.) 688 cfs (5.89 ft); Jan. 8 (2 p.m.) 1,170 cfs (6.95 ft); Jan. 12 (2:30 a.m.) 2,380 cfs (8.91 ft); Jan. 27 (2:30 p.m.) 1,630 cfs (7.96 ft); Feb. 14 (2:30 a.m.) 1,850 cfs (8.28 ft).

* Discharge measurement or observation of no flow made on this day.

1700. Long Tom River at Monroe, Oreg.

Location.--Lat 44°18'50", long 123°17'45", in NE¼ sec.33, T.14 S., R.5 W., on left bank in canalized river channel at Monroe, just downstream from Shafer Creek, upstream from a concrete drop structure.

Drainage area.--391 sq mi.

Records available.--November 1920 to July 1921, October 1921 to April 1926, November 1926 to May 1927, October 1927 to September 1959. Prior to October 1930, published as "near Monroe."

Gage.--Water-stage recorder and concrete control. Datum of gage is 270.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Nov. 24, 1944, staff gages at various sites ranging from present site to 1½ miles downstream, at different datums.

Average discharge.--36 years (1921-25, 1927-59), 783 cfs (566,900 acre-ft per year).

Extremes.--Maximum discharge during year, 6,900 cfs Jan. 16 (gage height, 8.75 ft); minimum, 31 cfs July 31, Aug. 1, 3, 4.

1920-59: Maximum discharge, 19,300 cfs Jan. 2, 1943 (gage height, 17.14 ft, site and datum then in use, from graph based on gage readings), includes some overflow from Willamette River near Junction City; no flow Oct. 20-22, 1944 (water filling pool at gage); minimum observed prior to regulation of flow, 7 cfs Sept. 29, Oct. 1, 1939.

Remarks.--Records excellent. Flow regulated by Fern Ridge Reservoir since 1941 (see p. 136). A few small diversions above station. In 1943-44 river channel was improved from outlet of Fern Ridge Reservoir to a point below Monroe.

Revisions (water years).--WSP 654: Drainage area. WSP 1248: 1923, 1927, 1928(M). WSP 1288: 1952 (yearly runoff only).

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 28					Dec. 29 to Sept. 30							
4.6	212	6.5	2,230	4.15	31	4.6	215	6.5	2,130			
4.9	435	7.1	3,330	4.2	37	5.0	490	7.5	4,000			
5.5	985			4.3	66	5.5	920	9.0	7,500			
Discharge, in cubic feet per second, water year October 1958 to September 1959												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	435	723	260	1,090	3,540	387	650	135	79	58	32	766
2	435	714	260	1,010	3,340	303	460	125	75	41	32	766
3	435	723	279	775	3,160	275	387	115	70	41	32	766
4	435	795	266	730	2,980	257	345	115	75	41	*31	757
5	435	795	260	757	2,120	245	310	120	79	39	34	757
6	435	795	260	910	942	233	275	*125	79	39	35	757
7	*498	813	287	1,390	522	227	245	110	75	39	35	748
8	633	813	301	2,390	482	221	233	110	75	39	35	748
9	633	849	330	4,020	546	215	221	110	79	39	37	748
10	633	1,120	453	3,460	1,010	221	210	101	84	37	35	739
11	633	1,700	606	3,350	1,030	215	198	97	79	37	34	739
12	633	1,640	732	4,860	*1,010	198	193	92	75	37	35	739
13	624	1,640	687	4,400	920	198	182	97	75	35	37	739
14	606	1,640	651	5,480	3,470	198	176	110	70	35	37	730
15	615	1,490	624	6,440	4,990	188	171	115	66	34	37	*730
16	615	642	489	6,610	5,030	176	166	106	66	34	39	730
17	624	408	294	5,870	5,030	176	160	115	66	34	37	714
18	624	272	287	6,540	4,810	193	160	110	66	33	37	722
19	615	1,420	279	6,130	5,060	263	150	106	62	33	37	722
20	624	2,910	308	5,270	4,660	233	145	101	58	33	39	722
21	615	2,540	597	4,460	4,310	233	145	97	54	33	54	714
22	633	2,150	705	3,740	2,680	233	130	97	54	34	193	714
23	660	1,950	660	3,340	850	*296	125	101	*66	34	193	706
24	660	*1,130	651	3,380	514	282	120	97	66	34	198	698
25	651	471	786	2,910	468	313	115	97	62	33	193	698
26	642	338	1,330	1,780	775	642	125	88	54	33	193	698
27	642	301	2,290	3,150	2,290	482	130	88	54	33	193	698
28	642	287	3,250	3,960	1,500	430	130	84	58	33	303	618
29	642	266	*3,180	3,520	-	452	125	84	66	33	626	359
30	633	260	2,710	4,110	-----	890	130	79	62	33	757	359
31	660	-----	1,620	3,760	-----	1,120	-----	79	-----	32	757	-----
Total	18,300	31,575	25,692	109,592	68,039	9,995	6,312	3,206	2,049	1,123	4,367	21,101
Mean	590	1,052	829	3,535	2,430	322	210	103	68.3	36.2	141	703
Ac-ft	36,300	62,630	50,960	217,400	135,000	19,820	12,520	6,360	4,060	2,230	8,660	41,850
Calendar year 1958: Max 5,380 Min 43 Mean 913 Ac-ft 660,700												
Water year 1958-59: Max 6,610 Min 31 Mean 826 Ac-ft 597,800												

* Discharge measurement made on this day.

1710. Marys River near Philomath, Oreg.

Location (revised).--Lat 44°31'35", long 123°20'00", in NE¼SE¼ sec.18, T.12 S., R.5 W., near midspan on downstream side of bridge on Bellfountain Road, 0.6 mile downstream from Newton Creek and 2.0 miles southeast of Philomath.

Drainage area.--159 sq mi (including drainage area of Evergreen Creek above Bellfountain Road, 1.4 miles south of station).

Records available.--October 1940 to September 1959.

Gage.--Wire-weight gage read twice daily, more often during floods. Altitude of gage is 218 ft (by barometer).

Average discharge.--19 years, 474 cfs (343,200 acre-ft per year).

Extremes.--Maximum discharge during year, 8,130 cfs Jan. 9 (gage height, 20.68 ft, from Floodmarks); minimum observed, 6.9 cfs Sept. 2.
1940-59: Maximum discharge observed, 8,660 cfs Dec. 21, 1955 (gage height, 20.83 ft ft); minimum observed, 4.7 cfs Oct. 15, 1952.

Remarks.--Records good. Records include flow of Evergreen Creek at Bellfountain Road crossing 1.4 miles south of station, with which overflow from Marys River may at times be mingled. Slight regulation by small storage reservoir on Rock Creek from which municipal supply is diverted for city of Corvallis. Other small diversions above station for irrigation of 1,500 acres.

Revisions.--WSP 1218: Drainage area.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 25 to Dec. 26, Mar. 30 to May 2)

Oct. 1 to Jan. 8

Jan. 9 to Sept. 30

1.5	7.5	5.0	308	1.6	5.8	5.0	308
1.7	12	7.0	661	1.8	10	7.0	661
2.0	23	10.0	1,330	2.0	16	10.0	1,330
2.5	51	14.0	2,510	2.5	41	14.0	2,510
3.0	85	18.0	3,850	3.0	74	18.0	3,850
4.0	177	21.0	9,250	4.0	170	21.0	9,250

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.5	38	223	800	1,400	562	1,460	207	86	49	12	8.0
2	9.8	33	218	750	1,120	*512	1,200	188	94	44	12	7.6
3	9.5	35	*255	576	941	472	988	186	94	41	10	8.0
4	9.8	82	239	500	808	434	832	180	98	36	12	8.5
5	9.1	87	232	460	700	380	736	278	108	39	12	29
6	8.5	177	222	424	672	343	627	324	110	41	12	23
7	8.5	359	246	604	661	353	566	284	88	40	12	24
8	9.5	385	292	3,920	612	340	508	257	90	*43	9.9	20
9	13	833	280	6,600	625	359	*467	236	132	36	9.4	18
10	12	888	287	5,400	813	380	427	227	146	32	9.9	17
11	13	480	327	3,810	780	330	404	203	119	28	9.9	13
12	13	397	416	*4,960	678	321	366	187	101	28	9.9	14
13	12	720	410	3,440	700	383	350	175	97	26	*9.9	16
14	12	1,060	376	2,470	2,100	417	334	187	80	25	9.9	13
15	12	930	330	1,870	2,410	356	308	211	76	25	9.9	16
16	11	600	294	*1,560	3,150	350	282	196	82	25	9.9	16
17	11	426	266	1,230	2,680	343	280	180	78	21	8.5	16
18	12	482	244	1,060	2,350	353	264	178	76	20	9.2	21
19	95	2,380	241	1,080	2,650	598	250	168	60	18	9.2	80
20	109	2,440	223	968	2,100	541	241	158	60	15	9.4	104
21	74	1,550	340	880	1,770	581	224	*152	64	14	9.9	76
22	40	1,020	387	780	1,360	570	213	132	53	13	9.9	67
23	30	740	343	708	1,130	655	205	108	53	14	9.2	*50
24	*24	589	311	1,040	926	642	200	129	59	15	9.4	40
25	24	407	424	950	760	696	191	125	57	13	8.0	35
26	21	383	926	842	720	1,020	191	127	59	16	8.0	67
27	18	300	1,450	2,810	665	922	192	128	56	14	8.0	138
28	248	3.89	2,390	3,310	12.2	1,000	211	117	56	14	8.5	156
29	.17	255	1,180	2,510	8.39	1,200	194	110	54	14	9.4	97
30	.17	236	1,010	2,190	-----	1,980	205	108	52	14	8.0	70
31	23	-----	894	1,770	-----	1,820	-----	95	-----	13	9.4	-----
Total	706.2	18,554	14,256	60,272	35,885	19,213	12,916	5,541	2,438	786	304.6	1,328.1
Mean	22.8	618	460	1,944	1,282	620	431	179	81.3	25.4	9.83	44.3
Cfsm	0.143	3.89	2.89	12.2	8.06	3.90	2.71	1.15	0.511	0.160	0.062	0.279
In.	0.17	4.34	3.33	14.10	8.39	4.49	3.02	1.30	0.57	0.18	0.07	0.31
Ac-ft	1,400	36,800	28,280	119,500	71,180	38,110	25,620	10,990	4,840	1,560	604	2,630

Calendar year 1958: Max 3,860 Min 7.0 --Mean 449 Cfsm 2.82 In. 38.32 Ac-ft 324,900
Water year 1958-59: Max 6,600 Min 7.6 --Mean 472 Cfsm 2.97 In. 40.27 Ac-ft 341,500

Peak discharge (base, 3,200 cfs, revised).--Nov. 19 (7 a.m.) 3,210 cfs (16.20 ft); Jan. 9 (1 a.m.) 8,130 cfs (20.68 ft); Jan. 12 (6 a.m.) 6,050 cfs (20.00 ft); Jan. 27 (7 p.m.) 3,850 cfs (18.00 ft); Feb. 16 (7 a.m.) 3,270 cfs (16.40 ft).

* Discharge measurement made on this day.

1720. Calapooya River at Holley, Oreg.

Location--Lat 44°21'05", long 122°47'10", in SE $\frac{1}{4}$ sec.15, T.14 S., R.1 W., on right bank 200 ft downstream from bridge on State Highway 288, 0.3 mile southwest of Holley, and 5.0 miles upstream from Brush Creek.

Drainage area--105 sq mi.

Records available--September 1935 to September 1959.

Gage--Staff gage read once daily below and two or more times daily above 3.0 ft gage height. Datum of gage is 527.20 ft above mean sea level, datum of 1929.

Average discharge--24 years, 450 cfs (325,800 acre-ft per year).

Extremes--Maximum discharge during year, 4,660 cfs Nov. 19 (gage height, 7.13 ft, from graph based on gage readings), maximum gage height, 7.25 ft Jan. 27 (from graph based on gage readings); minimum discharge observed, 25 cfs Oct. 16.
1935-59: Maximum discharge, 12,200 cfs Dec. 28, 1945 (gage height, 14.1 ft, from floodmark); minimum observed, 13 cfs Sept. 8, 1940.

Remarks--Records good. Slight regulation at times during low-water periods by small dam upstream; diversions for irrigation of about 150 acres above station.

Cooperation--Gage-height record collected in cooperation with U. S. Weather Bureau.

Revisions (water years)--WSP 1044: 1943: WSP 1218: Drainage area.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 19				Nov. 20 to Sept. 30			
0.6	23	3.0	880	0.7	27	3.0	770
.8	35	4.0	1,560	.8	35	4.0	1,410
1.0	58	6.0	3,370	1.0	54	6.0	3,220
1.5	175	7.0	4,500	1.5	145	7.0	4,350
2.0	370			2.0	305		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*27	34	256	670	980	620	1,400	560	179	86	43	*31
2	26	40	260	570	806	580	1,300	492	165	82	47	31
3	26	48	413	474	675	515	1,030	461	160	76	40	30
4	26	334	373	425	*615	461	848	385	158	76	40	31
5	26	265	313	538	556	438	722	848	260	82	40	82
6	26	573	298	538	570	377	615	968	252	76	40	173
7	26	670	462	570	538	357	520	734	207	93	39	106
8	45	997	510	758	506	329	461	610	182	82	58	70
9	42	1,060	497	1,260	502	337	417	538	*210	73	38	58
10	32	892	542	2,290	538	333	377	474	260	68	37	51
11	29	565	1,170	2,430	470	298	353	413	228	66	36	44
12	28	*725	1,380	3,530	409	349	329	377	200	64	35	40
13	27	1,950	878	1,980	605	393	298	349	185	64	34	39
14	26	1,380	655	1,310	1,210	357	280	393	170	65	34	38
15	26	898	528	998	1,070	329	266	385	160	62	34	40
16	25	635	452	902	1,630	329	246	337	150	61	33	40
17	26	496	385	722	1,560	365	228	369	145	60	33	39
18	32	890	337	635	1,140	456	210	470	135	58	33	58
19	137	4,100	305	615	1,250	690	204	506	128	56	33	61
20	174	*2,960	277	560	1,140	*542	188	443	120	53	33	256
21	82	1,510	349	510	950	635	185	385	112	*52	33	235
22	58	998	291	466	788	670	191	345	110	50	33	132
23	57	734	*277	470	695	605	188	305	104	49	33	93
24	44	620	249	886	610	546	185	277	104	50	32	74
25	39	528	320	920	556	620	185	270	96	49	31	68
26	34	438	556	782	551	1,220	256	270	108	48	31	348
27	34	373	958	3,310	560	1,050	417	274	100	47	31	377
28	33	337	776	2,830	570	1,110	*506	252	149	0.591	0.336	252
29	32	305	776	1,670	-	1,060	405	224	102	45	34	173
30	31	280	968	1,300	-----	1,670	506	207	87	45	32	145
31	32	-----	776	1,150	-----	1,550	-----	191	-----	44	31	-----
Total	1,308	25,635	16,585	36,069	21,850	19,191	13,316	13,112	4,681	1,926	1,094	3,215
Mean	42.2	854	555	1,164	780	619	444	423	156	62.1	35.3	107
Cfs/m	0.402	8.13	5.10	11.1	7.43	5.90	4.23	4.03	1.49	0.591	0.336	1.02
In.	0.46	9.08	5.87	12.78	7.74	6.80	4.72	4.64	1.68	0.68	0.39	1.14
Ac-ft	2,590	50,850	32,900	71,540	43,340	38,060	26,410	26,010	9,280	3,820	2,170	6,380

Calendar year 1958: Max 4,100 Min 25 Mean 449 Cfs/m 4.28 In. 58.08 Ac-ft 325,300
Water year 1958-59: Max 4,100 Min 25 Mean 433 Cfs/m 4.12 In. 55.96 Ac-ft 313,400

Peak discharge (base, 3,400 cfs, revised)--Nov. 19 (4 p.m.) 4,660 cfs (7.13 ft); Jan. 12 (4 a.m.) 4,470 cfs (7.10 ft); Jan. 27 (4 p.m.) 4,650 cfs (7.25 ft).

* Discharge measurement made on this day.

1735. Calapooya River at Albany, Oreg.

Location.--Lat 44°37'15", long 123°07'40", in NW¼ sec.13, T.11 S., R.4 W., near right bank on upstream side of highway bridge, half a mile downstream from Oak Creek, 1½ miles southwest of Albany, and 3 miles upstream from mouth.

Drainage area.--372 sq mi.

Records available.--October 1940 to September 1959.

Gage.--Wire-weight gage read twice daily, more often at high stages. Datum of gage is 180.37 ft above mean sea level, datum of 1929.

Average discharge.--19 years, 931 cfs (674,000 acre-ft per year).

Extremes.--Maximum discharge during year, 13,400 cfs Jan. 13 (gage height, 19.0 ft, from graph based on gage readings); minimum observed, 15 cfs Oct. 7.
1940-59: Maximum discharge observed, 32,700 cfs Dec. 22, 1955 (gage height, 22.12 ft); maximum gage height, 25.5 ft Jan. 2, 1943, from graph based on gage readings (backwater from Willamette River); minimum discharge observed, 4 cfs Oct. 7, 1952; minimum daily, 6 cfs Aug. 14, 21, 28, Sept. 18, 1951, Sept. 30, 1952.

Remarks.--Records good except those below 100 cfs, which are fair. Diurnal fluctuation caused by ponds at flour mills near Shedd. Diversions for irrigation of 2,200 acres above station.

Revisions.--WSP 1218: Drainage area.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from Willamette River Feb. 2,3)

Oct. 1 to Jan. 12

Jan. 13 to Sept. 30

1.4	17	7.0	1,470	1.4	17	7.0	1,570
1.6	25	11.0	3,140	1.6	25	11.0	3,370
2.0	50	14.0	5,160	2.0	50	14.0	5,710
2.5	100	16.0	7,350	2.5	100	16.0	7,910
3.0	174	18.0	10,500	3.0	178	18.0	11,000
3.5	280	19.0	13,400	3.5	295	19.0	13,400

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	42	448	1,440	2,230	960	2,570	718	265	120	52	28
2	31	29	420	1,280	1,670	967	2,190	710	240	110	46	31
3	31	43	420	1,110	1,390	883	1,900	630	230	110	23	32
4	31	74	665	854	1,210	788	1,490	608	216	107	*35	31
5	29	49	546	805	1,070	694	1,220	610	225	102	44	30
6	19	212	469	1,120	967	634	1,070	1,690	332	104	42	32
7	26	536	560	*1,930	1,060	586	918	1,490	300	120	36	60
8	32	630	895	3,040	953	536	813	1,060	270	112	32	146
9	32	1,260	931	4,900	897	543	702	974	240	104	32	101
10	29	1,270	1,050	7,540	1,250	574	622	820	272	105	22	79
11	28	1,040	1,300	8,000	1,290	522	558	*710	323	93	31	73
12	37	634	2,190	10,600	932	498	518	598	280	73	42	70
13	23	788	2,270	10,900	820	670	487	532	265	56	35	57
14	*50	2,170	1,440	5,990	4,030	760	442	490	235	101	35	35
15	34	2,150	1,060	3,220	5,870	622	424	658	216	88	33	65
16	34	1,470	854	2,570	*5,610	566	392	586	202	81	25	38
17	34	910	746	3,070	4,370	526	362	512	190	86	19	*37
18	33	752	648	2,050	3,200	614	347	730	186	77	27	47
19	26	2,050	616	1,630	2,350	1,150	320	827	*165	52	35	55
20	23	6,710	560	1,510	2,170	1,140	310	799	160	39	36	65
21	136	7,080	1,030	1,230	1,970	1,100	290	662	142	90	33	96
22	128	3,670	970	1,070	1,690	1,710	278	558	144	66	32	250
23	90	1,850	623	995	1,390	1,540	275	484	136	38	22	171
24	79	*1,260	578	1,970	1,190	1,310	270	417	132	56	20	123
25	78	1,080	962	2,400	1,030	1,200	265	395	126	53	29	102
26	68	875	1,300	1,830	995	2,560	258	368	151	67	35	98
27	37	696	3,150	3,140	1,090	3,010	368	350	126	30	30	466
28	67	616	3,320	9,010	1,040	2,310	522	353	126	68	27	365
29	52	532	2,510	8,100	-	2,370	614	362	123	61	25	270
30	46	476	2,030	4,650	-	2,700	508	290	123	52	25	200
31	46	-----	1,850	3,120	-----	*3,170	-----	280	-----	47	19	-----
Total	1,442	40,954	36,422	111,074	54,794	37,213	21,303	20,269	6,141	2,468	979	3,253
Mean	46.5	1,365	1,175	3,583	1,957	1,200	710	654	205	79.6	31.6	108
Cfs/m	0.125	3.67	3.16	9.63	5.26	3.23	1.91	1.76	0.551	0.214	0.085	0.290
In.	0.14	4.09	3.64	11.10	5.48	3.72	2.13	2.03	0.61	0.25	0.10	0.32
Ac-ft	2,860	81,230	72,240	220,300	108,700	73,810	42,250	40,200	12,180	4,900	1,940	6,450

Calendar year 1958: Max 9,420 Min 14 Mean 890 Cfs/m 2.39 In. 32.45 Ac-ft 664,200
Water year 1958-59: Max 10,900 Min 19 Mean 921 Cfs/m 2.48 In. 33.61 Ac-ft 667,100

* Discharge measurement made on this day.

1740. Willamette River at Albany, Oreg.

Location.--Lat 44°38'20", long 123°06'20", in SW¹ sec.6, T.11 S., R.3 W., on right bank at Albany, a quarter of a mile downstream from Calapooya River and at mile 120.0.

Drainage area.--4,840 sq mi, approximately.

Records available.--November 1878 to April 1888 (fragmentary), January to June 1892, November 1892 to September 1894, December 1894 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 172.18 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Sept. 27, 1906, staff gage at site a quarter of a mile upstream at same datum. Sept. 27, 1906, to Nov. 13, 1934, staff gage at site 300 ft upstream at same datum.

Average discharge.--65 years (1893-94, 1895-1959), 14,410 cfs (10,430,000 acre-ft per year).

Extremes.--Maximum discharge during year, 77,200 cfs Jan. 29 (gage height, 17.50 ft); minimum, 3,750 cfs July 22.

1878-82, 1892-1959: Maximum discharge, 266,000 cfs Jan. 14, 1881 (gage height, 32.8 ft); minimum, 1,840 cfs Sept. 1, 2, 1940.

Maximum stage known, 36.0 ft Dec. 4, 1861 (discharge, 340,000 cfs, from rating curve extended above 220,000 cfs). Flood of Feb. 4, 1890, reached a stage of 33.9 ft (discharge, 291,000 cfs).

Remarks.--Records good. Flow regulated at times by Lookout Point, Cottage Grove, Dorena, and Fern Ridge Reservoirs (see elsewhere in this report). Albany power canal diverts water from South Santiam River at Lebanon and discharges into Calapooya River near mouth; small diversions for irrigation and municipal water supply.

Revisions (water years).--WSP 694: Drainage area. WSP 904: 1939. WSP 964: 1881, 1932(M). WSP 964 (daily high-water figures only) and WSP 1318 (monthly and annual figures only): 1894, 1897, 1901, 1903, 1908, 1910, 1916, 1923, 1927. WSP 984: 1916. WSP 1248: 1895, 1902, 1907, 1915(M), 1917(M), 1918-19, 1934(M).

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 28		Jan. 29 to Sept. 30	
-0.5	5,300	-1.4	3,890
0.0	6,300	0.0	6,680
4.0	16,800	4.0	17,800
10.0	39,300	10.0	41,000
18.0	80,200	18.0	80,200

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,020	6,370	9,780	22,000	47,800	15,100	33,300	10,800	7,880	4,620	4,270	4,430
2	5,940	5,900	9,700	20,400	44,200	15,000	30,500	11,500	7,620	4,830	4,300	4,490
3	5,920	5,500	10,200	17,800	40,600	14,900	29,200	11,000	7,280	4,750	4,300	4,360
4	5,980	6,300	11,200	15,200	31,800	14,000	27,100	10,600	6,870	4,560	*4,340	4,390
5	5,880	7,050	10,700	14,000	26,900	13,200	23,400	10,400	6,870	4,490	4,340	4,490
6	5,860	7,930	9,700	15,800	23,100	12,200	21,100	15,100	8,750	4,580	4,360	4,750
7	5,920	10,300	9,460	*17,400	21,400	11,200	19,400	17,900	10,000	4,620	4,340	5,280
8	6,040	14,200	11,400	23,600	18,000	10,600	16,300	16,700	9,200	4,680	4,250	5,260
9	6,120	19,400	13,100	36,500	16,600	10,300	14,800	15,500	8,680	4,770	4,270	4,960
10	6,300	19,700	14,600	49,400	17,400	10,200	13,300	15,000	8,650	4,490	4,300	4,890
11	6,020	19,200	18,000	57,200	18,000	10,000	12,400	*13,700	9,380	4,250	4,290	4,680
12	5,540	18,800	27,800	68,500	16,500	9,680	11,400	12,900	8,750	4,230	4,390	4,700
13	5,420	20,400	34,800	75,000	15,000	10,100	10,900	12,300	8,100	4,140	4,380	4,660
14	*5,500	31,900	28,000	62,600	24,400	11,000	10,500	12,300	7,280	4,140	4,450	4,580
15	5,580	35,100	23,600	45,600	42,700	10,700	9,900	13,200	6,750	4,160	4,390	4,600
16	5,840	29,300	20,100	41,000	*47,500	10,100	9,550	13,600	*6,570	4,270	4,290	4,750
17	5,780	23,600	19,800	39,100	46,200	9,920	9,100	12,900	6,310	4,340	4,290	*4,790
18	5,980	18,800	15,500	35,500	45,100	10,200	8,750	13,600	6,240	4,210	4,360	4,690
19	6,020	22,400	13,600	30,000	42,400	11,900	8,480	14,800	6,090	4,030	4,450	5,020
20	6,920	51,000	12,900	27,400	39,500	13,500	8,220	15,200	6,170	4,000	4,450	5,080
21	8,040	61,200	13,000	24,900	35,400	12,900	8,000	14,500	6,090	3,960	4,470	5,680
22	7,180	50,600	13,400	22,800	29,400	14,700	7,810	13,100	5,950	3,910	4,470	6,260
23	6,740	36,100	12,100	21,000	22,800	15,700	7,850	11,400	5,680	4,050	4,490	5,800
24	6,670	*28,700	10,400	21,400	19,600	15,200	7,810	10,100	5,360	4,090	4,450	5,320
25	6,610	23,100	10,600	25,200	17,500	15,500	7,860	9,600	5,180	4,200	4,430	5,080
26	6,340	17,500	12,300	25,900	15,700	18,700	7,980	9,280	5,160	4,210	4,390	5,040
27	6,300	14,600	19,300	30,900	16,500	25,900	8,620	9,250	5,160	4,200	4,390	9,040
28	6,480	12,600	25,000	58,400	16,900	24,900	9,600	8,900	5,160	4,160	4,360	9,050
29	6,220	11,400	23,800	74,800	-	24,600	10,100	8,880	5,020	4,160	4,430	7,780
30	6,260	10,500	22,300	59,000	-	26,800	9,650	8,340	4,900	4,250	4,510	7,740
31	6,280	-	23,500	53,200	-	*33,200	-	8,120	-	4,270	4,470	-
Total	191,700	639,650	509,240	*1127.3	798,700	461,700	413,060	380,470	207,140	133,620	135,670	161,880
Mean	6,184	21,320	16,430	36,360	28,520	14,690	13,770	12,270	6,905	4,310	4,376	5,396
Ac-ft	380,200	*1,269	*1,010	*2,236	*1,584	915,800	819,300	754,700	410,900	285,000	269,100	321,100
Calendar year 1958: Max 81,400 Min 4,320 Mean 16,350 Cfsm 3.38 In. 45.85 Ac-ft 11,840,000												
Water year 1958-59: Max 75,000 Min 3,910 Mean 14,140 Cfsm 2.92 In. 39.65 Ac-ft 10,240,000												

* Discharge measurement made on this day.

* Expressed in thousands.

1780. North Santiam River below Boulder Creek, near Detroit, Oreg.

Location--Lat 44°42'25", long 122°06'00", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.17, T.10 S., R.6 E., on right bank 0.5 mile downstream from Boulder Creek and 3.0 miles southeast of Detroit.

Drainage area--216 sq mi.

Records available--January 1907 to October 1909, October 1928 to September 1959.

Monthly discharge only January 1907, published in WSP 1318. Prior to October 1952, published as "at Detroit."

Gage--Water-stage recorder. Datum of gage is 1,590.07 ft above mean sea level, datum of 1923, supplementary adjustment of 1947. Jan. 24, 1907, to Oct. 31, 1909, staff gage at site $\frac{1}{2}$ miles downstream and Oct. 1, 1928, to June 30, 1932, at site $\frac{3}{4}$ miles downstream, at different datums. July 1, 1932, to Sept. 30, 1952, water-stage recorder at site 2 miles downstream at datum 114.39 ft lower.

Average discharge--33 years, 998 cfs (722,500 acre-ft per year).

Extremes--Maximum discharge during year, 4,770 cfs Nov. 20 (gage height, 5.90 ft); minimum, 400 cfs Oct. 5-7, 16, 17 (gage height, 2.60 ft).
1907-9, 1928-55: Maximum discharge, 20,300 cfs Dec. 28, 1945 (gage height, 11.24 ft, site and datum then in use); minimum, 250 cfs Sept. 13, 1909 (gage height, 0.40 ft, site and datum then in use).

Remarks--Records excellent. No diversion above station. Records of water temperatures for the water year 1959 are given in WSP 1644.

Revisions (water years)--WSP 814: Drainage area at former site. WSP 1248: 1931.

Rating table, water year 1958-59 (gage height, in feet and discharge, in cubic feet per second)

2.6	400	4.0	1,500
3.0	630	5.0	2,960
3.5	1,010	6.0	5,000

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	425	410	1,030	1,290	1,490	954	1,760	1,650	898	617	472	435
2	415	410	1,180	1,190	1,350	970	2,300	1,410	938	610	486	430
3	415	425	2,160	1,090	1,250	954	2,090	1,260	922	591	461	430
4	405	578	1,860	1,020	1,230	914	1,830	1,160	*922	578	456	450
5	400	630	1,330	1,000	1,150	890	1,270	1,220	922	584	456	559
6	400	*1,180	1,230	962	1,140	882	1,560	1,330	1,140	578	450	617
7	400	1,100	1,620	954	1,080	866	1,420	1,260	1,010	617	450	505
8	478	1,870	1,580	1,100	1,020	858	1,300	1,260	958	578	450	483
9	445	1,680	*1,520	1,320	1,000	850	1,230	1,300	1,020	585	450	450
10	435	1,510	1,650	2,300	962	826	1,190	1,250	1,000	565	450	456
11	425	1,140	3,360	2,540	906	*810	1,170	1,160	930	559	450	445
12	420	1,070	2,960	3,740	866	850	1,150	1,140	930	559	450	435
13	415	2,030	2,090	2,700	858	866	1,120	1,320	890	553	450	430
14	410	1,520	1,670	2,040	922	834	1,070	1,470	850	547	440	425
15	405	1,190	1,410	1,720	890	810	1,040	1,350	802	535	445	445
16	405	1,010	1,260	1,540	1,060	818	978	1,230	858	*535	450	440
17	405	890	*1,140	1,420	1,070	858	954	1,220	802	529	445	435
18	440	1,450	1,060	1,380	1,020	970	906	1,220	786	523	440	466
19	651	3,800	1,010	1,310	1,060	1,000	882	1,140	794	523	435	494
20	617	4,430	954	1,210	1,030	954	874	1,070	794	517	435	578
21	494	3,160	1,020	1,140	978	1,020	898	1,040	778	511	435	541
22	466	2,300	946	1,100	946	954	*962	1,030	742	511	435	494
23	456	1,830	898	1,170	906	1,020	1,020	1,050	714	523	430	472
24	435	1,850	866	2,080	882	1,000	1,060	1,050	700	511	430	456
25	430	1,620	874	2,000	874	1,050	1,090	1,090	686	494	425	461
26	425	1,380	1,010	1,740	874	1,250	1,150	1,060	679	494	425	1,280
27	425	1,200	1,150	2,960	874	1,160	1,360	1,010	658	483	444	1,040
28	420	1,100	1,070	2,650	882	1,250	1,500	946	644	478	*450	826
29	415	1,020	1,150	*2,100	---	1,250	1,460	922	637	472	440	693
30	410	986	1,400	1,800	---	1,470	1,760	890	524	472	435	617
31	405	---	1,330	1,630	---	1,560	---	882	---	472	440	---
Total	13,592	44,869	43,588	52,196	28,570	30,728	38,794	36,440	25,306	16,684	13,776	16,288
Mean	438	1,496	1,406	1,684	1,020	991	1,293	1,175	844	538	444	545
Cfsm	2.03	6.93	6.71	7.80	4.72	4.59	5.99	5.44	3.91	2.49	2.06	2.51
In.	2.34	7.73	7.50	8.99	4.92	5.29	6.68	6.27	4.36	2.87	2.37	2.80
Ac-ft	26,960	89,000	86,460	103,500	56,670	60,950	76,950	72,280	50,190	33,090	27,320	32,310

Calendar year 1958: Max 4,560 Min 400 Mean 1,117 Cfsm 5.17 In. 70.22 Ac-ft 808,800
Water year 1958-59: Max 4,430 Min 400 Mean 989 Cfsm 4.58 In. 62.12 Ac-ft 715,700

Peak discharge (base, 3,700 cfs, revised)--Nov. 20 (5 a.m.) 4,770 cfs (5.90 ft); Dec. 11 (8 p.m.) 4,150 cfs (5.62 ft); Jan. 12 (8:30 a.m.) 4,390 cfs (5.73 ft).

* Discharge measurement made on this day.

1790. Breitenbush River above Canyon Creek, near Detroit, Oreg.

Location.--Lat 44°45'10", long 122°07'40" in SE $\frac{1}{4}$ sec.36, T.9 S., R.5 E., on left bank 600 ft upstream from Canyon Creek and 1.5 miles northeast of Detroit.

Drainage area.--106 sq mi.

Records available.--June 1932 to September 1959. Monthly discharge only June 1932, published in WSP 1318. Prior to October 1952, published as "above French Creek, near Detroit."

Gage.--Water-stage recorder. Datum of gage is 1,573.95 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 1, 1952, at site 0.2 mile downstream at datum 13.46 ft lower.

Average discharge.--27 years, 570 cfs (412,700 acre-ft per year).

Extremes.--Maximum discharge during year, 4,000 cfs Nov. 20 (gage height, 7.50 ft); minimum, 117 cfs Oct. 6, 7.

1932-59: Maximum discharge, 11,600 cfs Dec. 28, 1945 (gage height, 11.86 ft, site and datum then in use); minimum, 87 cfs Sept. 2, 1940 (gage height, 0.36 ft, site and datum then in use).

Remarks.--Records excellent. No regulation or diversion above station. Records of water temperatures for the water year 1959 are given in WSP 1644.

Revisions (water years).--WSP 1044: 1943(M). WSP 1248: 1947.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 6				Nov. 7 to Sept. 30			
2.4	105	4.0	645	2.5	120	5.0	1,250
2.7	157	5.0	1,330	2.7	157	7.0	3,330
3.0	237	6.0	2,310	3.0	235	8.0	4,720
				4.0	620		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	120	137	552	798	870	670	1,250	995	498	298	151	132
2	*118	137	775	686	736	670	1,740	786	543	302	151	130
3	120	147	1,480	590	650	590	1,430	670	520	289	151	126
4	120	374	988	538	620	538	1,160	805	*561	274	151	159
5	120	513	698	520	580	507	1,050	742	888	283	151	277
6	118	*1,790	665	489	580	480	900	840	670	274	149	476
7	120	1,140	1,300	489	538	464	769	747	520	289	149	265
8	269	2,080	1,110	686	507	476	686	730	484	288	147	232
9	175	1,490	*900	1,060	489	476	825	725	575	265	145	185
10	149	1,160	1,200	2,360	456	456	610	670	566	265	143	168
11	137	752	2,890	2,600	424	*432	610	600	530	259	143	164
12	132	867	2,000	2,780	396	494	590	580	561	253	143	153
13	128	1,650	1,310	1,790	396	507	556	758	516	244	141	149
14	127	1,100	960	1,290	444	472	534	858	472	229	139	145
15	123	736	792	1,020	416	452	502	736	432	217	139	149
16	122	561	681	882	516	464	468	805	456	*208	137	149
17	120	484	*600	798	635	538	448	600	420	202	137	143
18	135	1,450	548	792	548	676	420	575	444	200	137	166
19	391	2,970	507	792	610	708	396	534	489	192	137	217
20	375	3,660	472	714	630	630	390	498	476	185	137	379
21	237	2,350	507	640	548	686	408	476	440	180	137	365
22	191	1,550	468	600	502	686	*460	498	400	178	137	280
23	180	1,280	440	670	468	655	498	548	376	178	135	223
24	164	1,310	424	1,450	436	625	543	570	379	173	134	195
25	157	1,090	460	1,280	428	670	534	605	351	168	134	195
26	153	852	728	1,100	460	988	570	534	326	164	132	1,040
27	149	703	852	2,310	456	846	703	472	306	162	132	554
28	145	610	714	*1,750	507	322	658	428	532	208	*135	386
29	143	548	816	1,350	-	792	882	408	302	157	134	302
30	139	525	1,130	1,110	-----	974	1,170	404	295	153	132	262
31	137	-----	956	1,010	-----	1,020	-----	428	-----	153	132	-----
Total	5,014	34,016	27,803	34,944	14,856	19,464	21,740	19,225	14,098	6,821	4,352	7,748
Mean	162	1,134	897	1,127	531	628	725	620	470	220	140	258
Cfsm	1.53	19.7	8.46	10.6	5.01	5.92	6.86	5.85	4.43	2.08	1.32	2.43
In	1.76	11.93	9.75	12.26	5.21	6.83	7.63	6.75	4.95	2.39	1.53	2.72
Ac-ft	9,950	67,470	55,150	69,310	29,470	38,610	43,120	38,130	27,960	13,530	8,630	15,370

Calendar year 1958: Max 4,090 Min 118 Mean 630 Cfsm 5.94 In. 80.71 Ac-ft 456,400
 Water year 1958-59: Max 5,660 Min 118 Mean 576 Cfsm 5.43 In. 73.71 Ac-ft 416,700

Peak discharge (base, 4,000 cfs).--Nov. 20 (7 a.m.) 4,000 cfs (7.50 ft).

* Discharge measurement made on this day.

1805. Detroit Reservoir near Detroit, Oreg.

Location--Lat 44°43'20", long 122°15'20", in NW 1/4 sec. 7, T.10 S., R.5 E., in control house near right abutment of Detroit Dam, 5 miles west of Detroit.

Drainage area--437 sq mi.

Records available--January 1953 to September 1959.

Gage--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

Extremes--Maximum contents during year, 448,600 acre-ft June 5 (elevation, 1,567.21 ft); minimum, 149,200 acre-ft Dec. 22 (elevation, 1,446.58 ft).
1953-59: Maximum contents, 455,900 acre-ft June 23, 1956 (elevation, 1,569.29 ft); minimum since first filling, 137,500 acre-ft Jan. 31, 1957 (elevation, 1,439.70 ft).

Remarks--Reservoir is formed by concrete, gravity-type dam with six 42- by 28-foot control gates. Length of dam is 1,380 ft; built by Corps of Engineers. Storage began in January 1953. Total capacity is 454,900 acre-ft and usable capacity is 340,200 acre-ft between elevations 1,425.0 (proposed lower limit of operation) and 1,569.0 ft (top of spillway gates). Reservoir used for flood control, power development, irrigation, improvement of navigation, pollution abatement, and other purposes. Capacity table computed by Corps of Engineers. Figures given herein represent total contents.

Capacity table, water year 1958-59 (elevation, in feet, and contents, in acre-feet)

1,446	149,200	1,490	231,800	1,540	359,600
1,450	155,000	1,500	254,500	1,550	391,000
1,460	172,600	1,510	278,800	1,560	424,000
1,470	191,000	1,520	304,200	1,570	458,400
1,480	210,600	1,530	330,800		

Contents, in acre-feet, at 12 p.m., water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	345,100	259,300	167,800	166,500	228,900	265,500	375,000	435,500	444,600	446,700	436,900	419,300
2	342,000	257,200	163,000	165,100	220,700	288,700	383,300	434,900	446,400	446,800	437,500	418,500
3	338,900	253,300	163,200	165,100	220,500	271,400	388,400	433,300	446,900	446,800	436,500	417,600
4	336,000	251,600	160,400	164,900	220,300	273,800	391,800	431,600	447,800	446,900	435,500	417,100
5	332,700	250,400	156,200	162,300	219,600	275,900	394,300	434,000	448,600	447,200	434,700	417,400
6	329,700	255,900	157,200	159,600	219,000	278,100	395,800	435,600	447,700	446,900	434,100	419,100
7	327,900	256,900	161,500	158,200	220,700	279,900	398,500	434,800	447,200	447,000	433,700	412,800
8	327,100	267,300	161,800	158,600	222,300	282,000	399,200	433,800	447,100	446,800	433,200	417,200
9	325,600	276,000	161,000	162,500	221,900	284,100	400,200	433,900	447,600	446,600	433,400	413,300
10	324,000	278,300	161,200	177,600	221,600	285,800	401,100	433,500	447,000	446,400	432,300	409,400
11	322,200	271,400	177,300	192,000	220,900	287,200	403,200	432,700	445,800	446,300	431,400	405,400
12	320,300	258,500	187,700	213,900	221,500	288,800	405,000	432,300	445,400	446,600	430,700	402,400
13	317,300	266,900	187,800	226,100	221,800	290,600	405,600	432,800	445,800	446,300	430,200	401,500
14	314,300	259,800	185,500	231,600	224,800	292,600	407,200	433,900	445,900	446,000	429,500	397,500
15	311,400	245,300	177,500	230,400	226,700	294,300	408,400	434,400	445,800	445,400	429,300	393,400
16	308,400	230,500	162,900	228,400	228,700	296,000	409,400	433,700	446,200	445,100	429,400	388,800
17	305,500	216,900	157,500	225,500	232,400	298,200	410,200	433,200	446,200	444,800	428,800	384,600
18	302,400	218,400	156,200	222,600	235,500	302,100	411,300	432,600	445,700	444,600	428,000	380,400
19	302,600	242,100	154,700	219,600	239,400	306,100	408,900	431,700	445,300	444,500	427,300	377,400
20	300,300	267,700	152,200	215,800	244,300	308,600	413,000	432,100	445,600	444,000	426,400	378,100
21	294,800	278,600	149,900	211,500	246,200	312,500	414,500	432,400	446,700	443,500	425,400	375,400
22	289,400	271,600	149,500	207,200	248,800	317,600	416,300	433,700	446,700	443,000	424,800	371,800
23	285,200	260,700	150,500	207,400	251,200	320,900	418,500	435,600	447,200	442,500	425,000	367,900
24	281,700	249,200	151,600	214,400	253,200	324,100	420,700	437,600	447,700	441,900	424,100	363,700
25	279,400	236,600	152,100	220,400	255,100	328,000	423,300	439,400	447,000	441,500	423,300	360,000
26	277,200	221,400	154,300	222,700	257,500	334,300	426,400	440,700	447,100	441,100	422,300	365,100
27	273,300	203,400	157,400	238,600	259,400	339,500	430,500	441,600	447,100	440,400	422,000	368,900
28	270,400	185,100	159,800	253,400	261,700	345,600	435,400	442,800	447,200	439,700	421,100	367,400
29	267,500	179,600	163,100	257,400	-	352,200	438,400	443,600	447,000	439,100	420,700	364,800
30	264,500	173,900	166,700	250,200	-	359,500	439,000	443,700	446,600	438,500	420,900	360,000
31	261,000	-	167,000	240,000	-	367,200	-	445,700	-	437,500	420,000	-
(+)	1,502.89	1,460.70	1,456.88	1,493.68	1,503.00	1,542.50	1,564.40	1,565.80	1,566.63	1,563.97	1,558.83	1,540.14
(*)	-87,100	-87,500	-6,900	+73,000	+21,700	+105,500	+71,800	+4,700	+2,900	-9,100	-17,500	-60,000

Calendar year 1958..... + -83,100

Water year 1958-59..... +11,500

† Elevation, in feet, at end of month.

* Change in contents, in acre-feet.

1815. North Santiam River at Niagara, Oreg.

Location.--Lat 44°45'10", long 122°17'50", in NE¹/₄NE¹/₄ sec.34, T.9 S., R.4 E., on left bank 0.1 mile downstream from Little Sardine Creek, 0.8 mile downstream from Big Cliff Dam, and 2.1 miles east of Niagara.

Drainage area.--453 sq mi.

Records available.--December 1908 to January 1920, October 1921 to March 1922, October 1938 to September 1959. Monthly discharge only for some periods, published in WSP 1318. Published as North Fork of Santiam River near Niagara prior to October 1913, and as "above Mayflower Creek, near Detroit" October 1938 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,093.78 ft above mean sea level (Bureau of Public Roads bench mark). Dec. 1, 1908, to May 31, 1922, staff gage at site 2½ miles downstream at different datum. Oct. 1, 1938, to Nov. 16, 1939, staff gage and Nov. 17, 1939, to Sept. 30, 1952, water-stage recorder, at various sites and datums about 3½ miles upstream.

Average discharge.--31 years (1909-19, 1938-59), 2,329 cfs (1,686,000 acre-ft per year), adjusted for storage.

Extremes.--Maximum discharge during year, 12,000 cfs Nov. 26 (gage height, 8.29 ft); minimum, 658 cfs Aug. 3; minimum daily, 760 cfs Mar. 22, 24, 25.

1908-22, 1938-59: Maximum discharge, 63,200 cfs Nov. 22, 1909 (gage height, 16.4 ft, from floodmark, site and datum then in use), from rating curve extended above 35,000 cfs; minimum, 87 cfs Nov. 8, 1953; minimum daily, 430 cfs Sept. 23-25, 1915.

Remarks.--Records excellent. Flow completely regulated by Detroit Reservoir since 1953 (see preceding page). No diversion above station. Records of water temperatures for the water year 1959 are given in WSP 1644.

Revisions (water years).--WSP 1288: 1914-18, 1920.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 12					Nov. 13 to Sept. 30				
3.3	1,500	6.0	5,750		2.4	760	5.0	3,900	
4.0	2,320	8.0	11,000		3.0	1,250	7.0	8,100	
5.0	3,830				4.0	2,370	9.0	14,500	

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,130	1,830	5,120	3,760	9,040	1,080	1,020	5,940	1,500	1,120	990	958
2	*2,140	1,830	5,100	3,760	7,100	1,190	1,970	3,730	1,390	1,030	990	950
3	2,150	2,730	5,000	2,840	3,080	1,080	3,100	3,560	1,460	1,010	1,010	955
4	2,220	2,350	5,100	2,540	2,830	1,050	3,060	3,660	1,410	990	1,950	950
5	2,190	2,270	5,160	3,460	3,060	1,050	3,100	2,020	*2,410	982	990	958
6	2,180	*2,870	2,400	3,610	2,990	1,050	2,870	3,050	2,980	998	950	974
7	1,570	3,680	2,330	3,190	1,690	1,030	1,980	3,660	2,340	1,200	942	990
8	1,810	3,070	3,510	3,060	1,600	1,040	2,330	3,630	2,130	1,080	942	1,900
9	1,720	1,830	4,070	2,850	2,240	1,050	2,170	3,300	1,870	1,080	942	2,560
10	1,620	3,760	4,180	1,050	2,360	1,050	2,070	3,020	2,570	1,030	942	2,900
11	1,590	6,560	2,520	1,100	2,270	*926	1,650	2,960	2,580	1,030	958	2,680
12	1,650	9,720	2,670	1,100	1,560	1,120	1,650	2,650	2,340	1,020	950	2,380
13	2,240	3,100	5,100	1,030	1,500	1,120	1,840	2,740	1,740	1,020	942	1,530
14	2,270	8,000	5,040	2,860	1,040	1,080	1,460	2,580	1,700	1,040	942	2,240
15	2,240	10,000	7,180	4,690	1,060	1,030	1,410	2,820	1,640	1,040	942	2,940
16	2,230	10,100	9,900	4,720	1,450	1,050	1,420	2,900	1,520	1,050	934	2,870
17	2,350	8,630	*5,100	4,700	1,150	1,050	1,380	2,960	1,520	*1,050	918	2,960
18	2,150	4,820	3,050	4,700	1,170	1,070	1,250	2,960	1,740	1,030	942	3,040
19	2,190	1,200	2,860	4,800	1,060	1,080	1,210	2,930	1,740	1,050	958	2,160
20	2,520	1,120	2,940	4,800	1,100	998	1,250	2,240	1,360	1,050	974	1,700
21	3,740	3,200	3,240	4,760	1,070	767	1,070	1,840	1,330	1,060	950	2,490
22	3,970	9,200	2,320	4,210	1,090	760	*1,040	1,470	1,370	1,040	950	2,930
23	3,060	10,100	1,310	1,920	1,020	767	1,050	1,240	1,140	1,020	934	3,050
24	2,670	10,100	1,340	2,490	1,020	760	1,030	1,230	1,060	1,010	958	3,020
25	2,000	10,100	1,560	2,540	1,040	760	1,030	1,270	1,430	1,030	942	3,040
26	2,080	10,900	1,730	3,350	1,040	788	1,010	1,280	1,120	1,020	942	3,020
27	2,670	11,800	1,900	2,350	1,030	767	1,050	1,340	1,050	1,050	942	1,770
28	2,310	11,700	1,700	1,070	1,050	781	1,080	1,380	1,060	1,030	*966	2,530
29	2,280	5,060	1,930	*3,750		774	2,070	1,430	1,170	1,020	942	3,020
30	2,190	5,040	3,080	8,000		802	4,300	1,740	1,400	1,020	942	*3,850
31	2,140	-----	3,610	8,980	-----	788	-----	1,690	-----	1,010	982	-----
Total	70,270	176,670	112,050	108,740	57,810	29,688	52,920	79,280	50,070	32,210	29,638	67,310
Mean	2,267	5,889	3,615	3,508	2,065	958	1,764	2,557	1,669	1,039	956	2,244
Ac-ft	139,400	350,400	222,200	215,700	114,700	58,890	105,000	157,200	99,310	63,890	58,790	133,500

Adjusted for change in contents in Detroit Reservoir

	Mean	851	4,418	3,502	4,695	2,456	2,674	2,633	1,718	891	672	1,235
Cfsm	1.88	9.75	7.73	10.4	5.42	5.90	6.56	5.81	3.79	1.97	1.48	2.73
In.	2.16	10.88	8.91	11.95	5.65	6.80	7.32	6.70	4.23	2.27	1.71	3.04
Ac-ft	52,300	262,900	215,300	288,700	136,400	164,400	176,800	161,900	102,200	54,790	41,290	73,500

Observed

Calendar year 1958: Max	13,000	Min	810	Mean	2,644	Ac-ft	1,914,000
Water year 1958-59: Max	11,800	Min	760	Mean	2,374	Ac-ft	1,719,000

Adjusted

Calendar year 1958: Mean	2,529	Cfsm	5.58	In.	75.78	Ac-ft	1,831,000
Water year 1958-59: Mean	2,390	Cfsm	5.28	In.	71.62	Ac-ft	1,730,000

* Discharge measurement made on this day.

1825. Little North Santiam River near Mehama, Oreg.

Location.--Lat 44°47'30", long 122°34'40", in NW $\frac{1}{4}$ sec.16, T.9 S., R.2 E., on left bank 2 miles east of Mehama and 2 miles upstream from mouth.

Drainage area.--110 sq mi.

Records available.--October 1931 to September 1959. Records for July to September 1931 at site 4 miles upstream not equivalent owing to difference in drainage areas.

Gage.--Water-stage recorder. Datum of gage is 655.41 ft above mean sea level, datum of 1929. Prior to June 1, 1948, staff or wire-weight gages at about same site and datum.

Average discharge.--28 years, 776 cfs (561,800 acre-ft per year).

Extremes.--Maximum discharge during year, 10,600 cfs Nov. 19 (gage height, 10.76 ft); minimum, 33 cfs Aug. 27.

1931-59: Maximum discharge, 19,900 cfs Dec. 28, 1945 (gage height, 15.20 ft), from rating curve extended above 13,000 cfs by logarithmic plotting; minimum, 21 cfs Sept. 11, 1934, Sept. 27, 28, 1938, Sept. 1, 1940.

Remarks.--Records excellent. No regulation or diversion above station.

Revisions (water years).--WSP 754: 1932. WSP 1218: 1934, 1936, 1949-50.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

2.3	29	4.5	650
2.4	38	5.0	960
2.7	73	6.0	1,810
3.0	122	8.0	5,150
3.5	240	10.0	9,080
4.0	420		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	51	126	545	1,380	1,510	1,150	2,090	1,750	456	165	63	41
2	48	115	811	1,090	1,190	1,060	4,150	1,190	468	160	60	39
3	45	118	2,520	869	988	841	2,240	953	428	151	60	35
4	42	493	1,310	742	960	706	1,530	848	420	144	59	45
5	39	*1,290	918	695	883	625	1,280	1,830	*974	160	59	420
6	37	4,620	796	695	890	555	1,100	1,920	760	154	58	1,920
7	36	2,960	1,960	820	814	525	897	1,370	600	205	55	807
8	528	5,470	1,520	1,120	730	530	748	1,200	505	205	51	560
9	322	3,520	1,150	1,910	685	535	660	1,120	972	170	49	388
10	195	2,920	1,660	3,800	620	*515	625	1,030	1,570	154	49	277
11	151	1,590	5,930	3,300	560	464	605	834	1,030	142	46	228
12	124	1,880	3,340	5,260	510	655	570	724	772	134	48	190
13	108	4,560	1,730	2,610	496	766	515	808	650	124	48	165
14	94	2,550	1,230	1,620	640	665	484	883	545	120	47	144
15	85	1,520	950	1,210	640	595	452	1,020	474	118	45	144
16	80	1,090	*802	1,060	1,240	605	412	848	444	115	42	138
17	74	848	675	953	1,490	718	392	802	400	108	40	128
18	78	3,350	600	988	1,160	1,030	368	918	360	104	40	140
19	647	7,300	535	1,080	1,200	1,170	348	918	336	99	40	264
20	918	6,720	488	946	1,160	897	333	796	308	93	40	620
21	492	3,350	530	790	953	1,060	*364	695	288	90	40	1,110
22	336	1,930	540	724	808	1,200	448	625	267	88	40	680
23	333	1,490	468	814	742	995	480	620	243	88	39	460
24	264	1,620	468	2,300	665	939	510	590	235	88	38	344
25	220	1,420	496	1,790	635	932	505	610	218	85	36	305
26	190	1,060	783	1,280	820	2,230	605	695	215	80	34	2,150
27	170	820	1,310	5,760	778	1,640	1,340	650	202	74	*35	1,160
28	151	700	1,100	*3,590	862	1,510	2,020	590	195	73	48	766
29	136	600	1,410	2,090	-	1,460	1,530	525	190	73	49	560
30	126	550	2,530	1,760	-----	1,610	2,080	480	178	70	41	448
31	120	-----	1,690	1,810	-----	1,690	-----	452	-----	65	39	-----
Total	6,238	66,600	40,825	54,856	24,629	29,873	29,681	28,274	14,703	3,699	1,438	14,696
Mean	201	2,220	1,317	1,770	880	964	989	912	490	119	46.4	490
Cfs/m	1.83	20.2	12.0	16.1	8.00	8.76	8.99	8.29	4.45	1.08	0.422	4.45
In.	2.11	22.52	13.80	18.55	8.33	10.10	10.03	9.56	4.97	1.25	0.49	4.97
Ac-ft	12,370	132,100	80,980	108,800	48,850	59,250	58,870	56,080	29,160	7,340	2,850	29,150

Calendar year 1958: Max 8,920 Min 25 Mean 815 Cfs/m 7.41 In. 100.61 Ac-ft 590,200
 Water year 1958-59: Max 7,300 Min 34 Mean 864 Cfs/m 7.85 In. 106.68 Ac-ft 625,800

Peak discharge (base, 8,200 cfs).--Nov. 6 (6 p.m.) 8,480 cfs (9.70 ft); Nov. 19 (1 a.m.) 10,600 cfs (10.76 ft); Jan. 27 (12:30 p.m.) 8,880 cfs (9.90 ft).

* Discharge measurement made on this day.

1830. North Santiam River at Mehama, Oreg.

Location.--Lat 44°47'20", long 122°37'00", in NW $\frac{1}{4}$ sec.18, T.9 S., R.2 E., on right bank 300 ft downstream from highway bridge at Mehama and 0.5 mile downstream from Little North Santiam River.

Drainage area.--665 sq mi.

Records available.--July 1905 to March 1907, October 1910 to September 1914, September 1921 to September 1959. Monthly discharge only September 1921, published in WSP 1318. Prior to October 1913, published as North Fork of Santiam River at Mehama.

Gage.--Water-stage recorder. Datum of gage is 602.49 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to June 15, 1933, staff gage at site 100 ft upstream at same datum.

Average discharge.--43 years (1905-6, 1910-14, 1921-59), 3,321 cfs (2,404,000 acre-ft per year).

Extremes.--Maximum discharge during year, 18,600 cfs Nov. 19 (gage height, 8.33 ft); minimum, 913 cfs Aug. 17; minimum daily, 970 cfs Aug. 9, 13, 15-17, 23, 25-27.
1905-7, 1910-14, 1921-59: Maximum discharge, 76,600 cfs Dec. 28, 1945 (gage height, 15.37 ft), from rating curve extended above 36,000 cfs on basis of slope-area measurement of peak flow; maximum gage height, 17.5 ft Nov. 20, 1921, from graph based on gage readings and Jan. 6, 1923, from floodmark, at site then in use; minimum discharge, 400 cfs Sept. 29, Oct. 13, 1934; minimum daily, 420 cfs Sept. 18, 1924.

Remarks.--Records excellent. Flow regulated by Detroit Reservoir since 1953 (see p.146). No diversion above station.

Revisions (water years).--WSP 634: Drainage area. WSP 739: 1922-23(M). WSP 1044: 1943. WSP 1248: 1906, 1911-14, 1924(M), 1926, 1934-36(M), 1937, 1938(M), 1942(M).

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 27

Jan. 28 to Sept. 30

2.8	1,650	6.0	8,620	2.2	940	5.0	5,700
4.0	3,500	8.0	17,000	3.0	1,860	7.0	12,400
5.0	5,700			4.0	3,480		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*2,200	1,960	5,870	5,840	12,000	2,620	4,200	8,350	2,140	1,380	1,050	1,010
2	2,170	1,940	6,080	5,340	10,000	2,620	6,520	5,760	1,970	1,220	1,050	1,000
3	2,180	2,690	8,400	3,990	4,740	2,290	6,000	4,970	2,100	1,180	1,060	990
4	2,260	2,900	7,000	3,660	4,320	2,060	5,240	4,930	1,860	1,160	1,070	1,010
5	2,170	*3,480	6,440	4,390	4,320	1,930	4,930	4,860	*3,480	1,170	1,050	1,380
6	2,200	7,340	4,110	4,630	4,320	1,870	4,570	6,080	4,110	1,160	1,030	2,950
7	1,690	6,600	4,610	4,410	3,110	1,800	3,250	5,810	3,250	1,420	1,010	1,820
8	2,210	9,670	5,340	4,930	2,740	1,820	3,310	5,600	2,900	1,360	1,000	2,420
9	2,060	6,530	7,750	6,620	3,200	1,860	3,060	5,090	3,070	1,270	970	2,900
10	1,830	6,940	5,860	6,860	3,330	*1,830	3,040	4,610	4,460	1,210	980	3,130
11	1,690	8,520	10,400	6,460	3,160	1,660	2,500	4,240	3,350	1,180	1,000	2,980
12	1,680	11,900	7,180	9,800	2,460	2,140	2,440	3,630	3,480	1,180	1,010	2,580
13	2,260	9,910	7,880	5,420	2,300	2,300	2,500	3,910	2,680	1,170	970	1,700
14	2,300	11,500	7,090	5,060	2,550	2,140	2,230	3,910	2,460	1,170	980	2,290
15	2,280	12,500	7,770	6,740	2,470	1,970	2,070	4,260	2,340	*1,170	970	3,070
16	2,260	12,100	*11,400	6,520	4,010	1,960	2,000	4,150	2,170	1,160	970	3,040
17	2,380	10,700	6,890	6,240	3,810	2,110	1,940	4,220	2,080	1,160	970	3,110
18	2,210	9,200	4,030	6,270	3,240	2,500	1,800	4,370	2,230	1,160	980	3,180
19	2,760	12,400	3,700	6,460	3,090	2,710	1,700	4,410	2,180	1,150	1,010	2,550
20	3,300	10,700	3,610	6,240	2,980	2,300	1,700	3,610	1,660	1,150	1,020	2,420
21	4,030	7,210	3,950	6,020	2,650	2,470	*1,610	3,000	1,720	1,160	1,010	3,650
22	4,240	11,600	3,500	5,670	2,400	2,540	1,610	2,490	1,740	1,150	990	3,730
23	3,450	12,800	2,070	4,070	2,240	2,290	1,680	2,220	1,480	1,130	970	3,560
24	3,030	12,800	2,040	5,700	2,070	2,220	1,730	2,140	1,370	1,120	980	3,420
25	2,270	12,600	2,500	5,140	2,040	2,350	1,730	2,160	1,700	1,120	970	3,350
26	2,200	12,500	2,820	5,020	2,230	4,110	1,860	2,240	1,380	1,130	970	5,600
27	2,680	13,400	3,740	11,100	2,180	3,250	2,730	2,280	1,380	1,130	*970	3,440
28	2,520	13,300	3,560	*6,740	2,240	3,220	3,480	2,240	1,290	1,140	1,000	3,460
29	2,420	7,380	3,870	6,800	-	3,090	3,670	2,100	1,330	1,100	1,000	3,790
30	2,340	5,810	6,300	11,000	-	3,440	6,740	2,360	1,610	1,070	980	4,460
31	2,340	-	5,860	12,400	-	3,310	-	2,340	-	1,060	1,030	-
Total	75,610	268,680	169,100	195,550	100,200	74,780	91,840	122,490	69,750	36,490	31,020	83,990
Mean	2,439	8,956	5,455	6,308	3,579	2,412	3,061	3,951	2,325	1,177	1,001	2,600
Cfs/m	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	150,000	532,900	335,400	387,900	198,700	148,300	182,200	243,000	138,300	72,360	61,530	166,600

Calendar year 1958: Max 14,500 Min 952 Mean 3,814 Cfs/m 5.74 In. 77.86 Ac-ft 2,761,000
 Water year 1958-59: Max 15,400 Min 970 Mean 3,615 Cfs/m 5.44 In. 73.75 Ac-ft 2,617,000

* Discharge measurement made on this day.

1850. South Santiam River below Cascadia, Oreg.

Location.--Lat 44°23'35" long 122°30'35" in SE¼ sec.36, T.13 S., R.2 E., on right bank 100 ft downstream from bridge at Cascadia ranger station, 0.5 mile downstream from Mouse Creek, 0.5 mile upstream from Deer Creek, and 1.5 miles southwest of Cascadia. All records computed are for site at gaging cable 0.7 mile upstream, above Mouse Creek.

Drainage area.--174 sq mi at gaging cable.

Records available.--September 1935 to September 1959. Monthly discharge only September 1935, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 759.88 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Nov. 1, 1935, staff gage at same site and datum.

Average discharge.--24 years, 817 cfs (591,500 acre-ft per year).

Extremes.--Maximum discharge during year, 9,070 cfs Nov. 19 (gage height, 10.56 ft); minimum, 50 cfs Oct. 7 (gage height, 1.60 ft).

1935-59: Maximum discharge, 26,800 cfs Dec. 11, 1956 (gage height, 19.35 ft), from rating curve extended above 14,000 cfs by logarithmic plotting; minimum, 23 cfs Dec. 1, 2, 1936 (gage height, 0.98 ft).

Remarks.--Records excellent. No regulation or diversion above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 19

Nov. 20 to Sept. 30

1.6	50	4.0	980	1.2	44	3.0	475
1.8	78	5.0	1,680	1.6	100	4.0	1,050
2.2	156	6.0	2,600	2.0	180	6.0	2,650
2.5	240	8.0	5,010	2.5	305	9.0	6,300
3.0	435	10.0	8,100				

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57	86	475	1,440	1,620	1,100	2,340	1,620	424	198	78	56
2	*56	94	488	1,190	1,290	1,040	2,750	1,300	418	189	77	54
3	*56	101	1,250	952	*1,060	910	2,170	1,110	393	182	77	52
4	55	318	931	825	1,010	796	1,760	952	382	176	76	54
5	54	480	735	885	892	708	1,500	2,040	702	193	76	153
6	52	1,440	724	885	980	642	1,290	2,830	735	187	74	326
7	50	1,340	1,380	917	910	598	1,060	1,860	555	209	71	209
8	108	3,400	1,400	1,460	820	592	898	1,500	*484	189	70	180
9	133	2,860	1,350	2,480	762	603	802	1,320	570	171	68	142
10	88	2,260	1,550	4,610	696	598	746	1,140	730	158	65	120
11	75	*1,370	5,610	4,610	625	545	718	958	605	154	64	118
12	67	1,130	4,340	6,130	550	713	674	850	540	146	63	107
13	65	4,120	2,340	3,280	545	802	620	874	480	140	63	100
14	62	2,700	1,600	2,110	1,060	724	576	980	435	138	63	93
15	60	1,600	1,200	1,550	1,210	664	545	966	400	132	62	104
16	58	1,140	938	1,340	2,740	669	484	814	400	126	60	111
17	57	932	784	1,150	2,250	768	459	886	365	122	58	100
18	80	1,740	680	1,080	1,750	938	424	1,090	341	118	59	122
19	374	7,640	592	1,340	1,800	*1,180	400	1,130	323	116	60	138
20	430	*5,250	540	1,230	1,580	966	393	966	299	*109	60	373
21	228	2,860	658	1,040	1,300	1,110	404	828	281	105	62	407
22	174	1,900	560	924	1,080	1,220	455	735	268	102	60	270
23	171	1,460	488	958	892	1,120	484	580	262	100	59	211
24	142	1,340	*467	2,070	784	980	525	625	248	100	58	160
25	125	1,130	535	1,940	735	1,080	530	625	238	98	56	176
26	114	886	912	1,570	796	1,900	691	620	242	95	54	2,260
27	107	730	1,390	6,060	826	1,620	1,270	614	232	90	54	1,360
28	99	614	1,130	4,860	880	1,680	1,550	550	225	88	59	904
29	94	535	1,450	2,850	-----	1,680	*1,330	502	220	86	58	603
30	86	495	2,420	2,150	-----	2,260	1,560	463	209	83	58	455
31	83	-----	1,780	1,950	-----	2,200	-----	428	-----	82	*56	-----
Total	3,460	51,949	40,657	65,800	31,423	32,396	29,408	31,834	12,004	4,182	1,982	9,538
Mean	112	1,732	1,312	2,123	1,122	1,045	980	1,027	400	135	63.9	318
Cfsm	0.644	9.95	7.54	12.2	6.45	6.01	5.63	5.90	2.30	0.778	0.367	1.83
In.	0.74	11.10	8.59	14.06	8.72	8.92	8.29	8.80	2.57	0.89	0.42	2.04
Ac-ft	6,860	103,000	80,640	130,500	62,330	64,260	58,330	63,140	23,810	8,290	3,930	18,920

Calendar year 1958: Max 7,700 Min 47 Mean 860 Cfsm 4.94 In. 67.06 Ac-ft 622,300
 Water year 1958-59: Max 7,640 Min 50 Mean 862 Cfsm 4.95 In. 67.24 Ac-ft 624,000

Peak discharge (base, 5,700 cfs, revised).--Nov. 19 (9 p.m.), 9,070 cfs (10.56 ft); Dec. 11 (6:30 p.m.), 7,760 cfs (9.91 ft); Jan. 12 (7:30 a.m.), 7,930 cfs (10.02 ft); Jan. 27 (3 p.m.), 8,610 cfs (10.42 ft).

* Discharge measurement made on this day.

1865, Middle Santiam River at mouth, near Foster, Oreg.

Location (revised).--Lat 44°25'25", long 122°37'25", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.24, T.13 S., R.1 E., on right bank 0.7 mile upstream from mouth and 2.7 miles northeast of Foster.

Drainage area.--287 sq mi.

Records available.--January 1951 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 562.14 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark). Prior to Oct. 24, 1952, staff gage at same site and datum.

Average discharge.--8 years, 1,831 cfs (1,326,000 acre-ft per year).

Extremes.--Maximum discharge during year, 21,400 cfs Nov. 19 (gage height, 15.63 ft); minimum, 104 cfs Oct. 7, 8 (gage height, 0.81 ft).
1951-59: Maximum discharge, 41,000 cfs, Dec. 11, 1956 (gage height, 20.25 ft); minimum, 72 cfs Sept. 22-24, 1951 (gage height, 0.77 ft).
During flood of Dec. 28, 1945, flow of 41,800 cfs occurred at former station upstream where drainage area is 6 percent smaller.

Remarks.--Records excellent except those for periods of shifting control, which are good. No regulation or diversion above station. Records of water temperatures for the water year 1959 are given in WSP 1644.

Rating table, water year 1958-59, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

0.8	103	6.0	1,570
1.5	190	7.0	2,520
3.0	450	10.0	6,690
4.0	680	14.0	16,000
5.0	1,030		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	121	190	1,240	2,940	3,610	2,410	5,010	3,540	846	402	182	122
2	*116	184	1,550	2,370	2,810	2,230	6,130	2,550	842	384	177	116
3	113	190	4,170	1,900	*2,500	1,900	4,550	2,070	785	368	173	111
4	110	843	2,750	1,650	2,140	1,640	3,590	1,820	764	356	171	124
5	108	1,820	1,960	1,640	1,940	1,500	3,070	3,870	1,420	388	170	690
6	106	5,080	1,700	1,630	1,940	1,390	2,630	5,160	1,200	380	166	1,900
7	105	3,820	3,360	1,880	1,810	1,330	2,160	3,560	1,020	448	160	910
8	309	8,600	3,120	2,310	1,610	1,320	1,830	2,910	*886	420	158	630
9	353	5,660	2,850	4,090	1,520	1,350	1,640	2,580	1,100	366	154	462
10	213	4,670	3,410	8,050	1,450	1,300	1,540	2,280	1,630	341	150	359
11	175	*2,890	11,900	7,890	1,310	1,200	1,490	1,890	1,330	324	146	320
12	158	2,480	7,390	10,100	1,200	1,450	1,400	1,670	1,160	312	144	283
13	145	7,620	4,410	5,970	1,170	1,630	1,310	1,730	1,040	303	144	252
14	138	5,210	3,110	4,070	1,440	1,450	1,230	1,840	926	295	143	234
15	130	3,240	2,360	3,040	1,450	1,330	1,170	1,850	842	285	138	248
16	126	2,220	1,910	2,590	3,040	1,350	1,090	1,580	814	276	136	250
17	121	1,720	1,620	2,220	3,290	1,580	1,040	1,570	755	268	134	237
18	138	4,620	1,440	2,160	2,650	2,170	978	1,960	692	261	133	268
19	794	15,900	1,280	2,270	3,260	*2,730	926	1,930	650	250	132	419
20	1,080	14,200	1,190	2,080	3,040	2,030	886	1,650	608	*240	132	934
21	548	6,810	1,370	1,800	2,440	2,300	926	1,460	575	237	133	1,240
22	400	4,380	1,260	1,650	2,050	2,550	1,050	1,330	540	230	132	832
23	390	3,370	*1,150	1,710	1,860	2,270	1,090	1,250	510	228	126	590
24	322	3,120	1,100	4,090	1,800	2,160	1,130	1,190	498	228	122	478
25	273	2,760	1,200	3,770	1,580	2,230	1,130	1,170	478	222	119	436
26	240	2,150	1,910	3,030	1,720	4,590	1,320	1,180	476	213	116	4,000
27	222	1,760	3,110	12,500	1,740	3,630	2,650	1,130	464	206	114	2,460
28	206	1,510	2,670	9,180	1,860	3,850	3,630	1,060	454	201	126	1,540
29	193	1,350	3,120	5,430	-	3,760	*2,880	998	444	198	132	1,130
30	182	1,310	5,010	4,620	-----	4,840	3,680	914	418	193	124	902
31	179	-----	3,730	4,450	-----	4,590	-----	863	-----	187	*118	-----
Total	7,814	119,577	88,350	123,080	57,930	70,060	63,156	60,555	24,167	9,010	4,405	22,477
Mean	252	3,986	2,850	3,970	2,069	2,260	2,105	1,953	806	291	142	749
Cfs/m	0.878	13.9	9.93	13.8	7.21	7.87	7.33	6.80	2.81	1.01	0.495	2.61
In.	1.01	15.50	11.45	15.95	7.51	9.08	8.18	7.85	3.13	1.17	0.57	2.91
Ac-ft	15,500	237,200	175,200	244,100	114,900	139,000	125,300	120,100	47,930	17,870	8,740	44,580
Calendar year 1958: Max	15,900	Min	101	Mean	1,760	Cfs/m	6.13	In.	83.28	Ac-ft	1,274,000	
Water year 1958-59: Max	15,900	Min	105	Mean	1,782	Cfs/m	6.21	In.	84.31	Ac-ft	1,290,000	

Peak discharge (base, 16,000 cfs, revised).--Nov. 19 (9:30 p.m.) 21,400 cfs (15.63 ft); Jan. 27 (12:30 p.m.) 18,400 cfs (14.77 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used June 5-9, July 22 to Sept. 5.

1870. Wiley Creek near Foster, Oreg.

Location.--Lat 44°22'20", long 122°37'20", in NE¹/₄ sec.12, T.14 S., R.1 E., on right bank 0.4 mile downstream from Little Wiley Creek and 3.5 miles southeast of Foster.

Drainage area.--52 sq mi, approximately.

Records available.--October 1947 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 718.08 ft above mean sea level (Corps of Engineers bench mark).

Average discharge.--12 years, 235 cfs (170,100 acre-ft per year).

Extremes.--Maximum discharge during year, 2,770 cfs Nov. 19 (gage height, 4.83 ft); minimum, 10 cfs Oct. 6-8.
1947-59: Maximum discharge, 6,290 cfs Dec. 21, 1955 (gage height, 8.42 ft, momentary backwater from debris); minimum, 5.6 cfs Nov. 26, 1952.

Remarks.--Records excellent. No regulation or diversion above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 30

Mar. 31 to Sept. 30

0.2	10	2.0	420	0.25	11	1.5	220
.5	30	3.0	1,000	.3	14	2.0	410
1.0	100	4.0	1,750	.5	28	3.0	1,000
1.5	225	5.0	2,700	1.0	94		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*12	21	124	359	435	307	626	309	86	41	16	*13
2	11	24	122	299	383	288	587	268	82	40	15	12
3	11	28	219	250	*307	256	475	235	77	38	15	12
4	11	93	187	222	270	219	383	214	77	37	15	13
5	11	114	150	323	236	198	329	500	150	45	15	39
6	11	279	170	315	264	181	274	582	137	41	15	52
7	10	261	228	295	250	167	235	401	112	47	15	35
8	24	581	236	445	222	160	205	321	98	41	14	32
9	22	686	232	852	213	167	182	274	*132	36	14	24
10	16	565	260	1,450	213	170	168	232	137	34	14	19
11	14	327	639	1,390	187	150	154	199	121	32	14	18
12	13	*307	764	1,840	167	175	142	173	112	30	13	17
13	13	1,100	485	965	178	192	130	157	100	28	13	16
14	12	752	347	625	505	187	126	190	91	28	13	15
15	12	460	270	455	505	175	114	182	84	28	13	15
16	12	311	219	398	937	170	106	160	79	26	12	16
17	11	242	189	335	722	175	100	184	74	25	12	16
18	24	470	167	292	625	213	92	238	70	24	12	26
19	91	*2,280	150	323	680	*295	87	241	65	23	12	31
20	72	*1,320	138	315	586	242	82	214	61	22	13	94
21	43	680	195	274	455	315	80	187	59	*21	13	87
22	36	455	154	250	375	347	79	165	57	21	13	57
23	38	335	135	253	323	323	77	144	54	21	12	42
24	29	295	*135	485	278	268	76	128	53	21	12	36
25	26	242	160	440	253	327	77	128	50	21	12	34
26	24	204	297	375	264	636	128	121	56	20	11	219
27	22	178	495	1,560	270	530	220	144	50	19	11	147
28	21	157	398	1,290	278	565	*244	126	49	19	13	106
29	20	140	416	752	---	550	205	110	49	19	14	79
30	19	127	510	570	---	826	273	100	45	18	13	66
31	19	---	420	515	---	710	---	91	---	17	12	---
Total	710	13,034	8,631	18,512	10,361	9,504	6,056	6,718	2,467	883	411	1,386
Mean	22.9	434	278	597	370	307	202	217	82.2	28.5	13.3	46.2
Cfsm	0.440	8.35	5.35	11.5	7.12	5.90	3.88	4.17	1.58	0.548	0.256	0.888
In.	0.51	9.32	6.17	13.24	7.41	6.80	4.33	4.80	1.76	0.63	0.29	0.99
Ac-ft	1,410	25,850	17,120	36,720	20,550	18,850	12,010	13,320	4,890	1,750	815	2,750

Calendar year 1958: Max 2,280 Min 9.0 Mean 206 Cfsm 3.96 In. 53.74 Ac-ft 149,000
Water year 1958-59: Max 2,280 Min 10 Mean 216 Cfsm 4.15 In. 56.25 Ac-ft 156,000

Peak discharge (base, 2,300 cfs, revised).--Nov. 19 (1 p.m.) 2,770 cfs (4.83 ft); Jan. 12 (4 a.m.) 2,420 cfs (4.72 ft).

* Discharge measurement made on this day.

1875. South Santiam River at Waterloo, Oreg.

Location.--Lat 44°29'55", long 122°49'20", in SW¹/₄ sec.28, T.12 S., R.1 W., on left bank 600 ft downstream from bridge at Waterloo and 2 miles upstream from Hamilton Creek.

Drainage area.--640 sq mi, approximately.

Records available.--July 1905 to March 1907, October 1910 to December 1911 (gage heights only, January to December 1911), July 1923 to September 1959. Monthly discharge only for some periods, published in WSP 1318. Published as South Fork of Santiam River at Waterloo 1905-7, 1910-11.

Gage.--Water-stage recorder. Datum of gage is 370.39 ft above mean sea level, datum of 1929. Prior to Dec. 31, 1911, staff gage at site half a mile downstream at datum about 5.0 ft lower. July 1, 1923, to Nov. 12, 1934, staff gage at present site and datum.

Average discharge.--37 years (1905-6, 1923-59), 2,875 cfs (2,081,000 acre-ft per year).

Extremes.--Maximum discharge during year, 32,900 cfs Nov. 19 (gage height, 13.79 ft); minimum, 150 cfs Oct. 7 (gage height, 2.07 ft).
1905-7, 1910-11, 1923-59: Maximum discharge, 74,200 cfs Dec. 28, 1945 (gage height, 22.85 ft), from rating curve extended above 37,000 cfs by logarithmic plotting; minimum, 96 cfs Sept. 1, 2, 1940.

Remarks.--Records excellent. Some diurnal fluctuation caused by numerous logponds above station. No diversion above station.

Revisions (water years).--WSP 1248: 1907, 1924-30, 1932.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 19

Nov. 20 to Sept. 30

2.1	160	5.0	3,490	2.1	157	5.0	3,600
2.5	360	7.0	8,700	2.5	345	7.0	8,800
3.0	720	10.0	18,600	3.0	710	9.0	15,200
4.0	1,790	12.0	25,800	4.0	1,870	12.0	25,800

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	*188	316	2,060	5,510	6,940	4,000	8,770	6,220	1,460	646	255	*205	
2	180	322	2,170	4,550	5,460	3,940	10,800	4,590	1,450	614	250	205	
3	176	344	5,910	3,860	4,460	3,470	8,300	3,860	1,380	590	250	196	
4	168	977	4,420	3,160	*4,090	3,010	6,470	3,320	1,320	558	245	200	
5	164	2,220	3,320	3,260	3,720	2,710	5,430	6,400	2,370	590	245	470	
6	160	5,850	2,940	3,330	3,780	2,470	4,660	11,000	2,470	646	245	2,220	
7	180	7,140	4,990	3,580	3,600	2,300	3,940	7,140	1,960	646	240	1,430	
8	196	13,000	5,510	4,710	3,220	2,280	3,350	5,540	1,670	702	231	890	
9	608	10,400	4,760	8,300	3,070	2,300	2,960	4,850	*1,830	582	222	678	
10	372	9,350	5,310	15,800	2,990	2,360	2,720	4,220	2,710	534	218	534	
11	280	*5,420	17,200	16,200	2,650	2,100	2,600	3,540	2,280	502	214	450	
12	245	3,800	15,500	21,500	2,360	2,480	2,430	3,120	1,940	478	209	424	
13	225	14,200	8,990	13,700	2,250	2,960	2,300	3,050	1,730	457	209	381	
14	210	10,700	6,060	8,830	4,440	2,740	2,120	3,330	1,550	444	209	345	
15	200	6,630	4,530	6,300	4,370	2,450	2,040	3,470	1,420	431	205	351	
16	192	4,350	3,660	5,410	8,180	2,420	1,840	2,980	1,350	418	200	363	
17	192	3,270	3,050	4,550	7,970	2,670	1,720	2,940	1,320	405	200	363	
18	196	5,170	2,650	4,240	6,090	3,450	1,630	3,600	1,180	393	200	363	
19	710	25,800	2,330	4,640	6,580	4,660	1,540	3,760	1,100	375	200	486	
20	1,820	23,700	2,100	4,440	6,120	*3,700	1,460	3,280	1,020	363	205	1,100	
21	990	12,900	2,420	3,820	4,900	3,920	1,460	2,850	950	*351	214	1,830	
22	684	8,270	2,250	3,410	4,070	4,710	1,590	2,520	920	345	214	1,290	
23	616	6,090	2,000	3,330	3,620	4,220	1,670	2,300	860	334	209	900	
24	532	5,330	*1,880	7,060	3,220	3,920	1,770	2,160	830	328	205	710	
25	455	4,850	2,080	7,350	2,960	3,720	1,790	2,080	800	323	200	638	
26	408	3,820	2,780	5,690	3,160	8,460	2,060	2,100	800	301	196	5,770	
27	372	3,120	2,770	5,900	3,240	7,170	3,800	2,040	782	290	192	4,440	
28	344	2,690	5,040	19,000	3,330	6,940	5,770	1,880	746	275	200	2,850	
29	327	2,350	5,160	11,600	---	7,140	*4,850	1,740	737	270	222	1,960	
30	290	2,140	9,280	9,150	---	8,900	5,510	1,590	678	270	218	1,500	
31	290	---	7,030	8,430	---	8,360	---	1,510	---	260	205	---	
Total	11,945	204,519	153,150	244,010	120,840	126,430	107,330	112,980	41,623	13,721	6,727	33,542	
Mean	385	6,817	4,940	7,871	4,316	4,078	3,578	3,645	1,387	443	217	1,118	
Cfsm	0.602	10.7	7.72	12.3	6.74	6.37	5.59	5.70	2.17	0.692	0.339	1.75	
In.	0.69	11.88	8.90	14.18	7.02	7.35	6.24	6.57	2.42	0.80	0.39	1.95	
Ac-ft	23,690	405,700	303,800	484,000	239,700	250,800	212,900	224,100	82,560	27,220	13,340	66,530	
Calendar year 1958:	Max	25,800		Min	160	Mean	3,176	Cfsm	4.96	In.	67.36	Ac-ft	2,299,000
Water year 1958-59:	Max	25,800		Min	160	Mean	3,224	Cfsm	5.04	In.	68.39	Ac-ft	2,334,000

Peak discharge (base, 24,000 cfs, revised).--Nov. 19 (11 p.m.) 32,900 cfs (13.79 ft); Jan. 12 (9:30 a.m.) 26,000 cfs (12.06 ft); Jan. 27 (4 p.m.) 28,900 cfs (13.06 ft).

* Discharge measurement made on this day.

1890. Santiam River at Jefferson, Oreg.

Location (revised).--Lat 44°42'55", long 123°00'40", in SE $\frac{1}{4}$ sec.11, T.10 S., R.3 W., on right bank 350 ft upstream from Southern Pacific railroad bridge at Jefferson, 2.0 miles downstream from confluence of North and South Santiam Rivers, and 9.5 miles upstream from mouth.

Drainage area.--1,790 sq mi, approximately.

Records available.--October 1905 to June 1906 (gage heights and discharge measurements only), October 1907 to September 1916, October 1939 to September 1959. Gage-height records collected at same site since 1907 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 199.63 ft above mean sea level, datum of 1929. Prior to Sept. 22, 1940, staff gages at sites within 350 ft downstream at different datums.

Average discharge.--29 years (1907-16, 1939-59), 7,799 cfs (5,646,000 acre-ft per year).

Extremes.--Maximum discharge during year, 64,900 cfs Nov. 20 (gage height, 17.36 ft); minimum, 680 cfs Aug. 18, 26, 27 (gage height, 1.64 ft).
1905-6, 1907-16, 1939-59: Maximum discharge, 161,000 cfs Nov. 22, 1909 (gage height, 18.2 ft, from floodmark, site and datum then in use; corresponding gage height at present site, 23.0 ft, from curve of relation); minimum observed, 260 cfs Aug. 15-22, Aug. 24 to Sept. 2, 1940 (gage height, -1.00 ft, site and datum then in use).
Maximum stage known, 19.5 ft Nov. 21, 1921, at railroad bridge 350 ft downstream, U. S. Weather Bureau datum; corresponding gage height at present site and datum, 24.4 ft, from curve of relation (discharge, 202,000 cfs).

Remarks.--Records excellent. Flow regulated by Detroit Reservoir (see p. 146). Salem Canal diverts from North Santiam River at Stayton for irrigation and power use; most of this water reaches Willamette River through Mill Creek at Salem. Stayton Canal diverts from North Santiam River at Stayton for irrigation of lands near West Stayton; some return flow reaches North Santiam River above station. Albany power canal diverts from South Santiam River at Lebanon; return flow reaches Willamette River at Albany.

Revisions (water years).--WSP 904: Drainage area. WSP 1094: 1908, 1910, 1912, 1943. WSP 1248: 1911, 1915-16(M).

Rating tables, water year 1958-59 (gage height, in feet, and discharge in cubic feet per second)

Oct. 1 to Jan. 27 Jan. 28 to Sept. 30

2.8	1,660	10.0	19,500	1.6	650	9.0	16,300
4.0	3,300	13.0	33,100	2.5	1,490	13.0	33,500
6.0	7,200	17.0	61,800	4.0	3,540	16.0	53,700
				6.0	7,510		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,070	2,180	9,270	14,800	24,400	8,220	15,800	*16,400	4,230	2,210	882	773
2	2,020	2,050	9,270	13,100	*21,200	8,720	21,200	12,600	4,000	1,780	890	*765
3	2,020	2,360	14,300	10,600	13,800	7,820	18,600	10,400	3,900	1,770	890	773
4	2,050	3,330	13,900	8,960	11,600	6,940	15,300	9,400	3,680	1,690	908	765
5	2,050	5,260	11,500	9,490	10,800	6,320	13,200	12,500	5,440	1,680	*908	962
6	2,060	10,000	9,160	10,100	10,600	5,840	12,000	22,600	7,370	1,710	839	3,840
7	1,890	19,200	9,710	10,900	9,720	5,540	9,750	16,500	6,230	1,780	789	4,250
8	1,730	23,800	13,100	13,300	8,580	5,560	8,580	13,800	5,300	2,080	757	3,010
9	2,620	21,700	12,300	20,500	8,250	5,400	7,850	12,300	5,220	1,780	733	3,570
10	2,200	*21,900	13,000	32,200	8,600	5,680	7,330	11,000	*7,490	1,630	718	3,560
11	1,830	17,400	28,800	33,400	7,950	5,140	6,700	9,550	7,120	1,500	710	3,460
12	1,820	16,500	32,400	50,300	6,980	5,580	6,250	8,520	6,270	1,450	725	2,980
13	2,000	25,700	22,000	*32,400	6,320	6,850	6,000	8,120	5,420	1,380	725	2,450
14	2,220	27,000	16,600	20,100	12,300	6,740	5,660	8,700	4,680	1,300	718	2,130
15	2,230	22,900	14,100	18,000	12,900	6,080	5,300	9,520	4,360	1,280	710	2,950
16	2,200	19,500	17,000	16,800	17,400	5,820	4,920	8,800	4,020	1,250	710	3,320
17	2,240	16,800	13,400	14,800	18,200	5,960	4,680	9,100	3,780	1,230	702	3,430
18	2,230	14,200	8,750	13,900	14,100	*7,050	4,450	10,300	3,610	1,210	695	3,430
19	2,410	45,700	7,580	14,000	13,400	9,750	4,140	10,500	3,540	1,170	710	3,220
20	5,080	55,300	7,020	13,700	13,100	8,580	3,960	9,100	3,250	1,150	718	3,430
21	5,000	28,800	7,680	12,600	11,200	8,620	3,880	7,680	2,920	1,100	725	5,220
22	5,000	24,000	7,580	11,700	9,500	9,900	3,880	6,650	2,860	*1,040	725	5,680
23	4,320	22,700	5,460	10,000	8,650	9,100	3,980	5,920	2,520	1,010	718	4,430
24	3,650	21,000	5,100	14,400	7,780	8,600	4,120	5,420	2,300	989	725	4,450
25	2,960	20,500	5,680	17,100	7,100	8,300	4,180	5,260	2,400	980	718	4,140
26	2,480	18,500	6,960	13,700	7,400	16,300	4,540	5,340	2,290	980	702	9,740
27	2,730	18,500	13,000	32,200	7,560	15,500	6,720	5,240	2,250	962	710	10,800
28	2,800	17,500	12,700	48,100	7,420	14,000	10,400	5,040	2,080	953	741	7,230
29	2,530	12,600	*11,800	27,300	-	14,800	9,700	4,710	2,050	935	749	6,340
30	2,430	9,460	18,700	26,000	-----	16,000	12,500	4,600	2,160	899	749	6,210
31	2,360	-----	17,000	27,800	-----	16,700	-----	4,520	-----	890	741	-----
Total	81,140	566,320	394,820	612,250	318,610	271,010	245,570	290,090	122,740	41,768	23,440	117,700
Mean	2,617	18,880	12,740	19,750	11,310	8,742	8,186	9,358	4,091	1,347	756	3,924
Ac-ft	160,900	*1,123	783,100	*1,214	628,000	537,500	487,100	575,400	243,500	82,850	46,490	233,500
Calendar year 1958:	Max	55,300		Min	780		Mean	8,161	Ac-ft	5,908,000		
Water year 1958-59:	Max	55,300		Min	695		Mean	8,448	Ac-ft	6,115,000		

* Discharge measurement made on this day.

† Expressed in thousands.

1895. Luckiamute River near Hoskins, Oreg.

Location.--Lat 44°43'10", long 123°30'10", in NE¹ sec.11, T.10 S., R.7 W., on right bank a quarter of a mile downstream from Benton County line and 3.5 miles northwest of Hoskins.

Drainage area.--34 sq mi, approximately.

Records available.--May 1934 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 378.7 ft above mean sea level (river-profile survey).

Average discharge.--25 years, 209 cfs (151,300 acre-ft per year).

Extremes.--Maximum discharge during year, 1,740 cfs Nov. 18 (gage height, 6.72 ft); minimum, 7.4 cfs Oct. 3-7 (gage height, 1.38 ft).

1934-59: Maximum discharge, 5,560 cfs Dec. 14, 1946, Feb. 17, 1949; maximum gage height, 13.22 ft Dec. 14, 1946; minimum daily discharge, 5 cfs Oct. 15, 16, 1952, Aug. 25, 1958.

Remarks.--Records good. Logponds upstream cause diurnal fluctuation at times. No diversion above station.

Revisions (water years).--WSP 834: 1936(M). Revised figures of discharge, in cubic feet per second, for some peak discharges in the water years 1943 and 1946, superseding those published in WSP 984 and 1064, are given herewith:

Revised peak discharge.--1942-43: Dec. 27 (10 to 11 a.m.) 2,690 cfs; Jan. 1 (2 a.m.) 2,240 cfs; Feb. 6 (4 p.m.) 2,770 cfs; Mar. 31 (4 p.m.) 3,380 cfs.
1945-46: Nov. 27 (3 a.m.) 3,410 cfs; Dec. 28 (4 to 5 p.m.) 3,440 cfs.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18					Nov. 19 to Sept. 30				
1.3	4.0	2.2	139		1.4	9.3	2.5	217	
1.4	8.5	3.0	325		1.5	17	4.0	640	
1.5	16	4.0	615		1.6	28	7.0	1,880	
1.6	26	5.0	1,000		1.8	62			
1.8	56								

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.0	27	181	404	480	236	794	315	62	40	17	11
2	8.0	23	238	341	401	217	668	246	58	38	17	11
3	8.0	35	328	287	347	*198	507	207	58	37	16	11
4	8.0	102	276	254	308	183	401	212	66	35	16	109
5	8.0	175	241	246	274	169	339	401	82	40	16	169
6	8.0	606	229	229	282	160	287	383	64	40	15	181
7	9.1	360	331	251	266	148	254	305	62	*47	15	82
8	36	562	308	382	244	144	229	258	60	40	14	60
9	16	524	279	1,500	286	160	205	244	111	34	14	43
10	12	398	356	1,030	313	146	186	212	103	31	14	37
11	10	279	808	822	300	139	169	188	101	28	14	32
12	9.1	359	555	1,040	274	139	160	167	92	28	14	28
13	9.1	530	409	784	305	158	144	151	82	28	14	26
14	9.1	500	331	567	417	144	142	162	90	28	14	26
15	9.1	388	287	450	422	139	133	155	74	28	14	25
16	9.1	306	*254	414	570	135	*120	139	68	27	14	26
17	9.8	253	222	357	537	137	109	135	64	25	14	23
18	23	705	217	341	546	211	103	135	62	25	*14	40
19	111	1,320	198	339	815	276	97	128	56	23	12	171
20	63	1,490	212	*318	661	236	90	122	54	23	12	183
21	30	1,060	279	295	504	269	84	116	51	22	12	176
22	24	658	261	282	409	244	80	107	49	20	12	120
23	24	471	236	323	373	271	76	99	45	20	12	88
24	20	380	227	630	323	251	72	95	47	20	11	70
25	18	313	264	564	297	323	70	95	47	20	11	70
26	16	266	323	492	279	412	80	92	45	19	11	254
27	15	234	388	1,140	264	391	137	86	43	17	13	181
28	13	210	450	802	244	439	193	*82	45	17	14	137
29	13	210	513	672	-	453	227	76	45	17	12	*114
30	*12	188	616	626	-----	794	375	70	41	17	12	95
31	20	-----	504	564	-----	759	-----	66	-----	17	11	-----
Total	588.4	12,932	10,319	17,146	10,721	8,081	6,531	5,249	1,917	851	421	2,599
Mean	19.0	431	333	553	383	261	218	169	63.9	27.5	13.6	86.6
Cfs/m	0.559	12.7	9.79	16.3	11.3	7.68	6.41	4.97	1.88	0.809	0.400	2.55
In.	0.64	14.15	11.29	18.75	11.73	8.84	7.14	5.74	2.10	0.93	0.46	2.84
Ac-ft	1,170	25,650	20,470	34,010	21,260	16,030	12,950	10,410	3,800	1,690	835	5,160

Calendar year 1958: Max 1,760 Min 6.0 Mean 205 Cfs/m 6.03 In. 81.80 Ac-ft 148,300
Water year 1958-59: Max 1,500 Min 8.0 Mean 212 Cfs/m 6.24 In. 84.61 Ac-ft 153,400

Peak discharge (base, 2,000 cfs).--No peak above base.

* Discharge measurement made on this day.

1900. Lucklamute River at Pedee, Oreg.

Location.--Lat 44°44'35", long 123°25'25", in SE $\frac{1}{4}$ sec.33, T.9 S., R.6 W., on left bank 0.5 mile downstream from Pedee Creek and 1.0 mile (revised) southwest of Pedee.

Drainage area.--115 sq mi.

Records available.--October 1940 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 245.47 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to July 1, 1949, staff gage at site 1,700 ft downstream at datum 1.85 ft lower.

Average discharge.--19 years, 474 cfs (343,200 acre-ft per year).

Extremes.--Maximum discharge during year, 4,720 cfs Jan. 9 (gage height, 11.10 ft); minimum, 12 cfs sometime during period Oct. 3-7.

1940-59: Maximum discharge, 13,500 cfs Feb. 17, 1949 (gage height, 18.46 ft, from floodmark, present site and datum), from rating curve extended above 7,800 cfs by logarithmic plotting; minimum observed, 7 cfs Sept. 12, 1944.

Remarks.--Records excellent except those for periods of no gage-height record or backwater from debris, which are good. Some diurnal fluctuation at low flow caused by logponds above station. Several small diversions for irrigation above station.

Revisions (water years).--WSP 964: 1941. WSP 1044: Drainage area. WSP 1248: 1945.

Rating tables, water year 1958-59, except period of backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 9					Jan. 10 to Sept. 30				
1.4	13	3.0	340		1.4	12	2.5	175	
1.6	26	6.0	1,680		1.6	25	3.0	350	
1.9	56	9.0	3,400		1.9	55	6.0	1,680	
2.2	110	11.0	4,650		2.2	102	9.0	3,400	

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	52	316	875	1,210	516	1,590	504	130	69	28	17
2	14	44	366	749	1,030	480	1,360	404	125	66	26	17
3	14	44	558	622	887	*440	1,110	342	125	65	26	16
4	13	145	478	546	770	399	910	338	128	63	26	52
5	13	217	414	522	680	370	766	667	162	66	26	199
6	13	682	396	478	672	346	680	668	135	69	24	268
7	16	544	538	586	646	326	584	548	123	*75	24	128
8	50	770	526	2,180	600	314	512	476	116	69	22	89
9	36	865	494	4,200	624	359	462	435	175	61	22	66
10	26	700	554	3,720	756	334	422	390	170	55	22	54
11	22	438	1,240	2,510	725	300	386	346	162	50	22	47
12	20	508	1,000	3,170	660	303	354	310	155	48	22	43
13	18	906	785	2,120	698	338	330	286	140	48	22	41
14	18	996	642	1,540	1,520	322	306	310	130	48	22	40
15	18	744	558	1,220	1,360	306	296	306	128	48	22	39
16	18	542	490	1,120	1,910	296	*275	275	120	46	22	40
17	20	434	*434	950	1,750	296	264	268	116	42	22	38
18	40	1,010	414	874	1,600	418	247	258	114	42	*21	51
19	170	2,990	386	853	1,900	640	233	244	104	40	20	206
20	100	2,820	396	*761	1,590	544	216	233	98	38	20	193
21	60	1,940	558	694	1,300	584	205	216	95	36	20	208
22	46	1,220	502	648	1,060	544	196	202	83	34	22	148
23	44	920	462	694	932	584	184	193	91	34	21	114
24	36	713	442	1,220	788	552	175	175	89	34	20	95
25	32	574	538	1,180	712	689	100	175	88	34	17	89
26	30	486	740	1,080	648	942	178	175	86	32	16	222
27	28	418	996	2,650	604	896	250	168	81	30	17	202
28	26	375	1,110	2,610	556	1,020	318	*155	80	28	22	162
29	25	354	1,120	1,810		1,050	354	150	80	26	21	*138
30	*24	330	1,220	1,620		1,700	532	145	74	26	17	118
31	31	-----	1,050	1,420	-----	1,640	-----	138	-----	28	17	-----
Total	1,035	22,761	19,725	44,952	28,090	17,646	13,645	9,500	3,513	1,454	673	3,142
Mean	33.4	759	636	1,450	1,003	578	462	306	117	46.9	21.7	105
Cfsm	0.290	6.60	5.53	12.6	8.72	5.01	4.02	2.66	1.02	0.408	0.189	0.913
In.	0.33	7.36	6.38	14.54	9.08	5.77	4.46	3.07	1.34	0.47	0.22	1.02
Ac-ft	2,950	45,150	39,120	89,180	55,720	35,400	27,460	18,840	6,970	2,880	1,330	6,230

Calendar year 1958: Max 4,410 Min 9.9 Mean 447 Cfsm 3.89 In. 52.77 Ac-ft 323,600
 Water year 1958-59: Max 4,200 Min 13 Mean 456 Cfsm 3.97 In. 53.86 Ac-ft 330,300

Peak discharge (base, 4,200 cfs, revised).--Jan. 9 (12 m.) 4,720 cfs (11.10 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-29, July 10 to Aug. 17; discharge estimated on basis of recorded range in stage when available and records for stations near Hoskins and Suver. Backwater from debris Sept. 7-30.

1905. Luckiamute River near Suver, Oreg.

Location.--Lat 44°47'00", long 123°14'00", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.18, T.9 S., R.4 W., on right bank 10 ft upstream from highway bridge at Helmick State Park, 3.0 miles northwest of Suver, and 4.5 miles downstream from Little Luckiamute River.

Drainage area.--240 sq mi.

Records available.--August 1905 to October 1911, July 1940 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 171.92 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Aug. 18, 1905, to Oct. 31, 1911, staff gage at same site at different datum and Aug. 20 to Oct. 15, 1940, at present datum.

Average discharge.--25 years, 947 cfs (685,600 acre-ft per year).

Extremes.--Maximum discharge during year, 8,700 cfs Jan. 10 (gage height, 27.50 ft); minimum, 27 cfs Oct. 6, Sept. 3.

1905-11, 1940-59: Maximum discharge, 23,800 cfs Feb. 18, 1949 (gage height, 33.10 ft), from rating curve extended above 14,000 cfs by logarithmic plotting; minimum, 13 cfs Oct. 17, 18, 1952.

Maximum stage known, 33.5 ft, probably on Dec. 29, 1937, from information by local residents (discharge, 25,000 cfs, from rating curve extended above 14,000 cfs by logarithmic plotting).

Remarks.--Records good. Some diurnal fluctuation during periods of low flow caused by millpond above station. A few small diversions for irrigation above station.

Revisions (water years).--WSP 1044: Drainage area. WSP 1094: 1945-46. WSP 1248: 1905-11.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second (Backwater from debris Oct. 1 to Nov. 19)

Oct. 1 to Jan. 9

Jan. 10 to Sept. 30

1.8	27	12.0	1,340	1.8	27	12.0	1,400
2.0	35	18.0	2,800	2.0	35	18.0	2,900
3.0	89	24.0	5,100	3.0	89	24.0	4,900
5.0	260	26.0	6,300	5.0	260	26.0	6,100
8.0	642	27.0	7,670	8.0	670	28.0	9,810

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	68	592	1,710	2,460	1,040	3,180	973	223	118	39	29
2	29	88	659	1,480	2,010	966	2,840	756	214	111	37	29
3	29	*78	1,130	1,230	1,680	*888	2,280	640	209	108	40	27
4	29	162	1,030	1,050	1,460	816	1,800	576	210	106	38	29
5	29	315	858	988	1,280	761	1,480	798	250	106	37	215
6	28	530	768	898	1,200	713	1,280	1,230	241	114	36	332
7	28	1,230	877	957	1,180	670	1,110	952	216	*116	35	328
8	32	941	1,080	2,440	1,080	648	968	795	202	123	33	180
9	73	1,170	941	6,460	1,040	648	876	715	235	104	33	135
10	63	1,480	988	8,110	1,350	707	793	680	342	96	34	104
11	46	875	1,800	5,760	1,320	614	732	598	292	88	32	88
12	40	622	2,030	6,280	1,170	602	681	544	304	83	31	80
13	38	1,310	1,589	*5,650	1,100	632	632	492	270	80	31	74
14	37	1,500	1,240	4,270	2,600	650	596	484	245	76	32	71
15	37	1,390	1,050	3,020	2,970	602	578	541	240	74	33	68
16	37	997	947	2,430	3,760	572	*544	472	220	70	33	67
17	37	746	*829	2,140	3,780	564	509	456	206	70	33	69
18	44	799	758	1,830	3,060	626	481	436	201	65	*33	69
19	106	3,530	749	1,640	3,520	1,180	461	428	189	62	33	191
20	262	5,070	694	1,500	3,470	1,030	433	405	175	59	32	432
21	160	4,960	1,090	*1,360	2,780	974	408	374	164	54	31	460
22	94	3,240	1,070	1,240	2,170	1,030	386	352	157	52	32	356
23	73	1,960	934	1,220	1,850	995	369	328	149	50	34	251
24	71	1,440	861	2,400	1,580	1,030	350	309	147	50	33	200
25	61	1,160	1,050	2,670	1,400	1,090	333	294	147	50	29	173
26	54	970	1,410	2,170	1,290	1,840	330	294	147	50	29	262
27	50	822	2,090	3,540	1,190	1,740	425	282	139	48	29	509
28	47	710	2,390	5,380	1,090	1,840	577	*273	135	47	29	367
29	45	642	2,260	4,580	-	1,930	658	259	139	45	35	*280
30	44	645	2,280	3,550	-----	2,880	867	246	127	45	33	240
31	46	-----	2,050	2,960	-----	3,370	-----	235	-----	43	31	-----
Total	1,802	39,450	38,055	90,923	54,840	33,648	26,957	16,217	6,135	2,363	1,030	5,715
Mean	58.1	1,315	1,228	2,933	1,959	1,085	899	523	204	76.2	35.2	190
Cfs/m	0.242	5.48	5.12	12.2	8.16	4.52	3.75	2.18	0.850	0.318	0.138	0.792
In.	0.28	6.11	5.90	14.09	8.50	5.21	4.18	2.51	0.95	0.37	0.16	0.89
Ac-ft	3,570	78,250	75,480	180,300	108,800	66,740	53,470	32,170	12,170	4,690	2,040	11,340
Calendar year 1958: Max	7,600			Min 23		Mean 892	Cfs/m 3.72	In. 50.45	Ac-ft 645,800			
Water year 1958-59: Max	8,110			Min 27		Mean 869	Cfs/m 3.62	In. 49.15	Ac-ft 629,000			

Peak discharge (base, 6,600 cfs).--Jan. 10 (1 a.m.) 8,700 cfs (27.50 ft); Jan. 12 (5 to 6 p.m.) 7,060 cfs (26.68 ft).

* Discharge measurement made on this day.

1907. Rickreall Creek near Dallas, Oreg.

Location.--Lat 44°54'50", long 123°23'20", in SW $\frac{1}{4}$ sec.35, T.7 S., R.6 W., on left bank 150 ft downstream from highway bridge, 2 miles downstream from Canyon Creek, and $3\frac{1}{2}$ miles west of Dallas.

Drainage area.--26.5 sq mi.

Records available.--August 1957 to September 1959.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 520 ft (from topographic map).

Extremes.--Maximum discharge during year, about 2,200 cfs Jan. 9; no flow for part of each day Aug. 8, 26.

1957-59: Maximum discharge, 2,610 cfs Dec. 19, 1957 (gage height, 5.81 ft); no flow at times.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Figures of daily discharge do not include water diverted above station for water supply of Dallas. Entire flow is diverted at times during low-flow periods.

Cooperation.--Records of diversion furnished by city of Dallas.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.1	0.7	2.2	81
1.2	1.6	2.7	196
1.3	3.3	3.3	415
1.4	5.9	4.0	815
1.5	9.5	5.0	1,660
1.6	14	6.0	2,870
1.9	39		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.0	16	113	249	302	180	451	182	29	16	3.5	2.5
2	1.0	17	172	210	249	*159	356	137	28	16	5.0	2.0
3	1.0	18	231	177	210	142	290	117	29	14	4.2	2.5
4	1.0	67	182	156	180	126	237	108	31	15	4.2	19
5	1.0	83	149	144	159	115	196	196	35	18	4.5	32
6	.8	221	128	160	149	104	169	188	30	19	4.2	34
7	1.0	154	162	360	139	96	146	152	28	21	2.8	23
8	5.5	182	152	1,400	126	128	130	28	*16	.8	18	
9	5.0	337	139	1,900	128	96	115	115	58	14	4.0	13
10	3.6	224	180	1,000	137	89	104	100	51	13	2.8	10
11	3.0	137	318	950	135	83	96	89	55	12	2.3	9.0
12	2.6	204	243	1,200	126	85	87	78	52	12	2.8	8.2
13	2.4	306	193	800	139	89	79	71	47	12	3.0	8.2
14	2.0	240	159	500	185	85	76	75	44	12	2.6	7.8
15	2.0	174	135	380	201	81	*71	68	40	10	3.0	7.1
16	2.2	130	*121	280	495	79	67	64	37	10	3.8	7.4
17	3.6	102	113	240	438	79	61	61	34	9.0	3.0	7.1
18	13	678	106	220	467	135	59	59	32	8.6	3.0	16
19	60	844	96	200	780	193	55	55	28	8.2	*2.5	68
20	38	852	114	190	570	156	51	52	27	6.8	3.3	119
21	26	519	196	*180	410	166	49	50	25	6.5	2.8	96
22	18	322	191	169	322	154	46	47	23	7.1	3.5	71
23	15	234	166	235	276	182	45	45	23	6.8	4.0	40
24	13	188	156	640	240	182	43	43	23	7.1	3.5	33
25	9.5	152	273	460	216	260	41	41	23	6.8	2.5	29
26	7.5	128	396	397	14	358	50	40	22	6.8	2.6	59
27	7.0	113	442	1,030	185	302	78	*39	21	6.2	2.6	70
28	6.0	100	475	700	177	330	102	37	21	6.5	3.0	59
29	*5.6	96	420	495	-	322	121	36	20	4.8	2.8	44
30	5.6	90	370	428	-	592	255	34	18	4.5	3.0	*38
31	10	-----	302	366	-	532	-----	32	-----	5.4	2.6	-----
Total	273.1	6,922	6,593	15,816	7,343	5,644	3,734	2,539	962	331.1	98.2	952.6
Mean	8.81	231	213	510	222	124	61.9	32.1	32.1	10.7	3.17	31.8
Ac-ft	542	13,730	13,080	31,370	14,560	11,190	7,410	5,040	1,910	657	195	1,890

Adjusted for diversion to city of Dallas

Mean	11.2	234	215	513	264	184	127	84.4	34.3	13.9	5.76	33.8
Cfs/m	0.423	8.83	8.11	19.4	9.96	6.94	4.79	3.18	1.29	0.525	0.217	1.28
In.	0.49	9.83	9.34	22.30	10.38	7.99	5.33	3.67	1.44	0.60	0.25	1.42
Ac-ft	690	13,900	13,200	31,520	14,670	11,290	7,530	5,190	2,040	853	354	2,010

Observed

Calendar year 1958: Max	1,120	Min	0.2	Mean	141	Ac-ft	102,400
Water year 1958-59: Max	1,900	Min	0.8	Mean	140	Ac-ft	101,600

Adjusted

Calendar year 1958: Mean	144	Cfs/m	5.43	In.	73.86	Ac-ft	104,400
Water year 1958-59: Mean	143	Cfs/m	5.40	In.	73.04	Ac-ft	103,300

Peak discharge (base, 1,300 cfs).--Nov. 18 (8 p.m.) 1,580 cfs (4.92 ft); Jan. 9 (about 6 a.m.) about 2,200 cfs.

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-29, Jan. 6-20; discharge estimated on basis of 1 discharge measurement, recorded range in stage when available, and records for Mill Creek near Willamina.

1910. Willamette River at Salem, Oreg.

Location.--Lat 44°56'40", long 123°02'30", in SW $\frac{1}{4}$ sec.22, T.7 S., R.3 W., on right bank 300 ft upstream from Center Street Bridge at Salem and at mile 85.1.

Drainage area.--7,280 sq mi, approximately.

Records available.--October 1909 to December 1916, January 1923 to September 1959.

Monthly discharge only January 1923 to September 1927, published in WSP 1318. Gage-height records collected at about the same site since 1892 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 114.14 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Oct. 1, 1909, to Dec. 31, 1916, staff gage at site half a mile upstream at about present datum. Jan. 1, 1923, to Nov. 26, 1934, staff gage at Center Street Bridge at present datum.

Average discharge.--43 years, 23,280 cfs (16,850,000 acre-ft per year).

Extremes.--Maximum discharge during year, 130,000 cfs Jan. 13 (gage height, 16.83 ft); minimum, 5,300 cfs Aug. 11, 27, 28 (gage height, -3.60 ft).

1909-16, 1923-59: Maximum discharge, 348,000 cfs Jan. 8, 1923 (gage height, 30.3 ft); minimum, 2,470 cfs Aug. 27, 1940 (gage height, -4.45 ft).

Maximum discharge known, 500,000 cfs Dec. 4, 1861 (gage height, about 39 ft), from rating curve extended above 250,000 cfs in 1916. Flood of Feb. 5, 1890, reached a stage of 37.1 ft.

Remarks.--Records excellent. Flow regulated at times by Lookout Point, Cottage Grove, Dorena, Fern Ridge, and Detroit Reservoirs (see elsewhere in this report). Many small diversions for irrigation above station; part of flow of Salem Canal, which diverts water from North Santiam River, returns to Willamette River below station, through Mill Creek at Salem. Records of chemical analyses and water temperatures for the water year 1959 are given in WSP 1644.

Revisions (water years).--WSP 1318: 1915(M).

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 7-25)

-3.6	5,300	2.0	24,800
-2.0	9,350	10.0	79,800
0.0	16,000	17.0	131,000

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,210	8,870	20,200	41,800	81,900	24,500	*53,100	26,400	12,300	7,400	5,500	5,500
2	8,150	8,540	19,800	38,400	72,200	24,200	53,900	26,600	11,800	7,120	5,520	5,520
3	8,060	7,940	22,400	33,600	61,700	23,700	52,000	22,400	11,400	7,000	5,620	5,500
4	8,060	8,900	28,500	28,000	49,900	21,700	47,000	20,500	11,000	6,780	5,540	5,440
5	8,090	10,800	24,800	25,000	41,500	20,000	40,800	20,100	11,300	6,700	*5,600	5,580
6	8,030	14,200	21,500	26,400	37,200	18,500	35,400	34,000	14,600	6,700	5,560	6,820
7	8,030	27,200	18,800	29,400	34,900	17,500	32,500	38,600	16,100	6,880	5,500	10,100
8	7,620	31,200	24,400	*39,800	29,900	16,300	27,300	35,700	14,700	7,120	5,460	8,690
9	8,450	42,900	26,500	63,200	26,700	15,900	24,000	30,300	13,700	7,150	5,360	8,480
10	8,810	44,500	27,800	87,300	27,600	16,000	21,500	27,800	14,900	6,780	5,460	8,480
11	8,360	39,800	38,200	102,000	28,400	15,600	19,800	25,000	16,400	6,380	5,360	8,330
12	7,700	35,800	58,900	113,000	25,800	15,000	18,300	*22,700	15,300	6,120	5,400	7,910
13	7,450	43,500	61,500	108,000	23,000	16,400	17,300	21,000	14,100	6,100	5,500	7,450
14	7,850	54,700	51,300	111,000	34,400	17,500	16,600	20,900	12,500	6,000	5,460	6,850
15	*7,880	60,500	42,300	80,800	57,300	17,000	15,600	22,400	11,500	5,940	5,460	7,280
16	8,120	53,700	39,500	66,400	72,000	16,000	15,000	22,700	11,000	6,000	5,400	8,000
17	8,270	44,900	37,700	62,000	*74,400	15,600	14,300	21,600	*10,600	5,980	5,400	8,060
18	8,480	36,800	29,100	54,300	68,000	16,400	13,700	22,800	10,300	5,940	5,400	*8,210
19	8,750	51,000	25,800	49,300	62,900	20,600	13,200	24,800	10,100	5,740	5,500	8,570
20	10,400	90,100	21,600	46,200	59,900	22,500	12,600	24,800	9,660	5,680	5,500	8,510
21	12,800	104,000	22,000	42,400	55,500	21,900	12,200	22,600	9,590	5,580	5,540	9,770
22	12,400	30,600	23,200	38,800	45,600	24,200	11,900	20,400	9,140	5,480	5,560	11,900
23	11,500	71,400	20,600	35,400	38,100	25,600	11,800	18,000	8,870	5,500	5,620	11,000
24	10,600	56,700	17,500	39,200	31,800	24,800	11,900	16,000	8,330	5,500	5,540	10,100
25	10,100	*48,600	17,400	47,000	28,000	24,000	12,000	15,200	7,910	5,640	5,380	9,500
26	9,200	41,900	20,100	45,700	25,400	32,800	12,200	14,500	8,120	5,680	5,400	9,740
27	8,990	37,000	32,700	54,800	24,800	43,200	13,500	14,400	7,750	5,700	5,300	16,900
28	9,320	33,600	41,700	101,000	25,900	42,300	17,600	14,000	7,780	5,580	5,340	17,400
29	9,050	29,100	40,700	113,000	---	42,600	19,900	13,500	7,620	5,600	5,400	14,500
30	8,900	21,900	42,600	104,000	-----	45,400	20,000	13,000	7,520	5,540	5,500	13,600
31	8,930	-----	45,700	89,900	-----	52,600	-----	12,700	-----	5,580	5,560	-----
Total	276,560	*1,250.95	962,600	*1,937.1	*1,242.7	750,100	687,900	683,400	336,090	190,890	169,640	275,690
Mean	8,921	41,700	31,050	62,490	44,380	24,200	22,930	22,050	11,200	6,158	5,472	9,190
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	548,500	*2,481	*1,909	*3,842	*2,465	*1,488	*1,364	*1,356	666,600	378,600	336,500	546,800
Calendar year 1958: Max	119,000	Min	5,620	Mean	26,140	Cfsm	3.59	In.	48.74	Ac-ft	18,920,000	
Water year 1958-59: Max	128,000	Min	5,300	Mean	24,010	Cfsm	3.30	In.	44.77	Ac-ft	17,380,000	

* Discharge measurement made on this day.

† Expressed in thousands.

1920. Mill Creek at Salem, Oreg.

Location.--Lat 44°56'05", long 123°01'00", in NE $\frac{1}{4}$ sec.26, T.7 S., R.3 W., on left bank at State Street Bridge in Salem, 220 ft downstream from 19th Street power diversion.

Drainage area.--110 sq mi.

Records available.--November, December 1934, August to October 1938, May 1939 to September 1959. Prior to October 1940 monthly discharge only, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 166.12 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Nov. 2 to Dec. 31, 1934, staff gage at site three-quarters of a mile downstream at different datum. July 21 to Aug. 14, 1938, staff gage and Aug. 15, 1938, to Oct. 9, 1940, water-stage recorder, at site 200 ft upstream at different datum.

Average discharge.--20 years (1939-59), 141 cfs (102,100 acre-ft per year).

Extremes.--Maximum discharge during year, 731 cfs Jan. 28 (gage height, 4.39 ft); minimum, 8.7 cfs July 4.
1934, 1938-59: Maximum discharge, 1,350 cfs Jan. 28, 1954 (gage height, 7.07 ft); no flow Oct. 2, 1938.

Remarks.--Records excellent except those for periods of backwater from debris, which are good. Diurnal fluctuation caused by powerplant above station. Salem power canal diverts water into Mill Creek near Stayton. Several diversions from Mill Creek, including Shelton flood bypass $\frac{1}{4}$ miles upstream and 19th Street power diversion 220 ft upstream.

Revisions.--WSP 1218: Drainage area.

Rating table, water year 1958-59, except periods of backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

0.5	8.0	1.0	43
.6	12	1.5	110
.7	17	2.0	200
.8	24	4.0	645

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	54	127	237	200	70	239	*74	69	66	48	51
2	67	58	134	228	*163	66	243	73	61	52	28	*52
3	65	62	170	204	142	58	192	69	64	18	26	*52
4	66	65	154	184	125	52	163	70	70	9.8	23	59
5	73	69	142	174	117	54	146	156	90	48	28	74
6	72	98	154	169	124	62	137	174	80	88	28	83
7	65	98	172	226	125	60	130	127	74	79	26	89
8	35	120	156	400	113	59	106	106	74	83	27	66
9	38	158	147	480	129	60	84	100	82	73	28	59
10	31	*176	161	548	147	59	77	92	*86	67	35	58
11	30	138	198	467	115	53	67	86	83	60	37	52
12	32	138	222	614	102	66	64	76	73	66	39	51
13	34	192	186	393	112	67	59	67	70	66	38	51
14	37	194	169	294	308	61	55	80	69	64	38	43
15	36	169	156	241	342	55	59	107	67	65	37	51
16	39	147	152	281	548	51	55	92	61	62	39	51
17	40	138	141	245	384	50	53	101	58	62	39	54
18	45	168	146	208	294	*61	48	118	80	61	38	62
19	59	451	147	180	239	132	48	107	61	59	44	67
20	53	480	144	159	186	83	46	89	58	61	46	60
21	44	306	190	142	158	129	45	79	48	*60	50	55
22	44	243	*167	141	139	118	44	76	44	62	48	54
23	46	226	152	185	122	122	61	67	56	60	51	52
24	44	212	191	285	98	105	62	65	60	64	48	53
25	41	186	180	224	89	150	62	60	64	72	44	58
26	42	161	278	194	94	296	82	69	62	76	41	72
27	42	144	368	444	94	222	79	73	66	73	41	76
28	42	134	308	627	80	241	76	70	70	70	45	74
29	44	136	299	351	-	243	72	70	70	70	48	80
30	46	132	294	285	-	345	69	69	67	67	52	65
31	56	-----	254	243	-----	285	-----	74	-----	61	50	-----
Total	1,479	5,045	5,817	9,011	4,896	3,536	2,723	2,735	2,017	1,944.8	1,208	1,824
Mean	47.7	168	188	291	175	114	90.8	88.3	67.2	62.7	39.0	60.8
Ac-ft	2,930	10,010	11,540	17,870	9,710	7,010	5,400	5,430	4,000	3,860	2,400	3,620

Calendar year 1958: Max 896 Min 17 Mean 127 Ac-ft 92,090
Water year 1958-59: Max 627 Min 9.8 Mean 116 Ac-ft 83,780

* Discharge measurement made on this day.

Note.--Backwater from debris Oct. 1 to Dec. 26, July 28 to Sept. 30.

1925. South Yamhill River near Willamina, Oreg.

Location.--Lat 45°02'50", long 123°30'10", in sec.14, T.6 S., R.7 W., on left bank 2.3 miles southwest of Willamina and 3.2 miles (revised) upstream from Willamina Creek.

Drainage area.--133 sq mi.

Records available.--May 1934 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 235.55 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--25 years, 619 cfs (448,100 acre-ft per year).

Extremes.--Maximum discharge during year, 8,300 cfs Jan. 9 (gage height, 10.07 ft); minimum, 10 cfs Oct. 2 (gage height, 0.51 ft).
1934-59: Maximum discharge, 15,200 cfs Feb. 10, 1949 (gage height, 14.80 ft); minimum, 2.6 cfs Oct. 11, 1952 (gage height, 0.36 ft).

Remarks.--Records good. Slight regulation occasionally at low flows by millpond upstream. No diversion above station.

Revisions (water years).--WSP 814: Drainage area. WSP 1318: 1934.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris Nov. 4-6)

Oct. 1 to Jan. 8

Jan. 9 to Sept. 30

0.5	11	2.0	360	0.5	12	2.0	390
.6	18	3.0	850	.6	20	3.0	980
.8	39	4.0	1,490	.8	43	4.0	1,520
1.0	68	6.0	3,150	1.0	75	6.0	3,150
1.4	155	8.0	5,470	1.4	173	10.0	8,200

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	68	476	1,290	1,280	670	1,770	705	142	101	39	19
2	11	73	604	1,090	1,090	595	1,530	555	137	96	39	20
3	15	81	832	874	928	525	1,230	458	135	94	36	15
4	14	362	640	750	800	*458	1,020	430	145	90	35	54
5	12	400	535	705	695	418	862	803	224	90	36	339
6	14	1,200	490	655	715	386	735	735	162	105	36	302
7	14	922	980	1,180	670	358	635	605	151	162	36	176
8	77	982	838	5,390	600	370	545	525	142	129	35	140
9	66	1,700	750	7,280	635	430	480	510	316	*108	33	103
10	42	1,390	935	4,110	755	446	434	466	330	94	31	81
11	34	886	2,200	3,280	695	390	394	410	354	90	30	68
12	31	1,130	1,550	*4,710	645	402	358	366	338	79	a29	63
13	30	1,740	1,200	2,910	804	450	330	330	295	75	a28	56
14	28	1,550	958	2,060	1,260	430	*310	334	272	75	a27	55
15	26	1,130	*790	1,560	1,160	410	306	338	251	73	a26	54
16	23	838	670	1,350	2,110	394	276	299	224	72	a25	54
17	24	660	570	1,070	1,900	398	262	302	207	65	a24	49
18	85	2,480	545	970	2,230	583	244	295	198	58	a22	101
19	470	4,130	486	1,030	2,950	820	227	276	176	58	a21	612
20	336	3,410	618	994	2,210	680	214	254	162	60	*20	916
21	160	2,540	1,100	910	1,730	892	198	237	151	58	21	735
22	114	1,680	928	*898	1,370	810	192	220	142	52	24	438
23	112	1,220	790	1,420	1,230	1,090	182	204	135	52	25	310
24	84	970	826	3,190	1,030	1,010	173	189	132	55	21	240
25	72	750	1,500	2,330	916	1,190	167	192	135	55	19	220
26	60	625	1,850	1,940	826	1,620	173	*198	142	52	14	1,100
27	55	515	1,930	4,080	760	1,420	339	188	119	48	17	805
28	*48	445	1,940	*2,730	705	1,660	610	182	119	44	20	565
29	47	432	1,760	2,000	---	1,560	605	167	119	48	22	418
30	47	592	1,760	1,730	---	2,340	988	156	108	44	19	358
31	48	---	1,500	1,520	---	1,950	---	151	---	40	17	---
Total	2,215	34,701	32,551	66,006	32,699	25,155	15,789	11,079	5,663	2,322	827	8,446
Mean	71.5	1,157	1,050	2,129	1,168	811	526	357	189	74.9	26.7	282
Cfs/m	0.538	8.70	7.89	16.0	8.78	6.10	3.95	2.68	1.42	0.563	0.201	2.12
In.	0.62	9.70	9.10	18.46	9.14	7.03	4.41	3.10	1.58	0.65	0.23	2.36
Ac-ft	4,390	68,830	64,560	130,900	64,650	49,890	31,320	21,970	11,230	4,610	1,640	16,750

Calendar year 1958: Max 4,200 Min 6.0 Mean 646 Cfs/m 4.86 In. 65.95 Ac-ft 467,900
Water year 1958-59: Max 7,280 Min 11 Mean 651 Cfs/m 4.89 In. 66.38 Ac-ft 471,000

Peak discharge (base, 5,700 cfs)--Nov. 18 (11:30 p.m.) 6,670 cfs (8.91 ft); Jan. 9 (4:30 a.m.) 8,300 cfs (10.07 ft); Jan. 12 (1 a.m.) 6,740 cfs (8.96 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for Willamina Creek and Mill Creek near Willamina.

WILLAMETTE RIVER BASIN

1930. Willamina Creek near Willamina, Oreg.

Location.--Lat 45°08'30", long 123°29'35", in W¹/₂NE¹/₄ sec.13, T.5 S., R.7 W., on left bank 4.5 miles north of Willamina and 7.0 miles upstream from mouth.

Drainage area.--65 sq mi, approximately.

Records available.--June 1934 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 315.1 ft above mean sea level (from river-profile map). Prior to Oct. 1, 1939, at datum 1.00 ft higher.

Average discharge.--25 years, 256 cfs (185,300 acre-ft per year).

Extremes.--Maximum discharge during year, 2,620 cfs Jan. 9 (gage height, 7.29 ft); minimum, 12 cfs Oct. 3-6.

1934-59: Maximum discharge, 7,760 cfs Dec. 21, 1955 (gage height, 11.65 ft), from rating curve extended above 3,400 cfs on basis of slope-area measurement of peak flow; minimum, 9 cfs Sept. 3, 4, 1934, Sept. 9, 1935, Aug. 8-10, 19, Sept. 22-27, 1939, Aug. 17, 18, 1940.

Flood of Mar. 31, 1931, reached a stage of about 12 ft, from information by local resident (discharge, 8,200 cfs).

Remarks.--Records excellent except those for period of no gage-height record, which are good. No regulation or diversion above station.

Revisions.--WSP 964: Drainage area.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.3	10	3.0	257
1.5	18	4.0	585
1.8	41	5.0	1,040
2.1	75	7.0	2,580
2.5	143		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	33	187	641	585	307	881	262	79	55	24	19
2	13	28	210	533	505	*285	737	224	78	53	24	17
3	12	33	250	435	442	264	601	198	79	55	25	17
4	12	91	217	379	388	240	502	198	86	51	26	54
5	12	94	198	346	340	222	428	290	95	55	24	78
6	12	379	194	313	349	203	367	267	83	63	24	65
7	13	227	362	387	325	196	322	237	79	74	24	43
8	32	296	325	1,340	304	192	288	222	79	*59	22	36
9	22	390	293	2,360	310	212	260	224	167	50	21	30
10	18	325	401	1,580	337	210	237	212	141	47	21	25
11	17	227	876	1,290	313	196	217	194	143	41	21	24
12	16	369	605	1,540	285	196	203	178	121	41	21	23
13	16	529	484	1,140	307	224	192	167	109	41	21	23
14	16	505	394	876	373	222	185	172	103	39	21	23
15	15	361	*343	696	382	207	*178	167	97	38	21	23
16	15	272	296	613	719	203	163	157	91	36	21	24
17	17	222	257	505	665	203	155	157	91	36	21	23
18	44	756	247	470	818	303	145	147	85	35	21	33
19	123	1,120	222	*502	1,250	370	137	143	79	34	*21	112
20	66	965	252	470	1,030	316	129	155	74	33	21	257
21	39	773	397	435	791	340	123	127	71	32	21	143
22	30	561	355	480	637	319	119	121	70	30	23	92
23	28	435	310	751	545	355	114	112	68	31	20	72
24	24	358	307	1,360	470	328	109	109	67	32	18	60
25	23	293	480	1,050	435	420	107	109	68	31	17	59
26	21	250	613	895	382	565	114	110	67	30	16	223
27	20	217	750	1,640	352	521	*105	65	28	18	165	
28	*19	194	658	1,140	325	540	220	100	65	28	20	123
29	18	183	905	872	617	230	94	62	30	18	100	100
30	17	172	910	600	-----	1,040	313	89	59	27	17	*89
31	28	-----	755	678	-----	985	-----	85	-----	26	18	-----
Total	771	10,658	13,271	26,497	13,964	10,866	7,939	5,112	2,621	1,260	651	2,075
Mean	24.9	355	428	855	499	351	265	165	87.4	40.6	21.0	59.2
Cfsm	0.383	5.46	6.58	13.2	7.66	5.40	4.08	2.54	1.34	0.625	0.323	1.06
In.	0.44	6.10	7.59	15.16	7.99	6.22	4.54	2.92	1.50	0.72	0.37	1.19
Ac-ft	1,530	21,140	26,320	52,560	27,700	21,550	15,750	10,140	5,200	2,500	1,290	4,120

Calendar year 1958: Max 1,700 Min 10 Mean 270 Cfsm 4.15 In. 56.30 Ac-ft 195,200
 Water year 1958-59: Max 2,360 Min 12 Mean 262 Cfsm 4.03 In. 54.74 Ac-ft 189,800

Peak discharge (base, 2,500 cfs).--Jan. 9 (9:30 a.m.) 2,620 cfs (7.29 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Aug. 4-18; discharge estimated on basis of recorded range in stage and records for South Yamhill River and Mill Creek near Willamina.

1933. Mill Creek near Willamina, Oreg.

Location.--Lat 44°58'20", long 123°27'00", in NE1/4 sec.17, T.7 S., R.6 W., on left bank 0.2 mile upstream from road bridge, 4 miles southwest of Buell, and 8 miles south of Willamina.

Drainage area.--27.4 sq mi.

Records available.--July 1958 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 562.02 ft above mean sea level (levels by Bureau of Reclamation).

Extremes.--Maximum discharge during year, 2,230 cfs Jan. 9 (gage height, 7.77 ft), from rating curve extended above 680 cfs by logarithmic plotting; minimum, 3.2 cfs Oct. 6. 1958-59: Maximum discharge, that of Jan. 9, 1959; minimum, 2.6 cfs Sept. 8, 1958 (gage height, 1.98 ft).

Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation or diversion above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 8				Jan. 9 to Sept. 30			
2.0	3.0	3.0	84	1.9	2.9	3.0	84
2.1	5.5	3.5	185	2.0	5.2	3.5	185
2.2	9.0	4.0	325	2.1	8.3	4.0	325
2.4	20	5.0	700	2.2	12	5.0	700
2.7	45	7.0	1,730	2.4	23	7.0	1,730
				2.7	47	8.0	2,390

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.4	22	104	202	238	185	458	192	26	a15	6.4	4.9
2	3.4	20	180	165	200	*149	356	130	25	a14	6.4	4.8
3	3.4	32	241	134	162	120	282	100	25	a13	6.4	4.6
4	3.4	114	172	122	140	104	202	90	26	a15	6.6	20
5	3.4	149	128	116	120	92	160	172	30	a17	6.6	42
6	3.2	311	102	118	114	81	134	195	26	a18	6.4	58
7	3.4	172	181	330	109	76	114	142	25	a19	6.0	36
8	6.4	182	153	1,460	98	73	100	114	25	*16	5.8	25
9	7.8	423	132	1,680	104	78	89	97	55	14	5.2	19
10	6.1	239	164	1,010	124	74	78	83	60	13	5.2	15
11	5.5	134	336	962	120	68	71	73	57	12	5.2	13
12	5.2	228	225	1,180	105	70	66	66	52	11	5.2	12
13	4.9	322	168	734	148	78	63	60	46	11	5.5	11
14	4.6	232	132	482	277	77	59	63	42	11	5.2	11
15	4.6	165	107	339	238	74	*56	57	38	11	5.2	10
16	4.6	114	*94	268	580	73	52	54	34	10	5.2	10
17	6.6	90	81	215	500	76	49	51	32	9.8	5.2	9.8
18	22	*675	75	180	656	142	47	48	29	9.4	5.5	26
19	79	825	70	175	920	230	44	46	26	9.0	*5.5	162
20	50	716	100	165	624	162	42	43	24	8.7	5.2	208
21	29	451	230	151	409	185	41	42	22	8.3	5.2	128
22	21	268	215	*145	307	158	39	40	22	8.0	5.5	74
23	18	192	162	229	277	247	37	37	22	8.0	5.5	51
24	15	145	160	789	230	268	36	36	21	8.3	5.2	40
25	12	111	381	490	208	292	35	35	21	8.0	4.9	34
26	11	92	544	367	205	426	39	34	21	7.6	4.6	68
27	*10	76	584	954	178	332	78	*33	18	7.3	4.9	89
28	9.0	66	552	*616	182	346	140	32	a19	7.6	5.2	55
29	8.2	66	406	430	-	350	128	30	a18	7.6	5.2	44
30	7.8	64	328	353	---	740	268	29	a17	7.3	4.9	*37
31	16	---	253	295	---	588	---	28	---	6.6	4.6	---
Total	389.9	6,696	6,720	15,056	7,573	5,994	3,343	2,252	905	341.5	169.6	1,301.9
Mean	12.6	223	217	486	270	193	111	72.6	30.2	11.0	5.47	43.4
Cfs/m	0.460	8.14	7.92	17.7	9.65	7.04	4.05	2.65	1.10	0.401	0.200	1.58
In.	0.53	9.09	9.12	20.44	10.28	8.14	4.54	3.06	1.23	0.46	0.23	1.77
Ac-ft	773	13,280	13,330	29,860	15,020	11,890	6,630	4,470	1,800	677	336	2,580

Calendar year 1958: Max - 1,880 Min 3.2 Mean 139 Cfs/m 5.07 In. 68.89 Ac-ft 100,600
 Water year 1958-59: Max 1,880 Min 3.2 Mean 139 Cfs/m 5.07 In. 68.89 Ac-ft 100,600

Peak discharge (base, 1,400 cfs).--Nov. 18 (8 p.m.) 1,560 cfs (6.72 ft); Jan. 9 (5:30 a.m.) 2,230 cfs (7.77 ft); Jan. 12 (1 a.m.) 1,600 cfs (6.79 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for Willamina Creek near Willamina and Rickreall Creek near Dallas.

1940. South Yamhill River near Whiteson, Oreg.

Location (revised).--Lat 45°10'08", long 123°12'25", in NW¼ sec.5, T.5 S., R.4 W., near left bank on downstream side of Whiteson Bridge on U. S. Highway 99W, 1.3 miles northwest of Whiteson, and 1.4 miles downstream from Salt Creek.

Drainage area.--502 sq mi.

Records available.--July 1940 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 82.30 ft above mean sea level, datum of 1929. Prior to Sept. 20, 1940, wire-weight gage at same site and datum.

Average discharge.--19 years, 1,749 cfs (1,266,000 acre-ft per year).

Extremes.--Maximum discharge during year, 27,100 cfs Jan. 9 (gage height, 42.90 ft); minimum, 22 cfs Oct. 4.

1940-59: Maximum discharge, 36,800 cfs Dec. 22, 1955 (gage height, 45.25 ft); minimum, 8.5 cfs Sept. 25, 26, 1952 (gage height, 0.80 ft).

Remarks.--Records fair. Slight regulation during low-water periods by logpond upstream. Small diversions for irrigation above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second) (Shifting-control method used Oct. 1-19, Nov. 24 to Dec. 30, Jan. 2-9; rate of change in stage used as a factor Nov. 19, 21, 22, Jan. 10, 11, 13-18, 24, 26, 27, Jan. 29 to Feb. 2, Feb. 14, 16, 19, 21-24, Mar. 26, 30, Apr. 1-4)

Oct. 1 to Jan. 9				Jan. 10 to Sept. 30			
0.9	23	10.0	1,320	1.2	37	15.0	2,800
1.1	32	15.0	2,520	1.5	53	25.0	6,000
1.5	53	25.0	5,910	2.0	90	35.0	10,800
2.0	90	35.0	10,800	3.0	190	39.0	15,300
3.0	188	39.0	15,300	5.0	467	41.0	20,500
4.0	308	42.0	23,500	10.0	1,500		
6.0	585						

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	142	896	3,620	4,040	1,990	5,960	1,880	356	220	90	44
2	28	200	1,140	3,130	3,440	1,840	4,970	1,400	340	210	86	42
3	28	168	1,590	2,560	2,980	1,660	3,950	1,160	333	201	85	42
4	23	353	1,530	2,100	2,570	*1,490	3,210	1,020	340	201	80	47
5	26	684	1,300	1,910	2,270	1,360	2,680	1,250	418	201	80	266
6												
7	29	988	1,150	1,690	2,120	1,240	2,280	1,900	421	212	80	453
8	27	2,340	1,390	1,890	2,170	1,160	1,980	1,510	364	242	80	472
9	28	1,510	2,220	6,360	2,020	1,120	1,750	1,280	337	302	80	278
9	88	1,800	1,760	22,500	1,940	1,120	1,560	1,180	387	*236	75	224
10	101	3,220	1,740	19,600	2,280	1,360	1,390	1,150	815	211	70	168
11	67	1,980	3,660	13,300	2,510	1,220	1,260	1,030	715	196	70	137
12	55	1,350	3,980	15,300	2,290	1,170	1,150	920	753	187	65	119
13	52	2,920	3,130	13,200	2,070	1,220	1,070	832	654	178	65	112
14	46	3,130	2,470	*9,740	3,610	1,360	*1,000	794	578	168	60	106
15	44	2,560	1,980	6,770	4,480	1,200	1,000	844	550	165	60	103
16	44	1,800	1,690	4,690	6,000	1,150	920	779	496	155	55	95
17	42	1,360	1,440	3,880	7,110	1,100	856	745	457	146	55	90
18	46	1,340	1,300	3,350	6,280	1,180	806	726	442	138	50	100
19	243	6,170	*1,270	*3,210	7,300	2,220	764	707	408	134	48	330
20	747	7,540	1,160	3,140	7,640	2,070	726	650	364	124	*46	1,300
21	427	6,890	2,130	2,860	6,100	1,950	680	601	337	113	46	1,600
22	266	4,850	2,660	2,640	4,520	2,200	640	566	315	112	50	986
23	209	3,180	2,600	2,700	3,740	2,210	608	530	297	109	54	654
24	189	2,380	1,400	5,680	2,440	2,550	566	491	287	109	52	481
25	153	1,870	2,730	7,190	2,790	2,420	555	481	279	113	46	392
26	130	1,480	4,090	5,950	2,570	3,960	544	491	291	107	44	731
27	117	1,280	5,070	6,740	2,320	4,250	650	487	278	104	42	1,620
28	108	1,090	5,800	9,470	2,130	4,100	1,040	470	259	99	40	1,080
29	*104	978	5,450	7,910		4,220	1,350	*433	262	103	45	798
30	94		5,190	5,940		5,490	1,590	398	243	104	47	644
31	95		4,450	4,810		6,600		376		103	44	
Total	3,684	66,511	78,566	205,830	102,530	68,180	47,505	27,081	12,376	5,003	1,890	13,514
Mean	119	2,217	2,534	6,575	3,662	2,199	1,584	874	413	161	61.0	450
Cfsm	0.237	4.42	5.05	15.1	7.29	4.38	3.16	1.74	0.823	0.321	0.122	0.896
In.	0.27	4.95	5.82	15.10	7.60	5.05	3.52	2.01	0.92	0.37	0.14	1.00
Ac-ft	7,310	131,900	155,800	404,300	203,400	135,200	94,220	53,710	24,550	9,920	3,750	26,800

Calendar year 1958: Max 12,700 Min 11 Mean 1,754 Cfsm 3.49 In. 47.42 Ac-ft 1,270,000
 Water year 1958-59: Max 22,500 Min 23 Mean 1,728 Cfsm 3.44 In. 46.73 Ac-ft 1,251,000

Peak discharge (base, 13,000 cfs, revised).--Jan. 9 (8 p.m.) 27,100 cfs (42.90 ft);
 Jan. 12 (8:30 p.m.) 18,400 cfs (40.31 ft).

* Discharge measurement made on this day.

1943. North Yamhill River near Fairdale, Oreg.

Location.--Lat 45°21'55", long 123°22'40", in SW $\frac{1}{4}$ sec.25, T.2 S., R.6 W., on right bank 0.4 mile downstream from small tributary, 1.4 miles upstream from Kutch Creek, 2.1 miles west of Fairdale, and 9 $\frac{1}{2}$ miles west of Yamhill.

Drainage area.--9.03 sq mi.

Records available.--October 1958 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 560 ft (from topographic map).

Extremes.--Maximum discharge during year, 650 cfs Nov. 18 (gage height, 5.19 ft), from rating curve extended above 55 cfs; minimum daily, 2.6 cfs Oct. 1-5.

Remarks.--Records good except those for periods of no gage-height record or backwater from debris, which are fair. No regulation or diversion above station.

Rating table, water year 1958-59, except periods of backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

1.8	2.5	2.4	22	3.5	161
2.0	6.0	2.7	44	4.0	288
2.2	12	3.0	77	4.5	465

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a2.6	6.3	39	93	105	87	230	76	18	13	6.0	4.6
2	a2.6	6.5	47	80	92	84	176	62	17	12	6.3	4.3
3	2.6	10	57	65	81	73	137	52	18	12	6.3	4.3
4	2.6	19	51	58	71	65	114	49	20	12	6.5	16
5	2.6	21	47	54	66	60	93	63	19	13	6.3	15
6	2.8	75	42	52	67	*54	78	56	18	*13	6.0	16
7	3.5	40	61	74	60	49	69	50	17	14	5.8	11
8	9.7	45	53	354	56	48	62	48	17	12	5.6	9.0
9	5.0	64	53	*441	54	54	56	48	37	11	5.2	7.6
10	4.4	54	82	273	51	50	51	46	29	10	5.2	6.8
11	4.1	41	141	212	52	47	47	41	32	9.9	5.4	6.3
12	3.9	88	108	220	44	48	45	38	29	9.6	5.8	6.3
13	*3.8	*117	85	182	49	56	*40	35	27	7.8	5.6	6.0
14	3.7	98	69	137	52	53	40	36	27	9.3	5.4	5.8
15	3.5	60	58	110	51	52	37	34	24	9.0	5.4	6.0
16	3.5	39	51	93	98	54	34	32	23	8.7	5.4	6.0
17	4.9	29	44	78	93	61	32	32	22	8.4	*5.4	6.0
18	12	275	*44	75	149	93	31	30	20	7.8	5.2	13
19	25	*274	40	77	222	105	29	29	19	7.6	5.0	25
20	12	220	42	71	182	90	28	27	18	7.3	5.0	33
21	7.8	167	56	64	141	93	27	27	17	7.3	5.0	27
22	6.8	114	54	70	117	85	25	25	17	7.3	5.2	20
23	6.8	85	51	*149	107	90	25	23	16	7.6	5.0	17
24	5.8	70	51	304	94	82	23	23	16	7.6	4.6	15
25	5.4	57	92	210	94	89	23	*23	17	7.3	4.4	17
26	5.2	49	115	167	93	96	26	23	15	7.0	4.4	64
27	4.8	42	133	273	87	93	42	22	15	6.8	4.8	42
28	4.6	37	128	198	86	112	55	21	14	7.0	4.8	*32
29	4.4	35	124	153	-	128	58	20	14	6.8	4.4	25
30	4.4	32	124	135	---	187	86	19	13	6.3	4.4	21
31	7.4	---	108	120	---	254	---	19	---	6.0	4.8	---
Total	178.2	2,269.8	2,250	4,642	2,514	2,592	1,817	1,129	605	286.2	164.6	488.0
Mean	5.75	75.7	72.6	150	89.8	83.6	60.6	36.4	20.2	9.23	5.31	16.3
Cfsm	0.637	8.38	8.04	16.6	9.94	9.26	6.71	4.03	2.24	1.02	0.588	1.81
In.	0.73	9.35	9.27	19.12	10.35	10.68	7.48	4.65	2.49	1.18	0.68	2.01
Ac-ft	353	4,500	4,460	9,210	4,990	5,140	3,600	2,240	1,200	568	326	968

Calendar year 1958: Max - Min - Mean - Cfsm - In. - Ac-ft -
 Water year 1958-59: Max 441 Min 2.6 Mean 51.9 Cfsm 5.75 In. 77.99 Ac-ft 37,560

Peak discharge (base, 350 cfs).--Nov. 18 (7 p.m.) 650 cfs (5.19 ft); Jan. 9 (4 a.m.) 519 cfs (4.77 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for station at Pike.

Note.--Backwater from debris Oct. 3 to Jan. 26, Mar. 31 to May 25, Sept. 26-30.

1960. Haskins Creek below reservoir, near McMinnville, Oreg.

Location--Lat 45°18'40", long 123°20'55", in NE $\frac{1}{4}$ sec.18, T.3 S., R.5 W., on right bank 800 ft downstream from dam of McMinnville water-supply reservoir and 11 miles northwest of McMinnville.

Drainage area--7.1 sq mi, approximately.

Records available--October 1951 to September 1959.

Gage--Water-stage recorder and concrete control. Altitude of gage is 707 ft above mean sea level (topographic survey of 1955). Prior to Aug. 5, 1952, at site 600 ft upstream at different datum.

Average discharge--8 years 33.5 cfs (24,250 acre-ft per year), adjusted for storage and diversion.

Extremes--Maximum daily discharge during year, 260 cfs Jan. 9; minimum daily, 1.6 cfs Apr. 11-14.
1951-59: Maximum daily discharge, 378 cfs Dec. 22, 1955; minimum daily, 0.3 cfs Oct. 1, 2, 1951.

Remarks--Records fair. All records presented herein include flow in pipeline which diverts 600 ft above station for McMinnville city water supply. Flow regulated by Haskins Creek Reservoir (see p. 177), but during winter months reservoir is empty except when inflow exceeds capacity of outlet tunnel.

Cooperation--Meter readings for diversion furnished by city of McMinnville.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.7	2.4	24	58	69	44	124	34	10	6.9	7.1	3.9
2	3.0	2.4	27	50	60	42	102	29	10	7.6	7.2	4.0
3	3.0	2.5	29	42	54	40	81	26	11	7.3	5.6	3.9
4	3.0	*2.4	25	36	48	48	88	25	12	7.3	5.4	4.5
5	3.0	2.4	23	34	46	36	56	33	12	8.0	6.0	3.7
6	3.0	2.6	22	34	47	*33	49	29	10	*7.9	6.0	3.3
7	3.0	2.4	36	50	42	31	43	27	10	8.2	6.0	3.3
8	3.2	2.4	30	240	40	30	40	26	10	7.1	6.6	3.3
9	3.1	13	30	260	38	33	34	25	20	6.4	7.1	3.3
10	3.1	30	47	220	37	32	16	24	16	6.0	6.4	3.3
11	3.1	23	71	190	35	30	1.6	22	16	6.0	6.0	3.3
12	3.1	51	55	200	34	29	1.6	20	14	6.3	6.1	3.3
13	3.1	86	44	170	36	30	1.6	20	12	6.5	6.0	3.3
14	3.1	107	37	120	44	29	1.6	19	12	5.4	6.0	3.3
15	3.1	104	33	95	50	28	1.7	18	11	5.5	6.0	3.3
16	3.1	100	29	80	95	27	1.7	17	11	6.1	6.0	3.3
17	3.1	86	26	65	90	29	1.8	17	10	6.4	*5.2	3.3
18	3.1	80	*25	60	120	40	1.8	18	11	6.4	5.2	3.5
19	3.2	92	24	55	140	43	1.8	14	9.7	7.2	5.2	3.5
20	3.1	93	29	50	130	38	1.9	16	8.8	7.2	5.2	3.6
21	3.3	92	36	48	100	42	1.9	14	10	7.2	4.8	3.6
22	3.1	86	32	55	75	38	1.9	14	9.0	7.2	4.9	3.5
23	3.1	80	30	*100	70	44	2.0	13	9.0	7.2	4.4	5.1
24	3.2	72	32	173	60	41	2.4	13	8.6	7.2	4.4	6.9
25	2.7	59	61	124	55	51	2.4	12	9.4	5.5	4.4	7.6
26	1.8	33	79	108	50	56	1.9	*12	8.5	5.5	5.2	22
27	1.8	23	90	171	48	54	2.0	12	8.1	6.3	6.0	19
28	2.1	21	85	122	46	61	2.0	12	8.1	5.1	4.8	14
29	2.2	20	81	104		70	14	11	8.1	5.2	4.9	12
30	2.2	18	78	92		108	39	11	7.6	6.2	5.9	11
31	2.4		65	80		134		10		7.2	5.9	
Total	89.1	1,388.5	1,333	3,286	1,759	1,361	699.6	593	322.9	205.5	171.9	174.9
Mean	2.87	46.3	43.0	106	62.8	44.5	23.3	19.1	10.8	6.63	5.55	5.83
Ac-ft	177	2,750	2,640	6,520	3,490	2,740	1,390	1,180	640	408	341	347

Adjusted for change in contents in Haskins Creek Reservoir

Mean	3.97	37.6	42.9	106	62.8	44.6	35.8	19.0	10.8	5.72	3.59	6.79
Cfsm	0.559	5.30	6.04	14.9	8.85	6.28	5.04	2.68	1.52	0.806	0.506	1.24
In.	0.64	5.92	6.97	17.22	9.22	7.24	5.63	3.09	1.69	0.93	0.58	1.38
Ac-ft	244	2,240	2,640	6,520	3,490	2,740	2,130	1,170	640	352	221	523

Observed

Calendar year 1958 : Max	171	Min	1.8	Mean	32.4	Ac-ft	23,450
Water year 1958-59 : Max	260	Min	1.6	Mean	31.2	Ac-ft	22,620

Adjusted

Calendar year 1958: Mean	32.4	Cfsm	4.56	In.	61.91	Ac-ft	23,450
Water year 1958-59: Mean	31.6	Cfsm	4.45	In.	60.51	Ac-ft	22,910

* Discharge measurement made on this day.

1970. North Yamhill River at Pike, Oreg.

Location.--Lat 45°22'10", long 123°15'15", in NW¼ sec.25, T.2 S., R.5 W., on right bank 500 ft downstream from Turner Creek, 0.5 mile southeast of Pike, and 4.0 miles northwest of Yamhill.

Drainage area.--66.8 sq mi.

Records available.--October 1948 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 192.66 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark). Prior to Aug. 21, 1950, at datum 1.02 ft higher.

Average discharge.--11 years, 256 cfs (185,300 acre-ft per year).

Extremes.--Maximum discharge during year, 3,830 cfs Jan. 9 (gage height, 7.93 ft); minimum, 7.2 cfs Oct. 1.

1948-59: Maximum discharge, 9,530 cfs Dec. 21, 1955 (gage height, 12.42 ft), from rating curve extended above 2,600 cfs on basis of slope-area measurement of peak flow; minimum, 5.0 cfs Aug. 22, 1958.

Remarks.--Records excellent except those for period of no gage-height record, which are good. Occasional diurnal fluctuations caused by small dams upstream; no seasonal regulation. Water supply for city of McMinnville is diverted from Haskins Creek above station and water supply for city of Yamhill is diverted from Turner Creek above station. Small diversions above station for irrigation.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 8

Jan. 9 to Sept. 30

0.9	5.4	2.5	240	0.9	7.2	2.5	250
1.0	8.4	3.0	405	1.2	22	3.0	420
1.1	12	4.0	860	1.5	43	4.0	880
1.4	31	6.0	2,100	1.8	77	6.0	2,100
1.7	61	7.0	2,950	2.1	136	7.0	2,950
2.0	112						

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.5	25	160	412	464	307	1,010	223	61	41	14	11
2	8.1	20	188	363	408	286	735	190	59	39	14	10
3	8.1	22	222	297	366	265	572	168	61	37	14	9.2
4	8.1	*49	190	270	324	238	460	162	66	37	15	50
5	8.1	65	172	255	295	220	360	250	70	41	14	44
6	8.1	192	168	234	295	205	328	217	62	41	13	37
7	9.2	119	257	354	277	190	292	190	60	48	12	29
8	23	138	225	2,220	253	187	265	184	60	41	11	20
9	16	216	219	2,900	265	211	241	173	118	37	11	17
10	12	192	380	1,630	283	*202	205	162	94	34	10	15
11	12	142	685	1,500	256	182	173	149	107	32	11	14
12	11	295	444	1,540	235	182	162	136	92	30	12	14
13	11	426	346	1,160	274	214	152	129	82	29	12	14
14	11	464	282	865	352	202	149	131	77	29	12	14
15	11	338	243	685	352	190	139	127	73	28	10	14
16	10	258	210	590	850	184	129	120	67	*26	10	14
17	12	213	190	482	649	193	122	118	64	23	*11	14
18	41	977	*185	432	1,040	271	118	113	61	21	12	18
19	75	1,000	168	416	1,280	310	111	107	56	20	12	60
20	40	790	203	366	955	274	104	100	52	20	12	140
21	24	585	297	338	716	283	*100	86	49	19	12	90
22	19	428	255	370	577	268	96	89	49	18	14	50
23	19	358	231	790	505	314	94	82	48	18	13	42
24	17	285	240	1,480	424	292	92	79	48	19	11	36
25	15	237	514	960	396	378	91	*82	48	18	10	36
26	14	190	730	*800	370	416	92	82	49	17	9.9	120
27	14	155	780	1,370	345	380	134	77	47	17	11	90
28	14	140	690	930	317	452	152	74	47	18	12	*62
29	14	133	615	735	557	538	162	70	45	17	10	52
30	13	126	580	654	970	274	67	64	42	15	9.5	46
31	22	---	480	550	---	1,210	---	---	---	14	10	---
Total	527.2	8,556	10,529	25,928	13,123	10,012	7,134	4,011	1,914	844	364.4	1,162.2
Mean	17.0	285	340	836	469	323	238	129	63.8	27.2	11.8	38.7
Cfs/m	0.254	4.27	5.09	12.5	7.02	4.84	3.56	1.93	0.955	0.407	0.177	0.579
In.	0.29	4.76	5.86	14.44	7.31	5.57	3.27	2.23	1.07	0.47	0.20	0.65
Ac-ft	1,050	16,970	20,880	51,430	26,030	19,860	14,150	7,960	3,800	1,570	723	2,310

Calendar year 1958: Max 1,580 Min 5.7 Mean 240 Cfs/m 3.59 In. 48.74 Ac-ft 173,600
 Water year 1958-59: Max 2,900 Min 7.5 Mean 230 Cfs/m 3.44 In. 46.82 Ac-ft 166,800

Peak discharge (base, 2,900 cfs, revised).--Jan. 9 (1:30 a.m.) 3,830 cfs (7.93 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Sept. 8-27; discharge estimated on basis of recorded range in stage and records for Willamina Creek near Willamina.

1980. Willamette River at Wilsonville, Oreg.

Location (revised).--Lat 45°17'31", long 122°46'05", in SE¼ sec.23, T.3 S., R.1 W., in upstream side of pier of bridge on U. S. Highway 99 at Wilsonville, 1.3 miles downstream from Corral Creek and 2.8 miles upstream from Molalla River.

Drainage area.--8,400 sq mi, approximately.

Records available.--October 1948 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 50.00 ft above mean sea level, datum of 1929; gage readings have been reduced to elevations above mean sea level. Prior to Oct. 1, 1954, staff gage at Butteville 4.5 miles upstream at same datum.

Average discharge.--11 years, 30,540 cfs (22,110,000 acre-ft per year).

Extremes.--Maximum discharge during year, 136,000 cfs Jan. 14 (elevation, 75.50 ft); minimum daily, 6,500 cfs July 22-24, July 28 to Sept. 5 (computed from records for station at Salem).

1948-59: Maximum discharge, 248,000 cfs Jan. 21, 1953 (elevation, 90.00 ft, site then in use; about 87 ft at present site); minimum daily, 3,600 cfs Nov. 29, 30, 1952. Maximum stage known, about 105 ft at Wilsonville, Dec. 4, 1861.

Remarks.--Records fair. Flow regulated at times by Lookout Point, Cottage Grove, Dorena, Fern Ridge, and Detroit Reservoirs (see elsewhere in this report). Many small diversions for irrigation above station.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9,000	10,500	22,600	48,000	92,100	28,900	61,400	27,000	14,000	8,500	6,500	6,500
2	9,000	10,000	21,600	43,400	81,200	27,900	*60,800	28,000	13,500	8,500	6,500	6,500
3	9,000	9,500	23,000	38,800	71,500	27,500	59,600	26,000	13,000	8,500	*6,500	6,500
4	9,000	10,500	29,200	33,900	60,800	25,800	54,000	23,000	13,000	8,500	6,500	6,500
5	9,000	13,000	28,700	29,700	48,700	23,400	46,800	23,000	13,000	8,000	6,500	6,500
6	9,000	17,000	25,800	28,500	41,800	21,900	40,300	28,000	15,000	8,000	6,500	7,500
7	9,000	25,000	23,100	29,900	38,500	20,400	36,400	40,000	17,000	8,500	6,500	10,000
8	9,000	34,000	25,400	38,300	35,400	19,100	32,000	36,000	17,500	8,500	6,500	11,000
9	9,500	38,700	29,000	69,000	31,200	18,300	27,700	33,000	16,000	8,500	6,500	9,500
10	10,000	44,500	29,800	98,400	30,600	18,200	24,800	30,000	16,000	8,500	6,500	9,000
11	10,000	42,800	35,900	112,000	31,800	18,300	22,600	27,500	17,000	8,000	6,500	8,500
12	9,500	37,700	56,100	123,000	30,600	17,600	21,100	25,000	18,000	7,500	6,500	8,500
13	9,000	39,500	63,100	*132,000	27,600	17,800	19,500	*23,500	17,500	7,500	6,500	8,000
14	9,500	51,200	59,400	134,000	32,100	19,300	18,600	22,500	16,000	7,000	6,500	7,500
15	*9,500	57,900	48,000	115,000	54,900	19,600	17,800	24,000	14,000	7,000	6,500	7,000
16	9,500	56,500	40,500	87,400	70,800	18,600	16,800	24,000	13,000	7,000	6,500	*8,000
17	10,000	47,900	39,700	74,000	81,500	17,800	15,800	24,000	*12,000	7,000	6,500	8,500
18	10,000	39,900	34,400	66,100	*79,500	17,900	15,100	25,000	12,000	7,000	6,500	9,000
19	10,500	47,600	27,900	58,500	75,000	20,900	14,700	26,000	12,000	7,000	6,500	9,000
20	12,500	75,500	25,100	53,600	71,600	25,200	14,000	26,000	11,500	7,000	6,500	9,000
21	14,000	94,900	25,000	49,200	65,500	25,200	13,400	25,000	11,000	7,000	6,500	10,000
22	15,000	96,500	27,500	43,800	56,500	26,500	13,100	23,000	10,500	6,500	6,500	12,500
23	13,500	83,000	*26,600	40,500	46,800	28,800	12,800	21,000	10,000	6,500	6,500	12,500
24	12,000	65,700	23,100	44,500	38,400	28,800	12,900	19,000	10,000	6,500	6,500	11,000
25	11,500	54,900	22,400	55,700	34,100	28,200	13,000	17,000	9,500	7,000	6,500	10,500
26	11,000	46,400	25,900	57,100	31,100	33,700	13,300	16,000	9,500	7,000	6,500	10,500
27	10,500	38,800	35,500	59,000	29,000	45,200	15,000	16,000	9,000	7,000	6,500	17,000
28	10,500	35,400	45,700	84,600	29,300	48,100	18,000	16,000	9,000	6,500	6,500	20,000
29	10,500	32,000	48,000	108,000	---	47,900	22,000	15,500	9,000	6,500	6,500	17,000
30	10,500	26,400	47,000	114,000	---	50,500	23,000	15,000	8,500	6,500	6,500	15,000
31	10,500	---	50,300	104,000	---	37,600	---	14,000	---	6,500	6,500	---
Total	321,000	*1,283.2	*1,064.3	*2,173.7	*1,417.9	844,900	776,300	739,000	587,000	229,500	201,500	298,500
Mean	10,350	42,770	34,330	70,120	50,640	27,250	25,880	23,840	12,900	7,403	6,500	9,950
Cfsm	---	---	---	---	---	---	---	---	---	---	---	---
In.	---	---	---	---	---	---	---	---	---	---	---	---
Ac-ft	636,700	*2,545	*2,111	*4,311	*2,812	*1,676	*1,540	*1,466	767,600	455,200	399,700	592,100
Calendar year 1958: Max	131,000	Min	6,500	Mean	29,790	Cfsm	3.55	In.	48.14	Ac-ft	21,570,000	
Water year 1958-59: Max	134,000	Min	6,500	Mean	26,680	Cfsm	3.18	In.	43.11	Ac-ft	19,310,000	

* Discharge measurement made on this day.

* Expressed in thousands.

Note.--Backwater from stoplogs, gates, and locks at dam at Oregon City Oct. 1 to Nov. 8, Apr. 26 to Sept. 30 (no gage-height record Oct. 1-14; discharge estimated on basis of records for station at Salem).

1985. Molalla River above Pine Creek, near Wilhoit, Oreg.

Location.--Lat 45°00'45", long 122°29'00", in SW¹/₄SE¹/₄ sec.30, T.6 S., R.3 E., on right bank a quarter of a mile upstream from Pine Creek and 4¹/₂ miles southeast of Wilhoit.

Drainage area.--96 sq mi, approximately.

Records available.--October 1935 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 780 ft (by barometer). Prior to Oct. 1, 1945, at datum 2.02 ft higher.

Average discharge.--24 years, 533 cfs (385,900 acre-ft per year).

Extremes.--Maximum discharge during year, 6,730 cfs Nov. 18 (gage height, 10.19 ft); minimum, 32 cfs Oct. 6, 7, Sept. 3, 4, 1935-59; Maximum discharge, 12,200 cfs Jan. 7, 1948 (gage height, 13.17 ft), from rating curve extended above 4,800 cfs on basis of shape of previous curve defined to 7,000 cfs; maximum gage height, 16.04 ft Dec. 21, 1955; minimum discharge, 19 cfs Aug. 30 to Sept. 2, 1940.

Remarks.--Records good except those for periods of no gage-height record, backwater from debris, or shifting control, which are fair. No regulation or diversion above station.

Rating tables, water year 1958-59, except periods of backwater from debris or shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 11

Jan. 12 to Sept. 30

2.4	25	4.0	495	2.5	25	5.0	985
2.6	57	5.0	985	2.7	70	6.0	1,670
2.9	125	6.0	1,670	3.0	145	8.0	3,620
3.4	275	8.0	3,620	3.5	290	10.0	6,430
				4.0	480		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	52	350	946	1,080	864	1,650	1,060	260	140	58	34
2	36	48	450	575	875	792	2,090	792	*263	138	54	34
3	33	50	1,100	507	748	655	1,440	650	257	128	54	32
4	33	*242	800	519	721	552	1,090	588	266	120	54	36
5	33	330	600	519	660	488	914	1,170	396	130	54	233
6	32	1,260	500	543	680	440	765	1,290	356	125	52	440
7	33	888	850	725	606	424	645	946	342	148	49	233
8	121	1,520	750	1,140	538	416	552	809	304	142	49	180
9	100	1,650	650	2,200	504	*392	496	710	702	125	47	142
10	73	1,380	1,200	3,430	460	364	468	606	853	120	45	118
11	61	787	2,400	3,000	420	332	452	524	610	115	45	105
12	57	1,000	1,900	5,010	376	408	420	480	484	105	45	90
13	52	1,700	1,200	7,430	380	444	388	488	416	102	45	78
14	48	900	900	1,520	620	400	360	520	356	95	45	72
15	41	700	*705	1,070	610	380	336	574	318	92	43	70
16	39	550	575	968	892	400	311	508	297	*90	43	70
17	38	500	475	842	974	488	304	512	275	90	43	68
18	43	1,500	*427	798	820	685	290	570	251	88	43	92
19	262	3,400	384	788	1,100	760	275	552	230	88	43	260
20	248	3,000	359	700	1,040	635	266	488	218	82	43	392
21	152	1,800	443	601	809	809	269	444	200	80	43	565
22	122	1,300	427	524	650	814	300	400	194	78	43	360
23	128	900	390	640	560	716	*318	376	178	75	40	260
24	108	750	384	2,100	472	635	328	353	172	75	40	206
25	91	650	451	1,610	440	821	328	360	169	75	*56	178
26	79	550	925	1,170	560	1,500	368	368	172	72	34	617
27	69	440	1,280	*3,960	552	1,100	745	353	167	70	34	468
28	63	400	1,000	*2,830	645	1,220	963	325	161	68	40	356
29	59	380	1,130	1,750	--	1,070	831	300	158	68	43	287
30	53	360	1,520	1,340	--	1,400	1,160	284	*145	65	36	*242
31	52	--	1,150	1,260	--	1,360	--	269	--	61	34	--
Total	2,395	28,987	25,575	46,085	18,792	21,764	19,142	17,669	9,170	3,050	1,377	6,318
Mean	77.3	966	825	1,487	671	702	638	570	306	98.4	44.4	211
Cfs/m	0.805	10.1	8.59	15.5	6.99	7.31	6.65	5.94	3.19	1.02	0.462	2.20
In.	0.93	11.23	9.91	17.85	7.28	8.43	7.42	6.84	3.55	1.18	0.53	2.45
Ac-ft	4,750	57,490	50,730	91,410	37,270	43,170	37,970	35,050	18,190	6,050	2,730	12,530

Calendar year 1958: Max 4,400 Min 26 Mean 517 Cfs/m 5.39 In. 73.14 Ac-ft 374,500
Water year 1958-59: Max 5,010 Min 32 Mean 549 Cfs/m 5.72 In. 77.80 Ac-ft 397,300

Peak discharge (base, 3,600 cfs).--Nov. 18 (about 11 p.m.) 6,730 cfs (10.19 ft); Jan. 12 (6 a.m.) 6,670 cfs (10.15 ft); Jan. 27 (3 p.m.) 5,220 cfs (9.22 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 12 to Dec. 14; discharge estimated on basis of records for station near Canby and Little North Santiam River near Mehama. Backwater from debris Oct. 1 to Nov. 6. Shifting-control method used Dec. 15 to Jan. 11.

2000. Molalla River near Canby, Oreg.

Location (revised).--Lat 45°14'40" long 122°41'33", in NW $\frac{1}{4}$ sec.9, T.4 S., R.1 E., on right bank 0.3 mile downstream from Goods Bridge on Marquam-Canby road, 1.3 miles south of Canby, and 2.4 miles downstream from Milk Creek.

Drainage area.--323 sq mi.

Records available.--August 1928 to September 1959 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 102.02 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 24, 1933, staff gage and Oct. 24, 1933, to Sept. 26, 1955, water-stage recorder, 0.3 mile upstream at Goods Bridge at datum 2.98 ft higher. Sept. 27, 1955, to June 3, 1956, water-stage recorder at site 145 ft downstream from Goods Bridge at datum 1.98 ft higher.

Average discharge.--31 years, 1,134 cfs (821,000 acre-ft per year).

Extremes.--Maximum discharge during year, 12,200 cfs Jan. 12 (gage height, 11.09 ft); minimum, 20 cfs Aug. 27.

1928-59: Maximum discharge, 25,100 cfs Jan. 7, 1948 (gage height, 14.9 ft, site and datum then in use; about 15.0 ft, present site and datum); minimum, that of Aug. 29, 1959.

Remarks.--Records excellent. No regulation. Numerous small diversions for irrigation above station.

Revisions (water years).--WSP 1248: 1929-30, 1932.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 19

Nov. 20 to Sept. 30

1.3	47	4.0	1,370	1.1	18	3.0	785
1.6	110	6.0	3,500	1.3	65	4.0	1,460
2.0	220	8.0	6,150	1.6	152	6.0	3,500
2.5		10.0	9,900	2.0	290	8.0	6,150
3.0	670			2.5	515	11.0	12,000

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	92	128	871	2,500	2,740	1,730	2,970	2,030	815	310	82	33
2	79	125	947	1,990	2,290	1,760	4,160	1,670	*590	290	80	36
3	68	122	2,190	1,680	2,000	1,550	3,200	1,430	570	283	60	29
4	68	301	2,040	1,470	1,860	1,350	2,510	1,300	565	258	62	33
5	66	450	1,610	1,410	1,730	1,220	2,120	2,010	956	286	62	106
6	82	1,410	1,450	1,360	1,690	1,110	1,850	2,850	910	286	58	542
7	82	*2,000	1,750	1,810	1,610	1,030	1,590	2,210	878	294	50	469
8	90	2,560	2,020	2,480	1,490	1,000	1,390	1,850	791	302	42	326
9	254	3,100	1,770	4,570	1,420	988	1,260	1,660	1,120	262	40	258
10	163	3,420	1,810	7,880	1,390	975	1,170	1,450	1,690	241	40	196
11	138	2,000	3,990	6,940	1,270	884	1,080	1,280	1,400	220	40	165
12	125	1,520	5,770	10,200	1,150	*1,030	1,010	1,120	1,190	210	40	152
13	112	4,100	3,520	5,340	1,030	1,150	942	1,080	1,010	192	42	133
14	103	3,110	2,460	3,940	2,280	1,140	878	1,140	878	*181	42	118
15	94	2,130	*1,930	2,920	2,550	1,070	845	1,410	785	182	40	109
16	87	1,530	1,630	2,690	3,060	1,080	773	1,380	725	168	38	124
17	85	1,190	1,380	2,410	3,200	1,150	737	1,360	670	152	38	118
18	92	2,180	1,330	2,240	2,580	1,400	725	1,500	605	146	38	124
19	264	8,220	1,280	2,400	2,510	1,780	676	1,490	540	130	40	258
20	575	7,780	1,190	2,230	2,440	1,600	*637	1,360	490	121	38	605
21	353	4,870	1,400	1,940	2,020	1,850	632	1,220	455	115	38	923
22	264	3,080	1,360	1,760	1,690	2,130	853	1,100	420	106	40	725
23	293	2,360	1,240	1,730	1,520	1,930	*686	982	392	95	36	520
24	254	2,090	1,160	3,800	1,540	1,760	703	910	379	104	*31	397
25	205	1,890	1,280	3,910	1,260	1,750	708	890	366	98	25	330
26	181	1,610	1,770	2,900	1,420	3,650	797	916	402	95	25	814
27	166	1,370	2,770	6,480	1,380	3,040	1,190	890	374	89	22	1,010
28	155	1,180	2,300	*7,200	1,420	2,950	1,640	845	366	87	29	779
29	145	1,040	2,200	4,640	-	2,780	1,540	767	384	84	48	*632
30	132	949	3,010	3,490	-----	2,920	1,790	703	338	76	36	520
31	128	-----	2,570	3,090	-----	2,940	-----	654	-----	68	33	-----
Total	4,955	67,815	61,993	109,980	52,320	52,727	40,868	41,457	20,854	5,535	1,295	10,564
Mean	160	2,260	2,000	3,548	1,669	1,701	1,362	1,337	695	179	41.8	352
Cfsm	0.495	7.00	6.19	11.0	5.79	5.27	4.22	4.14	2.15	0.554	0.129	1.09
In.	0.57	7.81	7.14	12.66	6.02	6.07	4.70	4.77	2.40	0.64	0.15	1.22
Ac-ft	9,830	134,500	123,000	218,100	103,800	104,600	81,060	82,230	41,360	10,980	2,570	20,950

Calendar year 1958: Max 8,800 Min 49 Mean 1,197 Cfsm 3.71 In. 50.50 Ac-ft 866,500
 Water year 1958-59: Max 10,200 Min 22 Mean 1,289 Cfsm 3.99 In. 54.15 Ac-ft 933,000

Peak discharge (base, 7,200 cfs).--Nov. 19 (5:30 a.m.) 9,900 cfs (10.00 ft); Jan. 12 (11 a.m.) 12,200 cfs (11.09 ft); Jan. 27 (9 p.m.) 9,980 cfs (10.04 ft).

* Discharge measurement made on this day.

2010. Pudding River near Mount Angel, Oreg.

Location (revised).--Lat 45°03'47", long 122°49'45", in SE¼ sec.8, T.6 S., R.1 W., on left bank on downstream side of Cline Bridge, 1.5 miles west of Mount Angel and 3.6 miles upstream from Little Pudding River.

Drainage area.--204 sq mi.

Records available.--October 1939 to September 1959. Monthly discharge only January to September 1945, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 119.76 ft above mean sea level, datum of 1929. Prior to Sept. 22, 1945, staff or wire-weight gages at same site and datum.

Average discharge.--20 years, 712 cfs (515,500 acre-ft per year).

Extremes.--Maximum discharge during year, 5,370 cfs Jan. 12 (gage height, 25.14 ft); minimum, 11 cfs Aug. 27.
1939-59: Maximum discharge, 15,000 cfs Feb. 17, 1949; maximum gage height, 30.38 ft Feb. 18, 1949; minimum discharge, 6.1 cfs Aug. 26, 1958.

Remarks.--Records good. No regulation. Small diversions for irrigation above station.

Revisions (water years).--WSP 1094: 1943. WSP 1218: Drainage area. WSP 1248: 1943.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 4-6, Jan. 24 to Feb. 4; rate of change in stage used as a factor on many days)

0.5	10	4.0	256
.6	13	8.0	850
1.0	30	17.0	2,750
2.0	86	25.0	5,300
3.0	158		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		
1	*24	51	668	1,550	2,500	940	1,990	791	276	129	24	20		
2	22	59	680	1,390	2,090	902	2,090	683	256	116	22	20		
3	21	58	k1,140	1,200	1,790	834	1,830	629	*247	108	22	20		
4	20	*k91	1,070	1,050	1,550	752	1,540	584	240	102	22	20		
5	19	k184	926	1,000	1,330	696	1,310	k964	k414	105	21	k64		
6	20	k570	841	994	1,260	648	1,130	1,270	370	121	21	k192		
7	20	*k929	k923	1,140	1,220	612	962	1,070	308	122	18	188		
8	22	k1,100	926	k1,650	1,090	590	843	881	281	126	18	112		
9	k92	k1,320	843	k2,690	1,030	575	780	803	376	119	17	100		
10	61	1,570	873	k4,000	1,070	574	693	730	527	104	16	75		
11	46	1,140	k1,540	4,340	1,020	522	632	640	452	90	15	62		
12	38	k897	1,950	k5,220	927	*580	584	568	405	81	14	56		
13	36	k1,810	1,730	k4,850	k874	598	545	503	369	75	15	51		
14	35	1,760	1,410	k3,870	k1,870	590	509	521	k326	70	15	47		
15	33	1,430	1,160	3,040	2,170	548	500	674	300	67	14	44		
16	32	1,110	1,030	2,700	k2,580	522	461	630	274	62	13	50		
17	32	866	913	2,390	2,780	518	426	624	258	*56	13	50		
18	38	k1,220	*846	2,000	2,480	k532	406	722	234	50	14	52		
19	k73	k3,240	828	1,770	2,340	k836	378	717	210	48	15	k104		
20	k170	3,880	780	1,530	2,170	789	*353	648	193	48	15	k227		
21	112	3,160	k923	1,310	1,890	k920	335	593	181	44	14	k293		
22	82	2,360	936	1,170	1,610	1,060	324	548	173	40	14	240		
23	87	1,890	836	k1,110	1,420	1,020	313	502	162	38	13	167		
24	91	1,610	805	k1,630	1,240	962	305	456	158	40	14	130		
25	73	1,400	873	1,850	1,090	k970	295	439	159	42	*14	114		
26	64	1,180	k1,110	1,660	1,100	k1,740	357	454	150	40	13	k183		
27	58	990	1,720	*k2,620	1,020	1,800	526	427	147	40	12	263		
28	54	863	1,800	k4,040	967	1,780	712	395	143	37	13	199		
29	51	769	1,710	3,480	---	1,790	636	356	148	35	21	163		
30	48	709	1,770	k3,020	---	1,930	k720	324	144	34	24	*142		
31	48	---	1,670	2,640	---	2,030	---	298	---	31	21	---		
Total	1,622	38,216	35,210	73,104	44,478	29,160	22,465	19,444	7,881	2,220	517	3,448		
Mean	52.3	1,274	1,136	2,358	1,588	941	749	627	263	71.6	16.7	115		
Cfsm	0.256	6.25	5.57	11.6	7.78	4.61	3.67	3.07	1.29	0.351	0.082	0.564		
In.	0.30	6.97	6.42	13.33	9.11	5.32	4.10	3.54	1.44	0.40	0.09	0.63		
Ac-ft	3,220	75,800	69,840	145,000	88,220	57,840	44,560	38,870	16,630	4,400	1,030	6,840		
Calendar year 1958: Max				5,210	Min	6.7	Mean	727	Cfsm	3.56	In.	48.37	Ac-ft	526,300
Water year 1958-59: Max				5,220	Min	12	Mean	761	Cfsm	3.73	In.	50.65	Ac-ft	551,000

* Discharge measurement made on this day.

k Computed by using rate of change of stage as a factor.

2020. Pudding River at Aurora, Oreg.

Location (revised).--Lat 45°14'00", long 122°44'56", in SE¹ sec.12, T.4 S., R.1 W., on upstream side of bridge on U. S. Highway 99E at Aurora, 1.0 mile upstream from Mill Creek.

Drainage area.--479 sq mi.

Records available.--October 1928 to September 1959.

Gage.--Wire-weight gage read once daily. Datum of gage is 77.23 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 2, 1934, and June 1 to Sept. 15, 1947, staff gage at same site and datum.

Average discharge.--31 years, 1,212 cfs (877,500 acre-ft per year).

Extremes.--Maximum discharge during year, 7,940 cfs Jan. 13 (gage height, 19.20 ft, from graph based on gage readings); minimum, 32 cfs Aug. 14.

1928-59: Maximum discharge, 25,400 cfs Dec. 30, 1937 (gage height, 24.5 ft, from graph based on gage readings), from rating curve extended above 16,000 cfs; minimum, 28 cfs Aug. 24, 25, 29, 1958.

Maximum stage known, 25.0 ft about Jan. 7, 1923 (discharge, 27,900 cfs, from rating curve extended above 16,000 cfs).

Remarks.--Records good. Slight regulation at times in summer by mills on tributaries. Small diversions above station.

Revisions (water years).--WSP 1094: 1931, 1934, 1936(M), 1938, 1943. WSP 1218:

Drainage area.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

-0.4	27	2.0	328
-.2	42	4.0	740
0.0	60	7.0	1,630
.3	91	15.0	4,700
1.0	176	20.0	9,200

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*63	102	996	2,440	4,730	1,700	3,590	1,240	494	252	55	50
2	60	105	949	2,350	4,480	1,640	3,550	1,240	452	238	43	48
3	56	109	1,160	1,990	4,030	1,540	3,570	1,100	*440	193	42	45
4	56	110	1,710	1,800	3,470	1,400	3,150	999	405	182	42	46
5	56	*188	1,610	1,650	2,860	1,260	2,640	1,100	474	185	42	49
6	56	317	1,360	1,510	2,350	1,160	2,250	1,820	624	196	38	82
7	56	618	1,390	1,610	2,130	1,070	1,910	2,020	595	217	38	228
8	56	1,200	1,810	2,440	1,990	1,020	1,640	1,720	514	211	38	262
9	56	1,550	1,500	4,080	1,840	991	1,420	1,460	482	207	37	190
10	106	2,110	1,410	5,190	1,820	991	1,260	1,280	673	164	38	160
11	125	2,060	1,890	6,190	1,840	960	1,150	1,120	804	163	37	129
12	95	1,530	2,870	6,880	1,710	*923	1,050	999	716	142	37	108
13	83	1,630	3,030	7,700	1,560	1,010	970	892	642	129	34	98
14	77	2,450	2,600	6,840	2,530	1,080	905	814	586	*120	32	93
15	74	2,400	2,130	6,170	4,420	1,030	850	921	518	110	33	91
16	73	2,140	*1,780	5,660	4,670	986	822	1,110	482	105	35	87
17	71	1,890	1,540	5,280	4,900	947	764	1,060	450	101	38	91
18	77	1,600	1,360	4,820	4,790	941	718	1,100	424	91	37	99
19	102	2,540	1,390	4,320	4,560	1,210	675	1,250	393	80	37	119
20	180	3,960	1,350	3,800	4,340	1,530	635	1,260	355	74	38	197
21	259	4,330	1,380	3,150	3,990	1,580	*602	1,100	323	72	39	351
22	217	4,240	1,540	2,570	3,510	1,960	575	996	304	63	40	409
23	171	3,920	1,630	2,200	3,010	2,030	553	897	288	57	39	371
24	153	3,410	1,420	2,700	2,520	1,970	534	804	273	55	*39	288
25	141	2,820	1,520	3,620	2,170	1,920	518	742	265	57	41	235
26	131	2,260	2,020	3,540	1,980	2,620	508	714	255	58	42	220
27	121	1,800	3,020	*3,540	1,900	3,560	828	708	266	57	39	284
28	113	1,450	3,310	4,800	1,790	3,530	892	675	253	56	40	371
29	109	1,210	3,000	5,440	-	3,550	1,060	631	252	55	40	300
30	105	1,080	2,810	5,260	-----	3,530	1,030	578	253	53	41	300
31	102	-----	2,810	5,000	-----	3,590	-----	528	-----	54	49	-----
Total	3,202	55,369	58,095	124,520	85,870	53,209	40,417	32,876	13,255	3,817	1,220	5,401
Mean	103	1,846	1,874	4,017	3,067	1,716	1,347	1,061	442	123	39.4	180
Cfs/m	0.215	3.85	3.91	8.59	6.40	3.58	2.81	2.22	0.923	0.257	0.082	0.376
In.	0.25	4.30	4.51	9.67	6.67	4.13	3.14	2.55	1.03	0.30	0.09	0.42
Ac-ft	6,350	109,800	115,200	247,000	170,300	105,500	80,170	65,210	26,290	7,570	2,420	10,710
Calendar year 1958: Max	7,740	Min	28	Mean	1,288	Cfs/m	2.69	In.	36.49	Ac-ft	952,100	
Water year 1958-59: Max	7,700	Min	38	Mean	1,308	Cfs/m	2.73	In.	37.06	Ac-ft	946,500	

* Discharge measurement made on this day.

2030. Scoggin Creek near Gaston, Oreg.

Location (revised).--Lat 45°27'32", long 123°09'16", on line between secs. 26 and 27, T.1 S., R.4 W., on left bank 100 ft upstream from bridge on State Highway 47 (Tualatin Valley Highway), 1.7 miles upstream from mouth, and 1.7 miles northwest of Gaston.

Drainage area.--44.0 sq mi.

Records available.--October 1940 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 168.92 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 1, 1947, water-stage recorder at site 300 ft upstream at same datum. Oct. 1, 1947, to June 7, 1950, staff gage at site 150 ft upstream at same datum.

Average discharge.--19 years, 141 cfs (102,100 acre-ft per year).

Extremes.--Maximum discharge during year, 1,950 cfs Jan. 9 (gage height, 12.92 ft); minimum, 0.1 cfs Oct. 1, 3.
1940-59: Maximum discharge, 5,320 cfs Dec. 21, 1955 (gage height, 15.94 ft); minimum, 0.1 cfs Aug. 28, Sept. 30, Oct. 1, 3, 1958.

Remarks.--Records excellent except those for period of no gage-height record, which are good. Some diurnal fluctuation caused by logponds above station. Diversions by pumping for irrigation of 420 acres above station. Part of water supply (about 1 cfs) for Hillsboro is diverted from Sein Creek above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30			
1.8	0.2	2.4	20	1.8	1.4	3.0	95
1.9	.8	2.6	40	1.9	2.5	4.0	288
2.0	2.4	3.0	107	2.0	4.0	6.0	494
2.1	5.0	4.0	288	2.1	6.1	9.0	890
2.2	9.5	5.0	394	2.2	8.9	12.0	1,550
				2.4	18	13.0	2,000
				2.6	36		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.2	15	83	286	329	212	594	150	43	26	7.6	2.1
2	2.4	11	99	242	288	194	467	132	43	24	7.3	1.9
3	.2	11	140	185	237	174	380	116	*40	24	7.3	1.8
4	3.2	*41	122	161	204	163	321	114	40	24	5.6	15
5	4.5	57	110	156	180	152	264	134	47	33	6.4	41
6	4.7	147	104	142	178	146	212	134	41	31	5.6	24
7	.3	93	150	187	165	138	180	122	41	37	4.4	18
8	9.0	105	148	834	156	134	158	116	40	31	4.0	14
9	9.5	145	138	1,700	156	142	146	114	80	28	4.0	12
10	4.0	128	200	1,160	163	*134	140	103	70	27	3.6	11
11	7.7	94	478	839	156	120	132	95	70	22	3.6	9.4
12	7.7	172	348	987	142	116	126	92	62	20	4.2	10
13	7.7	280	*260	744	154	124	118	85	55	20	4.8	13
14	5.9	223	196	562	204	114	114	83	51	*20	4.6	9.4
15	2.0	156	158	456	191	110	110	85	48	18	4.4	6.2
16	5.4	122	142	401	a500	106	103	78	44	16	5.0	6.4
17	7.2	96	130	344	a400	106	101	78	44	14	5.6	7.6
18	19	318	126	302	a550	124	95	73	43	13	6.2	13
19	36	604	114	260	785	148	93	72	40	12	6.1	38
20	22	491	118	222	616	132	*88	67	36	11	5.6	35
21	14	420	183	194	475	136	83	62	34	8.9	6.4	28
22	12	291	165	210	394	130	78	62	33	8.8	6.2	20
23	10	191	150	375	351	144	75	58	32	8.4	6.6	17
24	9.5	148	144	890	314	144	72	54	31	8.9	*5.6	14
25	10	128	306	626	286	169	68	54	31	9.8	4.6	14
26	9.0	110	416	*491	267	222	72	52	33	8.9	4.6	24
27	5.4	95	482	783	237	212	92	52	31	8.8	4.4	25
28	2.0	86	442	598	216	258	118	52	31	10	4.6	20
29	3.2	80	400	486	--	277	122	48	33	11	4.4	18
30	9.5	78	374	425	--	508	165	47	29	9.2	8.0	17
31	12	---	332	373	---	579	---	46	---	8.4	5.4	---
Total	257.2	4,936	6,758	15,623	8,294	5,566	4,887	2,630	1,296	552.1	166.7	485.8
Mean	8.30	165	218	504	296	180	163	84.8	43.2	17.8	5.38	16.2
Cfsm	0.189	3.75	4.95	11.5	6.73	4.09	3.70	1.93	0.982	0.405	0.122	0.368
In.	0.22	4.17	5.71	13.20	7.01	4.70	4.13	2.22	1.10	0.47	0.14	0.41
Ac-ft	510	9,790	13,400	30,990	16,450	11,040	9,690	5,220	2,570	1,100	331	964

Calendar year 1958: Max 933 Min 0.1 Mean 144 Cfsm 3.27 In. 44.36 Ac-ft 104,100
Water year 1958-59: Max 1,700 Min 0.2 Mean 141 Cfsm 3.20 In. 43.48 Ac-ft 102,100

Peak discharge (base, 1,100 cfs).--Jan. 9 (12 m.) 1,950 cfs (12.92 ft); Jan. 12 (2 a.m.) 1,210 cfs (10.63 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for North Yamhill River at Pike.

2035. Tualatin River near Dilley, Oreg.

Location (revised).--Lat 45°28'30", long 123°07'23", in NE1/4NW1/4 sec.24, T.1 S., R.4 W., on left bank 5 ft upstream from highway bridge, 1.0 mile south of Dilley, and 1.5 miles downstream from Scoggin Creek.

Drainage area.--133 sq mi.

Records available.--October 1939 to September 1959. Prior to October 1940 monthly discharge only, published in WSP 1818.

Gage.--Water-stage recorder. Datum of gage is 151.57 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to June 16, 1950, chain, wire-weight, or staff gage at several sites within 200 ft of present site at same datum.

Average discharge.--20 years, 400 cfs (289,600 acre-ft per year).

Extremes.--Maximum discharge during year, 5,460 cfs Jan. 9 (gage height, 13.35 ft); minimum, 4.3 cfs Aug. 11.
1939-59: Maximum discharge, 13,200 cfs Dec. 22, 1955 (gage height, 14.78 ft); minimum, 0.4 cfs Sept. 5, 1951.

Remarks.--Records good. Diurnal fluctuation caused by dam below Gaston. Diversions above station for municipal water supply and irrigation, chiefly in Wapato Lake area.

Rating table, water year 1958-59 (gage height, in feet, and discharge,
in cubic feet per second)
(Shifting-control method used Sept. 19-30)

0.4	5.5	4.0	172	11.5	1,360
.6	9.0	7.0	400	12.0	2,060
1.0	22	10.0	815	13.0	4,360
1.5	41	11.0	1,080	13.5	6,060
2.0	65				

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.4	40	258	873	955	689	1,910	450	107	66	12	10
2	9.5	34	294	783	863	653	1,520	366	104	82	12	10
3	7.2	30	890	890	784	594	1,170	330	*104	59	11	7.6
4	7.0	95	393	559	700	514	985	304	105	52	9.5	14
5	8.4	168	340	510	611	457	853	344	125	66	10	109
6	9.2	*364	324	441	558	417	742	378	107	73	12	68
7	7.2	384	406	479	520	385	633	341	104	85	8.0	58
8	15	349	474	1,390	467	361	535	315	100	77	6.0	41
9	35	392	425	4,910	455	365	482	307	184	85	8.8	35
10	58	443	505	5,740	479	*384	414	284	221	58	7.8	29
11	17	329	1,030	2,480	457	347	377	261	202	48	5.5	25
12	16	359	1,060	*2,980	420	338	346	242	192	40	7.0	24
13	15	751	*855	2,420	416	352	323	226	188	58	10	25
14	15	712	689	1,840	584	344	305	221	152	*37	11	24
15	11	569	549	1,420	629	326	300	227	144	35	9.0	19
16	11	396	455	1,180	925	315	278	213	128	33	9.5	19
17	13	312	398	1,020	1,120	309	264	213	122	27	12	20
18	28	439	378	930	1,170	335	253	197	122	21	12	27
19	81	1,220	352	841	1,910	430	241	188	104	21	11	77
20	72	1,140	339	766	1,820	413	*220	179	94	18	12	96
21	41	1,110	504	698	1,390	410	202	169	89	14	11	96
22	31	898	511	677	1,110	408	192	159	81	14	11	70
23	27	718	466	812	985	423	183	152	73	14	15	51
24	25	556	440	1,960	789	440	178	140	80	17	*13	41
25	23	444	647	1,940	806	468	174	136	80	18	11	37
26	22	383	960	1,440	790	605	177	136	84	18	10	80
27	20	336	1,240	*1,980	754	665	234	131	78	15	9.8	113
28	18	299	1,250	1,960	708	728	130	76	21	12	8	81
29	14	270	1,120	1,500	---	770	391	124	84	25	12	62
30	18	251	1,070	1,220	---	1,150	447	120	72	18	14	54
31	21	---	985	1,060	---	1,550	---	114	---	12	14	---
Total	699.9	13,796	19,155	45,169	23,175	15,939	14,628	7,117	3,486	1,167	326.9	1,422.6
Mean	22.6	460	618	1,457	828	514	486	230	118	37.6	10.5	47.4
Cfs/m	0.170	3.46	4.65	11.0	6.23	3.86	3.67	1.73	0.872	0.283	0.079	0.356
In.	0.20	3.66	5.36	12.63	6.48	4.46	4.09	1.99	0.97	0.33	0.09	0.40
Ac-ft	1,390	27,360	37,990	89,590	45,970	31,610	29,010	14,120	6,910	2,310	648	2,820

Calendar year 1958: Max 2,680 Min 1.0 Mean 407 Cfs/m 3.06 In. 41.52 Ac-ft 294,400
Water year 1958-59: Max 4,610 Min 5.5 Mean 400 Cfs/m 3.01 In. 40.86 Ac-ft 289,700

Peak discharge (base, 4,000 cfs).--Jan. 9 (4 to 5 p.m.) 5,460 cfs (13.35 ft).

* Discharge measurement made on this day.

2075. Tualatin River near Willamette, Oreg.

Location (revised).--Lat 45°21'03", long 122°40'30" in SW¹/₄ sec.34, T.2 S., R.1 E., on left bank 300 ft upstream from bridge on State Highway 212, 1.2 miles northwest of Willamette, and 1.8 miles upstream from mouth.

Drainage area.--710 sq mi.

Records available.--July 1928 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 85.61 ft above mean sea level (levels by Corps of Engineers). Prior to June 12, 1941, staff gage at datum 1.02 ft higher.

Average discharge.--31 years, 1,485 cfs (1,075,000 acre-ft per year).

Extremes.--Maximum discharge during year, 11,500 cfs Jan. 14; minimum daily, 20 cfs Aug. 17-19.

1928-59: Maximum discharge, 29,300 cfs Dec. 23, 1933; minimum daily, 15 cfs Aug. 16-19, 22, Sept. 2, 3, 1958.

Remarks.--Records good. All records herein include flow of Oswego Canal which diverts water 4½ miles above station for recreational use in Oswego Lake and development of power between outlet of that lake and Willamette River, to which water is returned. Some regulation in low-water season by flashboards on crest of diversion dam for Oswego Canal. Several small diversions above station for irrigation.

Revisions (water years).--WSP 1014: 1943. WSP 1184: 1947. WSP 1248: 1941.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	70	99	836	3,590	6,410	3,510	4,020	1,050	425	274	46	30	
2	70	101	820	3,490	6,090	3,080	4,250	1,170	403	257	45	30	
3	68	117	888	3,260	5,580	2,670	4,580	1,120	*374	235	43	31	
4	67	148	1,050	2,980	5,100	2,340	4,440	1,020	370	225	41	35	
5	66	170	1,160	2,600	4,540	2,030	4,400	973	395	225	40	45	
6	66	313	1,110	2,190	3,960	1,820	4,170	1,030	416	224	37	58	
7	64	*528	1,080	1,960	3,430	1,680	3,810	1,080	429	248	34	83	
8	63	770	1,180	2,600	2,920	1,540	3,340	1,020	404	273	30	98	
9	61	780	1,380	5,360	2,600	1,460	2,850	940	395	299	29	105	
10	61	853	1,490	6,320	2,680	1,440	2,260	903	429	289	27	107	
11	65	985	2,060	7,250	2,760	*1,460	1,840	864	584	268	24	107	
12	70	921	2,720	9,460	2,670	1,370	1,600	801	635	225	22	104	
13	74	937	2,940	*11,100	2,460	1,310	1,440	722	640	199	22	101	
14	76	1,280	*2,890	11,300	3,070	1,260	1,300	691	597	176	21	98	
15	77	1,590	2,720	10,400	3,750	1,250	1,230	722	529	167	21	96	
16	78	1,490	2,400	9,440	4,260	1,190	1,170	806	479	*144	21	96	
17	80	1,210	1,970	8,430	4,580	1,140	1,120	870	453	108	20	95	
18	84	1,000	1,660	7,580	4,630	1,120	1,030	830	420	80	20	97	
19	91	1,340	1,470	6,780	4,860	1,210	984	802	402	94	20	103	
20	100	2,250	1,350	6,140	4,970	1,360	934	779	383	87	21	114	
21	137	2,700	1,420	5,470	5,090	1,470	*880	733	343	77	21	207	
22	179	2,920	1,700	4,840	5,230	1,520	824	676	314	69	22	250	
23	161	3,030	1,900	4,260	5,270	1,560	761	621	301	64	23	234	
24	137	2,980	1,870	4,520	5,240	1,560	717	583	282	60	24	200	
25	124	2,700	1,890	4,760	5,050	1,650	696	550	269	55	26	170	
26	114	2,140	2,240	4,860	4,760	2,090	676	515	269	53	*28	156	
27	108	1,560	2,900	5,580	4,380	2,500	681	515	270	51	29	148	
28	105	1,210	3,270	6,260	3,940	2,760	728	506	276	50	30	185	
29	101	1,020	3,450	*6,390	-	2,820	824	511	280	50	30	226	
30	99	921	3,590	6,550	-	3,280	941	494	274	49	30	203	
31	98	-	3,650	6,580	-	3,650	-	461	-	47	30	-	
Total	2,814	38,063	61,054	182,300	120,220	59,100	58,276	24,358	12,042	4,722	877	3,612	
Mean	90.8	1,269	1,969	5,881	4,294	1,901	1,943	786	401	152	28.3	120	
Cfsm	0.128	1.79	2.77	8.28	6.05	2.68	2.74	1.11	0.565	0.214	0.040	0.169	
In.	0.15	1.99	3.20	9.55	6.30	3.10	3.05	1.28	0.63	0.25	0.05	0.19	
Ac-ft	5,580	75,500	121,100	361,600	238,500	117,200	115,600	48,310	23,880	9,370	1,740	7,160	
Calendar year 1958: Max			7,580	Min	15	Mean	1,600	Cfsm	2.25	In.	30.58	Ac-ft	1,158,000
Water year 1958-59: Max			11,300	Min	20	Mean	1,555	Cfsm	2.19	In.	29.74	Ac-ft	1,126,000

* Discharge measurement made on this day.

2080. Clackamas River at Big Bottom, Oreg.

Location.--Lat 45°01'00", long 121°55'00", in SE $\frac{1}{4}$ sec.26, T.6 S., R.7 E., on right bank just downstream from Pot Creek at lower end of Big Bottom, half a mile upstream from site of proposed dam and 28 miles southeast of Estacada. Inflow between gage and measuring section 2,000 ft downstream is included in records.

Drainage area.--136 sq mi at cableway 2,000 ft downstream, where all discharge measurements are made.

Records available.--April 1920 to September 1959. Monthly discharge only April 1920, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 2,057.56 ft above mean sea level, datum of 1929 (Public Roads Administration bench mark).

Average discharge.--39 years, 476 cfs (344,600 acre-ft per year).

Extremes.--Maximum discharge during year, 2,120 cfs Jan. 12 (gage height, 5.40 ft); minimum, 229 cfs Oct. 2-5, 13-18, Nov. 1-3.

1920-59: Maximum discharge, 6,750 cfs Mar. 31, 1931, Dec. 15, 1946, from rating curves extended above 3,500 and 1,700 cfs, respectively; maximum gage height, 8.96 ft Dec. 21, 1955; minimum discharge, 184 cfs Sept. 12, 1942.

Remarks.--Records fair. No regulation or diversion above station.

Cooperation.--Water-stage-recorder graph and nine discharge measurements furnished by Portland General Electric Co.

Revisions (water years).--WSP 1218: Drainage area. WSP 1248: 1943.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.7	205
2.5	470
3.0	690
4.0	1,230
5.0	1,840

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	232	232	474	505	775	418	750	823	421	302	253	244
2	232	229	509	477	710	428	916	710	428	298	253	241
3	232	235	812	446	670	421	852	630	421	293	253	241
4	232	298	660	424	655	414	812	581	418	292	253	250
5	*232	292	558	424	610	407	785	615	494	292	253	283
6	232	430	545	424	600	396	745	635	463	292	*250	292
7	232	480	725	424	558	396	690	586	428	298	247	268
8	271	538	680	494	533	400	640	581	410	292	247	253
9	244	595	615	615	513	404	615	581	456	286	247	247
10	238	550	620	999	498	396	600	563	470	283	244	247
11	235	424	911	1,110	477	386	600	533	428	283	244	253
12	232	455	960	1,780	460	410	581	521	410	280	244	247
13	232	856	770	1,250	452	421	558	550	400	280	244	244
14	229	600	675	999	474	404	545	625	390	277	244	244
15	229	477	605	856	446	396	521	635	376	274	244	250
16	229	418	558	806	442	396	505	590	390	274	241	247
17	229	382	521	755	432	414	498	568	376	274	241	244
18	247	744	494	735	424	463	484	554	362	271	241	265
19	365	1,590	474	700	418	474	466	521	354	271	241	283
20	330	1,840	456	640	418	452	463	498	348	268	244	295
21	274	1,280	466	595	407	477	470	484	340	262	241	280
22	253	966	449	563	396	488	488	477	334	262	241	268
23	253	862	424	620	390	488	502	480	330	265	241	259
24	247	834	418	1,180	382	484	521	480	326	262	241	256
25	241	735	424	1,050	382	494	521	488	320	259	241	259
26	241	625	513	916	396	620	554	484	320	259	238	393
27	238	545	577	1,500	386	568	645	470	316	259	241	316
28	238	*494	484	1,280	386	590	706	452	320	259	241	295
29	235	474	491	*1,040	---	*581	715	442	316	259	241	274
30	235	460	537	916	---	665	872	428	306	256	*241	265
31	*235	---	513	850	---	705	---	*421	---	256	244	---
Total	7,624	18,943	17,895	25,373	13,690	14,456	18,629	17,006	11,471	8,540	7,579	8,003
Mean	246	625	577	818	489	466	549	549	382	275	241	281
Cfsm	1.81	4.64	4.24	6.01	3.60	3.43	4.57	4.04	2.81	2.02	1.79	1.96
In.	2.08	5.18	4.89	6.94	3.74	3.95	5.09	4.65	3.14	2.34	2.07	2.19
Ac-ft	15,120	37,570	35,490	50,330	27,150	28,670	36,950	33,730	22,750	16,940	15,030	15,870

Calendar year 1958: Max 2,290 Min 229 Mean 522 Cfsm 3.84 In. 52.11 Ac-ft 377,900
 Water year 1958-59: Max 1,840 Min 229 Mean 464 Cfsm 3.41 In. 46.26 Ac-ft 335,600

Peak discharge (base, 1,200 cfs).--Nov. 20 (5 a.m.) 2,010 cfs (5.24 ft); Jan. 12 (9 a.m.) 2,120 cfs (5.40 ft); Jan. 24 (2 p.m.) 1,410 cfs (4.31 ft); Jan. 27 (1 p.m.) 1,820 cfs (4.97 ft).

* Discharge measurement made on this day.

Reservoirs in Willamette River basin, Oreg.

1955. Haskins Creek Reservoir near McMinnville, Oreg.--Lat 45°18'40", long 123°21'15", in NW¼ sec.18, T.3 S., R.5 W., on control tower 250 ft upstream from dam on Haskins Creek and 11 miles northwest of McMinnville. Drainage area, 7.1 sq mi, approximately. Records available, October 1951 to September 1959. Staff gage read once daily. Datum of gage is at mean sea level (levels by city of McMinnville). Maximum contents observed during year, 744 acre-ft Apr. 30 (elevation, 835.5 ft); reservoir empty Nov. 26 to Jan. 7, Jan. 11 to Apr. 9. Maximum contents observed during period 1951-59, 748 acre-ft Nov. 17, 1954 (elevation, 835.65 ft); reservoir empty most of time during winter months.

Reservoir is formed by earth-fill dam equipped with 5 siphon spillways which act as overflow weirs until priming occurs (approximately 835.5 ft elevation). Capacity of reservoir is 733 acre-ft between elevations 761.5 (invert of outlet tunnel) and 835.0 ft (crest of siphon spillways). Rated capacity of three siphons is 700 cfs each and remaining two, 350 cfs each. Under normal operation, reservoir is filled in the spring (April or May) and drained when fall rains start. There is no planned storage during winter months; however, during periods of heavy runoff, inflow may be greater than capacity of outlet tunnel and there may be some temporary storage. Water is used for municipal supply of city of McMinnville.

2086. Timothy Lake near Government Camp, Oreg.--Lat 45°06'50", long 121°48'35", in NE¼ sec.27, T.5 S., R.8 E., in intake structure 350 ft upstream from dam on Oak Grove Fork, 0.5 mile upstream from Anvil Creek, and 14 miles south of Government Camp. Drainage area, 53.5 sq mi. Records available, May 1956 to September 1959. Prior to October 1957, published as Timothy Meadows Reservoir. Once-daily readings of Bristol pressure gage usually obtained by Three Lynx powerhouse personnel by microwave transmission. Datum of gage is at mean sea level (Portland General Electric Co. bench mark). Prior to Nov. 26, 1956, staff gage at same site and datum. Maximum contents observed during year, 66,270 acre-ft May 13-15 (elevation, 3,190.4 ft); minimum observed, 50,690 acre-ft Nov. 6, 7 (elevation, 3,178.4 ft). Maximum contents observed during period 1956-59, 66,820 acre-ft May 13, 14, 18-24, 27, 1958 (elevation, 3,190.8 ft); minimum observed, 16,010 acre-ft Feb. 24, 1957 (elevation, 3,144.5 ft).

Reservoir is formed by earth-fill dam with concrete spillway built by Portland General Electric Co. Usable storage began May 28, 1956. Capacity, 65,710 acre-ft at elevation 3,190.0 ft (normal maximum operating level). Usable capacity, 61,650 acre-ft between elevations 3,125.0 (invert of outlet pipe) and 3,190.0 ft (top of taintor gates). Storage of 4,060 acre-ft below elevation 3,125.0 ft not normally available for release. Water is used for power generation.

Month-end elevation and contents, water year October 1956 to September 1959

Date	Elevation (feet)†	Usable contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)‡	Total contents (acre-feet)	Change in contents (acre-feet)
Haskins Creek Reservoir			Timothy Lake			
Sept. 30.....	820.2	442	-	3,188.3	63,400	-
Oct. 31.....	824.1	509	+67	3,179.2	51,680	-11,720
Nov. 30.....	-	0	-509	3,181.3	54,300	+2,620
Dec. 31.....	-	0	0	3,182.9	56,320	+2,020
Calendar year 1958.....	-	-	0	-	-	+12,470
Jan. 31.....	-	0	0	3,188.0	62,990	+6,670
Feb. 28.....	-	0	0	3,187.3	62,060	-930
Mar. 31.....	-	0	0	3,185.2	59,290	-2,770
Apr. 30.....	835.5	744	+744	3,188.7	63,940	+4,650
May 31.....	835.1	735	-9	3,190.0	65,710	+1,770
June 30.....	835.1	735	0	3,189.2	65,440	-270
July 31.....	832.6	679	-56	3,189.9	65,570	+130
Aug. 31.....	826.8	559	-120	3,190.0	65,710	+140
Sept. 30.....	835.1	735	+176	3,182.4	55,690	-10,020
Water year 1958-59.....	-	-	+293	-	-	-7,710

† Gage read at 4 p.m.

‡ Gage read at 8 a.m.

2087. Oak Grove Fork near Government Camp, Oreg.

Location.--Lat 45°06'50", long 121°48'50", in NE $\frac{1}{4}$ sec.27, T.5 S., R.8 E., on right bank 0.1 mile upstream from Anvil Creek, 0.3 mile downstream from Timothy Lake, and 14 miles south of Government Camp.

Drainage area.--54.3 sq mi.

Records available.--July 1956 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 3,041.83 ft above mean sea level (Portland General Electric Co. bench mark).

Extremes.--Maximum discharge observed during year, 408 cfs Sept. 5 (discharge measurement, gage height not determined); minimum daily, 37 cfs Oct. 4, 5.
1956-59: Maximum discharge, 410 cfs Nov. 10, 1957 (gage height, 2.87 ft), but may have been higher Sept. 5, 1959; minimum daily, 24 cfs for many days in 1956.

Remarks.--Records fair. Regulation by Timothy Lake (see p. 177). No diversion above station.

Cooperation.--Water-stage recorder graph and 14 discharge measurements furnished by Portland General Electric Co.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.3	33	2.5	260
1.5	52	3.0	473
2.0	124		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	139	38	149	48	45	122	45	*41	140	102	40	113
2	156	38	133	120	56	161	45	40	156	120	*40	161
3	134	204	45	154	54	156	44	40	166	95	40	247
4	37	227	118	158	46	174	44	40	154	40	40	218
5	*37	212	142	156	50	174	43	99	77	40	40	220
6	*150	103	120	171	55	176	42	171	40	41	41	48
7	253	39	65	168	80	174	42	171	40	40	40	47
8	151	41	95	156	96	171	41	134	113	62	40	197
9	222	41	93	126	97	176	41	73	159	64	40	182
10	212	121	88	60	117	182	40	60	154	90	46	154
11	186	144	46	45	124	182	40	70	176	62	50	196
12	282	136	45	45	138	174	40	99	107	40	50	215
13	267	43	45	44	130	168	90	111	40	62	50	224
14	260	43	44	44	117	140	106	130	41	76	45	277
15	264	99	44	43	149	154	113	239	95	72	38	301
16	260	89	65	43	158	182	126	253	41	70	40	301
17	257	188	98	43	168	176	128	190	104	61	43	297
18	240	108	116	43	174	168	134	76	151	36	44	290
19	155	47	130	43	179	163	140	103	116	38	44	260
20	234	46	142	43	179	168	146	119	41	58	44	278
21	240	46	138	69	182	99	140	126	41	80	44	278
22	237	46	145	63	185	59	134	126	110	77	44	290
23	237	46	163	43	188	179	132	130	128	74	44	297
24	230	46	168	45	190	151	117	132	128	67	44	297
25	230	46	171	45	190	126	40	117	100	39	44	274
26	163	60	123	45	179	95	40	134	51	39	44	61
27	216	46	149	46	168	108	52	134	41	39	44	133
28	237	91	*154	46	188	45	41	144	*41	39	44	264
29	244	*111	149	45	-	44	41	156	77	40	44	247
30	240	111	76	45	-----	*98	41	*161	80	40	44	264
31	198	-----	95	45	-----	56	-----	161	-----	40	44	-----
Total	6,568	2,658	3,354	2,290	3,704	4,401	2,268	3,780	2,908	1,665	1,339	6,631
Mean	205	88.6	108	73.9	132	142	75.6	122	96.9	60.2	43.2	221
Ac-ft	12,630	5,270	6,650	4,540	7,350	8,730	4,500	7,500	5,770	3,700	2,660	13,150

Adjusted for change in contents in Timothy Lake

	Mean	Cfs	In.	Ac-ft	Mean	Cfs	In.	Ac-ft	Mean	Cfs	In.	Ac-ft
Mean	14.8	133	141	182	116	96.9	154	151	92.4	62.3	45.5	52.6
Cfs	0.273	2.45	2.60	3.35	2.14	1.78	2.84	2.78	1.70	1.15	0.838	0.968
In.	0.31	2.72	2.99	3.67	2.22	2.06	3.16	3.20	1.90	1.32	0.97	1.08
Ac-ft	910	7,890	8,670	11,210	6,420	5,960	9,150	9,270	5,500	3,630	2,800	3,130

Observed

Calendar year 1958: Max	282	Min	37	Mean	98.2	Ac-ft	71,060
Water year 1958-59: Max	301	Min	37	Mean	114	Ac-ft	82,450

Adjusted

Calendar year 1958: Mean	115	Cfs	2.12	In.	28.84	Ac-ft	83,530
Water year 1958-59: Mean	103	Cfs	1.90	In.	25.80	Ac-ft	74,740

* Discharge measurement made on this day.

2090. Oak Grove Fork above powerplant intake, Oreg.

Location (revised).--Lat 45°04'20", long 121°57'00", on line between secs.3 and 4, T.6 S., R.7 E., on right bank 0.2 mile upstream from Spring Creek, 0.7 mile upstream from Kink Creek, 1.1 miles upstream from Portland General Electric Co. diversion dam, and 24 miles southeast of Estacada. Records include flow of Spring Creek.

Drainage area.--126 sq mi, includes that of Spring Creek.

Records available.--May 1909 to September 1959. Monthly discharge only for some periods, published in WSP 1318. Published as both Oak Grove Fork of Clackamas River at proposed intake, near Cazadero and Oak Grove Fork of Clackamas River at intake, near Cazadero May 1909 to September 1910, as Oak Grove Fork of Clackamas River at intake, near Cazadero October 1910 to September 1921, and as Oak Grove Fork at Portland Electric Power Co.'s intake October 1921 to September 1929.

Gage.--Water-stage recorder. Datum of gage is 2,052.31 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. May 21, 1909, to Nov. 17, 1911, staff gage and Mar. 26, 1912, to Sept. 30, 1923, water-stage recorder, at various sites 0.7 mile downstream, below Kink Creek, at different datum.

Average discharge.--50 years, 507 cfs (367,100 acre-ft per year).

Extremes.--Maximum discharge during year, 1,030 cfs Nov. 18 (gage height, 3.18 ft); minimum, 245 cfs Nov. 1-3.

1909-59: Maximum discharge, 5,000 cfs Jan. 7, 1923 (gage height, 5.45 ft, site and datum then in use), computed from flow at stations on Clackamas River; minimum, 236 cfs Oct. 15, 16, 18, 1931 (gage height, 1.42 ft).

Remarks.--Records good. Flow regulated by Timothy Lake beginning in 1956 (see p. 177). No diversion above station.

Cooperation.--Water-stage recorder graph and 12 discharge measurements furnished by Portland General Electric Co.

Revisions (water years).--WSP 1248: 1909, 1910(M), 1916, 1918, 1923, 1932.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.9	235	2.5	510
2.2	350	3.0	860

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	387	248	470	410	552	516	552	*522	504	355	268	337
2	405	245	500	480	534	510	619	486	510	385	*268	410
3	390	449	492	504	546	528	591	462	534	365	268	536
4	252	540	498	504	546	540	570	450	528	290	268	534
5	*252	516	516	504	522	540	558	540	474	290	268	540
6	346	504	504	510	522	540	540	664	385	290	268	301
7	498	332	534	504	522	540	516	640	370	290	268	279
8	462	410	510	504	522	546	504	591	440	301	268	465
9	462	435	504	504	516	558	492	510	534	328	268	510
10	522	492	546	516	522	552	486	474	516	536	275	435
11	370	480	848	552	522	546	486	480	528	314	283	492
12	552	534	768	776	522	552	474	504	450	279	279	540
13	528	516	612	633	528	546	516	534	350	298	279	499
14	528	415	534	552	492	498	534	598	341	323	275	522
15	534	430	492	504	528	498	534	760	394	318	261	540
16	528	375	486	510	534	546	528	776	332	314	268	540
17	534	522	486	486	534	552	534	696	380	310	268	540
18	516	616	510	486	540	558	534	528	445	279	272	540
19	486	768	504	468	540	552	528	522	420	275	272	534
20	528	744	504	440	540	546	534	522	314	290	272	540
21	528	680	504	445	540	504	534	522	310	318	272	534
22	522	591	492	462	540	410	534	522	360	314	272	540
23	528	577	504	474	540	577	540	522	405	314	272	540
24	528	591	504	696	540	540	534	522	405	310	272	546
25	522	522	504	633	552	546	435	516	385	275	272	552
26	462	492	504	584	534	516	435	528	318	272	272	492
27	456	460	504	848	540	522	460	522	305	272	272	404
28	522	456	*498	752	*558	462	492	522	*305	268	275	558
29	528	*474	522	656	-----	*450	504	522	332	268	272	528
30	528	462	498	*605	-----	558	546	522	336	268	*272	534
31	*498	-----	486	577	-----	528	-----	*522	-----	268	275	-----
Total	14,702	14,856	16,338	17,079	14,928	16,377	15,664	17,001	12,210	9,377	8,414	14,862
Mean	474	495	527	551	533	528	522	548	407	302	271	495
Ac-ft	29,160	29,470	32,410	33,880	29,610	32,480	31,070	33,720	24,220	18,600	16,690	29,480
Calendar year 1958: Max			1,360		Min 245		Mean 466		Ac-ft 337,400			
Water year 1958-59: Max			848		Min 245		Mean 471		Ac-ft 340,800			

* Discharge measurement made on this day.

2095. Clackamas River above Three Lynx Creek, Oreg.

Location.--Lat 45°07'30", long 122°04'20", in NE $\frac{1}{4}$ sec.21, T.5 S., R.6 E., on right bank just downstream from powerplant, 500 ft upstream from Three Lynx Creek and 17 miles southeast of Estacada.

Drainage area.--479 sq mi.

Records available.--April 1909 to December 1913, October 1921 to September 1959. Prior to October 1911 monthly discharge only, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 1,091.69 ft above mean sea level, datum of 1929, supplementary adjustment of 1947 (levels by Portland General Electric Co.). Apr. 23, 1909, to Jan. 4, 1914, staff gage at about same site and datum.

Average discharge.--42 years, 1,943 cfs (1,407,000 acre-ft per year).

Extremes.--Maximum discharge during year, 13,300 cfs Jan. 12 (gage height, 8.95 ft); minimum, 324 cfs Oct. 17; minimum daily, 427 cfs Oct. 5.
1909-13, 1921-59: Maximum discharge, 34,800 cfs Mar. 31, 1931 (gage height, 15.5 ft), from rating curve extended above 11,000 cfs; minimum observed, that of Oct. 17, 1958; minimum daily, that of Oct. 5, 1958.

Remarks.--Records excellent except those for periods of shifting control or no gage-height record, which are good. Water diverted from Oak Grove Fork is used in powerplant on Clackamas River just above station. Minor regulation since 1956 by Timothy Lake (see p. 177). Considerable diurnal fluctuation during periods of low flow.

Cooperation.--Water-stage-recorder graph and eight discharge measurements furnished by Portland General Electric Co.

Revisions (water years).--WSP 1184: Drainage area. WSP 1248: 1910(M), 1912, 1948-50(m).

Rating table, water year 1958-59, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

0.6	390	5.0	4,730
1.5	880	7.0	8,590
3.0	2,170	8.0	10,900

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	678	a1,000	1,810	2,660	3,310	2,400	3,820	*3,720	1,790	1,070	734	760
2	820	a900	2,040	2,500	2,950	2,470	a5,000	3,010	1,910	1,020	739	873
3	762	a1,000	3,580	2,240	2,760	2,320	a3,800	2,550	1,860	996	744	1,020
4	606	a1,200	2,840	2,020	2,680	2,170	3,910	2,360	1,810	782	714	994
5	*427	a1,300	2,420	2,030	2,480	2,080	3,610	2,600	2,180	858	679	1,150
6	909	2,730	2,230	1,900	2,500	2,010	3,380	3,030	1,840	885	*754	1,230
7	777	2,980	2,890	1,900	2,340	1,940	3,040	2,880	1,580	931	702	794
8	1,050	3,550	2,840	2,350	2,210	1,960	2,770	2,850	1,730	923	704	1,180
9	968	3,930	2,540	3,650	2,210	1,960	2,600	2,760	2,030	948	686	1,120
10	883	3,710	2,680	6,500	2,110	1,910	2,530	2,570	2,400	886	708	942
11	796	2,530	4,510	6,860	2,020	1,810	2,500	2,210	2,130	728	716	1,110
12	822	2,480	5,160	10,800	1,920	1,900	2,270	2,460	1,940	762	712	1,060
13	868	5,050	3,770	a7,000	1,890	2,010	2,410	2,430	1,650	890	720	964
14	864	a4,400	3,000	a4,400	a1,900	1,860	2,350	2,760	1,350	826	702	1,030
15	876	a3,400	2,640	3,610	a1,900	1,770	2,230	2,890	1,610	849	687	1,060
16	845	a2,600	2,350	3,270	a2,000	1,850	2,180	2,720	1,460	836	678	1,060
17	850	a2,100	2,150	2,990	2,020	2,010	2,130	2,550	1,420	902	691	1,040
18	978	3,930	2,010	2,890	1,980	2,390	2,020	2,320	1,430	763	670	1,110
19	1,340	9,510	1,890	2,840	2,000	2,630	1,950	2,220	1,420	569	674	1,230
20	1,370	9,800	1,780	2,620	2,110	2,440	1,910	2,140	1,270	882	666	1,490
21	1,080	6,480	1,800	2,380	2,000	2,540	1,920	2,070	1,030	812	680	1,540
22	1,030	4,380	1,810	2,290	1,890	2,580	2,040	2,020	1,320	824	683	1,400
23	1,030	3,570	1,730	2,670	1,830	2,550	2,150	2,090	1,260	868	644	1,280
24	976	3,330	1,700	6,240	1,790	2,550	2,310	2,040	1,240	896	710	1,200
25	917	2,960	1,750	5,240	1,800	2,540	2,260	2,170	1,200	768	714	1,180
26	778	2,510	2,390	4,140	1,930	3,480	2,070	2,120	1,150	574	696	2,690
27	943	2,020	2,920	7,810	1,900	3,170	2,700	2,060	*1,090	980	714	2,050
28	a1,100	*1,980	2,510	6,930	*2,020	3,170	3,140	1,950	892	788	826	1,780
29	a1,200	1,800	*2,660	4,920	---	3,030	3,130	1,840	1,130	775	*723	1,500
30	a1,400	1,720	3,240	4,000	---	3,430	3,790	1,760	1,090	742	497	1,430
31	a1,200	---	2,960	*3,650	---	3,580	---	1,720	---	746	698	---
Total	29,143	98,850	80,600	125,300	60,450	74,510	81,920	74,870	46,212	26,076	21,645	37,247
Mean	940	3,295	2,600	4,042	2,159	2,404	2,731	2,415	1,540	841	698	1,242
Cfsm	1.96	6.88	5.43	8.44	4.51	5.02	5.70	5.04	3.22	1.76	1.46	2.59
In.	2.26	7.67	6.26	9.73	4.69	5.78	6.36	5.81	3.59	2.02	1.68	2.89
Ac-ft	57,800	196,100	159,900	248,500	119,900	147,800	162,500	148,500	91,660	51,720	42,930	73,880

Calendar year 1958: Max 11,900 Min 427 Mean 2,110 Cfsm 4.41 In. 59.79 Ac-ft 1,528,000
Water year 1958-59: Max 10,800 Min 427 Mean 2,073 Cfsm 4.33 In. 58.74 Ac-ft 1,501,000

Peak discharge (base, 8,100 cfs).--Nov. 19 (1 a.m.) 12,100 cfs (8.58 ft); Jan. 12 (7:30 a.m.) 13,300 cfs (8.95 ft); Jan. 27 (12 m.) 10,400 cfs (7.78 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records of powerplant operation and records for stations at Big Bottom and Estacada.

Note.--Shifting-control method used Oct. 1 to Dec. 11.

2100. Clackamas River at Estacada, Oreg.

Location.--Lat 45°18'00", long 122°21'10", in NE 1/4 sec.19, T.3 S., R.4 E., on left bank 0.2 mile downstream from River Mill Dam and 1.5 miles northwest of Estacada.

Drainage area.--671 sq mi.

Records available.--April 1908 to September 1959. Monthly discharge only April 1908, published in WSP 1318. Published as "near Cazadero" January 1909 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 298.93 ft above mean sea level (levels by Portland General Electric Co.). Apr. 6 to Dec. 31, 1908, staff gage at site 1.3 miles upstream; Jan. 1 to Nov. 19, 1909, staff gage and Nov. 20, 1909, to Oct. 9, 1922, water-stage recorder, at site 5.8 miles upstream; Oct. 10 to Nov. 14, 1922, staff gage and Nov. 15, 1922, to Sept. 30, 1957, water-stage recorder, at site 6.3 miles upstream, all at different datum.

Average discharge.--51 years, 2,692 cfs (1,949,000 acre-ft per year).

Extremes.--Maximum discharge during year, 18,600 cfs Jan. 12 (gage height, 8.88 ft); minimum, 141 cfs Sept. 8 (gage height, 0.56 ft); minimum daily, 285 cfs Oct. 4, 5, caused by filling of North Fork forebay.

1908-59: Maximum discharge, 60,800 cfs Mar. 31, 1931 (gage height, 24.5 ft, site and datum then in use), by computation of flow over dam, from data furnished by Portland General Electric Co.; minimum, that of Sept. 8, 1959; minimum daily, that of Oct. 4, 5, 1958.

Revisions.--The maximum discharge for the water year 1919 has been revised to 23,800 cfs Jan. 23, 1919 (gage height, 37.02 ft, site and datum then in use), superseding figure published in WSP 514 and 1318.

Remarks.--Records excellent. Large diurnal fluctuations and some regulation caused by powerplants at River Mill Dam and, since 1958, North Fork Dam. Minor regulation since 1956 by Timothy Lake (see p. 177). Two small diversions above station for Oregon City and Estacada municipal water supplies.

Cooperation.--Water-stage-recorder graph and 13 discharge measurements furnished by Portland General Electric Co.

Revisions (water years).--WSP 1184: Drainage area (former site). WSP 1248: 1908-9, 1910(M), 1916, 1917(M), 1922(M), 1923. WSP 1288. Drainage area (former site).

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

0.9	280	4.0	3,710
1.0	625	6.0	8,490
2.0	1,000	9.0	19,100
3.0	2,150		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	820	*582	2,640	4,350	5,420	3,020	5,600	5,420	2,940	1,770	687	832
2	1,030	318	2,480	3,840	4,360	3,960	8,140	*4,370	2,720	1,950	*701	979
3	654	415	4,530	5,040	4,230	3,620	6,750	3,600	2,760	780	796	1,140
4	*285	623	4,460	2,500	3,390	3,370	7,000	3,770	2,610	457	516	1,230
5	285	656	*3,750	5,070	3,670	3,230	4,650	3,550	2,920	553	*913	1,070
6	574	1,940	3,200	2,910	3,490	3,160	4,680	4,470	2,770	2,730	1,060	1,550
7	508	4,720	3,870	2,760	3,540	2,100	4,390	4,430	598	1,240	932	792
8	445	5,950	4,720	3,430	2,620	1,740	3,830	4,140	2,880	1,510	768	1,470
9	797	5,920	4,370	*3,920	3,220	3,120	3,670	3,880	3,160	1,270	710	1,440
10	876	6,670	4,940	9,740	3,350	3,130	3,530	3,900	2,980	1,180	911	1,340
11	1,000	3,870	8,290	10,200	3,140	3,000	3,280	2,470	3,240	660	890	2,270
12	1,040	3,880	10,900	15,300	2,580	2,140	1,520	4,070	3,320	445	850	304
13	522	7,640	6,380	9,820	2,700	2,820	3,310	3,330	2,140	2,150	863	348
14	656	6,010	4,180	6,940	2,740	2,470	3,470	3,280	1,210	798	864	1,060
15	1,100	5,000	4,600	5,620	1,250	1,140	3,100	3,640	2,870	1,040	740	1,430
16	647	3,340	3,490	5,300	2,840	3,040	2,650	3,890	2,370	827	710	1,340
17	286	2,720	2,660	4,270	3,240	2,740	2,630	3,220	2,450	748	900	1,440
18	618	4,230	3,330	4,120	3,170	3,190	1,670	3,690	2,060	708	812	1,790
19	1,400	14,400	3,360	4,460	3,140	3,660	1,160	2,900	2,190	721	877	752
20	1,800	13,900	2,840	4,310	3,170	3,700	2,770	2,840	556	836	820	1,020
21	1,470	9,870	1,060	3,610	2,950	3,060	1,710	2,930	305	1,190	781	1,970
22	1,910	6,750	2,890	3,820	1,280	3,390	2,690	3,010	2,360	1,230	706	1,860
23	1,180	5,380	3,310	3,730	3,050	3,810	2,960	2,760	1,870	1,200	706	1,710
24	1,200	5,000	2,590	7,920	2,880	3,800	2,960	2,050	1,620	1,150	787	1,880
25	893	4,640	596	8,550	2,230	3,550	2,340	3,400	1,450	716	776	1,750
26	494	4,500	2,720	6,470	2,720	3,960	2,280	3,180	1,320	711	725	2,320
27	1,520	2,920	4,370	10,000	3,130	4,640	3,400	3,300	432	976	842	3,820
28	1,650	*2,760	4,190	11,400	*1,430	4,660	3,640	2,610	*1,060	998	956	2,880
29	1,720	2,290	*2,770	*7,950	---	*4,510	4,190	2,350	2,280	950	879	3,390
30	2,170	2,360	3,960	6,320	---	4,640	4,420	1,680	1,500	1,070	712	2,890
31	1,690	---	4,670	5,640	---	5,320	---	*1,700	---	806	707	---
Total	31,240	139,454	122,116	185,310	84,930	103,690	108,370	103,830	62,941	33,170	25,108	48,067
Mean	1,008	4,648	3,939	5,978	3,033	3,345	3,612	3,349	2,098	1,070	810	1,602
Cfsm	1.50	6.93	5.87	6.91	4.52	4.99	5.38	4.99	3.13	1.59	1.21	2.39
In.	1.73	7.73	6.77	10.27	4.71	5.75	6.01	5.75	3.49	1.84	1.39	2.66
Ac-ft	61,960	276,600	242,200	367,600	168,500	205,700	214,900	205,900	124,800	65,790	49,800	95,340

Calendar year 1958: Max 16,600 Min 285 Mean 2,854 Cfsm 4.25 In. 57.74 Ac-ft 2,066,000
Water year 1958-59: Max 15,300 Min 285 Mean 2,872 Cfsm 4.28 In. 58.10 Ac-ft 2,079,000

Peak discharge (base, 15,000 cfs, revised).--Nov. 19 (3 a.m.) 17,700 cfs (8.64 ft); Dec. 12 (8 p.m.) 15,500 cfs (8.09 ft); Jan. 12 (9:30 a.m.) 18,600 cfs (8.88 ft); Jan. 27 (2:30 p.m.) 18,500 cfs (8.86 ft).

* Discharge measurement made on this day.

2115. Johnson Creek at Sycamore, Oreg.

Location.--Lat 45°28'40", long 122°30'24", in lot 2, SW $\frac{1}{4}$ sec.13, T.1 S., R.2 E., on right bank 0.3 mile southwest of Sycamore station and 2.5 miles east of city limits of Portland.

Drainage area.--28.2 sq mi.

Records available.--July 1940 to September 1959.

Gage.--Water-stage recorder and V-notch weir. Datum of gage is 228.47 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--19 years, 54.2 cfs (39,240 acre-ft per year).

Extremes.--Maximum discharge during year, 782 cfs Dec. 11 (gage height, 8.45 ft); minimum, 0.2 cfs Aug. 18.

1940-59: Maximum discharge, 2,110 cfs Feb. 10, 1949 (gage height, 13.77 ft, from floodmark); minimum, 0.2 cfs Aug. 14-16, 18-22, 1940, Aug. 2, 21, 22, 1941, Sept. 6, 1955, Sept. 4, 1956, Aug. 18, 1959.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Slight diurnal fluctuation at low flow caused by recreational ponds upstream. Small diversions for irrigation above station.

Revisions (water years).--WSP 1318: 1941(M).

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 12 to Feb. 8)

0.7	0.3	1.1	4.5	4.0	172
.8	.6	1.5	20	5.0	275
.9	1.1	2.0	42	6.0	399
1.0	2.1	3.0	98	8.0	715

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	1.0	16	97	138	60	174	15	8.9	3.8	0.6	0.4
2	.6	1.2	21	79	100	52	160	21	8.2	3.8	.6	.4
3	.6	2.4	64	56	78	46	112	38	7.8	3.5	.7	*.4
4	.6	3.2	60	41	63	40	85	28	10	3.2	.6	.5
5	.6	4.5	50	38	*52	36	67	85	26	4.5	.6	2.4
6	.6	8.9	40	31	74	32	56	81	14	4.5	.6	1.8
7	.6	5.9	70	49	80	30	46	54	11	4.8	.6	.9
8	.9	10	60	217	79	27	37	43	10	3.8	.6	.7
9	1.0	26	70	433	90	29	31	43	12	2.8	.5	.6
10	.8	30	150	559	120	28	27	33	14	2.4	.5	.5
11	1.5	14	600	374	100	24	24	28	*14	2.0	.5	.5
12	3.2	27	250	482	80	37	21	22	12	1.7	.5	.5
13	3.5	*80	120	258	100	37	20	18	11	1.5	.5	.6
14	2.1	78	70	152	400	33	19	27	10	1.4	.5	.5
15	1.0	60	60	106	250	30	21	116	9.6	1.4	.5	.5
16	.7	38	50	129	180	27	17	99	8.9	1.3	.4	.6
17	1.1	27	60	105	150	*26	17	92	9.2	1.3	.4	.7
18	2.4	51	80	102	130	34	16	85	8.2	1.2	.4	1.1
19	4.8	240	*71	125	110	57	14	74	7.4	1.2	.6	3.5
20	2.4	186	62	108	100	42	13	55	6.2	1.0	.5	2.6
21	1.3	100	131	86	95	76	11	43	5.6	.9	.5	2.8
22	1.1	64	99	80	90	71	11	34	4.8	.9	.4	1.7
23	1.7	56	75	180	100	83	10	27	4.8	*.9	.4	1.2
24	1.2	58	74	580	80	82	9.2	22	4.8	.9	.4	1.0
25	1.0	47	103	220	70	133	8.9	19	4.8	.9	.4	.8
26	.9	34	224	142	90	294	12	18	4.8	.9	.4	2.0
27	.9	26	215	329	70	179	16	16	4.5	.8	.4	5.9
28	1.1	22	131	329	65	192	13	14	4.8	.8	.4	5.6
29	1.1	19	145	197	--	139	12	12	4.5	.8	.4	3.8
30	.8	15	134	235	---	231	*18	10	4.5	.8	.4	2.8
31	.8	---	99	198	---	185	---	9.6	---	.7	.4	---
Total	41.5	1,335.1	3,454	5,918	3,134	2,392	1,098.1	1,281.6	266.3	60.4	15.2	47.3
Mean	1.34	44.5	111	191	112	77.2	36.6	41.3	8.88	1.95	0.49	1.58
Cfsm	0.048	1.58	3.94	6.77	3.97	2.74	1.30	1.46	0.315	0.069	0.017	0.056
In.	0.05	1.76	4.56	7.80	4.13	3.15	1.45	1.69	0.35	0.08	0.02	0.06
Ac-ft	82	2,650	6,850	11,740	6,220	4,740	2,180	2,540	528	120	30	94
Calendar year 1958: Max	667			Min 0.4	Mean 53.4	Cfsm 1.89	In. 25.70	Ac-ft 38,620				
Water year 1958-59: Max	600			Min 0.4	Mean 52.2	Cfsm 1.85	In. 25.10	Ac-ft 37,770				

Peak discharge (base, 500 cfs, revised).--Dec. 11 (time unknown) 782 cfs (8.45 ft); Jan. 10 (7:30 a.m.) 744 cfs (8.25 ft); Feb. 14 (time unknown) 550 cfs (7.13 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 4-18, Feb. 9 to Mar. 1; discharge estimated on basis of weather records, recorded range in stage, and records for nearby stations.

2120. Salmon Creek near Battle Ground, Wash.

Location.--Lat 45°46'25", long 122°26'35", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.4, T.3 N., R.3 E., on left bank 100 ft upstream from highway bridge, 150 ft downstream from Rock Creek, and 4 miles east of Battle Ground.

Drainage area.--18.3 sq mi.

Records available.--October 1943 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 354.88 ft above mean sea level (river-profile survey). Prior to Oct. 1, 1950, staff gage at same site at datum 1.0 ft higher. Oct. 1, 1950, to June 24, 1953, staff gage and crest-stage indicator at same site and datum.

Average discharge.--16 years, 61.7 cfs (44,670 acre-ft per year).

Extremes.--Maximum discharge during year, 610 cfs Jan. 23 (gage height, 3.00 ft); minimum, 2.9 cfs Oct. 6 (gage height, 1.03 ft).

1943-59: Maximum discharge, 1,500 cfs Jan. 22, 1954 (gage height, 4.02 ft), from rating curve extended above 440 cfs; minimum observed, 1.3 cfs Aug. 20, 22, 28-30, Sept. 5-9, 13, 14, 1949, Sept. 14-16, 22, 1951.

Remarks.--Records excellent. No regulation or diversion above station.

Revisions (water years).--WSP 1044: 1944. WSP 1318: 1946(M). WSP 1568: 1955(M).

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.07	3.0	2.0	115
1.2	5.4	2.4	253
1.4	13	2.8	471
1.7	52		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	3.1	4.7	48	134	152	97	196	50	30	17	5.2	3.6	
2	3.3	8.1	54	118	128	88	155	48	*27	17	5.7	3.1	
3	3.0	13	70	97	115	79	123	43	28	16	5.7	3.1	
4	*3.0	28	64	85	101	70	99	38	40	15	5.4	21	
5	3.0	46	56	79	92	62	83	43	62	17	5.7	17	
6	3.0	147	58	70	90	56	70	38	48	18	5.2	11.5	
7	4.3	99	108	74	85	54	60	34	43	40	*4.7	7.7	
8	21	139	101	132	85	49	54	34	40	21	4.5	6.5	
9	7.4	152	85	262	113	56	48	38	76	16	4.5	5.2	
10	5.2	134	213	*267	139	55	43	37	79	14	4.1	4.5	
11	4.2	120	452	211	118	49	40	32	115	12.5	4.1	*4.2	
12	4.1	206	281	258	97	55	37	27	118	12	4.2	4.5	
13	3.9	249	181	211	121	82	36	25	94	11.5	4.2	4.2	
14	3.7	185	134	161	305	64	40	64	77	11.5	4.1	4.2	
15	3.6	171	106	131	215	60	40	161	62	11	3.7	4.2	
16	3.4	106	68	161	*189	54	36	120	64	10.5	3.9	4.7	
17	3.1	85	77	145	174	50	32	131	56	9.6	4.1	4.2	
18	4.2	153	101	131	145	48	30	137	49	8.8	4.2	5.9	
19	19	300	97	113	120	44	27	108	42	8.4	4.2	12	
20	12.5	286	88	99	101	*40	24	83	38	8.4	4.2	12	
21	7.4	207	101	90	88	54	22	70	36	8.1	4.1	17	
22	7.4	*158	90	120	81	52	*20	60	32	7.7	4.2	11	
23	10.5	134	83	306	79	52	19	49	31	8.1	4.1	8.4	
24	7.1	113	77	417	70	*48	18	46	30	8.1	3.7	7.4	
25	5.7	94	79	236	80	66	18	49	27	7.7	3.4	8.1	
26	5.2	79	97	168	97	148	31	48	24	6.8	3.0	27	
27	4.7	68	110	232	94	142	38	52	22	6.8	3.6	17	
28	4.5	60	115	245	104	137	38	46	24	6.5	3.7	13	
29	4.2	55	134	196	-	118	46	42	21	6.2	3.3	11	
30	4.1	50	148	164	-----	137	54	38	*18	5.2	3.1	9.6	
31	4.1	-----	145	168	-----	174	-----	32	-----	4.9	3.4	-----	
Total	182.9	3,649.8	3,642	5,281	3,388	2,320	1,577	1,823	1,453	371.3	131.2	272.8	
Mean	5.90	122	117	170	121	74.8	52.6	58.8	48.4	12.0	4.23	9.09	
Cfsm	0.322	6.67	6.39	9.29	6.61	4.09	2.87	3.21	2.64	0.856	0.231	0.497	
In.	0.37	7.42	7.40	10.73	6.89	4.71	3.20	3.70	2.95	0.75	0.27	0.55	
Ac-ft	363	7,240	7,220	10,470	6,720	4,600	3,130	3,620	2,880	736	260	541	
Calendar year 1958: Max	452			Min	1.9	Mean	59.0	Cfsm	3.22	In.	43.73	Ac-ft	42,690
Water year 1958-59: Max	452			Min	3.0	Mean	68.0	Cfsm	3.61	In.	48.94	Ac-ft	47,780

Peak discharge (base, 470 cfs).--Dec. 11 (12:30 a.m.) 560 cfs (2.93 ft); Jan. 23 (11 p.m.) 610 cfs (3.00 ft).

* Discharge measurement made on this day.

2132. Lewis River near Trout Lake, Wash.

Location.--Lat 46°09'55", long 121°52'10", in NW $\frac{1}{4}$ sec.24, T.8 N., R.7 E., on right bank half a mile downstream from Copper Creek, $1\frac{1}{2}$ miles downstream from Quartz Creek, and 20 miles northwest of Trout Lake.

Drainage area.--120 sq mi, approximately.

Records available.--October 1958 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,500 ft above mean sea level, unadjusted.

Extremes.--Maximum discharge during water year, 4,300 cfs Nov. 12 (gage height, 23.43 ft), from rating curve extended above 2,100 cfs by logarithmic plotting; minimum, 91 cfs about Oct. 6 or 7 (gage height, 18.30 ft, from recorded range in stage).

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

18.3	91	20.0	750
18.6	157	21.0	1,460
19.0	275	22.0	2,440
19.5	480	23.0	3,690

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	110	129	961	1,170	926	422	1,380	2,200	1,000	550	217	140
2	110	126	1,650	1,040	818	378	*1,810	2,000	1,100	550	208	135
3	110	187	2,550	864	738	362	1,490	1,500	1,200	500	205	135
4	110	466	1,750	798	684	350	1,260	1,200	1,200	462	200	237
5	110	520	1,360	774	636	346	1,140	1,000	1,300	458	194	358
6	100	1,710	1,140	720	*630	338	1,010	950	1,100	448	191	462
7	140	1,260	1,160	666	575	338	905	950	1,000	444	189	296
8	500	1,490	1,000	884	540	350	840	950	950	404	189	240
9	250	1,970	898	1,280	515	342	792	1,000	1,200	390	183	200
10	160	1,730	1,280	1,530	490	334	768	900	1,100	417	178	*197
11	140	1,380	2,420	1,660	453	330	798	900	1,200	426	178	191
12	130	3,080	2,180	2,710	430	338	792	900	1,300	417	170	180
13	125	2,790	2,240	417	346	756	1,100	1,150	390	167	175	175
14	120	1,750	1,320	1,680	417	330	714	1,140	1,050	362	167	170
15	120	1,260	1,120	1,360	386	330	654	1,600	1,000	346	167	165
16	115	989	954	1,190	378	330	610	1,400	1,000	334	173	160
17	110	810	834	1,100	362	378	575	1,300	950	322	167	152
18	150	1,550	884	1,090	342	471	550	1,200	900	318	162	183
19	400	2,230	780	989	330	480	530	1,100	1,000	306	157	440
20	*236	3,380	744	891	318	466	540	1,000	1,050	292	160	545
21	183	3,470	982	810	306	535	590	950	1,000	286	155	485
22	167	2,460	912	762	300	525	678	900	900	272	155	417
23	162	1,990	846	1,050	296	520	738	950	850	278	152	350
24	145	*1,990	786	2,370	286	500	798	1,000	750	278	150	310
25	135	1,610	774	2,200	*289	530	800	*1,100	700	252	147	303
26	131	1,320	864	1,700	278	654	850	1,050	650	242	147	801
27	126	1,090	940	2,240	272	825	1,000	1,020	600	230	173	780
28	124	940	870	1,900	296	654	1,400	940	560	217	162	636
29	120	852	840	1,510	-	642	2,000	891	*540	*214	143	535
30	115	786	*996	1,260	-----	708	2,500	900	540	214	138	458
31	118	-----	1,070	1,080	-----	884	-----	900	-----	217	145	-----
Total	4,872	45,315	36,505	41,518	12,706	14,156	29,268	34,891	28,840	10,836	5,289	9,836
Mean	157	1,510	1,178	1,339	454	457	976	1,126	961	350	171	328
Cfsm	1.31	12.6	9.82	11.2	3.78	3.81	8.13	9.38	8.01	2.92	1.42	2.73
In.	1.51	14.04	11.31	12.87	3.94	4.39	9.07	10.81	8.94	3.36	1.64	3.05
Ac-ft	9,660	89,880	72,410	82,350	25,200	28,080	58,050	69,210	57,200	21,490	10,490	19,510

Calendar year 1958: Max - Min - Mean - Cfsm - In. - Ac-ft -
 Water year 1958-59: Max 3,470 Min 100 Mean 751 Cfsm 6.26 In. 84.93 Ac-ft 543,500

Peak discharge (base, 2,800 cfs).--Nov. 12 (4:30 p.m.) 4,300 cfs (23.43 ft); Nov. 20 (6 p.m.) 4,180 cfs (23.35 ft); Dec. 3 (1:30 a.m.) 3,170 cfs (22.61 ft); Jan. 12 (7:30 a.m.) 2,890 cfs (22.38 ft); Jan. 24 (3:30 p.m.) 2,850 cfs (22.35 ft); probably Apr. 30 (time and discharge unknown).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-19, Apr. 25 to May 26, May 30 to June 28, Sept. 8, 9; discharge estimated on basis of recorded range in stage, 1 discharge measurement, weather records, and records for nearby stations. Discharge measurement made Sept. 24, 1958, 109 cfs.

2135. Big Creek below Skookum Meadow, near Trout Lake, Wash.

Location.--Lat 46°05'30", long 121°51'30", in NE $\frac{1}{4}$ sec.13, T.7 N., R.7 E., on left bank just downstream from Skookum Meadow, 3 miles upstream from Lewis River and 17 miles northwest of Trout Lake.

Drainage area.--13.2 sq mi.

Records available.--September 1927 to September 1931 (published as "below Skookum Meadow"), September 1955 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 3,213.00 ft above mean sea level (levels by Pacific Power & Light Co.). Prior to September 1955, at site 100 ft upstream at different datum.

Average discharge.--8 years (1927-31, 1955-59), 58.1 cfs (42,060 acre-ft per year).

Extremes.--Maximum discharge during year, 718 cfs Nov. 12 (gage height, 5.21 ft), from rating curve extended above 230 cfs by logarithmic plotting; minimum, 6.6 cfs Oct. 4-7 (gage height, 0.69 ft).

1927-31, 1955-59: Maximum discharge recorded, 766 cfs Mar. 31, 1931 (gage height, 5.1 ft, site and datum then in use), from rating curve extended above 230 cfs, but may have been higher Nov. 25, 1927, during period of no gage-height record; minimum, 4 cfs Nov. 20, 21, Dec. 2, 1929, Sept. 2-4, 19-26, 29, 30, Oct. 1-5, 1930.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 1448: 1928.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

0.69	6.6	2.0	108
1.0	18	3.0	256
1.5	55	4.5	555

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.8	13	78	103	78	35	133	230	81	28	11.5	9.0
2	6.8	14	162	82	68	40	163	168	87	26	11.5	8.7
3	6.8	37	226	75	60	36	132	128	88	26	11.5	9.0
4	6.8	55	142	70	56	32	112	107	96	25	11	30
5	6.6	77	110	68	*52	29	97	95	113	27	11	38
6	6.6	223	94	66	52	29	84	83	90	28	10.5	63
7	17	154	132	65	48	28	77	83	78	25	10.5	33
8	59	212	96	90	44	28	75	83	74	23	10	32
9	17.5	229	85	120	42	28	73	90	128	22	10	*22
10	16	172	176	200	40	27	75	85	102	21	9.9	18
11	12.5	160	320	175	37	28	80	83	109	20	9.9	16.5
12	11	464	232	270	36	31	76	86	92	19.5	9.9	15.5
13	9.9	324	154	200	35	*30	70	120	80	19	9.9	14.5
14	9.0	181	116	150	34	27	64	176	72	18	9.9	14
15	8.4	*124	96	115	32	27	58	201	65	17.5	9.6	14.5
16	8.2	93	82	100	32	27	55	162	77	17	9.6	15
17	7.9	76	71	100	32	34	53	143	65	16.5	9.6	14
18	13	210	95	110	31	40	52	125	56	16	9.6	17
19	54	211	71	90	30	36	53	109	52	15.5	9.3	44
20	32	388	67	80	30	32	59	98	50	15	9.6	36
21	19	329	100	76	29	38	*68	93	46	14.5	9.3	38
22	19	248	80	75	28	37	70	90	44	14.5	9.0	30
23	20	212	68	115	28	36	76	94	42	14	9.0	25
24	15.5	234	62	220	28	36	77	*98	45	14.5	8.7	24
25	13.5	154	62	170	28	39	74	96	39	13	8.7	29
26	12.5	114	82	150	28	46	89	102	37	13	8.7	83
27	11.5	90	72	175	29	40	114	92	36	12.5	11.5	74
28	11.5	78	63	140	31	41	186	88	*56	12	10.5	55
29	10.5	75	*68	120	-	39	253	83	32	*11.5	9.3	46
30	10	71	90	100	-----	41	294	78	29	11.5	8.7	41
31	10.5	-----	94	88	-----	57	-----	77	-----	11.5	9.3	-----
Total	469.3	5,022	3,446	3,758	1,098	1,074	2,942	3,444	2,041	567.5	307.0	908.7
Mean	15.1	167	111	121	39.2	34.6	98.1	111	68.0	18.3	9.90	30.3
Cfs/m	1.34	12.7	8.41	9.17	2.97	2.62	7.43	8.41	5.15	1.39	0.750	2.30
In.	1.32	14.15	9.71	10.59	3.09	3.03	8.29	9.70	5.75	1.60	0.66	2.56
Ac-ft	931	9,960	6,840	7,450	2,180	2,130	5,840	6,830	4,050	1,130	609	1,800

Calendar year 1958: Max 535 Min 6.6 Mean 72.7 Cfs/m 5.51 In. 74.79 Ac-ft 52,650
Water year 1958-59: Max 464 Min 6.6 Mean 68.7 Cfs/m 5.20 In. 70.65 Ac-ft 49,750

Peak discharge (base, 360 cfs).--Nov. 12 (4:30 p.m.) 718 cfs (5.21 ft); Nov. 18 (7:30 p.m.) 360 cfs (3.56 ft); Nov. 20 (7 p.m.) 487 cfs (4.18 ft); Dec. 11 (6 p.m.) 360 cfs (3.56 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Jan. 3 to Feb. 4, Feb. 15 to Mar. 12, July 7-28; discharge estimated on basis of recorded range in stage and records for Meadow Creek below Lone Butte Meadow, near Trout Lake.

2140. Rush Creek above Meadow Creek, near Trout Lake, Wash.

Location.--Lat 46°02'30", long 121°50'30", in NE¼ sec.6, T.6 N., R.8 E., on left bank 1 mile upstream from Meadow Creek and 15 miles west of Trout Lake.

Drainage area.--5.97 sq mi.

Records available.--September 1955 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 3,400 ft (from topographic map).

Extremes.--Maximum discharge during year, 640 cfs Dec. 2 (gage height, 3.08 ft); minimum, 0.1 cfs for many days during year.
1955-59: Maximum discharge, that of Dec. 2, 1958; minimum, 0.1 cfs for many days in most years.

Remarks.--Records good except those above 30 cfs and those below 1 cfs, which are fair, and those for period of no gage-height record, which are poor. No regulation or diversion above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 21-26)

Oct. 1 to Nov. 20

Nov. 21 to Sept. 30

0.4	0.1	1.0	32	0.4	0.1	1.0	32
.6	3.4	1.5	97	.6	3.0	1.5	97
.8	17	2.3	305	.8	15	2.1	240

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	7.7	30	36	18	5.2	9.4	66	85	53	0.1	0.1
2	.1	9.2	211	27	14	10	22	64	99	53	.1	.1
3	.1	62	100	49	10	11.5	25	41	101	35	.1	.1
4	.1	52	23	7	*6.2	11.5	27	23	103	34	.1	.1
5	.1	82	11.5	7	4.6	7.4	28	15	144	33	.1	16.5
6	.1	177	8.0	9	3.8	2.6	31	13	92	29	.1	45
7	.1	45	25	11	3.4	1.8	28	16.5	62	37	.1	11.5
8	20	136	18	18	2.6	1.6	20	23	55	25	.1	*18
9	1.2	80	13.5	40	2.6	1.4	13	23	82	29	.1	3.8
10	.6	34	120	60	2.3	1.2	11	21	60	28	.1	1.1
11	.3	28	196	40	2.0	.9	13	17.5	90	26	.1	.5
12	.2	172	43	65	1.8	*1.8	16	23	92	21	.1	.4
13	.1	*48	16.5	60	1.6	2.6	14.5	52	78	17.5	.1	.4
14	.1	29	10	45	1.8	1.4	9.4	82	65	9.4	.1	.3
15	.1	21	8.0	35	1.8	1.1	6.2	94	60	6.2	.1	.2
16	.1	34	6.8	30	1.6	1.2	4.6	66	71	4.6	.1	.2
17	.1	45	5.6	35	1.4	2.0	3.8	50	60	3.0	.1	.2
18	.1	88	28	40	1.2	2.3	3.0	45	84	2.0	.1	5.6
19	37	96	19	30	1.2	1.8	2.6	33	120	1.4	.1	127
20	13.5	275	16	20	1.1	1.4	*3.4	31	105	.8	.1	68
21	7.7	119	27	15	1.1	1.4	8.7	39	101	.6	.1	35
22	5.1	50	11.5	8	1.1	1.2	16	50	94	.4	.1	16.5
23	4.5	46	6.8	25	.9	1.1	21	*71	72	.2	.1	8.0
24	1.8	54	4.6	80	.8	.9	24	71	78	.2	.1	4.6
25	.7	22	3.4	65	.7	1.1	19	60	61	.2	.1	8.7
26	.6	23	5.6	35	.6	1.8	17.5	52	53	.1	.1	113
27	.6	38	5.6	60	.5	1.6	13.5	40	*51	*.1	.1	50
28	.6	13.5	*4.6	45	.7	1.4	21	37	*55	*.1	.1	18
29	.7	5.6	4.6	35	-	1.2	48	46	42	*.1	.1	8.7
30	1.0	9.4	35	25	-----	1.4	64	55	48	.1	.1	5.2
31	2.0	-----	39	22	-----	1.6	-----	66	-----	.1	.2	-----
Total	99.4	1,901.4	1,056.6	1,079	89.4	85.4	543.6	1,386.0	2,359	450.1	3.2	586.8
Mean	3.21	63.4	34.1	34.8	3.19	2.75	18.1	44.7	78.6	14.5	0.10	18.9
Cfsm	0.558	10.6	5.71	5.83	0.534	0.461	3.03	7.49	13.2	2.43	0.017	3.17
In.	0.62	11.84	6.58	6.72	0.56	0.53	3.39	8.63	14.70	2.80	0.02	3.53
Ac-ft	197	3,770	2,100	2,140	177	189	1,080	2,750	4,680	893	6.3	1,120

Peak discharge (base, 350 cfs).--Nov. 9 (12:15 p.m.) 380 cfs (2.50 ft); Nov. 12 (12:30 p.m.) 400 cfs (2.55 ft); Nov. 20 (4:15 p.m.) 376 cfs (2.49 ft); Dec. 2 (7:15 p.m.) 640 cfs (3.08 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Jan. 4 to Feb. 3; discharge estimated on basis of recorded range in stage, weather records, and records for nearby stations.

2145. Meadow Creek below Lone Butte Meadow, near Trout Lake, Wash.

Location.--Lat 46°02'50", long 121°51'20", in E½ sec.36, T.7 N., R.7 E., on right bank just downstream from Lone Butte Meadow, half a mile upstream from mouth, and 16 miles northwest of Trout Lake.

Drainage area.--11.7 sq mi.

Records available.--September to December 1927 (fragmentary), January 1928 to September 1931, September 1955 to September 1959. Prior to September 1955, published as "below Lone Butte Meadow."

Gage.--Water-stage recorder. Datum of gage is 3,226.84 ft above mean sea level (levels by Pacific Power & Light Co.).

Average discharge.--7 years (1928-31, 1955-59), 90.1 cfs (65,230 acre-ft per year).

Extremes.--Maximum discharge during year, 302 cfs Nov. 12 (gage height, 2.09 ft); minimum, 69 cfs Oct. 24 to Nov. 2 (gage height, 0.92 ft).
1927-31, 1955-59: Maximum discharge, 330 cfs Dec. 11, 1956 (gage height, 2.20 ft); minimum, 47 cfs Dec. 29-31, 1930, Jan. 1-3, 19-21, 1931.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1448: 1928-29.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov.20

Nov. 21 to Sept. 30

0.9 67
1.2 110
1.8 236

0.9 59
1.2 119
1.8 239

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	73	69	105	*119	109	95	115	137	107	97	83	75
2	73	71	135	111	105	87	117	121	111	95	83	73
3	73	76	182	111	105	87	107	111	113	95	83	75
4	73	82	123	111	105	85	105	107	119	93	83	87
5	73	90	109	111	*101	85	101	103	135	93	83	91
6	73	147	105	102	99	83	97	101	121	95	81	97
7	76	126	127	99	97	83	97	97	111	99	81	85
8	92	157	113	117	95	83	97	97	107	91	81	*83
9	77	151	107	135	95	85	97	101	137	89	81	77
10	75	133	150	141	95	81	97	99	129	89	79	75
11	74	118	237	133	93	83	99	97	125	89	79	75
12	74	202	181	171	93	89	97	95	121	89	79	73
13	73	*177	135	135	93	*85	95	109	113	89	79	73
14	72	124	121	119	91	83	93	135	113	87	79	73
15	72	105	113	111	91	81	91	*143	109	87	79	73
16	72	96	109	111	89	81	89	125	119	87	81	73
17	71	92	107	113	89	85	91	123	113	85	81	73
18	74	140	115	119	89	87	91	119	109	85	81	75
19	90	170	109	107	87	83	91	111	111	85	79	93
20	78	223	105	103	87	81	*93	107	113	85	79	87
21	73	208	111	101	87	85	93	105	109	83	77	83
22	72	161	107	99	87	85	93	105	107	83	77	77
23	72	159	101	144	87	83	93	105	105	83	77	75
24	69	163	99	199	87	83	95	107	103	83	77	73
25	69	135	99	151	87	85	91	107	101	83	77	79
26	69	117	116	135	87	91	97	113	99	83	77	115
27	69	107	113	167	87	85	109	105	99	83	77	111
28	69	105	103	143	89	87	127	101	*99	*83	77	91
29	69	103	105	127	-	85	137	101	97	83	75	81
30	69	101	115	119	-----	85	153	103	97	83	75	79
31	69	-----	115	115	-----	95	-----	103	-----	83	75	-----
Total	2,277	3,908	3,770	3,879	2,606	2,637	3,046	3,393	3,352	2,717	2,455	2,450
Mean	73.5	130	122	125	93.1	85.1	102	109	112	87.6	79.2	81.7
Cfs/m	6.28	11.1	10.4	10.7	7.96	7.27	8.72	9.32	9.57	7.49	6.77	6.98
In.	7.24	12.42	11.98	12.33	8.28	8.38	9.68	10.79	10.65	8.64	7.80	7.79
Ac-ft	4,520	7,750	7,480	7,690	5,170	5,230	6,040	6,730	6,650	5,390	4,870	4,860

Calendar year 1958: Max 254 Min 69 Mean 100 Cfs/m 8.55 In. 115.97 Ac-ft 72,360
Water year 1958-59: Max 237 Min 69 Mean 100 Cfs/m 8.55 In. 115.98 Ac-ft 72,380

Peak discharge (base, 230 cfs).--Nov. 12 (6:30 p.m.) 302 cfs (2.09 ft); Nov. 20 (7 p.m.) 267 cfs (1.94 ft); Dec. 11 (7 p.m.) 247 cfs (1.84 ft).

* Discharge measurement made on this day.

2150. Rush Creek above falls, near Cougar, Wash.

Location.--Lat 46°03'20", long 121°54'20", on line between secs.27 and 34, T.7 N., R.7 E., on right bank 500 ft upstream from falls, 2 miles upstream from mouth, and 18 miles east of Cougar.

Drainage area.--26.0 sq mi.

Records available.--December 1927 to September 1931 (published as Rush Creek above falls), October 1955 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 2,260.51 ft above mean sea level (levels by Pacific Power & Light Co.). December 1927 to September 1931, water-stage recorder at same site at different datum.

Average discharge.--7 years (1928-31, 1955-59), 163 cfs (118,000 acre-ft per year).

Extremes.--Maximum discharge during year, 762 cfs Nov. 20 (gage height, 3.48 ft); minimum, 99 cfs Oct. 28-31 (gage height, 0.58 ft).

1927-31, 1955-59: Maximum discharge, 846 cfs Dec. 11, 1956 (gage height, 3.69 ft); minimum, 79 cfs Jan. 24-27, 29, Nov. 6, 7, 1930.

Revisions.-- The maximum discharge for the water year 1929 has been revised to 578 cfs Nov. 9, 1928 (gage height, 2.55 ft); maximum gage height, 2.66 ft June 15, 1929; superseding figures published in WSP 694 and WSP 1318.

Remarks.-- Records good. No regulation or diversion above station.

Revisions (water years).-- WSP 1568: 1956(P), 1957.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

0.5	91
1.0	150
2.0	295
3.1	615

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	104	108	192	233	199	153	203	307	248	206	128	118
2	104	108	349	190	188	149	226	270	270	207	128	117
3	103	154	410	163	185	146	211	233	277	185	128	117
4	103	191	218	156	*186	146	206	203	283	180	128	133
5	103	236	180	159	177	141	202	188	360	181	127	147
6	102	387	164	158	176	136	197	177	291	179	127	194
7	109	257	221	167	171	133	189	177	244	194	125	137
8	162	381	196	199	167	133	177	185	227	171	125	*145
9	112	372	184	286	164	132	167	192	295	170	124	123
10	109	273	340	309	162	129	163	185	263	170	124	118
11	105	224	566	264	158	*130	167	176	295	167	124	117
12	103	*495	336	370	154	138	168	179	285	162	124	114
13	102	354	230	301	153	133	160	232	263	156	124	114
14	101	234	201	234	153	128	151	299	245	147	123	114
15	101	192	186	210	150	127	144	323	236	144	123	113
16	100	160	175	205	149	128	141	262	257	141	123	113
17	100	150	167	206	147	133	141	240	242	138	123	112
18	106	295	212	221	145	140	140	233	257	137	122	118
19	179	396	189	203	144	133	138	210	303	137	122	259
20	129	610	173	185	142	128	*141	198	303	136	122	210
21	112	454	205	175	141	137	151	203	289	134	122	164
22	109	319	176	173	138	133	160	212	272	133	120	136
23	109	311	156	266	137	130	166	*236	250	134	120	123
24	104	319	150	403	136	130	171	239	250	133	120	119
25	102	232	151	348	137	136	163	228	233	133	119	124
26	101	190	194	277	136	144	172	230	220	132	119	285
27	100	168	189	348	136	137	190	207	*214	132	122	242
28	100	158	*167	309	141	140	226	193	216	*130	120	160
29	99	155	170	259	-	137	268	202	198	130	118	134
30	99	155	227	226	---	141	327	211	199	129	118	125
31	100	---	234	211	---	159	---	224	---	128	118	---
Total	3,372	8,038	6,908	7,405	4,372	4,240	5,427	6,854	7,785	4,756	3,810	4,345
Mean	109	268	223	239	156	137	181	221	260	153	123	145
Cfsm	4.19	10.3	8.58	9.19	6.00	5.27	6.96	8.50	10.0	5.88	4.73	5.58
In.	4.82	11.50	9.88	10.59	6.25	6.06	7.76	9.80	11.14	6.80	5.45	6.22
Ac-ft	6,690	15,940	13,700	14,690	8,670	8,410	10,760	13,590	15,440	9,430	7,560	8,620
Calendar year 1958: Max	610			Min 99	Mean 183	Cfsm 7.04	In. 95.63	Ac-ft 132,600				
Water year 1958-59: Max	610			Min 99	Mean 184	Cfsm 7.08	In. 96.27	Ac-ft 133,500				

Peak discharge (base, 500 cfs).-- Nov. 8 (6 a.m.) 524 cfs (2.84 ft); Nov. 9 (3:30 p.m.) 598 cfs (3.05 ft); Nov. 12 (2:15 p.m.) 726 cfs (3.39 ft); Nov. 20 (6:30 p.m.) 762 cfs (3.48 ft); Dec. 2 (9 to 10 p.m.) 758 cfs (3.47 ft); Dec. 11 (1:30 a.m.) 626 (3.13 ft).

* Discharge measurement made on this day.

2155. Curly Creek near Cougar, Wash.

Location.--Lat 46°02'05", long 121°54'30", in NW¹ sec.3, T.6 N., R.7 E., on right bank half a mile downstream from confluence of Hardtime and Outlaw Creeks, 4 miles upstream from mouth, and 18 miles east of Cougar.

Drainage area.--12.6 sq mi.

Records available.--September 1955 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 2,489.85 ft above mean sea level (levels by Pacific Power & Light Co.).

Extremes.--Maximum discharge during year, 390 cfs Nov. 20 (gage height, 3.19 ft); minimum, 8.8 cfs Oct. 4-7 (gage height, 0.83 ft).

1955-59: Maximum discharge, 417 cfs Dec. 22, 1955; maximum gage height, 3.25 ft Apr. 20, 1958; minimum discharge, that of Oct. 4-7, 1958.

Remarks.--Records excellent except those above 150 cfs, which are good. No regulation or diversion above station.

Cooperation.--Gage-height record collected in cooperation with Pacific Power & Light Co.

Revisions (water years).--WSP 1518: 1956.

Rating table, water year 1958-59 (gage height, in feet,
and discharge, in cubic feet per second)

0.8	8.0	2.0	78
1.1	18	2.5	149
1.5	40	3.1	345

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.2	10	77	120	96	30	107	180	63	40	15.5	11.5
2	9.2	10	118	99	85	29	141	147	68	38	15	11.5
3	9.0	13	172	84	*79	28	128	124	66	35	14.5	11.5
4	9.0	27	111	78	*74	28	116	108	67	33	14.5	16
5	8.8	37	90	76	68	27	107	96	32	33	14.5	17.5
6	8.8	79	81	73	66	27	96	86	71	32	14	22
7	9.2	54	114	73	61	26	88	80	57	34	13.5	15
8	15.5	104	103	93	58	26	84	81	51	30	13.5	*15
9	11	131	89	143	56	26	80	82	74	28	13	13
10	11	108	137	201	54	26	76	79	78	28	13	12.5
11	10	95	239	192	51	*26	75	74	79	26	13	12.5
12	9.8	*244	175	288	48	28	74	72	74	26	13	12.5
13	9.5	225	132	215	46	28	73	84	68	24	13	12.5
14	9.5	149	111	164	45	26	69	113	63	23	13	12
15	9.2	114	95	138	44	26	66	119	59	22	12.5	12
16	9.2	94	85	124	41	27	63	99	65	22	12.5	12
17	9.0	82	78	114	38	29	60	86	63	21	12.5	11.5
18	10	158	86	113	36	33	58	80	60	20	12.5	12.5
19	20	232	75	99	35	34	55	75	67	20	12.5	38
20	15	315	69	87	33	33	*53	66	64	19.5	12.5	36
21	11.5	292	82	80	32	39	55	63	60	19	12.5	25
22	11	204	75	76	31	40	58	63	57	18.5	12.5	23
23	11.5	178	67	127	30	41	61	*70	53	18	12.5	17
24	11	175	64	292	29	41	63	72	51	17.5	12	15.5
25	10.5	141	84	228	29	46	64	67	48	17.5	12	16.5
26	10.5	114	92	182	28	58	69	68	46	17	12	48
27	10	96	*103	228	27	56	92	62	*45	16.5	12.5	44
28	10	86	90	182	28	64	136	56	44	*16	12	28
29	10	78	90	153	-	62	175	55	41	15.5	11.5	24
30	10	73	116	128	-----	66	210	55	40	15.5	11.5	22
31	10	-----	124	113	-----	80	-----	58	-----	15.5	11.5	-----
Total	326.9	3,718	3,204	4,361	1,349	1,156	2,652	2,620	1,834	741.0	400.5	580.0
Mean	10.5	124	103	141	48.2	37.3	88.4	84.5	61.1	23.9	12.9	19.3
Cfsm	0.833	9.84	8.17	11.2	3.85	2.96	7.02	6.71	4.95	1.90	1.02	1.53
In.	0.96	10.97	9.46	12.87	3.98	3.41	7.83	7.73	5.41	2.19	1.18	1.71
Ac-ft	648	7,370	6,360	8,650	2,680	2,290	5,260	5,200	3,640	1,470	794	1,150
Calendar year 1958: Max	360			Min 8.8	Mean 67.3	Cfsm 5.34	In. 72.53	Ac-ft 48,730				
Water year 1958-59: Max	315			Min 8.8	Mean 62.9	Cfsm 4.99	In. 67.70	Ac-ft 45,510				

Peak discharge (base, 180 cfs).--Nov. 9 (5:30 p.m.) 190 cfs (2.68 ft); Nov. 12 (6 p.m.) 380 cfs (3.17 ft); Nov. 20 (5 p.m.) 390 cfs (3.19 ft); Dec. 2 (11:30 p.m.) 280 cfs (2.90 ft); Dec. 11 (2 to 3 a.m.) 250 cfs (2.87 ft); Jan. 12 (6 to 7 a.m.) 314 cfs (3.03 ft); Jan. 24 (1 p.m.) 332 cfs (3.07 ft); Jan. 27 (7 to 8 a.m.) 250 cfs (2.87 ft); Apr. 30 (1 to 5 p.m.) 219 cfs (2.78 ft).

* Discharge measurement made on this day.

2160. Lewis River above Muddy River, near Cougar, Wash.

Location.--Lat 46°03'30", long 121°58'50", in SE $\frac{1}{4}$ sec.30, T.7 N., R.7 E., on right bank 1 mile upstream from Pepper Creek, 2 miles upstream from Muddy River, and 15 miles east of Cougar.

Drainage area.--227 sq mi.

Records available.--August 1927 to September 1934, October 1954 to September 1959. Records for August to October 1909, published in WSP 272, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Altitude of gage is 1,080 ft (from river-profile map). August 1927 to September 1934 at datum 2.61 ft lower.

Average discharge.--12 years, 1,275 cfs (923,100 acre-ft per year).

Extremes.--Maximum discharge during year, 7,880 cfs Nov. 12 (gage height, 7.56 ft), from rating curve extended above 5,000 cfs; minimum, 250 cfs Oct. 6 (gage height, 1.35 ft). 1927-34, 1954-59: Maximum discharge, 27,000 cfs Dec. 21, 1933 (gage height, 10.6 ft, from high-water marks, present datum), from rating curve extended above 6,000 cfs; minimum, 175 cfs Nov. 21, 1929; minimum gage height, -0.13 ft Sept. 28, 29, 1934, datum then in use.

Remarks.--Records excellent except those for period of no gage-height record, which are fair. No regulation or diversion above station.

Revisions.--See Records available.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.3	235	4.0	2,000
2.0	500	5.0	3,220
3.0	1,100	7.0	6,650

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	262	306	1,600	2,200	1,750	869	2,720	3,940	1,660	*934	446	330
2	262	306	2,660	1,910	1,500	836	3,440	2,980	1,920	947	442	323
3	265	388	4,230	1,590	1,400	800	2,850	2,350	1,910	876	452	323
4	259	876	2,900	1,460	1,300	770	2,380	2,010	1,870	824	428	492
5	253	998	2,260	1,420	1,300	758	2,110	1,750	2,320	830	419	682
6	*253	2,660	1,910	1,350	1,400	746	1,870	1,570	2,000	812	414	882
7	281	2,160	2,130	1,350	1,250	740	1,690	1,520	1,660	850	406	590
8	835	2,630	1,850	1,500	1,150	770	1,560	1,570	1,460	758	402	585
9	402	3,200	1,670	2,100	1,100	764	1,470	1,630	1,970	728	398	464
10	350	2,980	2,430	3,000	1,050	740	1,420	1,590	1,830	746	390	424
11	316	2,430	4,600	3,500	960	734	1,450	1,500	2,000	752	386	410
12	292	5,300	4,000	*5,500	920	812	1,460	1,460	2,060	746	*378	*394
13	286	5,190	2,980	4,000	880	794	1,390	1,770	1,890	710	366	378
14	277	3,260	2,350	3,000	850	746	1,280	2,460	1,680	668	362	370
15	277	2,310	1,980	2,500	800	734	1,220	2,680	1,500	645	362	358
16	271	1,800	1,710	2,300	850	734	1,150	2,260	1,550	625	366	362
17	288	1,490	1,510	2,100	800	818	1,090	2,000	1,500	610	362	346
18	286	2,700	1,620	1,900	*750	988	1,040	1,840	1,440	600	354	386
19	685	4,210	1,450	1,750	734	1,000	1,010	1,660	1,660	585	350	842
20	535	6,000	1,350	1,600	710	960	1,020	1,520	1,780	570	354	947
21	398	6,130	1,700	1,550	692	1,090	1,080	1,460	1,640	550	350	830
22	362	4,320	1,580	1,500	680	1,060	1,200	1,490	1,460	540	346	722
23	370	*3,620	1,460	2,500	674	1,050	*1,270	1,700	1,330	540	346	625
24	334	3,530	1,380	5,500	650	1,020	1,360	1,840	1,300	545	342	570
25	316	2,830	1,400	5,000	668	1,060	1,330	*1,740	1,200	505	338	580
26	306	2,500	1,680	4,400	656	*1,310	1,390	1,690	1,090	496	338	1,300
27	302	1,890	1,840	4,500	645	1,250	1,700	1,580	1,040	478	366	1,320
28	292	1,630	1,710	4,000	674	1,320	2,290	1,460	1,020	464	366	1,050
29	289	1,510	1,670	3,000	--	1,510	3,260	1,400	940	450	338	895
30	286	1,390	1,970	2,500	--	1,410	4,620	1,390	921	446	326	794
31	283	---	2,080	2,000	---	1,780	---	1,450	---	446	330	---
Total	10,433	80,334	65,630	82,480	26,793	29,773	53,120	57,260	47,601	20,276	11,603	18,584
Mean	337	2,678	2,117	2,661	957	960	1,771	1,847	1,587	654	374	619
Cfsm	1.48	11.8	9.33	11.7	4.22	4.23	7.80	8.14	6.99	2.88	1.56	2.73
In.	1.71	13.16	10.75	13.51	4.39	4.88	8.70	9.38	7.80	3.32	1.90	3.04
Ac-ft	20,690	159,300	130,200	163,600	53,140	59,050	105,400	113,600	94,420	40,220	23,010	36,860
Calendar year 1958: Max	7,720	Min	253	Mean	1,420	Cfsm	6.26	In.	84.89	Ac-ft	1,028,000	
Water year 1958-59: Max	6,130	Min	253	Mean	1,391	Cfsm	6.08	In.	82.54	Ac-ft	999,500	

Peak discharge (base, 4,000 cfs).--Nov. 9 (4:45 p.m.), 4,370 cfs (5.76 ft); Nov. 12 (6:30 p.m.) 7,880 cfs (7.56 ft); Nov. 20 (7:15 p.m.), 7,530 cfs (7.41 ft); Dec. 3 (12:30 a.m.) 5,230 cfs (6.26 ft); Dec. 11 (6:30 p.m.) 5,010 cfs (6.14 ft); probably Jan. 12 (time and discharge unknown); probably Jan. 24 (time and discharge unknown); probably Jan. 27 (time and discharge unknown); Apr. 30 (4 p.m.) 4,920 cfs (6.09 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Jan. 7 to Feb. 18; discharge estimated on basis of 2 discharge measurements and records for nearby stations.

2165. Muddy River below Clear Creek, near Cougar, Wash.

Location.--Lat 46°06'50", long 122°00'30", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.1, T.7 N., R.6 E., on right bank a quarter of a mile downstream from Clear Creek, 4 miles upstream from mouth, and 1 $\frac{1}{4}$ miles northeast of Cougar.

Drainage area.--131 sq mi.

Records available.--August 1927 to September 1934, October 1954 to September 1959. Published as "near Cougar" 1927-34. Records for August to October 1909, published in WSP 272 and 492, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Altitude of gage is 1,200 ft above mean sea level (from river-profile map). August 1927 to September 1934 at site 3 miles downstream at different datum.

Average discharge.--12 years, 863 cfs (624,800 acre-ft per year).

Extremes.--Maximum discharge during year, 5,900 cfs Jan. 12 (gage height, 6.88 ft); minimum, 115 cfs Oct. 6, 7 (gage height, 1.53 ft).
1927-34, 1954-59: Maximum discharge, 17,500 cfs Dec. 21, 1933 (gage height, 14.0 ft, from high-water marks, site and datum then in use), from rating curve extended above 4,500 cfs; minimum recorded, 94 cfs Dec. 5-7, 1929.

Remarks.--Records excellent. No regulation or diversion above station.

Revisions.--See Records available.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.5	107	4.0	1,800
2.0	264	5.0	3,000
2.5	515	7.0	6,100
3.0	870		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	123	182	1,130	1,730	1,350	588	2,040	2,470	928	*521	220	172
2	123	182	1,510	1,580	1,180	620	2,230	2,000	1,080	515	220	169
3	123	274	1,880	1,350	1,070	539	1,910	1,630	1,140	497	217	166
4	120	428	1,720	1,210	982	527	1,640	1,430	1,160	467	214	356
5	120	582	1,500	1,140	918	521	1,450	1,230	1,230	461	210	375
6	*118	1,320	1,330	1,080	928	515	1,290	1,100	1,160	461	204	370
7	*148	1,050	1,500	1,050	830	521	1,170	1,040	1,020	455	201	276
8	368	1,370	1,260	1,470	768	557	1,100	1,020	942	418	197	257
9	201	1,930	1,170	2,450	742	557	1,030	1,020	1,160	395	194	220
10	182	1,780	1,570	3,360	710	545	998	1,010	1,050	385	194	210
11	160	1,560	2,290	3,640	661	527	982	974	1,240	380	191	197
12	151	2,420	2,320	*5,540	614	551	966	950	1,240	375	*188	*191
13	146	2,530	2,040	4,440	601	545	942	1,030	1,180	360	188	185
14	140	1,900	1,700	3,050	594	521	910	1,340	1,080	341	185	182
15	137	1,440	1,460	2,260	557	503	854	1,540	974	332	185	185
16	137	1,160	1,250	1,880	575	497	806	1,420	968	323	191	182
17	134	998	1,090	1,610	*563	557	774	1,270	926	310	185	178
18	196	1,870	1,070	1,470	539	696	734	1,150	888	301	182	224
19	455	2,180	942	1,320	515	734	696	1,040	926	293	182	653
20	297	3,060	950	1,190	485	689	898	974	1,010	284	185	608
21	231	3,140	1,230	1,110	473	846	718	918	974	276	178	461
22	214	2,580	1,090	1,100	461	838	774	910	894	272	175	406
23	207	*2,050	1,050	1,980	461	862	*798	958	822	272	172	365
24	194	1,920	1,010	4,400	455	830	846	*1,040	766	264	172	341
25	182	1,600	1,190	3,880	479	902	870	1,070	710	253	169	332
26	182	1,390	1,550	3,130	473	*1,120	942	1,030	654	246	172	675
27	172	1,210	1,930	3,270	461	1,090	1,140	974	614	242	178	682
28	168	1,080	1,860	2,820	485	1,190	910	910	588	234	178	808
29	168	1,010	1,730	2,240	537	1,170	2,010	854	557	231	169	551
30	163	958	1,750	1,830	-----	1,320	2,740	830	533	224	166	503
31	168	-----	1,750	1,580	-----	1,610	-----	838	-----	220	175	-----
Total	5,618	45,134	45,822	70,180	18,928	23,088	35,526	35,970	28,408	10,606	5,837	10,280
Mean	181	1,504	1,478	2,263	676	745	1,184	1,160	947	342	188	343
Cfs/m	1.38	11.5	11.3	17.3	5.16	5.89	9.04	8.85	7.23	2.61	1.44	2.62
In.	1.58	12.81	13.01	19.92	5.37	8.55	10.09	10.21	8.06	3.01	1.66	2.92
Ac-ft	11,140	89,520	90,890	139,200	37,540	45,790	70,460	71,350	56,350	21,040	11,580	20,390

Calendar year 1958: Max 3,970 Min 118 Mean 937 Cfs/m 7.15 In. 97.04 Ac-ft 678,100
Water year 1958-59: Max 5,540 Min 118 Mean 919 Cfs/m 7.02 In. 95.20 Ac-ft 665,200

Peak discharge (base, 3,500 cfs).--Nov. 18 (7:30 p.m.) 3,550 cfs (5.41 ft); Jan. 12 (5 p.m.) 5,900 cfs (6.88 ft); Jan. 24 (3 p.m.) 4,960 cfs (6.32 ft).

* Discharge measurement made on this day.

2168. Pine Creek near Cougar, Wash.

Location.--Lat 46°02'30", long 122°05'30", in E½ sec.15, T.7 N., R.6 E., on right bank 2 miles upstream from mouth and 12½ miles east of Cougar.

Drainage area.--21.4 sq mi.

Records available.--August 1957 to September 1959. Records for August to October 1909, February 1928 to September 1930, published in WSP 272, 492, 674, 694, and 709, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Altitude of gage is 1,330 ft (from topographic map). Supplementary water-stage recorder on right bank at same datum used July 17 to Sept. 30, 1959.

Extremes.--Maximum discharge during year, 921 cfs Jan. 24 (gage height, 4.06 ft); minimum, 119 cfs Oct. 17, 18 (gage height, 2.08 ft).
1957-59: Maximum discharge, that of Jan. 24, 1959; minimum, 116 cfs Oct. 21, 1957 (gage height, 2.05 ft).

Remarks.--Records good except those for period July 1 to Sept. 30, which are fair. No regulation or diversion above station.

Revisions.--See Records available.

Rating table, water year 1958-59 (gage height, in feet,
and discharge, in cubic feet per second)

2.1	121	3.1	339
2.3	146	3.9	767
2.6	197		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	134	134	230	296	225	201	467	328	178	*158	142	136
2	136	137	334	262	214	197	432	270	178	156	140	134
3	136	168	359	237	208	195	359	245	178	156	137	134
4	136	163	280	230	203	193	263	237	189	155	137	183
5	134	210	250	223	205	191	256	225	189	158	137	163
6	*132	455	240	220	218	191	240	216	178	158	137	180
7	153	306	280	218	210	191	230	212	171	158	137	154
8	161	320	253	250	203	199	225	208	175	154	137	149
9	137	398	250	320	203	197	220	212	216	154	137	143
10	132	306	359	382	199	193	218	210	203	154	137	143
11	126	309	467	397	191	193	216	208	216	155	136	141
12	127	*622	380	*570	188	201	214	205	208	155	*136	*140
13	126	498	292	457	189	197	210	205	199	154	136	137
14	122	324	250	360	186	191	210	214	193	152	137	134
15	121	250	228	299	182	191	203	212	184	150	138	133
16	121	216	214	283	184	191	199	203	186	150	138	132
17	121	203	205	267	180	201	197	203	180	149	138	131
18	129	380	214	273	*178	223	193	199	178	149	138	137
19	168	373	201	262	178	228	191	195	176	150	140	173
20	143	581	208	250	176	223	191	193	173	149	140	173
21	138	493	228	240	178	242	191	191	168	149	140	168
22	141	369	212	242	175	235	193	191	168	146	140	160
23	141	*302	208	398	178	235	*193	189	164	146	140	154
24	141	296	205	*753	175	228	195	189	168	146	140	144
25	142	264	237	457	182	237	193	191	163	146	138	156
26	138	245	286	365	178	*256	212	189	161	146	137	205
27	136	230	317	467	180	256	273	186	160	143	138	201
28	136	218	292	352	186	270	378	184	160	142	136	191
29	134	214	292	289		259	417	*182	160	142	137	186
30	134	210	332	259	---	276	437	178	158	142	136	176
31	136	---	324	240	---	339	---	178	---	142	138	---
Total	4,234	9,192	8,387	10,118	5,348	6,820	7,616	6,448	5,378	4,664	4,275	4,691
Mean	137	306	271	326	191	220	254	208	179	150	138	156
Cfs/m	6.40	14.3	12.7	15.2	8.93	10.3	11.9	9.72	8.36	7.01	6.45	7.29
In.	7.36	15.97	14.58	17.58	9.29	11.85	13.24	11.21	9.35	8.11	7.43	8.15
Ac-ft	8,400	18,230	16,640	20,070	10,610	13,530	15,110	12,790	10,670	9,250	8,480	9,300
Calendar year 1958: Max	622											
Min	121											
Mean	201											
Cfs/m	9.39											
In.	127.65											
Ac-ft	145,700											
Water year 1958-59: Max	753											
Min	121											
Mean	211											
Cfs/m	9.86											
In.	134.12											
Ac-ft	153,100											

Peak discharge (base, 450 cfs).--Nov. 6 (10:30 a.m.) 704 cfs (3.78 ft); Nov. 8 (7 a.m.) 472 cfs (3.38 ft); Nov. 9 (7:30 a.m.) 532 cfs (3.49 ft); Nov. 12 (12 m.) 819 cfs (3.94 ft); Nov. 18 (5 p.m.) 698 cfs (3.77 ft); Nov. 20 (3:15 p.m.) 652 cfs (3.70 ft); Dec. 2 (3:45 p.m.) 542 cfs (3.51 ft); Dec. 11 (10:30 a.m.) 520 cfs (3.47 ft); Jan. 12 (6:15 a.m.) 628 cfs (3.66 ft); Jan. 24 (1:30 p.m.) 921 cfs (4.06 ft); Jan. 27 (2:45 a.m.) 559 cfs (3.54 ft); Apr. 1 (6 p.m.) 542 cfs (3.51 ft); Apr. 30 (5:45 a.m.) 477 cfs (3.39 ft).

* Discharge measurement made on this day.

2198. Speelyai Creek near Cougar, Wash.

Location.--Lat 46°00'25", long 122°20'40", in NW $\frac{1}{4}$ sec. 17, T.6 N., R.4 E., on left bank at road crossing, $3\frac{3}{4}$ miles upstream from mouth and 4 miles southwest of Cougar.

Drainage area.--12.6 sq mi.

Records available.--May to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 500 ft (from topographic map).

Extremes.--Maximum discharge during period May to September, 318 cfs June 11 (gage height, 3.07 ft); minimum, 4.3 cfs Sept. 2, 3 (gage height, 0.62 ft).

Remarks.--Records good except those for period of no gage-height record and those above 200 cfs, which are fair. No regulation or diversion above station. Greater part of flow diverted into Yale Reservoir, 240 ft below station, beginning Mar. 30, 1959.

Rating table, May 19 to Sept. 30, 1959 (gage height, in feet, and discharge, in cubic feet per second)

0.64	4.7	1.5	58
.8	9.1	2.0	123
1.0	18	2.8	271
1.2	31		

Discharge, in cubic feet per second, May to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								-	34	28	8.5	6.1
2								-	34	26	8.5	4.7
3								-	33	25	8.5	5.1
4								-	50	23	8.5	93
5								-	58	25	8.5	118
6								-	48	25	7.9	189
7								-	44	30	7.3	116
8								-	49	25	7.0	85
9								-	224	22	6.7	60
10								-	218	20	6.7	46
11								-	263	18.5	*6.4	39
12								-	253	18	6.7	33
13								-	176	17	6.7	*28
14								-	133	16.5	6.1	25
15								*a98	105	16	5.8	25
16								a98	91	15.5	5.8	22
17								a82	79	14.5	6.1	19
18								a74	67	13.5	6.1	25
19								65	55	13	5.5	144
20								61	48	12.5	5.5	182
21								57	44	12.5	5.5	223
22								52	41	11.5	6.1	156
23								49	38	12	5.5	111
24								47	38	12	5.1	90
25								46	37	11.5	4.7	88
26								46	34	10.5	4.9	191
27								45	34	9.8	8.8	158
28								42	34	9.8	7.9	123
29								*40	33	9.4	5.5	102
30								37	*30	9.1	4.7	86
31								36		8.8	7.0	-----
Total								-	2,425	520.9	204.5	2,592.9
Mean								-	80.8	16.8	6.60	86.4
Cfsm								-	6.41	1.33	0.524	6.86
In.								-	7.16	1.54	0.60	7.65
Ac-ft								-	4,810	1,030	406	5,140
Calendar year	: Max			Min	Mean		Cfsm	In.	Ac-ft			
Water year	: Max			Min	Mean		Cfsm	In.	Ac-ft			

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 1 discharge measurement and records for nearby stations.

Reservoirs in Lewis River basin, Wash.

2176. Swift Reservoir.--Lat 46°03'40", long 122°11'45", in SW $\frac{1}{4}$ sec.28, T.7 N., R.5 E., near left bank in control room of Swift powerhouse on Lewis River, 5 miles east of Cougar. Drainage area, 481 sq mi. Records available, September 1958 to September 1959. Duplex water-stage recorder and long distance indicator in powerhouse. Datum of gage is at mean sea level (levels by Pacific Power & Light Co.). Maximum contents during year, 755,600 acre-ft Jan. 14, 18, 19, 24, 26, 27, 29, Feb. 2, Apr. 5, 6, 29, 30, Aug. 20, 21 (elevation, 1,000.00 ft); minimum observed, 3,410 acre-ft Oct. 1 (elevation, 668.4 ft). Reservoir is formed by rock- and earth-fill dam completed in December 1958; storage began Sept. 29, 1958. Usable capacity, 447,000 acre-ft between elevations 878 (lower limit for economic operation) and 1,000 ft (maximum operating limit). Dead storage, 308,580 acre-ft. Records given herein represent total contents. Water used for power. Records of stage and data from which capacity table was computed furnished by Pacific Power & Light Co.

2185. Yale Reservoir.--Lat 45°57'50", long 122°20'00", in NE $\frac{1}{4}$ sec.32, T.6 N., R.4 E., at left end of Yale Dam on Lewis River just upstream from intake, 500 ft upstream from powerhouse, 1 mile upstream from Canyon Creek, and 3 miles southeast of Yale. Drainage area, 596 sq mi. Records available, August 1952 to September 1959. Water-stage recorder and long distance indicator in powerhouse. Datum of gage is at mean sea level (levels by Pacific Power & Light Co.). Prior to Feb. 1, 1954, indicating gage at same site and datum. Maximum contents during year, 402,200 acre-ft Jan. 17-19, Apr. 6; maximum elevation, 490.12 ft Jan. 18; minimum contents, 293,300 acre-ft Nov. 28 (elevation, 458.24 ft). Maximum contents during period 1952-59, that of Jan. 17-19, Apr. 6, 1959; maximum elevation, that of Jan. 18, 1959; minimum observed since reservoir was first filled, 227,600 acre-ft Feb. 22, 1957 (elevation, 435.65 ft).

Reservoir is formed by rock-fill dam, storage began July 31, 1952. Usable capacity, 189,530 acre-ft between elevations 430 (lower limit for economic operation) and 490 ft (top of spillway gates). Dead storage, 212,250 acre-ft. Records given herein represent total contents. Water used by Pacific Power & Light Co. for power development. Records of stage and data from which capacity table was computed furnished by Pacific Power & Light Co.

2200. Lake Merwin.--Lat 45°57'25", long 122°33'15", in SW $\frac{1}{4}$ sec.34, T.6 N., R.2 E., on dam on Lewis River at Ariel. Drainage area, 730 sq mi. Records available, March 1931 to September 1959. Water-stage recorder and long distance indicator in powerhouse. Datum of gage is at mean sea level (levels by Pacific Power & Light Co.). Maximum contents during year, 424,000 acre-ft Jan. 24 (elevation, 239.86 ft); minimum, 379,500 acre-ft Oct. 22 (elevation, 228.47 ft). Maximum contents during period 1931-59 not determined; minimum observed since reservoir was first filled, 164,200 acre-ft Dec. 5, 1936 (elevation, 166.7 ft).

Reservoir is formed by concrete-arch dam completed in 1931. Usable capacity, 246,000 acre-ft between elevations 165 (lower limit of regulation set by Federal Power Commission) and 235 ft (top of spillway gates) above mean sea level. Dead storage, 159,000 acre-ft. Records given herein represent total contents. Water used for power.

Month-end elevation and contents, water year October 1958 to September 1959

Date	Elevation (feet)†	Contents (acre- feet)	Change in contents (acre-feet)	Elevation (feet)†	Contents (acre- feet)	Change in contents (acre-feet)
Swift Reservoir			Yale Reservoir			
Sept. 30.....	a661.3	1,470	-	489.0	398,000	-
Oct. 31.....	a750.8	59,800	+58,300	487.5	322,600	-75,400
Nov. 30.....	a912.3	413,300	+353,500	459.5	297,300	-25,300
Dec. 31.....	986.7	695,900	+282,600	471.3	335,100	+37,800
Calendar year 1958.....	-	-	+695,900	-	-	-62,500
Jan. 31.....	999.5	753,300	+57,400	489.8	401,000	+65,900
Feb. 28.....	968.0	701,600	-51,700	478.4	359,400	-41,600
Mar. 31.....	995.4	734,700	+33,100	478.4	359,400	0
Apr. 30.....	999.9	755,100	+20,400	490.0	401,800	+42,400
May 31.....	997.0	741,900	-13,200	487.6	392,800	-9,000
June 30.....	997.9	746,000	+4,100	488.9	397,600	+4,800
July 31.....	999.4	752,800	+6,800	489.5	399,100	+1,500
Aug. 31.....	999.8	754,700	+1,900	489.8	401,000	+1,900
Sept. 30.....	999.2	751,900	-2,800	489.5	399,900	-1,100
Water year 1958-59.....	-	-	+750,400	-	-	+1,900
Lake Merwin						
Sept. 30.....	239.5	422,400	-			
Oct. 31.....	238.2	417,200	-5,200			
Nov. 30.....	237.1	412,900	-4,300			
Dec. 31.....	236.0	408,500	-4,400			
Calendar year 1958.....	-	-	-12,700			
Jan. 31.....	239.2	421,200	+12,700			
Feb. 28.....	233.7	399,500	-21,700			
Mar. 31.....	236.6	410,900	+11,400			
Apr. 30.....	239.3	421,600	+10,700			
May 31.....	237.8	415,600	-6,000			
June 30.....	237.0	412,500	-3,100			
July 31.....	238.7	419,200	+6,700			
Aug. 31.....	239.6	422,800	+3,600			
Sept. 30.....	234.6	403,000	-19,800			
Water year 1958-59.....	-	-	-19,400			

† Elevation at 12 p.m.

a Elevation furnished by Pacific Power & Light Co. from their powerplant record.

2205. Lewis River at Ariel, Wash.

Location.--Lat 45°57'10", long 122°33'45" in NW¼ sec. 4, T.5 N., R.2 E., on right bank at Ariel, half a mile downstream from Ariel Dam and powerplant and 3 miles upstream from Cedar Creek.

Drainage area.--731 sq mi.

Records available.--July to October 1909, November 1909 (gage heights only), July to October 1922, July 1923 to September 1959. Published as "near Ariel" 1922-29. Prior to October 1952, discharge measurements made at site half a mile downstream; low discharges not equivalent due to local inflow.

Gage.--Water-stage recorder. Datum of gage is 44.0 ft above mean sea level, unadjusted (levels by Pacific Power & Light Co.). July to November 1909, staff gage at site 4 miles upstream at different datum. July 27 to October 28, 1922, and July 31, 1923, to Apr. 20, 1930, staff gages at site half a mile downstream at datums 3.90 and 0.90 ft higher, respectively, than present datum.

Average discharge.--36 years (1923-59), 4,733 cfs (3,427,000 acre-ft per year), adjusted for storage in Lake Merwin Reservoir since March 1931, Yale Reservoir since August 1952, and Swift Reservoir since October 1958.

Extremes.--Maximum discharge during year, 32,800 cfs Jan. 24 (gage height, 15.12 ft); minimum, 492 cfs Oct. 16 (gage height, -0.12 ft); minimum daily, 701 cfs Aug. 9.

1909, 1922-59: Maximum discharge, 129,000 cfs Dec. 22, 1933 (gage height, 35.0 ft, from floodmarks), from rating curve extended above 56,000 cfs 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 Ariel Dam); minimum daily, 1 cfs July 6, 1931.

Remarks.--Records excellent. No diversion. Flow regulated by Lake Merwin and Yale and Swift Reservoirs (see preceding page). Records of water temperatures for the water year 1959 are given in WSP 1644.

Cooperation.--Gage-height record collected in cooperation with Pacific Power & Light Co.

Revisions (water years).--WSP 884: 1938. WSP 984: 1936-37, 1940-42. WSP 1318: 1924-30(M).

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

0.3	680	9.0	14,900
2.0	2,030	13.0	26,400
5.0	6,230		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	766	917	886	1,260	7,020	957	7,510	12,700	5,630	2,930	715	4,540
2	778	945	1,550	7,110	9,140	6,860	9,970	10,900	4,310	*3,360	705	4,280
3	682	1,110	4,100	7,560	8,950	4,290	4,770	8,660	*3,500	3,970	1,500	4,300
4	786	2,220	5,400	7,080	8,240	5,680	2,670	6,100	3,010	805	1,110	4,420
5	826	3,850	5,360	8,900	6,960	5,920	4,450	6,750	2,310	1,090	1,230	3,990
6	792	7,080	1,140	7,050	6,740	5,850	6,090	5,470	1,670	3,610	2,140	766
7	782	8,620	952	7,020	4,970	2,550	4,610	7,050	2,580	4,110	2,120	1,010
8	1,830	6,340	4,340	5,000	5,890	2,000	5,400	7,710	4,410	4,500	2,160	3,040
9	*2,040	5,560	2,260	4,500	8,660	6,450	4,530	6,640	7,570	4,260	701	3,020
10	2,250	7,150	2,890	5,500	8,250	6,310	6,810	5,290	8,620	3,510	2,190	2,930
11	2,200	5,530	6,910	2,920	8,470	6,620	5,790	6,030	7,200	760	*1,980	2,420
12	1,710	7,980	6,610	6,250	8,410	6,280	4,500	5,040	7,390	760	720	3,790
13	2,240	9,070	4,830	6,260	8,620	6,400	7,510	3,860	6,780	1,320	705	2,030
14	2,210	9,220	3,410	7,900	7,230	5,030	6,470	5,660	4,260	1,020	710	*2,590
15	2,180	6,850	6,720	12,400	5,330	2,040	4,790	6,520	5,620	766	705	2,730
16	2,190	4,040	5,990	11,700	8,350	6,700	5,090	6,800	6,200	766	715	1,640
17	2,270	7,200	2,700	9,750	5,530	6,020	5,350	5,140	6,420	766	710	778
18	1,950	6,530	3,120	4,010	5,410	8,870	4,980	6,070	6,190	766	715	779
19	901	12,200	4,740	8,480	5,890	3,880	2,060	6,610	5,400	760	725	1,370
20	4,060	13,100	1,700	8,700	5,910	5,760	4,590	6,260	3,030	1,450	725	862
21	4,100	11,600	1,130	9,350	6,010	2,120	3,100	6,050	1,940	766	1,220	3,250
22	4,030	8,210	6,300	8,150	4,220	2,060	2,700	5,950	5,680	766	736	3,580
23	3,830	4,830	5,680	9,460	5,780	3,200	2,500	5,900	4,590	766	730	3,980
24	3,760	6,250	3,350	25,800	6,930	*2,660	*3,250	4,760	4,570	760	730	4,230
25	1,970	6,980	945	*19,200	6,650	4,580	2,980	5,670	4,790	760	730	4,570
26	898	6,800	2,590	*14,000	7,100	3,440	2,720	4,200	4,630	754	736	4,670
27	3,150	3,420	2,000	20,300	6,440	4,390	6,590	4,220	1,600	1,210	736	2,840
28	3,690	2,940	945	15,000	3,250	4,530	8,530	4,980	1,640	772	742	5,380
29	1,180	880	6,120	11,900	-	4,540	11,700	4,760	4,930	760	730	7,220
30	910	886	3,620	11,500	-----	4,890	12,800	3,560	3,700	736	736	6,940
31	924	-----	4,110	9,940	-----	5,500	-----	2,950	-----	736	1,170	-----
Total	62,013	178,308	112,988	293,350	190,590	146,177	165,020	191,760	140,170	50,065	31,977	97,725
Mean	2,000	5,744	3,645	9,465	6,807	4,715	5,321	6,185	4,515	1,615	1,032	3,268
Ac-ft	123,000	353,700	224,100	581,900	378,000	289,900	327,300	380,400	278,000	99,300	63,430	193,800
(t)	-22,300	+323,900	+316,000	+136,000	-115,000	+44,500	+73,500	-28,200	+5,800	+15,000	+7,400	-23,700

Adjusted for change in contents in Lake Merwin and Swift and Yale Reservoirs

	Mean	Cfsm	In.	Ac-ft
Calendar year 1958: Max	1,638	11,390	8,784	11,680
Water year 1958-59: Max	2,24	15.6	12.0	16.0
	2.58	17.38	13.85	18.1
	102,700	677,600	540,100	717,900
	263,000	334,400	400,800	352,200
	283,800	114,300	70,830	170,100

Observed

Calendar year 1958: Max	15,900	Min	680	Mean	4,591	Ac-ft	3,324,000
Water year 1958-59: Max	25,600	Min	701	Mean	4,548	Ac-ft	3,293,000

Adjusted

Calendar year 1958: Mean	5,449	Cfsm	7.45	In.	101.14	Ac-ft	3,945,000
Water year 1958-59: Mean	5,561	Cfsm	7.61	In.	103.25	Ac-ft	4,026,000

* Discharge measurement made on this day.

† Change in contents, in acre-feet.

2225. East Fork Lewis River near Heisson, Wash.

Location.--Lat 45°50'10", long 122°27'50", in N $\frac{1}{2}$ sec.17, T.4 N., R.3 E., on right bank 60 ft downstream from Basket Creek, $\frac{1}{2}$ miles northeast of Heisson, and 20 miles upstream from mouth.

Drainage area.--125 sq mi.

Records available.--September 1929 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 366.8 ft above mean sea level (river-profile survey).

Average discharge.--30 years, 747 cfs (540,800 acre-ft per year).

Extremes.--Maximum discharge during year, 5,960 cfs Nov. 18 (gage height, 8.01 ft); minimum, 52 cfs Oct. 6 (gage height, 0.35 ft).

1929-59: Maximum discharge, 15,600 cfs Dec. 22, 1933 (gage height, 12.3 ft), from rating curve extended above 12,000 cfs; minimum, 29 cfs Nov. 3, 1935 (gage height, 0.04 ft).

Remarks.--Records excellent. No regulation or diversion above station.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

0.3	48	3.0	745
.6	75	4.0	1,310
1.0	124	6.0	3,100
1.5	220	8.0	5,940
2.0	360		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	142	606	1,880	1,730	1,750	3,120	1,480	420	235	88	76
2	57	174	835	1,470	1,410	1,460	2,770	1,060	396	240	88	63
3	55	272	1,820	1,150	1,190	1,160	1,910	840	*384	220	88	60
4	54	664	1,170	950	1,110	962	1,450	750	462	213	88	465
5	*54	920	905	855	984	865	1,210	780	718	215	89	590
6	54	2,780	815	775	994	770	1,010	727	610	230	86	522
7	67	2,140	1,370	795	905	745	870	668	528	381	*81	297
8	871	2,860	1,290	1,420	840	755	770	632	498	275	79	272
9	348	2,270	1,070	2,520	840	785	704	678	980	232	77	195
10	272	2,040	1,830	*2,880	825	727	660	646	1,110	211	75	157
11	211	1,910	4,700	2,400	736	680	624	594	1,230	193	74	*140
12	172	3,140	3,090	3,540	660	820	594	534	1,140	184	76	127
13	148	3,520	2,020	2,760	740	845	542	530	940	176	76	115
14	129	2,240	1,480	1,970	1,010	750	530	665	820	172	72	106
15	115	1,560	1,170	1,530	885	678	494	1,170	714	165	69	104
16	104	1,140	956	1,530	967	655	452	994	709	159	71	108
17	97	910	815	1,280	*1,050	714	434	1,010	642	150	75	97
18	112	2,830	1,010	1,250	935	895	414	1,070	562	138	77	121
19	509	4,080	890	1,170	895	930	393	1,000	514	134	75	562
20	506	4,060	825	1,060	815	*765	381	880	452	126	74	775
21	345	3,080	1,040	925	732	972	393	765	420	122	72	984
22	292	*2,120	940	1,250	686	967	*424	668	396	116	77	686
23	303	1,690	850	2,620	736	925	427	602	369	118	75	458
24	240	1,440	795	4,360	691	845	424	554	351	122	67	357
25	208	1,170	994	2,690	845	1,000	393	566	324	116	63	324
26	186	984	1,510	2,100	950	1,960	510	655	303	108	61	1,340
27	188	835	1,890	3,070	915	1,630	1,000	632	294	105	73	1,490
28	155	722	1,710	2,570	1,240	1,650	1,520	598	312	105	80	989
29	140	655	1,720	2,000	-	1,460	1,750	546	286	101	66	664
30	130	602	2,380	1,810	-----	1,670	1,950	494	*256	93	61	506
31	129	-----	2,140	2,030	-----	2,440	-----	452	-----	88	70	-----
Total	6,289	52,950	44,636	58,610	26,318	33,210	28,123	23,280	17,138	5,244	2,343	12,750
Mean	203	1,765	1,440	1,891	940	1,071	937	750	571	169	75.6	425
Cfs/m	1.62	14.1	11.5	15.1	7.52	8.57	7.50	6.00	4.57	1.35	0.605	3.40
In.	1.97	15.75	13.28	17.44	7.93	9.68	8.37	6.92	5.10	1.56	0.70	3.79
Ac-ft	12,470	105,000	89,530	116,300	52,200	65,870	55,780	46,140	33,990	10,400	4,650	25,290
Calendar year 1958: Max	5,220	Min	41	Mean	760	Cfs/m	6.08	In.	82.56	Ac-ft	550,400	
Water year 1958-59: Max	4,700	Min	54	Mean	852	Cfs/m	6.82	In.	92.49	Ac-ft	616,600	

Peak discharge (base, 6,100 cfs).--No peak above base.

* Discharge measurement made on this day.

2235. Kalama River below Italian Creek, near Kalama, Wash.

Location.--Lat 46°02'40", long 122°48'50", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.33, T.7 N., R.1 W., on right bank $\frac{1}{2}$ miles northeast of Kalama, 3 miles upstream from mouth, and 5 miles downstream from Italian Creek.

Drainage area.--201 sq mi.

Records available.--September 1946 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 20 ft (from topographic map). Prior to Oct. 7, 1952, staff gage and crest-stage indicator at site about 70 ft downstream at same datum.

Average discharge.--13 years, 1,264 cfs (915,100 acre-ft per year).

Extremes.--Maximum discharge during year, 8,850 cfs Jan. 24 (gage height, 10.39 ft); minimum, 155 cfs Oct. 3, 5-7; minimum gage height, 2.38 ft Oct. 3.
1946-59: Maximum discharge, 16,000 cfs Dec. 9, 1953 (gage height, 14.93 ft); minimum, that of Oct. 3, 5-7, 1958; minimum gage height observed, 1.76 ft Sept. 13, 1951.

Remarks.--Records excellent except those for period of shifting control, which are fair. Small diversions for fish hatchery returned to stream above gage. No regulation.

Revisions (water years).--WSP 1318: 1948-49(M).

Rating table, water year 1958-59, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

2.2	155	6.0	3,400
3.0	675	8.0	5,740
4.0	1,460	10.0	8,300
5.0	2,360		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	175	298	1,080	2,450	2,090	1,860	4,350	2,850	*710	549	310	259
2	170	369	1,430	2,040	1,880	1,810	3,810	2,020	717	535	310	241
3	165	409	2,370	1,690	1,730	1,620	2,760	1,610	703	*521	*304	247
4	160	724	1,760	1,480	1,600	1,430	2,180	1,420	738	507	310	617
5	155	1,040	1,420	1,380	1,500	1,320	1,880	1,280	964	535	310	1,130
6	155	3,320	1,280	1,290	1,650	1,230	1,650	1,150	805	535	310	1,040
7	190	2,520	1,650	1,430	1,550	1,200	1,460	1,080	745	598	310	828
8	654	3,030	1,650	2,900	1,460	1,180	1,320	1,060	717	514	298	731
9	*395	2,800	1,450	6,020	1,480	1,210	1,220	1,100	1,630	493	291	584
10	*388	2,460	2,010	5,340	1,540	1,200	1,170	1,050	1,810	472	291	507
11	336	2,260	4,300	4,070	1,430	1,120	1,130	988	1,770	465	291	451
12	298	5,120	3,370	6,380	1,290	1,190	1,080	924	1,930	444	291	416
13	265	5,050	2,400	*4,850	1,500	1,200	1,040	940	1,540	444	284	332
14	241	3,140	1,880	3,500	2,060	1,130	1,020	1,140	1,300	437	278	362
15	223	2,180	1,570	2,690	1,620	1,070	964	1,440	1,150	430	272	*356
16	211	1,600	1,330	2,470	1,550	1,040	908	1,270	1,070	416	272	356
17	223	1,290	1,200	2,140	1,560	1,080	884	1,230	972	409	272	324
18	336	3,020	1,240	2,060	1,460	1,280	860	1,160	884	395	278	356
19	752	4,490	1,110	1,890	*1,590	1,460	820	1,090	828	388	272	898
20	689	4,380	1,110	1,700	1,520	1,310	812	1,000	782	382	272	1,320
21	528	3,820	1,390	1,560	1,400	1,520	812	948	738	382	265	1,390
22	493	2,660	1,330	1,800	1,300	1,590	852	900	710	376	272	1,110
23	493	2,140	1,240	3,730	1,280	*1,520	860	884	675	369	265	892
24	402	1,880	1,190	7,960	1,230	1,390	*860	868	661	376	253	775
25	362	1,570	1,660	5,090	1,400	1,380	836	852	647	362	247	745
26	330	*1,380	2,380	3,910	1,490	1,750	932	868	619	350	247	1,310
27	310	1,220	3,360	5,140	1,400	1,730	1,320	852	598	336	272	1,490
28	291	1,110	3,000	3,840	1,540	2,000	2,600	805	640	330	284	1,170
29	272	1,020	2,640	2,890	-	1,980	3,520	752	619	330	259	972
30	259	964	2,990	2,380	-----	2,570	4,020	724	570	317	247	860
31	259	-----	2,690	2,340	-----	3,360	-----	703	-----	317	265	-----
Total	10,180	67,264	59,680	98,410	43,100	46,730	47,930	34,958	28,242	13,314	8,702	22,119
Mean	328	2,242	1,925	3,175	1,559	1,507	1,598	1,128	941	429	281	737
Cfsm	1.63	11.2	9.58	15.8	7.66	7.50	7.95	5.61	4.68	2.13	1.40	3.67
In.	1.88	12.45	11.04	18.21	7.97	8.65	8.87	6.47	5.23	2.46	1.61	4.09
Ac-ft	20,190	133,400	118,400	195,200	85,490	92,690	95,070	69,340	56,020	26,410	17,260	43,870

Peak discharge (base, 6,000 cfs).--Nov. 12 (7:30 p.m.) 8,360 cfs (10.04 ft); Nov. 18 (10:30 p.m.) 6,990 cfs (8.99 ft); Jan. 9 (4:30 p.m.) 6,830 cfs (8.67 ft); Jan. 12 (9:30 a.m.) 7,220 cfs (9.17 ft); Jan. 24 (12 m.) 8,850 cfs (10.39 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used Oct. 1 to Nov. 5.

2265. Cowlitz River at Packwood, Wash.

Location--Lat 46°36'40", long 121°40'45", in SE $\frac{1}{4}$ sec.16, T.13 N., R.9 E., on right bank 100 ft upstream from Forest Service bridge, half a mile upstream from Skate Creek, and half a mile northwest of Packwood.

Drainage area--287 sq mi.

Records available--July 1911 to December 1919, September 1929 to September 1959. Published as "at Lewis" 1911-19.

Gage--Water-stage recorder. Datum of gage is 1,048.0 ft above mean sea level (Bureau of Public Roads bench mark). July 1, 1911, to Dec. 31, 1919, staff gages at sites about 1 mile upstream at different datums. Sept. 30, 1929, to Jan. 1, 1930, staff gage at present site and datum.

Average discharge--38 years, 1,634 cfs (1,183,000 acre-ft per year).

Extremes--Maximum discharge during year, 15,400 cfs Dec. 3 (gage height, 10.65 ft); minimum, 340 cfs Oct. 7 (gage height, 2.70 ft).

1911-19, 1929-59: Maximum discharge, 36,600 cfs Dec. 21, 1933 (gage height, 13.0 ft), from rating curve extended above 12,600 cfs; minimum, 130 cfs Nov. 29, 1952; minimum gage height, 2.47 ft Sept. 26, 1955.

Remarks--Records good except those for periods of shifting control, which are fair. Small diversions for domestic use. No regulation.

Revisions (water years)--WSP 884: 1938. WSP 1348: 1916-18(M), 1934. The supplemental peak discharge for Dec. 13, 1947, has been revised to Dec. 13 (1:35 p.m.), 13,100 cfs, superseding figure published in WSP 1094.

Rating tables, water year 1958-59, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 24

Nov. 25 to Sept. 30

2.7	340	6.0	3,050	3.1	495	7.0	4,550
3.3	575	7.0	5,010	4.0	960	8.0	6,950
4.0	965	8.0	7,340	5.0	1,750	9.5	11,500
5.0	1,820	9.0	10,000	6.0	2,800		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	403	535	2,340	2,220	1,390	1,440	3,390	4,620	3,380	2,850	1,220	588
2	435	547	*5,790	2,450	1,250	1,340	5,250	2,940	4,550	2,930	1,160	539
3	459	575	9,020	2,020	1,180	1,170	3,200	2,320	4,750	2,500	1,020	539
4	455	1,410	3,920	1,750	1,140	1,040	2,490	1,930	4,640	2,310	932	1,250
5	419	1,400	2,620	1,640	1,090	953	2,190	1,620	5,810	2,630	878	2,280
6	372	8,930	2,170	1,500	1,130	890	1,950	1,460	4,550	2,430	*860	3,070
7	638	5,080	2,380	1,370	1,050	866	1,690	1,490	3,430	2,010	878	1,970
8	2,780	7,080	2,320	1,530	968	872	1,530	1,800	3,040	1,840	904	2,040
9	1,820	5,550	2,250	2,110	946	848	1,450	1,970	3,180	*1,960	884	1,370
10	2,010	4,610	3,440	2,390	890	812	1,430	1,860	2,800	2,160	848	1,060
11	1,390	3,760	10,300	2,340	866	776	1,520	1,630	3,420	2,720	806	953
12	1,110	7,120	7,080	3,500	*842	842	1,500	1,590	4,580	2,750	710	884
13	1,010	5,950	3,920	3,000	824	830	1,440	2,190	4,250	2,530	634	848
14	776	3,460	2,790	2,410	818	764	1,330	3,380	3,380	2,300	665	788
15	647	2,390	2,280	*2,080	759	726	1,210	3,570	3,070	2,250	710	*705
16	571	1,890	1,970	1,960	732	705	1,110	2,750	3,120	2,260	737	675
17	535	1,590	1,740	1,970	700	812	1,050	2,450	2,990	2,400	720	588
18	*726	1,950	2,320	2,230	656	1,030	995	2,340	3,310	2,490	638	553
19	1,190	2,660	2,190	2,070	634	*1,040	953	2,080	5,020	2,450	571	1,510
20	1,060	6,610	2,100	1,860	598	946	988	1,850	5,660	2,350	547	2,260
21	869	7,980	2,490	1,680	575	953	1,140	1,770	5,050	2,260	539	1,900
22	754	6,050	2,170	1,760	559	897	1,620	1,980	4,250	2,060	551	1,630
23	690	5,400	1,920	3,150	543	848	*1,660	2,570	3,530	2,040	543	1,240
24	611	5,480	1,700	5,710	535	812	1,850	3,030	3,620	1,950	580	1,080
25	571	3,750	1,600	4,330	611	830	1,760	2,850	3,380	1,740	575	1,120
26	547	2,720	1,620	2,850	624	995	1,700	2,500	2,760	1,540	598	4,640
27	535	2,210	1,610	2,810	616	974	1,790	2,270	2,560	1,350	830	3,300
28	519	1,880	1,500	2,460	759	995	2,270	2,090	2,430	1,110	726	2,620
29	495	1,660	1,540	2,070	-	953	5,500	2,060	2,400	1,050	563	2,100
30	467	1,520	2,940	1,790	-----	1,040	7,240	2,110	2,520	1,050	511	1,690
31	471	-----	3,220	1,590	-----	1,300	-----	*2,480	-----	1,150	602	-----
Total	25,335	111,767	95,250	73,600	23,305	29,299	62,996	71,530	111,730	65,670	22,940	45,800
Mean	517	3,726	3,073	2,374	832	945	2,307	2,307	3,724	2,118	740	1,527
Cfsm	2,85	13.0	10.7	8.27	2.90	3.29	7.32	8.04	13.0	7.38	2.58	5.32
In.	3.28	14.48	12.34	9.54	3.02	3.80	8.16	9.27	14.48	8.51	2.97	5.93
Ac-ft	50,250	221,700	188,900	146,000	46,220	58,110	125,000	141,900	221,600	130,300	45,500	90,840

Calendar year 1958: Max 10,300 MIn 358 Mean 1,858 Cfsm 6.47 In. 87.85 Ac-ft 1,345,000
 Water year 1958-59: Max 10,300 MIn 372 Mean 2,025 Cfsm 7.06 In. 95.78 Ac-ft 1,466,000

Peak discharge (base, 8,000 cfs).--Nov. 6 (4:30 p.m.) 12,600 cfs (9.87 ft); Nov. 8 (5:30 a.m.) 9,860 cfs (8.95 ft); Nov. 12 (3 p.m.) 9,320 cfs (8.75 ft); Nov. 20 (8:30 p.m.) 9,940 cfs (8.97 ft); Dec. 3 (12:15 a.m.) 15,400 cfs (10.65 ft); Dec. 11 (5:30 p.m.) 12,800 cfs (9.89 ft); Apr. 30 (10:30 to 11:30 a.m.) 8,060 cfs (8.41 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used Nov. 21-24, June 20 to Aug. 4, Sept. 5-30.

2325. Cispus River near Randle, Wash.

Location.--Lat 46°26'50", long 121°51'35", in NW¹ sec.18, T.11 N., R.8 E. (unsurveyed), on left bank 60 ft upstream from bridge to Tower Rock ranger station, 4 miles downstream from North Fork, and 8 miles southeast of Randle.

Drainage area.--321 sq mi.

Records available.--October 1910 to February 1912, September 1929 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,221.60 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Mar. 1, 1912, staff gage at site 1 mile upstream at different datum. Sept. 28 to Oct. 31, 1929, staff gage and Nov. 1, 1929, to Nov. 26, 1949, Oct. 1-24, 1950, water-stage recorder, at site 450 ft upstream at datum 0.26 ft higher.

Average discharge.--31 years (1910-11, 1929-59), 1,319 cfs (954,900 acre-ft per year).

Extremes.--Maximum discharge during year, 5,320 cfs Jan. 12 (gage height, 7.17 ft); minimum, 300 cfs Oct. 5-7 (gage height, 3.11 ft).
1910-12, 1929-59: Maximum discharge, 20,000 cfs Dec. 22, 1933 (gage height, 12.7 ft, site and datum then in use), from rating curve extended above 8,000 cfs; minimum, 183 cfs Dec. 30, 1936; minimum gage height, 2.55 ft Oct. 25, 1942, site and datum then in use.

Remarks.--Records excellent except those for October, which are good. No regulation or diversion above station. Records of water temperatures for the water year 1959 are given in WSP 1644.

Revisions (water years).--WSP 794: 1934. WSP 1288: Drainage area.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 9

Nov. 10 to Sept. 30

3.1	295	5.0	1,870	3.2	350	5.0	1,850
3.5	520	6.2	3,500	3.5	525	6.0	3,180
4.0	875			4.0	850	7.0	4,980

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	325	384	1,380	1,800	1,620	930	1,600	3,150	2,170	1,160	604	435
2	330	378	*1,780	1,660	1,470	914	2,150	2,550	2,520	1,190	585	411
3	325	389	3,310	1,410	1,370	874	2,020	2,130	2,570	1,120	567	417
4	315	692	2,610	1,350	1,350	829	1,860	1,870	2,520	1,040	561	447
5	310	811	2,130	1,350	1,240	815	1,800	1,630	2,670	1,030	543	689
6	310	2,000	1,860	1,310	1,210	794	1,660	1,510	2,550	1,000	*537	748
7	330	2,300	1,900	1,280	1,140	794	1,530	1,490	2,200	946	531	618
8	920	2,700	1,740	1,650	1,070	794	1,440	1,630	1,960	882	551	604
9	604	3,240	1,580	2,670	1,030	794	1,390	1,720	2,100	*858	519	525
10	618	3,280	1,770	3,210	986	774	1,370	1,710	1,950	914	507	483
11	520	2,500	3,280	3,020	930	754	1,440	1,590	2,020	946	507	477
12	460	3,070	3,620	4,880	*890	808	1,430	1,580	2,240	978	495	465
13	430	3,280	2,900	3,980	882	801	1,380	1,990	2,190	946	477	453
14	406	2,510	2,400	3,020	898	767	1,310	2,870	1,990	890	471	*447
15	384	1,980	2,070	*2,480	836	754	1,220	3,120	1,770	866	483	435
16	367	1,620	1,810	2,220	822	754	1,140	2,660	1,770	836	501	417
17	350	1,390	1,620	2,020	808	808	1,090	2,390	1,710	829	495	394
18	*394	1,860	1,660	1,970	774	922	1,040	2,250	1,620	828	465	405
19	705	2,780	1,570	1,840	760	*930	1,000	2,070	1,930	829	447	508
20	637	2,670	1,470	1,680	741	882	1,010	1,890	2,110	801	435	774
21	540	3,520	1,650	1,560	728	962	1,110	1,800	2,010	780	429	702
22	502	3,090	1,570	1,490	715	978	1,310	1,840	1,830	748	435	637
23	478	2,940	1,460	1,800	702	954	*1,490	2,130	1,690	760	435	573
24	448	2,670	1,390	3,390	689	922	1,630	2,330	1,600	767	435	537
25	430	2,310	1,360	3,570	715	958	1,580	2,250	1,560	696	435	531
26	418	1,980	1,460	2,820	708	1,080	1,570	2,100	1,370	682	435	1,020
27	406	1,720	1,580	2,820	689	1,060	1,610	1,960	1,300	644	501	1,270
28	394	1,540	1,430	2,550	728	1,080	1,690	1,840	1,220	598	483	1,110
29	384	1,410	1,360	2,240	-	1,070	2,300	1,790	1,170	579	429	946
30	372	1,310	1,530	1,980	-----	1,130	3,390	1,800	1,150	573	411	829
31	367	-----	1,670	1,800	-----	1,240	-----	*1,920	-----	598	435	-----
Total	13,779	62,524	58,920	70,820	26,481	27,906	46,560	63,560	57,450	26,315	15,124	18,407
Mean	444	2,084	1,901	2,255	946	900	1,552	2,050	1,915	849	488	614
Cfsm	1.38	6.49	5.92	7.12	2.95	2.80	4.83	6.39	5.97	2.64	1.52	1.91
In.	1.60	7.24	6.83	8.20	3.07	3.23	5.39	7.36	6.66	3.05	1.75	2.13
Ac-ft	27,330	124,000	116,900	140,500	52,520	55,350	92,350	126,100	114,000	52,200	30,000	36,510

Calendar year 1958: Max 4,430 Min 310 Mean 1,351 Cfsm 4.21 In. 57.16 Ac-ft 978,200
Water year 1958-59: Max 4,880 Min 310 Mean 1,337 Cfsm 4.17 In. 56.51 Ac-ft 967,800

Peak discharge (base, 4,000 cfs, revised).--Nov. 9 (6 to 7 p.m.) 4,070 cfs (6.53 ft); Jan. 12 (10:30 a.m.) 5,320 cfs (7.17 ft); Jan. 24 (7 p.m.) 4,130 cfs (6.56 ft).

* Discharge measurement made on this day.

2335. Cowlitz River near Kosmos, Wash.

Location.--Lat 46°28'00", long 122°07'20", in SE $\frac{1}{4}$ sec.1, T.11 N., R.5 E., on right bank half a mile downstream from Tumwater Creek, $\frac{1}{2}$ miles downstream from Cispus River, and 4 miles southeast of Kosmos.

Drainage area.--1,042 sq mi.

Records available.--October 1947 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 759.29 ft above mean sea level (levels by city of Tacoma). Prior to Dec. 3, 1948, staff gage at site half a mile upstream at different datum.

Average discharge.--12 years, 5,206 cfs (3,769,000 acre-ft per year).

Extremes.--Maximum discharge during year, 23,500 cfs Nov. 13 (gage height, 13.85 ft); minimum, 922 cfs Oct. 7 (gage height, 3.15 ft).
1947-59: Maximum discharge, 33,800 cfs Feb. 11, 1951 (gage height, 16.60 ft); minimum, 518 cfs Nov. 29, 1952 (gage height, 2.34 ft).

Remarks.--Records excellent. No regulation. Small diversion for domestic use and irrigation above station.

Revisions.--WSP 1218: Drainage area.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

3.2	950	8.0	6,350
4.0	1,470	10.0	10,900
5.0	2,280	13.5	22,200
6.0	3,350		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	986	1,380	5,320	9,000	6,510	3,710	6,960	15,100	7,120	5,050	2,270	1,460
2	992	1,390	7,360	7,900	5,860	4,270	13,400	11,100	9,170	5,420	2,270	1,390
3	1,030	1,440	*19,900	6,490	5,420	4,050	11,500	8,590	10,200	4,790	2,150	1,340
4	1,020	2,180	15,300	5,720	5,120	3,690	9,270	7,080	9,800	4,550	2,060	1,460
5	1,010	2,870	10,700	5,470	4,810	3,490	7,940	6,200	10,800	4,550	1,960	2,950
6	980	7,850	8,570	5,120	4,780	3,340	7,080	5,570	10,500	4,780	1,910	4,300
7	992	14,400	8,570	4,880	4,490	3,250	6,330	5,280	8,540	4,150	*1,870	3,730
8	3,970	13,800	8,740	5,450	4,230	3,210	5,810	*5,620	7,220	3,810	1,880	3,570
9	3,530	15,000	7,640	8,160	4,050	3,180	5,390	6,100	7,400	3,620	1,850	2,920
10	3,590	15,700	7,870	10,700	3,880	3,180	5,210	6,230	7,200	*3,980	1,820	2,430
11	2,880	11,400	17,600	10,300	3,630	3,030	5,290	5,840	7,000	4,430	1,770	2,170
12	2,290	15,900	21,900	14,400	3,430	3,220	5,260	5,480	8,830	4,700	1,700	2,020
13	2,070	21,700	16,100	14,200	*3,330	3,270	5,070	6,030	9,170	4,550	1,610	1,920
14	1,880	14,900	11,800	11,100	3,340	3,090	4,810	9,140	7,740	4,150	1,580	*1,830
15	1,670	10,600	9,370	9,050	3,150	2,980	4,490	11,100	6,900	3,940	1,600	1,750
16	1,540	7,690	7,760	*8,030	3,050	2,950	4,180	9,620	6,640	3,850	1,630	1,670
17	1,430	6,200	6,670	7,360	2,990	3,060	3,950	8,030	6,620	3,890	1,650	1,800
18	1,470	6,320	6,800	7,660	2,850	3,540	3,750	7,510	6,210	3,990	1,600	1,520
19	*2,300	10,500	7,020	7,490	2,740	3,810	3,590	6,820	7,490	4,050	1,510	1,860
20	2,700	12,100	6,400	6,770	2,660	3,640	3,520	6,180	9,400	3,850	1,450	3,390
21	2,280	20,600	6,900	6,160	2,590	3,720	3,710	5,790	9,120	3,720	1,400	3,470
22	2,070	17,700	6,840	6,030	2,540	3,800	4,270	5,670	8,240	3,520	1,390	3,230
23	1,960	16,200	6,200	8,510	2,500	3,660	4,840	6,510	7,340	3,350	1,390	2,970
24	1,810	14,400	5,700	17,900	2,430	3,510	*5,340	7,660	6,710	3,340	1,330	2,530
25	1,670	12,900	5,400	19,700	2,600	3,460	5,440	7,910	6,980	3,110	1,400	2,460
26	1,600	10,000	5,450	14,400	2,760	3,920	5,370	7,300	5,980	2,890	1,410	4,820
27	1,530	7,920	5,810	13,000	2,630	*3,980	5,820	6,670	5,400	2,670	1,550	7,080
28	1,480	6,710	5,450	11,700	2,750	4,020	6,230	6,150	5,150	2,410	1,700	5,880
29	1,430	5,910	5,180	9,900	-	4,040	9,780	5,820	4,960	2,260	1,500	4,350
30	1,380	5,340	6,660	8,380	-----	4,110	15,400	5,720	4,880	2,190	1,360	4,010
31	1,330	-----	8,620	7,430	-----	4,620	-----	*5,960	-----	2,220	1,360	-----
Total	56,870	310,990	278,500	288,360	101,120	110,800	189,000	223,680	228,610	117,970	51,990	86,430
Mean	1,835	10,370	8,984	9,302	3,611	3,574	6,300	7,215	7,620	3,805	1,677	2,881
Cfs/m	1.76	9.95	8.62	8.93	3.47	3.43	6.05	6.92	7.31	3.65	1.61	2.76
In.	2.03	11.10	9.94	10.29	3.61	3.95	6.75	7.98	8.16	4.21	1.86	3.08
Ac-ft	112,800	616,800	552,400	572,000	200,600	219,800	374,900	443,700	453,400	234,000	103,100	171,400
Calendar year 1958:	Max	21,900	Min	980	Mean	5,287	Cfs/m	5.07	In.	68.88	Ac-ft	3,828,000
Water year 1958-59:	Max	21,900	Min	980	Mean	5,601	Cfs/m	5.38	In.	72.96	Ac-ft	4,055,000

Peak discharge (base, 16,000 cfs).--Nov. 7 (3:30 a.m.) 17,600 cfs (12.16 ft); Nov. 10 (2 a.m.) 17,700 cfs (12.20 ft); Nov. 13 (3:30 a.m.) 23,500 cfs (13.85 ft); Nov. 21 (1:30 p.m.) 21,300 cfs (13.23 ft); Dec. 3 (2:30 p.m.) 21,600 cfs (13.31 ft); Dec. 12 (7 a.m.) 23,000 cfs (13.70 ft); Jan. 12 (8 p.m.) 16,100 cfs (11.73 ft); Jan. 25 (2 a.m.) 21,400 cfs (13.25 ft); Apr. 30 (11:30 p.m.) 17,200 cfs (12.06 ft).

* Discharge measurement made on this day.

COWLITZ RIVER BASIN

201

2350. Cowlitz River at Mossyrock, Wash.

Location.--Lat 46°33'00", long 122°29'30", in SE $\frac{1}{4}$ sec. 1, T.12 N., R.2 E., on left bank 200 ft upstream from Harmony Bridge and $\frac{1}{2}$ miles north of Mossyrock.

Drainage area.--1,170 sq mi, approximately.

Records available.--January to April 1912, November 1912 to June 1913 (fragmentary), October 1913 to September 1917, March 1926 to September 1935, August 1946 to October 1959 (destroyed by flood in November 1959), discontinued. Estimated means October to December 1912 and July to September 1913, published in State Water-Supply Bulletin 5, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Datum of gage is 357.31 ft above mean sea level (levels by city of Tacoma). Jan. 1, 1912, to Sept. 30, 1917, and Mar. 12, 1926, to Sept. 30, 1935, staff, chain, or wire-weight gages within 200 ft of present site at different datums.

Average discharge.--27 years (1912-17, 1926-35, 1946-59), 5,413 cfs (3,919,000 acre-ft per year).

Extremes.--Maximum discharge during period October 1958 to October 1959, 26,800 cfs Nov. 13 (gage height, 17.08 ft); minimum, 1,010 cfs Oct. 7, 1958 (gage height, 3.74 ft).

1912-17, 1926-35, 1946-59: Maximum discharge, 83,500 cfs Dec. 23, 1933 (gage height, 37.53 ft, average of high-water marks, site and datum then in use), from rating curve extended above 20,000 cfs; minimum, 543 cfs Nov. 30, 1952 (gage height, 3.06 ft).

Maximum stage known since 1906, that of Dec. 23, 1933. Flood in November 1906 reached a stage of 29.4 ft, datum in use 1913-34 (discharge, 61,300 cfs).

Remarks.--Records excellent. Minor diversions for domestic and farm use above station.

No regulation.

Revisions (water years).--WSP 769: 1933. WSP 1318: 1913 (annual figures). WSP 1398: 1914(M), 1916-17(M), 1927-28(M), 1930-32(M), 1934-35(M), 1949. See also Records available.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,070	1,470	5,820	9,840	7,820	3,970	*6,970	17,100	7,100	5,090	2,440	*1,560
2	1,060	1,550	7,530	9,050	8,940	4,800	14,000	12,900	9,110	5,370	2,460	1,520
3	1,080	1,560	17,800	7,460	6,400	4,580	13,400	9,780	10,500	5,190	2,350	1,470
4	1,100	2,060	17,800	6,510	6,000	4,290	10,500	8,030	*10,200	4,780	2,250	1,580
5	1,090	3,140	12,200	6,150	5,620	4,020	8,880	6,960	11,000	4,630	2,170	2,680
6	1,050	6,170	9,560	5,820	5,570	3,840	7,870	6,160	11,200	4,900	2,100	3,990
7	1,070	15,900	9,400	5,500	5,300	3,720	6,960	5,750	9,260	4,500	2,050	4,190
8	3,310	14,500	9,880	5,860	4,960	3,680	6,270	5,970	7,820	4,070	2,050	3,560
9	4,240	16,500	8,710	8,410	4,750	3,680	5,840	6,490	7,990	3,860	2,030	3,320
10	3,700	17,700	8,820	11,700	4,510	3,700	5,570	6,780	8,010	4,000	1,980	2,740
11	3,340	13,400	*17,700	11,800	4,290	3,500	5,570	6,380	7,490	4,400	1,930	2,440
12	2,620	18,700	24,700	10,000	4,910	3,680	5,530	5,910	9,090	4,320	1,870	2,280
13	2,300	25,600	13,800	16,800	3,890	3,780	5,350	6,200	9,820	4,820	1,780	2,130
14	2,150	18,500	14,300	13,200	3,950	3,820	5,120	9,130	8,500	4,340	1,710	2,030
15	1,890	12,600	11,100	10,500	3,740	3,500	4,840	12,000	7,420	4,050	1,710	1,970
16	1,720	9,110	9,050	9,200	3,640	3,420	4,510	10,700	6,990	3,950	1,730	1,870
17	1,590	7,270	7,700	8,330	3,560	3,440	4,310	8,920	6,990	*3,950	1,790	1,770
18	1,570	7,050	7,550	8,410	3,410	3,860	4,070	8,180	6,580	4,020	1,740	1,690
19	2,280	11,700	7,930	8,410	3,280	4,240	3,860	7,490	7,400	4,050	1,650	1,870
20	2,960	12,500	7,140	7,660	3,220	4,110	3,770	6,700	9,440	3,940	1,580	3,290
21	2,550	22,000	7,490	*6,970	3,110	4,160	3,860	6,200	9,520	3,830	1,540	3,740
22	*2,320	20,100	7,650	6,870	3,070	4,270	4,320	6,060	8,650	3,640	1,530	3,470
23	2,190	17,800	6,920	9,540	3,000	4,100	4,870	6,690	7,760	3,480	1,520	3,180
24	2,030	15,700	6,420	20,700	2,930	3,940	5,370	7,860	6,990	3,480	1,500	2,830
25	1,870	14,700	6,060	24,300	3,140	3,890	5,570	8,270	7,140	3,280	1,510	2,680
26	1,760	11,300	6,040	18,400	*3,350	4,290	5,570	7,910	6,360	3,090	1,500	3,990
27	1,690	9,000	6,470	15,800	3,190	4,430	6,150	7,230	5,700	2,910	1,620	7,440
28	1,640	7,590	6,180	14,400	3,280	4,480	6,560	6,580	5,370	2,700	1,830	6,200
29	1,580	6,690	5,910	12,200	-	4,500	9,660	6,180	5,160	2,480	1,680	5,180
30	1,520	6,070	6,900	10,100	-----	4,530	*16,200	6,000	5,010	2,390	1,510	4,390
31	1,480	-----	9,220	9,030	-----	5,120	-----	6,160	-----	2,390	1,500	-----
Total	61,820	345,930	309,750	333,520	119,950	125,120	201,320	242,610	239,570	122,060	56,610	91,030
Mean	1,994	11,530	9,992	10,760	4,284	4,036	6,711	7,828	7,986	3,937	1,826	3,034
Cfs/m	1.70	9.85	8.54	9.20	3.66	3.45	5.74	6.89	6.83	3.36	1.56	2.59
In.	1.97	11.00	9.85	10.60	3.81	3.98	6.40	7.71	7.62	3.88	1.80	2.89
Ac-ft	122,600	686,100	614,400	661,500	237,900	248,200	399,300	481,200	475,200	242,100	112,300	180,600

Calendar year 1958: Max 25,600 Min 1,050 Mean 5,807 Cfs/m 4.96 In. 67.39 Ac-ft 4,204,000
 Water year 1958-59: Max 25,600 Min 1,050 Mean 6,162 Cfs/m 5.27 In. 71.51 Ac-ft 4,461,000

Peak discharge (base, 16,000 cfs).--Nov. 7 (7 a.m.) 17,800 cfs (12.92 ft); Nov. 10 (5:30 a.m.) 19,000 cfs (13.49 ft); Nov. 13 (9 a.m.) 26,800 cfs (17.08 ft); Nov. 21 (6 p.m.) 23,200 cfs (15.44 ft); Dec. 3 (7 p.m.) 22,300 cfs (15.05 ft); Dec. 12 (12:30 p.m.) 25,900 cfs (16.69 ft); Jan. 13 (12:30 a.m.) 18,000 cfs (12.98 ft); Jan. 25 (5 a.m.) 25,800 cfs (16.64 ft); Apr. 30 (12 p.m.) 18,500 cfs (13.26 ft).

* Discharge measurement made on this day.

Discharge, in cubic feet per second, 1959

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
Oct. 1....	3,800	Oct. 9....	5,350	Oct. 17....	4,820	Oct. 25....	12,800
2....	3,350	10....	5,880	18....	4,310	26....	10,100
3....	3,050	11....	9,650	19....	3,920	27....	2,800
4....	2,810	12....	15,400	20....	3,940	28....	*7,140
5....	*2,600	13....	11,200	21....	4,750	29....	6,400
6....	2,440	14....	8,180	22....	7,640	30....	5,600
7....	2,370	15....	6,600	23....	21,000	31....	5,300
8....	2,330	16....	5,570	24....	14,800		

Total..... 211,220
 Mean..... 6,812
 Cubic feet per second per square mile..... 5.82
 Runoff in inches..... 6.71
 Runoff in acre-feet..... 418,900

Peak discharge (base, 16,000 cfs).--Oct. 12 (12:30 a.m.) 16,700 cfs (12.40 ft); Oct. 23 (8 a.m.) 22,600 cfs (15.20 ft); Nov. 24 (time unknown) about 52,000 cfs (high-water mark 26.1 ft).

Discharge measurement made on this day.

Note.--Discharge measurement of 31,800 cfs made Nov. 25.

COWLITZ RIVER BASIN

2355. West Fork Tilton River near Morton, Wash.

Location.--Lat 46°36'45", long 122°14'45", in NE¹/₄ sec.13, T.13 N., R.4 E., on left bank three-quarters of a mile upstream from mouth and 4 miles northeast of Morton.

Drainage area.--16.4 sq mi.

Records available.--June 1950 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 1,150 ft (from topographic map).

Average discharge.--9 years, 129 cfs (93,390 acre-ft per year).

Extremes.--Maximum discharge during year, 2,850 cfs Nov. 12 (gage height, 6.20 ft), from rating curve extended above 1,200 cfs as explained below; minimum, 7.0 cfs Aug. 25, 26 (gage height, 1.52 ft).

1950-59: Maximum discharge, 6,620 cfs Dec. 11, 1955 (gage height, 7.55 ft, from high-water mark in gage well), from rating curve extended above 1,200 cfs on basis of slope-area measurement of peak flow; minimum, 4.7 cfs Oct. 29, 1952; minimum gage height, 0.87 ft Aug. 25, Sept. 20-24, 1951.

Remarks.--Records excellent. Logging company diverts small amount for sprinkling system. No regulation. Records of water temperatures for the water year 1959 are given in WSP 1644.

Revisions (water years).--WSP 1348: 1953.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 11

Nov. 12 to Sept. 30

1.6	6.0	3.0	164	1.5	6.5	3.5	315
1.8	13.5	3.5	295	1.7	13	4.0	530
2.0	26	4.0	490	2.0	32	5.0	1,240
2.5	74	4.7	930	2.5	87	6.0	2,500
				3.0	177		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.8	27	153	233	145	285	868	336	45	28	9.6	10.5
2	8.5	48	362	173	124	196	497	214	43	28	9.2	8.9
3	8.5	56	*378	140	111	147	273	158	42	27	9.2	8.9
4	8.2	87	217	120	100	119	196	145	68	25	9.2	163
5	8.2	160	157	110	101	104	166	131	90	28	9.2	245
6	8.2	728	143	95	141	94	137	119	74	27	8.9	322
7	79	383	304	88	117	87	115	106	64	28	*8.5	177
8	226	490	238	133	103	97	106	101	63	25	8.5	153
9	88	409	179	362	94	97	103	112	158	23	8.5	103
10	69	316	420	300	84	88	100	104	184	*21	8.2	78
11	51	809	700	249	74	91	100	94	233	19.5	8.0	63
12	42	1,950	378	505	68	133	90	86	214	18.5	8.2	52
13	37	631	227	322	*66	117	82	84	149	17.5	8.2	45
14	31	288	162	222	66	103	78	106	117	17	8.0	*39
15	27	187	126	168	60	93	70	109	95	16.5	8.0	37
16	24	139	103	162	68	90	64	98	88	15.5	7.7	37
17	23	112	90	157	75	119	60	94	79	14.5	8.5	30
18	30	673	131	*189	72	182	58	90	70	14	8.9	30
19	*162	476	106	166	68	175	55	83	63	13.5	9.2	97
20	96	848	112	135	67	*135	56	75	58	13	8.5	217
21	68	508	206	115	67	209	63	70	54	13	8.0	162
22	58	312	179	232	69	189	69	66	49	12.5	8.0	126
23	58	249	145	1,150	77	156	63	63	45	12.5	8.0	95
24	48	329	119	1,240	75	135	*70	62	45	13	7.4	82
25	43	227	122	*528	162	137	68	63	41	12.5	7.2	86
26	38	166	219	382	157	182	88	64	38	11.5	7.7	175
27	34	128	267	560	128	166	238	66	35	11	13	133
28	31	106	206	315	173	191	596	61	36	11	12.5	103
29	28	93	258	214	-	189	700	*55	33	10.5	9.6	62
30	26	94	412	175	---	227	640	51	30	10.5	8.5	89
31	27	285	168	---	---	485	---	47	---	9.9	13	---
Total	1,495.4	11,029	7,104	9,108	2,712	4,817	5,875	3,114	2,403	547.4	275.1	3,029.3
Mean	48.2	368	229	294	96.9	155	196	100	80.1	17.7	8.87	101
Cfs/m	2.94	22.4	14.0	17.9	5.91	9.45	12.0	6.10	4.88	1.08	0.541	6.16
In.	3.39	25.01	16.11	20.65	6.15	10.92	13.32	7.06	5.45	1.24	0.62	6.87
Ac-ft	2,970	21,880	14,090	18,070	5,380	9,550	11,650	6,180	4,770	1,090	546	6,010

Calendar year 1959: Max 1,950 Min 5.2 Mean 123 Cfs/m 7.50 In. 101.91 Ac-ft 89,150
 Water year 1958-59: Max 1,950 Min 7.2 Mean 141 Cfs/m 8.60 In. 116.79 Ac-ft 102,200

Peak discharge (base, 800 cfs).--Nov. 6 (2 p.m.) 1,040 cfs (4.83 ft); Nov. 12 (9 a.m.) 2,850 cfs (6.20 ft); Nov. 18 (5 p.m.) 1,510 cfs (5.28 ft); Jan. 23 (3:30 p.m.) 1,850 cfs (5.41 ft); Mar. 31 (11:30 p.m.) 918 cfs (4.61 ft); Apr. 29 (11 a.m.) 840 cfs (4.50 ft).

* Discharge measurement made on this day.

2362. Tilton River above Bear Canyon Creek, near Cinebar, Wash.

Location.--Lat 46°35'40", long 122°27'30" (revised), in NE1/4 sec.20, T.13 N., R.3 E., on right bank 0.8 mile upstream from Bear Canyon Creek and 1 mile southeast of Cinebar.

Drainage area.--141 sq mi.

Records available.--October 1956 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 600 ft (from topographic map).

Extremes.--Maximum discharge during year, 15,600 cfs Nov. 12 (gage height, 12.48 ft), from rating curve extended above 7,000 cfs; minimum, 74 cfs Oct. 5-7 (gage height, 2.15 ft).

1956-59: Maximum discharge, that of Nov. 12, 1958; minimum, 58 cfs Aug. 25-27, Sept. 8, 9, 13, 1958 (gage height, 2.05 ft).

Remarks.--Records excellent except those above 7,000 cfs and those below 150 cfs, which are good. Several small diversions for municipal and domestic use above station. No regulation.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 11				Nov. 12 to Sept. 30			
2.1	65	5.0	1,650	2.2	70	5.0	1,540
2.4	131	6.0	2,650	2.5	142	6.0	2,560
3.0	350	7.5	4,620	3.0	307	8.0	5,400
4.0	890			3.5	530	11.0	11,700
				4.0	820		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	83	219	975	2,090	1,470	1,800	4,970	2,430	465	296	122	136
2	79	276	1,660	1,620	1,280	1,450	3,590	1,670	445	286	120	112
3	78	296	2,570	1,310	1,180	1,180	2,160	1,310	*426	282	117	109
4	76	459	1,730	1,120	1,080	982	1,620	1,180	508	276	120	800
5	74	681	1,360	1,020	1,040	874	1,360	1,080	724	290	120	1,440
6	74	3,330	1,240	975	1,320	790	1,170	954	607	290	114	1,830
7	251	2,410	1,960	928	1,170	754	1,020	868	536	300	109	1,070
8	1,620	3,120	1,920	1,080	1,040	795	904	820	520	282	107	947
9	717	2,830	1,540	2,100	961	850	832	961	1,140	262	104	664
10	574	2,420	2,720	2,010	880	850	790	969	1,570	245	102	495
11	431	4,250	5,480	1,710	802	784	766	910	1,600	235	100	403
12	346	11,600	3,520	2,850	730	1,040	718	814	1,520	222	102	344
13	300	6,370	2,240	*2,340	700	1,010	658	766	1,180	215	102	304
14	257	3,150	1,680	1,770	736	898	646	892	975	212	100	272
15	226	2,040	1,360	1,440	664	820	618	1,120	844	*205	95	269
16	201	1,520	1,140	1,360	676	784	568	1,010	778	199	97	276
17	184	1,220	989	1,270	748	866	541	922	748	189	104	241
18	201	3,000	1,230	1,470	682	1,200	515	874	640	179	107	235
19	825	5,390	1,050	1,380	646	1,280	465	820	574	173	102	430
20	681	4,200	1,020	1,290	624	1,070	465	736	520	167	100	1,090
21	488	3,820	1,440	1,090	602	1,360	475	670	480	161	95	1,090
22	426	2,620	1,320	1,620	596	1,330	505	618	445	154	97	874
23	445	2,200	1,140	6,300	629	1,140	510	574	416	154	100	858
24	381	2,200	1,000	9,140	618	1,010	510	552	426	158	92	541
25	333	1,770	982	4,860	*998	989	490	585	385	151	88	*596
26	300	1,420	1,300	3,330	1,180	1,230	612	720	369	142	90	1,420
27	272	1,170	1,760	4,110	975	1,180	1,540	674	356	139	188	1,260
28	249	1,020	1,500	2,840	1,150	1,350	3,470	664	360	319	*170	947
29	230	910	1,530	2,080	-	1,400	*4,300	596	340	136	122	742
30	216	862	2,860	1,720	-----	*1,560	3,840	546	314	131	107	607
31	208	-----	2,300	1,740	-----	2,510	-----	505	-----	125	125	-----
Total	10,826	74,773	54,516	69,943	25,157	35,157	40,648	27,830	20,211	6,395	3,418	20,002
Mean	349	2,492	1,759	2,256	898	1,134	1,355	898	674	206	110	667
Cfs/m	2.48	17.7	12.5	16.0	6.37	8.04	9.61	6.57	4.78	1.46	0.780	4.73
In.	2.86	19.72	14.38	18.45	6.64	9.27	10.72	7.34	5.33	1.69	0.90	5.28
Ac-ft	21,470	148,300	108,100	138,700	49,900	69,730	80,620	55,200	40,090	12,680	6,780	39,670

Calendar year 1958: Max 11,600 Min 58 Mean 887 Cfs/m 6.29 In. 85.37 Ac-ft 641,900
 Water year 1958-59: Max 11,600 Min 74 Mean 1,065 Cfs/m 7.55 In. 102.58 Ac-ft 771,200

Peak discharge (base, 6,200 cfs)--Nov. 12 (1 and 2 p.m.) 15,600 cfs (12.48 ft); Nov. 18 (8 p.m.) 7,240 cfs (9.03 ft); Jan. 24 (5 a.m.) 10,400 cfs (10.48 ft).

* Discharge measurement made on this day.

2364. Cinnabar Creek near Cinebar, Wash.

Location.--Lat 46°36'20", long 122°30'30", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.13, T.13 N., R.2 E., on left bank 1 mile east of Cinebar and 2 miles upstream from mouth.

Drainage area.--4.79 sq mi.

Records available.--October 1956 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 940 ft (from topographic map).

Extremes.--Maximum discharge during year, 412 cfs Nov. 12 (gage height, 2.98 ft); minimum, 4.2 cfs Oct. 6 (gage height, 0.88 ft), 1956-59: Maximum discharge, that of Nov. 12, 1958; minimum, 3.1 cfs Aug. 25-27, 1958 (gage height, 0.83 ft).

Remarks.--Records fair. No regulation or diversion above station.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

0.8	2.5	1.6	57
1.0	7.8	2.0	128
1.2	17.5	2.7	310

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.9	8.6	20	71	43	47	167	65	17	16	6.8	*6.8
2	4.6	9.9	31	53	40	42	108	51	16	15.5	6.8	5.9
3	4.6	10	44	45	37	33	64	46	*16	15.5	6.8	7.2
4	4.6	13	38	38	35	28	52	43	18.5	14	7.5	31
5	4.4	19.5	31	35	37	24	49	42	20	16	6.8	55
6	4.2	106	30	32	45	21	42	36	18	16	6.8	61
7	16.5	57	43	30	44	21	38	33	17	16.5	6.8	44
8	40	76	44	36	38	23	33	30	17.5	16	6.5	38
9	19	67	*41	56	33	26	30	40	42	15	6.5	29
10	16	55	74	52	30	27	29	43	46	13.5	6.5	21
11	13	114	176	50	25	26	27	40	51	13.5	6.8	17.5
12	12	296	97	53	23	35	25	35	45	12.5	6.8	15
13	10.5	164	56	*52	22	33	24	31	38	12	6.5	13
14	9.5	67	47	49	23	30	24	39	33	11	6.2	12
15	8.6	47	42	43	21	26	24	61	28	*10.5	6.2	12.5
16	7.8	44	35	41	24	26	22	52	25	10.5	6.8	11.5
17	8.2	37	31	38	25	29	21	49	24	9.9	7.5	10.5
18	9.9	95	42	40	24	40	20	43	22	9.5	6.5	11
19	35	88	36	40	23	42	19	36	21	9.1	5.9	20
20	23	99	37	37	23	35	18	32	19	9.1	5.9	41
21	17.5	91	51	34	22	45	18	29	17.5	9.5	5.9	51
22	16	56	46	47	22	46	19	25	16.5	9.1	6.5	44
23	*14	47	41	*174	23	43	18	23	16	9.1	5.6	34
24	12	45	35	220	22	35	17.5	21	16.5	8.6	5.2	27
25	11	42	32	102	*34	35	17	23	15.5	8.2	4.6	*30
26	10.5	38	40	71	38	44	25	22	14	7.8	6.8	67
27	9.5	31	49	109	31	46	52	24	15	7.5	15	49
28	8.6	26	47	65	40	50	106	24	19.5	7.5	8.6	38
29	8.2	23	52	46	-	53	*133	23	13.5	7.2	6.8	*30
30	7.8	21	113	44	-----	*56	104	20	15	7.5	6.5	24
31	8.6	-----	84	45	-----	92	-----	19	-----	7.2	9.1	-----
Total	380.0	1,891.0	1,585	1,848	847	1,159	1,345.5	1,100	693.0	350.8	213.5	856.9
Mean	12.3	63.0	51.1	59.6	30.2	37.4	44.8	35.5	23.1	11.3	6.89	26.6
Cfsm	2.57	13.2	10.7	12.4	6.30	7.81	9.35	7.41	4.82	2.36	1.44	5.97
In.	2.95	14.68	12.31	14.35	6.58	9.00	10.45	8.54	5.38	2.72	1.66	6.65
Ac-ft	754	3,750	3,140	3,670	1,680	2,300	2,670	2,180	1,370	696	423	1,700

Calendar year 1958: Max 296 Min 3.1 Mean 26.7 Cfsm 5.57 In. 75.53 Ac-ft 19,280
 Water year 1958-59: Max 296 Min 4.2 Mean 33.6 Cfsm 7.01 In. 95.27 Ac-ft 24,330

Peak discharge (base, 220 cfs).--Nov. 12 (2:30 p.m.) 412 cfs (2.98 ft); Jan. 24 (2:45 a.m.) 283 cfs (2.58 ft).

* Discharge measurement made on this day.

2370. Klickitat Creek at Mossyrock, Wash.

Location.--Lat 46°31'15", long 122°28'05", on line between secs.17 and 18, T.12 N., R.3 E., near left bank at upstream side of highway bridge, 1 mile southeast of Mossyrock and 4½ miles upstream from mouth.

Drainage area.--3.45 sq mi.

Records available.--August 1948 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 668.41 ft above mean sea level (levels by city of Tacoma).

Average discharge.--11 years, 9.67 cfs (7,000 acre-ft per year).

Extremes.--Maximum discharge during year, 95 cfs Jan. 24 (gage height, 3.87 ft); no flow for many days during October, August, and September.

1948-59: Maximum discharge, 165 cfs Feb. 17, 1949 (gage height, 3.62 ft), from rating curve extended above 42 cfs; maximum gage height, that of Jan. 24, 1959; no flow for long periods in most years.

Remarks.--Records fair. No regulation or diversion above station.

Revisions (water years).--WSP 1288: Drainage area. WSP 1568: 1957.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 31					Mar. 31 to Sept. 30				
0.4	0	1.2	8.1		0.4	0	1.0	5.1	
.5	.1	2.0	30		.6	.6	1.8	25	
.7	.6	3.1	64		.8	2.2			
.9	2.3								

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.3	16	19	23	14	22	9.1	5.3	3.2	0.1	0.1
2	0	.7	24	16.5	21	12	20	8.4	5.3	3.2	.1	0
3	0	1.0	22	14.5	22	12.5	18	8.4	6.2	3.6	.1	0
4	0	1.9	18.5	14	18.5	11.5	17	9.6	*8.1	2.9	.1	.8
5	.1	4.0	16	14.5	18.5	11	17.5	7.6	9.3	3.9	.2	2.2
6	.5	18.5	18.5	16	19	10.5	16	6.4	5.7	3.3	.2	2.0
7	2	10.5	26	15	16	11	14.5	5.7	4.7	3.4	.1	1.0
8	7	20	20	19	15.5	11.5	13	6.0	7.0	3.2	.1	.8
9	4	27	18.5	26	16	13.5	11.5	7.6	23	2.5	0	.5
10	2	15.5	39	21	16	12	11	7.4	14	2.1	0	.3
11	1	12.0	*49	26	14	11	10.5	6.2	19	1.8	0	.3
12	.9	36	38	31	12.5	13	10	4.5	14	1.7	0	.2
13	.8	28	34	26	14	13	9.6	4.0	12.5	1.6	0	.2
14	.7	26	30	23	16.5	11.5	11	9.9	12.5	1.6	0	.2
15	.6	20	26	23	13	10.5	9.8	13.5	11.5	1.5	0	.2
16	.6	16	23	25	14	10	8.4	10	12	1.4	0	.3
17	.6	14.5	20	22	12.5	11.5	8.4	11.5	11	*1.1	0	.2
18	1	37	26	23	12	12	7.6	9.8	8.8	.9	.1	.3
19	5	28	18.5	21	11.5	11	6.7	8.6	7.9	.7	.1	1.4
20	2	28	22	19	10.5	9.7	6.0	7.9	7.2	.7	.1	1.6
21	1	25	23	*19	9.9	15	5.1	7.2	6.7	.6	0	5.0
22	*6	23	18.5	23	9.9	12	4.9	6.4	6.4	.6	0	3.0
23	*8	20	16.5	*49	9.9	11.5	4.7	5.5	6.0	1.0	.1	1.3
24	.5	19	15.5	62	9.0	10.5	4.5	5.3	6.7	.9	0	1.0
25	.4	16	15	43	15.5	13	4.4	7.8	5.5	.7	0	*1.0
26	.4	14.5	24	40	*12.5	14	9.0	13.5	4.5	.5	0	4.9
27	.3	13.5	18.5	42	11	12.5	12.5	14	5.5	.4	.1	2.6
28	.3	12.5	16.5	35	14	18.5	10.5	9.3	6.0	.5	*.1	1.6
29	.3	12	18	30	-	15.5	11	8.1	4.5	.3	0	*1.2
30	.2	13	22	30	-----	15.5	*11.5	7.2	3.8	.3	0	1.0
31	.3	-----	20	28	-----	*22	-----	6.4	-----	.2	.1	-----
Total	33.9	513.4	712.5	815.5	407.7	392.7	326.6	252.8	260.1	50.3	1.7	35.4
Mean	1.09	17.1	23.0	26.3	14.6	12.7	10.9	8.15	8.67	1.62	0.05	1.18
Cfsm	0.316	4.96	6.67	7.62	4.23	3.68	3.16	2.36	2.51	0.470	0.014	0.342
In.	0.37	5.53	7.68	8.79	4.39	4.23	3.52	2.75	2.80	0.54	0.02	0.38
Ac-ft	67	1,020	1,410	1,620	809	779	648	501	516	100	3.4	70

Calendar year 1958: Max 49 Min 0 Mean 9.52 Cfsm 2.76 In. 37.431 Ac-ft 6,890
 Water year 1958-59: Max 62 Min 0 Mean 10.4 Cfsm 3.01 In. 40.98 Ac-ft 7,540

Peak discharge (base, 60 cfs).--Nov. 12 (5 p.m.) 63 cfs (3.07 ft); Nov. 18 (5:30 p.m.) 65 cfs (3.13 ft); Jan. 24 (2:30 a.m.) 95 cfs (3.87 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-21; discharge estimated on basis of records for nearby stations.

2375. Winston Creek near Mayfield, Wash.

Location.--Lat 46°29'00", long 122°31'15", about center of sec.35, T.12 N., R.2 E., on left bank 100 ft downstream from bridge, 3 miles southeast of Mayfield, and 3¼ miles upstream from mouth.

Drainage area.--40.0 sq mi.

Records available.--October 1949 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 470 ft (from topographic map).

Average discharge.--10 years, 121 cfs (87,600 acre-ft per year).

Extremes.--Maximum discharge during year, 1,590 cfs Nov. 12 (gage height, 7.37 ft, from high-water mark in well); minimum, 5.7 cfs Aug. 25, 26 (gage height, 2.38 ft).
1949-59: Maximum discharge, 3,510 cfs Dec. 9, 1953 (gage height, 8.58 ft), from rating curve extended above 550 cfs; minimum, 0.6 cfs Aug. 24, 1951 (gage height, 1.63 ft).

Remarks.--Records good except those for period Oct. 1 to Jan. 22, which are poor. Small diversion by Howard Lumber Co. for millpond. Diverted water is returned to stream below station. No regulation.

Rating tables, water year 1958-59, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-7			Oct. 8 to Sept. 30		
2.6	18.5	2.4	6.0	4.0	173
2.8	34	2.7	13.5	5.0	435
3.2	80	3.0	26	6.0	820
		3.5	74	7.0	1,370

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	14	140	220	260	180	255	161	67	42	9.0	10
2	20	30	160	200	231	163	*278	149	62	40	8.8	7.8
3	20	31	180	170	211	166	243	136	84	44	8.8	7.0
4	19	89	150	150	192	147	214	138	*74	45	8.5	21
5	21	178	120	120	175	138	197	123	99	46	9.8	52
6	23	511	130	130	195	127	173	107	74	42	8.8	52
7	74	435	170	150	173	125	149	98	63	43	7.6	28
8	194	658	150	200	163	123	129	92	71	36	7.2	27
9	34	580	150	250	151	127	117	115	219	32	6.8	19
10	26	650	*360	350	144	125	105	105	202	28	6.8	15
11	18	538	900	250	138	117	94	98	216	25	6.4	13
12	15	1,000	650	350	125	142	87	87	190	24	7.6	12.5
13	13	800	450	300	127	142	81	78	163	24	7.8	11
14	11.5	650	350	220	154	136	81	105	149	24	7.0	10
15	11	500	250	200	136	129	84	178	131	22	6.8	9.8
16	10	400	170	220	142	123	75	159	127	*21	7.2	11.5
17	9.8	300	150	170	151	125	75	163	115	18.5	8.2	10.5
18	19.5	550	200	210	138	144	70	156	96	17.5	8.8	10.5
19	133	500	160	190	131	147	63	140	84	16	8.0	26
20	53	450	150	*178	123	133	59	125	74	14.5	7.4	38
21	28	350	300	171	113	175	55	113	69	13.5	7.0	54
22	*23	300	250	221	107	168	53	99	64	13	7.4	46
23	*29	250	200	*590	107	161	50	87	61	13.5	7.8	31
24	22	200	150	1,300	96	147	48	80	66	16.5	7.0	*24
25	18	180	130	754	*149	156	47	80	56	14.5	6.0	26
26	16.5	150	160	542	147	178	71	99	53	13	6.0	91
27	15	130	200	582	*136	163	144	140	58	12	*10.5	77
28	14	110	180	444	149	199	156	113	69	12	11.5	55
29	13	100	150	360	-	195	*156	94	58	11.5	8.0	43
30	12.5	110	200	312	-	197	178	84	48	10.5	6.8	36
31	12.5	-----	250	315	-----	238	-----	75	-----	9.5	9.8	-----
Total	946.3	10,744	7,290	9,819	4,264	4,736	3,587	3,577	2,942	744.0	245.1	874.6
Mean	30.5	358	235	317	152	153	120	115	98.1	24.0	7.91	29.2
Ac-ft	1,880	21,510	14,460	19,480	8,460	9,390	7,110	7,090	5,840	1,480	486	1,730

Calendar year 1958: Max 1,000 Min 1.9 Mean 132 Ac-ft 95,790

Water year 1958-59: Max 1,300 Min 6.0 Mean 136 Ac-ft 98,720

Peak discharge (base, 900 cfs).--Nov. 12 (time unknown) 1,590 cfs (7.37 ft); probably Dec. 11 (time and discharge unknown); Jan. 24 (3:30 a.m.) 1,560 cfs (7.32 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 21, Nov. 8, 9, Nov. 12 to Jan. 19; discharge estimated on basis of low-water recorded range in stage, high-water mark in well, 1 discharge measurement, and records for Mill Creek near Salkum. Shifting-control method used Oct. 1-20, Oct. 22 to Nov. 7, Nov. 10, 11, Jan. 20-23.

2380. Cowlitz River near Mayfield, Wash.

Location.--Lat 46°30'40", long 122°36'50", in NE $\frac{1}{4}$ sec. 24, T.12 N., R.1 E., on right bank 1 mile upstream from Mill Creek, 2 miles downstream from Winston Creek, and 2 $\frac{1}{4}$ miles west of Mayfield.

Drainage area.--1,400 sq mi.

Records available.--August to October 1910, December 1910 to September 1911, October to November 1911 (monthly discharge only), April 1934 to September 1959. Published as "at Mayfield" 1910-11.

Gage.--Water-stage recorder. Datum of gage is 226.6 ft above mean sea level, datum of 1929. August 1910 to November 1911 staff gage at site 2 $\frac{1}{2}$ miles upstream at different datum. Apr. 27 to June 30, 1934, staff gage at present site and datum.

Average discharge.--25 years (1934-59), 6,132 cfs (4,439,000 acre-ft per year).

Extremes.--Maximum discharge during year, 37,400 cfs Nov. 12 (gage height, 19.69 ft); minimum, 1,080 cfs Oct. 6 (gage height, 8.31 ft).

1910-11, 1934-59: Maximum discharge, 58,000 cfs Dec. 13, 1946 (gage height, 24.75 ft); minimum, 698 cfs Nov. 30, 1952; minimum gage height, 7.18 ft Nov. 30, Dec. 1, 1936.

Flood in December 1933 is known to have exceeded that of Dec. 13, 1946.

Remarks.--Records excellent. Minor diversions for domestic and farm use above station. No regulation.

Revisions (water years).--WSP 1318: 1949(M). WSP 1348: Drainage area.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 12					Nov. 13 to Sept. 30			
8.3	1,070	12.0	8,280		8.9	1,680	15.0	17,200
9.0	1,930	15.0	17,400		10.0	3,380	19.0	34,000
10.0	3,580	17.5	27,200		12.0	7,760		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,140	1,700	7,280	12,100	9,910	6,390	*12,500	19,100	7,660	5,740	2,710	*1,890
2	1,110	1,850	9,580	11,000	8,840	6,990	17,300	14,400	9,270	5,990	2,710	1,820
3	1,120	1,900	19,600	9,160	8,230	6,460	15,800	11,200	10,500	5,830	2,650	1,760
4	1,160	2,440	19,500	7,970	7,610	5,880	12,400	9,390	*10,500	5,380	2,550	2,160
5	1,150	3,810	15,800	7,480	7,180	5,470	10,700	8,510	11,400	5,200	2,450	4,200
6	1,110	8,920	11,100	7,140	7,480	5,180	9,570	7,340	11,500	5,510	2,340	5,970
7	1,200	17,500	11,600	6,720	7,080	5,010	8,540	6,840	9,800	5,120	2,320	5,580
8	4,700	16,600	12,100	7,110	6,600	4,980	7,710	6,590	8,490	4,620	2,300	4,670
9	5,360	18,800	10,700	10,500	6,360	5,050	7,160	7,580	9,380	4,360	2,300	4,200
10	4,280	19,400	*12,200	13,500	6,010	5,120	6,840	8,020	10,100	4,500	2,270	5,420
11	3,870	17,000	23,600	13,100	5,670	4,810	6,720	7,610	9,600	4,900	2,240	2,990
12	3,030	26,600	29,600	12,700	5,310	5,340	6,720	7,040	10,800	5,140	2,210	2,770
13	2,610	33,000	22,300	18,600	5,090	5,380	6,480	7,060	11,100	5,090	2,120	2,580
14	2,400	22,800	16,500	15,000	5,310	5,120	6,220	9,570	7,770	4,790	2,020	2,450
15	2,160	15,700	12,900	12,100	4,980	4,880	5,940	12,500	8,700	4,520	2,010	2,410
16	1,960	11,600	10,800	10,900	4,860	4,730	5,580	11,600	8,150	*4,360	2,050	2,330
17	1,800	9,430	9,240	9,910	4,900	4,840	5,290	10,000	8,180	4,300	2,100	2,210
18	1,790	10,800	9,190	10,100	4,600	5,650	5,010	9,320	7,580	4,380	2,080	2,080
19	3,040	16,200	9,490	10,200	4,420	6,200	4,790	8,680	8,120	4,400	1,990	2,540
20	3,770	16,900	8,650	9,320	4,300	5,810	4,650	7,840	9,930	4,240	1,910	4,220
21	*3,170	24,900	9,490	*8,410	4,120	6,220	4,710	7,260	10,000	4,120	1,840	4,980
22	2,830	22,500	9,550	8,920	4,040	6,290	5,140	7,010	9,270	3,930	1,840	4,500
23	2,690	19,700	8,620	16,300	4,020	5,900	5,720	7,440	8,440	3,780	1,840	3,990
24	2,450	17,800	7,920	31,500	3,930	5,600	6,150	8,410	7,710	3,780	1,810	3,510
25	2,260	16,500	7,460	30,200	4,480	5,470	6,390	8,970	7,810	3,610	1,800	3,400
26	2,100	12,900	7,640	22,300	*5,090	6,130	6,510	8,810	7,080	3,400	1,800	5,110
27	1,970	10,400	8,780	20,500	4,690	6,240	7,940	8,440	6,430	3,190	1,980	9,050
28	1,920	8,940	8,230	18,000	4,940	6,550	10,200	7,660	6,130	2,990	2,210	7,410
29	1,820	7,940	7,810	15,000	-	6,700	13,700	7,160	5,880	2,770	2,050	*6,180
30	1,750	7,100	10,000	12,400	-----	6,790	*18,900	6,940	5,670	2,690	1,840	5,180
31	1,690	-----	11,600	11,500	-----	8,180	-----	6,960	-----	2,680	1,840	-----
Total	73,410	421,840	375,810	414,140	180,050	179,360	251,280	275,340	264,850	135,290	66,180	115,360
Mean	2,368	14,060	12,120	13,360	5,716	5,766	8,766	8,882	8,828	4,364	2,135	3,845
Cfs/m	1.69	10.0	8.66	9.54	4.08	4.13	5.98	6.34	6.31	3.12	1.52	2.75
In.	1.95	11.21	9.98	11.00	4.25	4.76	6.68	7.31	7.04	3.59	1.76	3.06
Ac-ft	145,600	836,700	745,400	821,400	317,500	355,800	498,400	546,100	525,300	268,300	131,300	228,800
Calendar year 1958: Max	33,000	Min	1,110	Mean	6,863	Cfs/m	4.90	In.	68.55	Ac-ft	4,968,000	
Water year 1958-59: Max	33,000	Min	1,110	Mean	7,487	Cfs/m	5.35	In.	72.59	Ac-ft	5,421,000	

Peak discharge (base, 16,000 cfs).--Nov. 7 (7 and 8:30 a.m.) 19,300 cfs (15.56 ft); Nov. 12 (11 p.m.) 37,400 cfs (19.69 ft); Nov. 21 (5:30 p.m.) 26,000 cfs (17.24 ft); Dec. 3 (7:30 p.m.) 23,900 cfs (16.75 ft); Dec. 12 (8:30 a.m.) 29,700 cfs (18.07 ft); Jan. 13 (3 a.m.) 20,100 cfs (15.81 ft); Jan. 24 (7:30 p.m.) 33,800 cfs (18.96 ft); Apr. 2 (6 p.m.) 18,500 cfs (15.37 ft); May 1 (1 a.m.) 20,800 cfs (15.98 ft).

* Discharge measurement made on this day.

2385. Mill Creek near Salkum, Wash.

Location.--Lat 46°30'50", long 122°37'20", in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 24, T.12 N., R.1 E., on right bank half a mile upstream from mouth and $1\frac{1}{4}$ miles southeast of Salkum.

Drainage area.--20.9 sq mi.

Records available.--May 1955 to April 1959 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 520 ft (from topographic map).

Extremes.--Maximum discharge during year, 726 cfs Jan. 24 (gage height, 4.74 ft); minimum, 2.2 cfs Oct. 4, 6 (gage height, 1.55 ft).
1955-59: Maximum discharge, 940 cfs Dec. 11, 1955 (gage height, 5.16 ft); minimum, 1.7 cfs sometime Aug. 18 to Sept. 10, 1958; minimum gage height, 1.41 ft Sept. 6, 7, 10, 12, 13, 1955.

Remarks.--Records excellent. No known regulation or diversion above station.

Rating table, Oct. 1, 1958, to Apr. 30, 1959 (gage height, in feet, and discharge, in cubic feet per second)

1.55	2.2	2.5	84
1.7	6.1	3.0	167
1.9	18	3.5	295
2.1	34	4.5	630

Discharge, in cubic feet per second, October 1958 to April 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.8	7.3	60	118	118	81	*169					
2	2.6	7.7	78	98	100	71	147					
3	2.4	9.2	110	76	108	71	116					
4	2.2	14.5	87	65	98	60	98					
5	2.4	24	76	62	97	57	88					
6	2.4	109	78	67	121	52	78					
7	4.0	91	115	67	107	49	66					
8	28	118	102	88	95	51	57					
9	14.5	151	88	178	100	70	50					
10	13	115	201	147	106	81	45					
11	8.2	113	*360	134	106	65	43					
12	7.3	346	228	188	90	70	40					
13	6.9	339	159	147	85	73	37					
14	6.1	205	126	118	115	65	42					
15	5.7	129	102	104	100	57	44					
16	4.7	97	85	112	101	52	35					
17	4.4	84	73	94	101	52	33					
18	8.2	212	102	110	87	65	31					
19	37	215	78	100	80	73	27					
20	26	186	77	88	73	60	25					
21	*18	155	159	*83	66	108	23					
22	15	153	108	127	61	94	22					
23	15	113	88	350	58	85	21					
24	12.5	98	77	576	53	70	19.5					
25	10.5	83	67	312	76	70	18.5					
26	8.7	70	87	235	*78	100	26					
27	8.2	60	104	307	65	91	49					
28	7.3	51	88	217	71	112	70					
29	6.9	47	85	169	-	108	100					
30	6.1	50	151	143	-----	107	*104					
31	6.1	-----	121	153	-----	140	-----					
Total	303.1	3,432.7	3,500	4,833	2,516	2,360	1,724.0					
Mean	9.78	114	113	156	89.9	76.1	57.5					
Cfsm	0.468	5.45	5.41	7.46	4.30	3.64	2.75					
In.	0.54	6.11	6.23	8.60	4.48	4.20	3.07					
Ac-ft	601	6,810	6,940	9,590	4,990	4,680	3,420					

Calendar year 1958: Max 360 Min 2.1 Mean 54.6 Cfsm 2.61 In. 35.47 Ac-ft 39,520
Water year 1958-59: Max - Min - Mean - Cfsm - In. - Ac-ft -

Peak discharge (base, 350 cfs).--Nov. 12 (6:30 p.m.) 583 cfs (4.38 ft); Nov. 18 (8 p.m.) 360 cfs (3.72 ft); Dec. 11 (3 to 5 a.m.) 395 cfs (3.83 ft); Jan. 24 (3:30 a.m.) 726 cfs (4.74 ft).

* Discharge measurement made on this day.

2420. Silver Lake at Silver Lake, Wash.

Location.--Lat 46°17'15", long 122°48'30", in NE $\frac{1}{4}$ sec.4, T.9 N., R.1 W., on left shore at Silver Lake, 5 miles east of Castle Rock.

Drainage area.--41.5 sq mi.

Records available.--July 1949 to September 1950 (fragmentary), August 1953 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 480 ft (from topographic map). Prior to Sept. 30, 1950, staff gage at same site and datum.

Extremes.--Maximum gage height during year, 4.83 ft Jan. 27, 28; minimum, 1.36 ft Oct. 6. 1949-50, 1953-59: Maximum gage height, 5.90 ft Dec. 23-24, 1956; minimum observed, 0.18 ft Sept. 22, 1950.

Remarks.--No regulation or diversion above station.

Gage height, in feet, at 12 p.m., water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.39	1.65	3.72	3.67	4.50	3.27	3.60	3.18	2.50	2.34	1.98	1.68
2	1.39	1.65	3.79	3.63	4.40	3.20	3.68	3.22	2.48	2.33	1.96	1.68
3	1.39	1.71	3.83	3.57	4.30	3.16	3.70	3.21	2.46	2.32	1.95	1.69
4	1.39	1.80	3.83	3.52	4.19	3.10	3.68	3.20	2.47	2.33	1.93	1.82
5	1.39	1.88	3.81	3.47	4.10	3.05	3.65	3.17	2.47	2.33	1.92	1.88
6	1.37	2.02	3.79	3.46	4.08	3.00	3.59	3.13	2.45	2.33	1.90	1.92
7	1.42	2.11	3.79	3.45	4.02	2.95	3.53	3.10	2.44	2.32	1.88	1.94
8	1.47	2.17	3.76	3.60	3.97	2.93	3.47	3.06	2.44	2.31	1.87	1.94
9	1.46	2.36	3.72	3.81	3.97	2.93	3.40	3.02	2.46	2.30	1.85	1.94
10	1.46	2.48	3.79	3.94	3.97	2.90	3.32	2.98	2.46	2.29	1.84	1.93
11	1.45	2.55	3.87	4.07	3.93	2.88	3.27	2.94	2.49	2.27	1.83	1.94
12	1.45	2.95	3.90	4.24	3.90	2.85	3.20	2.89	2.49	2.26	1.82	1.95
13	1.45	3.26	3.89	4.29	3.92	2.87	3.14	2.85	2.48	2.24	1.81	1.94
14	1.45	3.42	3.86	4.28	3.97	2.85	3.11	2.88	2.49	2.22	1.80	1.93
15	1.44	3.48	3.82	4.25	3.97	2.82	3.05	2.91	2.48	2.21	1.78	1.93
16	1.44	3.49	3.75	4.22	4.00	2.80	3.01	2.89	2.49	2.20	1.77	1.93
17	1.48	3.48	3.70	4.17	3.97	2.79	2.96	2.91	2.48	2.18	1.77	1.92
18	1.57	3.77	3.67	4.12	3.95	2.80	2.92	2.91	2.46	2.16	1.77	1.98
19	1.60	3.95	3.60	4.06	3.88	2.78	2.86	2.89	2.45	2.15	1.76	2.04
20	1.60	4.11	3.62	4.00	3.82	2.79	2.82	2.87	2.43	2.13	1.74	2.03
21	1.60	4.17	3.63	3.94	3.75	2.85	2.78	2.84	2.41	2.12	1.73	2.05
22	1.62	4.18	3.62	3.90	3.67	2.88	2.74	2.81	2.40	2.10	1.73	2.05
23	1.62	4.14	3.60	4.16	3.61	2.89	2.69	2.79	2.39	2.09	1.72	2.06
24	1.62	4.10	3.62	4.58	3.54	2.88	2.68	2.74	2.38	2.08	1.70	2.06
25	1.63	4.05	3.58	4.68	3.49	2.90	2.62	2.72	2.38	2.07	1.69	2.06
26	1.62	3.97	3.64	4.72	3.42	2.93	2.64	2.69	2.38	2.05	1.68	2.10
27	1.62	3.88	3.71	4.83	3.35	2.98	2.69	2.65	2.38	2.04	1.71	2.10
28	1.62	3.81	3.72	4.82	3.30	3.05	2.81	2.62	2.33	2.03	1.70	2.10
29	1.62	3.75	3.73	4.77	-	3.09	2.93	2.59	2.37	2.02	1.70	2.10
30	1.62	3.69	3.72	4.70	-	3.19	3.08	2.57	2.36	2.01	1.70	2.10
31	1.65	-	3.70	4.61	-	3.40	-	2.54	-	2.00	1.69	-

2425. Toutle River near Silver Lake, Wash.

Location.--Lat 46°20'10", long 122°43'30", in SE $\frac{1}{4}$ sec.19, T.10 N., R.1 E., on right bank just downstream from highway bridge, half a mile downstream from confluence of North and South Forks and 5 miles northeast of Silver Lake.

Drainage area.--474 sq mi.

Records available.--September 1909 to August 1912, October 1919 to October 1921, May to November 1922, December 1922 (monthly discharge only), January to December 1923, September 1929 to September 1959. Published as "near Castle Rock" 1909-12.

Gage.--Water-stage recorder. Datum of gage is 407.3 ft above mean sea level (from river-profile survey). Prior to Aug. 4, 1912, staff gage at site 2 miles downstream at datum 307.3 ft above mean sea level, unadjusted. Oct. 9, 1919, to Dec. 14, 1923, water-stage recorder at site 300 ft downstream at different datum. Sept. 25 to Nov. 10, 1929, chain gage; Nov. 11, 1929, to Oct. 5, 1938, and Oct. 4, 1950, to Apr. 16, 1952, water-stage recorder; all at site 50 ft upstream at present datum. Oct. 6, 1938, to Oct. 3, 1950, and since Apr. 17, 1952, water-stage recorder at present site and datum.

Average discharge.--35 years (1909-11, 1919-21, 1922-23, 1929-59), 2,024 cfs (1,465,000 acre-ft per year).

Extremes.--Maximum discharge during year, 17,600 cfs Jan. 24 (gage height, 13.01 ft); minimum, 325 cfs probably Oct. 6 (gage height, 1.62 ft, from recorded range in stage).

1909-12, 1919-23, 1929-59: Maximum discharge, 37,600 cfs Mar. 2, 1910 (gage height, 11.3 ft, from graph based on gage readings, site and datum then in use); maximum gage-height recorded, 22.7 ft Dec. 23, 1933; minimum discharge, 240 cfs Nov. 21, 1929.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 292: 1909, calendar year. WSP 754: 1930-32. WSP 1348: 1910(M), 1930-32(M), 1945.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 11				Nov. 12 to Sept. 30			
1.6	315	4.0	2,690	1.8	380	6.0	6,150
2.2	660	6.0	6,150	2.2	620	9.0	10,800
3.0	1,390			3.0	1,300	13.0	17,600
				4.0	2,600		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	330	584	2,100	3,740	3,520	2,520	4,370	4,290	1,550	1,240	519	430
2	330	597	2,620	3,200	3,100	2,470	*5,440	3,290	1,770	1,230	507	391
3	330	645	4,710	2,680	2,920	2,320	4,480	2,650	*1,860	1,210	501	366
4	330	944	3,700	2,410	2,700	2,060	3,620	2,500	1,870	1,230	501	687
5	330	1,350	*3,070	2,260	2,490	1,920	3,120	2,220	2,380	1,230	501	1,190
6	330	3,240	2,670	2,160	2,720	1,780	2,770	1,930	2,070	1,190	489	1,290
7	450	3,690	3,640	2,220	2,500	1,770	2,440	1,770	1,750	1,200	483	966
8	2,700	4,460	3,560	4,080	2,320	1,730	2,220	1,770	1,580	1,070	465	939
9	1,250	5,770	3,050	9,620	2,280	1,740	2,100	1,970	3,030	1,000	453	778
10	900	5,590	4,270	9,110	2,240	1,770	2,000	1,990	3,010	984	447	*676
11	750	4,060	8,610	6,620	2,080	1,640	1,900	1,940	2,920	975	441	620
12	850	8,540	7,140	10,600	1,920	1,820	1,800	1,750	2,920	984	447	581
13	600	10,800	5,240	8,020	1,990	1,840	1,750	1,870	2,580	939	441	555
14	550	6,600	4,100	5,770	2,400	1,740	1,750	2,670	2,290	*890	435	531
15	520	4,520	3,270	4,620	2,100	1,660	1,650	4,000	2,060	850	430	549
16	490	3,220	2,750	4,420	2,160	1,630	1,600	3,400	1,910	826	430	555
17	*462	2,570	2,400	3,780	2,220	1,680	1,500	3,050	1,900	794	441	519
18	694	5,500	2,680	3,860	2,010	2,060	1,450	2,790	1,730	770	441	513
19	1,520	8,190	2,440	3,660	1,870	2,290	1,400	2,500	1,740	762	435	1,120
20	1,390	7,350	2,340	*3,310	1,770	2,070	1,400	2,230	1,640	722	424	1,530
21	1,100	7,590	3,200	3,010	1,700	2,550	1,400	2,040	1,720	698	418	1,320
22	1,000	5,750	2,860	3,120	1,600	2,460	1,450	1,910	1,550	663	424	1,250
23	1,000	5,000	2,520	6,500	1,600	2,290	1,500	1,860	1,420	669	430	1,070
24	850	4,250	2,300	16,300	1,550	2,080	1,450	1,920	1,410	663	408	*939
25	750	3,540	2,600	11,000	1,800	2,060	1,450	1,950	1,330	634	396	914
26	670	2,980	3,250	7,500	1,900	2,540	1,600	1,990	1,290	607	391	2,400
27	632	2,520	4,730	8,420	*1,870	2,350	2,000	1,960	1,300	581	447	3,400
28	604	2,230	4,000	6,600	2,060	2,750	*2,910	1,820	1,510	568	459	2,380
29	584	2,040	3,400	5,280	-	2,700	3,540	1,630	1,420	549	413	1,800
30	554	1,940	3,640	4,440	-----	3,010	4,480	1,520	1,320	543	386	1,490
31	542	-----	3,580	4,160	-----	3,800	-----	1,490	-----	531	413	-----
Total	23,212	126,061	110,640	172,470	61,390	67,100	70,940	70,670	57,030	26,842	13,816	31,769
Mean	749	4,202	3,669	5,564	2,192	2,165	2,365	2,280	1,901	866	446	1,059
Cfs/m	1.58	8.66	7.53	11.7	4.62	4.57	4.99	4.81	4.01	1.83	0.941	2.23
In.	1.82	9.89	8.68	13.53	4.82	5.26	5.57	5.54	4.47	2.11	1.08	2.49
Ac-ft	46,040	250,000	219,500	342,100	121,800	133,100	140,700	140,200	113,100	53,240	27,400	63,010

Calendar year 1958: Max 10,800 Min 330 Mean 2,052 Cfs/m 4.33 In. 58.76 Ac-ft 1,485,000
 Water year 1958-59: Max 16,300 Min 330 Mean 2,279 Cfs/m 4.81 In. 65.26 Ac-ft 1,650,000

Peak discharge (base, 9,000 cfs).--Nov. 12 (8:45 p.m.) 15,600 cfs (11.82 ft); Nov. 18 (10:30 p.m.) 12,100 cfs (9.78 ft); Jan. 9 (5 p.m.) 11,500 cfs (9.39 ft); Jan. 12 (9:15 a.m.) 12,300 cfs (9.86 ft); Jan. 24 (4:30 p.m.) 17,600 cfs (13.01 ft); Jan. 27 (8:20 a.m.) 9,360 cfs (8.07 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-16, 21-26, Feb. 21-26, Apr. 9-27; discharge estimated on basis of recorded range in stage and records for nearby stations.

2430. Cowlitz River at Castle Rock, Wash.

Location--Lat 46°16'30", long 122°54'50", in SE $\frac{1}{4}$ sec.10, T.9 N., R.2 W., on right bank at highway bridge in Castle Rock, 2 $\frac{1}{2}$ miles downstream from Toutle River and 14 miles upstream from mouth.

Drainage area--2,238 sq mi.

Records available--December 1926 to September 1959.

Gage--Water-stage recorder. Datum of gage is 19.73 ft above mean sea level, datum of 1929. Prior to Dec. 18, 1933, staff gage at site 2 miles upstream at datum 14.93 ft higher. Dec. 18, 1933, to June 13, 1934, staff or wire-weight gage and June 14 to Sept. 30, 1934, water-stage recorder, at present site at datum 5 ft higher.

Average discharge--32 years (1927-59), 9,036 cfs (6,542,000 acre-ft per year).

Extremes--Maximum discharge during year, 57,800 cfs Jan. 24 (gage height, 20.44 ft); minimum, 1,680 cfs Oct. 7 (gage height, 7.27 ft).

1926-59: Maximum discharge observed, 139,000 cfs Dec. 23, 1933 (gage height, 31.6 ft, present datum), from rating curve extended above 65,000 cfs; minimum, 998 cfs Nov. 7, 8, 1935.

Remarks--Records excellent. Minor diversions for domestic and farm use above station. No regulation.

Revisions--WSP 1218: Drainage area. The figure of supplemental peak discharge for Feb. 2, 1947, has been revised to 32,800 cfs Feb. 2, 1947 (12 m.), superseding figure published in WSP 1094.

Corrections--The figure of acre-feet for June 1951, published erroneously in WSP 1218, has been corrected to 474,900 acre-ft.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

7.2	1,570	11.0	11,800
8.0	3,050	13.0	19,400
9.0	5,650	16.0	33,200
10.0	8,500	20.0	55,200

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,750	2,480	10,300	17,400	16,100	9,170	19,600	*25,500	9,260	7,080	3,190	2,320
2	1,720	2,520	12,800	18,300	14,200	10,400	24,000	20,100	*10,900	7,280	3,190	2,290
3	1,700	2,700	23,300	13,700	13,000	9,840	22,900	16,200	12,700	7,460	3,140	2,190
4	1,720	3,160	26,400	11,800	12,100	8,960	18,400	13,600	12,800	6,940	3,050	2,400
5	1,690	4,920	*19,400	10,900	11,200	8,270	15,800	12,200	13,800	6,660	2,960	4,660
6	1,690	9,860	16,100	10,400	11,500	7,780	14,100	10,600	14,300	6,850	2,830	7,020
7	1,720	21,900	16,500	10,100	11,300	7,460	12,500	9,680	12,600	6,740	2,770	7,430
8	4,460	21,300	17,700	13,100	10,400	7,310	11,100	9,390	10,800	6,040	2,750	5,900
9	7,190	26,000	15,800	23,500	10,200	7,460	10,200	10,100	12,000	5,570	2,700	5,490
10	5,110	27,200	16,500	27,100	10,500	7,750	9,580	10,800	14,000	5,410	2,660	4,440
11	5,110	22,800	32,000	23,700	10,200	7,200	9,260	10,500	13,000	5,820	2,620	3,770
12	3,980	31,300	37,000	30,100	9,390	7,600	9,170	9,580	14,000	6,150	2,620	3,470
13	3,400	49,200	30,300	31,600	8,800	8,010	8,890	9,580	14,400	*6,210	2,580	3,230
14	3,120	35,100	22,500	24,500	10,200	7,830	8,560	11,700	13,000	5,960	2,480	3,030
15	2,850	23,600	18,100	19,600	9,550	7,340	8,380	16,900	11,500	5,540	2,420	2,920
16	*2,620	17,500	15,400	17,900	9,140	7,050	7,830	16,700	10,400	5,330	2,420	2,920
17	2,500	14,000	13,300	16,100	9,710	6,990	7,430	14,600	10,600	5,190	2,480	2,750
18	2,540	17,600	13,000	15,700	8,680	7,950	7,140	13,600	9,810	5,240	2,520	2,660
19	4,110	30,600	13,400	15,800	8,090	9,390	7,770	12,400	9,710	5,300	2,460	3,050
20	5,620	26,900	12,300	*14,600	*7,600	8,770	6,490	11,100	11,400	5,240	2,360	5,190
21	4,650	34,200	15,200	13,100	7,140	9,740	6,430	10,100	12,100	5,030	*2,290	6,430
22	3,950	31,800	15,400	13,400	6,770	10,500	6,740	9,520	11,300	4,890	2,250	6,240
23	3,770	27,000	13,400	22,500	6,690	9,640	7,370	9,550	10,400	4,650	2,270	*5,430
24	3,470	23,700	12,100	52,900	6,450	8,990	7,860	10,400	9,640	4,600	2,230	4,730
25	3,120	21,900	11,700	46,900	8,740	8,410	8,270	11,400	9,420	4,410	2,210	4,410
26	2,920	18,200	12,600	34,400	8,380	9,550	8,470	11,400	9,020	4,160	2,230	6,170
27	2,810	15,100	16,200	32,800	7,660	9,940	10,300	11,100	8,120	3,900	2,290	12,500
28	2,680	12,900	14,800	28,700	7,660	10,800	14,000	10,200	7,920	3,720	2,560	10,800
29	2,600	11,400	13,400	23,400	-	11,600	18,000	9,420	7,660	3,420	2,540	8,800
30	2,520	10,300	15,100	19,500	-----	12,400	24,800	8,960	7,200	3,260	2,320	7,370
31	2,460	-----	16,900	18,200	-----	*14,700	-----	8,770	-----	3,190	2,230	-----
Total	99,530	597,120	538,700	669,700	269,360	278,800	350,340	375,370	333,760	167,240	79,620	150,010
Mean	3,211	19,900	17,380	21,600	9,620	8,994	11,680	12,110	11,130	5,395	2,568	5,000
Cfm	1.43	8.89	7.77	9.65	4.30	4.02	5.22	5.41	4.97	2.41	1.15	2.23
In.	1.65	9.92	8.95	11.13	4.48	4.63	5.82	6.24	5.55	2.78	1.32	2.49
Ac-ft	197,400	*1,184	*1,068	*1,328	534,300	553,000	694,900	744,500	662,000	331,700	157,900	297,500

Calendar year 1958: Max 49,200 Min 1,690 Mean 9,792 Cfm 4.38 In. 59.38 Ac-ft 7,088,000
 Water year 1958-59: Max 52,900 Min 1,690 Mean 10,710 Cfm 4.79 In. 64.96 Ac-ft 7,753,000

Peak discharge (base, 32,000 cfs)--Nov. 13 (5 a.m.) 53,800 cfs (19.77 ft); Nov. 19 (3:30 a.m.) 34,400 cfs (16.23 ft); Nov. 21 (5 p.m.) 35,800 cfs (16.51 ft); Dec. 12 (4 a.m.) 37,800 cfs (16.93 ft); Jan. 12 (12 p.m.) 34,000 cfs (16.17 ft); Jan. 24 (2:45 p.m.) 57,800 cfs (20.44 ft).

* Discharge measurement made on this day.

* Expressed in thousands.

2435. Delameter Creek near Castle Rock, Wash.
(Formerly published as Arkansas Creek near Castle Rock)

Location.--Lat 46°15'50", long 122°58'00", in W $\frac{1}{2}$ sec. 17, T.9 N., R.2 W., on right bank 3 miles upstream from mouth and 3 miles west of Castle Rock.

Drainage area.--19.4 sq mi.

Records available.--May 1949 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 75 ft (from topographic map).

Average discharge.--10 years, 94.7 cfs (68,560 acre-ft per year).

Extremes.--Maximum discharge during year, 1,210 cfs Nov. 12 (gage height, 4.73 ft); minimum, 2.8 cfs Oct. 4, 5 (gage height, 0.48 ft).

1949-59: Maximum discharge, 2,270 cfs Dec. 9, 1953 (gage height, 6.26 ft), from rating curve extended above 700 cfs on basis of summation of culvert measurements on two main tributaries a quarter of a mile upstream from station; minimum, 1.3 cfs Aug. 22, 1951; minimum gage height, 0.37 ft Aug. 25, 26, 1958.

Remarks.--Records good except those for period Jan. 25 to Mar. 30, which are fair. Some diversion for domestic use. No regulation.

Revisions (water years).--WSP 1448: 1954.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 12 to Mar. 31)

Oct. 1 to Mar. 31

Apr. 1 to Sept. 30

0.49	2.9	2.5	173	0.6	3.6	2.5	173
.8	8.9	3.0	305	.8	7.3	3.0	305
1.1	19.5	3.5	500	1.1	17.5	3.5	500
1.5	40	4.1	830	1.5	40	4.1	830
2.0	90			2.0	90		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.2	15	103	217	159	119	752	394	28	18.5	6.2	6.6
2	3.2	20	162	182	142	110	475	285	*28	18	6.4	5.4
3	3.1	30	205	157	129	101	328	200	28	17	6.4	5.8
4	2.9	56	*165	139	116	93	245	175	45	16.5	6.4	5.9
5	2.9	83	142	129	110	88	197	144	44	29	6.4	6.2
6	3.1	290	130	116	119	83	163	122	32	22	5.8	75
7	11	186	177	114	108	79	139	108	29	22	5.4	42
8	43	243	159	172	103	80	122	100	32	18.5	5.2	37
9	19	227	142	274	112	91	110	107	55	16.5	5.0	26
10	16.5	186	165	293	122	89	100	91	46	14.5	5.0	20
11	12.5	251	245	277	121	86	89	83	53	13.5	5.2	17.5
12	11	794	209	328	110	93	83	75	45	13	5.6	16
13	11	*545	175	305	107	101	77	68	39	*13	5.6	14.5
14	9.5	367	151	257	114	94	79	74	40	13	5.2	13
15	8.3	254	130	209	104	91	71	80	37	12	4.8	13
16	*7.8	191	116	186	121	86	64	68	35	11.5	5.0	13
17	11	159	104	161	124	88	60	75	33	10.5	5.6	12
18	26	544	113	159	121	100	56	66	30	9.1	5.8	18.5
19	72	495	94	*142	125	100	52	64	27	8.6	5.6	65
20	38	434	97	129	125	96	49	60	26	8.6	5.2	74
21	28	378	132	122	119	133	46	55	24	8.6	*5.0	64
22	24	286	130	173	112	127	43	51	24	8.0	5.6	49
23	23	224	122	583	110	124	41	46	24	8.6	5.6	*38
24	20	197	113	821	104	110	39	45	24	9.1	4.7	34
25	16.5	163	139	464	119	108	38	44	25	8.8	4.5	36
26	15	140	159	390	118	114	61	42	22	8.0	4.7	65
27	14	122	175	530	*114	112	102	40	21	7.8	9.1	47
28	13	108	175	335	116	153	*448	37	26	8.0	7.8	41
29	12.5	98	212	251	-	167	580	35	22	7.5	5.8	36
30	12	91	305	209	-----	229	682	33	20	6.6	5.2	34
31	15	-----	255	182	-----	*489	-----	31	-----	6.4	6.8	-----
Total	508.0	7,177	4,911	8,006	3,304	3,734	5,389	2,878	964	392.7	176.6	1,039.3
Mean	16.4	239	158	258	118	120	180	92.8	32.1	12.7	5.70	34.6
Cfs/m	0.845	12.3	8.14	15.3	6.08	6.19	9.28	4.78	1.65	0.655	0.294	1.78
In.	0.97	13.76	9.41	15.35	6.33	7.16	10.33	5.52	1.85	0.75	0.34	1.99
Ac-ft	1,010	14,240	9,740	15,880	6,550	7,410	10,690	5,710	1,910	779	350	2,060

Calendar year 1958: Max 794 Min 1.6 Mean 87.4 Cfs/m 4.51 In. 61.14 Ac-ft 63,300
Water year 1958-59: Max 821 Min 2.9 Mean 105 Cfs/m 5.41 In. 73.76 Ac-ft 76,330

Peak discharge (base, 1,000 cfs).--Nov. 12 (12 m.) 1,210 cfs (4.73 ft); Nov. 18 (5 p.m.) 1,170 cfs (4.60 ft); Jan. 24 (1:30 a.m.) 1,030 cfs (4.43 ft).

* Discharge measurement made on this day.

2450. Coweman River near Kelso, Wash.

Location.--Lat 46°07'40", long 122°50'10", in S½ sec.32, T.8 N., R.1 W., on right bank 3 miles downstream from Goble Creek, 3.8 miles southeast of Kelso, and 7 miles upstream from mouth.

Drainage area.--119 sq mi.

Records available.--July 1950 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 100 ft (from topographic map).

Average discharge.--9 years, 439 cfs (317,800 acre-ft per year).

Extremes.--Maximum discharge during year, 4,570 cfs Nov. 12 (gage height, 10.68 ft); minimum, 35 cfs Oct. 6, 7 (gage height, 3.68 ft).

1950-59: Maximum discharge, 7,490 cfs Dec. 9, 1953 (gage height, 12.75 ft), from rating curve extended above 3,900 cfs as explained below; minimum, 22 cfs Sept. 22, 1951; minimum gage height, 3.62 ft Aug. 25, 26, Sept. 8, 1958.

Flood of Feb. 24, 1950, reached a stage of 12.8 ft, from floodmarks (discharge, 7,730 cfs, from rating curve extended above 3,900 cfs on basis of slope-area measurement of peak flow).

Remarks.--Records good. No regulation or diversion above station.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

3.6	26	6.0	690
4.0	76	7.0	1,210
4.5	167	8.0	1,950
5.0	301	10.0	3,760

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	79	354	776	735	596	1,670	985	181	141	57	52
2	37	121	480	676	658	555	1,360	722	179	133	59	44
3	36	121	855	568	632	511	1,010	560	179	*133	*57	42
4	36	199	650	511	568	453	785	499	*201	129	56	213
5	36	345	531	479	531	417	650	438	265	152	59	344
6	36	1,300	468	445	609	378	547	378	212	149	54	286
7	53	810	708	487	568	361	471	340	191	160	52	186
8	262	970	672	1,130	539	364	424	330	189	135	50	167
9	102	1,160	578	2,290	573	389	382	340	460	121	48	120
10	*82	1,000	794	1,960	627	414	347	317	483	112	47	97
11	70	875	1,620	1,520	596	375	320	289	464	104	47	85
12	61	2,580	1,250	2,150	519	396	301	263	431	99	50	79
13	57	2,370	915	*1,660	697	414	286	249	368	101	50	72
14	52	1,470	712	1,170	1,090	392	292	368	320	97	48	68
15	48	975	578	910	766	372	280	690	289	94	44	*72
16	47	690	487	885	726	358	260	578	289	91	44	80
17	47	535	431	758	730	354	263	519	286	85	52	68
18	104	1,410	491	758	650	424	249	460	249	80	57	69
19	304	1,920	451	708	622	519	230	424	220	78	50	236
20	211	1,390	428	645	*586	464	220	375	199	75	48	292
21	135	1,240	618	573	539	614	212	340	184	75	45	301
22	114	970	551	672	495	609	209	304	174	70	50	240
23	131	800	495	1,540	479	*560	204	277	167	72	52	184
24	99	694	453	3,680	442	475	199	263	167	80	44	149
25	86	568	676	2,290	519	471	*194	265	163	75	42	158
26	79	*491	865	1,540	564	555	265	265	154	69	42	321
27	72	424	1,160	1,960	511	551	456	254	149	66	57	350
28	68	382	1,000	1,470	515	735	906	251	194	68	63	255
29	65	350	910	1,080	-	805	1,140	222	196	65	49	212
30	59	327	870	875	- - -	1,090	1,230	207	154	63	43	179
31	63	- - -	800	845	- - -	1,480	- - -	194	- - -	59	47	- - -
Total	2,690	26,556	21,811	37,011	17,086	16,451	15,362	11,966	7,357	3,031	1,563	5,031
Mean	86.8	885	704	1,194	610	531	512	386	245	97.8	50.4	168
Cfs/m	0.729	7.44	5.92	10.0	5.13	4.46	4.30	3.24	2.06	0.822	0.424	1.41
In.	0.84	8.30	6.82	11.57	5.34	5.14	4.80	3.74	2.30	0.95	0.49	1.57
Ac-ft	5,340	52,670	43,260	73,410	33,890	32,630	30,470	23,730	14,590	6,010	3,100	9,980

Calendar year 1958: Max 2,580 Min 29 Mean 409 Cfs/m 3.44 In. 46.70 Ac-ft 296,500
 Water year 1958-59: Max 3,680 Min 36 Mean 455 Cfs/m 3.82 In. 51.86 Ac-ft 329,100

Peak discharge (base, 2,600 cfs).--Nov. 12 (6 p.m.) 4,570 cfs (10.68 ft); Nov. 18 (9:30 p.m.) 3,070 cfs (9.33 ft); Jan. 24 (3 p.m.) 4,050 cfs (10.25 ft).

* Discharge measurement made on this day.

2475. Elokomín River near Cathlamet, Wash.

Location.--Lat 46°13'10", long 123°20'30", in SE $\frac{1}{4}$ sec.31, T.9 N., R.5 W., on right bank 125 ft upstream from railroad bridge, $2\frac{1}{2}$ miles northeast of Cathlamet, and $4\frac{1}{2}$ miles upstream from mouth.

Drainage area.--65.8 sq mi.

Records available.--October 1940 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 29.60 ft above mean sea level, datum of 1929. Prior to June 25, 1941, staff gage at same site and datum.

Average discharge.--19 years, 374 cfs (270,800 acre-ft per year).

Extremes.--Maximum discharge during year, 4,550 cfs Nov. 12 (gage height, 8.86 ft); minimum, 36 cfs Aug. 25, 26 (gage height, 1.21 ft).
1940-59: Maximum discharge, 7,300 cfs Feb. 17, 1949 (gage height, 12.66 ft), from rating curve extended above 2,100 cfs on basis of slope-area measurement of peak flow; minimum, 18 cfs Oct. 6, 7, 15, 16, 1952; minimum gage height, 1.01 ft Sept. 22-26, 1957. Maximum stage known, 17.2 ft in December 1933, from information by local residents.

Remarks.--Records excellent. Some diversions for irrigation and domestic use. No regulation.

Revisions (water years).--WSP 1154: 1948. WSP 1218: Drainage area. WSP 1318: 1942-47(M). Supplemental peak discharges for Feb. 6, 1943, and Jan. 7, 1945, have been revised to 3,970 cfs Feb. 6, 1943 (7:30 a.m.) and 3,880 cfs Jan. 7, 1945 (10 a.m.), superseding figures published in WSP 984 and 1044, respectively.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 12

Nov. 13 to Sept. 30

1.2	27	3.0	464	1.2	35	3.0	464
1.4	52	4.5	1,260	1.4	55	4.5	1,270
1.7	99	7.5	3,460	1.7	100	7.5	3,580
2.3	236			2.3	236		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	122	417	1,000	715	582	*2,780	1,190	130	95	46	53
2	42	128	785	795	626	497	1,830	830	127	95	46	43
3	39	144	960	650	577	448	1,210	640	130	97	46	43
4	38	306	700	577	510	394	894	577	175	90	46	346
5	38	382	582	514	489	367	725	468	205	115	46	367
6	38	1,490	523	497	550	340	595	402	153	110	45	493
7	101	1,040	735	536	489	318	497	353	136	111	43	294
8	490	1,360	631	912	452	358	428	324	153	95	42	266
9	*220	1,180	564	1,190	460	402	380	377	272	*86	40	190
10	202	966	720	1,220	472	420	340	347	258	83	40	149
11	154	1,430	954	1,100	432	387	309	303	263	78	40	127
12	135	3,350	795	1,180	394	391	283	277	244	74	42	115
13	161	2,490	680	1,070	420	398	266	255	215	71	43	104
14	135	1,630	582	*900	501	363	283	283	200	71	41	97
15	116	1,150	510	765	456	340	266	315	180	68	40	123
16	105	858	440	700	568	318	236	274	174	67	41	117
17	113	710	391	613	626	318	226	280	162	62	53	95
18	220	2,090	540	618	613	384	213	263	153	59	47	110
19	692	1,940	432	584	750	398	200	250	136	56	44	358
20	394	2,260	507	514	*765	360	188	233	127	56	*42	730
21	285	1,890	795	480	660	484	178	220	121	56	42	541
22	247	1,350	710	735	586	456	167	208	115	55	44	*384
23	226	1,030	608	2,920	568	464	*162	192	115	55	44	297
24	188	*930	546	3,410	501	417	153	183	132	56	40	258
25	166	760	685	1,990	604	409	149	188	125	55	*37	263
26	148	636	800	1,550	600	452	198	190	113	52	38	518
27	135	545	894	2,130	541	432	178	110	50	63	47	417
28	126	480	966	1,430	528	725	1,280	167	113	50	33	331
29	118	428	1,030	1,090	-	825	1,860	*151	108	48	43	288
30	112	394	1,680	936	-----	1,120	1,960	144	98	46	40	258
31	118	-----	1,240	846	-----	1,920	-----	136	-----	45	53	-----

Total	5,345	33,470	22,402	33,432	15,453	15,485	18,618	10,198	4,743	2,207	1,370	7,775
Mean	172	1,116	723	1,078	552	500	621	329	158	71.2	44.2	259
Cfs/m	2.61	17.0	11.0	16.4	8.39	7.60	9.44	5.00	2.40	1.08	0.672	3.94
In.	3.02	18.92	12.66	18.90	8.73	8.75	10.52	5.76	2.68	1.25	0.77	4.39
Ac-ft	10,600	66,390	44,430	66,310	30,650	30,710	36,930	20,230	9,410	4,380	2,720	15,420

Calendar year 1958: Max	3,350	Min	22	Mean	396	Cfs/m	6.02	In.	81.59	Ac-ft	286,300
Water year 1958-59: Max	3,410	Min	37	Mean	467	Cfs/m	7.10	In.	96.35	Ac-ft	338,200

Peak discharge (base, 3,600 cfs).--Nov. 12 (1:30 p.m.) 4,550 cfs (8.86 ft); Nov. 18 (6:30 p.m.) 3,780 cfs (7.75 ft); Jan. 24 (1:30 a.m.) 4,150 cfs (8.21 ft).

* Discharge measurement made on this day.

2490. Grays River above South Fork, near Grays River, Wash.

Location.--Lat 46°23'35", long 123°28'35", in NW¹ sec.31, T.11 N., R.6 W., on right bank 500 ft upstream from the South Fork and 7 miles northeast of town of Grays River.

Drainage area.--33.4 sq mi.

Records available.--October 1955 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is about 350 ft (from topographic map).

Extremes.--Maximum discharge during year, 5,970 cfs Nov. 12 (gage height, 9.58 ft), from rating curve extended above 2,700 cfs on basis of contracted-opening measurement of peak flow; minimum, 28 cfs Aug. 25, 26 (gage height, 2.97 ft).
1955-59: Maximum discharge, 7,050 cfs Dec. 9, 1956 (gage height, 10.23 ft), from rating curve extended above 1,600 cfs on basis of contracted-opening measurement of peak flow; minimum, 18.5 cfs Aug. 23-27, 1958 (gage height, 2.89 ft).

Remarks.--Records good. No regulation or diversion above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 12

Nov. 12 to Sept. 30

3.0	28	5.0	690	3.0	28	6.0	1,400
3.3	64	6.0	1,340	3.5	97	7.0	2,410
3.6	119	7.0	2,190	4.0	239	8.5	4,350
4.0	240			5.0	680		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	110	432	647	415	448	*2,520	1,130	95	76	41	41
2	37	110	829	516	363	391	1,490	704	92	79	40	32
3	35	159	842	423	327	347	881	530	93	76	40	34
4	34	274	575	359	292	299	620	484	196	72	41	401
5	32	316	444	319	288	265	502	403	201	88	41	590
6	32	1,280	391	339	355	236	407	343	150	95	39	746
7	188	841	512	453	315	211	343	299	129	117	37	466
8	534	913	448	890	276	243	296	265	134	95	36	367
9	255	769	391	1,210	272	296	258	292	208	84	35	265
10	229	712	435	1,230	246	311	225	258	211	*78	32	198
11	172	1,850	615	902	222	284	201	225	269	74	32	158
12	182	4,280	525	1,190	201	307	182	204	265	72	34	134
13	322	1,860	444	1,060	198	303	169	165	225	70	32	117
14	218	1,030	375	*752	265	269	182	201	194	68	30	101
15	*166	692	335	580	243	243	164	239	172	66	30	104
16	139	520	280	484	374	222	150	218	155	63	31	93
17	147	427	246	419	453	250	147	261	139	60	35	83
18	373	1,720	411	444	*440	403	134	261	129	58	34	182
19	1,010	1,360	319	407	836	411	126	236	117	56	30	604
20	555	1,700	484	367	734	359	115	211	108	55	*30	2,040
21	378	1,250	698	351	560	570	108	188	104	55	30	937
22	310	830	555	598	458	507	101	172	95	52	35	*585
23	251	620	458	3,030	440	476	97	155	92	52	34	427
24	198	636	399	2,950	383	403	*92	147	108	54	30	351
25	169	*512	550	1,490	507	403	90	150	93	51	29	347
26	144	431	734	1,070	489	440	134	150	88	49	30	530
27	132	363	764	1,460	423	440	342	159	84	47	47	458
28	117	311	764	902	427	674	1,480	129	93	46	41	371
29	106	280	722	658	-	722	2,530	*117	88	45	32	315
30	97	254	1,060	550	-----	1,170	2,680	108	81	44	30	265
31	117	-----	794	489	-----	1,970	-----	101	-----	43	49	-----
Total	6,718	26,410	16,831	26,539	10,802	13,873	16,766	8,505	4,208	2,038	1,087	11,342
Mean	217	880	543	856	386	448	559	274	140	65.7	35.1	378
Cfsm	6.50	26.3	16.3	25.6	11.6	13.4	16.7	8.20	4.19	1.97	1.05	11.3
In.	7.48	29.41	18.74	29.55	12.03	15.45	18.67	9.47	4.69	2.27	1.21	12.63
Ac-ft	13,320	52,380	33,380	52,640	21,430	27,520	33,250	16,870	8,350	4,040	2,160	22,500

Calendar year 1958: Max 4,280 Min 18.5 Mean 322 Cfsm 9.64 In. 130.96 Ac-ft 233,300
Water year 1958-59: Max 4,280 Min 29 Mean 398 Cfsm 11.9 In. 161.60 Ac-ft 287,800

Peak discharge (base, 2,900 cfs).--Nov. 12 (9:15 a.m.) 5,970 cfs (9.58 ft); Nov. 18 (5:15 p.m.) 3,350 cfs (7.76 ft); Jan. 23 (5 p.m.) 4,360 cfs (8.51 ft); Apr. 30 (4 a.m.) 3,800 cfs (8.11 ft).

* Discharge measurement made on this day.

2495. Grays River below South Fork, near Grays River, Wash.

Location.--Lat 46°23'30", long 123°28'35", in SW $\frac{1}{4}$ sec.31, T.11 N., R.6 W., on right bank 400 ft downstream from South Fork and 7 miles northeast of town of Grays River.

Drainage area.--56.3 sq mi.

Records available.--September 1955 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 350 ft (from topographic map).

Extremes.--Maximum discharge during year, 8,340 cfs Nov. 12 (gage height, 9.40 ft); minimum, 45 cfs Aug. 25, 26 (gage height, 2.23 ft).
1955-59: Maximum discharge, 10,700 cfs Dec. 9, 1956 (gage height, 10.4 ft, from high-water mark in well), from rating curve extended above 2,400 cfs by logarithmic plotting; minimum, 23 cfs Aug. 20-27, 1958; minimum gage height, 2.10 ft Sept. 7-9, 1956.

Remarks.--Records excellent except those for period Nov. 22 to Dec. 21 and those above 5,000 cfs, which are good. No regulation or diversion above station.

Rating tables, water year 1958-59, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 12

Nov. 12 to Sept. 30

2.5	55	5.0	1,290	2.2	42	5.0	1,520
3.0	152	6.0	2,250	2.5	81	6.0	2,640
3.5	323	7.5	4,350	3.0	195	8.0	5,610
4.0	570	9.0	7,350	3.5	390	10.0	9,770
				4.0	690		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	179	586	1,010	620	746	*4,120	1,710	150	114	57	63
2	72	176	1,200	768	525	607	2,260	1,080	140	116	57	53
3	69	254	1,310	562	462	513	1,340	760	145	116	56	56
4	66	440	880	468	410	435	942	676	278	110	61	679
5	65	498	648	410	405	386	732	551	297	136	61	926
6	65	1,990	537	425	501	345	562	440	234	145	56	1,200
7	309	1,270	746	565	446	321	456	381	209	171	53	760
8	829	1,420	641	1,240	400	368	381	341	240	142	52	594
9	401	1,190	537	1,760	390	435	333	390	305	127	51	415
10	368	1,050	661	1,810	568	468	297	354	329	*118	51	325
11	289	2,650	982	1,370	333	425	273	317	415	114	50	262
12	294	5,760	828	1,700	309	451	258	289	405	108	51	226
13	490	2,700	648	1,520	333	446	240	262	350	106	51	198
14	350	1,590	519	*1,090	358	400	254	289	309	102	48	177
15	*277	974	446	842	341	372	237	325	273	98	46	183
16	229	690	368	676	524	345	220	301	228	95	48	171
17	240	549	329	562	669	376	206	354	246	88	52	148
18	535	2,840	554	600	*641	627	192	368	206	83	54	286
19	1,430	1,950	430	555	1,250	655	177	357	186	80	49	1,050
20	802	2,610	681	495	1,140	537	165	305	171	78	*46	2,630
21	548	1,860	1,050	462	872	918	160	281	160	76	48	1,410
22	435	1,280	835	876	690	812	150	254	148	74	54	*880
23	373	942	648	4,460	683	753	145	230	142	72	54	620
24	306	958	537	4,760	562	614	*140	216	165	74	49	495
25	254	*732	768	2,360	808	620	140	212	152	72	48	478
26	226	574	1,060	1,750	798	697	202	223	136	68	48	872
27	203	468	1,170	2,640	669	712	545	206	129	65	83	746
28	185	400	1,190	1,450	690	1,140	2,390	189	138	65	66	568
29	168	363	1,110	1,080	-	1,280	4,000	*174	131	65	51	468
30	157	333	1,750	872	-----	1,880	4,000	165	120	62	49	395
31	179	-----	1,270	775	-----	3,130	-----	158	-----	60	78	-----
Total	10,288	38,690	24,919	39,913	16,197	21,814	25,518	12,118	6,537	3,000	1,678	17,334
Mean	332	1,290	804	1,288	578	704	851	391	218	96.8	54.1	573
Cfsm	5.90	22.9	14.3	22.9	10.3	12.5	15.1	6.94	3.87	1.72	0.961	10.3
In.	6.80	25.56	16.46	26.37	10.70	14.41	16.86	8.00	4.32	1.98	1.11	11.45
Ac-ft	20,410	76,740	49,430	79,170	32,130	43,270	50,610	24,040	12,970	5,950	3,330	34,380

Calendar year 1958: Max 5,760 Min 23 Mean 473 Cfsm 8.40 In. 115.99 Ac-ft 342,300
Water year 1958-59: Max 5,760 Min 46 Mean 597 Cfsm 10.6 In. 144.02 Ac-ft 432,400

Peak discharge (base, 5,000 cfs).--Nov. 12 (9 a.m.) 8,340 cfs (9.40 ft); Nov. 18 (4 p.m.) 5,390 cfs (7.87 ft); Jan. 23 (2:30 p.m.) 6,600 cfs (8.56 ft); Apr. 30 (1:30 a.m.) 5,710 cfs (8.06 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used Nov. 22 to Dec. 21.

2505. West Fork Grays River near Grays River, Wash.
(Formerly published as West Branch Grays River)

Location.--Lat 46°23'10", long 123°33'30", on line between sec.33, T.11 N., R.7 W., and sec.4, T.10 N., R.7 W., on right bank 1 mile upstream from mouth and $3\frac{1}{4}$ miles north-east of town of Grays River.

Drainage area.--16.3 sq mi.

Records available.--April 1949 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 71 ft (by barometer).

Average discharge.--10 years, 129 cfs (93,390 acre-ft per year).

Extremes.--Maximum discharge during year, 2,890 cfs Nov. 12 (gage height, 6.36 ft), from rating curve extended above 1,000 cfs on basis of slope-area measurement at gage height 6.89 ft; minimum, 12 cfs Aug. 15, 16; minimum gage height, 2.15 ft Oct. 5.

1949-59: Maximum discharge, 2,970 cfs Feb. 9, 1951 (gage height, 6.45 ft), from rating curve extended above 460 cfs on basis of slope-area measurement at gage height 6.89 ft; minimum, 4.2 cfs Sept. 5, 1951 (gage height, 1.78 ft).

Flood of Feb. 22, 1949, reached a stage of 6.89 ft, from floodmarks (discharge, 3,700 cfs, from rating curve extended above 460 cfs on basis of slope-area measurement of peak flow).

Remarks.--Records good except those for period of no gage-height record, and those for period of shifting control, which are fair. No regulation or diversion above station.

Rating tables, water year 1950-59, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 22

Jan. 23 to Sept. 30

2.1	9.2	3.5	277	2.2	9	4.0	495
2.3	25	4.0	510	2.6	44	4.5	840
2.6	60	4.5	840	3.0	108	5.5	1,810
3.0	131	5.5	1,810	3.5	250		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15.5	42	181	266	119	132	*880	380	43	29	16	20
2	15.5	45	331	201	100	112	420	715	40	31	16	17
3	14.5	59	*311	163	91	97	218	150	40	31	15.5	17.5
4	14.0	102	204	146	80	86	a170	128	88	29	18.5	228
5	13.5	114	158	125	79	79	a140	106	97	37	18.5	249
6	13.5	538	138	131	115	70	a110	89	66	45	16	344
7	58	267	190	168	100	66	a90	77	54	70	15.5	163
8	208	314	163	287	87	70	a80	69	53	53	14.5	128
9	92	255	138	347	86	95	a70	79	84	44	14	89
10	*92	245	160	356	82	106	a63	75	93	*40	13	68
11	70	724	258	281	75	69	a59	69	117	35	13	56
12	76	1,810	207	435	69	87	a55	62	115	32	14	48
13	133	659	163	347	72	84	a55	62	89	30	13	44
14	87	356	135	255	89	75	a55	75	75	28	13	40
15	68	244	123	*192	87	69	a51	79	66	27	12.5	41
16	56	181	105	160	125	64	a47	87	58	26	12.5	36
17	57	149	98	146	152	62	a44	95	52	24	16	*33
18	143	736	188	173	132	88	a40	98	48	23	16	48
19	389	487	129	158	258	95	a38	93	45	22	*13	204
20	178	583	258	140	202	80	a36	87	42	22	13	688
21	119	425	321	129	150	166	a34	77	38	22	14	290
22	96	285	224	232	130	138	a32	69	36	21	18.5	175
23	80	214	170	1,410	121	121	*32	62	36	21	17.5	128
24	68	214	149	1,140	104	102	31	57	41	22	14.5	106
25	60	168	231	469	150	102	32	62	38	21	13	115
26	53	*140	305	322	140	121	43	64	34	19	14	286
27	48	121	281	501	115	119	92	63	33	18.5	23	226
28	43	107	270	282	121	215	604	*57	40	18.5	23	163
29	41	100	266	196	-	243	1,260	52	35	17.5	18.5	128
30	39	94	477	155	-----	370	1,070	48	31	17	15.5	106
31	47	-----	328	140	-----	797	-----	44	-----	16	22	-----
Total	2,487.5	9,778	6,638	9,473	3,231	4,198	5,951	2,830	1,727	891.5	487.0	4,284.5
Mean	80.2	326	214	306	115	135	198	91.3	57.6	28.8	15.7	143
Cfsm	4.92	20.0	13.1	18.8	7.06	8.28	12.1	5.60	3.53	1.77	0.963	8.77
In.	5.68	22.31	15.15	21.61	7.37	9.58	13.58	6.46	3.94	2.03	1.11	9.78
Ac-ft	4,930	19,390	13,170	18,790	6,410	8,330	11,800	5,610	3,430	1,770	966	8,500

Calendar year 1958: Max 1,810 Min 4.4 Mean 112 Cfsm 6.87 In. 93.54 Ac-ft 81,310
Water year 1958-59: Max 1,810 Min 12.5 Mean 142 Cfsm 6.71 In. 118.60 Ac-ft 103,100

Peak discharge (base, 1,500 cfs).--Nov. 12 (8:30 a.m.), 2,890 cfs (6.36 ft); Jan. 23 (2 p.m.) 2,090 cfs (5.75 ft); Apr. 29 (11 p.m.), 1,800 cfs (5.49 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for other Grays River stations.

Note.--Shifting-control method used Feb. 20 to Mar. 30.

PACIFIC SLOPE BASINS IN OREGON

NEHALEM RIVER BASIN

3010. Nehalem River near Foss, Oreg.

Location.--Lat 45°42'15", long 123°45'20", in NW¹ sec.35, T.3 N., R.9 W., on right bank a quarter of a mile upstream from Cook Creek and 2.2 miles northeast of Foss.

Drainage area.--667 sq mi.

Records available.--October 1939 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 32.60 ft above mean sea level, datum of 1929 (Oregon State Highway Department bench mark). Prior to Nov. 11, 1939, staff gage at same site and datum.

Average discharge.--20 years, 2,712 cfs (1,963,000 acre-ft per year).

Extremes.--Maximum discharge during year, 21,900 cfs Jan. 24 (gage height, 14.30 ft); minimum, 79 cfs Oct. 6, 7.

1939-59: Maximum discharge, 39,300 cfs Dec. 21, 1955 (gage height, 19.67 ft); minimum, 54 cfs Sept. 22-24, 1951.

Remarks.--Records excellent. No regulation. Several small diversions above station for irrigation and domestic use.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 24				Jan. 25 to Sept. 30			
1.2	66	4.0	1,740	1.5	124	4.0	1,840
1.4	112	6.0	4,040	1.8	235	6.0	4,240
1.8	255	9.0	9,300	2.4	570	9.0	9,660
2.5	630	14.0	21,000	3.0	970	13.0	18,300
3.0	950						

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	93	278	2,270	5,780	5,480	3,200	11,100	4,710	823	540	201	143
2	90	278	3,260	5,120	4,660	2,950	9,520	3,780	761	510	197	140
3	86	291	5,250	4,320	4,070	2,730	7,500	3,060	767	498	189	140
4	84	788	4,450	3,700	3,600	2,510	5,930	2,710	*816	480	166	376
5	84	*1,460	3,710	3,340	3,200	2,290	4,840	2,610	921	498	182	830
6	79	6,110	3,200	3,240	3,180	2,120	4,030	2,480	858	570	178	986
7	98	4,740	3,840	4,050	3,090	1,960	3,380	2,280	802	704	174	816
8	471	5,540	4,100	9,630	2,940	1,940	2,900	2,090	760	630	167	654
9	415	5,390	3,790	17,500	2,890	*1,960	2,560	2,040	1,290	582	160	516
10	291	5,630	4,440	20,100	3,060	2,230	2,270	2,020	1,590	522	153	408
11	a220	5,830	8,010	16,200	3,170	2,240	2,040	1,880	1,530	462	146	346
12	a190	8,960	7,040	15,800	3,060	2,190	1,840	1,720	1,470	426	146	305
13	a170	11,800	5,690	14,800	3,140	2,440	1,680	1,570	1,310	402	146	270
14	a160	9,800	4,590	11,500	4,040	2,620	1,610	1,510	1,190	384	146	245
15	a150	7,480	3,820	8,560	4,380	2,640	1,600	1,610	1,100	*362	143	240
16	a150	5,330	3,220	6,750	5,640	2,540	1,500	1,740	986	352	143	227
17	a150	3,910	*2,770	5,470	7,300	2,470	1,410	1,630	935	335	153	222
18	a310	9,930	3,170	4,670	7,320	2,970	1,310	1,600	900	315	156	360
19	a1,500	14,100	3,050	4,450	8,940	3,950	1,230	1,680	830	295	156	1,500
20	1,330	13,100	3,290	4,400	9,820	3,840	1,160	1,600	774	275	150	1,910
21	936	10,500	5,170	4,040	7,960	4,140	*1,110	1,500	711	260	146	1,890
22	696	7,880	5,870	4,580	6,250	4,160	*1,040	1,390	672	255	150	1,400
23	606	6,030	5,220	9,070	5,250	3,930	994	1,290	636	245	150	1,050
24	498	4,960	4,420	19,100	4,450	3,780	942	1,200	630	245	146	837
25	425	4,010	5,640	17,400	4,020	3,730	907	1,160	630	245	*137	760
26	375	3,330	7,180	12,400	3,930	4,280	970	1,150	612	240	130	2,360
27	330	2,810	8,440	13,100	3,540	4,600	1,500	1,110	588	231	143	2,530
28	300	2,460	9,020	*11,400	3,310	5,820	2,780	1,050	606	227	140	2,010
29	282	2,230	8,120	9,300	---	6,850	3,410	994	630	222	137	1,570
30	260	2,050	7,700	7,540	---	8,800	5,440	935	576	218	134	1,270
31	264	---	6,660	6,430	---	10,700	---	872	---	210	134	---
Total	11,093	167,205	156,430	283,740	131,690	112,580	88,503	57,378	26,724	11,740	4,819	26,311
Mean	358	5,574	5,046	9,153	4,703	3,632	2,950	1,851	891	379	155	877
Cfs/m	0.537	8.36	7.57	13.7	7.05	5.45	4.42	2.78	1.34	0.568	0.232	1.31
In.	0.62	9.32	8.72	15.82	7.34	6.28	4.93	3.20	1.49	0.65	0.27	1.47
Ac-ft	22,000	331,600	310,300	562,800	261,200	223,300	175,500	113,800	53,010	23,290	9,560	52,190

Calendar year 1958: Max 14,500 Min 70 Mean 2,767 Cfsm 4.15 In. 56.32 Ac-ft 2,003,000
 Water year 1958-59: Max 20,100 Min 79 Mean 2,954 Cfsm 4.43 In. 60.11 Ac-ft 2,139,000

Peak discharge (base, 19,000 cfs, revised).--Jan. 10 (9 a.m. to 2 p.m.) 20,600 cfs (13.86 ft); Jan. 24 (11:30 a.m.) 21,900 cfs (14.30 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for Wilson River near Tillamook.

3015. Wilson River near Tillamook, Oreg.

Location--Lat 45°28'40", long 123°43'20", in NW $\frac{1}{4}$ sec.18, T.1 S., R.8 W., on right bank 1 mile upstream from North Fork and 6 $\frac{1}{4}$ miles east of Tillamook.

Drainage area--159 sq mi.

Records available--October 1914 to September 1915, August to November 1916, July 1931 to September 1959. Prior to January 1915 monthly discharge only, published in WSP 1318.

Gage--Water-stage recorder. Datum of gage is 42.13 ft above mean sea level, datum of 1929. Dec. 18, 1914, to Nov. 4, 1916, staff gage at site three-quarters of a mile downstream at different datum. July 30, 1931, to Sept. 30, 1938, staff gage at site 100 ft downstream at datum 0.93 ft higher.

Average discharge--29 years (1914-15, 1931-59), 1,220 cfs (883,200 acre-ft per year).

Extremes--Maximum discharge during year, 15,000 cfs Nov. 18 (gage height, 12.26 ft), from rating curve extended above 10,000 cfs by logarithmic plotting; minimum, 56 cfs Oct. 5-7.

1914-16, 1931-59: Maximum discharge, 30,000 cfs Dec. 21, 1933 (gage height, 19.28 ft, site and datum then in use), from rating curve extended above 15,000 cfs; minimum, 45 cfs Oct. 15, 16, 17, 18, 1952.

Flood in February 1916 reached a stage of 20.8 ft, from floodmarks, site and datum then in use (discharge unknown).

Remarks--Records excellent except those for period of backwater from debris, which are good. No regulation. Small diversions for domestic use above station.

Revisions (water years)--WSP 1014: Drainage area. WSP 1398: 1953.

Rating tables, water year 1958-59, except period of backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18

Nov. 19 to Sept. 30

0.2	44	2.0	635	0.4	72	2.0	675
.5	95	3.0	1,290	.7	136	3.0	1,340
1.0	227	5.0	3,250	1.0	226	5.0	3,360
1.5	405	8.0	7,600	1.5	428	10.0	10,900

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62	184	1,030	2,390	1,870	1,480	5,890	3,100	332	276	134	83
2	61	212	1,730	1,920	1,610	1,320	4,480	2,090	320	269	129	76
3	59	227	2,770	1,540	1,420	1,140	3,060	1,580	320	261	129	74
4	58	921	1,920	1,320	1,230	991	2,260	1,360	*419	250	129	524
5	56	*1,570	1,490	1,200	1,110	893	1,780	1,360	470	291	129	845
6	56	5,910	1,300	1,270	1,140	821	1,440	1,240	388	332	122	1,170
7	70	3,310	2,060	1,880	1,080	780	1,200	1,090	344	525	117	785
8	477	3,370	1,950	5,100	977	780	1,030	984	357	a460	112	590
9	264	3,010	1,660	7,820	1,000	*815	905	1,020	1,130	a400	110	452
10	179	2,630	2,780	5,560	1,040	839	833	912	1,140	a360	108	362
11	141	2,590	5,840	4,280	950	780	763	833	1,030	a320	106	303
12	122	5,150	3,810	5,330	875	827	708	768	957	a290	108	265
13	115	5,820	2,540	4,580	944	905	655	714	821	a260	108	240
14	106	3,680	1,940	3,310	1,150	869	645	719	741	a240	106	223
15	99	2,430	1,560	2,460	1,090	827	615	702	655	*230	104	220
16	95	1,750	1,290	2,080	1,910	797	565	650	585	226	99	204
17	95	1,350	*1,110	1,720	2,190	833	550	655	540	220	106	185
18	255	6,590	1,380	1,560	2,280	1,280	515	650	505	204	106	273
19	1,050	7,750	1,200	1,530	3,960	1,700	485	625	466	194	99	1,410
20	823	8,080	1,230	1,450	3,340	1,400	461	595	424	168	97	2,290
21	522	6,400	2,000	1,320	2,410	1,530	433	585	392	168	99	2,030
22	409	3,850	1,990	1,920	1,890	1,450	*414	535	370	162	102	1,890
23	348	2,660	1,640	5,590	1,680	1,390	396	505	353	176	97	938
24	292	2,230	1,440	10,400	1,480	1,240	379	480	353	176	93	763
25	260	1,800	2,420	5,800	1,480	1,360	366	466	344	167	*91	702
26	227	1,490	3,190	4,050	1,550	1,930	485	475	332	158	87	2,040
27	208	1,260	3,620	6,750	1,410	1,950	998	437	311	156	104	1,810
28	190	1,100	3,430	*4,350	1,360	2,680	3,100	410	311	156	97	1,320
29	173	1,010	3,340	3,090	-	2,680	3,650	388	307	156	87	1,050
30	164	899	3,760	2,500	-----	3,850	4,610	362	288	147	80	863
31	179	-----	3,010	2,220	-----	4,870	-----	344	-----	142	83	-----
Total	7,221	89,223	70,370	106,310	44,426	45,007	43,671	26,614	15,305	7,600	3,278	23,410
Mean	233	2,974	2,270	3,429	1,587	1,452	1,456	858	510	245	106	760
Cfs/m	1.47	16.7	14.3	21.6	9.98	9.13	9.16	5.40	3.21	1.54	0.667	4.91
In.	1.69	20.87	16.46	24.87	10.39	10.53	10.21	6.23	3.58	1.78	0.77	5.48
Ac-ft	14,320	177,000	139,600	210,900	88,120	89,270	86,620	52,790	30,360	15,070	6,500	46,430
Calendar year 1958: Max	9,880	Min	53	Mean	1,244	Cfs/m	7.82	In.	106.17	Ac-ft	900,400	
Water year 1958-59: Max	10,400	Min	56	Mean	1,322	Cfs/m	8.31	In.	112.66	Ac-ft	957,000	

Peak discharge (base, 12,000 cfs)--Nov. 18 (8:30 p.m.) 15,000 cfs (12.26 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for Nehalem River near Foss.

Note--Backwater from debris Oct. 1 to Nov. 18.

SILETZ RIVER BASIN

3055. Siletz River at Siletz, Ore.

Location.--Lat 44°42'55", long 123°53'10", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.11, T.10 S., R.10 W., on right bank $\frac{1}{2}$ miles east of Siletz and $\frac{5}{2}$ miles downstream from Rock Creek.

Drainage area.--202 sq mi.

Records available.--October 1905 to November 1911, January to May 1912, January to June 1924, November 1924 to September 1959. Prior to December 1905 monthly discharge only, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 102.32 ft above mean sea level, datum of 1929. Oct. 1, 1905, to May 4, 1912, staff gage, Jan. 1 to Nov. 5, 1924, chain gage and Nov. 6, 1924, to Sept. 30, 1938, staff or wire-weight gage, all at sites within $2\frac{1}{2}$ miles downstream at different datums.

Average discharge.--40 years (1905-11, 1925-59), 1,601 cfs (1,159,000 acre-ft per year).

Extremes.--Maximum discharge during year, 14,200 cfs Nov. 18 (gage height, 15.20 ft); minimum, 74 cfs Oct. 7.

1905-12, 1924-59: Maximum discharge, 37,000 cfs Feb. 17, 1949 (gage height, 25.17 ft), from rating curve extended above 15,000 cfs by logarithmic plotting; minimum observed, 51 cfs Dec. 6, 7, 1929.

Maximum discharge known, 40,800 cfs Nov. 20, 1921 (gage height, 31.6 ft, site and datum then in use), from rating curve extended above 17,000 cfs.

Remarks.--Records excellent. Slight regulation from logponds. Small diversions above station for irrigation of not more than 600 acres.

Revisions (water years).--WSP 754: 1922 (maximum gage height). WSP 814: 1935.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30			
2.1	65	4.5	990	2.3	99	6.0	2,080
2.4	125	6.0	2,000	2.5	137	8.0	3,830
2.8	229	8.0	3,830	3.0	281	11.0	7,600
3.5	480	11.0	7,600	3.5	485	14.0	12,100
				4.5	1,020		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	87	364	*1,300	3,270	3,500	1,670	5,190	3,210	476	359	160	117
2	83	332	1,680	2,620	2,870	1,550	4,610	2,320	458	347	160	110
3	79	420	2,690	2,140	2,400	1,400	3,470	1,800	462	332	153	104
4	78	1,140	2,170	1,820	2,030	1,240	2,710	1,630	540	321	153	452
5	78	1,860	1,760	1,870	1,720	1,130	2,220	3,270	900	359	151	1,550
6	76	6,100	1,580	1,730	1,750	1,060	*1,850	3,320	680	*359	148	1,970
7	78	4,580	2,660	2,030	1,750	984	1,550	2,510	615	494	144	1,200
8	299	5,750	2,480	5,710	1,640	1,000	1,340	2,050	600	400	139	918
9	232	6,220	2,180	11,700	1,750	1,060	1,180	1,890	1,140	391	137	665
10	166	4,710	2,760	7,740	2,180	1,040	1,090	1,680	1,270	332	131	540
11	139	3,060	6,980	5,590	2,070	948	990	1,460	1,240	310	*129	458
12	125	3,540	4,460	*8,160	1,790	984	900	1,280	1,190	288	127	395
13	116	5,090	3,200	5,900	1,790	1,010	834	1,150	1,080	278	127	359
14	112	4,310	2,480	4,180	2,370	984	798	1,180	996	264	125	332
15	105	3,350	2,110	3,180	2,392	930	765	1,180	918	257	121	325
16	101	2,530	1,800	2,920	3,500	894	695	1,060	816	254	117	328
17	101	2,010	1,540	2,460	3,660	912	665	1,060	750	237	117	288
18	214	5,740	1,550	2,320	3,630	1,340	625	*1,010	710	228	119	367
19	1,030	9,980	1,420	2,300	5,780	1,980	590	960	650	225	117	1,680
20	900	10,200	1,530	2,200	4,780	1,650	560	894	600	215	115	2,380
21	*585	7,890	2,500	2,000	3,590	1,900	526	840	565	206	117	*2,700
22	472	4,820	2,330	2,010	2,860	1,790	498	780	535	198	119	1,820
23	424	3,450	2,010	2,760	2,570	1,990	472	750	503	198	117	1,320
24	335	2,740	1,850	6,260	*2,210	1,870	454	680	503	198	110	1,060
25	293	2,240	2,450	4,910	2,000	2,200	436	670	465	192	106	996
26	263	1,850	3,020	3,940	1,860	3,190	503	675	462	186	103	3,770
27	241	1,560	3,360	9,560	1,760	3,020	905	655	431	178	113	2,870
28	226	1,580	3,570	7,010	1,660	3,480	2,110	595	418	176	144	2,100
29	212	1,390	4,120	4,850	-	3,250	2,840	555	404	170	121	1,640
30	200	1,270	5,350	4,440	-----	4,810	4,270	521	375	170	110	1,340
31	286	-----	4,180	4,150	-----	4,810	-----	494	-----	165	110	-----
Total	7,727	109,876	83,030	131,730	71,842	56,076	45,646	42,089	20,772	8,287	3,960	34,154
Mean	249	3,663	2,678	4,249	2,566	1,809	1,522	1,358	692	267	128	1,138
Cfs/m	1.23	16.1	13.3	21.0	12.7	8.96	7.53	6.72	3.43	1.32	0.634	5.63
In.	1.42	20.23	15.29	24.25	13.23	10.32	8.40	7.75	3.82	1.53	0.73	6.29
Ac-ft	15,330	217,900	164,700	261,300	142,500	111,200	90,540	83,480	41,200	16,440	7,850	67,740

Calendar year 1958: Max 10,400 Min 55 Mean 1,547 Cfs/m 7.66 In. 103.95 Ac-ft 1,120,000
 Water year 1958-59: Max 11,700 Min 76 Mean 1,685 Cfs/m 8.34 In. 113.26 Ac-ft 1,220,000

Peak discharge (base, 14,000 cfs, revised).--Nov. 18 (11 p.m.) 14,200 cfs (15.20 ft).

* Discharge measurement made on this day.

3061. North Fork Alsea River at Alsea, Oreg.

Location.--Lat 44°22'45", long 123°35'40", in SE $\frac{1}{4}$ sec.1, T.14 S., R.8 W., on left bank 0.2 mile southeast of Alsea, 0.3 mile upstream from road bridge, and 0.5 mile upstream from confluence with South Fork.

Drainage area.--63.0 sq mi.

Records available.--October 1957 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 272.31 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 3,640 cfs Jan. 12 (gage height, 8.41 ft); minimum, 14 cfs Oct. 1-7; minimum gage height, 1.47 ft Sept. 3.
1957-59: Maximum discharge, 4,250 cfs Dec. 19, 1957 (gage height, 9.12 ft); minimum, 13 cfs Sept. 6, 7, 1958 (gage height, 1.46 ft).
Maximum stage known, 13.30 ft in December 1955 (discharge, about 9,000 cfs, from rating curve extended above 2,500 cfs), from information by local resident.

Remarks.--Records excellent except those for period of no gage-height record, which are good. No regulation. Some diversions by pumping above station. Records of water temperatures for the water year 1959 are given in WSP 1644.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 11

Jan. 12 to Sept. 30

1.4	10	3.5	455	1.4	12	3.5	455
1.6	24	4.0	690	1.6	26	4.0	690
2.0	71	5.0	1,250	2.0	69	5.0	1,250
2.5	157	6.0	1,880	2.5	155	6.0	1,880
3.0	280	8.0	3,310	3.0	280	8.0	3,310

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	47	159	415	735	372	844	170	70	48	27	21
2	15	38	175	361	575	334	705	151	70	48	27	19
3	14	42	*240	310	467	295	560	135	75	46	27	19
4	14	134	212	280	399	268	455	139	80	44	27	34
5	14	167	191	347	347	248	379	300	90	50	27	88
6	14	357	177	358	334	230	319	289	75	50	25	101
7	15	245	232	443	313	218	283	222	70	55	24	57
8	30	391	230	1,980	286	208	253	193	75	*48	22	42
9	26	692	220	3,220	313	220	*232	179	150	45	21	35
10	21	518	238	2,550	375	212	215	166	120	44	21	30
11	18	274	411	2,130	344	198	200	153	100	43	21	28
12	18	351	391	2,880	310	195	191	139	95	42	21	27
13	18	610	319	1,680	581	230	179	151	90	41	*21	26
14	18	580	268	1,120	749	228	175	145	90	40	22	29
15	18	427	228	800	800	218	166	143	85	39	21	36
16	18	292	205	*675	1,290	210	155	131	80	38	21	39
17	18	228	193	555	1,240	210	149	129	75	37	22	31
18	33	567	177	475	1,310	238	143	124	70	36	23	44
19	125	1,880	167	451	1,880	316	135	118	70	35	22	183
20	68	1,550	177	415	1,370	280	129	113	65	34	22	143
21	42	872	240	375	993	325	124	*109	60	33	24	113
22	34	545	225	340	746	331	118	104	60	33	24	79
23	31	395	205	337	645	379	116	99	60	33	21	*61
24	*27	316	200	606	545	375	113	96	55	33	19	54
25	25	262	248	570	475	459	109	96	55	32	18	50
26	25	228	498	537	435	751	116	96	55	30	17	128
27	24	200	960	2,300	*403	665	130	55	30	19	164	
28	23	179	910	1,710	583	645	145	85	50	30	20	124
29	22	175	720	1,120	680	129	85	50	30	20	96	
30	22	161	640	1,170	---	1,170	177	80	50	29	18	79
31	42	---	500	960	---	1,020	---	75	---	28	19	---
Total	847	12,733	9,956	31,470	18,434	11,728	7,149	4,285	2,250	1,204	683	1,980
Mean	27.3	424	321	1,015	658	378	238	158	75.0	38.8	22.0	66.0
Cfs/m	0.433	6.73	5.10	16.1	10.4	6.00	3.78	2.19	1.19	0.616	0.349	1.05
In.	0.50	7.52	5.88	18.58	10.88	6.92	4.22	2.53	1.33	0.71	0.40	1.17
Ac-ft	1,680	25,260	19,750	62,420	36,560	23,260	14,180	8,500	4,460	2,390	1,350	3,930

Calendar year 1958: Max 3,220 Min 14 Mean 260 Cfs/m 4.13 In. 55.92 Ac-ft 187,900
Water year 1958-59: Max 3,220 Min 14 Mean 281 Cfs/m 4.46 In. 60.64 Ac-ft 203,700

Peak discharge (base, 2,000 cfs).--Nov. 19 (1 to 3 p.m.) 2,020 cfs (6.23 ft); Jan. 9 (11 a.m.) 3,490 cfs (8.23 ft); Jan. 12 (1 a.m.) 3,640 cfs (8.41 ft); Jan. 27 (2 p.m.) 2,850 cfs (7.39 ft); Feb. 19 (5 a.m.) 2,020 cfs (6.22 ft).

* Discharge measurement made on this day.

Note.--No gage-height record May 27 to July 7; discharge estimated on basis of recorded range in stage, weather records, and records for South Fork Alsea River near Alsea and Fall Creek near Alsea.

3062. South Fork Alsea River near Alsea, Oreg.

Location.--Lat 44°21'55", long 123°35'55", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.12, T.14 S., R.8 W., on left bank 0.8 mile upstream from confluence with North Fork and 1.1 miles south of Alsea.

Drainage area.--49.5 sq mi.

Records available.--October 1957 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 300 ft (by barometer).

Extremes.--Maximum discharge during year, 3,050 cfs Jan. 12 (gage height, 7.38 ft); minimum, 7.2 cfs Sept. 2, 3.

1957-59: Maximum discharge, that of Jan. 12, 1959; minimum, that of Sept. 2, 3, 1959.

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. No regulation. Some diversions by pumping above station. Records of water temperatures for the water year 1959 are given in WSP 1644.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.4	5.0	4.0	590
1.6	13	5.0	1,120
2.0	45	6.0	1,810
2.5	120	7.2	2,870
3.0	240		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.2	58	78	228	390	234	420	91	41	26	12	8.2
2	8.2	28	80	205	330	210	380	85	40	25	11	7.9
3	8.2	29	*94	175	291	190	300	80	40	25	11	7.5
4	8.2	62	85	160	261	178	260	79	42	25	11	9.9
5	8.6	64	74	200	231	162	240	120	47	26	12	27
6	9.0	101	74	220	222	154	210	128	43	27	11	32
7	9.5	118	91	300	213	146	190	102	40	29	11	22
8	11	156	90	1,400	192	142	170	94	59	*27	10	15
9	15	311	86	2,800	210	142	*154	86	60	24	9.9	12
10	12	241	98	1,700	270	138	144	85	51	21	9.5	11
11	11	120	128	1,530	246	130	136	80	43	20	9.5	10
12	11	96	150	2,220	213	130	126	76	41	19	9.9	9.9
13	10	243	130	1,070	277	138	118	72	38	18	*10	10
14	10	273	112	705	594	136	112	82	38	18	10	11
15	10	195	98	522	562	128	108	80	37	17	9.5	11
16	9.9	134	90	*470	810	122	100	73	35	17	9.0	13
17	11	102	84	407	720	122	97	76	34	17	9.0	13
18	17	168	80	351	765	132	92	73	34	16	9.0	18
19	76	905	76	318	906	172	90	70	32	15	9.0	76
20	50	650	82	288	705	152	86	*66	30	15	9.0	57
21	22	382	106	264	546	185	85	62	29	14	9.0	35
22	18	252	90	240	449	200	80	58	29	14	9.0	25
23	17	185	85	228	393	240	79	55	29	14	8.6	*19
24	*15	154	96	330	334	240	78	52	30	14	8.2	18
25	14	130	138	318	297	280	76	52	30	14	7.9	18
26	13	110	399	294	279	440	79	52	30	13	7.9	50
27	13	97	590	1,210	*257	400	92	50	30	13	7.9	47
28	12	88	578	1,020	249	400	92	47	30	13	8.6	34
29	12	82	414	650	-	440	84	46	30	13	8.6	26
30	12	78	324	554	-----	600	94	45	28	13	8.2	22
31	27	-----	270	466	-----	500	-----	43	-----	12	7.9	-----
Total	488.8	5,592	4,970	20,843	11,222	6,983	4,352	2,260	1,100	574	294.1	675.4
Mean	15.8	196	160	672	401	225	145	72.9	36.7	18.5	9.49	22.5
Cfs/m	0.319	3.76	3.28	13.6	8.10	4.55	2.93	1.47	0.741	0.374	0.192	0.455
In.	0.37	4.20	3.73	15.66	8.43	5.25	3.27	1.70	0.83	0.43	0.22	0.51
Ac-ft.	970	11,090	9,860	41,340	22,260	13,850	8,630	4,480	2,180	1,140	583	1,340

Calendar year 1958: Max 1,390 Min 8.2 Mean 156 Cfs/m 3.15 In. 42.71 Ac-ft 112,800
 Water year 1958-59: Max 2,800 Min 7.5 Mean 163 Cfs/m 3.29 In. 44.60 Ac-ft 117,700

Peak discharge (base, 1,400 cfs)--Jan. 9 (about 12 m.) 3,000 cfs (7.33 ft); Jan. 12 (1:30 a.m.) 3,050 cfs (7.38 ft); Jan. 27 (2 p.m.) 1,640 cfs (5.78 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Jan. 4-9, Mar. 22 to Apr. 8; discharge estimated on basis of recorded range in stage and records for North Fork Alsea River at Alsea and Five Rivers near Fisher.

3063. Fall Creek near Alsea, Oreg.

Location.--Lat 44°23'50", long 123°44'50", in S¹NE¹ sec.35, T.13 S., R.9 W., on left bank 2.0 miles upstream from mouth and 8.0 miles west of Alsea. Inflow between gage and measuring section 1.9 miles downstream is included in records.

Drainage area.--29.4 sq mi at measuring section 1.9 miles downstream.

Records available.--August 1958 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 190 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,040 cfs Jan. 8 (gage height, 6.05 ft), from rating curve extended above 770 cfs by logarithmic plotting; minimum, 10 cfs Oct. 14. 1958-59: Maximum discharge, that of Jan. 8, 1959; minimum, 10 cfs Sept. 6, 7, Oct. 14, 1958.

Remarks.--Records good. No regulation or diversion above station. Records of water temperatures for the water year 1959 are given in WSP 1644.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.4	10	3.0	260
1.6	19	4.0	650
1.8	32	5.0	1,230
2.1	62	6.0	2,000
2.5	128		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	20	120	275	435	200	451	120	53	36	21	16
2	12	21	*151	239	346	185	399	107	51	35	21	15
3	11	32	218	200	294	172	322	94	53	34	21	15
4	11	83	168	188	251	160	263	104	59	33	21	43
5	11	156	143	218	221	148	227	374	65	38	21	108
6	11	476	130	203	212	139	198	245	54	37	20	145
7	11	240	237	284	200	130	180	175	51	38	20	59
8	23	514	198	1,090	190	126	165	143	53	*34	19	40
9	16	499	170	1,770	209	139	*150	135	120	32	18	31
10	14	336	164	1,230	245	126	139	124	99	31	18	26
11	12	203	443	1,010	221	118	128	115	82	31	18	23
12	12	306	322	1,360	192	118	120	106	75	30	18	21
13	11	447	242	788	252	150	113	99	68	30	*18	21
14	11	419	200	542	325	148	109	102	66	29	18	20
15	11	308	175	*411	328	132	104	100	61	29	18	24
16	11	218	158	381	614	122	97	94	58	28	18	22
17	11	175	141	332	569	120	92	94	54	28	18	20
18	20	389	132	294	844	146	90	94	52	27	18	64
19	104	938	122	278	1,110	175	84	90	50	26	18	252
20	49	*844	139	260	745	150	81	*84	48	26	18	150
21	28	503	180	239	515	178	76	81	46	26	18	118
22	23	353	165	215	399	178	73	76	45	25	18	82
23	*21	269	143	218	356	242	70	73	44	24	17	*62
24	18	230	141	354	300	221	68	70	44	24	16	52
25	16	190	172	311	263	248	66	69	42	24	16	52
26	16	170	292	308	242	336	75	72	41	24	16	283
27	14	150	431	1,380	*224	300	86	86	41	23	16	160
28	14	135	435	860	209	336	89	82	41	23	18	111
29	14	132	399	578	-	367	90	60	39	23	16	87
30	13	120	411	725	-----	610	148	58	37	23	16	73
31	20	-----	336	569	-----	503	-----	55	-----	22	16	-----
Total	581	8,876	6,898	17,090	10,311	6,423	4,353	3,341	1,692	893	563	2,195
Mean	18.7	296	223	551	368	207	145	108	56.4	28.8	18.2	73.2
Cfsm	0.636	10.1	7.59	18.7	12.5	7.04	4.93	3.67	1.92	0.980	0.619	2.49
In.	0.73	11.23	8.73	21.62	13.04	8.12	5.51	4.25	2.14	1.13	0.71	2.78
Ac-ft	1,150	17,810	13,680	33,900	20,450	12,740	8,630	6,630	3,360	1,770	1,120	4,350

Calendar year 1958: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1958-59: Max 1,770 Min 11 Mean 173 Cfsm 5.88 In. 79.97 Ac-ft 125,400

Peak discharge (base, 1,500 cfs).--Jan. 8 (12 p.m.) 2,040 cfs (6.05 ft); Jan. 12 (3 a.m.) 1,710 cfs (5.65 ft); Jan. 27 (9 a.m.) 1,690 cfs (5.63 ft).

* Discharge measurement made on this day.

ALSEA RIVER BASIN

3064. Five Rivers near Fisher, Oreg.

Location.--Lat 44°20'15", long 123°49'35", in W $\frac{1}{2}$ sec.19, T.14 S., R.9 W., on left bank at downstream side of county road bridge, 500 ft downstream from Lobster Creek, 3.2 miles north of Fisher, and 12 miles west of Alsea.

Drainage area.--114 sq mi.

Records available.--August 1958 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 130 ft (from topographic map).

Extremes.--Maximum discharge during year, 7,120 cfs Jan. 12 (gage height, 14.24 ft), from rating curve extended above 3,300 cfs; minimum, 17 cfs Oct. 6, 7 (gage height, 1.54 ft).
1958-59: Maximum discharge, that of Jan. 12, 1959; minimum, that of Oct. 6, 7, 1958.

Remarks.--Records excellent. No regulation or diversion above station. Records of water temperatures for the water year 1959 are given in WSP 1644.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 11

Jan. 12 to Sept. 30

1.5	13	5.0	980	1.6	23	5.0	980
1.6	23	7.0	1,950	1.9	72	7.0	1,950
1.8	53	10.0	3,700	2.5	197	10.0	3,700
2.5	172	14.0	6,900	3.5	441		
3.5	420						

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	103	345	844	1,240	579	1,380	351	133	76	42	29
2	20	79	*384	780	1,030	530	1,100	311	131	72	40	27
3	19	80	545	672	900	494	932	278	133	72	39	26
4	19	282	480	608	792	459	796	278	133	72	39	43
5	19	243	414	818	702	430	698	461	162	74	39	154
6	18	548	378	784	674	405	610	470	135	78	37	150
7	19	550	499	1,000	652	387	544	384	125	100	36	92
8	30	579	480	3,990	604	371	*500	348	125	*30	34	66
9	36	1,550	450	6,220	740	382	461	334	239	80	33	51
10	27	1,090	447	4,640	1,070	358	421	306	206	75	31	45
11	23	552	624	4,040	968	334	392	285	167	70	31	42
12	23	522	676	5,700	804	328	369	264	156	65	31	40
13	23	1,250	584	3,140	1,050	344	346	248	141	65	*33	37
14	23	1,080	501	2,120	1,200	331	334	264	133	65	31	45
15	23	840	450	*1,590	1,200	309	316	282	129	60	30	55
16	23	588	402	1,360	2,100	292	294	237	120	60	30	61
17	24	459	363	1,120	1,900	297	282	237	116	60	31	50
18	59	872	342	984	2,100	341	271	237	114	55	33	131
19	275	3,350	320	940	2,800	473	259	221	108	55	33	458
20	120	*3,130	377	876	2,000	403	248	*210	102	55	33	301
21	71	1,920	580	788	1,600	515	237	197	98	55	36	197
22	58	1,250	492	708	1,300	562	226	188	96	50	37	137
23	*55	908	447	702	1,100	716	217	173	92	48	34	*108
24	47	712	435	1,100	950	698	206	167	94	*48	31	92
25	42	570	545	1,060	850	756	201	164	90	47	30	90
26	39	477	1,200	980	*740	1,220	219	167	88	45	29	358
27	36	414	1,920	3,590	691	1,100	287	167	88	43	29	285
28	33	363	1,870	2,340	632	1,100	297	158	88	43	31	197
29	33	372	1,440	2,020	-	1,180	262	148	88	43	30	152
30	31	342	1,120	1,800	-----	2,080	369	141	82	43	29	131
31	60	-----	944	1,520	-----	1,750	-----	137	-----	42	27	-----
Total	1,348	25,075	20,054	59,432	32,189	19,524	13,074	7,793	3,712	1,906	1,029	3,650
Mean	43.5	858	647	1,917	1,150	630	436	251	124	61.5	33.2	122
Cfs/m	0.382	7.33	5.68	16.8	10.1	5.53	3.82	2.20	1.09	0.539	0.291	1.07
In.	0.44	8.18	6.54	19.39	10.50	6.37	4.27	2.54	1.21	0.62	0.34	1.19
Ac-ft	2,670	49,740	39,780	117,900	63,850	38,730	25,930	15,460	7,360	3,780	2,040	7,240

Calendar year 1958: Max - Min - Mean - Cfs/m - In. - Ac-ft -
Water year 1958-59: Max 6,220 Min 18 Mean 517 Cfs/m 4.54 In. 61.59 Ac-ft 374,500

Peak discharge (base, 4,000 cfs).--Jan. 9 (1:30 a.m.) 6,740 cfs (13.82 ft); Jan. 12 (2 to 3 a.m.) 7,120 cfs (14.24 ft); Jan. 27 (2 p.m.) 4,590 cfs (11.24 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Feb. 14-25, July 9-23; discharge estimated on basis of recorded range in stage and records for Alsea River near Tidewater.

3065. Alsea River near Tidewater, Oreg.

Location.--Lat 44°23'10", long 123°49'50", in NW¹/₄ NW¹/₄ sec.6, T.14 S., R.9 W., on right bank three-quarters of a mile downstream from Grass Creek, 2.3 miles upstream from Scott Creek, and 3.8 miles southeast of Tidewater.

Drainage area.--334 sq mi.

Records available.--October 1939 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 48.16 ft above mean sea level, datum of 1929. Prior to Nov. 16, 1939, staff gage at same site and datum.

Average discharge.--20 years, 1,556 cfs (1,126,000 acre-ft per year).

Extremes.--Maximum discharge during year, 18,900 cfs Jan. 12 (gage height, 18.28 ft); minimum, 64 cfs Oct. 6, 7 (gage height, 1.29 ft).
1939-59: Maximum discharge, 32,200 cfs Dec. 21, 1955 (gage height, 23.80 ft); minimum, 56 cfs Sept. 6, 1956 (gage height, 1.20 ft).
Maximum stage known, 29.5 ft, from floodmark shown by old resident, on or about Feb. 3, 1890.

Remarks.--Records good. No regulation. A few small diversions for irrigation above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 27				Jan. 28 to Sept. 30			
1.3	65	4.0	1,150	1.4	79	4.0	1,050
1.5	99	6.0	2,500	1.6	117	6.0	2,450
2.0	226	9.0	5,050	2.0	222	9.0	5,050
2.5	400	13.0	10,100	2.5	380	13.0	10,100
3.0	610	18.0	18,400	3.0	570		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	73	302	al,000	2,590	3,860	1,820	3,920	890	394	255	126	93
2	71	246	*1,040	2,350	3,230	1,660	3,330	795	387	246	124	93
3	70	240	1,500	2,050	2,770	1,510	2,800	718	387	240	124	90
4	68	615	1,360	1,850	2,410	1,390	2,370	705	401	234	124	113
5	67	810	1,190	2,260	2,110	1,280	2,030	1,380	470	243	124	380
6	65	1,540	1,090	2,300	1,970	1,210	1,780	1,510	415	252	121	514
7	65	1,840	1,400	2,550	1,910	1,130	1,570	1,150	380	*276	117	352
8	94	2,370	1,480	9,360	1,750	1,080	*1,420	970	376	258	111	243
9	121	3,490	1,550	17,400	1,820	1,060	1,300	910	680	231	107	186
10	107	3,280	1,340	15,700	2,610	1,060	1,190	870	646	216	101	156
11	90	1,790	2,050	10,600	2,610	965	1,100	790	526	207	99	137
12	83	1,420	2,180	16,300	2,240	950	1,020	728	482	195	*99	130
13	79	3,320	1,890	9,360	2,300	1,030	965	678	440	189	99	126
14	78	3,250	1,610	*6,120	4,750	1,050	925	705	415	186	99	128
15	76	2,620	1,400	4,490	4,830	975	900	732	394	184	99	146
16	76	1,880	1,260	3,930	6,440	925	830	664	373	181	97	175
17	78	1,430	1,160	3,440	6,420	915	785	664	356	175	97	156
18	118	1,850	1,070	3,030	6,190	965	755	656	348	170	97	230
19	684	8,540	994	2,810	8,390	1,430	723	633	335	164	97	1,020
20	500	8,310	1,050	2,620	6,870	1,250	687	*597	315	159	97	825
21	264	4,960	1,560	2,380	4,980	1,440	660	562	306	154	103	615
22	188	83,500	1,430	2,180	3,960	1,620	638	542	300	149	107	*436
23	*169	83,100	1,290	2,070	3,390	1,970	610	514	291	146	105	332
24	148	2,000	1,230	2,960	2,930	2,000	588	490	291	149	99	279
25	134	al,500	1,540	3,100	2,590	2,010	570	486	285	149	93	267
26	126	al,300	2,610	2,790	*2,310	3,200	592	490	282	146	90	912
27	119	al,100	4,930	9,420	2,110	3,100	687	486	282	142	90	855
28	113	al,000	5,140	*9,200	1,920	3,010	780	470	282	137	97	624
29	109	al,000	4,080	5,920	-	3,140	687	443	279	135	97	478
30	107	8,960	5,540	5,450	-----	6,090	870	422	264	135	93	398
31	130	-----	3,000	4,700	-----	4,790	-----	412	-----	130	90	-----
Total	4,270	69,564	57,774	169,310	99,650	55,045	37,082	22,062	11,362	5,833	3,223	10,489
Mean	138	2,319	1,864	5,462	3,559	1,776	1,236	712	379	188	104	350
Cfs/m	0.413	6.94	5.58	16.4	10.7	5.32	3.70	2.13	1.13	0.563	0.311	1.05
In.	0.48	7.75	6.43	18.85	11.10	6.13	4.13	2.46	1.27	0.65	0.36	1.17
Ac-ft	8,470	138,000	114,600	335,800	197,700	109,200	73,550	43,760	22,540	11,570	6,390	20,800

Calendar year 1958: Max 10,500 Min 64 Mean 1,503 Cfs/m 4.50 In. 61.07 Ac-ft 1,088,000
Water year 1958-59: Max 17,400 Min 65 Mean 1,495 Cfs/m 4.48 In. 60.78 Ac-ft 1,082,000

Peak discharge (base, 13,000 cfs).--Jan. 9 (4 to 5 a.m.) 18,000 cfs (17.78 ft); Jan. 12 (6:30 a.m.) 18,900 cfs (18.28 ft); Jan. 27 (7 p.m.) 15,200 cfs (15.0 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for Siletz River at Siletz.

3066. Drift Creek near Salado, Oreg.

Location.--Lat 44°30'50", long 123°50'50", in NE $\frac{1}{4}$ sec.24, T.12 S., R.10 W., on right bank 0.3 mile downstream from Cape Horn Creek, 4.1 miles southwest of Salado, and 8.5 miles southeast of Toledo.

Drainage area.--20.6 sq mi.

Records available.--September 1958 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 460 ft (from topographic map).

Extremes.--Maximum discharge during period September 1958 to September 1959, 1,680 cfs Jan. 9 (gage height, 7.47 ft), from rating curve extended above 520 cfs by logarithmic plotting; minimum, 3.8 cfs Sept. 7, 8, 1958 (gage height, 2.15 ft).

Remarks.--Records excellent except those for period of no gage-height record, which are good. No regulation or diversion above station.

Rating table, Sept. 5, 1958, to Sept. 30, 1959 (gage height, in feet, and discharge, in cubic feet per second)

2.1	2.9	3.0	59	6.0	820
2.2	4.9	3.5	125	7.0	1,360
2.4	12	4.0	210	8.0	2,100
2.7	30	5.0	450		

Discharge, in cubic feet per second, 1958

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
Sept. 1.....	a5	Sept. 9.....	4.2	Sept. 17.....	11	Sept. 25.....	a8
2.....	a4.8	10.....	4.7	18.....	7.9	26.....	a8
3.....	a4.6	11.....	4.9	19.....	8.2	27.....	a6
4.....	a4.4	12.....	5.7	20.....	7.6	28.....	a5
5.....	*4.2	13.....	22	21.....	9.6	29.....	a4.6
6.....	4.2	14.....	12	22.....	8.6	30.....	a4
7.....	4.0	15.....	12	23.....	6.9		
8.....	4.0	16.....	10	24.....	a6.5		
Total.....							212.6
Mean.....							7.09
Cubic feet per second per square mile.....							0.344
Runoff in inches.....							0.38
Runoff in acre-feet.....							422

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for Fall Creek near Alsea and Five Rivers near Fisher.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5	13	87	174	320	126	301	114	34	21	10	7.9
2	5	12	116	152	243	113	264	91	32	21	10	7.2
3	4	14	171	130	197	102	212	77	33	20	10	6.9
4	4	51	*126	122	167	92	176	82	36	19	10	28
5	4	113	106	145	145	86	150	260	45	22	10	82
6	4	323	95	142	147	79	130	190	37	*22	9.6	116
7	5	169	149	207	140	75	*115	134	34	22	9.3	49
8	18	430	134	845	131	71	102	110	34	21	9.3	39
9	13	430	114	1,400	152	81	92	102	66	19	9.0	28
10	11	300	131	769	199	76	83	95	59	19	8.6	23
11	9	171	320	612	174	70	77	84	51	18	8.6	20
12	8	244	230	810	147	75	72	76	46	18	*9.0	18
13	7	417	178	*510	194	103	67	70	44	17	9.0	16
14	7	370	143	362	368	103	65	72	41	16	8.6	16
15	6	266	125	271	328	90	61	73	38	16	8.6	16
16	6	185	109	243	350	79	56	65	36	16	8.6	15
17	6	136	96	212	330	78	54	67	34	16	8.6	14
18	12	327	90	190	448	112	51	*66	33	15	8.6	33
19	50	714	82	183	604	154	48	64	29	14	8.2	164
20	30	678	103	172	444	124	45	59	29	14	8.2	103
21	*21	*428	157	157	330	152	44	56	28	14	8.2	99
22	19	284	140	142	255	152	42	52	27	13	8.2	*67
23	17	208	118	143	230	206	41	49	26	12	7.9	51
24	14	169	112	265	192	190	39	46	26	12	7.9	43
25	12	136	124	232	*172	217	37	45	25	12	7.6	44
26	11	119	190	212	157	273	44	45	24	12	7.2	330
27	10	103	262	903	143	230	60	43	24	12	7.6	164
28	9.3	91	275	654	136	249	70	40	24	12	9.0	104
29	8.6	92	8.69	21.442	12.35	8.95	5.11	4.30	1.86	0.30	0.48	5.34
30	8.2	84	269	559	-----	450	157	36	22	11	7.2	67
31	13	-----	210	428	-----	350	-----	34	-----	10	7.6	-----
Total	357.1	7,081	4,808	11,888	6,843	4,627	2,829	2,435	1,040	497	268.1	1,852.0
Mean	11.5	236	155	383	244	149	93.5	78.5	34.7	16.0	8.65	61.7
Cfsm	0.558	11.5	7.52	18.6	11.8	7.23	4.58	3.81	1.68	0.777	0.420	5.00
In.	0.64	12.78	8.69	21.442	12.35	8.95	5.11	4.30	1.86	0.30	0.48	5.34
Ac-ft	708	14,040	9,540	23,580	13,570	9,180	5,610	4,830	2,060	986	532	3,670

Calendar year 1958: Max - Min 4 Mean - 122 Cfsm - 5.92 In. - 80.37 Ac-ft - 88,310
Water year 1958-59: Max 1,400 Min 4 Mean - 122 Cfsm 5.92 In. 80.37 Ac-ft 88,310

Peak discharge (base, 1,000 cfs).--Jan. 9 (1 a.m.) 1,680 cfs (7.47 ft); Jan. 27 (2:30 p.m.) 1,100 cfs (6.57 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-20; discharge estimated on basis of weather records and records for Fall Creek near Alsea and Five Rivers near Fisher.

3067. Needle Branch near Salado, Oreg.

Location.--Lat 44°30'35" long 123°51'20", in SW $\frac{1}{4}$ sec.24, T.12 S., R.10 W., on right bank 500 ft upstream from mouth, 4.6 miles southwest of Salado, and 8.5 miles south-east of Toledo.

Drainage area.--0.32 sq mi.

Records available.--October 1958 to September 1959.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 440 ft (from topographic map).

Extremes.--Maximum discharge during year, 16 cfs Jan. 9 (gage height, 2.67 ft), from rating curve extended above 7.3 cfs; practically no flow Oct. 1-7, 13-16.

Remarks.--Records excellent except those below 1 cfs, which are good. No regulation or diversion above station. Records of suspended sediment loads and water temperatures for the water year 1959 are given in WSP 1644.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.0	0	1.7	2.0
1.1	.1	1.9	3.5
1.2	.2	2.1	6.0
1.3	.4	2.6	15
1.5	1.0		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.1	1.1	2.7	4.3	1.2	3.7	1.6	0.4	0.3	0.1	0.1
2	0	.1	1.3	2.3	3.1	1.1	3.2	1.2	.4	.3	.1	.1
3	0	.2	1.8	1.8	2.4	1.0	2.7	1.0	.4	.2	.1	.1
4	0	.6	*1.7	1.7	1.8	.9	2.2	1.2	.6	.2	.1	.6
5	0	1.8	1.5	1.8	1.6	.8	1.8	3.7	.6	.3	.1	.9
6	0	4.5	1.3	1.7	1.6	.8	1.6	3.3	.5	.3	.1	1.0
7	0	2.7	2.2	2.5	1.8	.7	*1.4	2.5	.5	*.2	.1	.4
8	.3	6.6	2.0	10	1.7	.7	1.2	1.9	.5	.2	.1	.3
9	.1	6.2	1.8	1.4	2.2	.9	1.0	1.7	1.0	.2	.1	.2
10	.1	4.6	2.2	8.3	3.7	.7	.9	1.5	.9	.2	.1	.2
11	.1	2.8	5.4	6.8	3.3	.7	.8	1.4	.8	.2	*.1	.1
12	.1	3.5	4.4	9.4	2.6	.8	.7	1.2	.7	.2	.1	.1
13	0	6.9	3.3	*6.8	3.8	1.3	.7	1.1	.7	.2	.1	.1
14	0	7.2	2.5	4.8	7.8	1.3	.7	1.2	.7	.1	.1	.1
15	0	5.3	2.0	3.3	6.8	1.2	.6	1.2	.6	.1	.1	.1
16	0	3.4	1.7	2.8	5.7	1.1	.6	1.1	.6	.1	.1	.1
17	.1	2.5	1.5	2.4	4.3	1.0	.5	1.1	.6	.1	.1	.1
18	.3	4.1	1.3	2.2	4.0	1.8	.5	1.2	.5	.1	.1	.4
19	1.3	9.4	1.2	2.1	5.7	2.5	.5	*1.0	.5	.1	.1	1.2
20	.4	10	1.6	2.0	5.0	2.0	.4	1.0	.4	.1	.1	1.0
21	.2	*7.2	2.5	1.8	3.5	2.2	.4	.9	.4	.1	.1	.9
22	*.2	4.6	2.3	1.8	2.8	2.2	.4	.8	.4	.1	.1	*.6
23	.2	3.0	2.0	1.8	2.3	2.6	.3	.8	.4	.1	.1	.5
24	.1	2.3	1.8	3.1	*2.0	2.6	.3	.7	.4	.1	.1	.4
25	.1	1.8	1.8	2.9	1.8	2.7	.3	.7	.4	.1	.1	.6
26	.1	1.6	2.5	2.8	1.6	3.2	.4	.7	.3	.1	.1	5.3
27	.1	1.3	4.0	12	1.5	3.0	.7	.6	.3	.1	.1	2.6
28	.1	1.2	4.8	9.3	1.3	3.0	.7	.6	.3	.1	.1	1.6
29	.1	1.2	4.0	*6.0	--	3.2	.8	.5	.3	.1	.1	1.3
30	.1	1.0	4.0	7.8	--	4.8	1.8	.5	.3	.1	.1	1.0
31	.2	--	3.3	6.2	--	4.3	--	.4	--	.1	.1	--
Total	4.3	107.7	74.8	144.9	90.0	56.3	31.8	38.1	15.4	4.8	3.1	22.0
Mean	0.14	3.59	2.41	4.67	3.21	1.82	1.06	1.23	0.51	0.15	0.10	0.73
Cfsm	0.438	11.2	7.53	14.6	10.0	5.69	3.31	3.84	1.59	0.469	0.312	2.28
In.	0.48	12.52	8.69	16.84	10.46	6.54	3.70	4.43	1.79	0.56	0.36	2.56
Ac-ft	8.5	214	148	287	179	112	63	76	31	9.5	6.1	44

Calendar year 1958: Max - Min - Mean - Cfsm - In. - Ac-ft -
 Water year 1958-59: Max 14 Min 0 Mean 1.63 Cfsm 5.09 In. 68.93 Ac-ft 1,180

Peak discharge (base, 15 cfs).--Jan. 9 (3:30 a.m.) 16 cfs (2.67 ft); Jan. 27 (1 p.m.) 15 cfs (2.60 ft).

* Discharge measurement made on this day.

3068. Flynn Creek near Salado, Oreg.

Location.--Lat 44°32'20", long 123°51'05", in SW $\frac{1}{4}$ sec.12, T.12 S., R.10 W., on right bank 1,000 ft upstream from mouth, 3.4 miles west of Salado, and 6.9 miles southeast of Toledo.

Drainage area.--0.84 sq mi.

Records available.--September 1958 to September 1959.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 685 ft (from topographic map).

Extremes.--1958: Maximum daily discharge during September, 0.4 cfs Sept. 14-16; minimum daily, 0.1 cfs Sept. 2-10, 30.
1958-59: Maximum discharge during water year, 53 cfs Jan. 9 (gage height, 4.00 ft); minimum, 0.1 cfs Oct. 1-4; minimum gage height, 1.85 ft Oct. 2.

Remarks.--Records excellent except those below 1 cfs, which are fair. No regulation or diversion above station. Records of suspended sediment loads and water temperatures for water year 1959 are given in WSP 1644.

Discharge, in cubic feet per second, 1958							
Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
Sept. 1....	a0.2	Sept. 9.....	a0.1	Sept. 17.....	0.3	Sept. 25.....	0.2
2.....	a.1	10.....	a.1	18.....	.2	26.....	.2
3.....	a.1	11.....	a.2	19.....	.2	27.....	.2
4.....	a.1	12.....	a.2	20.....	.2	28.....	.2
5.....	a.1	13.....	a.4	21.....	.3	29.....	.2
6.....	a.1	14.....	.4	22.....	.2	30.....	.1
7.....	a.1	15.....	.4	23.....	*.2		
8.....	a.1	16.....	.4	24.....	.2		
Total.....							5.8
Mean.....							0.19
Cubic feet per second per square mile.....							0.226
Runoff in inches.....							0.26
Runoff in acre-feet.....							12

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for Drift Creek near Salado.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.3	3.2	8.1	13	4.3	10	4.2	1.6	0.9	0.4	0.3
2	.1	.4	3.5	6.9	10	4.0	9.7	3.8	1.6	.9	.4	.2
3	.1	.5	4.2	6.0	8.8	3.7	8.6	3.4	1.6	.9	.4	.2
4	.1	.9	4.2	5.5	7.2	3.4	7.5	3.6	1.9	.9	.4	1.2
5	.2	1.8	*3.9	5.1	6.2	3.2	6.5	6.5	1.9	.9	.3	1.8
6	.2	7.2	3.7	4.7	6.0	3.1	5.5	1.2	1.6	.9	.3	1.9
7	.2	4.5	4.6	5.6	5.7	2.8	*4.9	6.5	1.6	*.8	.3	1.0
8	.5	11	4.5	27	5.6	2.7	4.3	5.7	1.6	.8	.3	.8
9	.3	13	4.4	47	7.0	2.8	3.8	5.1	2.0	.8	.3	.6
10	.2	10	4.9	28	10.0	2.6	3.4	4.5	1.8	.7	.3	.5
11	.2	6.5	7.5	21	9.6	2.5	3.2	4.1	1.8	.7	.3	.5
12	.2	8.0	8.6	26	8.1	2.6	2.9	3.7	1.7	.7	*.3	.4
13	.2	15	7.8	*20	8.6	3.1	2.6	3.3	1.8	.7	.3	.4
14	.2	17	6.7	14	13	3.3	2.6	3.3	1.7	.7	.3	.4
15	.2	12	5.7	11	15	3.1	2.4	3.2	1.7	.6	.3	*.4
16	.2	8.3	4.9	9.7	15	3.0	2.3	3.0	1.6	.6	.3	.4
17	.2	6.4	4.3	8.1	14	3.1	2.1	2.9	1.6	.6	.3	.4
18	.5	11	4.0	7.3	13	4.4	2.1	2.8	1.5	.6	.3	.8
19	2.1	25	3.6	7.0	15	6.0	1.9	*2.6	1.4	.6	.3	1.8
20	.8	*30	4.3	6.7	14	5.8	1.9	2.5	1.4	.5	.3	1.3
21	.5	20	5.5	6.4	12	6.7	1.8	2.5	1.3	.5	.3	1.2
22	*.5	14	5.2	5.8	9.4	7.2	1.7	2.3	1.3	.5	.3	1.0
23	.4	9.9	4.9	6.1	8.0	7.3	1.7	2.2	1.2	.5	.3	.9
24	.4	7.5	4.7	8.6	6.9	6.9	1.6	2.1	1.2	.5	.3	.9
25	.3	6.0	5.3	9.4	*6.1	7.6	1.6	2.2	1.2	.5	.2	1.2
26	.3	5.0	6.6	9.4	5.5	8.8	1.6	2.1	1.1	.5	.2	9.6
27	.3	4.3	9.7	34	5.1	8.6	2.3	1.9	1.1	.5	.3	4.5
28	.2	3.9	12	*29	4.6	8.4	2.1	1.9	1.1	.4	.3	.5
29	.2	3.9	11	18	-	8.3	2.4	1.8	1.0	.4	.2	.5
30	.2	3.4	10	17	-	11	4.5	1.7	1.0	.4	.2	2.1
31	.5	-	9.4	16	-	11	-	1.6	-	.4	.3	-
Total	10.6	266.7	182.8	434.4	262.4	161.3	109.5	104.2	44.9	20.0	9.3	42.3
Mean	0.34	8.89	5.90	14.0	9.37	5.20	3.65	3.36	1.50	0.65	0.30	1.41
Cfsm	0.405	10.6	7.02	16.7	11.2	6.19	4.34	4.00	1.79	0.774	0.357	1.68
In.	0.47	11.81	8.09	19.23	11.62	7.14	4.85	4.61	1.89	0.89	0.41	1.87
Ac-ft	21	528	363	862	520	320	217	207	89	40	18	84

Calendar year 1958: Max - 47 Min - Mean - 4.52 Cfsm - 5.38 In. - 72.98 Ac-ft - 3,270
Water year 1958-59: Max - 47 Min - 0.1 Mean - 4.52 Cfsm - 5.38 In. - 72.98 Ac-ft - 3,270

Peak discharge (base, 40 cfs).--Jan.9 (4 a.m.) 53 cfs (4.00 ft); Jan. 27 (12 m.) 42 cfs (3.85 ft).

* Discharge measurement made on this day.

3068.1. Deer Creek near Salado, Oreg.

Location.--Lat 44°32'05", long 123°52'35", SW 1/4 sec.11, T.12 S., R.10 W., on right bank 1,000 ft upstream from mouth, 4.6 miles west of Salado, and 6.5 miles southeast of Toledo.

Drainage area.--1.20 sq mi.

Records available.--September 1958 to September 1959.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 600 ft (from topographic map).

Extremes.--1958: Maximum daily discharge during September, 0.9 cfs Sept. 13-15; minimum daily, 0.3 cfs Sept. 2-9, 30.

1958-59: Maximum discharge during water year, 99 cfs Jan. 9 (gage height, 3.37 ft); minimum, 0.3 cfs Oct. 1-7, 16; minimum gage height, 0.80 ft Oct. 3-7.

Remarks.--Records good. No regulation or diversion above station. Records of suspended sediment loads and water temperatures for the water year 1959 are given in WSP 1644.

Rating table, Sept. 15, 1958, to Sept. 30, 1959, except period of indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)

0.8	0.3	1.7	5.1	2.6	28
1.0	.7	2.0	8.8	2.9	48
1.2	1.5	2.3	15	3.2	78
1.4	2.6				

Discharge, in cubic feet per second, 1958

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
Sept. 1...	a0.4	Sept. 9...	a0.3	Sept. 17...	0.7	Sept. 25...	0.5
2...	a.3	10...	a.4	18...	.5	26...	.4
3...	a.3	11...	a.4	19...	.6	27...	.4
4...	a.3	12...	a.5	20...	.5	28...	.4
5...	a.3	13...	a.9	21...	.6	29...	.4
6...	a.3	14...	a.9	22...	*.5	30...	.3
7...	a.3	15...	.9	23...	.4		
8...	a.3	16...	.7	24...	.4		
Total.....							14.1
Mean.....							0.47
Cubic feet per second per square mile.....							0.392
Runoff in inches.....							0.44
Runoff in acre-feet.....							28

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for Drift Creek near Salado.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.7	4.8	10	18	6.0	15	9.3	2.0	1.4	0.7	0.5
2	.3	.8	5.6	8.8	14	5.4	15	7.3	2.0	1.4	.7	.5
3	.3	1.0	7.3	7.5	12	5.0	13	5.9	2.0	1.3	.7	.5
4	.3	1.6	7.3	7.0	9.7	4.6	11	5.8	3.0	1.2	.7	1.6
5	.3	3.6	*6.5	6.7	8.4	4.4	9.0	10	3.1	1.4	.7	3.2
6	.3	15	5.8	6.0	8.6	4.2	7.6	12	2.7	1.4	.7	3.8
7	.3	11	7.4	7.0	8.8	3.9	*6.6	10	2.5	*1.4	.6	2.1
8	.8	24	7.1	45	8.6	3.9	5.9	8.1	2.7	1.3	.6	1.9
9	.5	31	6.8	76	11	4.1	5.3	7.2	3.2	1.2	.6	1.4
10	.4	21	7.3	36	15	3.7	4.7	6.4	3.0	1.1	.6	1.2
11	.4	12	15	26	14	3.5	4.3	5.8	3.1	1.1	.5	1.0
12	.4	14	16	40	11	3.8	4.0	5.3	3.1	1.1	.5	.9
13	.4	30	12	26	12	4.4	3.6	4.7	3.1	1.0	.5	.9
14	.4	27	9.3	*18	20	4.6	3.6	4.9	2.9	1.0	.5	.8
15	.4	16	7.9	14	21	4.6	3.3	4.7	2.8	1.0	.5	.8
16	.3	11	6.6	13	19	4.4	3.1	4.4	2.6	1.0	.5	.7
17	.4	8.5	5.8	11	16	4.4	2.9	4.4	2.5	.9	.5	.7
18	.7	18	5.4	10	15	6.3	2.8	4.3	2.3	.9	.5	1.3
19	3.3	44	4.9	9.9	19	8.2	2.7	*4.0	2.2	.9	.5	3.3
20	1.4	*49	6.5	9.3	18	8.1	2.5	3.6	2.0	.9	.5	2.5
21	1.0	31	9.3	8.5	15	11	2.5	3.5	2.0	.8	.5	2.4
22	*1.1	18	8.8	7.8	12	12	2.3	3.2	1.8	.8	.5	*2.1
23	.9	13	7.8	9.4	11	11	2.2	3.1	1.8	.8	.5	1.8
24	.8	10	7.0	13	9.2	9.2	2.2	2.9	1.8	.8	.5	1.7
25	.7	8.5	7.5	14	*8.5	11	2.1	2.9	1.8	.8	.5	2.3
26	.6	7.2	9.2	13	7.6	14	2.2	2.8	1.6	.8	.5	17
27	.6	6.2	13	62	7.0	13	3.3	2.6	1.6	.8	.5	10
28	.6	5.5	15	*44	6.4	12	3.5	2.5	1.6	.7	.6	6.4
29	.5	5.8	14	25	---	12	4.3	2.3	1.5	.7	.5	4.5
30	.5	5.0	13	25	---	17	10	2.2	1.4	.7	.5	3.6
31	1.0	---	12	23	---	17	---	2.1	---	.7	.6	---
Total	20.2	449.4	271.9	630.9	355.8	236.7	160.5	158.2	69.7	31.5	17.4	81.4
Mean	0.65	15.0	8.77	20.4	12.7	7.64	5.35	5.10	2.32	1.01	0.56	2.71
Cfs/m	0.542	12.5	7.31	17.0	10.6	6.37	4.46	4.25	1.93	0.842	0.467	2.26
In.	0.63	13.93	8.43	19.55	11.03	7.34	4.97	4.90	2.16	0.97	0.54	2.52
Ac-ft	40	891	539	1,250	706	469	318	314	138	62	35	161

Calendar year 1958: Max - Min - Mean - Cfs/m - In. - Ac-ft -
water year 1958-59: Max 76 Min 0.3 Mean 6.80 Cfs/m 5.67 In. 76.97 Ac-ft 4,920

Peak discharge (base, 60 cfs).--Jan. 9 (3 a.m.) 99 cfs (3.37 ft); Jan. 27 (1 p.m.) 80 cfs (3.22 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation indefinite Aug. 11-24; discharge estimated on basis of records for Drift Creek near Salado and Needle Branch near Salado.

3077. Jackson Creek near Tiller, Oreg.

Location.--Lat 42°57'15", long 122°49'40", in SW¼NE¼ sec.21, T.30 S., R.1 W., on right bank 0.5 mile upstream from Chapman Creek, 0.8 mile downstream from Beaver Creek, and 6½ miles northeast of Tiller. Records include flow in Chapman Creek.

Drainage area.--152 sq mi, including Chapman Creek basin.

Records available.--October 1955 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,240.25 ft above mean sea level (levels by Douglas County Water Resources Survey).

Extremes.--Maximum discharge during year, 4,210 cfs Jan. 12 (gage height, 7.87 ft); minimum, 15 cfs Sept. 10 (gage height, 0.56 ft).
1955-59: Maximum discharge, 10,600 cfs Dec. 22, 1955 (gage height, 13.55 ft), from rating curve extended above 5,100 cfs by slope-area measurement of peak flow; minimum daily, 12 cfs Oct. 2-4, 1955.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 21 to May 5)

0.5	14	2.5	284
.6	16	3.0	435
.8	26	4.0	920
1.0	39	5.0	1,550
1.5	87	6.0	2,360
2.0	169	7.0	3,300

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	19	71	318	496	542	1,270	262	163	52	21	16
2	17	22	69	282	418	534	1,140	272	160	50	21	16
3	17	30	67	240	368	*468	956	279	152	49	20	16
4	17	65	63	212	332	407	838	269	143	46	20	16
5	16	*110	59	282	300	362	728	410	152	45	20	16
6	16	79	57	276	287	335	615	465	171	45	20	17
7	16	192	100	254	272	307	496	400	141	43	20	17
8	16	145	137	365	252	289	418	374	129	41	19	16
9	18	148	134	691	247	276	378	362	134	40	19	16
10	18	237	127	1,380	242	259	353	324	*132	38	18	16
11	18	137	169	1,270	228	240	335	297	117	37	18	*16
12	17	95	321	3,080	217	233	307	289	110	36	18	16
13	17	a500	240	1,450	235	242	289	300	106	35	18	16
14	16	a650	192	892	671	228	264	356	99	34	18	16
15	16	a350	158	610	821	214	240	394	94	33	18	17
16	16	a250	*137	480	1,100	210	219	327	92	32	18	18
17	16	a200	118	397	856	252	205	324	86	31	17	17
18	18	184	106	344	882	284	188	436	83	30	17	20
19	54	484	96	324	760	292	177	665	80	30	17	45
20	54	594	91	297	605	266	175	504	75	28	19	67
21	31	292	99	a270	508	289	182	414	71	28	25	54
22	25	228	85	254	472	341	194	362	70	27	21	31
23	25	186	79	242	450	359	*203	324	66	26	19	25
24	23	156	80	409	400	504	217	294	65	25	18	22
25	22	137	152	546	362	525	228	274	63	25	17	22
26	20	118	539	521	347	914	276	249	63	24	17	102
27	20	102	932	984	387	782	274	228	62	24	17	94
28	20	91	500	*1,290	432	685	252	203	59	23	17	47
29	19	81	368	920	-	804	237	188	56	23	16	33
30	19	74	397	722	---	932	252	177	54	23	16	29
31	19	---	365	582	---	1,040	---	169	---	22	16	---
Total	654	5,756	6,108	20,164	13,047	13,415	11,906	10,179	3,048	1,045	575	869
Mean	21.1	192	197	650	466	433	397	328	102	33.7	18.5	29.0
Cfsm	0.139	1.26	1.30	4.28	3.07	2.85	2.61	2.16	0.671	0.222	0.122	0.191
In.	0.16	1.41	1.49	4.93	3.19	3.28	2.91	2.49	0.75	0.26	0.14	0.21
Ac-ft	1,300	11,420	12,120	39,990	25,880	26,610	23,620	20,190	6,050	2,070	1,140	1,720
Calendar year 1958:	Max	4,630	Min	16	Mean	330	Cfsm	2.17	In.	29.44	Ac-ft	238,700
Water year 1958-59:	Max	3,080	Min	16	Mean	238	Cfsm	1.57	In.	21.22	Ac-ft	172,100

Peak discharge (base, 2,500 cfs).--Jan. 12 (5:30 a.m.) 4,210 cfs (7.87 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for South Umpqua River at Tiller.

3080. South Umpqua River at Tiller, Oreg.

Location.--Lat 42°55'50", long 122°56'50", in NE $\frac{1}{4}$ sec.33, T.30 S., R.2 W., on right bank 0.2 mile upstream from bridge on State Highway 42 at Tiller and 0.3 mile upstream from Elk Creek.

Drainage area.--449 sq mi.

Records available.--October 1910 to December 1911, October 1939 to September 1959.

Monthly discharge only for some periods, published in WSP 1318. Prior to December 1911, published as South Fork of Umpqua River at Tiller.

Gage.--Water-stage recorder. Datum of gage is 991.8 ft above mean sea level, datum of 1929 (river profile survey). Prior to Oct. 1, 1939, staff gage at site 0.2 mile downstream at different datum.

Average discharge.--21 years, 1,043 cfs (755,100 acre-ft per year).

Extremes.--Maximum discharge during year, 9,480 cfs Jan. 12 (gage height, 10.04 ft, referred to outside gage); minimum, 45 cfs Sept. 10, 1910-11, 1939-59: Maximum discharge, 46,400 cfs Dec. 11, 1956 (gage height, 22.7 ft, referred to outside gage); minimum observed, 20 cfs Sept. 3, 4, 1911.

Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation. Small diversions above station for irrigation.

Revisions (water years).--WSP 1448: 1911(M), 1912, drainage area.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

0.9	37	3.0	870
1.0	53	5.0	2,400
1.2	100	7.0	4,600
1.5	196	9.0	7,600
2.0	390		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	65	298	1,580	1,910	1,990	4,510	780	434	165	69	48
2	53	71	290	1,160	1,580	1,850	3,580	820	426	158	87	48
3	50	89	290	936	1,320	*1,570	2,830	876	418	152	65	48
4	50	243	274	790	1,140	1,320	2,390	810	402	152	63	48
5	48	*590	259	837	1,020	1,160	2,050	1,130	434	146	63	50
6	48	488	247	837	954	1,060	1,760	1,460	540	146	61	53
7	47	1,160	334	760	900	960	1,440	1,180	442	146	61	57
8	48	906	605	978	815	882	1,510	1,040	398	140	59	55
9	51	795	675	1,430	800	837	1,090	996	394	133	57	50
10	57	930	665	2,960	795	775	1,000	876	*398	130	57	47
11	57	600	759	3,270	755	715	942	795	366	124	57	*48
12	53	426	1,550	7,340	720	705	870	745	346	121	55	50
13	51	2,260	1,050	3,900	700	770	805	755	342	118	55	48
14	50	2,940	790	*2,450	1,950	725	745	900	326	118	55	48
15	48	1,450	645	1,790	2,390	670	690	1,030	306	115	55	48
16	48	864	540	1,420	3,290	665	635	864	294	106	55	53
17	48	635	*479	1,190	3,210	760	590	837	286	106	53	53
18	53	625	434	1,010	2,780	842	545	1,120	266	103	53	53
19	182	3,670	398	960	2,590	966	515	1,660	259	100	53	76
20	262	2,390	366	870	2,240	870	497	1,300	251	97	57	186
21	133	1,500	390	795	1,890	900	502	1,060	236	95	69	179
22	97	1,050	354	750	1,730	1,010	515	924	221	92	67	106
23	82	795	322	725	1,670	1,040	*535	815	210	89	59	81
24	81	670	322	1,150	1,460	1,460	560	740	207	84	55	69
25	73	555	540	1,690	1,300	1,520	585	690	196	a84	53	65
26	69	479	1,230	1,730	1,280	2,830	750	645	196	a78	51	203
27	67	430	3,130	5,850	1,560	2,440	810	590	193	a78	51	318
28	67	382	2,080	*6,140	1,720	2,080	775	540	182	73	51	146
29	65	346	1,630	3,670	-	2,260	715	492	176	*71	51	106
30	63	314	1,950	2,750	-----	3,420	730	470	172	71	50	95
31	63	-----	1,700	2,270	-----	3,840	-----	450	-----	69	50	-----
Total	2,229	27,698	24,576	63,798	44,469	42,892	35,271	27,390	9,317	3,458	1,777	2,535
Mean	71.9	923	793	2,058	1,588	1,384	1,176	884	311	112	57.3	84.5
Cfsm	0.160	2.06	1.77	4.58	3.54	3.08	2.62	1.97	0.693	0.249	0.128	0.188
In.	0.18	2.29	2.04	5.28	3.68	3.55	2.92	2.27	0.77	0.29	0.15	0.21
Ac-ft	4,420	54,940	48,750	126,500	88,200	85,080	69,960	54,330	18,480	6,860	3,520	5,030

Calendar year 1958: Max 16,200 Min 47 Mean 1,075 Cfsm 2.39 In. 32.47 Ac-ft 778,000
Water year 1958-59: Max 7,340 Min 47 Mean 782 Cfsm 1.74 In. 23.63 Ac-ft 566,100

Peak discharge (base, 7,000 cfs).--Jan. 12 (9 a.m.) 9,480 cfs (10.04 ft); Jan. 27 (7 p.m.) 9,230 cfs (9.91 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for Jackson Creek near Tiller.

3085. Elk Creek near Drew, Oreg.

Location.--Lat 42°53'25", long 122°55'00", in SW $\frac{1}{4}$ sec.11, T.31 S., R.2 W., on right bank 100 ft downstream from Dixon Creek, a quarter of a mile upstream from Drew Creek, $\frac{1}{4}$ miles northwest of Drew, and $3\frac{1}{2}$ miles southeast of Tiller.

Drainage area.--54.4 sq mi.

Records available.--September 1954 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,279.25 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--5 years, 92.5 cfs (66,970 acre-ft per year).

Extremes.--Maximum discharge during year, 1,970 cfs Jan. 12 (gage height, 6.24 ft); minimum 0.7 cfs Aug. 12 (gage height, 1.32 ft).

1954-59: Maximum discharge, 7,500 cfs Dec. 21, 1955 (gage height, 10.34 ft), from rating curve extended above 1,700 cfs on basis of slope-area measurement of peak flow; minimum, that of Aug. 12, 1959.

Maximum stage known, 11.8 ft, from floodmarks, probably for flood in January or November 1953 (discharge, about 11,000 cfs).

Remarks.--Records good. No regulation. Several diversions for irrigation above station.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.3	0.6	2.7	101
1.4	1.1	3.0	169
1.5	2.2	3.5	309
1.6	4.2	4.0	490
1.8	12	5.0	1,000
2.1	28	6.0	1,770
2.4	56		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.2	2.2	7.8	69	123	230	297	26	19	5.8	1.4	1.0
2	1.2	3.0	7.4	61	98	208	256	40	18	5.4	1.3	1.0
3	1.2	4.2	7.0	49	81	*169	182	46	17	5.4	1.4	1.0
4	1.1	6.6	6.6	41	69	126	144	40	16	5.0	1.4	1.0
5	1.2	*9.9	5.8	147	60	103	115	74	18	4.6	1.4	1.3
6	1.2	9.1	5.8	107	57	89	92	82	19	4.6	1.5	1.4
7	1.3	16	8.6	82	55	80	78	61	16	4.2	1.4	1.3
8	1.4	13	11	210	50	72	65	49	15	4.0	1.3	1.1
9	1.4	13	10	395	52	69	57	48	15	3.6	1.2	1.0
10	1.5	23	9.9	522	56	62	50	42	*14	3.6	1.0	1.0
11	1.6	16	12	480	54	55	46	36	14	3.4	1.0	*1.1
12	1.6	11	21	1,080	52	53	42	31	13	3.2	1.0	1.1
13	1.6	53	18	354	53	57	39	28	13	3.2	1.0	1.0
14	1.6	70	15	206	699	53	35	93	12	3.0	1.0	1.0
15	1.5	40	13	132	558	47	32	149	12	3.0	1.0	1.1
16	1.4	24	12	98	546	46	29	87	12	2.4	1.0	1.3
17	1.5	19	*11	75	378	54	28	78	11	2.4	.9	1.2
18	1.9	19	9.5	62	450	59	25	123	10	2.4	1.1	1.6
19	5.4	56	9.1	55	392	62	24	177	10	2.2	1.2	5.1
20	5.8	45	8.6	48	288	54	23	107	9.5	2.1	1.5	7.8
21	3.4	28	9.9	43	225	56	21	81	9.1	2.0	2.0	5.8
22	2.8	23	9.5	40	203	61	21	65	8.2	2.0	1.8	3.8
23	2.8	18	9.1	37	192	78	*20	52	7.8	1.8	1.5	3.4
24	2.6	16	10	192	156	132	19	42	7.8	1.5	1.3	3.0
25	2.4	14	33	214	132	132	19	38	7.4	1.5	1.2	3.0
26	2.2	13	259	159	128	270	33	33	7.8	1.5	1.1	5.1
27	2.1	11	343	380	177	247	27	29	8.2	1.4	1.0	11
28	2.1	9.9	152	*442	192	222	25	26	7.0	1.4	1.0	5.8
29	2.1	9.1	96	291	-	253	22	24	6.6	1.5	1.0	3.8
30	2.0	8.2	109	219	-----	415	23	23	6.2	1.5	1.1	3.2
31	2.0	-----	86	154	-----	340	-----	21	-----	1.5	1.0	-----
Total	63.1	603.2	1,325.6	6,444	5,576	3,954	1,869	1,851	359.6	91.1	38.0	81.3
Mean	2.04	20.1	42.8	208	199	128	62.3	59.7	12.0	2.94	1.23	2.71
Ac-ft	125	1,200	2,630	12,780	11,060	7,840	3,710	3,670	713	181	75	161
Calendar year 1958: Max 2,150 Min 1.1 Mean 87.0 Ac-ft 62,960												
Water year 1958-59: Max 1,080 Min 0.9 Mean 61.0 Ac-ft 44,140												

Peak discharge (base, 1,000 cfs).--Jan. 12 (3:30 a.m.) 1,970 cfs (6.24 ft); Feb. 14 (10:30 a.m.) 1,260 cfs (5.36 ft).

* Discharge measurement made on this day.

3087. Days Creek at Days Creek, Oreg.

Location.--Lat 42°58'55", long 123°08'55", in NE $\frac{1}{4}$ sec.10, T.30 S., R.4 W., on downstream side of bridge 20 ft upstream from Wood Creek, 1 mile northeast of town of Days Creek, and $\frac{1}{2}$ miles upstream from mouth.

Drainage area.--55.3 sq mi.

Records available.--October 1955 to September 1959.

Gage.--Wire-weight gage and crest-stage indicator; gage read once or twice daily. Altitude of gage is 810 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,940 cfs Feb. 14 (gage height, 7.8 ft, from floodmarks), from rating curve extended above 660 cfs as explained below; minimum observed, 0.1 cfs Aug. 26, Sept. 1.
1955-59: Maximum discharge, 3,450 cfs Feb. 21, 1956 (gage height, 11.24 ft), from rating curve extended above 660 cfs on basis of slope-area measurement of peak flow; minimum observed, that of Aug. 26, Sept. 1, 1959.

Remarks.--Records fair. No regulation. Several diversions for irrigation above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 28 to Nov. 12, Feb. 14, 15)

Oct. 1 to Feb. 13

Feb. 14 to Sept. 30

0.4	1.4	1.9	54	0.5	0	1.9	46
.7	2.6	2.4	117	.6	.2	2.2	79
.9	4.9	3.0	232	.7	1.0	2.5	125
1.1	9.9	3.8	436	.8	2.3	3.0	223
1.4	21			1.0	5.7	4.0	465
				1.2	10	6.0	1,220
				1.5	22		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.7	2.9	6.2	36	59	41	120	15	8.8	2.2	0.8	0.1
2	1.7	4.3	5.7	39	43	37	96	20	8.2	2.2	.4	.3
3	1.7	4.2	5.5	32	38	33	67	22	6.1	1.6	.5	.2
4	1.7	17	5.3	30	35	30	50	15	a6.0	a1.6	.4	.4
5	1.6	16	4.9	44	30	*27	40	28	a6.5	1.6	.6	.8
6	1.7	7.6	a6.6	39	30	24	35	24	a8.0	1.6	.7	.6
7	1.8	*22	8.4	34	30	22	30	22	6.1	1.1	.6	.3
8	1.7	21	8.7	64	27	22	28	21	6.7	.9	a.4	.3
9	1.8	19	7.6	95	26	21	24	a24	7.7	.5	.2	.7
10	1.8	15	7.9	133	63	19	21	14	*6.9	.6	.2	.6
11	1.8	10	11	133	52	17	19	14	6.9	1.3	.3	*.6
12	1.7	7.3	20	422	52	17	18	12	6.7	1.1	.2	.7
13	1.7	47	15	180	49	19	17	12	6.1	1.6	.2	.8
14	1.8	111	14	94	900	a19	15	26	5.9	.8	.2	.7
15	1.8	75	12	70	700	17	15	33	5.2	1.0	.8	3.1
16	1.8	36	*11	53	357	15	12	28	4.3	.8	.2	.8
17	1.8	26	11	40	183	17	13	29	4.1	1.0	.2	2.2
18	1.5	26	8.7	35	144	15	11	43	3.6	a1.0	.2	a2.8
19	7.9	50	7.9	33	93	22	11	71	3.1	1.0	.5	3.4
20	4.1	36	9.6	30	87	19	*10	48	2.6	.8	.8	.9
21	3.0	27	8.2	26	66	22	9.5	37	1.8	.6	.8	1.3
22	2.5	21	7.0	24	58	22	9.5	30	2.5	.3	.6	2.6
23	2.5	18	6.6	23	58	22	9.1	27	2.3	.4	.3	2.0
24	2.3	14	15	82	53	19	a9.0	22	2.6	.2	.2	2.0
25	2.3	13	21	45	49	45	9.8	19	2.5	.7	.2	2.0
26	2.2	a10	64	34	45	60	15	17	3.3	.5	.1	3.5
27	2.2	7.9	190	170	49	70	12	16	2.3	.2	.2	6.5
28	2.1	7.6	125	*190	45	67	11	12	2.3	*.6	.2	5.7
29	2.1	7.3	66	160	-	65	9.5	11	2.3	.3	.6	2.9
30	2.1	6.8	58	102	-----	64	15	a10	2.2	.6	a.4	1.6
31	2.2	-----	46	68	-----	136	-----	10	-----	.2	.3	-----
Total	68.6	685.9	793.8	2,560	3,411	1,045	761.4	734	143.6	28.9	12.3	48.4
Mean	2.21	22.9	25.6	82.6	122	33.7	25.4	23.7	4.79	0.93	0.40	1.61
Ac-ft	136	1,360	1,570	5,080	6,770	2,070	1,510	1,460	285	57	24	96

Calendar year 1958: Max 1,020 Min 1.5 Mean 39.1 Ac-ft 28,320
Water year 1958-59: Max 900 Min 0.1 Mean 28.2 Ac-ft 20,420

* Discharge measurement made on this day.

a No gage-height record; discharge interpolated or estimated on basis of weather records and records for North Myrtle Creek near Myrtle Creek.

3090. Cow Creek near Azalea, Oreg.

Location.--Lat 42°49'30", long 123°10'40", in N $\frac{1}{2}$ sec.4, T.32 S., R.4 W., on right bank 0.8 mile upstream from Whitehorse Creek and 4.5 miles northeast of Azalea.

Drainage area.--78.0 sq mi.

Records available.--April 1926 to September 1928 (no winter records), April 1929 to December 1931, April 1932 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 1,685 ft (by barometer). Prior to July 19, 1949, staff gage at same site and datum.

Average discharge.--29 years (1929-31, 1932-59), 108 cfs (78,190 acre-ft per year).

Extremes.--Maximum discharge during year, 3,100 cfs Jan. 12 (gage height, 8.84 ft); minimum, 9.5 cfs Sept. 13.

1926-59: Maximum discharge, 5,920 cfs Oct. 29, 1950 (gage height, 14.37 ft), from rating curve extended above 2,000 cfs on basis of slope-area measurement of peak flow; minimum observed, 4 cfs Sept. 9-19, 1929, Aug. 26-28, 1931, Aug. 21 to Sept. 6, 1934.

Remarks.--Records good. No regulation. Diversions for irrigation of 400 acres above station.

Revisions (water years).--WSP 984: 1933-36. WSP 1154: 1946(M), 1948(M). WSP 1448: Drainage area.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 26 to Jan. 11)

Oct. 1 to Jan. 11

Jan. 12 to Sept. 30

0.6	10	2.0	175	0.6	7.5	2.0	175
.8	19	3.0	430	.8	16	3.0	430
1.0	34	4.0	770	1.0	31	4.0	770
1.2	53	7.0	2,080	1.2	50	7.0	2,080
1.5	88			1.5	86		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	20	20	74	173	288	312	71	36	19	11	10
2	12	21	20	65	149	278	288	69	34	17	11	10
3	12	27	20	54	129	248	248	63	33	18	11	10
4	12	32	20	48	118	209	213	58	32	17	10	10
5	12	34	19	96	108	189	189	*66	35	17	11	11
6	12	*29	19	96	103	*171	165	65	37	17	11	12
7	12	46	20	91	99	155	145	58	32	16	11	11
8	12	32	22	609	92	145	127	56	30	16	11	11
9	12	29	22	874	93	137	116	61	31	16	11	11
10	13	50	21	*744	93	129	106	54	31	15	10	10
11	14	32	22	645	86	116	99	51	*30	14	10	10
12	14	25	30	*1,640	82	114	94	47	29	14	10	*10
13	13	73	25	511	94	118	87	46	30	14	10	9.9
14	13	105	22	300	945	108	82	60	28	14	10	9.9
15	13	61	*21	207	609	99	78	68	26	14	10	13
16	13	41	21	163	861	96	74	56	26	14	10	13
17	13	33	20	133	588	105	72	58	25	13	9.9	*12
18	16	36	20	114	760	106	69	61	25	13	9.9	13
19	38	82	19	110	616	113	66	73	24	12	10	21
20	32	71	19	99	463	102	63	63	22	12	12	25
21	21	48	25	92	358	106	*60	58	21	12	14	20
22	18	39	22	86	318	114	58	56	20	12	12	16
23	18	34	20	81	288	131	57	53	20	12	12	14
24	18	28	24	216	245	147	54	49	20	12	11	13
25	16	27	53	207	220	147	54	48	20	12	11	13
26	16	25	250	165	213	265	72	47	22	12	10	17
27	16	23	358	336	240	235	61	46	22	12	10	23
28	16	22	157	518	252	230	57	44	21	*12	10	14
29	16	22	94	338	258	53	42	20	12	12	10	16
30	16	20	92	258	-----	385	60	39	20	12	10	13
31	17	-----	84	203	-----	335	-----	37	-----	12	9.9	-----
Total	488	1,167	1,601	9,173	8,393	5,379	3,279	1,723	802	434	329.7	401.8
Mean	15.7	38.9	51.6	296	300	174	109	55.6	26.7	14.0	10.6	13.4
Cfs/m	0.201	0.499	0.662	3.79	3.85	2.23	1.40	0.715	0.342	0.179	0.136	0.172
In.	0.23	0.56	0.76	4.37	4.00	2.56	1.56	0.82	0.38	0.21	0.16	0.19
Ac-ft	968	2,310	3,180	18,190	16,650	10,670	6,500	3,420	1,590	861	654	797

Calendar year 1958: Max 2,590 Min 12 Mean 139 Cfs/m 1.78 In. 24.10 Ac-ft 100,300
Water year 1958-59: Max 1,640 Min 9.9 Mean 90.9 Cfs/m 1.17 In. 15.80 Ac-ft 65,790

Peak discharge (base, 1,300 cfs, revised).--Jan. 12 (4:30 a.m.) 3,100 cfs (8.84 ft); Feb. 14 (11:30 a.m.) 1,810 cfs (6.46 ft).

* Discharge measurement made on this day.

3095. West Fork Cow Creek near Glendale, Oreg.

Location.--Lat 42°48'10", long 123°37'10", in NW 1/4 sec. 11, T.32 S., R.8 W., on left bank 1 mile upstream from mouth and 11 miles northwest of Glendale.

Drainage area.--83.6 sq mi.

Records available.--August 1955 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,035.14 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 8,650 cfs Jan. 12 (gage height, 16.65 ft); minimum, 6.3 cfs Oct. 2.

1955-59: Maximum discharge, 10,600 cfs Dec. 21, 1955 (gage height, 18.60 ft), from rating curve extended above 4,300 cfs on basis of slope-area measurement of peak flow; minimum, that of Oct. 2, 1958.

Remarks.--Records good. No regulation or diversion above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 11					Jan. 12 to Sept. 30				
3.6	6.3	6.0	400		3.7	6.1	6.0	470	
3.8	12	8.0	1,250		3.9	17	7.0	780	
4.0	21	10.0	2,550		4.0	24	9.0	1,850	
4.5	60	12.0	4,250		4.3	61	11.0	3,320	
5.0	150	13.0	5,150		4.6	112	13.0	5,150	
					5.0	191			

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.1	41	46	295	509	665	572	64	40	23	11	7.6
2	6.8	26	46	250	410	575	464	71	39	23	11	7.6
3	6.8	32	42	208	339	470	362	67	37	23	10	7.6
4	6.8	68	40	182	295	374	284	63	37	23	10	8.1
5	6.8	96	39	318	263	311	231	74	36	22	9.7	8.1
6	6.8	*67	37	375	244	*268	191	77	37	22	9.7	9.2
7	6.8	150	41	633	231	238	167	69	36	22	9.7	9.7
8	7.1	91	50	3,980	208	218	149	64	35	22	9.2	9.2
9	7.6	128	46	*4,850	213	198	136	64	36	21	9.2	8.1
10	8.2	192	43	*5,540	220	189	128	61	37	20	8.6	7.6
11	8.2	103	43	2,770	215	171	121	60	*35	19	8.6	7.6
12	7.9	66	58	1,820	208	163	114	57	34	18	8.6	*7.1
13	7.6	349	57	1,530	254	187	110	53	34	17	9.2	7.6
14	7.4	596	54	*804	2,600	155	103	51	33	16	9.2	9.2
15	7.1	312	*50	539	1,360	145	98	51	33	16	9.2	10
16	7.1	198	47	380	*1,530	140	92	50	33	16	9.2	10
17	7.1	135	46	268	1,790	145	87	48	32	15	9.2	11
18	10	165	44	187	2,340	149	86	50	31	15	8.6	24
19	58	804	43	157	1,960	165	82	60	30	15	8.6	72
20	39	450	44	126	1,350	151	79	54	28	15	9.2	46
21	20	268	108	101	963	178	*77	51	27	14	9.7	36
22	16	185	85	79	734	198	74	48	26	14	9.2	26
23	16	130	72	63	668	531	72	47	25	12	8.6	22
24	15	98	82	359	581	800	69	47	25	12	8.1	18
25	14	83	335	419	509	614	67	46	24	12	7.6	17
26	14	71	1,430	284	518	773	69	47	25	12	7.1	26
27	14	62	1,770	1,320	566	674	66	47	26	12	6.6	51
28	13	55	1,040	1,750	623	554	64	47	25	*11	2.6	34
29	13	50	1,558	981	-	509	61	45	24	11	7.1	25
30	12	46	458	780	-----	872	64	43	24	11	7.6	22
31	21	-----	358	635	-----	714	-----	42	-----	11	7.6	-----
Total	398.2	5,117	7,192	32,983	21,701	11,474	4,339	1,718	944	515	273.5	564.3
Mean	12.8	171	232	1,064	775	370	145	55.4	31.5	16.6	8.82	18.8
Cfsm	0.153	2.05	2.78	12.7	9.27	4.43	1.73	0.663	0.377	0.199	0.106	0.225
In.	0.18	2.28	3.20	14.67	9.65	5.10	1.93	0.76	0.42	0.23	0.12	0.25
Ac-ft	790	10,150	14,270	65,420	43,040	22,760	8,610	3,410	1,870	1,020	542	1,120

Calendar year 1958: Max 4,670 Min 6.8 Mean 316 Cfsm 3.78 In. 51.32 Ac-ft 228,800
 Water year 1958-59: Max 4,850 Min 6.6 Mean 239 Cfsm 2.86 In. 38.79 Ac-ft 175,000

Peak discharge (base, 2,500 cfs).--Dec. 26 (4 p.m.) 3,210 cfs (10.86 ft); Jan. 9 (1:30 a.m.) 6,640 cfs (14.57 ft); Jan. 12 (2 a.m.) 8,650 cfs (16.65 ft); Feb. 14 (10:30 a.m.) 4,020 cfs (11.77 ft); Feb. 18 (4:30 a.m.) 2,550 cfs (10.00 ft).

* Discharge measurement made on this day.

3100. Cow Creek near Riddle, Oreg.

Location.--Lat 42°55'25", long 123°25'40", in NE $\frac{1}{4}$ sec.32, T.30 S., R.6 W., on left bank 1,500 ft upstream from Council Creek and 3 $\frac{1}{2}$ miles southeast of Riddle.

Drainage area.--456 sq mi.

Records available.--September 1954 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 682.60 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--5 years, 1,049 cfs (759,400 acre-ft per year).

Extremes.--Maximum discharge during year, 29,400 cfs Jan. 12 (gage height, 23.43 ft); minimum, 24 cfs Aug. 28, 29.

1954-59: Maximum discharge, 38,200 cfs Dec. 26, 1955 (gage height, 27.35 ft); minimum, 23 cfs Sept. 8, 1955.

Maximum discharge known, 41,100 cfs Oct. 29, 1950 (gage height, about 28.5 ft, present site and datum), from slope-area measurement.

Remarks.--Records good. Many small diversions for irrigation above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 8)

Oct. 1 to Jan. 8

Jan. 9 to Sept. 30

1.3	30	3.0	830	1.2	23	3.0	770
1.5	63	5.0	2,850	1.4	47	5.0	2,750
1.7	112	8.0	6,350	1.6	86	9.0	7,160
2.0	216	11.0	10,080	2.0	210	14.0	13,900
2.5	475			2.5	445	19.0	21,800

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	156	152	894	1,620	1,980	1,770	288	165	77	33	25
2	36	127	152	694	1,330	1,830	1,520	301	159	73	31	25
3	36	124	142	645	1,080	1,520	1,320	297	153	71	31	25
4	36	149	139	554	944	1,280	1,110	283	156	71	31	25
5	34	285	133	992	854	*1,090	944	288	156	75	31	25
6	34	238	130	1,650	762	971	818	301	153	66	*28	26
7	34	*325	133	1,460	725	892	718	283	153	66	30	27
8	34	290	149	9,930	660	818	646	258	146	66	31	27
9	38	280	145	15,800	674	762	592	258	143	61	28	27
10	38	404	142	*10,900	786	710	548	253	153	61	26	26
11	38	360	136	8,420	794	653	512	241	140	57	26	26
12	38	260	149	*20,800	770	618	484	230	*128	54	25	*25
13	38	610	169	*6,420	802	618	462	218	125	52	25	25
14	38	1,450	162	3,400	10,900	612	440	210	125	50	25	27
15	38	999	152	2,260	6,810	566	423	222	122	49	26	30
16	38	596	*142	1,650	6,670	530	396	230	113	46	26	33
17	38	410	136	1,290	6,810	530	385	222	110	44	26	33
18	42	355	136	1,030	8,240	554	370	233	105	44	25	38
19	102	1,310	133	910	6,850	586	349	258	100	43	25	89
20	200	1,190	139	826	4,760	554	*334	249	94	40	26	110
21	133	715	229	718	3,640	554	320	230	91	42	27	82
22	102	494	242	653	2,800	606	311	214	86	39	28	79
23	86	382	212	592	2,440	1,020	301	214	84	38	30	68
24	79	315	200	1,100	2,120	1,560	288	203	82	37	28	62
25	74	270	662	1,730	1,830	1,260	283	192	77	37	26	59
26	72	238	2,700	1,360	1,770	1,670	301	189	82	37	25	59
27	68	204	5,460	2,610	1,830	1,730	301	192	89	37	25	94
28	65	184	3,260	5,220	1,900	1,480	288	189	86	35	24	91
29	65	173	1,780	3,510	-	1,420	270	178	82	35	24	75
30	65	162	1,350	2,630	-----	2,010	270	172	82	34	25	66
31	77	-----	1,100	2,020	-----	2,050	-----	165	-----	33	25	-----
Total	1,854	13,055	20,066	112,668	81,151	33,034	17,074	7,261	3,540	1,570	842	1,429
Mean	59.8	435	647	3,634	2,898	1,066	569	234	118	50.6	27.2	47.6
Ac-ft	3,680	25,890	39,800	223,500	160,100	65,520	33,870	14,400	7,020	3,110	1,670	2,830

Calendar year 1958: Max 20,100 Min 30 Mean 1,183 Ac-ft 856,200
Water year 1958-59: Max 20,800 Min 24 Mean 804 Ac-ft 581,400

Peak discharge (base, 10,000 cfs).--Jan. 9 (4 a.m.) 19,200 cfs (17.38 ft); Jan. 12 (4 a.m.) 29,400 cfs (23.43 ft); Feb. 14 (1 p.m.) 15,700 cfs (15.17 ft).

* Discharge measurement made on this day.

3107. South Myrtle Creek near Myrtle Creek, Oreg.

Location.--Lat 43°01'55", long 123°11'30", in SE $\frac{1}{4}$ sec.20, T.29 S., R.4 W., on left bank 0.6 mile downstream from School Hollow and 5.5 miles east of town of Myrtle Creek.

Drainage area.--43.9 sq mi.

Records available.--October 1955 to September 1959.

Gage.--Staff gage and crest-stage indicator; gage read twice daily for stages above 3.0 ft, once daily below. Datum of gage is 775.25 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 1,240 cfs Feb. 14 (gage height, 4.6 ft, from graph based on gage readings); minimum observed, 0.4 cfs Aug. 18.
1955-59: Maximum discharge, 3,050 cfs Dec. 11, 1956 (gage height, 7.72 ft), from rating curve extended above 1,100 cfs by logarithmic plotting; minimum observed, that of Aug. 18, 1959.

Remarks.--Records fair. No regulation. Several diversions for irrigation of about 600 acres above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 13

Feb. 14 to Sept. 30

0.7	4.7	1.5	53	0.2	0.4	1.2	25
.8	7.0	2.0	132	.3	.8	1.5	53
1.0	13	2.5	255	.5	2.4	2.0	132
1.2	22	3.0	440	.6	3.6	2.5	255
				.8	7.3	3.0	440
				1.0	14	4.0	915

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*6.3	9.2	16	60	97	81	198	26	21	6.1	1.1	2.4
2	6.3	12	15	60	78	76	152	31	20	5.7	1.1	1.7
3	6.8	12	15	50	66	66	116	39	18	2.0	.7	2.8
4	5.8	42	15	42	57	58	95	32	18	2.4	.6	1.8
5	5.8	38	14	49	51	*52	80	62	19	2.8	1.3	3.2
6	5.6	*21	13	43	49	50	63	52	24	4.6	1.3	3.9
7	5.4	57	21	39	49	44	54	44	20	3.6	*1.6	2.4
8	5.8	36	21	56	45	42	50	45	18	3.6	2.2	3.2
9	6.5	36	19	114	42	39	45	49	19	3.4	2.9	2.6
10	6.5	30	18	*170	69	38	40	35	21	3.2	1.4	1.1
11	6.5	22	18	152	76	34	37	32	*17	3.1	.8	*2.1
12	6.3	13	51	*400	69	34	34	30	17	3.0	2.0	3.4
13	6.1	114	39	181	65	37	31	27	16	1.7	2.2	2.4
14	6.1	174	31	127	755	35	30	51	14	2.4	1.4	3.9
15	5.8	89	26	84	*755	33	28	62	14	3.8	2.0	4.8
16	6.1	51	*22	74	705	32	27	50	13	3.2	1.5	4.8
17	6.5	38	19	60	240	34	26	51	12	3.2	1.6	5.1
18	6.5	38	18	52	186	36	24	75	12	1.7	.4	5.0
19	16	114	17	45	142	49	23	102	12	2.2	2.4	5.3
20	15	78	16	43	121	40	*23	72	11	2.8	3.2	9.7
21	10	53	20	40	114	48	22	57	9.7	2.4	3.8	9.4
22	9.2	42	17	38	102	44	21	50	5.9	2.0	4.6	8.8
23	8.5	34	16	34	97	48	21	44	8.2	2.9	3.2	7.1
24	8.2	27	16	53	89	97	22	38	6.9	2.4	2.9	6.7
25	8.0	25	43	60	81	81	20	33	7.9	2.5	1.9	6.7
26	8.0	22	46	65	72	128	30	31	8.5	3.2	1.2	8.8
27	8.0	19	186	174	84	136	23	31	10	3.1	1.1	16
28	8.0	19	140	272	81	132	23	28	6.9	3.4	1.0	9.7
29	8.0	16	91	186	---	132	20	26	10	2.4	2.4	7.3
30	7.8	16	81	146	---	193	27	23	9.7	3.2	1.0	7.1
31	8.2	---	72	114	---	186	---	23	---	3.2	.7	---
Total	233.6	1,296.2	1,152	3,083	4,437	2,135	1,403	1,351	419.7	95.2	55.5	159.2
Mean	7.54	43.2	37.2	99.5	158	68.9	46.8	43.6	14.0	3.07	1.79	5.31
Ac-ft	463	2,570	2,280	6,120	8,800	4,230	2,780	2,680	832	189	110	316
Calendar year 1958	Max	1,140	Min	1.6	Mean	58.3	Ac-ft	42,220				
Water year 1958-59	Max	755	Min	0.4	Mean	43.3	Ac-ft	31,370				

* Discharge measurement made on this day.

3110. North Myrtle Creek near Myrtle Creek, Oreg.

Location.--Lat 43°02'30", long 123°15'30", in SW¹ sec.14, T.29 S., R.5 W., on right bank 0.1 mile downstream from Bilger Creek, 1.5 miles northeast of town of Myrtle Creek, and 2.5 miles upstream from confluence with South Myrtle Creek.

Drainage area.--54.2 sq mi.

Records available.--October 1955 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 660 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,350 cfs Feb. 14 (gage height, 6.24 ft); minimum, 0.4 cfs Aug. 8.

1955-59: Maximum discharge, 3,170 cfs Feb. 21, 1956 (gage height, 9.87 ft), from rating curve extended above 680 cfs by logarithmic plotting; maximum gage height, 11.58 ft Dec. 26, 1955 (backwater from debris); minimum discharge, that of Aug. 8, 1959.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation. Several diversions for irrigation above station.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 15-17)

1.2	1.2	2.1	32
1.5	1.8	2.5	85
1.4	2.6	3.0	199
1.5	4.0	4.0	535
1.7	9.0	5.0	910
1.9	18		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*5.5	13	17	80	130	78	194	27	18	7.0	3.8	2.0
2	5.1	12	17	78	110	71	166	32	17	6.5	1.8	1.8
3	5.3	13	16	66	90	65	139	38	17	6.2	2.3	1.7
4	5.3	30	16	58	80	59	114	35	16	6.0	1.7	2.0
5	5.1	29	15	60	70	*54	96	49	19	4.9	2.1	2.3
6	5.1	*25	15	54	70	52	76	53	17	5.5	1.7	2.7
7	5.5	37	17	52	65	48	66	43	14	5.5	*1.8	2.3
8	6.0	33	19	143	60	43	59	39	13	4.7	2.3	2.2
9	7.3	35	19	*292	60	41	54	40	15	4.4	1.5	2.2
10	7.0	32	19	344	110	39	49	35	14	4.9	1.6	2.3
11	7.0	26	22	315	100	36	45	32	*14	4.2	1.7	*2.4
12	6.8	22	47	*776	95	35	41	29	15	3.7	1.6	2.9
13	6.8	72	41	348	90	36	39	26	13	3.9	1.9	2.9
14	6.8	130	35	213	800	36	36	38	14	3.6	2.0	3.7
15	6.5	93	29	150	*832	33	35	49	13	3.6	1.9	4.0
16	6.5	56	*26	117	744	32	32	43	12	3.6	1.7	3.7
17	6.5	41	24	93	455	32	32	46	12	3.4	2.0	3.7
18	7.3	37	22	76	325	33	30	47	12	3.7	2.2	3.6
19	12	108	22	66	236	37	29	64	11	3.2	2.5	3.7
20	14	85	21	60	191	34	*27	58	9.8	2.5	3.2	3.7
21	9.0	54	43	55	156	38	26	49	9.4	1.9	3.2	7.9
22	8.2	42	36	55	136	39	25	42	9.0	2.4	2.6	5.1
23	7.9	36	33	50	119	43	24	37	9.0	2.4	2.5	4.0
24	7.6	30	36	70	104	65	24	32	8.7	2.4	2.2	3.7
25	7.6	24	80	85	94	80	24	29	8.4	2.6	2.6	3.7
26	7.3	23	127	150	91	139	29	27	9.4	2.3	1.8	5.5
27	7.3	21	247	300	94	146	26	29	9.8	1.7	2.1	7.9
28	7.3	19	244	500	85	146	25	25	9.4	2.7	2.1	4.9
29	7.3	18	158	350	-	153	24	23	8.4	2.4	3.2	4.2
30	7.3	17	119	200	-----	210	27	22	7.3	3.3	3.2	4.4
31	9.0	-----	93	160	-----	210	-----	19	-----	2.6	3.0	-----
Total	230.2	1,213	1,675	5,416	5,592	2,163	1,613	1,157	374.6	117.7	69.8	107.1
Mean	7.43	40.4	54.0	175	200	69.8	53.8	37.3	12.5	3.80	2.25	3.57
Ac-ft	457	2,410	3,320	10,740	11,090	4,290	3,200	2,290	743	233	138	212
Calendar year 1958: Max 1,450 Min 1.7 Mean 77.1 Ac-ft 55,830												
Water year 1958-59: Max 832 Min 1.5 Mean 54.1 Ac-ft 39,120												

Peak discharge (base, 1,100 cfs).--Feb. 14 (about 12 m.) 1,350 cfs (6.24 ft).

* Discharge measurement made on this day.

Notes.--No gage-height record Jan. 20 to Feb. 14, Aug. 1-6; discharge estimated on basis of weather records, recorded range in stage, and records for South Myrtle Creek near Myrtle Creek.

3112. Olalla Creek near Tenmile, Oreg.

Location.--Lat 43°02'20", long 123°32'35", in NW¼ sec.21, T.29 S., R.7 W., on left bank 0.5 mile downstream from Berry Creek and 4.4 miles south of Tenmile.

Drainage area.--60.5 sq mi.

Records available.--October 1956 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 749.53 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to June 21, 1957, wire-weight gage at site a third of a mile downstream at datum 7.83 ft lower.

Extremes.--Maximum discharge during year, 6,640 cfs Jan. 12 (gage height, 11.15 ft), from rating curve extended above 2,500 cfs; no flow Aug. 18.
1956-59: Maximum discharge, that of Jan. 12, 1959; minimum, that of Aug. 13, 1959. Flood of Dec. 26, 1955, reached a stage of 13.6 ft, present site and datum, from floodmarks (discharge, about 3,000 cfs), from rating curve extended above 2,500 cfs by logarithmic plotting. This was the highest known flood for at least the preceding 35 years.

Remarks.--Records good. Some diversions for irrigation above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 11				Jan. 12 to Sept. 30			
0.6	0.6	2.5	170	-0.1	0	1.5	51
.7	1.9	3.0	282	0.0	.2	2.0	106
.8	4.1	4.0	609	.1	.4	2.5	188
.9	7.4	5.0	1,110	.2	.8	3.0	298
1.1	16	6.0	1,750	.3	1.5	4.0	625
1.5	41	7.0	2,550	.5	3.8	5.0	1,140
2.0	91			.7	8.3	6.0	1,810
				.9	16	8.0	3,500
				1.1	25		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.9	7.8	14	86	223	87	178	16	6.6	2.3	0.3	0.3
2	.8	9.6	12	76	173	76	148	16	6.3	2.2	.3	.1
3	.9	12	11	61	137	-63	123	16	5.8	2.2	.2	.1
4	.8	20	11	54	113	55	98	*14	5.6	2.0	.2	.1
5	.8	24	*10	102	96	49	80	19	6.0	1.8	.2	.3
6	.8	19	10	136	88	44	67	19	6.3	1.8	*.2	.4
7	1.0	37	13	131	85	40	57	16	5.4	1.8	.2	.3
8	.9	35	16	1,470	77	37	49	15	5.4	1.7	.1	.3
9	.8	37	15	*2,120	107	35	43	15	5.8	1.7	.1	.3
10	.9	36	15	*1,560	202	34	41	14	5.8	1.6	.1	.3
11	1.0	25	15	1,520	202	30	35	13	5.0	1.4	.1	.3
12	1.2	19	21	*2,980	175	29	33	12	4.4	1.1	.1	.3
13	1.3	76	22	*752	189	32	31	12	4.0	1.0	0	.1
14	1.0	272	21	395	*2,010	31	29	12	3.8	1.1	.1	.3
15	1.0	154	19	258	1,310	29	28	12	*4.0	*1.2	.2	.5
16	1.0	79	17	192	904	28	26	11	3.8	1.2	.1	.7
17	*.9	61	16	149	840	28	25	12	3.5	1.0	.1	.7
18	1.9	52	15	114	750	28	24	14	3.4	.8	*.1	*1.1
19	14	172	14	103	561	28	22	18	3.5	.7	.1	2.0
20	14	132	14	87	395	*26	22	14	3.0	.7	.1	2.3
21	6.1	76	26	78	296	29	20	12	2.9	.6	.2	2.1
22	3.7	54	26	*69	227	31	19	12	2.6	.6	.2	1.6
23	2.8	39	24	61	184	83	18	11	2.5	.6	.2	1.4
24	2.1	31	34	141	149	165	17	9.9	2.4	.6	.2	1.3
25	1.9	25	184	169	129	138	17	9.3	2.5	.5	.3	1.2
26	1.8	22	683	143	116	164	19	8.9	2.9	.4	.2	1.4
27	1.6	20	890	437	109	229	17	8.9	3.5	.4	.1	2.3
28	1.8	18	520	604	98	208	15	8.3	3.2	.4	.1	2.4
29	1.5	16	257	407	-	231	14	8.0	3.2	.5	.1	2.1
30	1.5	14	162	341	-----	238	15	7.3	2.8	.3	.1	1.8
31	3.0	-----	111	281	-----	208	-----	7.0	-----	.3	.1	-----
Total	73.7	1,594.4	3,218	15,057	9,945	2,533	1,330	392.6	125.7	34.5	4.7	28.4
Mean	2.38	53.1	104	486	355	81.7	44.3	12.7	4.19	1.11	0.15	0.95
Ac-ft	146	3,160	6,350	29,870	19,730	5,020	2,640	779	249	68	9.3	56

Calendar year 1958: Max 2,620 Min 0.5 Mean 136 Ac-ft 98,410
Water year 1958-59: Max 2,960 Min 0 Mean 94.1 Ac-ft 68,110

Peak discharge (base, 1,000 cfs).--Dec. 26 (4 p.m.) 1,420 cfs (5.50 ft); Jan. 9 (1 a.m.) 2,760 cfs (7.23 ft); Jan. 12 (1 a.m.) 6,640 cfs (11.15 ft); Feb. 14 (10 a.m.) 3,560 cfs (7.85 ft).

* Discharge measurement made on this day.

3115. Lookingglass Creek at Brockway, Oreg.

Location.--Lat 43°07'05", long 123°26'15", in SW¹ sec.20, T.28 S., R.6 W., on right bank 0.4 mile northeast of Brockway and 0.8 mile upstream from mouth.

Drainage area.--158 sq mi.

Records available.--October 1955 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 493.19 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 19,100 cfs Jan. 12 (gage height, 20.27 ft), from rating curve extended above 7,200 cfs as explained below; no flow for many days.
1955-59: Maximum discharge, 35,000 cfs Dec. 26, 1955 (gage height, 24.93 ft), from rating curve extended above 7,200 cfs on basis of slope-area measurement of peak flow; no flow at times each year.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Many diversions by pumping for irrigation above station.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 26 to Feb. 17)

1.5	0	6.0	530
1.7	2.0	7.0	820
1.9	5.5	9.0	1,660
2.2	14	11.0	2,950
2.5	26	13.0	4,650
3.0	58	15.0	6,900
4.0	162	17.0	10,400
5.0	316		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	6.5	42	276	595	208	568	a49	17	3.5		
2	0	11	41	251	462	187	458	a49	14	2.3		
3	.7	14	39	208	372	164	376	a46	13	1.7		
4	.3	19	36	184	311	146	303	*42	13	0		
5	0	47	*34	246	262	134	249	45	13	0		
6	.1	44	33	311	238	125	204	49	15	0	(*)	
7	0	68	33	287	257	115	178	42	13	0		
8	.2	74	44	2,450	233	106	159	39	12	0		
9	0	92	45	5,840	400	99	156	38	11	0		
10	0	82	46	*4,770	852	95	132	36	13	0		
11	0	62	46	3,150	737	88	119	34	12	0		
12	0	44	62	10,200	611	84	108	31	9.8	0		
13	.1	104	72	*2,010	535	85	101	28	9.8	0		
14	.7	503	68	1,050	*4,720	90	96	28	9.0	0		
15	1.2	382	59	713	3,210	81	91	29	*7.2	0		
16	1.2	203	52	516	2,140	76	84	26	8.0	0		
17	*1.2	137	47	408	1,890	74	80	28	11	0		
18	1.3	104	44	338	1,470	72	75	30	11	0		(*)
19	3.4	428	41	282	1,180	84	71	39	10	0		
20	1.6	418	40	246	886	*76	66	35	9.0	0		
21	14	244	59	216	692	a80	63	30	7.8	0		
22	9.8	172	66	*193	535	a90	59	28	7.5	0		
23	7.0	156	60	176	438	a180	56	26	7.0	0		
24	5.8	105	62	297	368	a310	54	24	3.7	0		
25	4.5	89	295	366	312	273	53	22	3.0	0		
26	4.5	74	1,100	332	278	378	56	22	3.2	0		
27	4.3	62	2,080	1,820	267	478	56	22	5.3	0		
28	3.7	53	2,180	1,900	235	451	52	22	6.8	0		
29	3.7	49	710	1,220	-	575	49	20	7.5	0		
30	3.9	44	467	1,020	-----	848	a49	18	5.5	0		
31	4.7	-----	348	782	-----	692	-----	17	-----	0		
Total	92.4	3,870.5	8,351	42,056	24,486	6,544	4,221	994	288.1	7.5	0	0
Mean	2.98	129	269	1,357	874	211	141	32.1	9.60	0.24	0	0
Ac-ft	183	7,680	16,560	83,420	48,570	12,980	8,370	1,970	571	15	0	0

Calendar year 1958: Max 8,410 Min 0 Mean 339 Ac-ft 245,100

Water year 1958-59: Max 10,200 Min 0 Mean 249 Ac-ft 180,300

Peak discharge (base, 3,000 cfs).--Dec. 26 (9 p.m.) 3,010 cfs (11.07 ft); Jan. 9 (6 a.m.) 6,570 cfs (14.52 ft); Jan. 12 (7 a.m.) 19,100 cfs (20.27 ft); Feb. 14 (4 p.m.) 8,330 cfs (15.65 ft).

* Discharge measurement or observation of no flow made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for Olalla Creek near Tenmile.

3120. South Umpqua River near Brockway, Oreg.

Location.--Lat 43°08'00", long 123°23'50", in SW 1/4 sec.15, T.28 S., R.6 W., on downstream side of right pier of Winston Bridge on U. S. Highway 99, 2 1/2 miles northeast of Brockway, and 4 miles downstream from Lookingglass Creek.

Drainage area.--1,670 sq mi.

Records available.--December 1905 to June 1912, October 1923 to September 1926, January 1942 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 461.84 ft above mean sea level, datum of 1929 (Oregon State Highway Department bench mark). Prior to June 24, 1949, staff, chain, and wire-weight gages at several sites within 400 ft of present site at various datums.

Average discharge.--25 years (1906-11, 1923-26, 1942-59), 2,894 cfs (2,095,000 acre-ft per year).

Extremes.--Maximum discharge during year, 58,300 cfs Jan. 12 (gage height, 24.08 ft); minimum, 67 cfs Aug. 29.

1905-12, 1923-26, 1942-59: Maximum discharge, 102,000 cfs Oct. 29, 1950 (gage height, 32.4 ft), from rating curve extended above 76,000 cfs on basis of slope-conveyance study; minimum observed, 36 cfs Aug. 12, 13, 1946.

Flood of Feb. 21, 1927, reached a stage of about 31.2 ft, present site and datum (discharge, 101,000 cfs). Flood in February 1890 reached a stage 1.9 ft higher, according to local resident who lived nearby at time of both floods (discharge, about 130,000 cfs).

Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation. Many small diversions for irrigation above station.

Revisions (water years).--WSP 1248: 1946(M), 1948(M), 1951. WSP 1448: Drainage area.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 8 to Feb. 22)

2.8	60	7.0	2,880
3.1	102	8.0	4,500
3.5	178	10.0	6,800
4.0	333	14.0	21,000
5.0	810	21.0	45,400
6.0	1,620		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a145	246	650	3,640	5,940	5,340	9,100	1,430	780	276	105	72
2	a140	333	610	3,100	4,960	5,280	7,680	1,500	728	262	105	72
3	a135	309	595	2,640	4,170	4,610	6,280	1,590	700	249	104	71
4	a130	365	*580	2,210	3,590	3,910	5,370	*1,570	690	240	97	71
5	a127	712	560	2,340	3,190	3,380	4,630	1,490	680	237	96	75
6	a124	1,100	536	3,810	2,920	3,020	3,980	2,430	750	237	*92	75
7	a122	1,500	536	3,190	2,860	2,780	3,380	2,180	788	231	91	83
8	122	1,520	728	13,000	2,640	2,540	2,940	1,870	685	225	92	86
9	120	1,710	955	28,100	2,760	2,380	2,610	1,780	645	218	92	92
10	125	1,570	1,070	*23,400	4,000	2,240	2,350	1,650	645	205	91	88
11	134	1,560	1,020	17,900	3,760	2,060	2,160	1,480	635	195	82	80
12	136	1,070	1,760	45,000	3,430	1,920	2,010	1,360	585	190	78	83
13	138	1,380	2,010	20,100	3,190	1,920	1,870	1,280	555	185	72	86
14	136	6,660	1,570	*9,900	22,700	2,020	1,740	1,320	536	178	72	94
15	136	4,750	1,260	7,080	24,100	1,840	1,630	1,920	*505	176	72	96
16	*136	2,740	1,050	5,370	19,300	1,700	1,500	1,790	482	169	72	91
17	134	1,830	918	4,320	18,200	1,700	1,420	1,560	456	163	76	99
18	144	1,400	828	3,610	16,300	1,880	1,350	1,700	442	154	72	*107
19	178	3,920	760	3,130	15,100	2,050	1,270	2,540	420	150	71	116
20	460	5,870	728	2,920	11,400	*2,070	1,190	2,570	402	148	73	169
21	560	3,610	755	2,600	9,150	1,960	1,140	2,080	381	134	86	293
22	373	2,470	882	2,360	7,260	2,190	1,110	1,760	311	127	92	293
23	279	1,880	788	2,170	6,340	2,500	1,100	1,590	337	129	105	237
24	246	1,500	755	2,610	5,720	3,880	1,090	1,390	329	125	108	192
25	231	1,240	1,390	5,030	5,030	4,100	1,160	1,250	305	120	91	169
26	218	1,060	3,910	4,660	4,610	5,430	1,270	1,160	301	116	80	163
27	210	918	13,700	8,710	4,810	6,540	1,460	1,090	313	115	75	255
28	202	816	10,200	18,800	5,070	5,580	1,460	1,020	321	108	72	478
29	197	744	5,830	12,800	-	5,790	1,370	918	313	108	70	236
30	190	695	4,890	9,500	-----	7,250	1,300	852	293	105	70	225
31	202	-----	4,340	7,380	-----	4,480	-----	804	-----	108	71	-----
Total	5,930	55,478	66,164	281,380	222,490	108,340	76,860	48,924	15,343	5,383	2,625	4,397
Mean	191	1,849	2,134	9,077	7,946	3,495	2,562	1,578	511	174	84.7	147
Cfsm	0.114	1.11	1.28	5.44	4.76	2.09	1.53	0.945	0.306	0.104	0.051	0.088
In.	0.13	1.24	1.47	6.27	4.95	2.41	1.71	1.09	0.34	0.12	0.06	0.10
Ac-ft	11,760	110,000	131,200	558,100	441,300	214,900	152,400	97,040	30,430	10,680	5,210	8,720
Calendar year 1958:	Max	48,300	Min	96	Mean	3,492	Cfsm	2.09	In.	28.37	Ac-ft	2,528,000
Water year 1958-59:	Max	45,000	Min	70	Mean	2,447	Cfsm	1.47	In.	19.89	Ac-ft	1,772,000

Peak discharge (base, 18,000 cfs, revised).--Jan. 9 (9 a.m.) 30,500 cfs (16.48 ft); Jan. 12 (10 a.m.) 58,300 cfs (24.08 ft); Jan. 28 (8 a.m.) 20,800 cfs (13.75 ft); Feb. 14 (6:30 p.m.) 38,000 cfs (18.76 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for station at Tiller and Cow Creek near Riddle.

3122. Deer Creek near Roseburg, Oreg.

Location.--Lat 43°13'05", long 123°17'15", in SE $\frac{1}{4}$ sec.16, T.27 S., R.5 W., on left bank 200 ft upstream from Shick Creek, 2.8 miles east of Roseburg, and 3 miles upstream from mouth.

Drainage area.--54.3 sq mi.

Records available.--October 1955 to September 1959.

Gage.--Staff gage and crest-stage indicator; gage read once daily, twice daily above 4 ft gage height. Datum of gage is 486.1 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 3,160 cfs Feb. 14 (gage height, 9.8 ft), from rating curve extended above 2,200 cfs as explained below; no flow July 17.
1955-59: Maximum discharge, 6,800 cfs Dec. 26, 1955 (gage height, 13.67 ft, from floodmarks), from rating curve extended above 2,200 cfs on basis of slope-area measurements at gage heights 13.38 and 13.67 ft; no flow July 17, 1959.

Remarks.--Records good. Many small diversions by pumping for irrigation above station; diversions above station for log ponds.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 19

Nov. 20 to Sept. 30

1.3	1.0	1.1	0	2.0	39
1.4	2.8	1.2	.2	2.5	88
1.6	9.2	1.3	.4	3.0	162
1.8	21	1.4	2.0	4.0	370
2.0	38	1.5	5.0	6.0	1,070
2.5	93	1.7	16	8.0	2,050
3.0	164				

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.6	6.4	16	68	117	65	212	22	14	3.6	0.4	0.5
2	1.8	6.1	14	73	90	58	117	37	12	3.0	.4	.4
3	1.4	6.4	13	56	78	52	98	37	12	2.7	.4	.4
4	1.2	19	*13	49	67	45	74	37	10	2.2	.4	.9
5	1.1	12	11	60	66	44	64	37	16	3.0	.4	1.6
6	1.2	10	12	49	58	41	53	37	16	3.6	.3	1.6
7	1.2	15	14	47	64	37	48	36	15	*2.0	.2	.9
8	1.8	12	18	515	58	37	42	38	12	2.7	.2	.5
9	3.1	12	36	680	216	37	*39	37	12	2.2	.2	.5
10	2.8	17	25	575	345	33	36	31	11	3.3	.2	.4
11	2.4	11	33	431	66	30	33	28	10	3.6	.2	.6
12	1.6	9.2	56	1,440	117	33	31	24	9.8	3.3	.2	.9
13	1.1	59	41	750	251	32	30	22	8.7	1.6	.2	.9
14	1.0	152	35	*212	1,630	31	29	54	8.7	.9	.4	.6
15	*2.8	106	32	184	1,120	29	26	59	8.7	1.6	.3	.5
16	2.8	48	26	131	610	25	25	41	8.7	2.2	.2	.6
17	2.8	34	24	81	312	25	24	56	7.6	0	*.2	.9
18	3.4	30	22	70	202	37	24	90	7.2	.9	.1	2.2
19	1.6	119	21	58	151	30	22	65	6.7	2.0	.2	2.7
20	6.7	86	30	49	155	27	19	60	6.7	.9	.2	5.4
21	4.6	58	33	58	124	37	19	*52	7.2	.6	1.2	4.6
22	4.6	41	26	47	114	40	16	41	6.7	.6	.5	3.3
23	4.6	34	25	44	99	43	16	33	5.8	.1	.9	2.7
24	4.6	29	24	111	89	58	15	25	5.4	.9	.9	2.2
25	4.6	25	78	99	78	64	28	26	5.0	1.2	.6	3.0
26	4.6	24	345	90	*84	149	24	26	5.8	.6	.5	4.6
27	3.4	19	467	566	78	120	22	30	5.4	.6	.4	3.3
28	4.6	18	395	401	58	139	21	24	5.8	.2	.2	2.7
29	4.3	16	180	295	-	142	18	22	4.3	.4	.2	2.7
30	4.6	15	108	295	-----	271	26	21	3.6	.5	.1	2.2
31	8.0	-----	78	157	-----	216	-----	18	-----	.5	.1	-----
Total	110.3	1,049.1	2,251	7,741	6,497	2,027	1,249	1,189	267.8	51.5	10.9	54.3
Mean	3.56	35.0	72.6	250	232	65.4	41.6	38.4	8.93	1.66	0.35	1.81
Ac-ft	219	2,080	4,460	15,350	12,890	4,020	2,480	2,360	531	102	22	108

Calendar year 1958: Max 1,430 Min 0.2 Mean 78.7 Ac-ft 56,980
Water year 1958-59: Max 1,630 Min 0 Mean 61.6 Ac-ft 44,620

Peak discharge (base, 1,200 cfs).--Jan. 12 (about 12 m.) 1,780 cfs (7.5 ft); Feb. 14 (about 10 a.m.) 3,160 cfs (9.8 ft).

* Discharge measurement made on this day.

3130. Lemolo Reservoir near Toketee Falls, Oreg.

Location.--Lat 43°19'10", long 122°11'20", in SE 1/4 sec. 11, T.26 S., R.5 E., at Lemolo No. 1 diversion dam, 1.1 miles downstream from Lake Creek and 13 miles east of Toketee Falls.

Drainage area.--170 sq mi.

Records available.--July 1954 to September 1959.

Gage.--Staff gage read once daily. Datum of gage is at mean sea level (levels by The California Oregon Power Co.).

Extremes.--Maximum contents observed during year, 13,440 acre-ft Aug. 24 (elevation, 4,148.2 ft); minimum observed, 7,200 acre-ft Mar. 29, 30, Apr. 1 (elevation, 4,130.7 ft).

1954-59: Maximum contents observed, 13,560 acre-ft Aug. 5, 1955, June 13, 14, 1956 (elevation, 4,148.5 ft); minimum observed, 11 acre-ft Mar. 5, 1955 (elevation, 4,055.4 ft).

Remarks.--Reservoir is formed by Lemolo No. 1 diversion dam. Storage began July 15, 1954. Usable capacity, 12,520 acre-ft between minimum operating elevation at 4,097.0 ft and maximum operating elevation at 4,148.5 ft. Dead storage below 4,097.0 ft is 1,040 acre-ft. Water is used for generation of power at powerplants downstream. Figures given herein represent total contents.

Cooperation.--Gage readings furnished by The California Oregon Power Co.

Revisions.--WSP 1448: Drainage area.

Month-end elevation and contents, water year October 1958 to September 1959

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	4,132.8	7,850	-
Oct. 31.....	4,138.7	9,790	+1,940
Nov. 30.....	4,146.8	12,850	+3,060
Dec. 31.....	4,146.4	12,680	-170
Calendar year 1958.....	-	-	+1,030
Jan. 31.....	4,145.4	12,280	-400
Feb. 28.....	4,140.7	10,490	-1,790
Mar. 31.....	4,130.9	7,260	-3,230
Apr. 30.....	4,141.2	10,670	+3,410
May 31.....	4,144.8	12,040	+1,370
June 30.....	4,147.2	13,010	+970
July 31.....	4,147.1	12,970	-40
Aug. 31.....	4,147.4	13,100	+130
Sept. 30.....	4,147.5	13,140	+40
Water year 1958-59.....	-	-	+5,290

† Elevation at 9 a.m.

3135. North Umpqua River below Lemolo Reservoir, near Toketee Falls, Oreg.

Location.--Lat 43°19'20", long 122°11'40", in NW 1/4 sec. 11, T.26 S., R.5 E., on right bank 1,900 ft downstream from Lemolo Reservoir and 13 miles east of town of Toketee Falls.

Drainage area.--170 sq mi.

Records available.--October 1927 to December 1945, March 1946 to September 1959. Published as "below Lake Creek" prior to October 1952 and as "below Lake Creek, near Toketee Falls" October 1952 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 4,025 ft (from river-profile map). Prior to July 15, 1954, at site 1 mile upstream at datum about 65 ft higher. July 15, 1954, to Sept. 25, 1955, at site 400 ft upstream at datum 14.11 ft higher.

Average discharge.--31 years, 414 cfs (299,700 acre-ft per year), adjusted for storage.

Extremes.--Maximum discharge during year, 563 cfs Dec. 10; minimum daily, 152 cfs Nov. 5. 1927-59: Maximum discharge, 1,400 cfs June 3, 1956, from river rating curve extended from 450 to 905 cfs; minimum daily, 9.7 cfs May 13, 1955.

Remarks.--Records good. Flow regulated since 1954 by Lemolo Reservoir (see preceding page); also slightly regulated by Diamond Lake. All records presented herein include flow in Lemolo No. 1 power canal which, beginning July, 1955, diverts 0.4 mile above station for power generation with return flow 4.3 miles downstream.

Revisions.--WSP 1448: Drainage area.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	397	324	446	457	494	486	474	497	436	411	272	378
2	427	257	*421	470	490	411	380	489	393	384	282	381
3	403	303	407	550	493	483	413	492	388	397	*349	399
4	417	201	428	368	489	489	166	485	404	275	343	386
5	459	152	392	528	492	489	158	492	402	307	350	422
6	407	250	391	510	485	489	366	485	327	376	388	298
7	358	300	309	468	492	485	432	488	359	410	409	303
8	416	238	449	468	492	482	454	*485	416	408	285	367
9	308	287	510	468	485	493	383	493	435	406	247	381
10	383	407	553	468	492	492	391	469	437	403	326	387
11	316	400	514	377	495	489	415	463	470	336	376	254
12	493	417	498	352	488	478	432	447	496	328	373	319
13	381	444	342	445	484	485	397	401	312	394	371	332
14	*309	446	243	454	491	485	445	411	174	405	376	341
15	520	417	553	480	487	484	495	447	499	405	312	*361
16	519	421	552	475	486	487	491	487	471	401	289	369
17	341	444	547	411	486	481	455	443	412	400	377	369
18	355	446	454	424	486	*491	403	453	*436	317	374	344
19	277	450	462	449	483	483	427	512	435	335	362	335
20	377	448	465	444	483	485	431	492	409	399	354	335
21	326	458	452	*454	483	485	457	438	406	403	369	355
22	437	446	453	457	490	489	458	435	423	396	274	366
23	385	459	483	496	483	482	445	445	424	379	286	366
24	394	485	439	489	483	482	452	376	420	388	385	366
25	330	550	383	397	483	489	415	447	420	282	385	366
26	384	433	409	496	486	488	427	448	423	239	377	366
27	384	415	441	497	486	481	425	447	432	407	420	387
28	382	457	455	490	486	488	442	430	303	370	384	384
29	288	400	435	489	-	484	470	434	458	390	309	372
30	384	428	427	486	-----	439	490	370	342	423	332	375
31	371	-----	441	487	-----	422	-----	359	-----	474	375	-----
Total	11,908	11,583	13,754	14,304	13,653	14,876	12,489	14,060	12,142	11,648	10,711	10,664
Cfs	384	386	444	461	488	480	416	454	405	376	346	355
Ac-ft	23,620	22,970	27,280	28,370	27,080	29,510	24,770	27,890	24,080	23,100	21,240	21,150

Adjusted for change in contents of Lemolo Reservoir

Mean	416	437	441	455	455	427	474	476	421	375	348	356
Cfs	2.45	2.57	2.59	2.68	2.68	2.51	2.79	2.80	2.48	2.21	2.05	2.09
In.	2.62	2.87	2.99	3.08	2.79	2.90	3.11	3.23	2.76	2.54	2.36	2.34
Ac-ft	25,560	26,030	27,110	27,970	25,290	26,280	28,180	29,260	25,050	23,060	21,370	21,190

Observed

Calendar year 1958: Max	936	Min	152	Mean	503	Ac-ft	364,000
Water year 1958-59: Max	553	Min	152	Mean	416	Ac-ft	301,100

Adjusted

Calendar year 1958: Mean	504	Cfs	2.96	In.	40.27	Ac-ft	365,000
Water year 1958-59: Mean	423	Cfs	2.49	In.	33.79	Ac-ft	306,400

* Discharge measurement made on this day.

3145. Clearwater River above Trap Creek, near Toketee Falls, Oreg.

Location.--Lat 43°14'40", long 122°17'10", in SE $\frac{1}{4}$ sec.1, T.27 S., R.4 E., on right bank 900 ft downstream from Clearwater No. 1 diversion dam, 0.4 mile upstream from Trap Creek, and 8.7 miles (revised) east of town of Toketee Falls.

Drainage area.--41.6 sq mi.

Records available.--October 1927 to December 1945, March 1946 to September 1959. Monthly discharge only December 1927 to March 1928, published in WSP 1318. Prior to October 1952, published as "above Trap Creek."

Gage.--Water-stage recorder. Datum of gage is 3,862.84 ft above mean sea level (levels by The California Oregon Power Co.). Prior to Dec. 1, 1953, at two sites about 0.4 mile downstream at different datums.

Average discharge.--31 years, 166 cfs (120,200 acre-ft per year).

Extremes.--Maximum discharge during year, 330 cfs Jan. 12; minimum daily, 147 cfs

Sept. 8-13.

1927-59: Maximum discharge, 598 cfs Dec. 22, 1955, from river rating curve extended from 58 to 399 cfs by logarithmic plotting; minimum daily, 91 cfs Nov. 4-6, 1931.

Remarks.--Records good. All records presented herein include flow in Clearwater No. 1 power canal, completed in June 1953, which diverts 900 ft above station for generation of power and returns water to Clearwater River 2 $\frac{1}{2}$ miles below station.

Revisions.--WSP 1124: Drainage area.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	162	168	174	178	204	175	191	211	186	170	163	149	
2	162	168	*174	178	198	174	200	204	191	170	163	149	
3	162	169	177	174	196	173	204	199	193	170	163	148	
4	163	177	176	176	195	173	208	196	192	169	*157	148	
5	163	176	174	178	193	173	212	199	207	168	160	148	
6	163	179	174	177	192	173	214	195	208	168	160	149	
7	163	185	181	178	192	173	211	*193	195	168	160	148	
8	164	179	183	180	183	190	210	197	189	168	159	147	
9	164	181	185	195	190	173	209	197	188	167	159	147	
10	164	183	181	221	189	173	208	194	184	167	159	147	
11	164	175	189	221	188	171	209	194	183	167	159	147	
12	165	174	194	290	186	173	208	197	185	166	161	147	
13	165	199	185	244	185	173	207	205	187	167	160	147	
14	*166	191	181	226	186	172	205	213	186	166	157	148	
15	165	179	179	216	186	171	203	204	182	166	156	*149	
16	165	175	178	211	186	170	201	199	183	166	155	149	
17	165	175	177	208	185	172	200	203	*182	166	155	149	
18	170	180	176	204	183	*172	198	199	183	166	154	155	
19	183	215	176	202	181	172	196	194	187	166	154	167	
20	173	200	175	*199	181	172	195	190	189	166	157	164	
21	170	191	177	196	179	174	198	189	186	166	155	157	
22	169	184	175	194	178	175	200	189	184	166	154	155	
23	169	182	174	194	177	177	201	189	181	166	154	156	
24	168	179	175	207	176	177	204	189	178	166	153	155	
25	168	179	176	199	175	177	207	192	176	166	151	157	
26	168	178	181	198	175	181	212	189	175	165	150	173	
27	167	176	182	222	175	178	209	186	174	165	150	165	
28	167	175	177	222	175	180	204	185	172	164	150	161	
29	168	174	177	212	181	181	204	184	173	164	150	159	
30	168	174	179	208	-----	185	210	184	171	164	150	159	
31	168	-----	178	204	-----	186	-----	184	-----	163	150	-----	
Total	5,161	5,418	5,541	6,315	5,196	5,422	6,138	6,043	5,549	5,162	4,838	4,599	
Mean	166	181	179	204	186	175	205	195	185	167	156	153	
Cfsm	3.99	4.35	4.30	4.90	4.47	4.21	4.93	4.69	4.45	4.01	3.75	3.68	
In.	4.61	4.84	4.95	5.65	4.65	4.85	5.49	5.40	4.96	4.61	4.33	4.11	
Ac-ft	10,240	10,750	10,990	12,530	10,310	10,750	12,170	11,990	11,010	10,240	9,600	9,120	
Calendar year 1958: Max	340			Min	158	Mean	202	Cfsm	4.86	In.	65.93	Ac-ft	146,300
Water year 1958-59: Max	290			Min	147	Mean	179	Cfsm	4.30	In.	58.45	Ac-ft	129,700

* Discharge measurement made on this day.

3160. Fish Creek at Big Camas ranger station, near Toketee Falls, Oreg.

Location (revised).--Lat 43°13'50", long 122°26'45", in SE $\frac{1}{4}$ sec. 10, T.27 S., R.3 E., on right bank 0.3 mile upstream from Camas Creek, 0.7 mile east of Big Camas ranger station, 3.2 miles south of town of Toketee Falls, and 5 miles upstream from mouth.

Drainage area.--68.8 sq mi.

Records available.--October 1947 to September 1959. Prior to October 1952, published as "at Big Camas ranger station."

Gage.--Water-stage recorder. Datum of gage is 2,858.52 ft above mean sea level, datum of 1929 (levels by The California Oregon Power Co.). Prior to July 10, 1951, water-stage recorder and July 10 to Aug. 10, 1951, staff gage, at site 1,000 ft upstream at datum 13.72 ft higher. Aug. 11 to Nov. 3, 1951, staff gage at site 200 ft downstream at different datum. Nov. 4, 1951, to Sept. 30, 1956, water-stage recorder at same site at datum 1.92 ft higher.

Average discharge.--12 years, 254 cfs (183,900 acre-ft per year).

Extremes.--Maximum discharge during year, 1,580 cfs Jan. 12; minimum daily, 41 cfs Sept. 12, 13.

1947-59: Maximum discharge, 9,880 cfs Dec. 22, 1955, affected by failure of power canal diversion dam 2 miles upstream; minimum daily, 35 cfs Nov. 27, 1952.

Remarks.--Records good. All records presented herein include flow in Fish Creek power canal (completed in June 1952), which diverts water 2 miles above station for power generation at Fish Creek powerplant; diversion discharged to North Umpqua River just below Toketee Falls.

Revisions.--WSP 1448: Drainage area.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	48	112	211	338	179	438	342	208	101	55	44
2	48	48	*111	200	306	193	495	302	224	97	56	43
3	48	49	115	180	280	193	494	276	223	95	56	43
4	47	115	103	171	257	186	497	255	216	92	54	44
5	46	113	94	169	232	184	497	266	300	89	53	46
6	47	161	95	158	216	180	463	263	316	89	53	49
7	47	186	153	152	201	172	402	*270	249	87	52	45
8	47	146	176	214	187	169	364	295	221	86	52	44
9	48	169	222	368	181	164	341	299	223	82	49	43
10	48	178	187	689	177	159	333	284	205	80	50	42
11	47	116	258	723	166	153	330	282	192	80	50	43
12	46	97	284	1,260	156	161	314	305	189	77	50	41
13	46	452	228	807	150	163	299	368	184	76	50	41
14	45	320	196	542	152	155	278	403	178	76	50	42
15	*45	199	172	438	156	148	258	350	169	74	48	*47
16	44	150	156	400	186	150	236	312	176	72	48	46
17	44	126	144	365	175	167	223	318	*161	70	48	44
18	63	166	133	331	172	179	207	299	155	68	48	53
19	125	872	124	301	174	*181	200	280	153	68	48	111
20	73	522	117	*268	171	178	200	265	149	65	59	90
21	60	353	134	246	168	192	215	257	143	63	52	61
22	59	277	115	226	165	195	246	253	135	63	50	51
23	56	224	108	214	180	200	263	253	129	63	48	48
24	51	196	107	358	153	200	292	255	126	60	47	46
25	51	175	114	348	150	218	315	259	122	61	46	46
26	51	153	168	325	149	286	341	242	122	60	46	92
27	50	136	200	919	153	258	339	227	116	59	45	65
28	48	124	166	799	158	270	313	209	111	58	45	53
29	47	114	167	543	-	274	318	201	108	58	45	49
30	45	108	205	438	-	357	350	199	104	58	44	47
31	46	---	212	382	---	372	---	199	---	56	44	---
Total	1,618	6,095	4,876	12,745	5,269	6,238	9,861	8,588	5,307	2,283	1,541	1,559
Mean	52.2	203	157	411	188	201	329	277	177	73.6	49.7	52.0
Cfs/m	0.759	2.95	2.28	5.97	2.73	2.92	4.78	4.03	2.57	1.07	0.722	0.756
In.	0.88	3.29	2.64	6.89	2.85	3.37	5.33	4.64	2.87	1.23	0.83	0.84
Ac-ft	3,210	12,090	9,670	25,280	10,450	12,370	19,580	17,030	10,530	4,530	3,060	3,090

Calendar year 1958: Max 1,780 Min 44 Mean 270 Cfs/m 3.92 In. 53.37 Ac-ft 195,800
 Water year 1958-59: Max 1,260 Min 41 Mean 181 Cfs/m 2.63 In. 35.66 Ac-ft 130,900

Peak discharge (base, 900 cfs).--Nov. 19 (12 m.) 1,050 cfs; Jan. 12 (7 a.m.) 1,580 cfs; Jan. 27 (3:30 p.m.) 1,190 cfs.

* Discharge measurement made on this day.

3165. North Umpqua River above Copeland Creek, near Toketee Falls, Oreg.

Location.--Lat 43°17'45", long 122°32'10", in NW¼ sec.24, T.26 S., R.2 E., on right bank 0.6 mile upstream from Copeland Creek and 4.7 miles west of town of Toketee Falls.

Drainage area.--475 sq mi.

Records available.--September 1949 to September 1959. Monthly discharge only September 1949, published in WSP 1318. Prior to October 1952, published as "above Copeland Creek."

Gage.--Water-stage recorder. Altitude of gage is 1,580 ft (from river-profile map).

Average discharge.--10 years, 1,660 cfs (1,202,000 acre-ft per year).

Extremes.--Maximum discharge during year, 5,420 cfs Jan. 27 (gage height, 7.09 ft); minimum daily, 565 cfs Sept. 13.
1949-59: Maximum discharge, 25,000 cfs Dec. 22, 1955 (gage height, 14.84 ft), from rating curve extended above 10,000 cfs by logarithmic plotting; minimum daily, 570 cfs Sept. 5, 1955.

Remarks.--Records good. Regulation by powerplants upstream; slightly regulated by Diamond Lake and by storage in Lemolo Reservoir (see p. 243). No diversion above station.

Revisions (water years).--WSP 1448: 1953(M), 1954, drainage area.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 11-30)

2.6	540	5.0	2,520
3.0	750	7.0	5,270
4.0	1,510		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	798	675	1,180	1,520	1,930	1,670	2,660	1,760	1,240	1,010	670	831
2	894	756	1,140	1,670	1,960	1,720	2,670	1,820	1,240	971	615	756
3	852	859	*1,060	1,500	1,640	1,680	2,550	1,390	1,350	950	744	824
4	845	762	1,080	1,250	1,720	1,650	2,120	1,800	1,360	675	*708	929
5	1,010	873	1,020	1,370	1,550	1,540	2,090	1,580	1,350	804	922	720
6	901	1,040	824	1,460	1,560	1,590	2,110	*1,590	1,320	978	631	714
7	726	1,280	845	1,400	1,460	1,380	2,170	1,820	1,060	943	798	720
8	768	1,110	1,570	1,280	1,490	1,370	1,850	1,650	1,320	922	635	873
9	908	1,090	1,710	1,560	1,480	1,450	1,880	1,640	1,340	985	870	901
10	824	1,400	1,580	2,400	1,400	1,430	1,650	1,400	1,330	1,010	726	859
11	675	1,040	1,820	2,420	1,380	1,340	1,530	1,570	1,310	774	852	756
12	859	939	2,100	3,440	1,410	1,460	1,650	1,530	1,280	744	617	580
13	804	2,170	1,680	3,020	1,320	1,420	1,660	1,670	838	950	798	565
14	792	1,850	1,420	2,440	1,300	1,390	1,720	1,850	1,030	950	762	887
15	*922	1,480	1,470	2,120	1,500	1,220	1,570	1,770	1,260	971	732	845
16	929	1,110	1,470	1,950	1,530	1,350	1,480	1,580	1,270	965	696	*756
17	859	1,200	1,320	1,820	1,830	*1,420	1,450	1,360	*1,140	922	696	780
18	901	1,240	1,180	1,270	1,640	1,510	1,200	1,660	1,210	1,380	810	804
19	1,080	2,750	1,200	1,750	1,560	1,480	1,280	1,660	1,170	744	873	820
20	880	2,540	1,040	1,540	1,620	1,450	1,400	1,550	985	943	852	1,080
21	824	1,830	1,050	*1,460	1,600	1,360	1,440	1,510	971	659	702	762
22	943	1,550	1,200	1,320	1,420	1,410	1,510	1,390	1,160	887	744	750
23	901	1,670	1,240	1,320	1,470	1,570	1,530	1,310	1,120	957	615	845
24	943	1,460	1,150	1,720	1,480	1,560	1,560	1,280	1,010	894	714	901
25	824	1,320	929	2,010	1,430	1,620	1,530	1,430	1,120	675	786	873
26	720	1,310	1,200	1,770	1,370	1,880	1,560	1,430	1,110	605	817	645
27	894	1,100	1,740	3,560	1,340	1,850	1,660	1,360	943	880	852	838
28	880	1,150	1,560	3,830	1,500	1,710	1,640	1,280	838	831	901	780
29	908	1,040	1,400	2,750	-	1,600	1,780	1,350	1,010	866	610	696
30	824	908	1,710	2,300	-----	2,150	1,550	1,080	1,040	1,010	605	575
31	696	-----	1,690	2,160	-----	2,300	-----	1,040	-----	978	798	-----
Total	26,584	39,562	41,378	61,380	42,830	48,410	52,410	46,430	34,725	28,053	23,351	23,465
Mean	858	1,319	1,335	1,980	1,530	1,562	1,747	1,498	1,158	905	753	762
Cfam	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	52,730	78,470	82,070	121,700	84,950	96,020	104,000	92,090	68,880	55,640	46,320	46,540
Calendar year 1958: Max	8,020											
Water year 1958-59: Max	3,830											
Min	575											
Mean	1,691											
Cfam	3.56											
In.	48.32											
Ac-ft	1,224,000											
Water year 1958-59: Max	3,830											
Min	575											
Mean	1,691											
Cfam	3.56											
In.	48.32											
Ac-ft	1,224,000											

* Discharge measurement made on this day.

3167. Steamboat Creek near Glide, Oreg.

Location.--Lat 43°21'00", long 122°43'40", in N $\frac{1}{2}$ sec.32, T.25 $\frac{1}{2}$ S., R.1 E., on right bank in Canton Creek Forest Service Park, 0.5 mile upstream from mouth and 19 miles north-east of Glide.

Drainage area.--227 sq mi.

Records available.--October 1955 to September 1959. Prior to June 1956, supplemental peak discharges and discharge measurements only.

Gage.--Water-stage recorder. Datum of gage is 1,128.55 ft above mean sea level (levels by Bureau of Public Roads). Prior to June 14, 1956, crest-stage gage at site 100 ft upstream.

Extremes.--Maximum discharge during year, 11,200 cfs Jan. 27 (gage height, 10.67 ft); minimum, 37 cfs Sept. 4.

1955-59: Maximum discharge, 26,900 cfs Dec. 22, 1955 (gage height, 17.96 ft, from floodmarks), from rating curve extended above 13,000 cfs by slope-area measurement of peak flow; minimum, 31 cfs Sept. 24, 1957.

Remarks.--Records good except those for period of no gage-height record, which are fair.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

0.4	31	3.0	1,150
0.7	75	5.0	2,830
1.0	147	7.0	5,310
1.5	328	9.0	8,300
2.0	555		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	54	198	1,000	1,220	1,490	2,680	496	216	92	52	39
2	44	54	198	800	992	1,250	2,280	464	212	88	50	38
3	44	58	*237	632	836	1,010	1,670	442	205	83	49	38
4	43	362	234	540	732	836	1,350	406	198	81	49	38
5	42	575	205	505	660	720	1,090	605	252	81	*49	41
6	41	999	192	496	622	654	914	*759	263	83	48	54
7	39	938	337	505	575	595	742	605	223	79	48	55
8	41	1,030	990	654	525	560	636	540	205	77	46	48
9	42	896	1,470	920	510	545	570	530	212	77	44	43
10	43	842	962	1,970	505	515	535	478	226	75	43	41
11	43	492	1,260	2,060	464	460	500	428	209	73	43	41
12	43	328	1,850	3,500	428	482	460	397	192	72	43	39
13	42	2,320	1,110	*2,010	415	565	424	406	178	72	43	39
14	42	1,780	759	1,230	842	525	393	424	166	70	43	39
15	*41	864	565	902	*1,180	474	367	420	162	68	43	49
16	41	530	460	742	1,890	482	328	375	*150	68	43	*54
17	41	397	389	632	2,060	565	312	389	142	66	43	46
18	49	669	337	545	1,570	610	287	570	134	65	43	46
19	330	5,420	299	*570	1,750	*842	271	818	128	63	43	70
20	241	2,430	279	570	1,590	704	264	654	123	63	44	123
21	106	1,240	332	530	1,230	698	264	520	118	61	48	128
22	75	812	291	505	1,120	836	283	451	115	60	46	a70
23	70	585	268	555	1,040	824	295	397	110	60	44	a55
24	63	464	260	2,020	920	872	308	358	106	58	43	a50
25	58	389	535	1,760	800	920	316	324	103	58	42	a50
26	55	324	618	1,490	818	2,100	389	299	103	58	41	a450
27	55	275	2,020	8,060	1,070	1,630	500	283	103	56	41	a250
28	54	237	1,460	5,060	1,240	1,580	496	268	98	55	39	a150
29	52	212	1,370	2,490	452	1,890	446	248	98	55	39	a110
30	50	202	1,770	1,690	---	1,720	460	234	94	55	39	a90
31	52	---	1,320	1,440	---	3,080	---	219	---	54	38	---
Total	2,026	25,798	22,775	46,383	27,604	32,034	20,032	13,807	4,864	2,126	1,369	2,384
Mean	65.4	860	735	1,496	986	1,033	668	445	162	68.6	44.2	79.5
Cfsm	0.268	3.79	3.24	6.59	4.34	4.55	2.94	1.96	0.714	0.302	0.195	0.350
In.	0.35	4.23	3.73	7.60	4.52	5.25	3.28	2.28	0.80	0.35	0.22	0.39
Ac-ft	4,020	51,170	45,170	92,000	54,750	63,840	39,730	27,390	9,650	4,220	2,720	4,730
Calendar year 1958: Max	13,600	Min	38	Mean	751	Cfsm	3.31	In.	44.91	Ac-ft	543,700	
Water year 1958-59: Max	8,060	Min	38	Mean	551	Cfsm	2.43	In.	32.96	Ac-ft	399,100	

Peak discharge (base, 4,800 cfs).--Nov. 19 (6 p.m.) 7,160 cfs (8.24 ft); Jan. 27 (4 p.m.) 11,200 cfs (10.67 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for Rock Creek near Glide and Little River at Peel.

3176. Rock Creek near Glide, Oreg.

Location.--Lat 43°20'35", long 122°59'30", in NE¹/₄NE¹/₄ sec.1, T.26 S., R.3 W., on right bank 1 mile upstream from mouth and 6 miles northeast of Glide.

Drainage area.--97.4 sq mi.

Records available.--June 1957 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 933 ft above mean sea level (plane-table survey).

Extremes.--Maximum discharge during year, 4,360 cfs Jan. 27 (gage height, 9.05 ft); minimum, 21 cfs Aug. 31 to Sept. 3.

1957-59: Maximum discharge, 8,230 cfs Dec. 20, 1957 (gage height, 12.22 ft); minimum, 18 cfs Sept. 23-25, 1957.

Flood of Dec. 22, 1955, reached a stage of 14.83 ft, from floodmarks (discharge, 12,300 cfs), and that of Dec. 11, 1956, a stage of 15.46 ft, from floodmarks (discharge, 13,400 cfs); discharges from rating curve extended above 5,400 cfs on basis of slope-area measurement at gage height 14.83 ft.

Remarks.--Records good except those for periods of shifting control, which are fair. No regulation or diversion above station.

Rating table, water year 1958-59, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

0.6	20	3.0	410
.8	28	4.0	760
1.0	43	6.0	1,800
1.5	93	8.0	3,400
2.0	170		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	29	53	166	546	748	692	1,420	220	112	62	29	22
2	28	42	161	461	605	608	1,120	246	109	60	29	21
3	27	41	*172	380	497	518	863	276	105	59	28	21
4	27	256	159	340	457	452	688	246	101	57	28	22
5	26	386	147	330	386	395	556	*551	142	60	28	25
6	26	700	140	318	371	356	470	560	130	60	28	33
7	26	549	259	308	350	328	404	392	110	57	27	31
8	29	981	493	350	325	312	348	315	102	55	26	26
9	33	626	605	556	325	302	312	278	117	52	26	24
10	30	549	437	1,040	330	295	286	242	122	50	26	23
11	29	348	641	1,070	308	264	258	214	109	48	25	23
12	28	258	922	1,740	283	274	235	192	102	46	25	22
13	28	1,150	588	*1,120	271	305	218	174	98	46	24	22
14	26	1,190	425	740	724	293	200	200	93	45	24	22
15	26	636	342	556	*886	271	190	224	91	44	24	35
16	*26	401	295	461	1,250	267	176	204	*90	43	24	29
17	26	318	260	386	1,140	283	163	237	88	42	24	*26
18	32	441	237	338	976	295	152	389	84	41	23	24
19	245	2,210	220	368	1,070	*428	144	570	81	41	24	40
20	134	1,330	206	359	917	365	135	425	79	40	24	72
21	72	768	246	325	728	395	129	330	76	38	26	65
22	55	524	206	*308	622	467	124	278	75	37	25	39
23	52	398	192	302	584	461	119	235	73	35	24	30
24	45	332	192	809	514	619	116	208	71	35	23	28
25	40	286	320	768	464	704	114	188	70	35	23	28
26	37	248	432	720	470	1,320	156	178	70	33	22	297
27	36	220	990	3,300	594	1,120	214	161	69	32	22	135
28	35	200	827	2,400	636	1,000	214	150	68	32	22	76
29	34	180	756	1,410	-	1,210	180	137	66	31	22	58
30	33	170	922	1,120	-----	1,890	200	128	64	31	22	48
31	37	-----	696	912	-----	1,560	-----	120	-----	30	21	-----
Total	1,357	15,791	12,654	24,141	16,811	18,049	9,914	8,268	2,767	1,377	768	1,367
Mean	43.8	526	408	779	600	582	330	267	92.2	44.4	24.8	45.6
Cfs/m	0.450	5.40	4.19	8.00	6.16	5.98	3.39	2.74	0.947	0.456	0.255	0.468
In.	0.52	6.03	4.83	9.22	6.42	6.89	3.79	3.16	1.06	0.53	0.29	0.52
Ac-ft	2,690	31,320	25,100	47,880	33,340	35,800	19,660	16,400	5,490	2,730	1,520	2,710

Calendar year 1958: Max 6,480 Min 21 Mean 371 Cfs/m 3.81 In. 51.71 Ac-ft 268,600
 Water year 1958-59: Max 3,300 Min 21 Mean 310 Cfs/m 3.18 In. 43.26 Ac-ft 224,600

Peak discharge (base, 3,000 cfs).--Jan. 27 (4 p.m.) 4,360 cfs (9.05 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used Oct. 1 to Nov. 8, Nov. 11-13, 17, 18, Nov. 23 to Dec. 8, Dec. 15-26, Jan. 3-8, Jan. 12 to June 15.

3180. Little River at Peel, Oreg.

Location.--Lat 43°15'10", long 123°01'30", in NW¼ sec.2, T.27 S., R.3 W., on left bank 0.6 mile southeast of Peel and 0.8 mile downstream from Cavitt Creek.

Drainage area.--177 sq mi.

Records available.--August 1954 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 828.33 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--5 years, 501 cfs (362,700 acre-ft per year).

Extremes.--Maximum discharge during year, 4,960 cfs Jan. 12 (gage height, 8.55 ft); minimum, 20 cfs Sept. 13.
1954-59: Maximum discharge, 21,100 cfs Dec. 11, 1956 (gage height, 19.63 ft), from rating curve extended above 5,900 cfs on basis of slope-area measurement at gage height 16.55 ft; minimum, 15 cfs Sept. 24, 25, 1957.
Maximum discharge known, 22,700 cfs Nov. 22, 23, 1953 (gage height, 20.6 ft, from floodmark), from rating curve extended above 5,900 cfs on basis of slope-area measurement at gage height 16.55 ft.

Remarks.--Records good. No regulation. Small diversions for rural domestic use and irrigation above station.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.5	18	3.0	335
1.7	34	4.0	820
2.0	70	6.0	2,300
2.3	122	8.0	4,300
2.6	202		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	59	146	605	748	850	2,000	343	154	60	27	21
2	24	51	144	505	615	736	1,490	407	146	59	26	21
3	24	51	144	411	510	615	1,110	505	139	56	27	21
4	24	295	*134	359	451	505	898	460	129	55	26	21
5	24	473	127	367	403	439	724	*736	168	55	*27	22
6	24	510	122	371	403	407	615	784	208	55	27	23
7	24	872	347	379	379	371	510	580	157	54	26	23
8	25	784	411	575	347	355	443	510	136	51	25	22
9	28	615	439	1,110	371	343	407	535	144	49	24	22
10	28	718	395	1,780	411	321	379	455	154	48	24	21
11	28	447	450	1,610	379	293	351	399	132	46	24	21
12	28	297	970	3,630	335	300	324	347	122	43	24	21
13	27	1,510	610	*1,730	328	347	297	310	118	43	24	21
14	27	1,850	435	1,050	1,720	324	273	427	112	42	23	22
15	26	886	339	748	*2,070	318	256	600	104	42	24	28
16	*26	515	283	580	2,160	339	236	505	*100	41	22	27
17	26	375	243	473	1,550	*583	224	515	97	40	22	*24
18	32	451	214	399	1,260	403	208	660	92	39	23	23
19	268	2,350	193	399	1,100	482	193	820	88	38	24	31
20	179	1,240	176	359	928	427	185	640	85	39	25	73
21	95	736	227	328	730	478	185	505	80	36	28	69
22	72	515	188	*328	660	545	190	423	78	35	27	41
23	64	395	173	324	630	540	188	363	74	34	25	33
24	55	318	182	954	550	760	185	304	73	33	24	30
25	50	276	387	1,010	486	826	193	273	70	32	23	28
26	48	240	707	904	540	1,540	276	253	70	32	22	158
27	44	205	1,460	3,160	660	1,180	328	245	70	31	22	127
28	43	182	1,060	2,810	736	1,050	307	221	67	30	22	67
29	41	165	802	1,650	-	1,260	269	199	66	29	22	51
30	40	151	940	1,190	-----	2,000	310	182	63	29	22	42
31	43	-----	736	922	-----	1,830	-----	168	-----	28	21	-----
Total	1,511	17,532	13,068	30,968	21,450	20,567	13,554	13,672	3,296	1,304	752	1,154
Mean	48.7	584	422	999	766	663	452	441	110	42.1	24.3	38.5
Cfs/m	0.275	3.30	2.58	5.64	4.33	3.75	2.55	2.49	0.621	0.238	0.137	0.218
In.	0.32	3.68	2.75	6.51	4.51	4.32	2.85	2.87	0.69	0.27	0.16	0.24
Ac-ft	3,000	34,770	25,920	61,420	42,550	40,790	26,880	27,120	6,540	2,590	1,490	2,290

Calendar year 1958: Max 6,750 Min 21 Mean 469 Cfs/m 2.65 In. 35.96 Ac-ft 339,300
Water year 1958-59: Max 3,630 Min 21 Mean 580 Cfs/m 2.15 In. 29.17 Ac-ft 275,400

Peak discharge (base, 6,000 cfs).--No peak above base.

* Discharge measurement made on this day.

3192. Sutherlin Creek at Sutherlin, Oreg.

Location.--Lat 43°23'20", long 123°18'10", in SW¼ sec.16, T.25 S., R.5 W., on right bank at downstream side of Waite Street bridge in Sutherlin, 1½ miles upstream from Cooper Creek.

Drainage area.--16.4 sq mi.

Records available.--October 1955 to September 1959.

Gage.--Staff gage and crest-stage indicator; gage read once daily, twice daily at stages over 4.0 ft. Datum of gage is 512.46 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 1,040 cfs Feb. 14 (gage height, 5.36 ft), from rating curve extended above 490 cfs; no flow Oct. 1 to Nov. 1, July 12 to Sept. 30. 1955-59: Maximum discharge, 1,560 cfs Dec. 21, 1957 (gage height, 8.24 ft), from rating curve extended above 560 cfs on basis of slope-area measurement at gage height 7.77 ft; no flow for several months each year.

Remarks.--Records good. No regulation. A few small diversions by pumping for irrigation above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 14				Feb. 15 to Sept. 30			
0.1	0	0.9	22	0.3	0	1.4	49
.2	.1	1.2	44	.4	.1	1.7	85
.3	.3	1.5	75	.5	.7	2.0	130
.4	1.1	2.0	143	.6	3.2	3.0	328
.5	3.7	3.0	328	.8	9.0	4.0	610
.6	7.0	5.0	915	1.1	24		
.7	11						

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	3.1	31	43	15	45	3.5	2.1	0.2		
2		.5	2.8	29	29	14	35	4.6	1.6	.1		
3		.2	2.8	24	*22	12	23	4.9	1.1	.1		
4		.2	*2.5	21	20	12	18	4.3	.9	.1		
5		1.3	2.5	34	20	12	14	9.8	2.9	.1		
6		1.1	2.2	29	19	11	12	7.6	2.7	.1		
7		2.2	2.0	24	18	9.8	9.4	6.1	2.1	*.1		
8		9.8	6.7	143	18	8.4	7.9	4.3	1.4	.1		
9		9.0	27	*460	36	7.6	*7.9	5.2	2.1	.1		
10		6.7	20	412	177	6.9	7.2	4.6	2.1	.1		
11		3.4	16	161	100	6.3	6.3	3.5	1.6	.1		
12		1.5	29	*505	41	*6.1	5.5	2.9	1.4	0		
13		11	22	*94	64	6.1	4.6	2.1	1.1	0		
14		35	17	48	760	6.9	4.1	5.2	.9	0		
15	(*)	27	12	37	372	6.1	3.8	12	.7	0		
16		17	11	34	127	5.8	3.8	12	.7	0		
17		7.0	8.6	26	77	5.2	3.5	26	.5	0		
18		5.3	7.8	24	56	5.8	3.2	25	.4	0		(*)
19		32	7.0	28	30	11	2.9	26	.3	0		
20		42	6.7	22	26	9.4	2.7	16	.3	0		
21		21	20	19	29	17	2.7	*12	.3	0		
22		15	14	20	24	16	2.4	8.7	.3	0		
23		10	11	17	23	17	2.1	6.9	*.3	0		
24		7.8	8.6	33	19	31	1.9	5.8	.3	0		
25		6.7	43	43	*17	23	1.6	5.2	.3	0		
26		5.6	34	36	16	117	3.8	4.3	.2	0		
27		5.3	130	328	18	77	3.2	3.5	.2	0		
28		4.3	85	156	16	70	2.9	4.3	.2	0		
29	(*)	0.81	59	126		51	2.6	3.8	.3	0		
30		3.4	40	96	-----	145	3.8	3.2	.3	0		
31		-----	35	52	-----	137	-----	2.7	-----	0		-----
Total	0	355.3	688.3	3,112	2,217	878.4	246.8	246.0	29.6	1.2	0	0
Mean	0	11.8	22.2	100	79.2	28.3	8.23	7.94	0.99	0.04	0	0
Cfsm	0	0.720	1.35	6.10	4.83	1.73	0.502	0.484	0.060	0.0024	0	0
In.	0	0.81	1.56	7.06	5.03	1.99	0.56	0.07	0.003	0	0	0
Ac-ft	0	705	1,370	6,170	4,400	1,740	490	488	59	2.4	0	0

Calendar year 1958: Max 655 Min 0 Mean 19.6 Cfsm 1.20 In. 16.27 Ac-ft 14,220
 Water year 1958-59: Max 760 Min 0 Mean 21.3 Cfsm 1.30 In. 17.64 Ac-ft 15,420

Peak discharge (base, 400 cfs).--Jan. 9 (about 10 p.m.) 640 cfs (4.1 ft); Jan. 12 (about 5 a.m.) 954 cfs (5.11 ft); Jan. 27 (about 2 p.m.) 610 cfs (4.0 ft); Feb. 14 (12:30 p.m.) 1,040 cfs (5.36 ft).

* Discharge measurement or observation of no flow made on this day.

3195. North Umpqua River at Winchester, Oreg.

Location.--Lat 43°16'20", long 123°24'40", in NW 1/4 sec. 33, T.26 S., R.6 W., on right bank 1.8 miles upstream from confluence with South Umpqua River and 3 miles west of Winchester.

Drainage area.--1,344 sq mi.

Records available.--October 1908 to December 1913, October 1923 to September 1929, August 1954 to September 1959. Prior to December 1908 monthly discharge only, published in WSP 1318.

Gage.--Water-stage recorder. Altitude of gage is 370 ft (from river-profile map). Oct. 1, 1908, to Dec. 31, 1913, and Oct. 1, 1923, to Sept. 30, 1929, staff gage at site 4.8 miles upstream at different datums.

Average discharge.--16 years, 3,580 cfs (2,592,000 acre-ft per year).

Extremes.--Maximum discharge during year, 34,000 cfs Jan. 27 (gage height, 13.86 ft); minimum, 390 cfs Sept. 6; minimum daily, 578 cfs Sept. 14.

1908-13, 1923-29, 1954-59: Maximum discharge, 100,000 cfs Nov. 23, 1909 (gage height, 28.1 ft, site and datum then in use), from rating curve extended above 42,000 cfs by logarithmic plotting; minimum, that of Sept. 6, 1959.

Remarks.--Records excellent. Some regulation by powerplants upstream and flow slightly affected by storage in Lemolo Reservoir (see p. 243) and Diamond Lake. Small diversions for irrigation above station.

Revisions (water years).--WSP 1448: 1909-12, drainage area.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 27				Jan. 28 to Sept. 30			
1.9	655	4.0	3,300	1.7	530	4.0	3,300
2.2	900	6.0	7,600	2.0	780	6.0	7,600
3.0	1,820	11.0	24,000	3.0	1,840	12.0	27,500

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	920	819	1,530	5,150	6,590	5,740	12,000	3,270	1,790	1,350	1,080	807
2	828	778	1,870	4,380	5,780	5,740	10,500	3,450	2,010	1,310	768	910
3	930	855	*1,740	3,920	4,990	5,040	6,630	3,280	1,970	1,250	658	816
4	891	1,320	1,790	3,300	4,220	4,440	7,020	3,060	2,070	1,210	807	880
5	900	2,510	1,770	3,040	4,000	3,960	5,830	3,570	2,100	940	744	970
6	1,080	2,350	1,620	3,200	3,750	3,680	5,320	4,970	2,340	1,070	1,000	674
7	970	5,860	1,470	3,060	3,710	3,430	4,930	4,080	2,160	1,230	910	753
8	794	4,130	2,960	4,160	3,410	3,110	4,240	3,620	1,780	*1,190	890	753
9	819	4,580	5,610	6,710	3,790	3,080	3,820	3,660	2,060	1,160	717	852
10	970	4,080	4,540	10,300	4,710	3,170	*3,700	3,250	2,140	1,210	666	900
11	891	3,430	4,120	11,800	3,900	2,940	3,280	3,010	2,050	1,220	798	852
12	715	2,350	7,660	21,400	3,480	2,920	3,090	2,940	2,010	980	940	816
13	910	5,940	5,740	13,400	3,270	3,060	3,120	2,860	1,890	950	900	618
14	891	10,200	4,120	*8,150	8,320	3,220	3,030	3,170	1,450	1,140	880	578
15	*810	6,090	3,370	6,140	12,300	2,890	2,960	3,750	1,680	1,140	816	900
16	930	3,800	3,080	5,080	10,600	2,770	2,740	3,300	1,770	1,140	798	940
17	960	2,790	2,770	4,440	10,400	3,060	2,590	3,250	1,760	1,160	771	852
18	910	2,760	2,440	3,800	7,960	3,300	2,480	3,640	1,650	1,110	762	816
19	1,280	13,000	2,180	3,390	7,530	3,860	2,200	4,970	1,650	861	890	861
20	2,280	11,700	2,090	3,710	7,050	3,770	2,180	4,520	1,580	870	980	880
21	1,330	6,520	2,140	3,370	6,180	3,610	2,320	*3,700	1,420	1,100	970	1,400
22	1,080	4,560	2,140	3,240	5,390	4,040	2,340	3,270	1,380	1,000	798	1,040
23	1,140	3,640	2,140	3,040	5,040	4,200	2,410	2,950	1,560	1,020	852	910
24	1,030	3,200	6,140	5,710	-----	4,600	2,420	2,680	1,450	1,090	717	920
25	1,060	2,660	2,820	8,220	*4,220	5,080	2,460	2,500	1,390	1,020	771	960
26	920	2,450	3,700	6,710	4,040	8,830	2,740	2,620	1,470	807	870	1,060
27	794	2,260	8,830	19,700	4,540	8,580	2,950	2,480	1,440	666	910	1,240
28	940	1,870	7,550	24,300	5,010	7,220	3,140	2,370	1,800	980	950	1,420
29	960	1,870	5,610	13,600	-----	7,990	3,040	2,240	1,190	950	1,000	1,210
30	940	1,680	6,740	9,710	-----	12,000	2,900	2,170	1,340	970	699	1,070
31	930	-----	6,070	7,760	-----	12,400	-----	1,690	-----	1,130	634	-----
Total	30,803	120,052	112,550	233,630	158,780	151,950	120,360	100,470	51,850	33,244	25,967	28,358
Mean	994	4,002	3,631	7,536	5,671	4,902	4,012	3,241	1,728	1,072	838	945
Ac-ft	61,100	238,100	223,200	463,400	314,900	301,400	238,700	199,300	102,800	65,940	51,500	56,250

Calendar year 1958: Max 46,200 Min 715
Water year 1958-59: Max 24,300 Min 578
Mean 4,048 Ac-ft 2,931,000
Mean 3,200 Ac-ft 2,517,000

Peak discharge (base, 20,000 cfs).--Jan. 12 (2:30 p.m.) 27,500 cfs (12.00 ft); Jan. 27 (10 p.m.) 34,000 cfs (13.86 ft).

* Discharge measurement made on this day.

3207. Calapooya Creek near Oakland, Oreg.

Location.--Lat 43°24'10", long 123°21'45", in NW¹ sec.13, T.25 S., R.6 W., near center of span on downstream side of county bridge, half a mile downstream from Williams Creek, 2.5 miles northwest of Sutherlin, and 3.5 miles southwest of Oakland.

Drainage area.--210 sq mi.

Records available.--October 1955 to September 1959.

Gage.--Wire-weight gage and crest-stage indicator; gage read once daily below 4.0 ft gage height, twice daily above. Datum of gage is 371.26 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 9,220 cfs Jan. 12 (gage height, 17.11 ft); minimum observed, 5.8 cfs Oct. 7.

1955-59: Maximum discharge, 20,300 cfs Dec. 26, 1955 (gage height, 20.47 ft), from rating curve extended above 5,000 cfs on basis of contracted-opening measurement of peak flow; minimum observed, 5.4 cfs Sept. 24, 25, 1957.

Remarks.--Records good. No regulation. Diversion above station for municipal supply of cities of Sutherlin and Oakland. Small diversions by pumping for irrigation above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-19, Jan. 8-11)

Oct. 1 to Jan. 11					Jan. 12 to Sept. 30				
1.8	5.8	3.4	181		1.7	6.8	4.0	365	
1.9	9.0	4.4	445		1.8	9.8	5.0	740	
2.1	19	6.5	1,230		2.0	18	10.0	3,100	
2.3	33	9.0	2,350		2.4	46	13.0	4,800	
2.9	99	13.0	4,800		2.8	90	16.0	7,500	
					3.4	200			

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.4	20	126	490	983	500	1,400	184	106	42	11	8.6
2	9.0	23	121	457	785	468	1,090	235	98	39	11	8.6
3	9.0	29	113	385	648	402	848	245	95	38	10	8.0
4	8.4	30	*112	346	548	365	672	248	86	36	10	8.0
5	8.0	123	110	415	479	332	564	270	101	38	11	8.9
6	8.0	133	95	373	486	293	458	395	178	38	9.5	11
7	5.8	349	93	331	520	275	392	326	127	36	9.5	16
8	6.4	294	157	1,270	468	260	350	260	106	*37	9.5	14
9	8.7	325	427	*3,820	856	250	*308	250	98	35	9.2	11
10	13	379	373	4,310	1,700	278	270	205	119	32	8.3	12
11	11	292	343	3,520	1,140	225	248	180	101	28	8.0	11
12	11	194	710	*5,620	839	212	230	164	89	25	8.0	10
13	11	728	556	*7,800	696	225	205	144	89	24	8.3	11
14	*11	1,290	451	1,510	4,730	265	192	160	67	24	7.7	11
15	12	750	325	1,060	4,680	238	182	326	76	24	8.0	14
16	10	487	275	857	3,010	228	168	270	73	22	8.0	15
17	9.5	320	234	676	1,960	222	158	341	71	22	*9.8	15
18	24	415	205	572	1,470	230	150	572	65	22	8.9	16
19	31	2,560	179	572	1,230	362	140	708	62	21	9.5	16
20	135	1,440	163	552	1,020	287	129	524	59	20	11	33
21	61	798	277	500	898	302	126	409	51	18	12	51
22	39	511	208	468	790	389	119	*332	55	16	12	32
23	31	406	181	430	732	423	112	265	52	15	12	22
24	31	325	169	960	624	893	106	215	52	14	9.8	17
25	25	275	253	965	*564	857	101	188	48	14	9.8	17
26	23	229	950	848	508	1,960	138	186	47	14	8.6	21
27	20	220	1,550	3,400	564	1,940	196	166	46	14	8.6	90
28	18	163	1,270	3,600	508	1,500	164	158	46	12	9.5	52
29	17	148	846	2,160	-	1,580	140	136	47	12	9.2	39
30	17	137	682	1,670	-----	2,580	135	124	46	12	8.3	19
31	18	-----	552	1,310	-----	1,840	-----	110	-----	12	7.1	-----
Total	651.2	13,391	12,104	47,247	33,218	20,181	9,491	8,296	2,356	756	293.1	618.1
Mean	21.0	446	390	1,524	1,186	651	316	268	78.5	24.4	9.45	20.6
Cfs/m	0.100	2.12	1.86	7.26	5.65	3.10	1.50	1.28	0.374	0.116	0.045	0.098
In.	0.12	2.37	2.14	8.37	5.88	3.57	1.68	1.47	0.42	0.13	0.05	0.11
Ac-ft	1,290	26,560	24,010	93,710	65,880	40,030	18,830	16,450	4,670	1,500	581	1,230

Calendar year 1958: Max 9,260 Min 5.8 Mean 436 Cfs/m 2.08 In. 28.18 Ac-ft 315,700
Water year 1958-59: Max 6,620 Min 5.8 Mean 407 Cfs/m 1.94 In. 26.31 Ac-ft 294,700

Peak discharge (base, 6,300 cfs).--Jan. 12 (about 8 a.m.) 9,220 cfs (17.11 ft); Feb. 14 (about 3 p.m.) 9,060 cfs (17.03 ft).

* Discharge measurement made on this day.

3210. Umpqua River near Elkton, Oreg.

Location.--Lat 43°35'10", long 123°33'30", in NW¼ sec.8, T.23 S., R.7 W., on right bank 3½ miles south of Elkton and 8 miles upstream from Elk Creek.

Drainage area.--3,683 sq mi.

Records available.--October 1905 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 90.42 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Jan. 1, 1910, staff gage at site 1,700 ft upstream at datum 2.63 ft higher, Jan. 1, 1910, to Sept. 30, 1929, at datum 2.11 ft higher, and Oct. 1, 1929, to Nov. 1, 1956, at datum 1.15 ft higher.

Average discharge.--54 years, 7,450 cfs (5,394,000 acre-ft per year).

Extremes.--Maximum discharge during year, 95,200 cfs Jan. 12 (gage height, 26.81 ft); minimum, 960 cfs Sept. 1, 2, 14-16.

1905-59: Maximum discharge, 218,000 cfs Dec. 22, 1955 (gage height, 46.0 ft, from floodmark, present site and datum); minimum observed, 640 cfs July 18, 1926.

Maximum stage known since at least 1861, that of Dec. 22, 1955; flood in 1861 reached a stage about 0.1 ft lower, from information by local residents.

Remarks.--Records good. Powerplants on North Umpqua River ordinarily do not affect discharge at this station. Some diversions for irrigation from streams in South Umpqua River basin, but flow probably only slightly affected.

Revisions (water years).--WSP 1184: 1927(M), 1938(M), 1943(M), 1946(M). WSP 1448: 1911-13, drainage area.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 7, Dec. 27)

Oct. 1 to Dec. 27					Dec. 28 to Sept. 30				
1.8	990	5.0	4,700		1.7	920	8.0	12,500	
3.0	2,180	8.0	12,000		3.0	2,400	15.0	38,000	
4.0	3,210	12.0	25,700		5.0	4,980	23.0	75,200	

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,200	1,230	*2,720	10,500	15,900	11,100	22,600	*4,420	2,980	1,660	1,030	960
2	1,160	1,210	2,500	8,970	13,300	11,900	21,200	4,880	2,870	1,650	1,020	980
3	1,110	1,210	2,750	8,120	11,400	10,900	17,600	5,080	2,940	1,600	1,120	1,110
4	1,110	1,290	2,590	6,890	9,780	9,510	14,500	5,020	2,930	1,550	1,260	1,040
5	1,120	1,800	2,560	6,330	8,730	8,420	12,200	4,980	3,000	1,530	1,240	1,050
6	1,110	3,250	2,530	7,180	7,900	7,570	10,500	6,400	3,060	1,350	1,240	1,110
7	1,170	5,010	2,510	7,920	7,740	7,080	9,360	7,260	3,290	1,370	1,150	1,050
8	1,200	6,280	2,580	11,700	7,440	6,420	8,420	6,200	3,150	1,480	1,120	1,010
9	1,080	7,000	5,150	44,100	7,160	6,040	7,300	5,650	2,760	1,480	1,130	1,000
10	1,040	6,060	5,640	45,100	12,700	5,890	6,700	5,460	2,960	1,480	1,220	1,020
11	1,130	5,990	6,460	40,600	11,500	5,670	6,200	4,830	2,950	1,480	1,300	1,100
12	1,120	4,610	7,440	73,600	9,840	5,260	5,630	4,540	2,860	1,460	1,240	1,100
13	1,020	3,690	9,240	51,500	8,970	5,220	5,420	4,310	2,750	1,270	1,150	1,080
14	1,090	14,100	7,020	26,000	29,700	5,530	5,160	4,200	2,610	1,230	1,150	1,020
15	1,110	14,900	5,420	17,800	58,500	5,510	4,980	4,980	2,160	1,310	1,160	960
16	1,080	9,140	4,630	13,600	38,000	4,940	4,720	5,740	2,390	1,340	1,220	1,040
17	1,150	6,040	4,060	11,200	34,700	4,830	4,440	5,120	2,420	1,320	1,210	1,150
18	1,190	4,700	3,670	9,510	27,900	5,240	4,200	5,180	2,380	1,330	1,220	1,140
19	1,210	10,100	3,520	8,070	27,100	5,800	3,940	6,420	2,210	1,270	1,250	1,130
20	1,530	23,300	3,130	8,040	22,300	6,490	3,600	8,170	2,180	1,170	1,200	1,180
21	2,490	14,000	3,100	7,470	18,900	6,130	3,730	7,040	2,120	1,110	1,130	1,160
22	1,940	9,320	3,200	6,800	15,400	6,360	3,740	5,840	1,910	1,240	1,110	1,630
23	1,520	6,950	3,220	6,330	13,900	7,080	3,740	5,060	1,830	1,210	1,140	1,490
24	1,420	5,590	3,150	6,520	12,300	8,100	3,750	4,510	2,030	1,170	1,200	1,320
25	1,350	4,770	3,500	13,200	11,100	10,300	3,740	4,130	1,890	1,210	1,170	1,260
26	1,300	3,960	5,630	13,500	10,100	12,800	3,810	3,870	1,780	1,210	1,240	1,280
27	1,220	3,640	19,800	21,200	*9,950	18,500	4,240	3,870	1,890	1,100	1,110	1,350
28	1,150	3,380	23,700	53,300	10,600	18,900	4,630	*3,740	1,870	1,020	*1,110	2,320
29	1,180	5,040	15,900	35,300	15,400	4,650	3,560	1,710	1,090	1,110	1,170	1,970
30	1,190	2,950	15,700	25,300	-----	19,300	4,520	3,390	*1,590	1,160	1,150	*1,710
31	1,220	-----	12,400	19,300	-----	*25,300	-----	3,250	-----	*1,110	1,080	-----
Total	38,910	188,510	191,820	624,950	472,310	284,490	219,420	157,120	73,470	40,960	36,160	36,720
Mean	1,255	6,284	6,188	20,160	16,870	9,177	7,514	5,068	2,449	1,321	1,166	1,224
Cfs/m	0.341	1.71	1.68	5.47	4.58	2.49	1.99	1.38	0.665	0.359	0.317	0.332
In.	0.39	1.90	1.94	6.31	4.77	2.87	2.22	1.59	0.74	0.41	0.37	0.37
Ac-ft	77,180	373,900	380,500	*1,240	936,800	564,300	435,200	311,600	145,700	81,240	71,720	72,850
Calendar year 1958: Max	110,000	Min	1,020	Mean	8,232	Cfs/m	2.24	In.	30.33	Ac-ft	5,960,000	
Water year 1958-59: Max	73,600	Min	960	Mean	6,479	Cfs/m	1.76	In.	23.88	Ac-ft	4,691,000	

Peak discharge (base, 52,000 cfs).--Jan. 12 (7 p.m.) 95,200 cfs (26.81 ft); Jan. 28 (9 a.m.) 58,500 cfs (19.57 ft); Feb. 15 (4 a.m.) 66,800 cfs (21.30 ft).

* Discharge measurement made on this day.

† Expressed in thousands.

3220. Elk Creek near Drain, Oreg.

Location.--Lat 43°38'30", long 123°17'50", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.21, T.22 S., R.5 W., on right bank at downstream side of county bridge, 1,000 ft downstream from Yoncalla Creek and 1.7 miles southeast of Drain.

Drainage area.--104 sq mi.

Records available.--October 1955 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 305.96 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 7,080 cfs Feb. 14 (gage height, 16.73 ft); minimum daily, 0.5 cfs Aug. 11-16, 26, 27, Aug. 30 to Sept. 4.
1955-59: Maximum discharge, 9,100 cfs Dec. 26, 1955 (gage height, 19.06 ft); minimum daily, that of Aug. 11-16, 26, 27, Aug. 30 to Sept. 4, 1959.

Remarks.--Records excellent except those for periods of backwater from moss, which are fair. Small diversions by pumping for irrigation above station. Municipal supply for town of Yoncalla is diverted from Wilson Creek above station.

Rating table, water year 1958-59, except periods of backwater from moss (gage height, in feet, and discharge, in cubic feet per second)

0.8	5.0	4.0	564
.9	11	6.0	1,050
1.1	26	10.0	2,600
1.5	78	14.0	5,000
2.0	152		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.5	9	51	212	432	163	554	61	40	14	1.5	0.5
2	1.5	9.5	49	217	338	147	412	64	37	12	1.3	.5
3	1.5	9.5	*46	183	272	132	312	92	36	11	1.1	.5
4	1.5	18	45	162	229	119	248	77	34	9.5	1.0	.5
5	1.8	34	41	219	194	113	202	102	45	9.5	1.0	.6
6	2.2	40	40	219	185	105	170	113	47	9.5	1.0	.7
7	2.6	60	41	202	217	99	147	92	41	9.5	1.0	2.0
8	3.2	72	70	811	221	93	*126	81	36	8	1.0	1.8
9	3.2	113	165	2,380	435	88	116	85	35	7	1.0	1.5
10	3.8	102	158	2,420	1,160	92	105	70	35	5.5	.7	1.6
11	3.8	60	244	1,850	705	79	96	63	33	4.6	.5	1.2
12	3.8	37	370	*3,920	505	79	88	57	29	3.8	.5	1.3
13	3.8	142	255	1,300	416	79	82	53	28	3.8	.5	1.3
14	*3.8	443	188	728	4,330	84	77	67	27	3.8	.5	1.6
15	3.8	347	149	518	2,700	77	74	100	25	3.8	.5	1.7
16	3.6	176	119	440	1,510	71	68	89	24	3.8	.5	1.7
17	3.4	116	105	354	882	71	64	110	23	3.0	*.6	1.8
18	4.6	93	93	290	677	77	63	187	22	3.0	.6	1.9
19	14	1,200	85	257	566	106	60	200	20	3.0	.6	3.6
20	22	762	79	230	476	95	56	*157	19	2.6	.7	6
21	14	398	131	202	434	134	54	122	19	2.4	.7	9
22	10	250	110	157	361	154	53	105	19	2.2	.7	6
23	9	175	103	171	314	170	50	89	18	2.0	.7	4.0
24	8	131	107	316	267	282	46	75	17	2.0	.6	3.6
25	6.5	106	217	368	234	338	46	67	16	2.0	.6	3.4
26	6	88	470	336	*213	739	58	63	16	2.0	.5	4.0
27	5.5	75	815	1,980	215	700	56	63	16	1.8	.5	9.7
28	5	67	587	2,020	182	566	54	57	16	1.7	.6	9.0
29	5	60	427	970	-	526	51	50	16	1.7	.6	6.0
30	5	56	516	712	-----	1,010	54	47	16	1.7	.5	5.0
31	6	-----	244	537	-----	768	-----	44	-----	1.7	.5	-----
Total	169.4	5,249.0	5,920	24,711	18,670	7,357	3,642	2,702	805	151.9	22.6	92.0
Mean	5.46	175	191	797	667	237	121	87.2	26.8	4.90	0.73	3.07
Cfsm	0.052	1.68	1.84	7.66	6.41	2.28	1.16	0.838	0.258	0.047	0.0070	0.030
In.	0.06	1.88	2.12	8.84	6.68	2.63	1.30	0.97	0.29	0.05	0.008	0.03
Ac-ft	336	10,410	11,740	49,010	37,030	14,590	7,220	5,360	1,600	301	45	182

Calendar year 1958: Max 5,120 Min 0.7 Mean 208 Cfsm 2.00 In. 27.17 Ac-ft 150,700
Water year 1958-59: Max 4,330 Min 0.5 Mean 190 Cfsm 1.83 In. 24.86 Ac-ft 137,800

Peak discharge (base, 3,100 cfs).--Jan. 12 (8:30 a.m.) 5,500 cfs (14.71 ft); Jan. 27 (8:30 p.m.) 3,700 cfs (12.00 ft); Feb. 14 (3:30 p.m.) 7,080 cfs (16.73 ft).

* Discharge measurement made on this day.

Note.--Backwater from moss Oct. 1 to Nov. 4, June 27 to Sept. 26.

3232. Tenmile Creek near Lakeside, Oreg.

Location.--Lat 43°34'40", long 124°11'30", near center of sec.13, T.23 S., R.13 W., near left bank on downstream side of highway bridge,.200 ft upstream from Bel Creek, 0.8 mile upstream from Saunders Creek, and 1 mile west of Lakeside. Records include flow of Bel and Saunders Creeks.

Drainage area.--About 87 sq mi at measuring section 1¼ miles downstream.

Records available.--August 1957 to September 1959.

Gage.--Water-stage recorder. Auxiliary staff gage 1.4 miles upstream from base gage, read twice daily. Datum of both gages is at mean sea level.

Extremes.--Maximum discharge during year, 2,750 cfs Jan. 12 (gage height, 15.56 ft at base gage, 18.27 ft at auxiliary gage, from floodmarks); minimum, 7.2 cfs Oct. 14-17, 1957-59: Maximum discharge, that of Jan. 12, 1959; minimum, 5.8 cfs Sept. 23-26, 1957.

Maximum known stage at auxiliary gage, 19.83 ft in January 1953, from floodmarks.

Remarks.--Records good except those for periods of shifting control, which are fair.

Flow regulated by natural storage in Tenmile Lake and other lakes tributary to Bel and Saunders Creeks.

Rating table, water year 1958-59, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

6.4	6.4	8.0	169
6.6	12	9.0	339
6.8	22	11.0	890
7.0	36	13.0	1,630
7.3	67	15.3	2,620
7.6	109		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.7	21	416	665	1,110	518	614	144	88	39	21	8.5
2	9.0	20	392	620	976	478	593	144	84	38	19	8.2
3	9.0	20	372	569	854	440	560	142	81	38	19	8.2
4	9.0	22	349	550	770	410	518	140	77	34	18	8.2
5	8.7	32	329	527	686	*385	480	144	80	35	19	9.5
6	8.5	49	312	524	632	359	445	148	77	35	18	9.3
7	8.2	85	299	530	602	337	410	148	75	34	18	10
8	8.2	138	*297	782	566	321	381	148	73	34	18	10
9	8.0	206	299	1,480	578	308	357	150	74	34	18	9.7
10	7.7	262	301	1,800	656	297	333	148	74	34	17	9.7
11	7.7	281	337	1,990	722	285	315	147	73	33	17	10
12	7.7	285	468	2,620	716	274	297	144	71	32	16	9.3
13	7.4	337	518	*2,580	713	265	*279	140	70	*32	16	9.3
14	7.2	445	509	2,250	1,390	257	265	138	68	32	14	9.7
15	7.2	521	490	1,930	1,850	247	254	136	67	31	13	9.0
16	7.2	524	460	1,690	1,770	239	243	134	65	30	13	9.0
17	7.2	503	428	1,470	1,610	235	230	132	62	29	13	9.0
18	7.7	475	403	1,270	1,480	236	220	130	61	27	13	11
19	10	704	361	*1,120	1,410	241	212	128	60	27	12	13
20	10	1,160	370	990	1,510	246	203	128	57	26	12	14
21	10	1,180	396	887	1,190	263	196	126	57	24	11	15
22	*11	1,060	405	797	1,060	279	185	123	54	24	9.7	16
23	11	930	405	722	941	297	179	119	52	22	9.7	15
24	11	824	403	683	833	312	169	115	51	22	*9.3	15
25	11	728	405	647	755	343	161	*112	50	21	9.3	15
26	11	650	458	614	677	392	153	109	47	22	9.3	18
27	11	581	635	620	620	430	150	106	45	21	9.3	24
28	11	521	755	1,550	560	452	147	102	43	22	9.3	26
29	11	482	770	1,510	-	470	142	101	44	23	9.3	27
30	11	450	749	1,390	-----	530	144	96	42	24	9.0	29
31	15	-----	707	1,250	-----	596	-----	91	-----	21	9.0	-----
Total	288.3	13,496	13,818	36,607	27,037	10,742	8,835	4,013	1,922	900	428.2	394.4
Mean	9.30	450	446	1,181	966	347	294	129	64.1	29.0	13.8	13.1
Ac-ft	572	26,770	27,410	72,610	53,630	21,510	17,520	7,960	3,810	1,790	849	782
Calendar year 1958: Max			2,110		Min 7.2	Mean 357	Ac-ft 258,300					
Water year 1958-59: Max			2,620		Min 7.2	Mean 325	Ac-ft 235,000					

* Discharge measurement made on this day.

Note.--Shifting-control method used Oct. 1-17, July 16 to Sept. 30.

3245. West Fork Millicoma River near Allegany, Oreg.

Location.--Lat 43°28'35", long 124°03'20", in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.19, T.24 S., R.11 W., on left bank at county road bridge, 3 $\frac{1}{2}$ miles north of Allegany.

Drainage area.--46.5 sq mi.

Records available.--September 1954 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 76.95 ft above mean sea level, datum of 1929.

Average discharge.--5 years, 295 cfs (213,600 acre-ft per year).

Extremes.--Maximum discharge during year, 8,650 cfs Jan. 27 (gage height, 13.61 ft), from rating curve extended above 3,300 cfs; minimum, 3.7 cfs Aug. 13-21.

1954-59: Maximum discharge, 13,800 cfs Dec. 30, 1954 (gage height, 15.70 ft), from rating curve extended above 1,100 cfs on basis of slope-area measurement of peak flow; minimum, 2.1 cfs Sept. 19, 20, 1956.

Flood in January or November 1953 reached a stage of about 17.9 ft, from information by local resident.

Remarks.--Records excellent except those for periods of backwater from debris, which are good. Only minor diversions for irrigation above station.

Rating table, water year 1958-59, except period of backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

2.3	1.8	2.9	43	5.0	740
2.4	4.6	3.1	72	6.0	1,300
2.5	9.0	3.5	167	8.0	2,550
2.7	22	4.0	325	11.0	5,400

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	4.2	72	97	314	403	178	582	159	36	16	6.6	5.8	
2	4.0	53	92	274	314	156	455	151	35	16	6.6	5.0	
3	4.0	59	92	231	251	135	356	145	34	15	6.6	4.3	
4	4.0	216	90	204	213	*120	274	120	33	14	6.6	5.8	
5	4.0	455	84	499	181	110	222	231	52	16	6.6	4.0	
6	3.8	726	78	459	192	99	187	318	50	18	6.2	120	
7	3.8	652	101	370	213	90	156	222	40	20	6.2	69	
8	4.2	1,100	151	2,010	235	86	132	164	36	19	6.2	35	
9	4.4	1,130	*222	2,280	406	82	115	143	58	16	5.4	24	
10	4.8	750	247	1,990	755	90	104	138	84	15	5.0	19	
11	5.0	346	788	2,670	578	76	92	118	66	14	4.6	16	
12	4.6	266	760	4,520	411	78	84	99	56	12	4.6	15	
13	4.4	1,390	395	1,240	666	88	*74	86	51	*12	4.0	16	
14	4.2	1,530	267	675	2,400	106	70	84	44	12	3.7	17	
15	4.2	720	198	447	1,420	99	67	86	42	12	3.7	18	
16	4.0	407	159	374	1,160	90	61	76	36	12	3.7	18	
17	4.2	277	132	322	1,020	90	58	94	33	12	3.7	20	
18	8	269	113	290	1,180	125	56	118	31	12	3.7	32	
19	60	3,270	101	*297	1,400	374	53	125	29	11	3.7	94	
20	48	2,020	120	300	900	260	48	104	27	11	3.7	164	
21	24	800	403	260	620	424	47	88	23	10	4.0	110	
22	*18	463	267	222	463	475	43	80	22	9.5	4.0	62	
23	17	318	204	192	395	487	41	69	22	9.0	4.0	43	
24	15	247	189	274	325	635	38	59	22	9.0	*4.3	33	
25	13	195	311	283	267	600	37	*58	22	8.5	4.3	35	
26	12	159	855	318	241	885	44	56	22	8.0	4.3	466	
27	11	132	1,120	4,800	219	635	66	55	19	7.5	4.3	279	
28	11	115	1,920	1,920	198	513	86	51	18	7.0	4.3	130	
29	10	106	523	935	-	527	72	46	18	7.0	4.3	86	
30	10	104	515	735	-----	1,080	119	43	17	6.6	4.3	62	
31	24	-----	395	555	-----	810	-----	41	-----	6.6	5.4	-----	
Total	352.8	18,347	9,799	30,260	17,026	9,599	3,839	3,427	1,078	.373.7	148.6	2,043.9	
Mean	11.4	612	316	976	608	310	128	111	35.9	12.1	4.79	68.1	
Cfsm	0.245	13.2	6.80	21.0	13.1	6.67	2.75	2.39	0.772	0.260	0.103	1.46	
In.	0.28	14.67	7.84	24.20	13.62	7.68	3.07	2.74	0.86	0.30	0.12	1.63	
Ac-ft	700	36,390	19,440	60,020	33,770	19,040	7,610	6,800	2,140	741	295	4,050	
Calendar year 1958: Max			4,290	Min	2.2	Mean	256	Cfsm	5.51	In.	74.73	Ac-ft	185,300
Water year 1958-59: Max			4,800	Min	3.7	Mean	264	Cfsm	5.68	In.	77.01	Ac-ft	191,000

Peak discharge (base, 3,000 cfs).--Nov. 19 (5 p.m.) 4,700 cfs (10.36 ft); Jan. 8 (5:30 p.m.) 4,000 cfs (9.70 ft); Jan. 12 (2:30 a.m.) 8,400 cfs (13.43 ft); Jan. 27 (1:30 p.m.) 8,650 cfs (13.61 ft).

* Discharge measurement made on this day.

Note.--Backwater from debris Oct. 1-31, June 11 to Sept. 6, Sept. 19-21, 26-29.

3246. South Fork Coquille River above Panther Creek, near Illahe, Oreg.

Location.--Lat 42°45'40", long 123°59'00", in SE $\frac{1}{4}$ sec.28, T.32 S., R.11 W., on left bank 0.5 mile upstream from Panther Creek and 10 miles northeast of Illahe.

Drainage area.--29.8 sq mi.

Records available.--October 1956 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 2,117.30 ft above mean sea level (levels by Pacific Power & Light Co.).

Extremes.--Maximum discharge during year, 3,990 cfs Jan. 12 (gage height, 12.47 ft), from rating curve extended above 2,300 cfs as explained below; minimum, 1.4 cfs Sept. 3.
1956-59: Maximum discharge, 4,190 cfs Dec. 11, 1956 (gage height, 12.75 ft), from rating curve extended above 2,300 cfs on basis of slope-area measurement of peak flow; minimum daily, 1.4 cfs Oct. 8, 9, 1956.
Flood of Dec. 21, 1955, reached a stage of about 15.7 ft (discharge, about 6,300 cfs).

Remarks.--Records excellent except those for period of backwater from debris, which are good. No regulation or diversion above station.

Rating tables, water year 1958-59, except period of backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 11

Jan. 12 to Sept. 30

1.5	1.8	4.0	127	1.5	1.5	4.0	127
1.6	2.9	5.0	267	1.6	2.4	5.0	267
1.8	6.8	6.0	480	1.9	7.5	6.0	480
2.1	14	7.0	800	2.3	17	7.0	800
2.5	28	9.0	1,800	2.7	32	9.0	1,800
3.0	50	11.0	3,000	3.3	66	11.0	3,000
3.5	83						

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.1	14	43	211	257	338	408	32	18	8.3	3.0	1.6
2	2.0	12	40	172	208	322	355	38	17	8.1	2.8	1.5
3	2.0	12	36	137	172	*279	257	35	17	8.1	2.7	1.5
4	2.0	38	33	118	148	235	208	32	16	7.7	2.6	1.5
5	2.0	60	31	170	127	202	172	39	17	7.5	2.6	1.6
6	1.9	52	29	183	124	179	145	39	17	7.7	2.4	2.0
7	1.9	106	31	342	113	160	124	38	16	7.5	2.4	2.2
8	2.1	83	32	2,290	102	151	110	38	15	7.1	2.2	2.2
9	2.3	121	30	2,360	100	149	98	38	18	6.7	2.2	1.8
10	2.4	184	28	1,730	93	139	88	35	18	6.6	2.0	1.8
11	2.5	115	*32	1,430	82	123	80	32	16	6.2	2.0	1.6
12	2.3	77	43	2,510	76	118	72	31	15	5.8	2.0	1.5
13	2.2	263	41	790	93	126	67	28	14	5.4	2.0	1.8
14	2.1	372	39	422	1,070	117	58	28	14	5.4	2.0	2.2
15	2.1	212	36	282	598	108	*55	27	14	*5.1	2.0	2.4
16	2.0	134	34	212	709	103	51	25	13	4.9	2.0	2.4
17	2.1	99	32	170	804	115	48	27	12	4.8	2.0	2.4
18	4.8	142	30	139	988	125	44	31	12	4.6	2.0	13
19	26	498	29	130	936	143	42	36	11	4.6	2.0	30
20	20	348	34	113	625	124	39	32	11	4.4	2.0	21
21	*13	217	56	98	430	149	36	30	10	4.1	2.2	16
22	11	150	46	*88	326	168	36	29	9.9	5.9	2.2	12
23	10	112	42	77	291	326	32	26	9.7	5.8	2.0	9.5
24	8.6	90	58	215	255	607	31	24	9.5	3.6	1.8	7.9
25	7.5	75	143	228	227	470	31	24	9.3	3.6	1.6	7.3
26	7.0	63	438	201	217	520	31	24	9.7	3.4	1.6	23
27	6.2	55	667	687	262	428	31	*23	9.9	3.3	1.5	38
28	6.0	49	468	804	298	358	29	22	9.5	3.2	*1.5	21
29	5.3	44	344	490	---	352	26	21	9.3	3.2	1.6	16
30	5.1	40	311	412	---	274	29	20	8.9	3.2	1.6	13
31	10	---	258	320	---	535	---	19	---	3.2	1.6	---
Total	176.5	3,837	3,514	17,532	9,731	7,943	2,793	923	396.7	165.0	64.1	259.7
Mean	5.69	128	113	566	348	256	93.1	29.8	13.2	5.32	2.07	8.66
Cfs/m	0.191	4.30	3.79	19.0	11.7	8.59	3.12	1.00	0.443	0.179	0.069	0.291
In.	0.22	4.79	4.39	21.88	12.14	9.91	3.49	1.15	0.50	0.21	0.08	0.32
Ac-ft	350	7,610	6,970	34,770	19,300	15,750	5,540	1,830	787	327	127	515

Calendar year 1958: Max 2,210 Min 1.7 Mean 156 Cfs/m 5.23 In. 71.01 Ac-ft 112,800

Water year 1958-59: Max 2,510 Min 1.5 Mean 130 Cfs/m 4.36 In. 59.08 Ac-ft 93,880

Peak discharge (base, 1,200 cfs)--Jan. 8 (6 p.m.) 3,420 cfs (11.65 ft); Jan. 12 (2:30 a.m.) 3,990 cfs (12.47 ft); Feb. 14 (10:30 a.m.) 1,640 cfs (8.73 ft).

* Discharge measurement made on this day.

Note.--Backwater from debris Jan. 13 to May 27.

3247. South Fork Coquille River near Illahe, Oreg.

Location.--Lat 42°43'50", long 124°00'40", in NW¹ sec.16, T.33 S., R.11 W., on left bank 1½ miles downstream from Lockhart Creek and 7 miles northeast of Illahe. Records of discharge presented herein are for measuring section site 1.2 miles upstream.

Drainage area.--40.6 sq mi at measuring section 1.2 miles upstream from gage.

Records available.--October 1956 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,871.04 ft above mean sea level (levels by Pacific Power & Light Co.).

Extremes.--Maximum discharge during year, 5,960 cfs Jan. 12 (gage height, 9.78 ft), from rating curve extended above 2,800 cfs on basis of slope-area measurement at gage height 9.54 ft; minimum, 1.7 cfs Sept. 3.

1956-59: Maximum discharge, that of Jan. 12, 1959; minimum, that of Sept. 3, 1959. Flood of Dec. 21, 1955, reached a stage of about 10.8 ft (discharge, about 8,600 cfs).

Remarks.--Records excellent. No regulation or diversion above station.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 11					Jan. 12 to Sept. 30				
1.6	2.0	3.5	150		1.6	1.0	4.0	255	
1.9	9.1	4.0	250		1.7	2.3	4.5	390	
2.1	15	5.0	540		1.8	4.2	5.0	570	
2.2	19	6.0	1,010		2.0	9.8	6.0	1,050	
2.4	29	7.0	1,830		2.2	17	7.0	1,830	
2.6	42	8.0	2,970		2.5	34	8.0	2,870	
3.0	82	9.0	4,360		2.8	57	9.0	4,360	
					3.3	122			

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.8	17	48	242	315	430	518	42	22	10	3.6	1.8
2	3.3	13	43	203	250	405	393	47	21	10	3.8	1.8
3	3.3	13	38	162	208	*345	305	44	20	10	3.6	1.8
4	3.3	38	35	141	183	285	242	42	20	9.8	3.6	1.8
5	3.3	64	33	219	159	238	204	46	20	9.5	3.6	2.2
6	3.1	55	31	235	152	214	176	47	21	9.5	3.6	2.4
7	2.9	115	33	455	140	194	148	44	20	9.5	3.4	2.6
8	2.9	90	36	3,290	124	183	128	45	19	8.9	3.2	2.6
9	3.1	144	32	3,160	124	179	114	47	21	8.6	3.0	2.4
10	3.3	205	32	2,260	113	167	101	43	22	8.3	3.0	2.3
11	3.3	132	*35	2,160	101	149	89	41	20	8.0	2.8	2.3
12	3.3	88	49	3,200	92	140	81	38	18	7.4	2.8	2.2
13	3.1	302	47	978	120	149	74	37	18	7.1	2.8	3.0
14	3.1	440	44	534	1,370	138	68	37	17	7.1	2.6	3.4
15	2.9	240	40	354	825	127	*64	36	16	*7.1	2.6	3.2
16	2.7	156	38	255	940	122	60	33	16	6.8	2.4	3.4
17	2.9	116	35	202	1,020	135	56	36	15	6.8	2.4	3.2
18	6.8	180	33	172	1,250	149	53	38	15	6.5	2.4	18
19	30	790	31	159	1,170	176	52	44	14	6.8	2.4	42
20	22	484	36	140	830	152	47	40	13	6.2	2.4	31
21	*14	272	68	124	554	183	44	38	13	6.0	2.4	23
22	12	189	54	*112	405	200	43	36	12	5.8	2.4	17
23	11	144	49	100	357	407	42	33	12	5.8	2.3	13
24	9.7	115	74	285	308	770	40	32	12	5.2	2.2	11
25	8.6	94	197	280	272	628	39	30	12	4.8	2.0	10
26	8.1	78	606	248	260	723	40	30	12	4.5	1.8	23
27	7.3	63	912	1,020	308	558	40	*29	13	4.0	1.8	44
28	7.1	57	636	1,040	366	480	37	27	12	4.0	*1.8	26
29	6.4	50	431	682	---	489	35	26	12	4.0	1.8	20
30	6.1	44	371	542	---	945	38	24	11	3.8	1.8	17
31	12	---	300	408	---	732	---	23	---	3.8	1.8	---
Total	214.7	4,788	4,447	23,343	12,316	10,192	3,371	1,155	489	215.6	81.9	337.4
Mean	6.93	160	143	753	440	329	112	37.3	16.3	6.95	2.64	11.2
Cfsm	0.171	3.94	3.52	18.5	10.8	8.10	2.76	0.919	0.401	0.171	0.065	0.276
In.	0.20	4.39	4.07	21.38	11.28	9.34	3.09	1.06	0.45	0.20	0.08	0.31
Ac-ft	426	9,500	8,820	46,300	24,430	20,220	6,690	2,290	970	428	162	669

Calendar year 1958: Max 3,330 Min 2.2 Mean 208 Cfsm 5.12 In. 69.48 Ac-ft 150,400
 Water year 1958-59: Max 3,290 Min 1.8 Mean 167 Cfsm 4.11 In. 55.85 Ac-ft 120,900

Peak discharge (base, 1,700 cfs).--Jan. 8 (6 p.m.) 5,100 cfs (9.39 ft); Jan. 12 (12:30 a.m.) 5,960 cfs (9.78 ft); Feb. 14 (10 a.m.) 2,090 cfs (7.26 ft).

* Discharge measurement made on this day.

3249. South Fork Coquille River near Powers, Oreg.

Location--Lat 42°47'05", long 124°02'25", in SW¹SW¹ sec.18, T.32 S., R.11 W., on right bank three-quarters of a mile upstream from Hall Creek and 7 miles southeast of Powers.

Drainage area--93.2 sq mi.

Records available--October 1956 to September 1959.

Gage--Water-stage recorder. Datum of gage is 585.32 ft above mean sea level (levels by Pacific Power & Light Co.).

Extremes--Maximum discharge during year, 13,800 cfs Jan. 11 (gage height, 15.36 ft); minimum, 8.0 cfs Sept. 4.

1956-59: Maximum discharge, that of Jan. 11, 1959; minimum, that of Sept. 4, 1959.

Remarks--Records excellent except those for periods of shifting control, which are good. No regulation or diversion above station.

Rating tables, water year 1958-59, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 11				Jan. 12 to Sept. 30			
2.6	11	4.0	165	2.6	6.9	4.5	350
2.9	24	4.5	325	2.8	18	5.0	560
3.2	45	5.0	560	3.0	33	6.0	1,190
3.5	78			3.3	62	8.0	2,900
				3.6	102	10.0	5,100
				4.0	185	12.0	7,900

Note--Same as following table above 5.0 ft.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	100	178	570	768	804	1,180	140	70	37	17	8.6
2	13	65	185	485	620	*762	917	149	68	35	17	8.6
3	13	63	172	401	530		720	136	67	35	16	8.6
4	13	311	153	349	450	570	595	127	66	34	16	8.0
5	12	445	134	968	402	502	498	149	66	32	15	9.6
6	12	341	121	889	378	462	438	160	66	32	a15	18
7	12	445	126	1,450	362	426	382	142	63	32	a14	17
8	12	383	134	7,270	322	402	334	133	61	32	a14	15
9	13	654	124	6,620	358	386	294	134	70	31	a13	12
10	14	702	119	5,060	394	366	267	124	68	30	a13	11
11	14	406	*139	5,480	354	322	249	116	62	29	12	9.6
12	14	271	196	7,420	310	306	228	107	60	28	12	9.1
13	14	1,100	163	2,390	528	338	210	102	58	27	12	14
14	13	1,340	145	1,340	4,770	306	195	102	55	26	12	23
15	12	756	128	903	2,380	278	*180	99	54	26	12	17
16	12	480	117	684	2,450	267	165	93	52	*26	11	16
17	13	341	110	555	2,760	302	156	104	50	26	11	15
18	31	601	103	466	3,830	346	149	120	49	26	a11	88
19	155	2,900	97	434	3,220	470	140	142	47	25	a11	205
20	*88	1,600	115	390	1,970	378	134	122	45	25	a11	138
21	55	834	321	342	1,290	520	129	113	43	23	11	93
22	44	575	223	*302	980	530	122	106	41	23	11	66
23	44	425	182	278	868	1,000	120	100	40	21	11	52
24	37	333	290	826	752	1,480	115	92	39	21	10	44
25	33	271	684	756	645	1,360	111	86	39	20	9.1	39
26	29	232	1,880	732	615	1,750	116	87	40	20	*9.1	59
27	26	199	2,580	3,960	655	1,250	129	*86	41	19	8.6	104
28	25	172	1,750	2,990	720	1,210	122	83	39	18	8.6	72
29	23	155	1,070	1,680	-	1,270	107	80	39	18	8.6	58
30	22	141	840	1,340	-----	2,540	125	75	39	17	8.6	50
31	91	-----	684	1,010	-----	1,680	-----	73	-----	17	8.6	-----
Total	923	16,641	13,263	58,340	33,661	23,255	8,627	3,484	1,597	812	369.2	1,288.1
Mean	29.8	555	428	1,882	1,202	750	288	112	53.2	26.2	11.9	42.9
Cfsm	0.320	5.95	4.59	20.2	12.9	8.05	3.09	1.20	0.571	0.281	0.128	0.460
In.	0.37	6.64	5.29	23.28	13.43	9.28	3.44	1.39	0.64	0.32	0.15	0.51
Ac-ft	1,830	33,010	26,310	115,700	66,770	46,130	17,110	6,910	3,170	1,610	732	2,550

Calendar year 1958: Max 8,580 Min 12 Mean 569 Cfsm 6.11 In. 82.93 Ac-ft 412,200
 Water year 1958-59: Max 7,420 Min 8.0 Mean 445 Cfsm 4.77 In. 64.74 Ac-ft 321,800

Peak discharge (base, 4,000 cfs).--Jan. 8 (7:30 p.m.) 9,760 cfs (13.15 ft); Jan. 11 (11:30 p.m.) 13,800 cfs (15.36 ft); Jan. 27 (1:30 p.m.) 5,890 cfs (10.61 ft); Feb. 14 (8 a.m.) 7,480 cfs (11.72 ft).

* Discharge measurement made on this day.
 a No gage-height record; discharge estimated on basis of records for stations near Illahe and at Powers.

Note--Shifting-control method used Nov. 27 to Dec. 20, Dec. 23, 24.

3250. South Fork Coquille River at Powers, Oreg.

Location.--Lat 42°53'30", long 124°04'10", in SE $\frac{1}{4}$ sec.12, T.31 S., R.12 W., on left bank 0.5 mile northeast of bridge at Powers and three-quarters of a mile upstream from Woodward Creek.

Drainage area.--169 sq mi.

Records available.--September 1916 to September 1926, October 1928 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 197.42 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Nov. 17, 1938, staff or wire-weight gages at various sites within 1 mile of present site at different datums.

Average discharge.--40 years (1916-26, 1929-59), 772 cfs (558,900 acre-ft per year).

Extremes.--Maximum discharge during year, 21,200 cfs Jan. 12 (gage height, 16.58 ft); minimum, 16 cfs Aug. 18, Aug. 30 to Sept. 4.

1916-26, 1928-59: Maximum discharge, 30,500 cfs Dec. 28, 1945 (gage height, 20.57 ft), from rating curve extended above 14,000 cfs on basis of contracted-opening measurement at gage height 18.14 ft; minimum, 12 cfs Sept. 22-25, 27-30, 1939.

Remarks.--Records good. No regulation. Small diversions for irrigation above station.

Revisions (water years).--WSP 1184: 1946(M). WSP 1448: 1917-18(M), 1919, 1920(M), 1925.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1, 2, Jan. 14-26, Aug. 11 to Sept. 13)

Oct. 1 to Nov. 19				Nov. 20 to Sept. 50			
1.1	20	3.0	535	1.0	14	3.0	595
1.3	36	4.0	1,100	1.2	28	4.0	1,230
1.5	56	5.0	1,850	1.5	59	6.0	3,200
1.8	105	6.0	2,800	1.8	111	10.0	9,000
2.1	185	8.0	5,200	2.2	230	13.0	14,200
2.5	320						

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	167	270	880	1,370	1,170	1,680	226	101	48	28	17
2	21	87	266	780	1,100	*1,120	1,440	254	99	48	28	17
3	21	77	270	644	908	985	1,130	234	95	46	28	16
4	21	337	238	565	760	832	922	216	93	44	26	16
5	20	562	220	1,860	666	727	778	238	97	44	26	17
6	20	409	198	1,640	644	666	678	262	99	44	26	24
7	21	615	202	2,430	644	800	590	223	91	43	25	27
8	22	504	220	13,000	585	560	525	212	86	41	23	25
9	24	824	198	10,600	853	540	475	223	101	40	23	22
10	26	1,050	192	7,820	1,150	515	432	202	101	39	22	21
11	25	610	*212	8,350	908	460	396	182	91	38	21	19
12	26	396	310	12,500	710	440	368	169	84	37	20	19
13	26	1,510	274	4,220	1,080	475	342	155	81	36	21	22
14	26	2,080	242	2,370	8,380	445	310	152	79	34	21	36
15	26	1,280	220	1,670	5,420	414	*290	152	77	34	21	35
16	26	788	195	1,230	4,500	391	270	143	74	*35	20	32
17	26	548	179	985	4,990	427	258	155	71	34	20	30
18	37	625	166	784	7,640	465	246	179	68	33	18	78
19	235	3,920	160	716	5,630	644	230	223	66	32	18	290
20	138	2,540	176	634	3,440	525	220	189	64	32	19	198
21	*77	1,360	525	560	2,270	778	209	173	60	30	19	130
22	61	908	382	*510	1,650	808	198	157	58	30	19	86
23	60	678	310	460	1,450	1,620	189	149	57	30	19	66
24	54	540	407	1,560	1,220	2,450	179	138	57	30	18	55
25	48	450	1,220	1,350	1,060	2,110	173	128	55	30	18	49
26	44	391	3,100	1,190	985	2,810	182	128	57	30	17	62
27	41	337	4,500	5,900	1,030	2,080	198	*128	57	28	17	133
28	41	290	3,070	4,960	1,080	1,940	189	123	54	28	*18	97
29	39	258	1,850	2,820	-	2,090	169	113	52	29	18	76
30	37	234	1,390	2,320	-	3,900	189	109	51	30	18	64
31	69	---	1,070	1,770	---	2,810	---	105	---	30	17	---
Total	1,379	24,375	22,252	96,858	62,123	35,567	13,655	5,440	2,278	1,107	652	1,779
Mean	44.5	812	718	3,124	2,219	1,147	455	175	75.9	35.7	21.0	59.3
Cfsm	0.263	4.80	4.25	18.5	13.1	6.79	2.69	1.04	0.449	0.211	0.124	0.351
In.	0.30	5.36	4.90	21.31	13.67	7.83	3.00	1.20	0.50	0.24	0.14	0.39
Ac-ft	2,740	48,350	44,140	192,100	123,200	70,550	27,080	10,790	4,520	2,200	1,290	3,530

Calendar year 1958: Max 13,800 Min 20 Mean 887 Cfsm 5.25 In. 71.25 Ac-ft 642,200
Water year 1958-59: Max 13,000 Min 16 Mean 733 Cfsm 4.34 In. 58.84 Ac-ft 530,500

Peak discharge (base, 9,300 cfs, revised).--Jan. 8 (1:30 p.m.) 17,300 cfs (14.66 ft); Jan. 12 (12:30 a.m.) 21,200 cfs (16.58 ft); Feb. 14 (9:30 a.m.) 15,100 cfs (13.51 ft).

* Discharge measurement made on this day.

3280. Rogue River above Prospect, Oreg.

Location.--Lat 42°47', long 122°30', in NE¹/₄ sec.19, T.32 S., R.3 E., on left bank 1½ miles upstream from intake of diversion of The California Oregon Power Co., 2 miles northwest of Prospect, and 3 miles upstream from Mill Creek.

Drainage area.--332 sq mi.

Records available.--January 1908 to February 1912, October 1923 to September 1959.

Monthly discharge only for some periods, published in WSP 1318. Prior to October 1925, published as "near Prospect."

Gage.--Water-stage recorder. Altitude of gage is 2,620 ft (from river-profile map). Prior to Feb. 17, 1912, staff gage at several sites within a few hundred feet upstream at various datums.

Average discharge.--39 years (1908-11, 1923-59), 802 cfs (580,600 acre-ft per year).

Extremes.--Maximum discharge during year, 3,400 cfs Jan. 12 (gage height, 4.43 ft); minimum, 400 cfs Sept. 13.

1908-12, 1923-59: Maximum discharge, 16,600 cfs Dec. 22, 1955 (gage height, 10.01 ft), from rating curve extended above 6,400 cfs on basis of slope-area measurement of peak flow; minimum observed, 200 cfs Nov. 20, 1931 (gage height, 1.07 ft).

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Cooperation.--Water-stage-recorder graph furnished by The California Oregon Power Co.

Revisions (water years).--WSP 709: Drainage area. WSP 1248: 1925, 1927(M).

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.5	380	3.0	1,460
2.0	660	4.5	3,480
2.5	1,000		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	510	498	624	850	1,120	878	1,660	1,220	808	558	445	a415
2	510	510	630	794	1,050	*952	1,780	1,120	822	546	445	a415
3	510	528	642	726	1,000	944	1,750	1,030	822	540	440	415
4	504	*726	618	714	952	920	1,720	1,000	806	534	440	410
5	510	822	600	738	913	899	1,720	1,020	829	534	435	430
6	504	744	594	696	885	885	1,660	1,050	968	528	440	450
7	504	1,030	743	672	864	871	1,450	1,060	822	528	440	435
8	510	871	794	702	829	857	1,310	1,100	787	522	440	430
9	510	829	794	865	822	843	1,260	1,120	*801	528	440	420
10	510	878	750	1,610	801	822	1,240	1,060	768	522	440	*410
11	504	726	813	1,670	a785	794	1,240	1,050	744	522	440	410
12	504	678	1,010	2,740	750	808	1,220	1,060	732	516	440	410
13	504	1,330	836	2,060	750	822	1,170	1,180	732	510	435	410
14	498	1,210	762	1,550	762	787	1,110	1,260	714	504	440	410
15	498	843	720	1,270	762	774	1,060	1,170	690	498	440	420
16	492	726	702	1,170	794	780	1,020	1,050	696	486	440	415
17	492	684	666	1,120	836	829	992	1,060	672	486	435	410
18	516	714	*636	1,050	850	864	952	1,040	666	486	435	465
19	714	1,440	624	1,000	864	871	920	1,000	660	480	440	534
20	606	1,350	612	936	857	829	928	952	654	475	465	528
21	546	1,050	642	892	829	878	960	920	642	475	470	480
22	528	920	606	864	822	892	1,020	913	630	470	a445	445
23	522	829	582	836	794	899	1,060	920	612	470	a435	435
24	522	774	588	1,140	768	906	*1,100	913	600	465	a430	430
25	516	738	618	1,220	756	936	1,200	920	594	460	a425	435
26	516	702	720	1,230	762	1,170	1,260	899	594	455	a425	645
27	516	666	920	2,380	794	1,050	1,220	864	588	455	a425	564
28	504	642	768	a2,200	836	1,050	1,160	829	576	455	a425	465
29	498	624	750	*1,660	-	1,070	1,100	815	570	450	a425	440
30	498	618	829	1,380	-----	1,190	1,160	794	564	*450	a420	440
31	498	-----	864	1,220	-----	1,300	-----	794	-----	450	a420	-----
Total	16,074	24,700	22,057	37,955	23,607	28,370	37,402	31,183	21,165	15,358	13,560	13,421
Mean	519	823	712	1,224	843	915	1,247	1,006	706	495	437	447
Cfs/m	1.56	2.48	2.14	3.69	2.54	2.76	3.76	3.03	2.13	1.49	1.32	1.35
In.	1.80	2.77	2.47	4.25	2.64	3.18	4.19	3.49	2.37	1.72	1.52	1.50
Ac-ft	31,880	48,990	43,750	75,280	46,820	56,270	74,190	61,850	41,980	30,460	26,900	26,620

Peak discharge (base, 2,700 cfs).--Jan. 12 (12 m.) 3,400 cfs (4.43 ft); Jan. 27 (8 p.m.) 2,970 cfs (4.16 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for station below South Fork Rogue River, near Prospect.

3320. South Fork Rogue River near Prospect, Oreg.

Location (revised).--Lat 42°42'25", long 122°23'20", in NE $\frac{1}{4}$ sec.18, T.33 S., R.4 E., on right bank 500 ft downstream from diversion dam and intake of South Fork power canal, 0.1 mile downstream from Imnaha Creek, and 6 miles southeast of Prospect.

Drainage area.--79 sq mi, approximately.

Records available.--April 1924 to September 1931, October 1949 to September 1959. Equivalent records for period October 1931 to September 1949 may be obtained from combined flow of South Fork Rogue River above Imnaha Creek, near Prospect and Imnaha Creek near Prospect.

Gage.--Water-stage recorder. Altitude of gage is 3,330 ft (from topographic map). Apr. 1, 1924, to Sept. 30, 1931, at site an eighth of a mile downstream at different datum.

Average discharge.--17 years, 181 cfs (181,000 acre-ft per year).

Extremes.--Maximum discharge during year, 806 cfs Nov. 13; minimum daily, 66 cfs Sept. 8, 11.

1924-31, 1949-59: Maximum discharge, 3,180 cfs Dec. 22, 1955 (no flow in canal), from rating curve extended above 410 cfs on basis of computation of peak flow over dam; minimum daily, about 35 cfs in September 1931, during period of no gage-height record.

Remarks.--Records fair. All records presented herein include flow in South Fork power canal (completed in March 1932) which diverts 500 ft above station and returns water to Rogue River above South Fork Rogue River; practically no storage above diversion dam.

Cooperation.--Electrical-output record for power canal furnished by The California Oregon Power Co.

Revisions (water years).--WSP 1318: 1925(M), 1927(M), 1930(M).

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	95	89	115	129	186	140	267	251	165	108	80	70
2	97	91	120	126	175	*142	231	208	161	108	80	72
3	94	98	123	121	170	144	287	200	158	106	77	70
4	95	*115	119	122	167	144	286	196	157	104	80	69
5	95	130	114	125	162	140	290	205	160	103	77	71
6	95	128	110	122	159	142	282	215	180	103	78	71
7	94	190	161	119	158	142	258	209	162	104	78	69
8	94	153	208	124	152	140	245	214	*156	99	76	66
9	96	177	218	134	151	138	238	229	153	97	77	67
10	95	192	182	146	153	140	233	211	150	97	75	*67
11	94	148	232	152	146	136	230	203	144	99	75	66
12	94	128	263	191	141	138	217	208	142	96	75	67
13	94	467	197	175	144	142	214	223	139	96	76	67
14	92	350	171	162	141	137	207	247	136	94	75	68
15	92	219	156	153	145	133	201	231	132	95	75	72
16	91	169	148	150	151	136	194	212	132	92	76	72
17	90	151	138	147	152	141	191	220	131	93	75	70
18	92	157	*135	144	146	146	182	218	126	90	74	72
19	119	218	129	145	145	144	181	208	124	89	73	79
20	99	209	125	139	142	141	175	205	126	89	87	79
21	96	175	130	136	143	150	176	198	118	88	82	74
22	94	160	121	136	142	152	180	196	115	88	77	69
23	94	156	121	132	136	150	186	197	118	88	80	68
24	93	148	120	163	136	152	*194	193	118	87	75	70
25	92	143	126	166	132	156	202	196	115	85	75	69
26	92	138	126	165	132	164	220	217	125	85	75	85
27	92	128	142	*267	136	160	218	199	123	81	72	80
28	90	123	125	273	138	167	208	186	115	82	73	73
29	90	119	125	226	-	172	202	180	112	82	72	72
30	90	116	136	210	-----	223	210	174	112	*81	72	72
31	89	-----	130	197	-----	221	-----	169	-----	80	73	-----
Total	2,919	4,985	4,566	4,897	4,181	4,673	6,665	6,398	4,105	2,889	2,365	2,136
Mean	94.2	166	147	158	149	151	222	206	137	95.2	76.3	71.2
Cfsm	1.19	2.10	1.66	2.00	1.89	1.91	2.61	2.61	1.73	1.18	0.966	0.901
In.	1.37	2.35	2.15	2.31	1.97	2.20	3.14	3.01	1.93	1.36	1.11	1.01
Ac-ft	5,790	9,890	9,060	9,710	8,290	9,270	13,220	12,690	8,140	5,730	4,690	4,240

Calendar year 1958: Max 859 Min 89 Mean 213 Cfsm 2.70 In. 36.56 Ac-ft 154,000
 Water year 1958-59: Max 467 Min 66 Mean 139 Cfsm 1.76 In. 23.91 Ac-ft 100,700

* Discharge measurement made on this day.

3335. Red Blanket Creek near Prospect, Oreg.

Location (revised).--Lat 42°46'40", long 122°25'35", in NW¼NE¼ sec.23, T.32 S., R.3 E., on right bank 1.8 miles downstream from Lick Creek and 3.7 miles northeast of Prospect.

Drainage area.--40 sq mi, approximately.

Records available.--May 1925 to September 1959.

Gage.--Water-stage recorder. Altitude of gage is 2,780 ft (from river-profile map). Prior to Sept. 7, 1949, staff gage at several sites within 2½ miles of present site at various datums.

Average discharge.--34 years, 115 cfs (83,260 acre-ft per year).

Extremes.--Maximum discharge during year, 370 cfs Nov. 13 (gage height, 3.65 ft); minimum, 59 cfs Aug. 14.

1925-59: Maximum discharge, 1,840 cfs Dec. 22, 1955 (gage height, 7.30 ft), from rating curve extended above 360 cfs on basis of slope-area measurement of peak flow; minimum observed, 34 cfs Sept. 3, 4, 25, Oct. 9, 16, 1931.

Remarks.--Records good except those for period of no gage-height record, which are fair. One diversion above station for irrigation below.

Revisions (water years).--WSP 1318: 1926-28, 1930. WSP 1348: 1943(M), 1946(M), 1948(M), 1953.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 19, July 19 to Aug. 4, Sept. 27-30)

2.4	53
2.7	83
3.0	127
3.6	310

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	95	86	102	121	145	106	174	145	123	87	61	65
2	95	90	100	119	138	*111	180	136	123	86	61	65
3	94	91	100	113	134	113	174	132	123	85	61	65
4	94	*107	99	109	132	109	174	123	123	83	60	65
5	93	111	99	109	125	107	174	129	136	83	61	67
6	93	122	99	107	123	107	162	127	150	83	61	67
7	93	134	141	106	119	106	145	127	129	82	61	65
8	93	132	127	107	115	104	138	134	*125	81	61	64
9	93	132	132	117	115	103	136	134	123	79	61	64
10	93	132	123	138	113	102	134	129	117	79	61	*64
11	93	109	183	150	109	100	134	127	113	79	62	63
12	92	104	183	208	106	102	129	136	111	76	61	63
13	92	289	145	171	104	102	127	148	111	76	61	63
14	91	204	132	148	106	99	125	159	107	75	62	65
15	90	145	125	136	107	99	119	143	104	75	63	69
16	90	125	119	132	111	99	117	136	104	74	65	65
17	90	117	113	125	109	100	115	141	103	72	64	64
18	92	129	*111	123	111	103	111	138	100	69	65	72
19	104	277	109	117	111	103	109	138	98	66	66	76
20	93	210	109	111	109	a105	109	132	97	66	72	79
21	91	165	115	107	106	a105	113	129	95	66	69	68
22	91	143	107	107	106	a108	117	129	94	65	66	66
23	90	129	107	107	104	a110	121	129	93	65	66	64
24	90	121	107	134	103	a110	*130	129	92	65	65	64
25	88	117	111	134	102	a115	143	136	93	65	64	64
26	88	113	127	136	100	132	148	134	93	64	64	104
27	88	107	132	250	102	123	136	125	91	63	65	74
28	87	104	119	237	103	125	134	119	90	63	65	68
29	86	103	117	*182	-	127	134	119	88	62	65	66
30	86	102	123	162	-	148	141	117	87	*62	65	64
31	86	-	123	159	-	145	-	119	-	61	65	-
Total	2,834	4,050	3,739	4,298	3,168	3,428	4,103	4,099	3,236	2,257	1,969	2,032
Mean	91.4	135	121	139	113	111	137	132	108	72.8	63.5	67.7
Ac-ft	5,620	8,030	7,420	8,520	6,280	6,800	8,140	8,130	6,420	4,480	3,910	4,030
Calendar year 1958: Max 600 Min 79 Mean 156 Ac-ft 112,600												
Water year 1958-59: Max 289 Min 60 Mean 107 Ac-ft 77,780												

Peak discharge (base, 300 cfs).--Nov. 13 (3 p.m.) 370 cfs (3.65 ft); Nov. 19 (4 p.m.) 350 cfs (3.62 ft); Dec. 11 (8 p.m.) 318 cfs (3.54 ft); Jan. 27 (6 p.m.) 318 cfs (3.55 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for Rogue River above Prospect.

3350. Rogue River below South Fork Rogue River, near Prospect, Oreg.

Location.--Lat 42°42'00", long 122°35'40", in NW¼ sec.16, T.33 S., R.2 E., on left bank at downstream side of county road bridge and 6 miles southwest of Prospect.

Drainage area.--643 sq mi.

Records available.--October 1928 to September 1959. Prior to May 1929 monthly discharge only, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 1,707.26 ft above mean sea level (Bureau of Reclamation bench mark). Prior to Aug. 31, 1957, at datum 1.00 ft higher.

Average discharge.--31 years, 1,784 cfs (1,292,000 acre-ft per year).

Extremes.--Maximum discharge during year, 5,240 cfs Jan. 27 (gage height, 5.15 ft); minimum, 737 cfs Sept. 5; minimum daily, 919 cfs Sept. 8.
1928-59: Maximum discharge, 34,000 cfs Dec. 22, 1955 (gage height, 18.3 ft, present datum), from rating curve extended above 12,000 cfs on basis of slope-area measurement of peak flow; minimum since intake was lowered Aug. 18, 1934, 493 cfs Sept. 1, 1934 (prior to Aug. 18, 1934, minimum not determined).

Remarks.--Records good except those for period of no gage-height record, which are fair. Considerable diurnal fluctuation caused by powerplant 4 miles above station. Small diversion for irrigation above station.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.4	870
2.0	1,310
3.0	2,330
5.0	5,000

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,160	1,140	1,390	1,770	2,370	1,900	3,090	2,350	1,720	1,260	989	947
2	1,180	1,140	1,380	1,730	2,220	1,970	3,240	2,200	1,760	1,250	996	933
3	1,170	*1,210	1,380	1,620	2,100	1,960	3,220	2,060	1,770	1,230	1,020	940
4	1,160	1,390	a1,340	1,560	2,020	*1,920	3,140	1,970	1,750	1,230	996	954
5	1,170	1,560	a1,300	1,630	1,940	1,880	3,130	2,090	1,830	1,210	1,010	947
6	1,150	1,430	a1,260	1,590	1,890	1,850	3,030	2,130	2,070	1,200	1,000	982
7	1,170	1,950	a1,600	1,540	1,850	1,810	2,710	2,130	1,770	1,200	996	961
8	1,180	1,680	a1,750	1,560	1,770	1,790	2,520	2,170	1,670	1,190	996	919
9	1,170	1,670	a1,750	1,770	1,780	1,760	2,430	2,260	*1,660	1,150	996	*947
10	1,170	1,790	a1,700	2,740	1,750	1,720	2,380	2,110	1,620	1,150	989	968
11	1,180	1,490	a1,800	2,820	1,690	1,670	2,390	2,090	1,560	1,140	982	940
12	1,170	1,380	a2,400	4,140	1,620	1,700	2,330	2,130	1,550	1,120	989	933
13	1,150	2,980	a2,000	3,310	1,610	1,740	2,260	2,340	1,540	1,140	982	947
14	1,160	2,670	a1,800	2,670	1,660	1,660	2,170	2,530	1,510	1,130	989	940
15	1,160	1,890	a1,700	2,350	1,750	1,630	2,100	2,340	1,480	1,120	982	954
16	1,140	1,620	a1,600	2,190	1,910	1,620	2,020	2,100	1,480	1,110	975	954
17	1,150	1,510	*1,520	2,090	1,990	1,690	1,960	2,140	1,450	1,080	982	933
18	1,190	1,590	1,500	1,990	2,060	1,750	1,890	2,130	1,430	1,070	982	1,010
19	1,420	2,890	1,490	1,940	2,080	1,790	1,850	2,070	1,400	1,070	989	1,070
20	1,300	2,620	1,480	1,840	2,040	1,730	1,640	2,000	1,360	1,060	1,040	1,120
21	1,210	2,130	1,500	1,780	1,950	1,820	1,890	1,960	1,380	1,060	1,060	1,020
22	1,210	1,880	1,460	1,720	1,910	1,840	1,960	1,950	1,340	1,070	1,000	968
23	1,170	1,750	1,410	1,700	1,860	1,850	2,000	1,940	1,340	1,040	996	954
24	1,170	1,640	1,440	2,130	1,780	1,880	2,100	1,910	1,330	1,060	982	947
25	1,170	1,580	1,510	2,370	1,750	1,900	2,190	1,960	1,320	1,040	975	947
26	1,150	1,530	1,610	2,340	1,740	2,250	2,430	1,980	1,340	1,020	975	1,140
27	1,150	1,480	2,110	3,870	1,770	2,060	*2,310	1,870	1,320	1,030	975	1,170
28	1,170	1,450	1,790	4,250	1,800	2,020	2,210	1,790	1,290	1,020	975	1,000
29	1,140	1,390	1,690	*3,240	-	2,090	2,130	1,750	1,280	1,030	954	968
30	1,120	1,370	1,800	2,820	-----	2,510	2,230	1,720	1,280	*1,030	954	961
31	1,150	-----	1,810	2,530	-----	2,590	-----	1,720	-----	1,010	954	-----
Total	36,510	51,800	50,270	71,600	52,660	58,350	71,150	63,880	45,620	34,520	30,680	29,374
Mean	1,178	1,727	1,622	2,310	1,881	1,882	2,372	2,061	1,521	1,114	990	979
Cfsm	1.83	2.69	2.52	3.59	2.93	2.93	3.69	3.21	2.37	1.73	1.54	1.52
In.-ft.	2.11	3.00	2.91	4.14	3.05	3.37	4.12	3.69	2.64	2.00	1.77	1.70
Ac-ft.	72,420	102,700	99,710	142,000	104,400	115,700	141,100	126,700	90,490	68,470	60,850	58,260

Calendar year 1958: Max 9,600 Min 1,120 Mean 2,327 Cfsm 3.62 In. 49.11 Ac-ft 1,684,000
Water year 1958-59: Max 4,250 Min 919 Mean 1,634 Cfsm 2.54 In. 34.50 Ac-ft 1,183,000

Peak discharge (base, 5,300 cfs).--No peak above base.

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for station above Prospect.

3355. South Fork Big Butte Creek near Butte Falls, Oreg.

Location.--Lat 42°32'25", long 122°33'15", in SW¹ sec. 11, T.35 S., R.2 E., on right bank just downstream from Ginger Creek, 1 mile east of Butte Falls.

Drainage area.--135 sq mi.

Records available.--September 1910 to October 1911 (published as "at Butte Falls"), August to October 1915, October 1917 to September 1922, March 1925 to September 1959. Monthly discharge only August, September 1915, published in WSP 1318.

Gage.--Water-stage recorder. Altitude of gage is 2,360 ft (from river-profile map). Sept. 21, 1910, to Sept. 30, 1922, staff gage at site 300 ft upstream at different datums.

Average discharge.--40 years (1910-11, 1917-22, 1925-59), 164 cfs (118,700 acre-ft per year).

Extremes.--Maximum discharge during year, 300 cfs Mar. 30 (gage height, 1.29 ft); minimum, 76 cfs July 24, 27.
1910-11, 1915, 1917-22, 1925-59: Maximum discharge, 2,770 cfs Dec. 22, 1955 (gage height, 4.50 ft), from rating curve extended above 1,600 cfs by logarithmic plotting; minimum, 39 cfs Oct. 14, 1931 (gage height, 0.32 ft).

Remarks.--Records good. No regulation. Diversions for irrigation of 1,000 acres above station and for municipal water supply for Medford (since 1927) and Butte Falls.

Revisions (water years).--WSP 1288: 1911, 1918-19, 1921-22, 1929. WSP 1318: 1918-19.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

0.5	72
.7	115
1.0	195
1.5	400

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	99	92	110	140	178	156	260	148	115	86	84	82
2	101	94	110	135	167	156	242	156	113	86	82	82
3	101	97	108	130	162	156	228	156	110	86	82	82
4	101	104	108	128	*156	154	216	145	110	86	84	82
5	99	106	*106	130	156	151	207	156	110	86	84	82
6	99	104	104	122	156	*145	198	164	115	86	86	82
7	101	115	132	122	154	145	187	159	108	86	86	82
8	104	104	145	120	148	143	178	164	106	86	84	82
9	104	113	143	118	148	140	173	*170	106	84	82	80
10	104	120	132	122	148	138	170	162	101	86	*82	80
11	104	99	135	125	143	135	164	156	97	86	82	80
12	101	94	148	143	135	132	159	151	94	82	82	80
13	101	170	140	140	138	132	154	148	94	80	84	80
14	99	173	135	135	151	132	151	154	92	82	84	82
15	97	156	132	132	184	130	145	162	92	82	84	86
16	*97	132	130	130	187	125	140	154	90	82	82	84
17	97	113	125	128	189	125	138	151	88	82	82	84
18	99	101	122	128	189	128	135	154	86	82	82	88
19	110	*118	120	128	184	130	132	156	86	82	84	88
20	101	122	118	*128	178	125	130	151	84	82	92	90
21	99	120	120	130	181	132	125	148	84	82	90	*88
22	99	118	115	132	178	130	125	148	84	80	86	86
23	99	113	115	132	173	135	*120	145	86	80	86	84
24	97	110	122	162	164	140	118	140	84	80	86	84
25	97	110	140	164	162	143	120	140	84	82	82	84
26	97	110	143	167	162	164	148	145	86	78	82	88
27	97	110	175	198	164	167	140	138	84	78	82	88
28	94	119	164	222	159	170	135	130	82	80	82	86
29	94	110	154	210	187	128	*125	*82	82	82	82	84
30	92	110	148	201	-----	264	130	122	86	84	82	84
31	92	-----	143	187	-----	269	-----	120	-----	82	82	-----
Total	3,076	3,448	4,042	4,489	4,594	4,679	4,796	4,618	2,839	2,568	2,596	2,514
Mean	99.2	115	130	145	164	151	160	149	94.6	82.8	83.7	83.8
Ac-ft	6,100	6,840	8,020	8,900	9,110	9,280	9,510	9,160	5,630	5,090	5,150	4,990
Calendar year 1958: Max	1,270			Min	90	Mean	185	Ac-ft	133,700			
Water year 1958-59: Max	269			Min	78	Mean	121	Ac-ft	87,780			

Peak discharge (base, 450 cfs).--No peak above base.

* Discharge measurement made on this day.

3380. Elk Creek near Trail, Oreg.

Location.--Lat 42°39'50", long 122°44'50", in NE1/4 sec.31, T.33 S., R.1 E., on right bank 0.4 mile upstream from mouth and 3.3 miles northeast of Trail.

Drainage area.--133 sq mi.

Records available.--October 1945 to September 1959. Prior to March 1946 monthly discharge only, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 1,456.56 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to July 5, 1946, staff gage at various sites within 1 mile of present site at different datums. July 5, 1946, to June 22, 1950, staff gage and June 23, 1950, to May 23, 1954, water-stage recorder, at site 0.3 mile upstream at datum 12.14 ft higher.

Average discharge.--14 years, 248 cfs (179,500 acre-ft per year).

Extremes.--Maximum discharge during year, 2,190 cfs Jan. 27 (gage height, 6.83 ft); minimum, 2.1 cfs Sept. 9.

1945-59: Maximum discharge, 13,700 cfs Dec. 22, 1955 (gage height, 14.34 ft), from rating curve extended above 3,000 cfs on basis of slope-area measurement of peak flow; minimum observed, 0.9 cfs Aug. 29, 1946.

Remarks.--Records good. No regulation. Six diversions above station for irrigation of about 250 acres of which about 100 acres is below station.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

2.3	1.8	2.9	33	5.0	765
2.4	4.0	3.2	66	6.0	1,400
2.5	7.2	3.5	118	6.5	1,850
2.7	18	4.0	260		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.7	15	31	229	408	634	891	102	52	16	4.3	3.5
2	8.2	15	31	186	344	562	723	122	50	13	4.3	3.3
3	8.2	21	30	148	283	445	562	138	45	14	3.7	3.1
4	8.2	29	28	122	246	*358	455	120	44	13	4.6	3.1
5	8.2	*49	26	127	217	302	385	201	48	14	4.3	4.0
6	9.1	43	25	158	198	271	327	279	58	15	4.9	3.3
7	7.7	91	33	148	186	250	271	226	48	14	4.6	3.3
8	7.7	68	66	186	169	226	189	43	14	4.0	3.5	
9	7.7	70	54	349	166	207	204	172	*41	12	3.7	*2.7
10	7.7	90	52	933	158	189	189	150	40	12	4.0	2.7
11	9.1	68	51	765	143	172	175	133	39	11	4.3	3.5
12	7.7	48	88	1,390	136	158	163	116	37	9.1	4.3	3.1
13	7.7	146	84	771	133	163	150	104	37	8.2	4.0	3.5
14	7.7	246	70	455	300	156	140	136	34	7.7	3.5	3.5
15	8.2	148	60	311	475	140	131	195	32	7.7	3.1	3.5
16	8.6	93	51	236	973	127	118	161	31	7.2	2.9	4.3
17	10	68	*45	192	1,120	143	110	145	30	6.9	3.3	4.6
18	12	68	42	161	1,180	161	102	150	29	6.6	3.5	5.9
19	22	268	39	145	1,120	169	95	210	26	7.2	3.7	13
20	29	243	38	127	855	150	86	198	24	6.9	4.9	18
21	22	153	40	114	645	158	83	192	23	6.6	5.9	16
22	19	110	38	104	562	166	80	140	22	6.2	6.6	13
23	18	83	36	100	530	192	81	122	20	6.2	7.2	10
24	16	68	38	336	460	287	74	104	20	4.9	7.7	7.2
25	15	57	102	557	385	306	75	95	20	6.9	5.2	6.2
26	15	51	257	524	380	618	120	88	22	6.9	5.2	9.6
27	15	43	735	1,470	480	574	*102	80	20	5.9	4.0	3.1
28	15	39	435	1,390	546	450	95	72	18	5.6	3.5	16
29	15	37	290	843	-	465	86	68	18	5.9	3.7	12
30	15	34	349	*606	-----	1,060	93	60	18	5.2	3.7	10
31	15	-----	298	486	-----	958	-----	54	-----	*3.7	4.0	-----
Total	382.4	2,562	3,562	13,669	12,803	10,217	6,399	4,322	990	279.5	136.6	226.4
Mean	12.3	85.4	115	441	457	330	213	139	33.0	9.02	4.41	7.55
Ac-ft	758	5,080	7,070	27,110	25,390	20,270	12,690	8,570	1,960	554	271	449

Calendar year 1958: Max 5,640 Min 7.0 Mean 261 Ac-ft 188,800

Water year 1958-59: Max 1,470 Min 2.7 Mean 152 Ac-ft 110,200

Peak discharge (base, 2,700 cfs).--No peak above base.

* Discharge measurement made on this day.

3390. Rogue River at Dodge Bridge, near Eagle Point, Oreg.

Location.--Lat 42°31'30", long 122°50'30", in SE¼ sec.17, T.35 S., R.1 W., on right bank just upstream from Dodge Bridge, 0.6 mile downstream from Reese Creek, 4½ miles northwest of Eagle Point, and at mile 134.9 (river-profile survey).

Drainage area.--1,210 sq mi, approximately.

Records available.--October 1938 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,273.66 ft above mean sea level, datum of 1929. Prior to Dec. 21, 1938, staff gage at same site and datum.

Average discharge.--21 years, 2,682 cfs (1,942,000 acre-ft per year).

Extremes.--Maximum discharge during year, 9,760 cfs Jan. 28 (gage height, 4.80 ft); minimum, 940 cfs Sept. 5; minimum daily, 1,060 cfs Sept. 2.
1938-59: Maximum discharge, 75,000 cfs Dec. 22, 1955 (gage height, 12.90 ft), from rating curve extended above 16,000 cfs on basis of peak flow at stations upstream and downstream; minimum, 611 cfs Aug. 6, 14, 29, Sept. 9, 1940 (gage height, 0.99 ft); minimum daily, 830 cfs Sept. 1, 1940.

Remarks.--Records good. Some diurnal fluctuation caused by powerplant 30 miles upstream. Diversion for irrigation above station; most of flow of Big Butte Creek is diverted near Butte Falls.

Revisions (water years).--WSP 1094: 1942(M), 1943, 1945(M), 1946.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.0	1,060
2.0	2,560
3.0	4,700
5.0	10,400

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,360	1,420	1,610	2,380	3,540	3,290	5,020	2,830	1,990	1,400	1,140	1,090
2	1,310	1,430	1,640	2,300	3,180	3,290	4,890	2,770	2,000	1,380	1,120	1,060
3	1,320	*1,470	1,630	2,150	2,930	*3,080	4,610	2,710	2,020	1,380	1,150	*1,090
4	1,320	1,630	1,610	1,950	2,750	2,870	4,380	2,490	1,950	1,350	1,140	1,110
5	1,330	1,920	1,590	2,070	2,580	2,660	4,200	2,690	*1,990	1,360	1,150	1,110
6	1,320	1,760	1,560	2,070	2,490	2,580	4,060	2,930	2,310	1,330	1,120	1,180
7	1,330	2,310	1,660	1,970	2,420	2,490	3,650	2,770	2,080	1,330	1,140	1,150
8	1,330	1,990	2,310	2,020	2,310	2,380	3,330	2,690	1,940	1,310	1,110	1,110
9	1,330	2,080	2,180	2,430	2,300	2,330	3,160	2,810	1,910	1,310	1,110	1,100
10	*1,330	2,260	2,050	4,540	2,300	2,260	3,030	2,640	1,910	1,280	1,110	1,140
11	1,360	1,890	2,020	4,380	2,230	2,160	2,990	2,510	1,830	1,290	1,110	1,100
12	1,330	1,730	2,870	7,320	2,150	2,110	2,910	2,470	1,780	1,270	1,120	1,110
13	1,320	3,050	2,380	5,220	2,080	2,180	2,810	2,620	1,780	1,240	1,100	1,100
14	1,320	3,910	2,100	3,870	3,380	2,160	2,710	2,970	1,760	1,280	1,100	1,110
15	1,320	2,620	1,990	3,200	4,700	2,070	*2,580	3,010	1,700	1,280	1,100	1,150
16	1,320	2,150	1,880	2,870	5,580	2,050	2,450	2,670	1,680	*1,260	1,100	1,150
17	1,360	1,940	1,800	2,770	5,090	2,080	2,400	2,620	1,680	1,230	1,090	1,110
18	1,470	1,910	1,730	2,540	4,920	2,230	2,310	2,640	1,630	1,230	1,110	1,200
19	1,670	3,090	1,680	2,380	4,750	2,280	2,240	2,710	1,590	1,200	1,090	1,290
20	1,680	3,670	1,660	2,280	4,150	2,180	2,210	2,580	1,560	1,220	1,160	1,390
21	1,490	2,830	1,680	2,190	3,590	2,230	2,230	2,430	1,540	1,190	1,230	1,280
22	1,470	2,420	1,680	2,110	3,580	2,310	2,260	2,380	1,500	1,220	1,140	1,200
23	1,450	2,190	1,600	2,080	3,430	2,350	2,300	2,480	1,500	1,180	1,120	1,160
24	1,460	2,050	*1,630	3,200	3,120	2,490	2,420	2,330	1,490	1,190	1,120	1,140
25	1,400	1,970	2,000	3,930	2,870	2,520	2,470	2,300	1,490	1,160	1,100	1,140
26	1,450	1,880	2,280	3,710	2,790	3,480	2,870	2,380	1,490	1,150	1,100	1,280
27	1,400	1,800	4,310	7,040	2,990	3,390	2,710	2,240	1,490	1,150	1,110	1,590
28	1,420	1,760	3,100	8,100	3,080	3,060	2,600	2,160	1,460	1,160	1,110	1,230
29	1,400	1,700	2,470	5,550	-	3,200	2,520	2,100	1,430	1,160	1,090	1,200
30	1,390	1,560	2,600	*4,650	-----	5,040	2,560	2,060	1,420	1,160	1,070	1,160
31	1,400	-----	2,540	3,980	-----	4,800	-----	2,000	-----	1,140	1,090	-----
Total	43,150	64,490	63,840	107,230	91,360	83,600	90,880	78,880	51,900	38,790	34,650	35,220
Mean	1,392	2,150	2,059	3,459	3,263	2,697	3,029	2,545	1,730	1,251	1,118	1,174
Ac-ft	85,590	127,900	126,600	212,700	181,200	165,800	180,300	156,500	102,900	76,940	68,730	69,860
Calendar year 1958: Max 20,500 Min 1,290 Mean 3,217 Ac-ft 2,329,000												
Water year 1958-59: Max 8,100 Min 1,060 Mean 2,148 Ac-ft 1,555,000												

Peak discharge (base, 9,000 cfs).--Jan. 28 (2 a.m.) 9,760 cfs (4.80 ft).

* Discharge measurement made on this day.

3404. Dead Indian collection canal near Pinehurst, Oreg.

Location.--Lat 42°15'50", long 122°26'55", in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.15, T.38 S., R.3 E., on left bank at Howard Prairie road crossing, 2,400 ft downstream from Dead Indian Creek diversion dam and 11 miles northwest of Pinehurst.

Records available.--December 1958 to September 1959.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 4,540 ft (from topographic map).

Extremes.--1958-59: Maximum daily discharge during period, 40 cfs Feb. 17, 1959; no flow at times.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Canal diverts from Conde Creek in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.9, T.38 S., R.3 E., and from Dead Indian Creek in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.15, T.38 S., R.3 E., in Rogue River basin, and empties into Howard Reservoir in Klamath River basin. Water is later returned to Rogue River basin for irrigation of lands in the Ashland-Medford area and for power development enroute. Diversion began Dec. 3, 1958.

Discharge, in cubic feet per second, December 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			Q	4.3	b9.0	11	25	7.6	0.4	0.2	0	0.2
2			2	b4.0	b9.0	b12	32	7.6	.3	.2	0	.2
3			1.0	b4.0	b7.5	13	37	7.2	.3	.2	0	.1
4			3.0	b4.0	7.4	b13	*38	6.8	.3	.2	0	.1
5			2.8	4.0	b7.0	13	38	9.1	.3	.2	0	.1
6			2.8	b7.0	b6.5	13	38	8.2	.3	.2	0	.1
7			5.2	10	b6.2	13	31	7.0	.3	.2	0	.1
8			5.5	11	b6.0	13	27	8.2	.3	.1	0	.1
9			4.5	14	b5.5	12	24	9.1	.3	.2	0	.1
10			4.2	11	5.0	11	21	7.8	.3	.2	0	.1
11			5.1	14	b4.0	11	22	6.8	.2	.1	0	.1
12			5.0	28	b3.5	13	18	2.9	.2	.1	0	.1
13			*4.2	b18	3.9	12	16	.2	.2	.1	0	.1
14			b4.0	b15	10	11	14	.3	.2	.1	0	.1
15			3.8	12	19	11	13	*.2	.2	.1	0	.1
16			3.6	10	35	11	12	.2	.1	*.1	0	.1
17			3.4	9.1	40	12	*11	.3	.1	.1	0	.1
18			3.3	8.2	35	12	9.4	5.7	.1	.1	0	*.1
19			3.2	7.2	28	*14	8.6	16	.1	.1	*0	.2
20			b3.0	b7.0	22	12	7.8	14	.1	.1	.1	.2
21			b3.0	b6.5	22	14	7.0	13	.1	.1	.2	.1
22			3.0	6.2	18	13	6.6	13	.1	0	.2	.1
23			b3.0	6.2	15	14	6.0	12	.1	.1	.1	.1
24			b3.2	11	9.6	15	5.6	11	.1	.1	.1	.1
25			b6.0	9.1	b6.5	15	3.5	11	*.1	*0	.1	.2
26		†0	4.2	*9.4	b4.5	18	.2	11	.1	0	.2	.3
27			5.0	14	7.0	17	4.3	9.8	.1	0	.1	.2
28			3.9	14	b9.0	19	7.0	8.6	.1	0	.2	.2
29			3.9	b13	-	19	5.6	6.0	.2	0	.2	.2
30			4.4	11	-----	22	6.2	.5	.1	0	.2	.2
31			*4.3	9.6	-----	22	-----	.4	-----	0	.2	-----
Total			117.7	311.8	359.1	431	494.8	221.5	5.7	3.1	1.9	4.1
Mean			3.60	10.1	12.8	13.9	16.5	7.15	0.19	0.10	0.06	0.14
Ac-ft			222	618	712	855	981	439	11	06.1	3.8	8.1

Calendar year : Max Min Mean Ac-ft
Water year : Max Min Mean Ac-ft

* Discharge measurement or observation of no flow made on this day.

† Result of field observation.

b Stage-discharge relation affected by ice.

3415. South Fork Little Butte Creek near Lakecreek, Oreg.

Location.--Lat 42°24'30", long 122°36'00", in SE $\frac{1}{4}$ sec.29, T.36 S., R.2 E., on left bank a quarter of a mile upstream from intake of Rogue River Valley Canal and 1.4 miles (revised) southeast of Lakecreek.

Drainage area.--138 sq mi.

Records available.--April 1921 to September 1959. Prior to October 1958, sometimes published as "Lake Creek."

Gage.--Water-stage recorder. Altitude of gage is 1,720 ft (by barometer). Prior to June 17, 1921, staff gage at same site and datum.

Average discharge.--38 years, 108 cfs (78,190 acre-ft per year).

Extremes.--Maximum discharge during year, 308 cfs Mar. 30 (gage height, 2.23 ft); minimum, 11 cfs Aug. 5.

1921-59: Maximum discharge, 3,920 cfs Jan. 7, 1948 (gage height, 6.48 ft), from rating curve extended above 840 cfs by logarithmic plotting; minimum, 2 cfs Aug. 10, 1931 (gage height, 0.97 ft).

Remarks.--Records good except those for periods of no gage-height record, which are poor. Diversions for irrigation of about 1,000 acres above station and in December 1958 Dead Indian collection canal (see p. 269) began diverting above station from Conde Creek and Dead Indian Creek to Howard Prairie Reservoir in the Klamath River basin from where it is again routed to the Rogue River basin for irrigation of lands in the Ashland-Medford area and power development enroute.

Revisions (water years).--WSP 934: 1925(M). WSP 1398: 1922, 1927(M), 1937, 1941-42.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

1.1	12	1.7	102
1.2	19	2.0	210
1.3	27	2.2	295
1.5	55		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	24	37	50	97	a100	230	99	63	22	a14	16
2	18	25	*37	50	*86	*122	226	115	55	21	a13	14
3	19	25	35	45	83	118	218	109	52	20	*13	13
4	20	25	35	42	80	112	210	97	53	20	14	15
5	20	29	33	44	75	109	198	102	52	20	12	16
6	*20	28	32	45	73	105	190	125	59	20	12	16
7	20	37	44	*44	71	99	174	105	52	20	12	16
8	21	31	69	49	69	97	163	*99	49	*20	12	*15
9	21	35	59	67	63	94	152	122	49	19	12	14
10	21	55	49	78	63	86	142	105	45	18	13	13
11	21	37	59	78	59	83	135	97	42	19	13	12
12	21	31	90	149	52	86	132	86	41	19	14	14
13	21	104	61	128	59	86	125	83	41	19	14	15
14	21	109	53	109	a65	80	115	112	59	18	14	17
15	21	71	49	97	a150	75	109	149	37	18	14	21
16	21	52	47	91	125	75	102	115	34	15	14	20
17	21	50	44	83	a130	78	99	125	*33	14	12	a19
18	25	*53	42	78	a140	83	94	138	32	15	13	a21
19	38	63	41	73	a130	91	88	186	32	14	14	*24
20	34	69	38	69	a120	86	80	163	29	15	23	25
21	28	59	39	65	a125	94	75	138	29	16	25	24
22	28	53	37	63	a130	94	73	135	26	16	21	21
23	25	50	35	61	a120	99	71	118	25	16	19	19
24	25	49	38	71	a100	128	71	105	28	a16	18	18
25	25	45	52	78	a90	125	73	99	26	a16	17	18
26	25	44	69	83	a80	166	109	109	26	a15	16	21
27	24	41	122	109	a85	163	112	94	26	a14	16	25
28	24	39	78	152	a90	163	94	86	25	a14	15	21
29	24	38	61	128	-	182	80	78	*25	a15	16	19
30	24	37	59	118	-----	286	78	75	25	a14	15	19
31	24	-----	53	105	-----	*242	-----	71	-----	a14	16	-----
Total	718	1,408	1,587	2,502	2,610	3,607	3,818	3,440	1,148	532	466	541
Mean	23.2	46.9	51.2	80.7	93.2	116	127	111	38.3	17.2	15.0	18.0
Ac-ft	1,420	2,790	3,150	4,960	5,180	7,150	7,570	6,820	2,280	1,060	924	1,070
Calendar year 1958: Max			1,290		Min 18	Mean 134		Ac-ft 97,160				
Water year 1958-59: Max			286	Min 12	Mean 61.3		Ac-ft 44,370					

Peak discharge (base, 500 cfs).--No peak above base.

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for North Fork Little Butte Creek near Lakecreek, Bear Creek at Medford, and unpublished records for Rogue River Valley Canal at South Fork intake, near Lakecreek.

3425. North Fork Little Butte Creek at Fish Lake, near Lakecreek, Oreg.

Location.--Lat 42°22'35", long 122°21'20", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ (revised) sec.4, T.37 S., R.4 E., on right bank 0.5 mile downstream from Fish Lake and 14 miles east of Lakecreek.

Drainage area.--18 sq mi, approximately.

Records available.--October 1914 to July 1915, June 1916 to September 1959. Monthly discharge only November 1916 to May 1917, published in WSP 1318. Prior to October 1958, sometimes published as "Lake Creek."

Gage.--Water-stage recorder. Concrete control since Nov. 8, 1955. Datum of gage is 4,571.41 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Oct. 1, 1914, to July 31, 1915, staff gage at site half a mile upstream at different datum. June 1, 1916, to July 9, 1918, staff gage and July 10, 1918, to Oct. 28, 1932, water-stage recorder, at site a quarter of a mile upstream at different datums.

Average discharge.--43 years (1916-59), 36.4 cfs (26,350 acre-ft per year).

Extremes.--Maximum discharge during year, 163 cfs July 17 (gage height, 2.58 ft); minimum, 0.1 cfs Sept. 25-30.

1914-59: Maximum discharge, about 940 cfs June 5, 1917, computed from rate of change in contents in reservoir after break in dam occurred; no flow at times.

Remarks.--Records good. Since 1915, Fish Lake (see p. 285) has stored water for irrigation by Medford Irrigation District. Cascade Canal diverts from Fourmile Lake in Klamath River basin and discharges into lava bed $\frac{1}{2}$ miles above Fish Lake; diversion began August 1923. No diversion from creek above station.

Revisions (water years).--WSP 654: Drainage area. WSP 1218: 1917(M).

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

0.0	0	0.6	2.0	1.6	89
.1	.2	.8	4.0	1.8	110
.2	.4	1.0	10	2.0	127
.3	.6	1.2	27	2.3	148
.4	1.0	1.4	55	2.6	164

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	18	22	22	23	25	27	27	41	139	154	92
2	10	18	21	22	23	25	27	27	50	136	154	107
3	*10	18	21	22	23	25	27	27	71	114	154	89
4	10	19	*22	22	23	25	27	27	90	110	156	63
5	11	19	22	22	24	25	27	27	97	116	153	82
6	11	20	22	22	24	25	27	27	76	122	145	78
7	11	20	22	22	24	25	28	27	67	125	*151	69
8	11	20	22	23	24	25	28	27	61	136	149	59
9	11	21	22	23	24	25	28	27	61	144	136	56
10	11	21	22	23	24	25	*28	27	59	142	122	55
11	11	21	22	23	24	25	28	*27	67	138	128	63
12	12	*21	22	24	24	25	28	26	81	138	127	65
13	13	23	22	24	24	25	28	27	81	146	114	65
14	13	22	22	23	24	25	28	28	81	145	109	61
15	14	21	22	24	24	25	28	27	*81	146	94	31
16	14	21	22	24	25	25	28	28	90	147	93	38
17	14	20	22	24	25	26	28	32	102	154	99	33
18	15	20	22	24	25	26	28	35	102	160	92	24
19	16	20	22	24	25	26	28	42	112	157	58	4.9
20	16	20	23	24	25	26	28	45	125	154	61	9.6
21	16	21	23	24	25	26	28	*44	132	154	82	10
22	16	21	23	24	25	26	28	42	133	159	71	*10
23	16	21	23	24	25	26	28	42	136	160	71	4.3
24	16	21	23	24	25	26	28	41	141	160	67	.2
25	16	21	23	24	25	26	28	41	145	158	65	.1
26	16	21	23	23	25	26	27	42	131	157	73	.2
27	16	21	23	23	25	26	27	41	125	158	78	.1
28	17	21	22	23	25	26	27	41	123	158	85	.1
29	17	21	22	23	-	26	27	41	*121	159	75	.1
30	18	22	22	23	-----	26	27	42	127	156	75	.1
31	18	-----	22	23	-----	26	-----	42	-----	154	78	-----
Total	426	614	688	719	681	790	828	1,046	2,809	4,502	3,269	1,169.7
Mean	13.7	20.5	22.2	23.2	24.3	25.5	27.6	33.7	87.0	145	105	39.0
Ac-ft	845	1,220	1,360	1,430	1,350	1,570	1,640	2,070	5,770	8,930	6,480	2,320
Calendar year 1958: Max	132				Min 10		Mean 41.7	Ac-ft 30,140				
Water year 1958-59: Max	160				Min 0.1		Mean 48.3	Ac-ft 34,980				

* Discharge measurement made on this day.

3430. North Fork Little Butte Creek near Lakecreek, Oreg.

Location.--Lat 42°24'10", long 122°32'20", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.25, T.36 S., R.2 E., on right bank a quarter of a mile upstream from Hanley South Canal diversion and 4 $\frac{1}{2}$ miles east of Lakecreek.

Drainage area.--38 sq mi, approximately.

Records available.--September 1911 to March 1913, July to September 1917, May 1922 to September 1959. Monthly discharge only for some periods, published in WSP 1318. Published as "above Medford intake, near Lakecreek" 1922-28, 1931-40. Prior to October 1958, "Lakecreek" sometimes published as "Lake Creek." Records for April to September 1916, May 1917 to September 1919, April to September 1921, and October 1923 to September 1924 at site 3 miles upstream not equivalent owing to diversions and difference in drainage areas.

Gage.--Water-stage recorder. Datum of gage is 2,125.01 ft above mean sea level, datum of 1929. Sept. 10, 1911, to Mar. 31, 1913, and July 1 to Sept. 30, 1917, staff gages near present site at different datums.

Average discharge.--38 years (1911-12, 1922-59), 73.1 cfs (52,920 acre-ft per year).

Extremes.--Maximum discharge during year, 200 cfs July 24 (gage height, 2.02 ft); minimum, 22 cfs Sept. 23-30.
1911-13, 1917, 1922-59: Maximum discharge, 1,430 cfs Dec. 11, 1956 (gage height, 3.56 ft), from rating curve extended above 170 cfs; minimum, 11 cfs Oct. 29 to Nov. 8, 1931.

Remarks.--Records good. Flow regulated by Fish Lake since 1915 (see p. 285). Diversions for irrigation of 100 acres above station; some water diverted into Fish Lake from Fourmile Lake, in Klamath River basin, since 1923.

Revisions (water years).--WSP 1518: 1912-13.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 29				Mar. 30 to Sept. 30			
1.3	36	1.1	21	1.7	86		
1.5	53	1.2	24	1.9	150		
1.7	84	1.3	31	2.1	240		
2.0	160	1.5	51				

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	50	56	56	62	62	84	72	76	158	174	109
2	40	50	*56	56	*61	*62	80	70	78	158	170	135
3	40	51	56	56	60	61	76	66	96	139	166	112
4	40	52	56	56	58	61	74	64	116	135	170	89
5	41	52	56	56	58	60	72	68	116	139	170	109
6	41	54	56	56	58	60	70	66	104	146	166	107
7	42	56	65	*56	58	60	68	64	96	146	174	94
8	*42	53	62	57	58	58	66	*66	91	154	170	91
9	42	57	60	57	58	58	64	66	91	166	158	76
10	42	61	58	57	58	58	64	64	89	166	142	82
11	43	54	65	56	58	57	63	63	94	162	150	*84
12	43	53	63	68	57	57	63	63	*107	158	150	94
13	43	86	60	60	57	57	63	63	107	162	142	91
14	43	68	58	58	63	57	*63	70	107	162	*139	91
15	44	62	57	57	68	57	63	68	104	174	123	62
16	44	58	57	57	68	57	63	64	112	158	120	57
17	45	*58	56	57	65	57	65	72	123	146	127	60
18	46	60	56	56	63	57	62	78	120	154	120	56
19	53	62	56	56	62	58	62	86	127	158	102	*28
20	48	61	56	56	62	57	62	86	139	158	*81	32
21	47	60	56	57	63	60	60	84	150	146	116	31
22	47	58	54	57	66	58	60	82	154	182	104	31
23	47	57	54	57	65	61	60	80	154	190	104	28
24	47	57	57	58	63	75	60	76	170	195	102	22
25	48	57	61	62	62	71	62	78	170	186	94	22
26	48	57	61	61	62	82	66	80	154	182	102	24
27	48	57	65	63	63	80	62	76	150	178	107	22
28	49	57	60	68	62	84	60	74	150	178	112	22
29	49	57	58	65	-	86	58	76	*150	186	104	22
30	49	56	57	63	-----	104	60	76	154	178	104	22
31	50	-----	57	62	-----	89	-----	76	-----	178	109	-----
Total	1,394	1,731	1,801	1,816	1,718	2,019	1,953	2,237	3,649	5,078	4,072	1,905
Mean	45.0	57.7	58.1	58.6	61.4	65.1	65.1	72.2	122	164	131	63.5
Ac-ft	2,760	3,430	3,570	3,600	3,410	4,000	3,870	4,440	7,240	10,070	8,080	3,780
Calendar year 1958: Max 227 Min 40 Mean 85.0 Ac-ft 61,510												
Water year 1958-59: Max 195 Min 22 Mean 80.5 Ac-ft 58,250												

* Discharge measurement made on this day.

3500. Emigrant Creek near Ashland, Oreg.

Location.--Lat 42°10'30", long 122°37'15", in SE¹ sec.18, T.39 S., R.2 E., on right bank 6,000 ft downstream from Emigrant Dam and 4½ miles southeast of Ashland. Prior to Feb. 25, 1959, at site 5,000 ft upstream.

Drainage area.--67.2 sq mi.

Records available.--January to June 1920, October 1920 to July 1922, February 1923 to May 1924 (incomplete), October 1924 to November 1925, February to August 1926, October 1926 to September 1928, April 1929 to September 1930, April 1931 to October 1932 (incomplete), April 1933 to September 1935, April 1936 to September 1939 (incomplete), April 1940 to September 1947, January 1948 to October 1952 (incomplete), December 1952 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder. Altitude of gage is 1,990 ft (from topographic map). Prior to Oct. 1, 1926, water-stage recorder or staff gage at several sites about 1 mile upstream at various datums. Oct. 1, 1926, to Feb. 24, 1959, water-stage recorder at site 5,000 ft upstream at datum 2,053.73 ft above mean sea level.

Average discharge.--20 years (1924-28, 1929-30, 1933-35, 1940-47, 1953-59), 24.0 cfs (17,380 acre-ft per year).

Extremes.--Maximum discharge during year, 60 cfs July 22 (gage height, 1.65 ft); minimum daily, 0.2 cfs Sept. 11-16.

1920-59: Maximum discharge, 5,260 cfs Feb. 20, 1927, by computation of peak flow over dam; no flow at times.

Remarks.--Records good except those for period October to February and periods of no gage-height record, which are poor. Figures of daily discharge do not include water diverted from Emigrant Reservoir above station by East lateral or from Emigrant Creek above reservoir by Ashland lateral. Flow regulated since 1924 by Emigrant Gap Reservoir (see p. 285). Several diversions above station for irrigation; the principal diversion canals are Ashland lateral and East lateral. Water diverted by Keene Creek Canal from Klamath River basin into Emigrant Creek above station.

Revisions (water years).--WSP 1448: 1921, 1927-28, 1937, 1953(M).

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 18-22)

Oct. 1 to Feb. 24

Feb. 25 to Sept. 30

-0.3	0.2	0.2	6.2	0.4	0.2	1.0	14
-2	.7	.5	14	.5	.6	1.2	24
-1	1.6	.7	21	.6	2.0	1.4	37
0.0	2.8			.8	7.5	1.6	55

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19	2	*6.7	4	0.5	0.7	0.8	1.6	3	13	31	6.9
2	19.5	2	10	3	.5	.6	1.0	1.3	3	20	30	9.3
3	4	2	5.3	2	.5	.6	1.0	1.4	4	20	26	12
4	2	2	2	2	.5	.6	1.1	1.3	4	20	26	8.4
5	1	2	2	1.2	.5	*.6	1.1	1.3	5	12	25	5.4
6	.8	2	2	1	.5	.6	1.1	1.1	6	5.5	22	5.7
7	*.7	2.1	3.0	1	.5	.6	1.1	*.8	8	19	21	4.5
8	.7	2	2	1	.5	.6	6.3	.8	10	*31	21	2.0
9	.7	2	5.0	1	.5	.6	*25	.8	12	36	21	4.0
10	.6	5.0	6.0	1	.5	.6	38	.8	*17	36	20	2.7
11	.6	7.1	5.8	.5	.5	.5	34	.8	16	35	22	.2
12	.5	5.0	6.2	.5	.5	.5	22	.7	16	34	24	.2
13	.5	4.0	6.7	.5	.5	.5	17	.8	15	36	24	.2
14	*6.0	4.5	6.2	.5	.5	.5	9.6	1.4	14	41	24	.2
15	6.7	10	5.4	.5	.5	.5	3.2	1.1	14	41	24	.2
16	4	6.9	4.5	**4	.5	.5	5.4	1.1	16	40	24	.2
17	1.4	4.0	5.0	.4	.5	.5	3.0	1.1	17	*40	22	1.4
18	1	8.0	3.0	.4	.5	.5	3.1	1.0	16	40	20	*7.8
19	1	8.0	2	.4	.5	.5	3.0	1.0	15	42	15	6.9
20	5.2	7.0	2	.4	.5	.5	3.0	1.0	16	42	9.3	3.2
21	4.0	9.6	2	.4	.5	.5	3.0	.8	16	42	5.1	9.2
22	1.5	7.1	4.3	.4	.5	.5	5.2	1.0	16	*48	5.1	14
23	1.5	8.0	4.5	.4	.5	.7	3.5	.8	23	42	4.8	13
24	1.5	2.0	2	.4	.5	3.5	.8	.8	23	36	4.8	11
25	2	5.0	2	.4	.6	.7	2.8	1.3	23	32	4.5	8.4
26	2	6.4	2	.4	**7	.7	2.0	1.4	19	29	7.7	.4
27	2	6.4	2	.4	1.0	.8	1.7	1.4	14	14	12	.4
28	2.1	6.2	4.1	.4	.7	.8	1.4	1.6	13	4.2	13	.4
29	2	4.0	7.1	.4	-	.7	1.6	2	12	24	13	.5
30	4.5	3	8.0	.4	---	.7	1.7	2	12	29	8.7	.5
31	2	6.2	4	.4	.7	.7	---	---	---	31	6.6	---
Total	91.0	149.3	135.0	26.1	15.0	18.9	204.2	36.3	398	934.7	536.6	139.2
Mean	2.94	4.98	4.35	0.84	0.54	0.61	6.81	1.17	13.3	30.2	17.3	4.64
Ac-ft	180	296	268	52	30	37	405	72	789	1,850	1,060	276
(†)	0	0	0	0	0	23	226	329	944	1,430	1,260	445
(*)	0	0	0	0	0	0	1,720	1,170	3,650	4,640	3,140	1,190

Calendar year 1958: Max 708 Min 0.1 Mean 42.9 Ac-ft 31080 † 3,280 ‡ 13,540
Water year 1958-59: Max 48 Min 0.2 Mean 7.35 Ac-ft 5320 † 4,660 ‡ 15,510

* Discharge measurement made on this day.

† Diversion, in acre-feet, by Ashland lateral.

** Diversion, in acre-feet, by East lateral.

*** Field estimate made on this day.

Note.--No gage-height record Oct. 3-6, 8-13, 16, 18, 19, 22-27, 29, 31, Nov. 1-6, 8, 9, 30, Dec. 4-6, 8, 19-21, 24-27, Jan. 1-4, 6-15, 17-29, 31, Feb. 1-24, May 29 to June 9, Sept. 11-15; discharge estimated on basis of occasional low-stage readings, records for Bear Creek at Medford, and interpolation.

3575. Bear Creek at Medford, Oreg.

Location.--Lat 42°19'40", long 122°52'10", in NW¼ sec.30, T.37 S., R.1 W., on left bank 40 ft upstream from Main Street Bridge in Medford.

Drainage area.--289 sq mi.

Records available.--March 1915 to June 1920 (no low-flow records), October 1920 to September 1959. Monthly discharge only for some periods, published in WSP 1318.

Gage.--Water-stage recorder and since Dec. 30, 1947, concrete control. Datum of gage is 1,343.98 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Mar. 1, 1915, to June 30, 1918, staff gage and Sept. 20, 1918, to Feb. 9, 1919, water-stage recorder, at site 40 ft upstream at datum 0.58 ft lower. Feb. 10, 1919, to Jan. 6, 1943, water-stage recorder and Jan. 7 to Sept. 9, 1943, staff gage, at site 40 ft upstream at datum 0.42 ft higher. Sept. 10, 1943, to Dec. 30, 1947, water-stage recorder at site 40 ft upstream at same datum.

Average discharge.--39 years (1920-59), 102 cfs (73,840 acre-ft per year).

Extremes.--Maximum discharge during year, 1,020 cfs Feb. 14 (gage height, 2.43 ft); minimum, 6.5 cfs Aug. 11.

1915-59: Maximum discharge, 9,400 cfs Dec. 22, 1955 (gage height, 7.50 ft, from floodmarks); maximum gage height, about 11.0 ft Feb. 20, 1927, from floodmarks, present datum, site then in use; practically no flow at times.

Remarks.--Records good except those for period of no gage-height record, which are poor. Flow partly regulated since 1924 by Emigrant Gap Reservoir (see p. 285). Numerous diversions for irrigation above station.

Revisions (water years).--WSP 1044: 1944. WSP 1448: 1916, 1917(M), 1918-20, 1922, 1924, 1927(M), 1928, 1930. WSP 1568: Drainage area.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from moss and debris Sept. 8-22)

0.1	3.0	0.7	85
.2	10	1.0	167
.3	19	1.5	370
.5	46		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	40	38	65	77	121	113	95	29	16	13	18
2	29	42	*43	60	71	118	118	108	20	14	14	19
3	16	43	44	55	67	110	118	113	20	14	15	20
4	14	43	42	50	67	100	115	98	25	18	14	29
5	14	43	40	*50	65	95	113	102	29	20	13	31
6	13	42	38	54	63	90	110	*113	31	26	14	26
7	11	43	42	46	63	85	100	92	40	19	12	30
8	11	44	60	48	59	81	92	88	40	18	10	32
9	10	48	70	63	83	79	83	100	32	*16	9.3	26
10	14	63	60	88	65	75	115	88	27	16	9.3	21
11	27	56	70	81	61	*71	115	81	27	16	11	19
12	27	52	80	184	56	71	113	71	21	13	11	17
13	*27	79	90	110	54	71	81	63	24	14	13	16
14	26	92	70	85	228	69	61	102	20	14	16	21
15	29	69	60	77	342	67	34	118	18	13	16	29
16	30	57	55	73	*174	67	29	92	30	15	14	30
17	29	46	50	69	178	65	25	95	15	*14	12	24
18	29	*43	48	65	132	69	24	105	18	10	13	27
19	38	57	46	63	124	71	36	137	14	12	12	29
20	38	61	45	59	126	69	27	110	13	12	25	29
21	38	69	44	57	132	69	21	90	13	12	30	31
22	43	71	43	57	134	73	15	83	*14	9.3	25	*33
23	43	63	42	52	134	75	*15	79	14	10	19	32
24	43	56	45	77	118	92	16	65	15	10	19	31
25	43	44	50	83	105	98	23	65	18	9.3	18	30
26	42	44	80	79	100	124	60	61	27	9.3	16	26
27	42	43	150	92	105	115	73	50	37	*10	18	23
28	42	43	120	129	115	100	71	46	27	12	18	21
29	42	43	90	102	-	105	50	38	24	13	19	20
30	40	40	75	88	-----	118	56	31	21	13	20	20
31	42	-----	70	79	-----	115	-----	31	-----	12	21	-----
Total	932	1,579	1,900	2,360	3,078	2,728	2,027	2,610	703	429.9	489.6	760
Mean	30.1	52.6	61.3	76.1	110	88.0	67.6	84.2	23.4	13.9	15.8	25.3
Ac-ft	1,950	3,130	3,770	4,680	6,110	5,410	4,020	5,180	1,390	853	971	1,510
Calendar year 1958: Max			3,890		Min	10	Mean	212		Ac-ft	153,600	
Water year 1958-59: Max			342		Min	9.3	Mean	53.7		Ac-ft	38,870	

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 8 to Jan. 4; discharge estimated on basis of weather records and records for South Fork Little Butte Creek near Lakes Creek.

3590. Rogue River at Raygold, near Central Point, Oreg.

Location.--Lat 42°26'15", long 122°59'10", in SW $\frac{1}{4}$ sec.18, T.36 S., R.2 W., on right bank at Raygold, 0.2 mile downstream from Gold Ray Dam, 1.3 miles downstream from Bear Creek, and 5.6 miles northwest of Central Point.

Drainage area.--2,020 sq mi, approximately.

Records available.--August 1905 to September 1959. Prior to October 1921, published as "near Tolo."

Gage.--Water-stage recorder. Datum of gage is 1,121.78 ft above mean sea level, datum of 1929. Prior to Sept. 19, 1914, staff gage and Sept. 19, 1914, to Sept. 30, 1956, water-stage recorder, at site 300 ft upstream at same datum.

Average discharge.--54 years, 2,918 cfs (2,113,000 acre-ft per year).

Extremes.--Maximum discharge during year, 12,800 cfs Feb. 15 (gage height, 6.46 ft); minimum, 566 cfs July 22 (gage height, 0.03 ft); minimum daily, 1,060 cfs Aug. 11. 1905-59: Maximum discharge, 110,000 cfs Feb. 21, 1927 (gage height, 24.8 ft, from floodmark, site then in use), from rating curve extended above 36,000 cfs by logarithmic plotting, and Dec. 22, 1955 (gage height, 21.55 ft, from floodmark, present site), from rating curve extended above 25,000 cfs on basis of slope-area measurement of peak flow; minimum not determined; minimum daily, 616 cfs Sept. 6, 1931.

Greatest flood known occurred during winter of 1861-62 and reached a stage of about 32 ft; flood in February 1890 reached a stage of about 27.5 ft, from information by Corps of Engineers.

Remarks.--Records good. Diurnal fluctuation caused by powerplant just above station. Many diversions for irrigation above station.

Revisions (water years).--WSP 1248: 1906, 1914(M), 1915. WSP 1398: 1910(M), 1927(M).

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

0.7	1,040	4.0	6,230
1.2	1,470	6.0	11,600
2.0	2,400		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,440	1,570	1,790	2,780	4,000	3,550	6,110	3,100	2,090	1,420	1,100	1,100
2	1,420	1,570	1,820	2,660	3,580	3,700	5,730	3,250	2,030	1,350	1,100	1,090
3	1,420	1,630	1,800	2,470	3,360	3,510	5,380	3,210	2,000	1,350	1,090	1,080
4	1,430	1,750	1,820	2,250	3,150	*3,280	5,060	2,950	1,960	1,360	1,120	*1,100
5	1,430	2,050	1,780	2,330	2,960	3,090	4,760	3,020	*2,000	1,380	1,110	1,180
6	1,430	2,010	1,690	2,340	2,820	2,990	4,550	3,410	2,400	1,340	1,110	1,160
7	1,450	2,370	1,780	2,260	2,840	2,920	4,100	3,130	2,230	1,330	1,110	1,140
8	1,440	2,210	2,660	2,320	2,720	2,800	3,760	3,040	2,090	1,320	1,100	1,120
9	1,450	2,340	2,480	2,630	2,690	2,700	3,530	3,120	2,020	1,290	1,080	1,100
10	1,500	2,570	2,340	4,950	2,760	2,640	3,400	3,040	2,030	1,260	1,120	1,100
11	1,500	2,220	2,250	4,860	2,640	2,540	3,340	2,860	1,930	1,270	1,060	1,100
12	1,470	1,990	3,120	8,280	2,470	2,500	3,250	2,750	1,880	1,260	1,100	1,100
13	1,500	2,770	2,750	6,400	2,370	2,530	3,120	2,810	1,870	1,190	1,100	1,080
14	1,500	4,880	2,410	4,480	4,580	2,510	2,940	3,130	1,800	1,230	1,100	1,100
15	1,500	3,280	2,220	3,720	9,340	2,390	*2,780	3,500	1,760	1,240	1,120	1,150
16	1,510	2,600	2,120	3,280	6,940	2,360	2,630	3,040	1,760	*1,210	1,100	1,160
17	1,510	2,260	2,030	3,070	6,350	2,370	2,540	2,980	1,710	1,200	1,090	1,150
18	1,550	2,170	1,950	2,810	5,450	2,480	2,400	3,100	1,620	1,170	1,100	1,190
19	1,870	2,940	1,930	2,720	5,990	2,560	2,330	3,290	1,570	1,180	1,080	1,320
20	1,940	*4,180	1,890	2,680	5,110	2,500	2,270	3,200	1,540	1,160	1,140	1,480
21	1,690	3,200	1,910	2,540	4,650	2,440	2,230	2,870	1,540	1,140	1,290	1,390
22	1,650	2,740	1,890	2,410	4,500	2,620	2,300	2,900	1,500	1,120	1,190	1,300
23	1,630	2,460	1,820	2,320	4,300	2,600	2,320	2,780	1,460	1,140	1,160	1,270
24	1,590	2,290	*1,850	3,210	3,850	2,800	2,390	2,750	1,440	1,140	1,150	1,240
25	1,570	2,160	2,390	4,420	3,460	2,840	2,470	2,660	1,440	1,170	1,130	1,230
26	1,570	2,060	2,540	4,220	3,260	3,530	*2,960	2,780	1,510	1,190	1,140	1,250
27	1,560	2,010	5,850	7,590	3,310	4,180	2,930	2,570	1,540	1,140	1,100	1,700
28	1,590	1,960	3,910	9,830	3,450	3,560	2,870	2,540	1,520	1,110	1,110	1,300
29	1,570	1,880	3,010	6,670	-	3,830	2,720	2,330	1,490	1,120	1,100	1,240
30	1,560	1,820	2,940	*5,540	-----	6,250	2,720	2,300	*1,420	1,130	1,100	1,220
31	1,580	-----	2,990	4,650	-----	5,920	-----	2,140	-----	1,110	1,100	-----
Total	47,820	71,940	73,730	122,600	112,900	96,490	99,890	90,530	53,150	38,010	34,600	36,150
Mean	1,543	2,398	2,378	3,955	4,032	3,113	3,330	2,920	1,772	1,226	1,116	1,205
Ac-ft	94,850	142,700	146,200	243,200	223,900	191,400	198,100	179,600	105,400	75,390	68,630	71,700
Calendar year 1958: Max	36,600				Min 1,350	Mean 3,931	Ac-ft 2,846,000					
Water year 1958-59: Max	9,830				Min 1,060	Mean 2,405	Ac-ft 1,741,000					

Peak discharge (base, 11,000 cfs).--Jan. 28 (6 a.m.) 11,200 cfs (5.91 ft); Feb. 15 (3:30 a.m.) 12,800 cfs (6.46 ft).

* Discharge measurement made on this day.

3615. Rogue River at Grants Pass, Oreg.

Location.--Lat 42°25'50", long 123°19'00", in NW¼ sec. 20, T.36 S., R.5 W., on right bank at city of Grants Pass filter plant, 0.6 mile upstream from bridge on U. S. Highway 99 at Grants Pass, and at mile 98.0 (river-profile survey).

Drainage area.--2,420 sq mi, approximately.

Records available.--October 1938 to September 1959. Prior to January 1939 monthly discharge only, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 885.28 ft above mean sea level, datum of 1929. Prior to Aug. 8, 1957, at datum 3.00 ft higher.

Average discharge.--21 years, 3,511 cfs (2,542,000 acre-ft per year).

Extremes.--Maximum discharge during year, 15,400 cfs Feb. 15 (gage height, 9.06 ft); minimum, 760 cfs July 23; minimum daily, 951 cfs Aug. 9, 12, 14, 19.

1938-59: Maximum discharge, 135,000 cfs Dec. 22, 1955 (gage height, 32.6 ft, present datum), from rating curve extended above 33,000 cfs on basis of slope-area measurement of peak flow; minimum, 444 cfs Dec. 13, 1954; minimum daily, 637 cfs Aug. 8, 1940.

Flood in winter of 1861-62 reached a stage of about 42 ft, present datum (information furnished by Corps of Engineers). Flood in February 1890 reached a stage of about 35 ft, present datum, and that of Feb. 21, 1927, about 31 ft, present datum, according to local resident.

Remarks.--Records good. Many diversions from Rogue River and tributaries above station, the largest of which are at Savage Rapids Dam of Grants Pass Irrigation District, 5 miles above station. Flow regulated by dams at Savage Rapids and Raygold and slightly by Fish Lake and Emigrant Reservoir.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 14-21, Mar. 31 to Apr. 30)

Oct. 1 to Feb. 14				Feb. 15 to Sept. 30			
2.4	1,260	6.0	7,740	1.8	940	6.0	7,740
3.0	2,040	8.0	12,500	2.5	1,810	8.0	12,500
4.0	3,650			4.0	3,980		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*1,350	1,670	1,790	3,230	4,880	4,740	6,500	3,140	2,140	1,470	962	995
2	1,320	1,680	1,820	2,970	4,320	4,810	6,060	3,350	2,020	1,370	973	984
3	1,310	1,750	1,720	2,840	3,890	4,510	5,840	3,300	2,070	1,360	962	*984
4	1,270	1,860	1,700	2,550	3,630	4,190	5,370	3,010	*2,070	1,340	962	995
5	1,250	2,280	1,770	2,670	3,420	3,950	5,150	3,040	2,080	1,300	973	1,040
6	1,310	2,320	1,700	2,760	3,230	3,760	5,100	3,550	2,480	1,300	973	1,040
7	1,300	2,600	1,760	2,620	3,160	3,610	4,650	3,340	2,380	1,280	973	1,040
8	1,280	2,650	2,810	2,780	3,020	3,480	4,170	3,140	2,200	1,240	973	1,040
9	1,370	2,680	2,750	3,910	2,940	3,380	3,880	3,240	2,100	1,230	951	1,010
10	1,380	2,870	2,620	6,860	3,080	3,300	3,640	3,170	2,000	1,130	962	984
11	1,390	2,460	2,440	6,860	3,020	3,170	3,600	2,910	1,970	1,190	973	1,010
12	1,390	2,300	3,400	12,400	2,860	3,110	3,480	2,780	1,860	1,130	951	995
13	1,420	2,570	3,230	8,680	2,680	3,160	3,350	2,800	1,840	1,130	973	995
14	1,380	*5,320	2,760	5,720	5,580	3,140	*3,140	3,040	1,770	1,130	951	1,020
15	1,420	3,420	2,520	4,560	12,300	3,160	2,840	3,660	1,690	*1,160	962	1,050
16	1,620	2,490	2,340	*4,020	*10,100	2,950	2,760	3,240	1,650	1,130	962	1,130
17	1,940	2,060	2,240	3,600	9,180	2,940	2,670	3,020	1,650	1,110	962	1,030
18	1,850	1,910	2,140	3,350	8,400	3,060	2,460	3,140	1,580	1,070	962	1,070
19	1,940	2,340	2,060	3,160	8,770	3,120	2,420	3,320	1,510	1,070	951	1,420
20	2,300	4,420	2,040	2,950	7,100	3,110	2,360	3,280	1,510	1,090	973	1,690
21	1,910	3,440	2,060	2,790	6,480	3,120	2,290	2,980	1,520	1,040	1,110	1,680
22	1,790	2,910	2,080	2,670	5,940	3,200	2,280	2,920	1,480	1,040	1,220	1,580
23	1,800	2,620	1,980	2,590	5,940	3,220	2,290	2,810	1,450	1,010	1,000	1,430
24	1,720	2,420	*2,000	3,220	5,210	3,360	2,340	2,770	1,470	1,020	1,040	1,430
25	1,670	2,380	2,630	5,220	4,670	3,480	2,390	2,830	1,470	1,010	1,020	1,380
26	1,720	2,140	2,810	4,920	4,400	3,960	2,880	2,770	1,580	995	1,010	1,430
27	1,700	2,030	7,190	7,810	4,480	4,760	3,010	2,670	1,620	984	1,010	1,900
28	1,700	1,940	5,280	12,100	4,600	4,080	2,800	2,590	1,580	984	984	1,710
29	1,680	1,860	3,700	8,030	-	4,430	2,710	2,350	1,550	973	995	1,430
30	1,670	1,800	3,440	6,710	-----	6,620	2,710	2,320	1,470	973	995	1,720
31	1,670	-----	3,450	5,580	-----	6,780	-----	2,210	-----	973	995	-----
Total	48,840	75,190	82,250	150,130	147,280	117,660	105,140	92,690	53,760	35,232	30,763	37,212
Mean	1,575	2,506	2,653	4,843	5,260	3,795	3,505	2,990	1,732	1,137	1,010	1,240
Ac-ft	96,870	149,100	163,100	297,800	292,100	233,400	208,500	183,800	106,600	69,880	61,020	73,810
Calendar year 1958:	Max	56,800	Min	1,220	Mean	4,568	Ac-ft	3,307,000				
Water year 1958-59:	Max	12,400	Min	951	Mean	2,674	Ac-ft	1,936,000				

Peak discharge (base, 13,000 cfs).--Jan. 12 (12 m.) 14,200 cfs (8.65 ft); Jan. 28, 6:30 p.m.) 15,700 cfs (8.45 ft); Feb. 15 (6 a.m.) 15,400 cfs (9.06 ft).

* Discharge measurement made on this day.

3620. Applegate River near Copper, Oreg.

Location (revised).--Lat 42°03'30", long 123°06'50", in SE $\frac{1}{4}$ sec.25, T.40 S., R.4 W., on right bank 0.2 mile downstream from French Gulch, 1.6 miles downstream from Squaw Creek, and 2.6 miles northeast of Copper.

Drainage area.--220 sq mi.

Records available.--October 1938 to September 1959. Prior to January 1939 monthly discharge only, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 1,759.66 ft above mean sea level, datum of 1929.

Average discharge.--21 years, 440 cfs (318,500 acre-ft per year).

Extremes.--Maximum discharge during year, 10,700 cfs Jan. 12 (gage height, 14.57 ft), from rating curve extended above 4,900 cfs on basis of slope-area measurements at gage heights 16.50 and 23.47 ft; minimum, 32 cfs Sept. 12 (gage height, 1.02 ft).

1938-59: Maximum discharge, 20,300 cfs Dec. 21, 1955 (gage height, 23.47 ft, from floodmarks), from rating curve extended above 5,300 cfs on basis of slope-area measurement of peak flow; minimum, 20 cfs Sept. 23-25, 1939.

Remarks.--Records good. About 11 cfs diverted for irrigation of 482 acres above station in Applegate River basin; Grand Applegate ditch diverts about 3.3 cfs around station on left bank. An average of about 8 cfs for irrigation is diverted into Thompson Creek basin. Several hundred acre-feet normally stored each winter in Squaw Lake for irrigation the following summer.

Revisions.--WSP 1064: Drainage area.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	70	90	212	650	645	840	668	380	112	51	39
2	51	65	95	191	592	695	1,020	592	392	109	49	40
3	48	65	98	163	548	686	1,130	540	364	107	51	40
4	48	72	86	156	516	636	1,170	500	*356	105	51	40
5	49	93	81	186	490	604	1,220	496	364	103	52	39
6	49	80	81	176	456	588	1,140	496	350	102	47	39
7	51	95	86	208	432	572	962	524	308	100	42	40
8	52	86	132	770	396	544	855	572	281	96	42	41
9	52	121	136	2,580	400	532	830	580	272	95	42	39
10	49	170	118	2,660	396	508	820	536	245	95	42	38
11	*49	111	109	2,900	368	492	800	556	233	96	42	37
12	49	95	126	5,760	332	508	765	654	236	91	43	36
13	48	284	111	1,840	332	532	725	785	230	90	42	36
14	48	278	103	1,190	600	500	681	745	218	83	42	40
15	48	160	96	906	663	472	650	592	208	78	39	43
16	48	122	93	*775	918	472	614	532	203	74	41	45
17	46	*111	91	695	906	524	592	516	189	*70	42	47
18	53	116	90	627	1,040	536	560	472	189	68	42	93
19	130	372	88	572	950	516	548	436	183	66	45	114
20	96	300	93	512	785	484	560	416	176	63	51	83
21	74	193	181	472	663	508	*609	416	165	60	62	68
22	70	158	130	428	596	508	676	436	156	56	54	60
23	68	136	114	420	560	548	740	460	151	53	48	61
24	68	122	122	1,040	524	516	830	484	147	51	46	56
25	68	112	174	825	504	572	850	468	143	51	45	53
26	63	103	437	686	*492	790	830	436	156	48	43	53
27	63	98	404	1,680	508	645	686	408	151	47	41	58
28	65	91	233	1,370	548	614	627	376	136	48	40	54
29	62	90	189	1,040	-	614	658	353	130	51	38	53
30	60	86	*222	840	-----	745	715	353	124	53	39	49
31	60	-----	222	725	-----	695	-----	360	-----	51	*39	-----
Total	1,839	4,055	4,420	32,605	16,155	17,801	23,703	15,758	6,834	2,372	1,393	1,534
Mean	59.3	135	143	1,052	577	574	790	508	228	76.5	44.9	51.1
Ac-ft	3,650	8,040	8,770	64,670	32,040	35,310	47,010	31,280	13,560	4,700	2,760	3,040
Calendar year 1958: Max			7,840		Min 46	Mean 691		Ac-ft 500,000				
Water year 1958-59: Max			5,760		Min 36	Mean 352		Ac-ft 254,800				

Peak discharge (base, 1,700 cfs).--Jan. 9 (9:30 p.m.) 4,270 cfs (8.07 ft); Jan. 12 (4 a.m.) 10,700 cfs (14.57 ft); Jan. 27 (12 m.) 2,250 cfs (5.83 ft).

* Discharge measurement made on this day.

3660. Applegate River near Applegate, Oreg.

Location.--Lat 42°14'30", long 123°09'20", in NE $\frac{1}{4}$ sec.26, T.38 S., R.4 W., on left bank 0.9 mile downstream Keeler Creek and 1.8 miles (revised) southeast of Applegate.

Drainage area.--480 sq mi.

Records available.--October 1938 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,285.33 ft above mean sea level, datum of 1929. Prior to Dec. 23, 1938, staff gage at same site and datum.

Average discharge.--21 years, 546 cfs (395,300 acre-ft per year).

Extremes.--Maximum discharge during year, 11,700 cfs Jan. 12 (gage height, 10.37 ft); minimum, 15 cfs July 21.

1938-59: Maximum discharge, 47,600 cfs Dec. 21, 1955 (gage height, 18.00 ft), from rating curve extended above 9,600 cfs on basis of slope-area measurement of peak flow; minimum, 7 cfs Sept. 18, 1945, Aug. 28, 1951.

Maximum stage known, 18.7 ft Feb. 20, 1927, from floodmarks.

Remarks.--Records good except those for period of no gage-height record, which are fair. No appreciable regulation. Many diversions for irrigation of about 4,000 acres above station. McDonald Creek Canal diverts from McDonald Creek above station for irrigation in Bear Creek basin. Thompson Creek Irrigation Association ditch diverts as much as 8 cfs for irrigation and has diverted 21 cfs for mining into Thompson Creek basin. Fowler-Keeler and Berryman ditches divert up to 4.3 and 13.6 cfs, respectively, above station for irrigation of about 800 acres below.

Revisions (water years).--WSP 1064: Drainage area. WSP 1448: 1953(M).

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 16 to June 13)

0.5	15	3.0	760
1.0	57	4.0	1,500
1.5	145	6.0	3,800
2.0	295	8.0	6,860

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	81	115	264	790	880	915	724	383	103	25	18
2	50	84	129	242	706	971	1,140	645	403	94	25	18
3	46	77	121	207	655	957	1,300	600	371	77	26	18
4	45	87	117	188	635	880	1,330	555	*355	76	26	20
5	45	101	113	222	600	826	1,410	546	363	71	25	21
6	45	98	111	228	565	778	1,390	541	383	76	24	21
7	46	100	113	213	541	742	1,180	555	339	74	22	19
8	45	107	150	584	514	706	1,010	610	315	74	20	21
9	46	105	172	2,200	514	675	964	860	299	68	18	21
10	46	215	150	3,120	510	645	950	590	278	65	17	20
11	*45	150	139	2,460	469	625	929	595	256	65	16	20
12	44	129	162	6,590	438	630	862	650	246	61	18	20
13	47	228	143	2,410	428	665	820	820	250	60	18	20
14	49	399	131	1,490	935	630	772	862	239	63	20	21
15	47	228	123	1,110	1,320	605	730	690	222	64	18	23
16	50	175	117	*943	1,560	590	675	610	216	57	18	22
17	50	*152	113	844	1,570	635	645	580	204	*47	17	24
18	56	150	113	760	1,530	660	a620	536	195	42	18	45
19	115	296	109	685	1,490	635	a600	487	180	38	18	113
20	141	383	111	625	1,220	605	a600	469	172	35	18	101
21	105	239	172	570	1,020	625	*610	464	162	23	20	82
22	96	188	165	532	894	625	670	478	148	21	21	70
23	92	165	139	496	826	655	724	510	141	22	18	64
24	89	145	137	1,040	772	645	838	505	141	22	18	61
25	87	133	216	1,010	726	625	868	510	141	25	20	57
26	82	129	377	796	*724	964	894	478	148	24	18	56
27	79	123	610	1,510	724	814	754	460	152	23	18	58
28	76	117	363	1,760	766	742	670	424	131	30	19	58
29	74	117	270	1,270	730	730	670	395	123	31	18	56
30	73	115	*278	1,020	---	862	760	387	117	26	18	51
31	71	-----	267	874	---	820	---	383	---	26	*16	---
Total	2,032	4,816	5,546	36,243	23,452	22,447	26,280	17,319	7,073	1,583	611	1,219
Mean	65.5	161	179	1,169	838	724	876	559	236	51.1	19.7	40.6
Ac-ft	4,030	9,550	11,000	71,890	46,520	44,520	52,130	34,350	14,030	3,140	1,210	2,420
Calendar year 1958: Max	10,900				Min 44		Mean 689		Ac-ft 643,500			
Water year 1958-59: Max	6,590				Min 16		Mean 407		Ac-ft 294,800			

Peak discharge (base, 2,200 cfs).--Jan. 10 (1 a.m.) 4,480 cfs (6.49 ft); Jan. 12 (7 a.m.) 11,700 cfs (10.37 ft); Jan. 27 (5 p.m.) 2,500 cfs (5.03 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for station near Copper.

3715. Grave Creek at Pease Bridge, near Placer, Oreg.

Location (revised).--Lat 42°38'30", long 123°12'40", in SE $\frac{1}{4}$ sec. 6, T.34 S., R.4 W., on right bank 0.5 mile downstream from Pease Bridge, 0.6 mile upstream from Boulder Creek, and 5.4 miles east of Placer. All records computed are for site 0.5 mile upstream at Pease Bridge where discharge measurements are made.

Drainage area.--22 sq mi, approximately, at measuring section 0.5 mile upstream.

Records available.--October 1940 to September 1959. Prior to October 1945 monthly discharge only, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 2,354.2 ft above mean sea level, datum of 1929 (Bureau of Reclamation bench mark). Prior to Aug. 4, 1955, at sites 0.5 mile upstream at datum 29.9 ft higher.

Average discharge.--14 years (1945-59), 63.7 cfs (46,120 acre-ft per year).

Extremes.--Maximum discharge during year, 2,120 cfs Jan. 12 (gage height, 7.00 ft), from rating curve extended above 620 cfs on basis of slope-area measurement at gage height 9.66 ft; minimum, 0.5 cfs July 23.

1940-59: Maximum discharge, 4,610 cfs Dec. 21, 1955 (gage height, 9.66 ft), from rating curve extended above 620 cfs on basis of slope-area measurement of peak flow; minimum, 0.3 cfs Sept. 13, 1944, Aug. 16-27, 1946, Aug. 18, 21, 1950.

Remarks.--Records good. No regulation. One small diversion above station. Prior to 1945, Columbia upper ditch diverted water about 2 miles above station, bypassing station.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second.

1.1	0.8	2.5	95
1.2	1.7	3.0	178
1.4	5.2	4.0	465
1.6	12	5.0	880
1.8	23	5.5	1,130
2.0	40		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.6	3.6	8.4	96	87	210	166	26	11	3.8	1.2	1.2
2	1.6	4.4	8.4	78	77	199	158	28	10	3.8	1.2	*1.1
3	1.5	6.3	7.7	60	69	172	134	27	*9.8	3.8	1.2	1.1
4	1.5	14	7.4	50	63	142	114	25	9.8	3.8	1.2	1.2
5	1.5	13	7.2	51	58	126	99	32	10	3.8	1.2	1.2
6	1.5	14	6.9	46	56	116	82	31	11	3.6	1.2	1.3
7	1.6	22	7.2	55	52	103	69	29	9.8	3.2	1.2	1.3
8	1.6	13	7.7	413	46	96	60	27	9.4	3.2	1.2	1.2
9	1.7	17	7.2	830	46	90	55	27	10	3.0	1.1	1.2
10	1.8	29	7.4	*725	44	78	52	23	9.4	3.0	1.1	1.2
11	1.8	16	8.7	674	38	71	48	21	8.7	2.9	1.1	1.1
12	1.8	10	12	1,040	38	75	44	19	8.4	2.8	1.1	1.1
13	1.8	66	11	278	38	81	40	18	7.7	2.8	1.1	1.1
14	1.8	*69	10	140	116	70	*36	20	6.9	2.8	1.1	1.3
15	1.8	41	9.4	114	90	63	33	20	6.0	*2.6	1.0	1.4
16	1.7	26	8.7	*87	121	63	30	18	5.5	2.2	1.0	1.5
17	1.7	19	8.4	72	134	77	28	17	5.5	2.2	1.1	1.6
18	2.6	21	7.7	62	193	77	26	18	5.8	2.0	1.1	2.0
19	11	96	7.4	56	180	74	24	31	5.8	1.8	1.2	3.8
20	6.3	70	7.7	48	142	63	22	29	5.5	1.7	1.3	4.4
21	4.0	45	15	44	114	69	22	25	5.5	1.7	1.3	3.8
22	3.4	32	13	39	109	71	21	22	5.2	1.4	1.4	3.4
23	2.9	24	12	37	110	82	20	21	5.2	1.2	1.3	2.9
24	2.8	18	*13	98	103	85	19	18	5.2	1.4	1.3	2.8
25	2.8	18	31	106	*95	96	20	16	5.0	1.4	1.2	2.6
26	2.6	14	122	96	101	138	24	17	5.2	1.3	1.2	4.0
27	2.6	12	138	288	129	118	22	16	3.8	1.3	1.2	5.0
28	2.6	10	83	249	164	114	20	16	3.6	1.3	1.2	4.4
29	2.4	9.4	75	162	-	115	19	14	4.0	1.3	1.1	4.6
30	2.4	8	101	124	-----	174	22	13	4.0	1.3	1.1	3.8
31	2.9	-----	108	103	-----	168	-----	12	-----	1.3	1.1	-----
Total	79.6	759.4	877.5	6,321	2,609	3,276	1,529	674	212.7	73.3	36.3	68.6
Mean	2.57	25.3	28.3	204	95.2	106	51.0	21.7	7.09	2.36	1.17	2.29
Cfsm	0.117	1.15	1.29	9.27	4.24	4.82	2.32	0.986	0.322	0.107	0.053	0.104
In.	0.13	1.28	1.48	10.69	4.41	5.54	2.58	1.14	0.36	0.12	0.06	0.12
Ac-ft	158	1,510	1,740	12,540	5,170	6,500	3,030	1,340	422	145	72	136

Calendar year 1958: Max 1,470 Min 1.5 Mean 64.7 Cfsm 2.94 In. 39.93 Ac-ft 46,870
 Water year 1958-59: Max 1,040 Min 1.0 Mean 45.3 Cfsm 2.06 In. 27.91 Ac-ft 32,760

Peak discharge (base, 850 cfs, revised).--Jan. 9 (3 p.m.) 995 cfs (5.23 ft); Jan. 12 (3 a.m.) 2,120 cfs (7.00 ft).

* Discharge measurement made on this day.

3725. East Fork Illinois River near Takilma, Oreg.

Location.--Lat 42°00'40", long 123°37'30", in SE¹ sec.10, T.41 S., R.8 W., on right bank 500 ft upstream from highway bridge, 0.3 mile upstream from Long Gulch, and 3 miles south of Takilma.

Drainage area.--42.6 sq mi.

Records available.--April to September 1926, April 1927 to April 1932, October 1940 to September 1959. Monthly discharge only for some periods, published in WSP 1318. Records prior to 1942 water year not equivalent owing to large diversions.

Gage.--Water-stage recorder. Datum of gage is 1,746.6 ft above mean sea level, datum of 1929 (Bureau of Reclamation bench mark). Prior to Oct. 31, 1946, staff gages at nearby sites at different datums. Oct. 31, 1946, to May 13, 1949, staff gage at same site and datum.

Average discharge.--18 years (1941-59), 189 cfs (136,800 acre-ft per year).

Extremes.--Maximum discharge during year, 6,580 cfs Jan. 12 (gage height, 9.34 ft); minimum, 7.6 cfs Aug. 27.

1926-32, 1940-59: Maximum discharge, 8,230 cfs Dec. 22, 1955 (gage height, 10.05 ft); minimum observed, 5.2 cfs Sept. 24-29, 1944.

Remarks.--Records good. No regulation. Occasional small diversions above station during summer months. Esterly Upper Canal and Osgood Canal diverted water around station prior to 1942.

Revisions (water years).--WSP 1184: 1948. WSP 1288: 1951(P). WSP 1398: 1946, 1947(M), 1949.

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 11

Jan. 12 to Sept. 30

0.9	6.5	3.0	227	1.0	6.7	4.0	450
1.0	9.2	4.0	490	1.2	13	5.0	850
1.4	26	5.0	910	1.5	28	6.0	1,530
1.8	55	6.0	1,600	2.0	67	7.0	2,650
2.3	107	7.0	2,650	2.5	126	8.0	4,030
				3.0	206		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.9	17	36	249	238	220	477	140	66	21	9.3	*9.6
2	8.9	13	33	200	204	236	483	118	*71	21	10	9.6
3	8.7	13	31	160	180	230	453	104	66	20	11	9.0
4	8.7	33	29	130	165	206	412	95	63	19	9.6	9.0
5	8.4	43	27	195	155	188	381	108	62	18	9.3	9.6
6	8.4	26	26	178	146	180	336	123	59	18	9.0	9.6
7	8.4	47	35	232	139	168	266	126	54	17	8.4	9.3
8	8.4	28	77	1,150	127	160	224	136	49	18	8.4	9.0
9	8.7	67	80	2,000	126	152	211	130	50	17	9.9	8.7
10	8.7	92	70	1,640	117	142	206	114	45	16	10	8.4
11	8.7	47	68	2,110	106	130	195	114	43	16	10	8.7
12	8.7	*33	78	*2,980	100	142	185	133	44	15	9.9	8.7
13	8.4	431	69	*809	101	158	*171	180	43	*15	9.6	8.7
14	8.4	350	59	483	494	146	158	148	40	14	9.3	10
15	8.4	149	52	342	612	132	146	112	38	13	8.2	11
16	8.4	92	46	273	750	130	136	95	38	13	7.9	10
17	8.4	68	41	242	524	157	127	95	36	12	8.2	11
18	10	133	38	211	600	165	120	89	36	12	8.7	33
19	35	478	34	181	562	157	116	84	36	11	9.9	54
20	18	294	36	161	384	143	118	79	35	12	11	35
21	12	166	110	144	271	155	127	77	32	13	12	22
22	12	111	*84	127	219	154	139	78	30	11	11	17
23	11	85	72	120	193	208	155	81	29	11	10	15
24	11	67	91	382	*174	232	178	86	27	12	9.6	13
25	11	57	208	350	165	282	174	86	26	11	9.0	13
26	10	49	830	313	155	423	158	81	29	11	8.2	13
27	9.9	41	716	1,100	157	303	134	74	27	12	7.9	15
28	9.5	37	386	831	174	268	117	66	24	12	7.9	13
29	9.5	33	260	507	-	305	120	62	23	12	8.2	13
30	9.2	30	258	378	-----	805	144	62	23	11	8.2	13
31	12	-----	260	291	-----	520	-----	61	-----	9.0	9.3	-----
Total	325.7	3,130	4,240	18,469	7,338	6,997	6,367	3,117	1,244	443.0	288.9	428.9
Mean	10.5	104	137	596	262	226	212	101	41.5	14.3	9.32	14.3
Ac-ft	646	6,210	8,410	36,630	14,550	13,880	12,630	6,180	2,470	879	573	851

Calendar year 1958: Max 3,480 Min 7.8 Mean 215 Ac-ft 155,600

Water year 1958-59: Max 2,980 Min 7.9 Mean 144 Ac-ft 103,900

Peak discharge (base, 2,500 cfs).--Jan. 12 (12 p.m.) 6,580 cfs (9.34 ft).

* Discharge measurement made on this day.

3750. Sucker Creek near Holland, Oreg.

Location.--Lat 42°09'00", long 123°27'50", in NE $\frac{1}{4}$ sec.25, T.39 S., R.7 W., on right bank 1.3 miles (revised) downstream from Grayback Creek and 4 miles northeast of Holland.

Drainage area.--76 sq mi, approximately.

Records available.--April to August 1940, September 1941 to September 1959. Prior to October 1945 monthly discharge only, published in WSP 1318.

Gage.--Water-stage recorder. Datum of gage is 1,777.22 ft above mean sea level (Bureau of Reclamation bench mark). Prior to Sept. 16, 1947, staff gages at several sites within half a mile of present site at various datums. Sept. 16, 1947, to Sept. 19, 1952, staff gage at site 280 ft upstream at datum 0.62 ft higher.

Average discharge.--18 years (1941-59), 214 cfs (154,900 acre-ft per year).

Extremes.--Maximum discharge during year, 7,300 cfs Jan. 12 (gage height, 8.00 ft); minimum, 24 cfs Sept. 13.

1940-59: Maximum discharge, that of Jan. 12, 1959; minimum observed, 17 cfs Sept. 29 to Oct. 3, 1941.

Remarks.--Records good. No regulation. Grayback Canal diverts water from Grayback Creek above station for domestic use and irrigation; most of return flow from this canal enters creek above station.

Revisions (water years).--WSP 1318: 1946(M).

Rating tables, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 11

Jan. 12 to Sept. 30

1.2	24	3.0	455	1.2	20	3.0	455
1.6	61	4.0	1,060	1.4	34	4.0	1,060
2.0	128	5.0	1,970	1.7	71	5.0	1,970
2.5	260			2.0	128	6.0	3,250
				2.5	260	7.0	4,900

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	40	50	179	342	323	419	260	160	65	32	*28
2	31	36	47	155	306	338	446	236	*162	64	32	27
3	30	39	45	130	294	330	465	218	157	62	32	26
4	30	44	43	114	264	306	465	208	155	59	32	28
5	30	47	41	160	248	292	470	215	155	59	31	28
6	30	44	40	155	236	278	437	209	150	59	31	29
7	30	60	59	234	224	260	390	218	141	58	31	28
8	30	47	87	1,060	209	251	362	230	135	55	31	27
9	30	82	73	1,570	212	239	346	224	137	54	30	26
10	30	79	61	1,410	203	230	330	212	126	51	29	25
11	30	53	65	1,730	187	221	323	224	122	50	29	25
12	30	*47	69	*3,490	177	224	306	251	122	49	29	25
13	30	201	60	*1,120	177	224	*295	292	118	*48	29	27
14	29	148	56	719	323	215	284	284	114	46	29	32
15	29	79	51	550	414	206	267	236	108	45	29	33
16	29	59	49	450	566	208	254	218	106	45	28	30
17	29	53	47	394	540	218	245	209	102	43	28	29
18	33	65	46	346	566	218	233	195	100	41	29	66
19	82	133	44	312	550	212	230	190	98	41	30	78
20	46	114	48	281	455	206	230	179	96	40	32	52
21	36	84	84	254	378	215	236	179	92	39	33	40
22	38	69	*60	236	330	212	242	182	86	38	31	36
23	37	60	54	224	309	248	260	192	83	37	29	33
24	36	57	69	398	*295	236	288	192	80	37	28	32
25	35	52	114	354	281	260	298	190	80	36	28	32
26	34	49	385	326	274	323	298	179	88	36	28	37
27	34	47	330	591	274	292	270	167	80	36	27	34
28	33	45	218	638	288	295	251	157	74	35	28	32
29	33	43	177	520	-	298	257	155	71	35	28	31
30	32	42	190	437	-----	437	278	155	68	35	28	31
31	36	-----	187	382	-----	410	-----	155	-----	33	27	-----
Total	1,055	2,018	2,949	18,919	8,912	8,223	9,475	6,409	3,366	1,431	918	1,007
Mean	34.0	67.3	95.1	610	318	265	316	207	112	46.2	29.6	33.6
Cfs/m	0.447	0.866	1.25	6.03	4.18	3.49	4.16	2.72	1.47	0.608	0.389	0.442
In.	0.52	0.99	1.44	9.26	4.36	4.02	4.63	3.14	1.65	0.70	0.45	0.49
Ac-ft	2,090	4,000	5,850	37,530	17,680	16,310	18,790	12,710	6,680	2,840	1,820	2,000

Calendar year 1958: Max 3,040 Min 29 Mean 302 Cfs/m 3.97 In. 53.89 Ac-ft 218,400
 Water year 1958-59: Max 3,490 Min 25 Mean 177 Cfs/m 2.33 In. 31.65 Ac-ft 128,300

Peak discharge (base, 1,400 cfs).--Jan. 9 (9:30 p.m.) 1,970 cfs (5.00 ft); Jan. 12 (2:30 a.m.) 7,300 cfs (8.00 ft).

* Discharge measurement made on this day.

3755. West Fork Illinois River below Rock Creek, near O'Brien, Oreg.

Location.--Lat 42°02'20", long 123°44'50", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.34, T.40 S., R.9 W., on left bank 900 ft downstream from Rock Creek and 3 miles southwest of O'Brien.

Drainage area.--42.4 sq mi.

Records available.--September 1954 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,516.14 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--5 years, 232 cfs (168,000 acre-ft per year).

Extremes.--Maximum discharge during year, 5,790 cfs Jan. 12 (gage height, 11.90 ft); minimum, 3.2 cfs Aug. 12.

1954-59: Maximum discharge, 12,100 cfs Dec. 22, 1955 (gage height, 14.79 ft); minimum, 3.2 cfs Sept. 23, 1957, Aug. 12, 1959.

During flood of Oct. 28, 1950, flow of 14,200 cfs occurred at former station downstream where the drainage area is 15 percent larger. The flood of Dec. 22, 1955, was slightly lower.

Remarks.--Records good. Slight regulation by logpond upstream.

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.5	26	37	219	330	304	500	56	27	12	4.3	*4.0
2	6.3	17	35	178	267	295	372	53	*26	12	4.3	4.2
3	6.5	16	34	143	222	265	304	52	26	12	4.2	3.8
4	6.5	124	33	126	195	224	250	49	26	12	5.1	4.0
5	5.7	129	31	367	170	201	213	62	28	9.6	4.6	4.6
6	6.2	99	30	490	157	186	181	67	26	9.6	4.4	4.9
7	6.0	130	38	453	150	170	160	59	26	9.6	4.2	4.8
8	6.3	84	77	1,220	155	158	144	55	24	9.3	4.4	4.4
9	6.2	178	107	2,280	146	149	130	52	26	7.9	3.7	4.0
10	6.0	168	86	1,950	146	139	118	48	24	7.5	4.0	4.3
11	6.0	88	77	2,020	139	128	108	45	22	7.5	4.3	4.2
12	6.2	*59	77	3,120	133	125	102	42	23	7.2	3.4	4.2
13	6.6	655	67	*901	144	130	*96	41	22	*6.8	3.4	4.6
14	6.3	583	57	520	1,290	119	91	45	22	6.6	4.4	5.7
15	5.8	265	49	366	1,040	108	86	44	22	6.6	4.4	6.8
16	6.0	157	44	287	1,280	102	81	41	21	7.5	3.4	6.0
17	6.2	109	39	231	1,050	104	77	44	19	6.4	3.4	6.2
18	11	188	35	193	2,010	108	72	45	19	5.8	4.2	28
19	49	627	33	166	1,680	114	68	44	19	5.7	4.2	71
20	20	372	43	146	889	103	66	41	17	5.1	4.6	32
21	13	206	142	130	570	162	64	39	17	4.9	5.3	19
22	10	142	*98	118	435	160	60	39	16	4.8	4.9	14
23	10	103	81	107	415	510	59	38	16	4.8	4.6	11
24	9.9	81	98	330	*364	553	54	35	14	4.8	4.4	10
25	8.6	65	274	452	312	559	58	34	14	4.6	4.4	9.9
26	8.8	53	871	532	289	768	59	34	16	4.4	3.6	13
27	8.8	46	1,440	1,900	285	495	56	33	16	4.3	3.7	16
28	8.6	40	790	1,260	291	432	52	32	14	4.8	3.7	13
29	8.8	36	392	686	-	490	51	32	14	4.6	4.0	11
30	8.8	33	300	590	-	1,420	54	30	13	4.3	3.8	9.9
31	19	-----	261	428	-----	766	-----	28	-----	4.4	4.0	-----
Total	299.6	4,879	5,776	21,909	14,514	9,527	3,786	1,359	615	217.4	129.3	338.5
Mean	9.66	163	186	707	518	307	126	43.8	20.5	7.01	4.17	11.3
Ac-ft	594	9,680	11,460	43,460	28,790	18,900	7,510	2,700	1,220	431	256	671

Calendar year 1958: Max 4,210 Min 3.5 Mean 247 Ac-ft 179,100
 Water year 1958-59: Max 3,120 Min 3.4 Mean 174 Ac-ft 125,700

Peak discharge (base, 4,000 cfs, revised).--Jan. 12 (1:30 a.m.) 5,790 cfs (11.90 ft).

* Discharge measurement made on this day.

3770. Illinois River at Kerby, Oreg.

Location.--Lat 42°11'50", long 123°39'30", in NW¹ sec.9, T.39 S., R.8 W., on right bank at Finch Bridge and 0.5 mile west of Kerby.

Drainage area.--364 sq mi.

Records available.--March 1926 to September 1959. Monthly discharge only March 1926, published in WSP 1318.

Gage.--Wire-weight gage read once or twice daily. Datum of gage is 1,232.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to May 9, 1928, staff gage at site half a mile upstream at different datums. May 9, 1928, to Nov. 2, 1934, staff gage at present site at different datums. Nov. 3, 1934, to Sept. 30, 1950, water-stage recorder at site 1 mile downstream at datum 16.76 ft lower. Oct. 1, 1950, to Dec. 28, 1958, staff gage at same site at datum 2.00 ft higher.

Average discharge.--33 years, 1,208 cfs (874,600 acre-ft per year).

Extremes.--Maximum discharge during year, 43,200 cfs Jan. 12 (gage height, 13.6 ft, from floodmark); minimum observed, 9.6 cfs Aug. 16.
1926-59: Maximum discharge, 56,800 cfs Dec. 22, 1955 (gage height, 14.4 ft, from floodmark), from rating curve extended above 9,600 cfs on basis of slope-area measurement at gage height, 13.7 ft; minimum observed, that of Aug. 16, 1959.

Remarks.--Records good except those for period of shifting control, which are fair. No regulation. Diversions for irrigation of 5,500 acres above station. Some diversions for mining during winter months.

Revisions (water years).--WSP 864: 1936-37. WSP 1184: 1927(M), 1942(M), 1943, 1946(M), 1948. WSP 1218: Drainage area. WSP 1398: 1927-29, 1930(M), 1931-32, 1933-34(M).

Rating table, water year 1958-59, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

2.35	9.0	3.1	253	6.0	4,150
2.4	12	3.5	530	8.0	10,600
2.6	37	4.0	970	11.0	26,200
2.8	92	5.0	2,300		

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	112	155	1,290	2,240	1,900	3,090	639	229	80	23	*19
2	43	94	190	1,000	1,840	1,960	2,780	673	286	80	17	21
3	43	92	190	726	1,620	1,860	2,510	639	*279	73	17	21
4	42	92	170	538	1,430	1,690	2,260	598	273	73	23	23
5	42	498	177	1,390	1,330	1,470	2,060	614	286	70	26	21
6	42	330	166	2,000	1,230	1,370	1,790	590	286	70	26	21
7	41	516	250	2,080	1,160	1,260	1,660	639	260	73	23	24
8	41	330	424	7,390	1,060	1,180	1,470	656	241	67	23	23
9	41	721	552	12,800	1,080	1,090	1,310	648	260	61	19	26
10	41	870	440	11,200	1,180	981	1,200	552	241	64	18	23
11	41	448	448	10,300	1,160	960	1,150	494	229	59	17	23
12	41	288	489	*25,000	1,020	940	1,110	538	204	54	15	23
13	43	964	472	*7,320	1,000	960	1,010	605	210	51	12	24
14	42	2,400	379	4,190	5,200	940	*981	639	204	*49	11	26
15	41	1,300	270	3,130	6,100	843	920	545	181	47	10	29
16	41	730	216	2,490	7,180	816	861	530	170	42	9.6	31
17	41	600	207	2,080	6,190	861	807	530	142	39	13	34
18	45	720	186	1,760	9,520	920	753	568	158	39	16	127
19	65	2,720	177	1,550	8,060	890	726	523	158	35	19	158
20	140	2,000	170	1,370	4,560	861	690	465	164	34	21	164
21	92	1,260	570	1,230	3,470	960	699	408	142	35	21	101
22	80	850	*600	1,110	2,680	1,080	708	422	136	35	24	96
23	71	600	456	1,000	2,480	1,880	682	465	114	32	21	80
24	71	472	480	2,240	2,180	2,180	708	458	101	34	21	67
25	67	400	1,360	2,820	*1,920	2,180	780	422	101	34	21	61
26	67	358	3,320	2,980	1,790	3,890	789	387	101	32	20	61
27	65	260	6,560	7,580	1,720	2,660	717	373	92	32	23	84
28	65	225	3,400	*6,740	1,720	2,330	682	360	76	34	21	67
29	65	186	*2,060	4,260	-	2,440	622	293	83	29	21	70
30	63	162	1,620	3,460	-----	5,860	684	319	80	26	21	70
31	84	-----	1,440	2,770	-----	3,990	-----	266	-----	23	20	-----
Total	1,748	20,598	27,594	135,774	82,120	53,202	36,189	15,858	5,487	1,506	592.6	1,598
Mean	56.4	687	880	4,360	2,733	1,716	1,206	512	182	48.6	19.1	53.3
Ac-ft	3,470	40,860	54,750	269,300	162,900	105,500	71,780	31,450	10,880	2,890	1,180	3,170
Calendar year 1958: Max			29,900	Min 36		Mean 1,675		Ac-ft 1,213,000				
Water year 1958-59: Max			25,000	Min 9.6		Mean 1,047		Ac-ft 758,200				

* Discharge measurement made on this day.

Note.--Shifting-control method used Oct. 1 to Jan. 8.

3780. Illinois River near Selma, Oreg.

Location.--Lat 42°22'45", long 123°48'40", in SW¹ sec.6, T.37 S., R.9 W., on right bank 200 ft upstream from Panther Creek, 0.3 mile downstream from Briggs Creek, and 12 miles northwest of Selma. Records include flow of Panther Creek.

Drainage area.--665 sq mi, includes that of Panther Creek.

Records available.--October 1956 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 829.18 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 64,500 cfs Jan. 12 (gage height, 21.5 ft, from floodmarks); minimum, 61 cfs Aug. 28, Sept. 2.

1956-59: Maximum discharge, 70,100 cfs Jan. 29, 1958 (gage height, 22.3 ft, from floodmarks); minimum, that of Aug. 28, Sept. 2, 1959.

Maximum discharge known, 97,000 cfs Dec. 22, 1955 (gage height, 25.64 ft, from floodmarks), from slope-area measurement of peak flow.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation. Many diversions above station for irrigation, mining, and logpond operation.

Rating table, water year 1958-59 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 6-18, June 30 to Aug. 1)

2.0	57	4.0	480	9.0	6,220
2.4	100	5.0	940	11.0	11,300
3.0	198	6.0	1,720	14.0	22,200
3.5	320	7.0	2,850	17.0	36,000

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	111	220	250	1,800	3,910	3,750	5,560	950	508	204	75	62
2	108	250	275	1,500	3,320	3,830	4,820	1,000	492	198	74	*61
3	104	240	275	1,200	2,850	3,520	4,280	940	*484	188	73	82
4	101	250	250	900	2,570	3,140	*3,800	880	456	173	71	62
5	96	650	250	2,000	2,330	2,760	3,360	860	452	160	67	64
6	93	550	250	3,000	2,150	2,550	3,060	904	456	160	66	68
7	89	700	350	3,500	2,040	2,560	2,860	892	448	158	64	69
8	*83	600	500	9,000	1,900	2,220	2,390	875	431	154	63	69
9	83	1,000	776	18,000	2,000	2,100	2,140	880	424	149	64	66
10	83	1,400	750	17,000	2,000	1,950	2,010	850	424	141	63	63
11	84	700	700	16,000	1,900	1,800	1,910	830	401	127	63	62
12	86	500	725	35,000	1,730	1,700	1,810	840	386	120	63	62
13	87	*2,500	704	15,000	1,850	1,790	1,860	830	374	118	64	63
14	86	3,860	500	*7,210	8,000	1,750	1,560	875	371	*118	63	69
15	84	2,090	400	5,230	12,000	1,630	1,400	855	362	120	62	71
16	84	1,300	350	4,070	15,000	1,540	1,300	776	338	115	62	73
17	84	964	300	*3,340	14,000	1,580	1,200	748	332	110	63	76
18	147	1,050	290	2,850	*18,200	1,680	1,170	748	317	104	62	156
19	341	3,380	280	2,400	15,600	1,730	1,200	744	308	101	62	293
20	326	3,170	270	2,100	9,940	1,580	1,200	722	296	99	62	344
21	260	1,820	800	1,900	6,680	1,610	1,200	694	275	95	67	265
22	218	1,360	900	1,700	5,270	1,760	1,200	654	270	94	68	214
23	200	900	*694	1,700	4,660	3,180	1,100	645	252	88	67	182
24	190	700	694	3,500	4,120	3,830	1,200	640	233	83	67	167
25	180	600	1,590	4,000	3,690	3,520	1,300	636	222	81	64	157
26	170	550	4,980	4,500	3,410	6,470	1,300	609	229	78	63	158
27	165	400	11,000	15,000	3,300	4,820	1,200	600	236	77	62	169
28	165	350	8,890	*11,300	3,440	4,070	1,100	584	227	76	61	165
29	165	275	3,910	7,140	-	4,260	1,000	560	220	75	63	160
30	170	250	2,500	5,870	-----	9,450	1,000	540	212	76	64	155
31	190	-----	2,000	4,720	-----	7,210	-----	520	-----	76	63	-----
Total	4,433	32,579	44,403	210,430	157,860	95,140	60,090	23,681	10,436	3,716	2,015	3,707
Mean	143	1,086	1,432	6,788	5,638	3,069	2,003	764	348	120	65.0	124
Ac-ft	8,790	64,620	88,070	417,400	313,100	188,700	119,200	46,970	20,700	7,370	4,000	7,350
Calendar year 1958: Max	54,000				Min 83	Mean 3,129		Ac-ft 2,265,000				
Water year 1958-59: Max	35,000				Min 61	Mean 1,777		Ac-ft 1,286,000				

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 23 to Nov. 13, Nov. 23, to Dec. 8, Dec. 10-12, 14-22, Dec. 30 to Jan. 13, Jan. 19-27, Feb. 8-11, 14-17, Apr. 15-17, Apr. 19 to May 1; discharge estimated on basis of weather records, recorded range in stage, and records for station at Kerby.

Reservoirs in Rogue River basin, Oreg.

3420. Fish Lake.--Lat 42°23', long 122°21', in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.4, T.37 S., R.4 E., at outlet gate tower in reservoir on North Fork Little Butte Creek, 14 miles east of Lake Creek Post Office. Drainage area, 17 sq mi, approximately. Records available, October 1915 to September 1959. Staff gage read daily during summer and once or twice a month during winter. Datum of gage is 185.4 ft below mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 1, 1921, at datum 4,799.0 ft higher. Maximum contents observed during year, 8,100 acre-ft May 19-30, June 1, 2 (gage height, 4,827.4 ft); minimum observed, 311 acre-ft Sept. 14 (gage height, 4,802.9 ft). Maximum contents observed during period 1915-59, 8,190 acre-ft May 31 to June 9, 1958 (gage height, 4,827.6 ft); no usable contents at times.

Reservoir is formed by rock-faced, earth-fill dam, completed in 1915. Capacity, 8,020 acre-ft between gage heights 4,799.0 (outlet tunnel) and 4,827.2 ft (spillway crest, rebuilt in 1956). Since August 1923, water diverted during summer from Fourmile Lake in Klamath River basin through Cascade Canal into Fish Lake. Water from reservoir used for irrigation near Eagle Point and Medford.

3490. Emigrant Gap Reservoir.--Lat 42°09'40", long 122°36'20", in SE $\frac{1}{4}$ sec.20, T.39 S., R.2 E., on left bank face of Emigrant Gap Dam on Emigrant Creek, 2 miles downstream from Sampson Creek, and 6 miles southeast of Ashland. Drainage area, 64 sq mi, approximately. Records available, October 1924 to September 1959. Staff gage usually read once or twice a week during summer, less frequently during winter. Datum of gage is at mean sea level (levels by Talent Irrigation District). Maximum contents observed during year, 7,720 acre-ft Apr. 10 (elevation, 2,173.5 ft); no contents Sept. 30. Maximum contents observed during period 1924-59, 8,490 acre-ft Feb. 20, 1927 (elevation, 2,175.2 ft), from revised original capacity table, sedimentation being assumed negligible at that time; maximum elevation, 2,176.0 ft Jan. 27, 1954; no contents at times.

Capacity table used is based on survey made by Bureau of Reclamation in 1951, which indicated that a net amount of 366 acre-ft of silt had accumulated in reservoir from 1924-51.

Reservoir is formed by concrete-arch dam, completed in 1924. Capacity, 7,720 acre-ft between elevations 2,075.0 and 2,173.5 ft (crest of spillway). No dead storage. Water is used for irrigation near Talent. Ashland lateral diverts water from an upstream tributary, Sampson Creek, for irrigation in vicinity of Ashland. Flow in Sampson Creek is supplied principally from Klamath River basin by Keene Creek Canal transmountain diversion.

Revisions (water years).--WSP 834: 1936. WSP 1064: 1945. WSP 1348: 1927(M), 1951-53.

Month-end gage height or elevation and contents, water year October 1958 to September 1959

Date	Gage height (feet)	Contents (acre- feet)	Change in contents (acre-feet)	Elevation (feet)	Contents (acre- feet)	Change in contents (acre-feet)
Fish Lake			Emigrant Gap Reservoir			
Sept. 30.....	4,814.95	3,490	-	2,083.8	15	-
Oct. 31.....	-	a5,700	+2,210	-	a50	+35
Nov. 30.....	-	a6,700	+1,000	-	a140	+90
Dec. 31.....	-	a7,200	+500	-	a360	+220
Calendar year 1958...	-	-	+2,200	-	-	-4,990
Jan. 31.....	-	a7,700	+500	-	a1,900	+1,540
Feb. 28.....	-	a7,900	+200	-	a4,400	+2,500
Mar. 31.....	-	a7,950	+50	-	a6,700	+2,300
Apr. 30.....	4,827.1	7,980	+30	-	a6,800	+100
May 31.....	4,827.35	8,080	+100	2,170.2	6,970	+170
June 30.....	4,820.9	5,550	-2,530	2,155.5	4,280	-2,690
July 31.....	4,809.5	1,840	-3,710	2,118.8	820	-3,460
Aug. 31.....	4,804.5	590	-1,250	2,112.5	546	-274
Sept. 30.....	4,806.5	1,050	+460	2,075.0	0	-546
Water year 1958-59...	-	-	-2,440	-	-	-15

a Interpolated.

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrological analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or flood-flow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are generally presented in two tables. However, no records at low-flow partial-record stations are available for the 1959 water year. A table of annual maximum discharge at crest-stage stations is given first, followed by a table of measurements made at miscellaneous sites for both low flow and high flow.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations							
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
Walla Walla River basin							
159	Spring Creek tributary near Walla Walla, Wash.	N $\frac{1}{2}$ sec.9, T.7 N., R.37 E., at Spring Creek road 200 ft above mouth and 7 miles northeast of Walla Walla.	1.94	1956-59	1-24-59	3.70	70
166	Hatley Creek near Dayton, Wash.	On line between secs.2 and 11, T.9 N., R.39 E., at North Fork Touchet River road, 5 miles southeast of Dayton.	4.12	1955-59	1-24-59	3.88	103
166.5	Davis Hollow Creek near Dayton, Wash.	SE $\frac{1}{4}$ sec.32, T.10 N., R.39 E., at county road 200 ft above mouth and 2 miles southeast of Dayton city center.	3.01	1956-59	1- -59	.98	7.8
172	Badger Hollow Creek near Clyde, Wash.	SE $\frac{1}{4}$ sec.20, T.11 N., R.36 E., at county road 5.8 miles east of Clyde and 8 miles north of Prescott.	4.16	1955-59	1-24-59	1.33	15
175	Touchet River near Touchet, Wash.	NE $\frac{1}{4}$ sec.15, T.7 N., R.33 E., 100 ft below site of old county road bridge, $\frac{1}{4}$ mile above diversion dam, and $\frac{3}{4}$ miles north of Touchet.	736	1942*, 1944*, 1946-55*, 1956-59	1-27-59	10.19	6,130
191	Walla Walla River tributary near Wallula, Wash.	SW $\frac{1}{4}$ sec.25, T.7 N., R.31 E., at U. S. Highway 410, 1.5 miles southeast of Wallula.	.80	1955-59	1959	(a)	<1
Umatilla River basin							
208	Spring Creek at St. Andrews Mission, Oreg.	SE $\frac{1}{4}$ sec.24, T.2 N., R.33 E., at culvert, 0.1 mile east of St. Andrews School and 8 miles east of Pendleton.	2.74	1958-59	1959	(a)	78
216	Umatilla River tributary near Pendleton, Oreg.	E $\frac{1}{2}$ sec.4, T.2 N., R.32 E., at culvert on U. S. Highway 395, 0.7 mile above mouth and 1.5 miles northwest of Pendleton.	4.30	1958-59	1-28-59	13.14	53
223	Little McKay Creek near Pilot Rock, Oreg.	On line between secs.1 and 12, T.1 S., R.32 E., at culvert 0.4 mile above mouth and 4 miles northeast of Pilot Rock.	65.0	1958-59	12-11-58	10.59	41
Dead Canyon basin							
343.2	Dead Canyon tributary near Alderdale, Wash.	N $\frac{1}{2}$ of line between secs.14 and 15, T.5 N., R.23 E., 6 miles north of Alderdale.	1.08	1955-59	1959	-	(c)*

* Operated as a continuous-record gaging station.

< Less than.

a Peak stage did not reach bottom of gage.

b Approximately.

c Little or no flow during the year.

Annual maximum discharge at crest-stage partial-record stations--Continued

Annual maximum discharge at crest-stage partial record stations--Continued					Annual maximum		
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Date	Gage height (feet)	Discharge (cfs)
Willow Creek basin							
343.7	Willow Creek tributary near Heppner, Oreg.	SW $\frac{1}{4}$ sec.22, T.4 S., R.28 E., at culvert on Willow Creek Road, 300 ft above mouth and 15 miles southeast of Heppner.	b1.4	1958-59	1958 1959	(a)	(e,c) (c)
343.8	North Fork Willow Creek near Heppner, Oreg.	E $\frac{1}{2}$ sec.29, T.3 S., R.28 E., at culvert on Willow Creek Road, 200 ft above mouth and 12 miles southeast of Heppner.	10.0	1958-59	3- 1-59	15.64	22
John Day River basin							
410	Desolation Creek near Dale, Oreg.	SW $\frac{1}{4}$ sec.6, T.7 S., R.32 E., $\frac{1}{2}$ mile above mouth and 1.5 miles east of Dale.	108	1950-58 [†] , 1959	5- -59	3.68	414
469	John Day River tributary near Clarno, Oreg.	NE $\frac{1}{4}$ sec.3, T.8 S., R.18 E., at culvert on State Highway 218, 5 miles west of Clarno.	b2.0	1959	1959	-	(d)
480.2	Grass Valley Canyon near Grass Valley, Oreg.	NW $\frac{1}{4}$ sec.35, T.2 S., R.16 E., at culvert on county road, 1 mile northeast of Grass Valley.	b8.3	1958-59	1959	(a)	(c)
480.4	Gordon Hollow at DeMoss Springs, Oreg.	NW $\frac{1}{4}$ sec.3, T.1 S., R.17 E., at culvert on U. S. Highway 97 at DeMoss Springs, 0.1 mile above Barnum Canyon.	8.86	1959	1959	-	(d)
480.6	Hay Canyon near DeMoss Springs, Oreg.	N $\frac{1}{2}$ sec.18, T.1 S., R.18 E., at bridge at Monkland Ranch, 3 miles above mouth and 4 miles southeast of DeMoss Springs.	23.8	1959	1959	-	(d)
480.8	Buck Canyon (formerly Bull Run Canyon) near Klondike, Oreg.	SW $\frac{1}{4}$ sec.32, T.1 N., R.18 E., at culvert on State Highway 206, 0.3 mile above mouth and 4 miles south of Klondike.	3.42	1953, 1959	8-26-53 1959	-	e1,030 (d)
Spanish Hollow basin							
483	Spanish Hollow at Wasco, Oreg.	NE $\frac{1}{4}$ sec.9, T.1 N., R.17 E., at culvert on street in southeast Wasco.	8.05	1959	1959	-	(d)
Fulton Canyon basin							
483.5	Fulton Canyon tributary near Wasco, Oreg.	Center sec.12, T.1 N., R.16 E., at culvert on county road, 2.7 miles above mouth and 3.5 miles west of Wasco.	6.75	1959	1959	-	0
Deschutes River basin							
818	Ahalt Creek near Mitchell, Oreg.	NE $\frac{1}{4}$ sec.20, T.13 S., R.20 E., at culvert on Walton Lake road, 200 ft above mouth and 14 miles southwest of Mitchell.	2.28	1956, 1958-59	1959	(a)	(†)
937	Trout Creek tributary at Ashwood, Oreg.	SW $\frac{1}{4}$ sec.36, T.9 S., R.16 E., at culvert on county road, 0.1 mile above mouth and 0.3 mile north of Ashwood.	b1.9	1959	1959	-	(d)
938	Trout Creek tributary near Ashwood, Oreg.	NW $\frac{1}{4}$ sec.33, T.9 S., R.17 E., at culvert on county road, 2 miles east of Ashwood and 3 miles above mouth.	b4.7	1959	1959	-	(d)
942	Antelope Creek at Antelope, Oreg.	NW $\frac{1}{4}$ sec.4, T.8 S., R.17 E., at culvert on State Highway 218 in Antelope.	b26	1959	1959	-	(d)
943	Cow Canyon Creek near Antelope, Oreg.	Sec.28, T.8 S., R.15 E., at culvert on U. S. Highway 97, 1.4 miles north of Jefferson County line and 11 miles southwest of Antelope.	b2.9	1959	1959	-	(d)
952	Mud Spring Creek tributary near Madras, Oreg.	E $\frac{1}{2}$ sec.27, T.9 S., R.14 E., at culvert on U. S. Highway 97, 1 mile above mouth and 11 miles north of Madras.	b7.4	1958-59	1959	-	0
Little White Salmon River basin							
1252	Rock Creek near Willard, Wash.	NW $\frac{1}{4}$ sec.14, T.3 N., R.9 E., at county road 4.4 miles north of U. S. Highway 830 and 1 mile south of Willard.	4.04	1949-59	11-12-58	3.13	116

† Discharge not determined.

* Operated as a continuous-record gaging station.

a Peak stage did not reach bottom of gage.

b Approximately.

c Little or no flow during the year.

d Probably little or no flow during the year.

e Not previously published.

Annual maximum discharge at crest-stage partial-record stations--Continued							
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
Unnamed tributary to Columbia River							
1263	Columbia River tributary at Home Valley, Wash.	SE $\frac{1}{4}$ sec.27, T.3 N., R.8 E., at U. S. Highway 830, 0.3 mile east of Home Valley Post Office, Home Valley.	1.08	1950-59	11-12-58	2.44	32
Dry Creek basin							
1287.4	Dry Creek (formerly Columbia River tributary) at Cascade Locks, Oreg.	NW $\frac{1}{4}$ sec.7, T.2 N., R.8 E., at culvert on U. S. Highway 30, 0.4 mile above mouth and 0.8 mile east of Cascade Locks.	3.18	1952-59	12-11-58	7.24	57
Sandy River basin							
1312	Lady Creek near Rhododendron, Oreg.	NW $\frac{1}{4}$ sec.16, T.3 S., R.8 E., at water-supply dam, 300 ft above mouth and 4 miles east of Rhododendron.	3.82	1953-59	12-11-58	12.02	f223
Washougal River basin							
1432	Canyon Creek near Washougal, Wash.	SE $\frac{1}{4}$ sec.4, T.1 N., R.5 E., at State Highway 8B, 2.4 miles from U. S. Highway 830 and 8 miles east of Washougal.	2.74	1949-59	12-11-58	2.74	84
1440	Little Washougal River near Washougal, Wash.	SE $\frac{1}{4}$ sec.31, T.2 N., R.4 E., 20 ft below private bridge, 1 mile above mouth and 2 $\frac{1}{2}$ miles north of Washougal.	23.8	1952-58*, 1956-59	1959	6.63	1,040
1443	Shanghai Creek near Hockinson, Wash.	SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.33, T.3 N., R.3 E., at county road, 3.3 miles southeast of Hockinson.	2.14	1950-59	1-24-59	3.08	53
Groenveld Creek basin							
1446	Groenveld Creek near Camas, Wash.	NE $\frac{1}{4}$ sec.8, T.1 N., R.3 E., at private road 15 ft east of county road, 0.4 mile above mouth, and $\frac{1}{2}$ mile northwest of Camas city limits.	0.51	1958-59	4-20-58 1-27-59	2.64 1.81	47 24
Willamette River basin							
1487	Fern Creek near Lowell, Oreg.	W $\frac{1}{2}$ NW $\frac{1}{4}$ sec.3, T.20 S., R.1 E., at culvert on State Highway 58 at mouth, 6 miles southeast of Lowell.	0.44	1953-59	1-22-59	5.06	21
1539	Prather Creek near Disston, Oreg.	NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.30, T.21 S., R.1 E., at water-supply dam, 0.2 mile above mouth at Layng Creek ranger station and 1.8 miles northeast of Disston (revised).	5.69	1953-59	1-27-59	5.16	f144
1582.5	Hackleman Creek near Upper Soda, Oreg.	NW $\frac{1}{4}$ sec.32, T.13 S., R.6 E., at culvert on U. S. Highway 20, 1.3 miles above Indian Creek and 7 miles east of Upper Soda.	.21	1953-59	4- 2-59	2.99	27
1612	Lookout Creek tributary No. 3 near Blue River, Oreg.	NE $\frac{1}{4}$ sec.31, T.15 S., R.5 E., at weir 0.1 mile above mouth in H. J. Andrews Experimental Forest, and 6 miles northeast of town of Blue River.	.34	1953-59	1-27-59	2.35	27
1616	Lookout Creek tributary near Blue River, Oreg.	NW $\frac{1}{4}$ sec.6, T.16 S., R.5 E., at weir 0.2 mile above mouth in H. J. Andrews Experimental Forest, and 5.4 miles northeast of town of Blue River.	.41	1954-59	1-27-59	2.68	34
1630	Gate Creek at Vida, Oreg.	NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.28, T.16 S., R.2 E., 300 ft below U. S. Highway 126 bridge at Vida and 0.2 mile above mouth.	47.6	1952-57*, 1958-59	12-21-57 1-27-59	9.39 7.56	5,530 2,660
1697	Bear Creek near Cheshire, Oreg.	SE $\frac{1}{4}$ sec.24, T.16 S., R.6 W., at culvert on State Highway 36, 0.5 mile above Goldson mill pond and 4.2 miles southwest of Cheshire.	5.19	1957-59	3- 7-57 12-20-57 1-11-59	18.68 18.75 19.48	g169 g173 219
1705	Rock Creek near Philomath, Oreg.	NE $\frac{1}{4}$ sec.29, T.12 S., R.6 W., at dam 250 ft above bridge on State Highway 34, 0.2 miles above mouth, and 4.5 miles southwest of Philomath.	14.6	1946-52*, 1953-59	1-10-59	5.33	1,360
1723	Butte Creek near Plainview, Oreg.	NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.5, T.13 S., R.2 W., at culvert on county road, 2.9 miles east of Plainview.	5.06	1955-59	1-12-59	20.2	h595
1741	Cox Creek at Albany, Oreg.	SW $\frac{1}{4}$ sec.4, T.11 S., R.3 W., at dam at Waverly Lake outlet, in north Albany.	15.2	1953-59	1-10-59	11.82	550

* Operated as a continuous-record gaging station.

f Diversion flow negligible.

g Revised.

h Includes road overflow.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
Willamette River basin--Continued							
1788	Wind Creek near Detroit, Oreg.	NE $\frac{1}{4}$ sec.31, T.9 S., R.6 E., at culvert on Breitenbush River road, 0.1 mile above mouth and 2 miles northeast of Detroit.	1.03	1954-59	4- 2-59	9.96	62
1817	North Santiam River tributary near Gates, Oreg.	SW $\frac{1}{4}$ sec.25, T.9 S., R.3 E., at culvert on State Highway 22, 0.1 mile above mouth and 1.3 miles east of Gates.	1.97	1952-59	12-11-58	16.46	54
1849	Sheek Creek near Cascadia, Oreg.	SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.36, T.13 S., R.2 E., at culvert on U. S. Highway 20 at Cascadia ranger station, 0.1 mile above mouth and 1.5 miles west of Cascadia.	.94	1953-59	1-27-59	13.17	43
1902	Waymire Creek near Falls City, Oreg.	NW $\frac{1}{4}$ sec.22, T.8 S., R.6 W., at culvert on county road, 0.8 mile above mouth and 1 mile east of Falls City.	3.46	1954-59	1- 9-59	13.91	269
1906	Soap Creek tributary near Suver, Oreg.	SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.18, T.10 S., R.4 W., at culvert on U. S. Highway 99 W., 1.2 miles south of Polk County line and 3 miles south of Suver.	.57	1953-59	1- 9-59	3.49	41
1921	Glenn Creek near Salem, Oreg.	SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.20, T.7 S., R.3 W., at culvert on Glenn Creek road near intersection with Ferry Road, 1.5 miles northwest of Salem.	2.72	1952-59	3- 7-57 1-12-58 1- 9-59	k16.34 k16.97 17.09	42 74 80
1922	Gibson Creek (formerly Glenn Creek tributary) near Salem, Oreg.	S $\frac{1}{2}$ SE $\frac{1}{4}$ sec.8, T.7 S., R.3 W., at culvert on Gibson Road, 0.8 mile above mouth and 2.5 miles northwest of Salem.	4.83	1952-59	1- 9-59	15.68	161
1928	South Yamhill River tributary near Willamina, Oreg.	SW $\frac{1}{4}$ sec.18, T.6 S., R.6 W., at culvert on State Highway 22, 2 miles above mouth and 3 miles southeast of Willamina.	1.81	1954-59	1- 9-59	11.21	170
1973	Panther Creek near Carlton, Oreg.	SW $\frac{1}{4}$ sec.18, T.3 S., R.5 W., at water-supply dam, 1.6 miles above Fall Creek and 9 miles west of Carlton.	3.19	1953-59	1-10-59	13.35	f155
1997	Bull Creek near Colton, Oreg.	NE $\frac{1}{4}$ sec.6, T.5 S., R.3 E., at culvert on State Highway 211, 300 ft above mouth and 2.2 miles west of Colton.	4.16	1957-59	1-10-59	12.88	67
2038	Beaver Creek near Glenwood, Oreg.	SW $\frac{1}{4}$ sec.10, T.2 N., R.5 W., at culvert on county road, 1.7 miles northwest of Glenwood and 2.5 miles above mouth.	4.70	1952-59	1-10-59	16.04	177
2041	Bateman Creek near Glenwood, Oreg.	SE $\frac{1}{4}$ sec.26, T.2 N., R.5 W., at culvert on State Highway 6 at mouth, 1.5 miles south of Glenwood.	1.34	1952-59	1-10-59	11.36	45
2091	Kink Creek near Government Camp, Oreg.	SW $\frac{1}{4}$ sec.4, T.6 S., R.7 E., at culvert 0.1 mile below Kelly Creek, 0.2 mile above mouth at Lake Harriet, and 19 miles southwest of Government Camp.	3.75	1957-59	3- 7-57 12-20-57 12-11-58	17.98 16.22 16.44	107 53 60
2099	DuBois Creek at Estacada, Oreg.	NW $\frac{1}{4}$ sec.29, T.3 S., R.4 E., at culvert 0.4 mile above mouth and 0.5 mile southwest of Estacada.	2.52	1957-59	2-14-59	16.79	59
2108	Rock Creek near Boring, Oreg.	SW $\frac{1}{4}$ sec.32, T.1 S., R.3 E., at culvert on Foster Road, 1.5 miles northwest of Damascus and 4.5 miles west of Boring.	2.25	1957-59	1-10-59	52.54	78
2118	Saltzman Creek (formerly Willamette River tributary) at Portland, Oreg.	SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.13, T.1 N., R.1 W., at culvert at intersection of N. W. Balboa and Culebra Streets in Portland, 0.3 mile above mouth.	1.46	1952-59	2-14-59	12.13	90

Lake River basin

2119	Burntbridge Creek at Vancouver, Wash.	SW $\frac{1}{4}$ sec.14, T.2 N., R.1 E., at P Street 0.3 mile east of new U. S. Highway 99 at north city limits of Vancouver.	22.2	1949-59	1-24-59	3.19	57

Lewis River basin

2183	Dog Creek at Cougar, Wash.	SE $\frac{1}{4}$ sec.33, T.7 N., R.4 E., at State highway, 0.6 mile west of Cougar.	2.31	1956, 1958-59	11-18-58	5.12	279
2227	East Fork Lewis River tributary near Woodland, Wash.	SE $\frac{1}{4}$ sec.3, T.4 N., R.1 E., at U. S. Highway 99, 3.7 miles southeast of Woodland.	.53	1950-59	1- 9-59	2.09	26

Unnamed tributary to Columbia River

2238	Columbia River tributary at Carrols, Wash.	SW $\frac{1}{4}$ sec.19, T.7 N., R.1 W., at old U. S. Highway 99 at Carrols.	1.06	1950-59	1-24-59	2.28	38

f Diversion flow negligible.

j Corrected.

k Gage height adjusted to present datum.

Annual maximum discharge at crest-stage partial-record stations--Continued							
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
Cowlitz River basin							
2263	Skate Creek tributary near Packwood, Wash.	NW $\frac{1}{4}$ sec.16, T.14 N., R.8 E., on Skate Creek road, 9 $\frac{1}{2}$ miles northwest of Packwood.	1.32	1959	1-24-59	2.78	43
2269	Skate Creek tributary No.2 near Packwood, Wash.	NE $\frac{1}{4}$ sec.26, T.14 N., R.8 E., on Skate Creek road, 6 miles northwest of Packwood.	2.03	1959	1-24-59	4.26	115
2311	Mill Creek at Randle, Wash.	SE $\frac{1}{4}$ sec.8, T.12 N., R.7 E., at Main Street (formerly State Highway 5) at Randle.	2.95	1950-59	11-12-58	2.63	113
2320	Niggerhead Creek near Randle, Wash.	SE $\frac{1}{4}$ sec.20, T.11 N., R.8 E., 1 mile above mouth and 8 $\frac{1}{2}$ miles southeast of Randle.	66.3	1951-53*, 1954-59	1- -59	4.52	2,170
2353	Tilton River (formerly Tilton River tributary) near Mineral, Wash.	N $\frac{1}{2}$ sec.32, T.14 N., R.5 E., at State Highway 5, 4.1 miles south of Mineral.	.79	1950-59	11-12-58	3.07	88
2391	North Fork Lacamas Creek near Ethel, Wash.	SE $\frac{1}{4}$ sec.6, T.12 N., R.1 E., at county road 1.5 miles northeast of Ethel.	.36	1950-59	1-24-59	3.64	24
2397	Olequa Creek tributary near Winlock, Wash.	SE $\frac{1}{4}$ sec.5, T.11 N., R.2 W., at county road 2.4 miles south of Winlock.	.38	1950-59	1-23-59	2.2	20
2426	Toutle River tributary near Castle Rock, Wash.	NW $\frac{1}{4}$ sec.30, T.10 N., R.1 W., at Tower road 4 miles northeast of Castle Rock.	.64	1950-59	1-23-59	2.51	52
Skamokawa Creek basin							
2479	Risk Creek near Skamokawa, Wash.	NW $\frac{1}{4}$ sec.23, T.9 N., R.6 W., at private driveway off old highway 830, 1,000 ft west of old Risk Channel and 3.0 miles southeast of Skamokawa.	1.13	1949-59	1-23-59	4.64	85
Necanicum River basin							
2990	South Fork Necanicum River near Seaside, Oreg.	NW $\frac{1}{4}$ sec.29, T.5 N., R.9 W., at water-supply dam on Hollenback road, 1 mile above mouth and 8 miles southeast of Seaside.	7.99	1953-59	11-18-58	7.92	12,020
Asbury Creek basin							
2995	Asbury Creek near Cannon Beach, Oreg.	SW $\frac{1}{4}$ sec.19, T.4 N., R.10 W., at culvert on U. S. Highway 101 at Arch Cape, 0.1 mile above mouth and 6 miles south of Cannon Beach.	1.97	1952-59	1-24-59	7.86	166
Nehalem River basin							
3002	Oak Ranch Creek near Vernonia, Oreg.	NW $\frac{1}{4}$ sec.1, T.5 N., R.4 W., at culvert on county road, 1.9 miles above mouth and 7 miles north of Vernonia.	11.6	1959	1-24-59	15.24	294
Patterson Creek basin							
3014	Patterson Creek at Bay City, Oreg.	SE $\frac{1}{4}$ sec.34, T.1 N., R.10 W., at culvert on U. S. Highway 101 in Bay City, 0.3 mile above mouth.	1.87	1952-59	1-24-59	11.18	80
Salmon River basin							
3037	Alder Brook near Rose Lodge, Oreg.	SE $\frac{1}{4}$ sec.25, T.6 S., R.10 W., at culvert on State Highway 18, 0.1 mile above mouth and 1.5 miles northeast of Rose Lodge.	1.09	1954-59	1-10-59	11.11	58
Alsea River basin							
3068.5	South Fork Weiss Creek near Waldport, Oreg.	SW $\frac{1}{4}$ sec.33, T.13 S., R.11 W., at water-supply dam, 0.1 mile above mouth and 3.5 miles southeast of Waldport.	0.33	1953-59	1-12-59	6.59	f20
Siuslaw River basin							
3075.5	Deadwood Creek tributary at (formerly near) Alpha, Oreg.	SE $\frac{1}{4}$ sec.18, T.16 S., R.8 W., at culvert on county road, 500 ft above mouth and 0.5 mile north of Alpha.	0.75	1957-59	1-12-59	17.16	40
3076.1	Siuslaw River tributary near Rainrock, Oreg.	NW $\frac{1}{4}$ sec.27, T.17 S., R.10 W., at culvert on State Highway 36 at mouth, 1.3 miles west of Rainrock.	.42	1957-59	2-12-57 1-12-59	6.38 6.65	9.4 15
Umpqua River basin							
3089	Canyon Creek at Canyonville, Oreg.	SE $\frac{1}{4}$ sec.34, T.30 S., R.5 W., at dam near U. S. Highway 99, 0.5 mile south of Canyonville and 2.5 miles above mouth.	36.9	1951, 1958-59	1-11-59	26.71	2,620

* Operated as a continuous-record gaging station.

f Diversion flow negligible.

j Corrected.

Annual maximum discharge at crest-stage partial-record stations--Continued

Annual maximum discharge at crest-stage partial-record stations--Continued							
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
Umpqua River basin--Continued							
3109	West Fork Frozen Creek near Myrtle Creek, Oreg.	SE $\frac{1}{4}$ sec.32, T.28 S., R.4 W., at culvert on Frozen Creek road, 6.2 miles northeast of Myrtle Creek.	3.16	1955-59	12-30-54 12-26-55 12-11-56 3-12-57 1-29-58 1-11-59	16.31 19.64 7.99 17.99 18.58 17.55	g50 g300 g149 g149 g197 118
3121	Parrott Creek at Roseburg, Oreg.	NE $\frac{1}{4}$ sec.25, T.27 S., R.6 W., at culvert on Starmer Street in Roseburg, 0.5 mile above mouth.	2.42	1952-59	1-10-59	13.12	177
3123	Marks Creek near Roseburg, Oreg.	NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.3, T.27 S., R.6 W., at culvert on Garden Valley Road, 1 mile above mouth and 3.8 miles northwest of Roseburg.	1.26	1952-59	1-10-59	14.65	212
3171	Susan Creek near Idlewild, Oreg.	NW $\frac{1}{4}$ sec.23, T.26 S., R.2 W., at culvert on North Umpqua River Highway, at mouth in Susan Creek State Park, 6 miles east of Idlewild.	4.86	1957-59	1959	(a)	<450
3178	Cavitt Creek near Peel, Oreg.	NE $\frac{1}{4}$ sec.14, T.27 S., R.3 W., 1.5 miles above mouth and 1.5 miles south of Peel.	56.9	1956-59	12-20-57 1-12-59	m7.0 m4.8	b3,800 b1,200
3186	North Umpqua River tributary near Glide, Oreg.	SE $\frac{1}{4}$ sec.9, T.26 S., R.4 W., at culvert on county road, 0.1 mile above mouth and 3.7 miles northwest of Glide.	.75	1956-59	2-14-59	11.48	61
3206	Cabin Creek tributary (formerly Calapooya Creek tributary) near Oakland, Oreg.	SE $\frac{1}{4}$ sec.32, T.24 S., R.5 W., at culvert on U. S. Highway 99, 0.2 mile above mouth and 1 mile northwest of Oakland.	1.28	1957-59	1-10-59	12.48	(+)
3219	Yoncalla Creek near Yoncalla, Oreg.	SW $\frac{1}{4}$ sec.27, T.22 S., R.5 W., 1.5 miles above mouth and 1.8 miles north of Yoncalla.	26.0	1956-59	2-14-59	14.18	1,430
3224	Pass Creek near Drain, Oreg.	NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.34, T.21 S., R.5 W., 0.2 mile below Sand Creek and 3 miles northeast of Drain.	n61.9	1956-59	1-12-59	11.51	3,850
3227	Bear Creek near Drain, Oreg.	NW $\frac{1}{4}$ sec.25, T.22 S., R.6 W., at water-supply dam, 0.8 mile below Lost Cabin Creek and 3.5 miles southwest of Drain.	5.13	1952-59	2-14-59	14.87	f356
Ternmile Creek basin							
3233	Eel Creek at Lakeside, Oreg.	NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.13, T.23 S., R.13 W., at Lakeside Junction 0.8 mile west of Lakeside.	b11	1958-59	1-12-59	3.52	223
Coquille River basin							
3266	Gettys Creek near Myrtle Point, Oreg.	SW $\frac{1}{4}$ sec.35, T.29 S., R.13 W., at culvert on county road, 0.2 mile above mouth and 5.5 miles southwest of Myrtle Point.	1.45	1953-59	2-14-59	15.24	197
Geiger Creek basin							
3271	Geiger Creek near Bandon, Oreg.	SE $\frac{1}{4}$ sec.32, T.28 S., R.14 W., at culvert on county road, 1 mile above mouth and 1.8 miles southeast of Bandon.	1.36	1954-59	2-14-59	25.22	151
Brush Creek basin							
3274	Dry Run Creek near Port Orford, Oreg.	NW $\frac{1}{4}$ sec.25, T.33 S., R.15 W., at culvert in Humbug State Park, at mouth, 5 miles southeast of Port Orford.	0.86	1954-59	1-11-59	p17.76	(+)
Rogue River basin							
3350.7	Rogue River tributary near McLeod, Oreg.	SE $\frac{1}{4}$ sec.27, T.33 S., R.1 E., at culvert on State Highway 62 in McLeod State Park, at mouth, 1 mile north of McLeod.	0.50	1957-59	1957 1958 1959	(a) 14.39 (a)	(+) (+) (+)
3392	Rogue River tributary near Sams Valley, Oreg.	SW $\frac{1}{4}$ sec.24, T.35 S., R.2 W., at culvert on State Highway 234, 4.5 miles east of Sams Valley.	6.42	1959	2-14-59	15.16	256
3530	West Fork Ashland Creek near Ashland, Oreg.	W $\frac{1}{2}$ NW $\frac{1}{4}$ sec.29, T.39 S., R.1 E., at dam above Reader Reservoir, 2.4 miles south of Ashland.	10.5	1925-32*, 1954-59	1-12-59	13.68	q60
3535	East Fork Ashland Creek near Ashland, Oreg.	E $\frac{1}{2}$ NW $\frac{1}{4}$ sec.28, T.39 S., R.1 E., at dam above Reader Reservoir, 2.2 miles south of Ashland.	8.14	1925-32*, 1954-59	1-12-59	3.56	q33

† Discharge not determined.

* Operated as a continuous-record gaging station.

< Less than.

a Peak stage did not reach bottom of gage.

b Approximately.

f Diversion flow negligible.

g Revised.

m From graph based on twice-daily staff-gage readings.

n At measuring bridge 3 miles below gage.

p Stage-discharge relation affected by backwater.

q Includes estimated diversion flow.

Annual maximum discharge at crest-stage partial-record stations--Continued

Annual maximum discharge at crest-stage partial-record stations--Continued						Annual maximum		
Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum			
					Date	Gage height (feet)	Discharge (cfs)	
Rogue River basin--continued								
3613	Jones Creek near Grants Pass, Oreg.	SE $\frac{1}{4}$ sec. 16, T.36 S., R.5 W., at dam 200 ft below "A" Street bridge, 0.8 mile above mouth, and 2 miles east of Grants Pass.	7.41	1952-59	1-10-59	11.85	159	
3698	Butcherknife Creek near Wonder, Oreg.	NE $\frac{1}{4}$ sec. 19, T.37 S., R.7 W., at culvert near U. S. Highway 199, 0.5 mile above mouth and 2 miles southwest of Wonder.	3.07	1953-59	1-11-59	16.84	369	
3700	Slate Creek at Wonder, Oreg.	SW $\frac{1}{4}$ sec. 10, T.37 S., R.7 W., 0.4 mile east of Wonder and 0.5 mile above Elliott Creek.	31.4	1944-57*, 1958-59	1-12-59	9.62	3,940	
3702	Round Prairie Creek near Wilderville, Oreg.	SW $\frac{1}{4}$ sec. 2, T.37 S., R.7 W., at culvert on U. S. Highway 199, 0.1 mile above mouth and 1.5 miles west of Wilderville.	3.16	1953-59	1-11-59	6.00	232	
3778	Snailback Creek near Selma, Oreg.	NW $\frac{1}{4}$ sec. 7, T.38 S., R.8 W., at culvert on county road, 0.5 mile above mouth and 4.2 miles west of Selma.	1.62	1956-59	1-11-59	93.68	(†)	
Harris Creek basin								
3788	Harris Creek near Brookings, Oreg.	NE $\frac{1}{4}$ sec. 36, T.40 S., R.14 W., at culvert on U. S. Highway 101, 0.4 mile above mouth and 1.9 miles northwest of Brookings. Prior to 1959 water year, at site 500 ft downstream at different datum.	1.05	1954-59	1-12-59	15.44	109	
Ransom Creek basin								
3789	Ransom Creek near Brookings, Oreg.	NE $\frac{1}{4}$ sec. 1, T.41 S., R.14 W., at culvert on U. S. Highway 101, at mouth and 1.2 miles northwest of Brookings.	0.74	1953-59	1-12-59	24.54	78	

† Discharge not determined.

* Operated as a continuous-record gaging station.

p Stage-discharge relation affected by backwater.

Measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table. Those that are measurements of base flow are designated by an asterisk (*); measurements of peak flow by a dagger (†).

Discharge measurements made at miscellaneous sites during water year 1959

Discharge measurements made at miscellaneous sites during water year 1959						
Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
John Day River basin						
Canyon Creek	John Day River	NW $\frac{1}{4}$ sec.25, T.14 S., R.31 E., 4 miles south of Canyon City, Oreg.	100	1905-6, 1908-9, 1914-15, 1936, 1951-53, 1955-58	8-17-59	*1.29
South Fork John Day River	do.....	NE $\frac{1}{4}$ sec.24, T.13 S., R.26 E., 3 miles south of Dayville, Oreg.	a590	1948, 1951, 1952-56*, 1957-58	8-18-59	*11.5
Rock Creek...	do.....	NE $\frac{1}{4}$ sec.21, T.12 S., R.25 E., 7 miles northwest of Dayville, Oreg.	292	1934, 1948-58	8-18-59	*3.30
Desolation Creek	North Fork John Day River	SW $\frac{1}{4}$ sec.6, T.7 S., R.32 E., 1½ miles east of Dale, Oreg.	108	1915-17*, 1949-58*	8-19-59	*7.79
North Fork John Day River	John Day River	SE $\frac{1}{4}$ sec.35, T.6 S., R.31 E., 2 mile northeast of Dale, Oreg.	525	1930-58*	8-19-59	*48.5
Cable Creek..	Camas Creek...	Near line between secs.9 and 10, T.5 S., R.32 E., 1,000 ft above mouth and 5 miles northeast of Ukiah, Oreg.	a39	1914-17*, 1920-24*, 1932-37*, 1939*, 1942-49, 1951-53, 1955-58	8-18-59	*.76
Fox Creek..	North Fork John Day River	SW $\frac{1}{4}$ sec.8, T.11 S., R.29 E., 6 miles southwest of Fox, Oreg.	90.2	1931-58*	7-15-59	0
Willamette River basin						
McKenzie River	Willamette River	NE $\frac{1}{4}$ sec.1, T.15 S., R.6 E., 1 mile below Lower Falls, Oreg.	148	1948-52, 1954-55	7-29-59	*601
Lookout Creek	Blue River...	Lat 44°12'40", long 122°15'20", in T.15 or 16 S., R.5 E. (unsurveyed), 6 miles northeast of Blue River, Oreg.	24.1	1949-55*	7-29-59	*16.2
Lewis River basin						
Big Creek....	Lewis River..	SE $\frac{1}{4}$ sec.17, T.7 N., R.8 E., 4½ miles above mouth and 16 miles northwest of Trout Lake, Wash.	-		9- 9-59	7.02
Big Creek tributary	Big Creek....	SE $\frac{1}{4}$ sec.17, T.7 N., R.8 E., at mouth 16 miles northwest of Trout Lake, Wash.	-		9- 9-59	.29
Umpqua River basin						
Cavitt Creek	Little River..	NE $\frac{1}{4}$ sec.14, T.27 S., R.3 W., 1.5 miles above mouth, 1.5 miles south of Peel, and 8.8 miles southeast of Glide, Oreg.	56.9	1955-58	10-14-58 12- 4-58 1-22-59 2-15-59 3-17-59 5- 5-59 5-26-59 6-16-59 8- 5-59 9-17-59	*8.43 *37.8 *98.5 593 114 270 *77.1 *30.3 *7.56 6.75
Yoncalla Creek	Elk Creek....	SW $\frac{1}{4}$ sec.27, T.22 S., R.5 W., 1.5 miles above mouth, 1.8 miles north of Yoncalla, and 3.3 miles southeast of Drain, Oreg.	26.0	1955-58	10-14-58 12- 3-58 1-15-59 2-26-59 4- 8-59 5-20-59 7- 7-59 8-17-59	0 *9.52 *104 45.0 *31.2 20.1 *.56 0
Pass Creek...	Elk Creek....	NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.34, T.21 S., R.5 W., 0.2 mile below Sand Creek and 3 miles northeast of Drain, Oreg.	61.9	1955-58	10-14-58 12- 3-58 1-13-59 2-26-59 4- 8-59 5-20-59 7- 7-59 8-17-59	*2.44 *26.0 764 136 *93.9 82.3 *9.36 *.15

* Base flow.

† Operated as a continuous record gaging station.

a Approximately.

Discharge measurements made at miscellaneous sites during water year 1959--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Tenmile Creek basin						
Eel Creek....	Tenmile Creek.	NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.13, T.23 S., R.13 W., at Lakeside Junction $\frac{1}{4}$ mile west of Lakeside, Ore.	all	1957-58	10-22-58 12- 8-58 1-13-59 1-19-59 3- 5-59 4-13-59 5-25-59 7-13-59 8-24-59	*2.68 *22.4 167 *125 *55.6 *35.4 *15.1 *5.62 *2.99
North Slough basin						
North Slough (known locally as Bear Creek).	Pacific Ocean	SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.7, T.24 S., R.12 W., 3 miles northeast of Hauser, Ore.	2.42	1958	8-25-59	*0.35
Left Branch of North Fork North Slough (known locally as North Slough).	North Slough..	NW $\frac{1}{4}$ sec.1, T.24 S., R.13 W., 0.2 mile above confluence with Right Branch and 2 miles north-east of Hauser, Ore.	1.71	1958	8-25-59	* .21
Coquille River basin						
North Fork Coquille River.	Coquille River.	NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.29, T.26 S., R.11 W., below Neely Creek 11 miles southeast of Coos Bay, Ore.	28.5	1958	8-25-59	*5.06
Do.....	do.....	NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.22, T.28 S., R.12 W., at Fox bridge 5 miles southeast of Coquille, Ore.	134	1958	8-25-59	*8.60
Do.....	do.....	NW $\frac{1}{4}$ sec.36, T.28 S., R.12 W., $\frac{1}{2}$ miles northeast of Myrtle Point, Ore.	276	1929-46*, 1949-52, 1958	8-25-59	*24.8
Rogue River basin						
Silver Creek.	Illinois River	SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.16, T.36 S., R.11 W., at mouth 8 miles southeast of Agness, Ore.	80.6	1956, 1958	8-27-59	*23.9
Indigo Creek.	do.....	NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.4, T.36 S., R.11 W., 0.6 mile above mouth and 5 miles southeast of Agness, Ore.	63.0	1958	8-27-59	*13.8
Rogue River..	Pacific Ocean	NW $\frac{1}{4}$ sec.18, T.35 S., R.11 W., 1,000 ft above mouth of Illinois River at Agness, Ore.	23,870	1950-52, 1958	8-26-59	*1,100
Illinois River.	Rogue River...	SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.18, T.35 S., R.11 W., 300 ft above mouth at Agness, Ore.	995	1949-52, 1958	8-26-59	*154

* Base flow.

* Operated as a continuous-record gaging station.

a Approximately.

INDEX

	Page		Page
Accuracy of field data and computed results.....	7	Butte Falls, Oreg., South Fork Big Butte Creek near.....	266
Acre-foot, definition of.....	2	Butter Creek near Pine City, Oreg.....	36
Agencies other than Geological Survey, records collected by.....	11		
Albany, Oreg., Calapooya River at.....	142	Calapooya Creek near Oakland, Oreg.....	253
Willamette River at.....	143	Calapooya River, at Albany, Oreg.....	142
Alleghany, Oreg., West Fork Milllicoma River near.....	257	at Holley, Oreg.....	141
Allen Canal, Oreg., diversion by.....	37	Camas Creek, near Lehman, Oreg.....	43
Alsea, Oreg., Fall Creek near.....	223	near Ukiah, Oreg.....	44
North Fork Alsea River at.....	221	Canby, Oreg., Molalla River near.....	170
South Fork Alsea River near.....	222	Carson, Wash., Wind River near.....	97,98
Alsea River, near Tidewater, Oreg.....	225	Cascadia, Oreg., South Santiam River below.....	150
North Fork, at Alsea, Oreg.....	221	Castle Rock, Wash., Cowlitz River at... Delameter Creek near.....	211 212
South Fork, near Alsea, Oreg.....	222	Cathlamet, Wash., Elokomini River near.....	214
Alsea River basin, crest-stage stations in.....	290	Central Oregon Canal, Oreg., diversion by.....	65
gaging-station records in.....	221-229	Central Point, Oreg., Rogue River near.....	275
Amazon Creek near Eugene, Oreg.....	138	Cfs-day, definition of.....	2
Applegate River, near Applegate, Oreg.....	278	Charlton Creek above Crane Prairie Reservoir, near Lapine, Oreg.....	54
near Copper, Oreg.....	277	Cinebar, Wash., Cinnabar Creek near.....	204
Ariel, Wash., Lewis River at.....	195	Tilton River near.....	203
Arnold Canal, Oreg., diversion by.....	65	Cinnabar Creek near Cinebar, Wash.....	204
Asbury Creek basin, crest-stage stations in.....	290	Cispus River near Randle, Wash.....	199
Ashland, Oreg., Emigrant Creek near... Aurora, Oreg., Pudding River at.....	273 172	Clackamas River, above Three Lynx Creek, Oreg.....	180
Azalea, Oreg., Cow Creek near.....	234	at Big Bottom, Oreg.....	176
		at Estacada, Oreg.....	181
B-Z Corner, Wash., White Salmon River at.....	91	Clear Lake, Oreg., McKenzie River at outlet of.....	124
Battle Ground, Wash., Salmon Creek near.....	183	Clearwater River above Trap Creek, near Toketee Falls, Oreg.....	245
Bear Creek at Medford, Oreg.....	274	Coast Fork. See Willamette River, Coast Fork.	
Beaver Creek near Paulina, Oreg.....	70	Coburg, Oreg., McKenzie River near.....	132
Belknap Springs, Oreg., McKenzie River near.....	125	Columbia River, at The Dalles, Oreg.....	79
Smith River near.....	126	below McNary Dam at Umatilla, Oreg.....	24-28
Bend, Oreg., Deschutes River below.....	66	Computations, accuracy of results of... Contents, definition of.....	7 2
Deschutes River near.....	63,64	Control, definition of.....	2
diversions from Deschutes River near.....	65	Cook, Wash., Little White Salmon River near.....	96
reservoirs in Deschutes River basin above.....	62	Cooperation, record of.....	1
Tumalo Creek near.....	67	Copper, Oreg., Applegate River near.....	277
Big Bottom, Oreg., Clackamas River at.....	176	Coquille River South Fork, above Panther Creek, near Illahe, Oreg.....	258
Big Butte Creek, South Fork, near Butte Falls, Oreg.....	11,266	at Powers, Oreg.....	261
Big Creek below Skookum Meadow, near Trout Lake, Wash.....	185	near Illahe, Oreg.....	259
Big Spring Branch, east prong, Oreg., discharge measurements of.....	22	near Powers, Oreg.....	260
west prong, discharge measurements of.....	22	Coquille River basin, crest-stage stations in.....	291
Biggs, Oreg., Deschutes River near... Birch Creek, at Rith, Oreg.....	78 34	discharge measurements at miscellaneous sites in.....	294
Blue Creek near Walla Walla, Wash.....	16	gaging-station records in.....	258-261
Blue River near Blue River, Oreg.....	130	Cottage Grove, Oreg., Cottage Grove Reservoir near.....	117,118
near McKenzie Bridge, Oreg.....	11	Dorena Reservoir near.....	120,121
Bolles, Wash., Touchet River at.....	20	Mosby Creek near.....	122
Breitenbush River above Canyon Creek, near Detroit, Oreg.....	145	Row River near.....	121
Brockway, Oreg., Lookingglass Creek at.....	240	Cottage Grove Dam, Oreg., Coast Fork Willamette River below.....	118
South Umpqua River near.....	241	Cottage Grove Reservoir near Cottage Grove, Oreg.....	117,118
Brown Creek near Lapine, Oreg.....	56	Cougar, Wash., Curley Creek near.....	189
Brush Creek basin, crest-stage stations in.....	291	Lewis River near.....	190
Bull Run, Oreg., Bull Run River near... Lake Ben Morrow near.....	102 101,102	Muddy River near.....	191
Little Sandy River near.....	103	Pine Creek near.....	192
Sandy River near.....	104	Rush Creek near.....	188
Bull Run River near Bull Run, Oreg....	102	Speelya Creek near.....	193
		Cow Creek, near Azalea, Oreg.....	234
		near Riddle, Oreg.....	236

	Page		Page
Cow Creek, West Fork, near		Detroit, Oreg., Breitenbush River	
Glendale, Oreg.	235	near	145
Cowman River near Kelso, Wash.	213	Detroit Reservoir near	146,147
Cowlitz River, at Castle Rock, Wash.	211	North Santiam River near	144
at Mossyrock, Wash.	201	Detroit Reservoir near Detroit, Oreg.	146,147
at Packwood, Wash.	198	Dexter, Oreg., Middle Fork Willamette	
near Kosmos, Wash.	200	River near	113
near Mayfield, Wash.	207	Dille, Oreg., Tualatin River near	174
Cowlitz River basin, crest-stage		Dorena, Oreg., Row River near	119
stations in	290	Dorena Reservoir near Cottage Grove,	
gaging-station records in	198-213	Oreg.	120,121
Coyote Creek near Crow, Oreg.	135	Downing Spring, Oreg., discharge	
Crane Prairie Reservoir, Oreg.,		measurements of	22
contents of	62	Drain, Oreg., Elk Creek near	255
Crescent, Oreg., Crescent Creek		Drainage area, definition of	2-3
near	60	Drew, Oreg., Elk Creek near	232
Odell Creek near	57	Drift Creek near Salado, Oreg.	226
Crescent Creek at Crescent Lake, near		Dry Creek basin, crest-stage	
Crescent, Oreg.	60	stations in	288
Crescent Lake, Oreg., contents of	62	Dry Creek near Walla Walla, Wash.	18
Crooked River, above Hoffman Dam, near		Dugger Creek, Oreg., discharge	
Flinville, Oreg.	72	measurements of	23
near Culver, Oreg.	73		
near Post, Oreg.	71	Eagle Point, Oreg., Rogue River near	268
Crow, Oreg., Coyote Creek near	135	East lateral (Emigrant Gap Reservoir)	
Cubic feet per second per square mile,		near Ashland, Oreg.	273
definition of	2	East Mud Creek, Oreg., branch of,	
Cubic foot per second, definition of	2	discharge measurements of	23
Cultus Creek above Crane Prairie		east prong, discharge measurements	22
Reservoir, near Lapine, Oreg.	51	of	22
Cultus River above Cultus Creek near		west prong, discharge measurements	22
Lapine, Oreg.	50	of	22
Culver, Oreg., Crooked River near	73	Elk Creek (tributary to Rogue River)	
Deschutes River near	69	near Trail, Oreg.	267
Curley Creek near Cougar, Wash.	189	Elk Creek (tributary to South Umpqua	
		River) near Drew, Oreg.	232
Dallas, Oreg., Rickreall Creek		Elk Creek (tributary to Umpqua River)	
near	158	near Drain, Oreg.	255
Data, accuracy of	7	Elkton, Oreg., Umpqua River near	12,254
explanation of	3-7	Elmira, Oreg., Fern Ridge Reservoir	
Days Creek at Days Creek, Oreg.	233	near	136
Dayton, Wash., East Fork Touchet		Elokomin River near Cathlamet, Wash.	214
River near	19	Emigrant Creek near Ashland, Oreg.	273
Dayville, Oreg., John Day River		Emigrant Gap Reservoir, Oreg.,	
near	42	contents of	285
Dead Canyon basin, crest-stage		Engle Spring, Oreg., discharge	
stations in	286	measurements of	22
Dead Indian collection canal near		Estacada, Oreg., Clackamas River	
Pinehurst, Oreg.	269	at	181
Dee, Oreg., West Fork Hood River near	85	Eugene, Oreg., Amazon Creek near	138
Deer Creek (Alsea River basin) near			
Salado, Oreg.	229	Fairdale, Oreg., North Yamhill	
Deer Creek (Deschutes River basin)		River near	165
above Crane Prairie Reser-		Fall Creek, below Winberry Creek, near	
voir, near Lapine, Oreg.	52	Fall Creek, Oreg.	114
Deer Creek (Umpqua River basin) near		near Alsea, Oreg.	223
Roseburg, Oreg.	242	Fall River near Lapine, Oreg.	59
Delameter Creek near Castle Rock,		Fern Ridge Reservoir near Elmira,	
Wash.	212	Oreg.	136
Deschutes County Municipal Improvement		Fish Creek at Big Camas ranger station,	
District Canal, Oreg., diversion		near Toketee Falls, Oreg.	246
by	65	Fish Lake, Oreg., contents of	285
Deschutes River, at Benham Falls, near		Fish Lake Dam, tunnel at, Oreg.	11
Bend, Oreg.	63	Fisher, Oreg., Five Rivers	
at Moody, near Biggs, Oreg.	78	near	224
below Bend, Oreg.	66	Five Rivers near Fisher, Oreg.	224
below Crane Prairie Reservoir, near		Fivemile Creek near Ukiah, Oreg.	11
Lapine, Oreg.	55	Floods, special reports on	10
below Lava Island, near Bend,		Flynn Creek near Salado, Oreg.	228
Oreg.	64	Foss, Oreg., Nehalem River near	218
below Snow Creek, near Lapine,		Foster, Oreg., Middle Santiam River	
Oreg.	49	near	151
below Wickiup Reservoir, near Lapine,		Wiley Creek near	152
Oreg.	58	Pourbit Creek near Butte Falls, Oreg.	11
diversions from, near Bend, Oreg.	65	Fulton Canyon basin, crest-stage	
near Culver, Oreg.	69	stations in	287
near Lapine, Oreg.	11	Furnish Canal, Oreg., diversion by	37
near Madras, Oreg.	76		
Deschutes River basin, crest-stage		Gaging station, definition of	2
stations in	287	Gaston, Oreg., Scoggin Creek near	173
gaging-station records in	49-78	Geiger Creek basin, crest-stage	
reservoirs in, above Bend, Oreg.	62	stations in	291

	Page		Page
Gibbon, Oreg., Umatilla River near....	29	Johnson Creek (Cowlitz River basin), discharge measurements of.....	23
Glendale, Oreg., West Fork Cow Creek near.....	235	Johnson Creek (Willamette River basin) at Sycamore, Oreg.....	182
Glenwood, Wash., Klickitat River near.....	80,81	Kalama River below Italian Creek, near Kalama, Wash.....	197
Glide, Oreg., Rock Creek near.....	249	Kelso, Wash., Coweman River near.....	213
Steamboat Creek near.....	248	Kerby, Oreg., Illinois River at.....	283
Goldendale, Wash., Little Klickitat River near.....	82	Klickitat Creek at Mossyrock, Wash.....	205
Goshen, Oreg., Coast Fork Willamette River near.....	123	Klickitat River, above West Fork, near Glenwood, Wash.....	80
Government Camp, Oreg., Oak Grove Fork near.....	178	near Glenwood, Wash.....	81
Salmon River near.....	99	near Pitt, Wash.....	84
Timothy Lake near.....	177,178	Klickitat River basin, gaging-station records in.....	80-84
Grandview, Oreg., Metolius River near.....	75	Kosmos, Wash., Cowlitz River near.....	200
Grants Pass, Oreg., Rogue River at....	276	Lake Ben Morrow, near Bull Run, Oreg....	101,102
Grave Creek at Pease Bridge, near Placer, Oreg.....	279	Lake Creek near Sisters, Oreg.....	74
Grays River, Wash., Grays River near.....	215,216	Lake Merwin, Wash.....	194,195
West Fork Grays River near.....	217	Lake River basin, crest-stage stations in.....	289
Grays River, above South Fork, near Grays River, Wash.....	215	Lakecreek, Oreg., North Fork Little Butte Creek near.....	11,271,272
below South Fork, near Grays River, Wash.....	216	South Fork Little Butte Creek near.....	11,270
West Fork, near Grays River, Wash....	217	Lakes and Reservoirs.....	
Grays River basin, gaging-station records in.....	215-217	Ben Morrow, Lake, near Bull Run, Oreg.....	101,102
Groenveld Creek basin, crest-stage stations in.....	288	Cottage Grove Reservoir near Cottage Grove, Oreg.....	117,118
Harris Creek basin, crest-stage stations in.....	292	Crane Prairie Reservoir, Oreg.....	62
Harrisburg, Oreg., Willamette River at.....	133	Crescent Lake, Oreg.....	62
Haskins Creek below reservoir, near McMinnville, Oreg.....	166	Detroit Reservoir near Detroit, Oreg.....	146,147
Haskins Creek Reservoir near McMinnville, Oreg.....	166,177	Dorena Reservoir near Cottage Grove, Oreg.....	120,121
Haun Spring, Oreg., discharge measurements of.....	22	Emigrant Gap Reservoir, Oreg.....	285
Heisson, Wash., East Fork Lewis River near.....	196	Fern Ridge Reservoir near Elmira, Oreg.....	136
Heppner, Oreg., Willow Creek at.....	39	Fish Lake, Oreg.....	285
Hills Creek above Hills Creek Reser- voir, near Oakridge, Oreg.....	107	Haskins Creek Reservoir near McMinnville, Oreg.....	166,177
Holland, Oreg., Sucker Creek near.....	281	Lemolo Reservoir near Toketee Falls, Oreg.....	243,244
Holley, Oreg., Galapogya River at.....	141	Lookout Point Reservoir near Lowell, Oreg.....	112,113
Hood River, Oreg., Hood River near.....	86	McKay Reservoir near Pendleton, Oreg.....	32
Hood River, near Hood River, Oreg.....	86	Merwin, Lake, Wash.....	194,195
West Fork, near Dee, Oreg.....	85	Silver Lake at Silver Lake, Wash.....	209
Hood River basin, gaging-station records in.....	85-86	Swift Reservoir, Wash.....	194,195
Hoskins, Oreg., Luckiamute River near.....	155	Timothy Lake near Government Camp, Oreg.....	177,178
Husum, Wash., White Salmon River at.....	92	Wickiup Reservoir, Oreg.....	62
Hydrologic conditions.....	12	Yale Reservoir, Wash.....	194,195
graph of.....	12	Lakeside, Oreg., Tenmile Creek near.....	256
Illahe, Oreg., South Fork Coquille River near.....	258,259	Lapine, Oreg., Brown Creek near.....	56
Illinois River, at Kerby, Oreg.....	283	Charlton Creek near.....	54
East Fork, near Takilma, Oreg.....	280	Cultus Creek near.....	51
near Selma, Oreg.....	284	Cultus River near.....	50
West Fork below Rock Creek, near O'Brien, Oreg.....	282	Deer Creek near.....	52
Jackson Creek near Tiller, Oreg.....	230	Deschutes River near.....	49,55,58
Jasper, Oreg., Middle Fork Willamette River at.....	115	Fall River near.....	59
Jefferson, Oreg., Santiam River at....	154	Little Deschutes River near.....	61
John Day River, at McDonald Ferry, Oreg.....	48	Quinn River near.....	53
at Picture Gorge, near Dayville, Oreg.....	42	Lehman, Oreg., Camas Creek near.....	43
at Prairie City, Oreg.....	41	Lemolo Reservoir near Toketee Falls, Oreg.....	243,244
at Service Creek, Oreg.....	47	Lewis River, above Muddy River, near Cougar, Wash.....	190
Middle Fork, at Ritter, Oreg.....	45	at Ariel, Wash.....	195
North Fork, at Monument, Oreg.....	46	East Fork, near Heisson, Wash.....	196
John Day River basin, crest-stage stations in.....	287	near Trout Lake, Wash.....	184
discharge measurements at miscel- laneous sites in.....	293	Lewis River basin, crest-stage stations in.....	289
gaging-station records in.....	40-48	discharge measurements at miscel- laneous sites in.....	293
		gaging-station records in.....	184-196
		reservoirs in.....	194
		Lewis Spring, Oreg., discharge measurements of.....	22
		Little Butte Creek, at Lakecreek, Oreg.....	11

	Page		Page
Little Butte Creek North Fork, at	271	Mill Creek (tributary to Cowlitz	
Fish Lake, near Lakecreek, Oreg.	272	River, near Salkum, Wash.	208
near Lakecreek, Oreg.	11,272	Mill Creek (tributary to South	
South Fork near Lakecreek, Oreg.	11,270	Yamhill River) near Willamina,	
Little Deschutes River near Lapine,		Oreg.	163
Oreg.	61	Mill Creek (tributary to Willamette	
Little Klickitat River, near Golden-		River) at Salem, Oreg.	160
dale, Wash.	82	Mill Creek (tributary to Walla Walla	
near Wahkiacus, Wash.	83	River), at Walla Walla, Wash.	17
Little North Santiam River near		near Walla Walla, Wash.	15
Mehama, Oreg.	148	Millicoma River, West Fork, near	
Little River at Peel, Oreg.	250	Allegany, Oreg.	257
Little Sandy River near Bull Run,		Milton, Oreg., North Fork Walla Walla	
Oreg.	103	River near.	14
Little Walla Walla River at Milton,		South Fork Walla Walla River near.	13
Oreg.	11	Molalla River, above Pine Creek, near	
Little White Salmon River, at		Wilhoit, Oreg.	169
Willard, Wash.	94	near Canby, Oreg.	170
above Lapham Creek near Willard,		Monroe, Oreg., Long Tom River	
Wash.	95	at.	139
near Cook, Wash.	96	Monument, Oreg., North Fork John Day	
Little White Salmon River basin,		River at.	46
crest-stage stations in.	287	Morton, Wash., West Fork Tilton River	
gaging-station records in.	94-96	near.	202
London, Oreg., Coast Fork Willamette		Mosby Creek at mouth, near Cottage	
River at.	116	Grove, Oreg.	122
Long Tom River, at Monroe, Oreg.	139	Mossyrock, Wash., Cowlitz River at.	201
below Fern Ridge Dam, near		Klickitat Creek at.	205
Smithfield, Oreg.	137	Mount Angel, Oreg., Pudding River near.	171
near Notli, Oreg.	134	Muddy River below Clear Creek, near	
Lookingglass Creek at Brookway, Oreg.	240	Cougar, Wash.	191
Lookout Creek near Blue River,		Myrtle Creek, Oreg., North Myrtle	
Oreg.	11	Creek near.	238
Lookout Creek tributary near Blue		South Myrtle Creek near.	237
River, Oreg.	11		
Lookout Point Reservoir near Lowell,	112,113	Necanicum River basin, crest-stage	
Oreg.		stations in.	290
Lowell, Oreg., Lookout Point Reser-	112,113	Needle Branch near Salado, Oreg.	227
voir near.		Nehalem River basin, crest-stage	
Luckiamute River, at Pedee, Oreg.	156	stations in.	290
near Hoskins, Oreg.	155	Nehalem River near Foss, Oreg.	218
near Suver, Oreg.	157	Niagara, Oreg., North Santiam River	
		at.	147
McDonald Ferry, Oreg., John Day River		North Canal, Oreg., diversion by.	65
at.	48	North Myrtle Creek near Myrtle Creek,	
McEvoy Spring, Wash., discharge		Oreg.	238
measurements of.	22	North Santiam River, at Mehama,	
McKay Creek (Umatilla River basin),		Oreg.	149
near Pendleton, Oreg.	33	at Niagara, Oreg.	147
near Pilot Rock, Oreg.	31	below Boulder Creek, near Detroit,	
McKay Reservoir near Pendleton,		Oreg.	144
Oreg.	32	North Slough basin, discharge measure-	
McKenzie Bridge, Oreg., McKenzie		ments at miscellaneous sites in.	294
River at.	127	North Umpqua River, above Copeland	
McKenzie River, at McKenzie Bridge,		Creek, near Toketee Falls, Oreg.	247
Oreg.	127	at Winchester, Oreg.	252
at outlet of Clear Lake, Oreg.	124	below Lemolo Reservoir, near Toketee	
near Belknap Springs, Oreg.	125	Falls, Oreg.	244
near Coburg, Oreg.	132	North Unit Main Canal, Oreg.,	
near Vida, Oreg.	131	diversion by.	65
South Fork, above Cougar Reservoir		North Yamhill River, at Pike, Oreg.	167
near Rainbow, Oreg.	128	near Fairdale, Oreg.	165
near Rainbow, Oreg.	129	Notli, Oreg., Long Tom River near.	134
McMinville, Oreg., Haskins Creek			
near.	166	Oak Grove Fork, above powerplant	
Haskins Creek Reservoir near.	166,177	intake, Oreg.	179
Madras, Oreg., Deschutes River		near Government Camp, Oreg.	178
near.	76	Oakland, Oreg., Calapooya Creek	
Map of the United States.	9	near.	253
Marmot, Oreg., Sandy River		Oakridge, Oreg., Hills Creek near.	107
near.	100	Middle Fork Willamette River	
Marys River near Philomath, Oreg.	140	near.	106,108,111
Maxwell Canal, Oreg., diversion by.	37	North Fork of Middle Fork	
Mayfield, Wash., Cowlitz River near.	207	Willamette River near.	110
Winston Creek near.	206	Salmon Creek near.	109
Meadow Creek below Lone Butte Meadow,		O'Brien, Oreg., West Fork Illinois	
near Trout Lake, Wash.	187	River near.	282
Medford, Oreg., Bear Creek at.	274	Ochoco Creek near Prineville,	
Mehama, Oreg., Little North Santiam		Oreg.	11
River near.	148	Ochoco Reservoir near Prineville,	
North Santiam River at.	149	Oreg.	11
Metolius River near Grandview, Oreg.	75	Odell Creek near Crescent, Oreg.	57
Middle Santiam River at mouth near		Olalla Creek near Ternmile, Oreg.	239
Poster, Oreg.	151	Order, downstream and station numbers.	3

	Page		Page
Packwood, Wash., Cowlitz River at....	198	Salado, Oreg., Deer Creek near.....	229
Partial-record station, definition		Drift Creek near.....	226
of.....	2	Flynn Creek near.....	228
Patterson Creek basin, crest-		Needle Branch near.....	227
stage stations in.....	290	Salem, Oreg., Mill Creek at.....	160
Paulina, Oreg., Beaver Creek near.....	70	Willamette River at.....	159
Pedee, Oreg., Luckiamute River at....	156	Salkum, Wash., Mill Creek near.....	208
Peel, Oreg., Little River at.....	250	Salmon Creek (Lake River basin) near	
Pendleton, Oreg., McKay Creek near...	33	Battle Ground, Wash.....	183
McKay Reservoir near.....	32	Salmon Creek (Willamette River basin)	
Umatilla River at.....	30	near Oakridge, Oreg.....	109
Philomath, Oreg., Marys River		Salmon River basin, crest-stage	
near.....	140	stations in.....	290
Pike, Oreg., North Yamhill River		Salmon River near Government Camp,	
at.....	167	Oreg.....	99
Pilot Rock, Oreg., McKay Creek near..	31	Sandy River, below Bull Run River,	
Pine City, Oreg., Butter Creek near..	36	near Bull Run, Oreg.....	104
Pine Creek near Cougar, Wash.....	192	near Marmot, Oreg.....	100
Pinehurst, Oreg., Dead Indian		Sandy River basin, crest-stage	
collection canal near.....	269	stations in.....	288
Pitt, Wash., Klickitat River		gaging-station records in.....	99-104
near.....	84	Santiam River at Jefferson,	
Placer, Oreg., Grave Creek near.....	279	Oreg.....	154
Post, Oreg., Crooked River near.....	71	Schwartz Spring Branch, north prong,	
Powers, Oreg., South Fork Coquille		Oreg., discharge measurements of..	23
River at.....	261	south prong, discharge measurements	
South Fork Coquille River near.....	260	of.....	23
Prairie City, Oreg., John Day		Scoggin Creek near Gaston, Oreg.....	173
River at.....	41	Selma, Oreg., Illinois River near.....	284
Strawberry Creek near.....	40	Service Creek, Oreg., John Day River	
Prineville, Oreg., Crooked River		at.....	47
near.....	72	Siletz River at Siletz, Oreg.....	220
Prospect, Oreg., Red Blanket Creek		Silver Lake, Wash., Silver Lake at....	209
near.....	264	Toutle River near.....	210
Rogue River above.....	262	Silver Lake at Silver Lake, Wash.....	209
Rogue River near.....	265	Sisters, Oreg., Lake Creek near.....	74
South Fork Rogue River near.....	263	Squam Creek near.....	68
Publications on streamflow by		Siuslaw River basin, crest-stage	
Geological Survey.....	8-10	stations in.....	290
by State agencies.....	11	Skamokawa River basin, crest-stage	
Pudding River, at Aurora, Oreg.....	172	stations in.....	290
near Mount Angel, Oreg.....	171	Smith River near Belknap Springs,	
Quinn River near Lapine, Oreg.....	53	Oreg.....	126
Rainbow, Oreg., South Fork McKenzie		Smithfield, Oreg., Long Tom River	
River near.....	128,129	near.....	137
Rancheria Creek near Butte Falls,		South Mud Creek, Oreg., discharge	
Oreg.....	11	measurements of.....	23
Randle, Wash., Cispus River near.....	199	South Myrtle Creek near Myrtle Creek,	
Ransom Creek basin, crest-stage		Oreg.....	237
stations in.....	292	South Santiam River, at Waterloo,	
Red Blanket Creek near Prospect,		Oreg.....	153
Oreg.....	264	below Cascadia, Oreg.....	150
Reservoirs. See Lakes and Reservoirs		South Umpqua River, at Tiller, Oreg....	231
Rickreall Creek near Dallas, Oreg....	158	near Brockway, Oreg.....	241
Riddle, Oreg., Cow Creek near.....	236	South Yamhill River, near Whiteson,	
Rieth, Oreg., Birch Creek at.....	34	Oreg.....	164
Ritter, Oreg., Middle Fork John Day		near Willamina, Oreg.....	161
River at.....	45	Spanish Hollow basin, crest-stage	
Rock Creek near Glide, Oreg.....	249	stations in.....	287
Rogue River, above Prospect, Oreg....	262	Specaya Creek near Cougar, Wash.....	193
at Dodge Bridge, near Eagle Point,		Squam Creek near Sisters, Oreg.....	68
Oreg.....	268	Stage-discharge relation, definition	
at Grants Pass, Oreg.....	276	of.....	2
at Raygold, near Central Point,		Steamboat Creek near Glide, Oreg.....	248
Oreg.....	275	Strawberry Creek, above Slide Creek,	
below South Fork Rogue River, near		near Prairie City, Oreg.....	40
Prospect, Oreg.....	265	Sucker Creek near Holland, Oreg.....	281
South Fork, near Prospect, Oreg....	263	Sutherland Creek at Sutherland, Oreg....	251
Rogue River basin, crest-stage		Suver, Oreg., Luckiamute River near...	157
stations in.....	291-292	Swalley Canal, Oreg., diversion by....	65
discharge measurements at miscel-		Swift Reservoir, Wash.....	194,195
laneous sites in.....	294	Sycamore, Oreg., Johnson Creek at.....	182
gaging-station records in.....	262-285	Takilma, Oreg., East Fork Illinois	
reservoirs in.....	285	River near.....	280
Roseburg, Oreg., Deer Creek near....	242	Tenmile, Oreg., Olalla Creek near.....	239
Row River, above Pitcher Creek, near		Tenmile Creek basin, crest-stage	
Dorena, Oreg.....	119	stations in.....	291
near Cottage Grove, Oreg.....	121	discharge measurements at miscel-	
Runoff in inches, definition of.....	2	laneous sites in.....	294
Rush Creek, above falls, near		Tenmile Creek near Lakeside, Oreg....	256
Cougar, Wash.....	188	Terms and abbreviations, definition	
above Meadow Creek, near Trout		of.....	2-3
Lake, Wash.....	186	The Dalles, Oreg., Columbia River	
		at.....	79

	Page		Page
Three Lynx Creek, Oreg., Clackamas River above.....	180	Washougal River basin, crest-stage stations in.....	288
Tidewater, Oreg., Alsea River near.....	225	Washougal River near Washougal, Wash.....	105
Tillamook, Oreg., Wilson River near.....	219	Waterloo, Oreg., South Santiam River at.....	153
Tiller, Oreg., Jackson Creek near.....	230	West Division main canal, Oreg., diversion by.....	37
South Umpqua River at.....	231	Western Land Canal, Oreg., diversion by.....	37
Tilton River, above Bear Canyon Creek, near Cinebar, Wash.....	203	White River below Tygh Valley, Oreg.....	77
West Fork, near Morton, Wash.....	202	White Salmon River, above Trout Lake Creek, near Trout Lake, Wash.....	88
Timothy Lake near Government Camp, Oreg.....	177,178	at B-Z Corner, Wash.....	91
Toketee Falls, Oreg., Clearwater River near.....	245	at Husum, Wash.....	92
Fish Creek near.....	246	below Cascades Creek, near Trout Lake, Wash.....	87
Lemolo Reservoir near.....	243,244	near Trout Lake, Wash.....	90
North Umpqua River near.....	244,247	near Underwood, Wash.....	93
Touchet, Wash., Walla Walla River near.....	21	White Salmon River basin, gaging-station records in.....	87-93
Touchet River, at Bolles, Wash.....	20	Whiteson, Oreg., South Yamhill River near.....	164
East Fork, near Dayton, Wash.....	19	Wickiup Reservoir, Oreg., contents of.....	62
Toutle River, near Silver Lake, Wash.....	210	Willey Creek near Foster, Oreg.....	152
Trail, Oreg., Elk Creek near.....	267	Wilhoit, Oreg., Molalla River near.....	169
Trout Lake, Wash., Big Creek near.....	185	Willamette, Oreg., Tualatin River near.....	175
Lewis River near.....	184	Willamette River, at Albany, Oreg.....	143
Meadow Creek near.....	187	at Harrisburg, Oreg.....	133
Trout Lake, Wash., Rush Creek near.....	186	at Salem, Oreg.....	159
Trout Lake Creek near.....	89	at Wilsonville, Oreg.....	168
White Salmon River near.....	87,88,90	Coast Fork, at London, Oreg.....	116
Trout Lake Creek near Trout Lake, Wash.....	89	below Cottage Grove Dam, Oreg.....	118
Tualatin River, near Dilley, Oreg.....	174	near Goshen, Oreg.....	123
near Willamette, Oreg.....	175	Middle Fork, above Salt Creek, near Oakridge, Oreg.....	108
Tumalo Creek near Bend, Oreg.....	67	at Jasper, Oreg.....	115
Tygh Valley, Oreg., White River below.....	77	below North Fork, near Oakridge, Oreg.....	111
Ukiah, Oreg., Camas Creek near.....	44	near Dexter, Oreg.....	113
Umatilla project feed canal, Oreg., diversion by.....	37	near Oakridge, Oreg.....	106
Umatilla, Oreg., Columbia River below McNary Dam at.....	24-28	North Fork of, near Oakridge, Oreg.....	110
Umatilla River near.....	38	Willamette River basin, crest-stage stations in.....	288-289
Umatilla River, above Meacham Creek, near Gibbon, Oreg.....	29	discharge measurements at miscel-laneous sites in.....	293
at Pendleton, Oreg.....	30	gaging-station records in.....	106-182
at Yoakum, Oreg.....	35	reservoirs in.....	170
diversions from, between Yoakum and Umatilla gaging stations, Oreg.....	37	Willamina, Oreg., Mill Creek near.....	163
near Umatilla, Oreg.....	38	South Yamhill River near.....	161
Umatilla River basin, crest-stage stations in.....	286	Willamina Creek near.....	162
gaging-station records in.....	29-38	Willamina Creek near Willamina, Oreg.....	162
Umpqua River basin, crest-stage stations in.....	290-291	Willard, Wash., Little White Salmon River at.....	94
discharge measurements at miscel-laneous sites in.....	293	Little White Salmon River near.....	95
gaging-station records in.....	230-255	Willow Creek (tributary to Columbia River), at Heppner, Oreg.....	39
Umpqua River near Elkton, Oreg.....	12,264	Willow Creek basin (tributary to Columbia River), crest-stage stations in.....	287
Underwood, Wash., White Salmon River near.....	93	Willow Creek (tributary to Rogue River) near Butte Falls, Oreg.....	11
Unnamed Spring, Wash.....	22	Wilson River near Tillamook, Oreg.....	219
Vida, Oreg., McKenzie River near.....	131	Wilsonville, Oreg., Willamette River at.....	168
WSP, definition of.....	3	Winchester, Oreg., North Umpqua River at.....	252
Wahkiacus, Wash., Little Klickitat River near.....	83	Wind River, above Trout Creek, near Carson, Wash.....	97
Walla Walla, Wash., Blue Creek near.....	16	near Carson, Wash.....	98
Dry Creek near.....	18	Wind River basin, gaging-station records in.....	97-98
Mill Creek at.....	17	Winston Creek near Mayfield, Wash.....	206
Mill Creek near.....	15	Work, division of.....	2
Walla Walla River, near Touchet, Wash.....	21	slope of.....	1
North Fork, near Milton, Oreg.....	14	Yale Reservoir, Wash., contents of.....	194,195
South Fork, near Milton, Oreg.....	13	Yoakum, Oreg., Umatilla River at.....	35
Walla Walla River basin, crest-stage stations in.....	286		
gaging-station records in.....	13-22		
springs in, discharge measurements of.....	22-23		