HYDROLOGIC DATA SUMMARY
CLEARWATER RIVER BASIN
WATER YEAR 1974-1975

by

Arthur G. Larson

and

Harold J. Jacoby

College of Forest Resources
University of Washington
Seattle, Washington 98195

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Principle Investigator
David D. Wooldridge

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INTRODUCTION

The Clearwater River, located on the western Olympic peninsula, (Figure 1) encompasses approximately 91,000 acres or 140 square miles. The majority of this watershed is state owned and intensively managed by the Washington State Department of Natural Resources (DNR). The DNR's primary goal on these forested lands is maximizing income from sustained yield timber harvest. Income from timber sales is used to support the state school system and other state agencies.

Present management practices include (1) development of a forest road system, (2) clearcut harvesting of mature climax species, (3) slash burning for fire control, (4) planting of Douglas-fir seedlings, (5) fertilization, and (6) pre-commercial and commercial thinnings. Since logging in this basin is relatively recent, few second growth stands have reached rotation age, and harvesting is limited to the residual old growth stands.

Recognizing and understanding environmentally undesirable effects of present forest practices is also a concern of the DNR. Responsible maximizing of timber related income must account for realistic environmental costs. Awareness of environmental risks and forest management alternatives allows a balance between timber harvest and environmental quality. In support of this goal the DNR has funded a number of environmentally oriented independent research programs. One study currently underway is on the impact of timber harvest on fish resources of the Clearwater River. The principle objective of the work

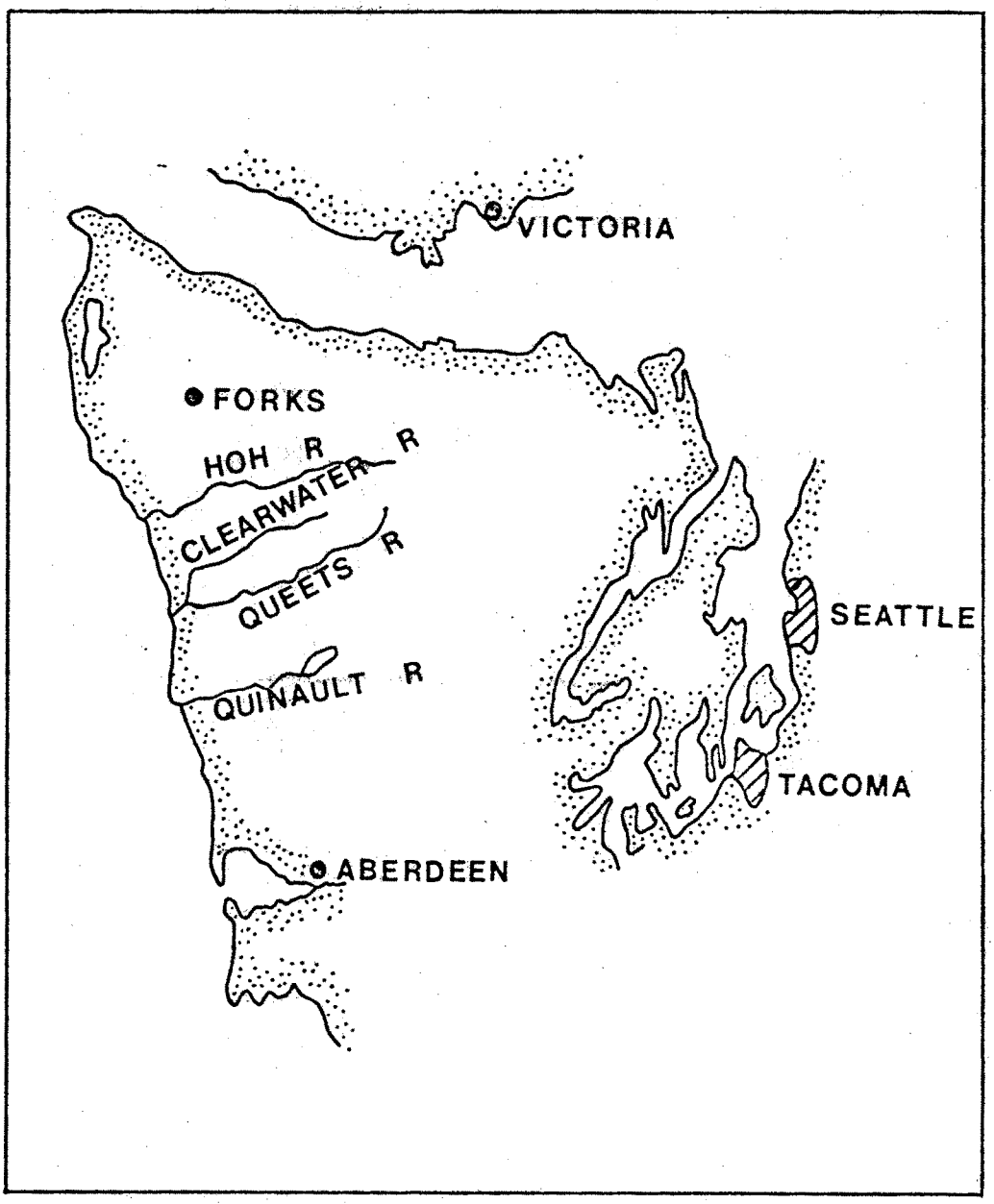


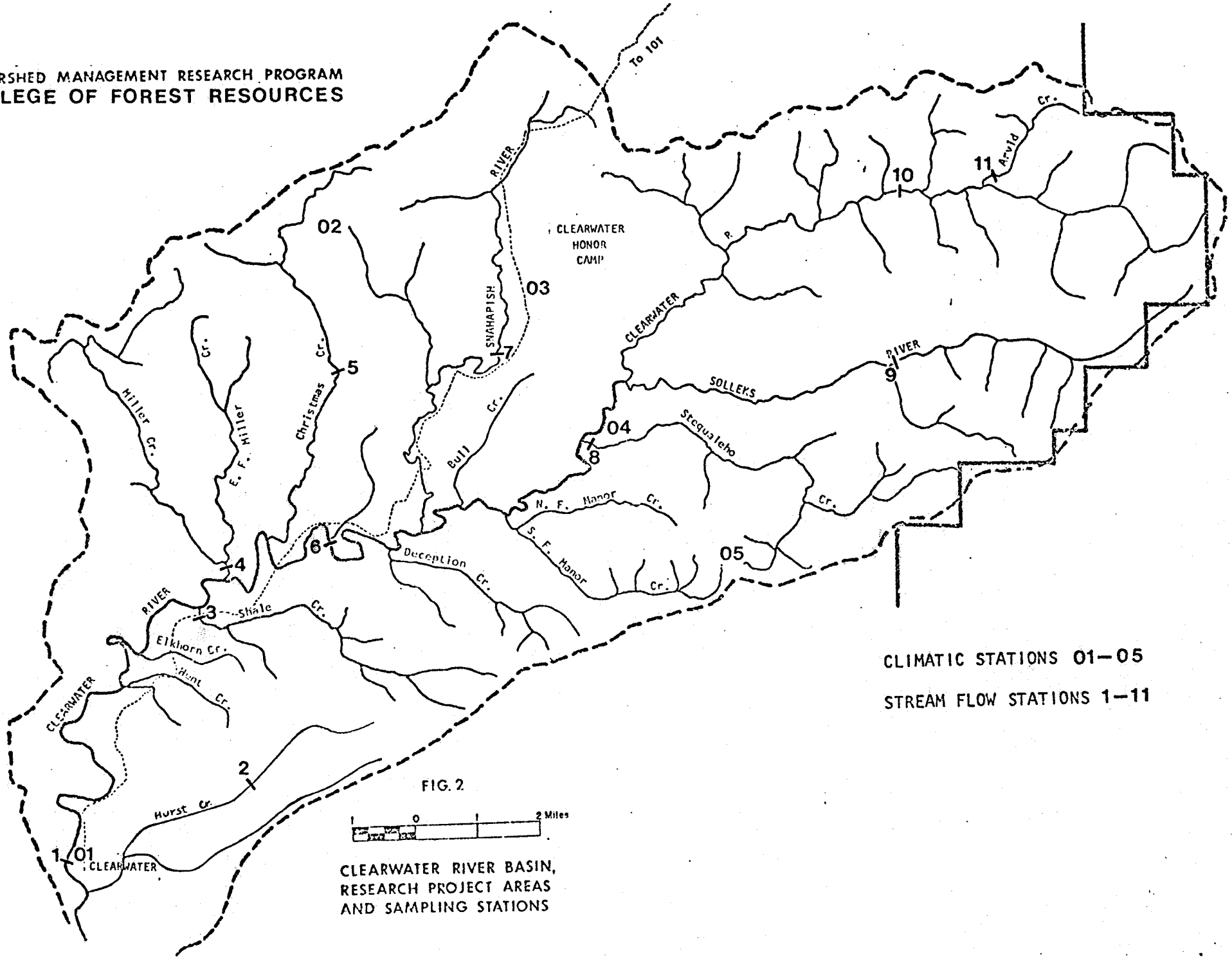
Figure 1. Location of Clearwater River.

summarized in this paper is to provide basic hydrologic data in support of this fisheries research. Funding was from the DNR in conjunction with other hydrologic research underway on the Olympic peninsula.

This paper is the second in a series of hydrologic data summaries for the Clearwater River system. Although hydrologic monitoring of selected sub-basins has been in progress since 1971 (Cederholm and Lestelle, 1974), compilation of hydrologic and climatologic information did not occur until 1975. The 1975 listing of hydrologic information covered water year 1973-1974 (Wooldridge, Larson, and Wald, 1975). This present summary covers water year 1974-1975.

Currently the Clearwater River basin is being monitored by a network of five water level recorders, five precipitation recorders, and two hygrothermographs. The 23 streams previously equipped with staff gages have been reduced to six. In addition, a number of storage rain gages primarily used as a check on the continuous precipitation recorders, are located in the Stequaleho drainage. Gaging locations are shown in Figure 2, a map of the Clearwater basin.

WATERSHED MANAGEMENT RESEARCH PROGRAM
COLLEGE OF FOREST RESOURCES



CLIMATIC STATIONS 01–05

STREAM FLOW STATIONS 1–11

FIG. 2

CLEARWATER RIVER BASIN, RESEARCH PROJECT AREAS AND SAMPLING STATIONS

STREAM GAGING

Five stream gaging locations are equipped with digital punch tape water level recorders which record stream stage to 0.01 ft. at fifteen minute intervals. Recorders are housed in small instrument shelters atop 18" diamter corrugated metal pipe (cmp) stilling wells. Intake orifices consist of 3/4" diameter pipe installed below the low flow level in the natural channel. Surge attenuation has not been a problem with the discrete recording, punch tape recorders. Streams were individually field rated for discharge (cfs) as a function of stage (ft.) using a velocity current meter. Equations developed to represent stage-discharge relationships, including the coefficient of determination (R^2), are presented in Table 1.

Artificial stream controls are not used at any of the eleven gaging sites. Sites were chosen for their apparent natural stability. For accurate stage-discharge relationships the stream gradient and cross section must remain constant with time. Some problems have been encountered with changing cross sections at different gaging sites. After a storm in November 1975 the slope of the discharge rating equation for the Clearwater River at Goodyear bridge was noted to shift. Comparison of the new, developing relationship, with the old rating curve indicated that the bed had been scoured an additional two feet. Miller Creek showed a similar shift in slope, but this time indicating approximately one foot of sedimentation at the gaging location. Such changes are

normal for dynamic mountain streams but make gaging difficult. Changes in the rating equation can be accounted for if the time of the shift is known. In most cases the change is small and remains unnoticed resulting in greater variance of the rating equation.

Staff gages installed on six streams are read periodically with stage, date, and time recorded. These stage readings (Y variable) are correlated with stage from a nearby continuous recorder (X variable). Computed prediction equations enable 15 minute values of the Y variable to be estimated from the recorder data. Stage predictions combined with a discharge rating equation allow continuous estimation of discharge Stage prediction equations for the six staff gages are presented in Table 2.

Flow timing is the principle criteria for chosing relatable streams. Peak flow periods must coincide, low flows are generally not important. Minimum flows are usually preceded by long recessions with little discharge change with time. A lack of matching in basin flow timing results in a scattering of points around the regression line. This variation is indicated by the value of R^2. Experience indicates that a minimum R^2 of 0.98 is desirable to insure a reliable relationship. Errors in computed head values can cause large errors in estimated discharge due to the power function in the head-discharge rating equation. A lower R^2 indicates that prediction of the extreme values, i.e. high and low flows, may be in error. This is not a serious consequence if only mean values are desired.

Use of staff gages in lieu of expensive recorders is a matter of economics. Correlations allow the usefulness of permanent gaging factilities to be expanded with little increase in expenditures. This technique is valid where mean values of daily, monthly, or annual flows are desired; or where estimates of maximum or minimum flow periods are wanted. It is inadequate, however, if accurate discharge or flow timing within discrete storm events is needed.

Using the equations presented in Tables 1 and 2, and the stage values from the five water level recorders, discharge in cubic feet per second (cfs) and inches were generated with the aid of a computer. Summaries of mean daily discharge in cfs are enclosed in Tables 3 to 13. Discharge in inches and maximum and minimum instantaneous flows (cfs) are included for each month.

Expansion of this data to cover ungaged basins within the Clearwater drainage is feasible using an area ratio approach. A nearby gaged watershed of similar size is chosen and the ratio of the ungaged watershed area to the gaged watershed area determined. Discharge for the ungaged watershed is estimated by multiplying the gaged discharge by this ratio. This approach assumes equal areas have equal runoff. It is valid where basin conditions, i.e. slope aspect, vegetation, and climate are similar.

PRECIPITATION

Precipitation was measured by a network of five tipping bucket rain gages. One of the gages was heated and used for measurement of

snowfall. Gages were calibrated to measure precipitation to 0.01 inches and were equipped with 8 day continuous event recorders. The heated snow-gage was equipped with a 90 day continuous recorder. Instrument locations are shown in Figure 1, the watershed map. Total daily precipitation for these five stations is summarized in Tables 14 to 18.

AIR TEMPERATURE AND RELATIVE HUMIDITY

The Clearwater basin is equipped with two hygrothermographs whose locations are shown with the other instruments in Figure 1. These instruments are 8 day continuous recorders. Calibration of the temperature sensor is done to the nearest 1° F. using a reliable thermometer. The hygrograph portion is calibrated periodically with a wet and dry bulb sling psychrometer. Maximum and minimums, including the time at which they occurred, and the mean; have been reduced from these records on a daily basis. The daily means only have been included in this summary as Tables 19 to 22.

REMARKS

The information summarized is but a small fraction of the total data collected. Much additional information is available from a detailed reduction and analysis of the instrument charts and related data. However, limited applicability and interest, as well as time and cost factors, preclude inclusion.

A note about the discharge rating equations for the Solleks River and the Clearwater River near mouth is necessary. Lack of proper

facilities precluded measurement of high flow discharge at these stations. Equations developed were based on low flow measurement and were extrapolated to include high flows. An effort was made to make estimated high flows reasonable, but reliability above the range of measured discharge is questionable.

REFERENCES

Cederholm, C.J. and L.C. Lestelle. 1974. Observations on the effects of landslide siltation on salmon and trout resources of the Clearwater River, Jefferson County, Washington, 1972-73. Final Report, Part I. Fisheries Research Institute, Seattle, Washington. FRI-UW-7404. 133pp.

Wooldridge, D.D., Larson, A.G. and A.R. Wald. 1975. Hydrologic data summary Clearwater River basin, water year 1973-1974. Final Report, College of Forest Resources, Seattle, Washington. 66pp.

Table 1

DISCHARGE RATING EQUATIONS

STATION	EQUATION [1/]	R^2
Christmas Creek	$Q= 27.107(S)^{3.107}$	0.99
Stequaleho Creek	$Q= 33.906(S)^{2.301}$	0.99
Solleks River	$Q= 0.657(S)^{4.452}$	0.99
Clearwater River at Goodyear Bridge	$Q= 357.6(S)^{1.312}$	0.99
Clearwater River at mouth	$Q= 0.143(S)^{4.875}$	0.99
Snahapish Creek	$Q= 0.343(S)^{4.564}$	0.99
Miller Creek	$Q= 0.081(S)^{7.330}$	0.99
Hurst Creek	$Q= 11.886(S)^{2.307}$	0.99
Shale Creek	$Q= 1.041(S)^{6.568}$	0.99
Upper Clearwater River	$Q= 74.514(S)^{2.181}$	0.99
Arvid Creek	$Q= 5.270(S)^{3.755}$	0.99

[1/] (S) = stage in feet

Q = discharge in cfs

Table 2

REGRESSION EQUATIONS RELATING STAFF GAUGES TO CONTINUOUS RECORDERS

STATION (Y)	RECORDER (X)	EQUATION 1/	R^2
Snahapish Creek	Christmas Creek	$Y=3.329(X)^{0.563}$	0.98
Miller Creek	Christmas Creek	$Y=2.494(X)^{0.409}$	0.95
Hurst Creek	Christmas Creek	$Y=1.160(X)^{0.861}$	0.97
Shale Creek	Stequaleho Creek	$Y=1.548(X)^{0.361}$	0.98
Upper Clearwater River	Solleks River	$Y=0.170(X)^{2.018}$	0.98
Arvid Creek	Solleks River	$Y=0.400(X)^{1.210}$	0.98

1/ (X) and (Y) are in feet

DISCHARGE

Tables 3-13

CLEARWATER RIVER NEAR MOUTH
BASIN AREA = 91200 ACRES

DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	87.5	78.6	1169.5	2130.3	293.8	1625.8	680.4	583.7	360.7	117.2	60.7	2041.2
2	120.4	76.7	1244.1	1871.3	238.8	3989.3	1059.1	938.9	334.1	88.1	60.7	1551.8
3	79.9	76.7	1405.8	1823.5	250.4	3574.2	905.1	3424.9	294.5	77.3	60.7	1190.5
4	76.7	77.1	2420.4	1590.5	482.6	2216.5	866.4	3975.6	350.8	70.0	60.7	895.6
5	76.7	153.8	2407.7	2123.2	525.7	1515.9	808.7	2881.5	410.7	65.3	46.4	569.3
6	76.7	518.9	1783.2	2269.9	523.7	1112.4	767.2	1861.9	301.9	59.9	35.0	457.5
7	76.7	535.6	1510.4	1911.8	1028.6	965.2	738.4	1192.7	258.5	91.9	167.7	378.4
8	76.7	624.3	1195.2	3017.0	991.5	931.9	709.0	920.3	232.2	125.3	163.7	320.3
9	68.6	1251.8	1493.1	2281.1	1386.7	888.0	686.2	879.8	213.2	117.8	41.8	272.5
10	45.4	1154.1	2847.1	1635.9	2617.5	783.4	643.2	989.5	208.2	120.2	38.4	257.5
11	45.4	1180.5	4053.1	1248.2	2196.0	721.5	577.5	901.2	193.2	119.6	38.4	313.9
12	45.4	3833.0	2556.3	5433.0	6287.2	880.8	654.8	758.3	162.7	100.8	47.8	282.3
13	45.4	2067.6	2348.2	3788.5	4601.1	843.6	669.9	669.7	148.6	89.9	53.4	254.1
14	45.4	1033.3	2073.1	2406.7	2836.6	939.5	609.5	653.9	145.6	114.3	53.4	231.4
15	42.6	623.6	1804.4	1587.5	2010.0	1427.0	562.2	583.9	145.6	132.6	53.4	226.6
16	38.4	393.6	2385.8	1249.9	1511.3	1373.4	521.5	536.0	145.6	128.7	53.4	249.4
17	38.4	736.5	2898.2	3350.0	1190.9	1835.4	488.2	466.2	145.6	130.3	53.4	228.9
18	38.4	1632.2	3462.2	5017.6	1023.3	2134.2	474.2	468.2	145.6	131.9	226.0	194.2
19	38.4	2335.9	3580.4	3036.1	1579.7	1921.3	524.1	521.0	145.6	135.8	176.1	178.0
20	58.8	5813.6	4229.4	2102.6	1784.8	1695.6	478.7	603.1	144.5	130.2	59.4	160.1
21	55.2	4874.3	6946.9	1475.6	1523.6	1550.6	442.7	534.3	135.4	126.2	45.4	145.7
22	40.8	2929.6	4068.6	1074.5	1203.8	1441.9	474.4	499.2	130.9	94.1	98.3	123.4
23	38.4	2207.6	2878.9	1778.6	1249.0	1384.4	717.6	510.6	241.9	60.7	1048.1	120.4
24	38.4	5146.1	2161.6	1702.6	1392.0	1207.6	1182.5	499.6	176.5	60.7	674.4	148.3
25	38.4	5407.3	2233.5	1447.1	1119.5	1060.3	1219.7	440.1	158.6	60.7	434.7	133.9
26	38.4	3097.5	1997.9	1129.7	1004.6	940.6	958.8	413.1	285.0	60.7	338.0	127.0
27	340.0	1940.3	1824.2	886.3	964.2	852.0	886.9	390.8	320.6	60.7	590.2	122.3
28	307.9	1584.6	1510.6	710.1	947.6	779.3	771.8	368.8	247.8	60.7	1449.7	117.2
29	81.8	1338.2	2713.4	559.4		739.1	674.2	368.2	214.8	60.7	4017.4	114.7
30	59.5	1188.3	3662.2	457.1		790.2	608.5	372.6	176.0	60.7	2958.3	113.5
31	77.9		2487.7	372.6		725.9		366.2		60.7	2676.5	
MEAN	75.4	1797.0	2559.8	1982.8	1527.3	1382.2	712.0	921.7	219.2	94.0	512.3	384.0
MAX	710.1	9384.1	9372.2	7839.0	8212.7	4793.4	1475.6	4349.0	472.2	140.5	5039.4	2339.4
MIN	38.4	76.7	1076.1	337.8	225.9	698.1	414.2	354.9	85.3	56.6	35.0	89.9
IN	0.6	14.1	20.7	16.0	11.2	11.2	5.6	7.4	1.7	0.8	4.1	3.0

MEAN ANNUAL FLOW (cfs) 1014.0

TOTAL RUNOFF (in) 96.4

Table 3

HURST CREEK
BASIN AREA = 1594 ACRES

DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	4.9	5.3	11.0	32.0	3.6	40.7	7.4	8.8	5.4	4.0	4.0	33.2
2	8.6	4.9	20.1	28.6	3.3	80.2	23.8	25.2	5.7	3.7	4.0	26.9
3	5.2	4.6	31.5	33.8	5.7	50.4	16.6	70.8	6.8	3.4	3.8	23.1
4	5.0	4.5	46.0	25.3	9.2	27.0	13.9	57.8	10.9	3.1	3.8	20.2
5	4.2	11.0	29.6	49.5	7.7	16.8	11.7	29.5	17.0	2.8	3.6	16.2
6	3.9	25.7	19.6	42.9	6.2	11.6	10.5	21.4	11.5	2.7	3.5	12.3
7	3.8	12.7	14.5	37.5	27.0	7.9	9.7	19.2	9.7	4.2	11.0	11.4
8	3.6	16.7	10.1	59.9	23.4	7.8	9.3	16.4	8.7	5.1	10.0	10.6
9	3.5	25.6	32.2	30.0	24.4	10.0	10.4	14.7	8.0	4.8	7.3	9.9
10	3.9	19.1	69.5	18.3	48.1	7.0	12.3	13.8	7.3	4.7	6.0	9.3
11	3.9	25.0	57.3	15.6	40.2	5.9	11.6	13.1	6.8	4.5	5.3	8.9
12	3.7	92.1	31.5	122.2	109.6	14.2	10.6	12.0	6.2	4.4	4.9	8.5
13	3.5	31.9	37.7	50.2	79.2	13.0	10.5	10.8	6.0	4.2	4.5	8.1
14	3.4	16.7	28.3	26.0	32.3	16.2	9.9	10.1	5.9	4.4	4.3	7.7
15	3.4	10.2	31.7	15.9	17.7	51.5	9.3	9.3	6.0	4.9	4.1	7.8
16	3.3	7.7	18.9	20.0	16.1	48.4	9.0	9.0	6.1	4.7	4.9	7.6
17	3.2	29.3	31.5	95.2	11.6	67.2	8.5	8.7	5.8	4.7	5.8	7.7
18	3.2	43.3	45.6	78.2	9.7	52.8	8.2	10.1	5.4	4.7	12.2	7.4
19	3.1	58.7	52.3	33.5	24.4	49.9	9.8	11.0	5.2	4.9	10.0	7.1
20	6.5	119.8	58.9	20.1	23.3	54.7	9.1	11.1	5.2	4.4	6.4	6.8
21	4.9	69.0	78.7	13.0	19.3	57.0	8.3	9.3	5.2	4.3	5.3	6.5
22	4.1	41.2	35.5	9.6	12.9	53.7	12.3	8.7	5.2	4.3	9.6	6.4
23	3.8	31.0	18.3	47.7	19.6	38.6	29.2	9.7	6.4	4.3	50.4	6.1
24	3.6	118.0	14.1	25.0	21.8	26.5	53.3	10.1	6.4	4.2	20.3	6.0
25	3.5	85.7	32.9	15.5	12.4	18.9	39.5	9.2	7.8	4.1	13.6	5.8
26	3.5	39.5	22.2	10.2	11.1	15.1	26.5	8.3	10.4	4.1	17.2	5.7
27	18.3	24.7	24.6	7.4	11.1	11.6	24.5	7.9	10.4	4.1	45.4	5.7
28	14.3	17.4	19.2	5.8	15.7	10.1	17.3	7.2	6.7	4.1	60.5	5.6
29	8.5	13.0	73.1	4.8		9.1	11.8	6.8	5.7	4.0	89.4	5.5
30	6.5	10.3	62.1	4.2		9.8	10.1	6.2	4.6	4.0	64.4	5.6
31	5.7		32.0	3.9		8.8		5.8		4.0	48.7	
MEAN	5.2	33.8	35.2	31.7	23.2	28.8	15.2	15.2	7.3	4.2	17.5	10.3
MAX	32.2	184.1	162.9	196.0	126.8	92.2	75.6	82.0	20.3	5.2	148.7	38.3
MIN	3.1	4.3	9.1	3.8	3.3	5.6	6.1	5.6	4.1	2.6	3.5	5.4
IN	2.4	15.1	16.3	14.7	9.7	13.3	6.8	7.0	3.3	1.9	8.1	4.6

MEAN ANNUAL FLOW (cfs) 19.0

TOTAL RUNOFF (in) 103.2

Table 4

SHALE CREEK
BASIN AREA = 3900 ACRES

DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	1.4	1.5	29.5	84.0	17.3	89.0	19.4	18.2	5.8	3.8	1.7	61.6
2	2.1	1.4	32.5	73.2	15.9	201.5	42.5	53.9	5.4	3.5	1.7	46.2
3	1.2	1.4	40.5	69.6	16.4	143.0	31.6	165.7	5.4	3.2	1.7	33.7
4	1.2	1.5	98.4	62.8	14.8	86.6	29.4	158.4	8.1	3.1	1.7	25.6
5	1.2	4.9	89.7	106.3	13.2	59.9	26.6	92.2	9.0	2.8	1.5	22.1
6	1.2	15.0	68.2	91.0	15.4	45.2	23.7	62.3	6.2	2.8	1.3	18.1
7	1.2	9.9	52.2	91.6	45.6	35.7	22.2	46.4	5.5	2.6	19.0	16.2
8	1.2	24.1	42.7	140.6	32.6	33.4	20.7	36.2	4.8	2.5	6.6	14.2
9	1.2	32.7	76.8	86.3	82.9	30.8	19.7	31.2	4.7	2.4	3.3	11.5
10	1.2	24.7	154.2	59.8	136.3	24.7	19.1	27.2	4.4	2.3	2.8	10.7
11	1.2	65.9	152.1	64.2	97.0	21.3	21.1	24.9	4.2	2.2	2.4	9.1
12	1.2	182.8	108.1	344.4	335.4	30.7	25.8	20.0	3.9	2.1	1.8	8.8
13	1.2	69.1	95.6	142.0	201.5	28.1	25.8	17.7	3.8	2.0	1.7	7.9
14	1.2	39.4	86.1	90.9	115.2	35.3	22.8	15.9	3.8	2.0	1.7	7.2
15	1.2	25.8	77.6	68.6	81.3	70.3	18.2	14.7	3.8	2.0	1.7	7.0
16	0.7	19.3	124.9	79.6	60.1	65.5	16.7	14.3	3.7	1.9	1.8	6.4
17	0.5	51.8	117.3	220.9	51.1	109.8	15.4	12.3	3.4	1.8	2.4	5.9
18	0.5	84.2	154.1	205.3	47.6	141.7	15.1	13.7	3.3	1.8	11.9	4.9
19	0.5	143.9	182.4	111.7	112.1	119.0	16.5	15.1	3.1	1.9	5.8	3.4
20	0.8	299.5	209.2	77.0	92.2	94.4	14.6	12.7	2.9	1.8	4.0	4.7
21	0.5	178.7	292.6	56.1	62.4	81.4	12.9	10.8	2.8	1.8	3.4	4.6
22	0.5	113.8	117.0	48.5	47.1	71.8	18.0	9.9	2.8	1.8	17.0	4.3
23	0.6	88.1	54.4	111.9	68.1	66.7	26.4	10.9	4.2	1.7	54.8	4.0
24	0.6	288.1	41.2	70.6	68.5	52.4	64.8	10.4	3.5	1.7	20.6	4.1
25	0.6	205.5	107.5	51.8	50.1	42.1	47.5	8.9	4.8	1.7	13.9	4.4
26	0.6	108.7	68.1	40.9	48.9	34.0	34.4	8.2	6.8	1.6	26.5	4.2
27	14.2	70.5	74.6	33.2	42.5	28.7	30.5	7.7	9.0	1.7	53.5	4.0
28	1.9	49.5	60.1	28.9	49.6	24.4	24.4	7.4	5.3	1.9	95.0	3.8
29	0.9	37.0	191.4	23.9		22.3	21.0	6.9	4.6	2.0	205.1	3.8
30	1.3	30.0	151.6	21.6		25.2	19.0	6.4	3.9	1.7	114.6	3.8
31	1.5		90.3	19.4		21.5		6.2		1.7	97.0	
MEAN	1.5	75.6	104.5	89.6	72.2	62.5	24.9	30.5	4.8	2.2	25.1	12.2
MAX	38.1	499.8	450.7	627.1	427.7	247.3	86.5	220.4	12.5	3.8	395.1	80.9
MIN	0.5	1.4	25.8	18.5	12.5	20.1	12.0	5.8	2.8	1.7	1.7	3.6
IN	0.3	13.8	19.8	16.9	12.3	11.8	4.6	5.8	0.9	0.4	4.7	2.2

MEAN ANNUAL FLOW (cfs) 42.1

TOTAL RUNOFF (in) 93.5

Table 5

MILLER CREEK
BASIN AREA = 8200 ACRES

DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	11.0	11.7	35.0	176.4	6.5	260.6	19.4	24.9	12.1	7.6	7.7	185.6
2	24.7	10.1	89.5	149.2	5.7	700.0	116.5	157.7	13.1	6.8	7.7	134.8
3	11.3	9.2	179.3	190.6	13.6	350.8	64.7	580.2	17.3	6.0	7.2	107.3
4	10.5	9.2	304.3	122.9	26.9	136.7	50.0	437.8	36.0	5.2	7.0	88.3
5	8.3	35.6	158.5	350.4	20.2	66.4	39.0	156.2	68.0	4.5	6.6	63.0
6	7.5	136.6	84.1	270.9	15.0	38.4	32.8	96.4	37.8	4.3	6.3	42.0
7	7.0	44.3	53.6	227.7	142.6	21.4	29.2	81.8	29.2	8.5	39.9	37.5
8	6.6	85.1	30.8	455.0	110.4	21.6	27.0	63.3	24.5	10.8	30.8	33.2
9	6.3	127.3	193.3	160.0	144.2	30.7	32.6	53.8	21.4	10.1	18.9	30.4
10	7.4	82.1	673.0	75.6	323.8	17.9	41.8	49.6	18.8	9.6	14.1	27.7
11	7.6	144.4	438.2	63.9	248.2	13.7	38.8	46.2	16.9	9.2	11.8	25.5
12	6.8	903.2	172.2	1373.9	1131.0	56.6	33.7	40.6	15.1	8.7	10.4	24.1
13	6.2	177.0	224.7	350.5	705.9	45.6	32.6	34.2	14.1	8.4	9.2	21.8
14	6.0	66.2	145.9	129.0	180.3	68.4	30.3	30.9	13.8	8.9	8.5	20.7
15	5.7	31.6	192.4	61.1	71.5	360.1	27.1	27.1	14.2	10.2	8.0	20.7
16	5.7	20.2	78.8	110.0	62.2	324.9	25.8	25.9	14.4	9.5	10.4	19.6
17	5.4	178.5	174.4	924.0	38.3	540.2	23.8	24.8	13.6	9.5	13.5	20.4
18	5.4	277.1	301.0	693.4	29.5	371.0	22.5	31.1	12.0	9.7	42.0	18.8
19	5.1	464.1	374.8	189.5	129.5	341.4	29.9	35.3	11.4	10.2	30.8	17.9
20	16.2	1345.2	449.9	87.5	111.1	395.2	26.3	35.6	11.2	8.8	15.5	16.9
21	10.3	575.8	696.0	45.6	82.1	417.0	22.7	26.9	11.2	8.6	11.6	16.2
22	8.0	257.9	208.0	29.4	45.0	383.6	46.4	24.8	11.3	8.6	35.0	15.7
23	7.0	153.5	76.1	325.1	95.0	232.1	152.0	29.5	15.8	8.6	361.6	14.6
24	6.6	1277.0	55.1	121.3	100.2	132.7	391.6	31.2	15.6	8.3	89.0	14.1
25	6.3	793.2	186.7	59.1	42.1	79.1	242.3	27.1	20.9	8.0	48.6	13.7
26	6.1	242.1	101.5	31.5	35.9	56.0	132.1	22.6	32.4	8.0	71.9	13.5
27	86.6	119.4	118.4	19.2	35.6	38.3	117.1	21.0	33.0	8.0	315.8	13.0
28	53.1	69.5	70.4	13.4	74.6	30.9	71.1	18.2	16.6	7.9	480.1	12.9
29	23.9	45.2	723.0	10.0		26.2	39.2	16.5	13.0	7.7	847.5	12.3
30	15.8	32.2	486.1	8.2		29.4	30.9	15.3	9.5	7.7	496.7	12.8
31	13.0		176.7	7.6		25.1		13.6		7.7	332.0	
MEAN	13.1	258.0	234.4	220.4	143.4	181.0	66.3	73.5	19.8	8.2	109.5	36.5
MAX	174.8	2424.5	2021.3	2698.4	1385.2	874.3	637.1	724.3	89.2	11.2	1774.8	230.7
MIN	5.1	8.6	30.9	7.1	5.6	22.9	14.5	12.6	8.0	4.1	6.3	12.1
IN	1.2	22.5	21.1	19.8	11.7	16.3	5.8	6.6	1.7	0.7	9.9	3.2

MEAN ANNUAL FLOW (cfs) 113.7

TOTAL RUNOFF (in) 120.5

Table 6

CHRISTMAS CREEK
BASIN AREA = 3750 ACRES

DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	4.4	4.6	14.4	76.4	2.5	114.6	7.8	10.0	4.8	3.0	3.0	80.3
2	10.0	4.0	38.0	64.3	2.2	317.5	49.8	69.6	5.2	2.7	3.0	57.7
3	4.5	3.6	76.5	82.8	5.4	155.6	27.0	261.5	6.9	2.3	2.8	45.7
4	4.2	3.6	134.2	52.6	10.9	58.7	20.7	195.9	14.8	2.0	2.7	37.1
5	3.3	14.6	68.5	155.7	8.1	27.7	16.0	67.4	28.4	1.7	2.5	26.4
6	2.9	59.0	35.3	119.1	6.0	15.8	13.5	40.8	15.5	1.6	2.4	17.4
7	2.7	18.3	22.2	99.6	61.3	8.6	11.9	34.4	11.9	3.3	16.5	15.4
8	2.5	36.7	12.6	203.9	47.0	8.7	11.1	26.4	9.9	4.3	12.6	13.7
9	2.5	54.6	84.7	69.1	62.2	12.6	13.4	22.1	8.6	4.0	7.5	12.4
10	2.9	34.6	309.9	31.7	143.1	7.1	17.2	20.3	7.5	3.8	5.6	11.2
11	2.9	63.2	197.0	26.9	108.8	5.4	15.8	19.1	6.7	3.6	4.7	10.3
12	2.6	415.2	74.5	641.4	523.2	23.7	13.9	16.7	6.0	3.4	4.1	9.6
13	2.4	76.8	97.4	155.7	321.5	18.9	13.4	14.1	5.6	3.3	3.6	8.8
14	2.3	27.6	62.7	55.3	78.2	28.9	12.3	12.6	5.4	3.5	3.4	8.2
15	2.2	12.9	84.6	25.4	29.9	159.4	11.1	11.1	5.7	4.0	3.1	8.2
16	2.2	8.1	33.1	48.1	25.9	143.5	10.4	10.5	5.8	3.7	4.1	7.9
17	2.1	78.3	75.6	424.5	15.8	243.6	9.6	10.0	5.4	3.7	5.3	8.1
18	2.0	121.8	132.9	315.9	12.0	164.7	9.1	12.7	4.8	3.8	17.3	7.5
19	2.0	208.4	166.9	82.3	56.0	150.9	12.1	14.5	4.5	4.0	12.6	7.2
20	6.4	628.8	201.4	36.9	47.4	175.5	10.6	14.6	4.5	3.5	6.2	6.8
21	4.1	260.5	316.8	18.8	34.6	185.9	9.2	11.0	4.5	3.4	4.6	6.5
22	3.1	113.1	90.6	11.9	18.5	170.7	19.3	9.9	4.5	3.4	14.6	6.2
23	2.7	72.6	31.9	143.9	40.7	101.5	65.2	11.9	6.3	3.4	161.1	5.8
24	2.5	593.2	23.2	51.8	42.6	56.8	175.0	12.7	6.2	3.2	37.6	5.6
25	2.4	362.9	81.2	24.6	17.4	33.2	106.1	11.0	8.5	3.2	20.0	5.4
26	2.4	106.0	43.1	12.9	14.7	23.1	56.7	9.2	13.3	3.2	30.3	5.3
27	37.0	50.9	49.7	7.7	14.6	15.8	50.1	8.4	13.6	3.2	140.1	5.1
28	22.1	29.1	34.2	5.3	26.1	12.5	29.7	7.3	6.6	3.1	216.2	5.0
29	9.6	18.6	337.3	4.0		10.7	16.1	6.6	5.1	3.0	388.7	4.0
30	6.3	13.2	218.2	3.2		12.0	12.6	6.0	3.8	3.0	233.2	5.0
31	5.1		76.5	2.9		10.1		5.4		3.0	147.1	
MEAN	5.3	116.5	104.0	98.5	63.4	79.8	28.2	31.7	8.0	3.2	48.6	15.2
MAX	75.4	1159.8	957.9	1282.3	649.7	395.8	288.2	327.5	37.5	4.5	831.7	99.6
MIN	2.0	3.4	10.6	2.8	2.1	5.0	5.8	5.0	3.2	1.6	2.4	4.7
IN	1.0	22.2	20.5	19.4	11.3	15.7	5.4	6.2	1.5	0.6	9.6	2.9

MEAN ANNUAL FLOW (cfs) 50.2

TOTAL RUNOFF (in) 116.3

Table 7

CLEARWATER RIVER AT GOODYEAR BRIDGE
BASIN AREA = 62300 ACRES

DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG	SEPT.
1	65.9	59.4	800.0	1425.2	211.4	1096.2	474.0	409.0	256.9	87.0	46.2	1367.1
2	89.3	58.0	848.1	1257.7	172.4	2608.3	726.5	643.8	238.6	66.0	46.2	1049.7
3	60.3	58.0	953.9	1226.0	180.7	2346.9	625.2	2252.5	212.1	58.4	46.2	813.6
4	58.0	58.3	1611.4	1074.9	340.0	1480.1	598.0	2601.6	250.2	52.9	46.2	617.9
5	58.0	112.8	1602.7	1419.4	370.0	1026.3	561.3	1906.4	291.2	49.2	35.6	399.0
6	58.0	364.1	1200.2	1514.6	368.6	762.7	533.2	1250.5	217.0	45.6	27.1	323.3
7	58.0	376.6	1022.6	1283.3	706.5	644.1	512.7	815.0	186.4	68.8	121.4	269.1
8	58.0	434.3	816.8	1992.9	682.1	643.2	492.4	634.5	168.1	92.9	119.4	229.5
9	52.1	853.6	1011.1	1521.8	940.3	612.7	476.7	607.7	154.9	87.2	29.7	196.6
10	35.0	789.1	1876.1	1104.5	1737.8	543.2	448.8	680.6	151.2	89.1	29.7	185.4
11	35.0	805.8	2648.5	851.2	1466.5	501.6	405.3	621.2	140.9	88.7	36.4	225.3
12	35.0	2508.8	1698.5	3508.2	4043.1	608.1	457.7	526.3	119.5	75.1	40.5	203.6
13	35.0	1382.0	1565.1	2483.1	2991.9	582.7	464.1	466.5	109.5	67.3	40.5	183.1
14	35.0	709.4	1388.1	1602.3	1877.8	647.0	426.0	456.1	107.5	85.0	40.5	167.6
15	32.8	435.6	1213.3	1073.1	1347.2	968.4	394.0	408.5	107.5	98.3	40.5	164.2
16	29.7	279.6	1588.5	852.2	1023.1	931.9	367.1	376.8	107.5	95.5	40.5	179.6
17	29.7	509.0	1917.2	2203.1	813.9	1233.3	344.8	329.6	107.5	96.6	40.5	165.5
18	29.7	1101.9	2276.4	3254.6	703.5	1427.4	335.5	330.8	107.5	97.8	168.2	141.6
19	29.7	1553.7	2351.0	2004.8	1066.3	1290.1	368.9	366.2	107.5	100.6	128.5	130.1
20	44.7	3744.8	2759.2	1406.8	1201.5	1142.7	338.1	421.8	106.7	96.6	45.1	117.5
21	42.1	3164.4	4451.8	999.8	1031.3	1049.4	313.3	375.6	100.3	93.6	34.9	107.5
22	31.4	1937.4	2659.9	737.5	822.3	977.9	334.0	352.3	97.0	70.4	72.4	91.5
23	29.7	1474.6	1904.7	1196.9	851.7	940.0	498.7	359.9	174.7	46.2	718.2	89.0
24	29.7	3330.5	1444.9	1147.9	945.0	824.5	807.1	352.2	128.7	46.2	469.7	109.3
25	29.7	3497.6	1491.7	981.4	767.5	728.7	833.0	311.3	116.0	46.2	307.7	99.3
26	29.7	2043.4	1338.2	773.8	691.2	648.0	660.3	292.8	205.2	46.2	241.4	94.2
27	239.5	1302.0	1226.8	611.6	664.0	589.0	612.1	277.5	229.6	46.2	412.0	90.7
28	220.4	1070.8	1023.1	493.9	652.4	540.0	535.3	262.3	179.0	46.2	981.3	86.8
29	61.5	910.2	1790.7	392.5		513.1	470.0	262.0	156.0	46.2	2627.0	84.8
30	45.3	812.0	2403.0	323.0		547.7	425.0	265.4	128.7	46.2	1956.5	84.3
31	58.8		1654.9	265.1		504.9		260.7		46.2	1775.5	
MEAN	56.3	1191.3	1694.8	1322.0	1023.9	934.8	494.7	628.3	158.8	70.3	346.8	268.9
MAX	494.4	5990.6	5953.9	5011.4	5250.0	3118.1	1000.1	2838.5	334.3	104.0	3276.1	1564.5
MIN	29.7	58.0	739.6	240.9	163.2	484.3	293.4	253.8	93.6	46.2	27.1	80.2
IN	0.7	13.7	20.1	15.7	11.0	11.1	5.7	7.4	1.8	0.8	4.1	3.1

MEAN ANNUAL FLOW (cfs) 682.6

TOTAL RUNOFF (in) 95.2

Table 8

SNAHAPISH CREEK
BASIN AREA = 8350 ACRES

DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	17.8	18.9	48.6	193.5	11.5	267.1	29.2	36.1	19.5	13.3	13.1	202.2
2	35.7	16.8	107.4	167.4	10.3	631.0	134.0	160.8	21.0	12.0	13.1	153.9
3	18.4	15.6	191.9	206.9	21.2	347.9	81.8	537.0	26.5	10.7	12.6	127.0
4	17.4	15.4	308.4	142.4	38.6	155.5	65.6	418.2	48.8	9.4	12.4	106.7
5	14.2	49.1	175.8	344.4	30.2	83.6	53.1	174.4	85.2	8.4	11.5	79.9
6	12.9	151.2	102.4	280.6	23.4	52.6	46.1	115.5	51.7	7.9	11.1	56.7
7	12.3	58.8	69.5	239.2	158.7	31.8	41.8	100.0	41.7	14.3	51.8	51.4
8	11.5	94.9	43.6	435.1	129.3	31.7	39.5	80.3	35.5	17.9	43.4	46.7
9	11.2	145.8	203.2	177.9	160.6	43.3	45.5	69.6	32.0	16.7	28.5	42.9
10	12.9	100.0	574.6	93.5	326.2	27.2	56.4	64.8	28.5	16.2	22.2	39.5
11	13.3	153.0	417.2	78.8	259.7	21.7	52.6	64.5	25.9	15.3	19.1	36.8
12	12.0	772.2	189.6	1110.2	950.0	70.9	47.1	54.9	23.5	14.8	17.0	34.9
13	10.9	193.4	237.8	347.2	629.6	60.6	45.8	47.8	22.2	14.3	15.3	32.5
14	10.8	83.1	164.6	148.0	196.5	83.4	42.8	43.6	21.7	15.0	14.6	30.6
15	10.5	44.4	200.9	77.9	89.3	356.8	39.3	39.6	22.4	17.0	13.8	30.5
16	10.2	30.2	97.2	118.6	78.9	327.4	37.1	37.4	22.7	15.8	17.1	29.4
17	9.8	186.3	190.7	795.2	52.3	504.1	34.8	35.9	21.5	15.8	21.3	30.1
18	9.7	285.0	305.8	620.1	41.9	366.8	33.4	43.9	19.3	16.1	56.0	28.5
19	9.3	434.5	367.1	205.3	143.3	341.9	42.3	49.0	18.4	16.9	43.3	27.3
20	24.8	1087.9	428.6	106.1	129.4	386.0	37.8	49.2	18.6	14.9	24.1	26.1
21	17.1	528.1	622.9	60.6	100.5	405.4	33.7	39.0	18.7	14.5	18.8	25.0
22	13.7	267.9	222.2	41.4	59.9	376.8	59.1	35.7	18.6	14.5	45.0	24.3
23	12.4	185.2	93.9	325.0	109.1	245.7	170.2	41.7	24.4	14.5	353.5	23.0
24	11.5	1050.1	69.6	140.5	118.3	151.8	379.3	43.9	24.2	14.2	107.4	22.3
25	11.1	696.7	202.0	75.6	56.7	97.3	253.9	39.0	31.2	13.9	64.0	21.6
26	10.9	253.7	120.6	44.2	49.4	72.2	151.5	33.7	45.6	13.9	88.7	21.2
27	100.6	138.5	138.1	29.0	49.2	52.4	136.8	31.3	45.9	13.9	312.4	20.6
28	68.8	87.2	99.5	21.3	78.3	43.5	88.1	27.8	25.6	13.6	448.8	20.4
29	34.9	60.2	615.7	16.7		35.9	53.4	25.5	20.7	13.1	736.2	19.7
30	24.4	45.2	458.4	14.1		42.1	43.6	23.7	16.0	13.1	468.4	20.4
31	20.7		193.6	13.1		36.4		21.5		13.1	332.6	
MEAN	19.7	241.6	234.2	215.1	146.5	185.6	79.2	83.3	29.2	14.0	110.9	47.7
MAX	191.9	1847.8	1581.8	2007.0	1139.8	761.4	581.6	646.8	107.1	18.7	1397.5	242.4
MIN	9.3	14.5	43.5	12.5	9.9	20.1	22.9	20.1	13.9	7.8	11.1	19.4
IN	1.7	20.7	20.7	19.0	11.7	16.4	6.8	7.4	2.5	1.2	9.8	4.1

MEAN ANNUAL FLOW (cfs) 117.3

TOTAL RUNOFF (in) 122.0

Table 9

STEQUALEHO CREEK
BASIN AREA = 6239 ACRES

DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	2.9	3.2	55.1	152.6	32.9	161.2	36.8	34.5	11.5	7.4	3.6	112.8
2	4.3	3.0	60.9	133.5	30.4	356.2	78.6	98.6	10.7	7.0	3.7	85.5
3	2.5	3.0	75.4	126.4	31.3	254.8	59.8	294.6	10.7	6.5	3.7	62.9
4	2.5	3.2	177.0	114.6	28.7	157.4	55.3	281.6	16.0	6.2	3.7	48.0
5	2.5	9.7	162.6	190.3	25.7	109.9	49.4	166.9	17.7	5.8	3.2	42.1
6	2.5	28.8	124.4	165.0	29.6	84.0	45.2	114.2	12.2	5.7	2.8	34.4
7	2.5	19.2	96.4	165.5	84.3	66.4	42.3	86.2	10.8	5.5	36.0	30.9
8	2.5	45.2	79.6	251.0	61.2	62.9	39.3	67.4	9.8	5.1	13.1	27.4
9	2.5	61.2	139.7	156.6	150.1	57.7	37.1	58.9	9.3	5.0	6.7	22.1
10	2.4	46.7	273.2	109.9	243.4	46.7	36.2	50.8	8-8	4.8	5.7	20.9
11	2.3	119.8	270.7	117.4	175.2	40.6	40.2	47.0	8.5	4.6	4.9	17.7
12	2.2	323.2	194.8	596.0	583.0	57.5	47.8	38.1	8.0	4.4	3.8	17.1
13	2.0	126.3	173.2	253.3	355.2	52.9	48.7	33.7	7.9	4.1	3.5	15.5
14	1.8	73.3	156.0	165.0	207.0	65.5	43.3	30.6	7.7	4.1	3.7	14.2
15	1.6	48.8	141.2	125.2	148.2	128.7	34.8	28.3	7.5	4.1	3.5	13.7
16	1.4	36.7	223.3	144.7	110.4	120.1	32.1	27.4	7.2	3.9	3.9	12.9
17	1.0	95.0	210.9	387.5	94.6	197.4	29.6	23.7	6.8	3.9	5.0	11.7
18	1.0	153.3	274.5	362.3	88.1	253.5	29.2	26.3	6.6	3.8	22.9	9.8
19	1.1	255.8	323.5	200.8	200.9	212.7	31.8	28.8	6.2	4.0	11.5	8.6
20	1.7	520.8	369.1	140.2	167.3	171.6	28.1	24.5	5.8	3.9	7.9	9.4
21	1.0	316.5	509.9	103.5	114.3	147.7	25.2	20.9	5.7	3.8	6.8	9.3
22	1.0	204.7	210.0	89.8	87.4	130.7	34.3	19.3	5.8	3.8	31.9	8.6
23	1.2	160.2	100.2	201.4	124.4	122.0	49.7	21.2	8.4	3.7	100.6	8.2
24	1.3	501.7	76.1	128.8	125.2	97.0	118.8	20.3	6.9	3.7	39.3	8.3
25	1.3	362.5	193.2	95.7	92.8	78.2	88.0	17.5	9.6	3.7	26.8	8.7
26	1.3	195.7	124.3	76.0	90.5	63.7	64.5	16.4	13.5	3.5	49.8	8.5
27	27.1	128.7	135.8	62.4	78.8	53.8	57.2	15.3	17.6	3.6	98.5	8.1
28	4.0	91.6	110.3	54.2	91.0	46.3	46.3	14.5	10.6	4.0	171.5	7.9
29	1.9	68.9	336.6	45.3		42.3	40.2	13.7	9.2	4.2	360.9	7.8
30	2.8	56.4	269.8	41.4		47.4	36.3	12.8	7.9	3.7	205.5	7.4
31	3.2		163.8	36.7		41.1		12.2		3.6	175.2	
MEAN	3.0	135.4	187.5	161.1	130.4	113.8	46.9	56.3	9.5	4.5	45.8	23.3
MAX	71.1	852.1	767.7	1063.3	745.1	437.9	159.5	392.9	24.6	7.5	675.4	144.9
MIN	1.0	3.0	47.7	35.5	24.0	37.9	23.3	11.7	5.7	3.5	3.4	7.2
IN	0.4	15.5	22.2	19.0	13.9	13.5	5.4	6.7	1.1	0.5	5.4	2.7

MEAN ANNUAL FLOW (cfs) 76.5

TOTAL RUNOFF (in) 106.3

Table 10

UPPER SOLLEKS RIVER
BASIN AREA = 4950 ACRES

DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	8.8	8.3	49.4	72.6	33.6	215.1	29.6	47.0	32.8	13.3	7.7	62.4
2	11.4	8.0	58.3	69.1	31.5	516.7	35.5	106.0	28.9	12.8	7.7	46.7
3	9.1	7.7	76.1	70.6	30.4	231.0	31.8	278.0	27.0	12.4	7.7	38.4
4	8.5	7.8	170.9	67.7	28.0	130.6	30.2	197.6	29.4	12.2	7.5	33.1
5	8.1	14.0	127.6	130.3	26.1	88.5	29.0	128.1	28.1	11.9	7.2	29.5
6	7.9	33.4	118.1	106.8	29.7	67.8	28.1	91.6	23.9	11.5	6.9	26.8
7	7.8	22.3	92.0	97.1	70.8	54.6	27.6	73.0	22.1	11.2	20.5	24.7
8	7.7	49.3	76.8	169.2	48.5	54.1	29.7	65.9	21.0	10.9	12.4	22.8
9	7.6	61.0	109.2	95.0	163.8	51.1	27.7	80.0	20.8	10.8	9.1	21.2
10	8.2	44.8	253.3	68.9	242.4	43.2	29.6	85.9	20.8	10.5	8.3	19.8
11	8.2	118.9	179.4	62.0	119.1	38.7	37.6	76.3	19.8	10.3	7.9	18.5
12	7.6	344.9	138.3	717.8	801.9	41.3	51.8	60.4	18.6	10.1	7.7	17.5
13	7.5	88.8	123.9	180.3	292.5	37.9	51.9	59.7	17.9	9.9	7.4	16.7
14	7.4	53.8	127.2	112.9	133.3	39.8	45.2	64.4	17.1	9.9	7.3	16.1
15	7.2	41.2	121.2	89.8	93.1	59.0	40.9	55.7	16.5	10.1	7.1	15.4
16	7.3	34.2	226.5	118.6	71.5	54.0	38.2	51.0	15.8	9.8	7.7	15.4
17	7.0	86.5	164.3	499.7	59.5	85.7	36.8	45.1	15.1	9.7	8.3	14.8
18	6.9	122.8	206.3	452.4	53.6	154.4	38.4	45.9	14.5	9.7	18.1	14.1
19	7.0	235.0	246.2	173.2	140.3	115.8	41.8	44.0	14.2	9.6	12.8	13.6
20	11.1	832.2	1232.3	125.2	101.7	79.6	38.0	37.6	13.9	9.2	9.6	13.1
21	8.0	307.5	624.2	93.9	74.1	64.3	35.7	36.3	13.6	9.0	9.2	12.8
22	7.4	138.7	177.9	83.1	59.8	59.9	37.9	36.1	13.6	8.7	14.2	12.3
23	7.2	123.2	111.2	212.2	113.0	52.4	45.5	38.5	15.6	8.5	76.4	12.0
24	7.0	658.5	104.3	124.2	99.9	45.2	75.6	35.7	13.5	8.6	26.4	11.8
25	7.0	371.5	102.6	91.0	74.5	39.2	66.0	32.5	17.4	8.4	19.1	11.6
26	7.0	136.4	124.9	72.0	82.0	35.3	53.5	32.6	20.7	8.3	22.1	11.3
27	28.5	94.6	92.0	59.2	75.1	32.4	53.3	30.9	18.0	8.3	38.3	11.1
28	12.7	71.2	76.9	51.3	96.2	30.3	46.0	31.2	15.9	8.1	129.4	11.0
29	9.6	57.4	124.9	44.2		29.8	42.0	32.7	14.9	7.9	342.3	10.7
30	8.6	49.3	110.3	40.0		34.2	42.5	33.5	13.9	7.9	136.5	10.4
31	8.8		79.0	36.7		30.3		33.8		7.9	92.1	
MEAN	8.8	140.8	181.5	141.5	115.9	84.3	40.6	66.7	19.2	9.9	37.3	19.9
MAX	56.1	2055.1	4261.2	1693.8	1526.2	659.2	87.1	353.2	34.9	13.4	850.2	73.8
MIN	6.9	7.5	44.7	35.5	25.3	28.9	26.3	30.6	12.9	7.7	6.8	10.2
IN	1.3	20.3	27.0	21.1	15.6	12.6	5.9	9.9	2.8	1.5	5.3	2.9

MEAN ANNUAL FLOW (cfs) 72.2

TOTAL RUNOFF (in) 126.2

Table 11

UPPER CLEARWATER
BASIN AREA = 9590 ACRES

DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	22.7	21.8	86.2	116.2	64.2	266.4	58.4	82.9	63.0	31.4	20.3	103.4
2	27.9	21.1	97.8	111.5	60.9	527.4	66.8	151.8	57.2	30.5	20.3	82.9
3	23.4	20.3	120.0	113.7	59.1	282.8	61.6	327.0	54.1	29.8	20.3	71.2
4	22.2	20.8	224.2	110.0	55.7	182.8	59.2	251.6	57.9	29.5	20.1	63.4
5	21.6	32.6	223.9	181.6	52.8	135.4	57.3	180.3	55.8	28.6	19.6	58.0
6	20.8	62.5	169.3	156.7	58.2	110.1	55.7	139.1	49.2	28.2	18.7	53.9
7	20.5	46.7	139.6	144.3	113.7	93.4	55.2	116.7	46.3	27.6	42.2	50.6
8	20.1	81.7	121.3	222.5	85.0	92.7	57.6	107.7	44.6	26.7	29.7	47.4
9	19.9	101.1	158.3	143.1	211.9	88.7	55.5	125.3	44.2	26.7	23.3	45.0
10	21.4	79.9	291.0	111.5	290.9	77.9	58.2	132.5	44.4	26.3	21.7	42.6
11	21.6	160.1	232.8	102.4	170.0	71.5	69.7	120.7	42.6	25.6	20.7	40.6
12	20.1	373.8	191.3	659.1	725.3	75.3	89.9	100.6	40.5	25.2	20.3	38.7
13	20.1	135.5	175.7	234.1	337.7	70.6	90.1	99.2	39.4	25.2	19.8	37.5
14	19.7	92.2	179.3	163.5	185.7	73.1	80.8	105.8	38.0	25.2	19.5	36.4
15	19.4	75.2	172.8	137.4	140.9	99.0	75.6	94.8	37.0	25.2	19.4	35.0
16	19.6	65.0	277.1	166.6	114.8	92.7	70.9	88.7	35.7	24.7	20.5	35.2
17	19.3	130.1	218.3	503.4	99.3	131.7	69.0	80.7	34.5	24.6	21.7	33.9
18	18.9	174.7	260.5	467.4	92.3	208.2	71.3	81.7	33.4	24.5	39.6	32.9
19	19.0	728.4	298.1	227.5	192.1	166.7	76.1	79.0	33.0	24.3	30.3	31.8
20	27.2	729.2	934.3	177.2	150.8	124.7	70.7	70.1	32.5	23.5	24.4	31.2
21	21.0	347.6	595.7	141.9	118.0	105.7	67.1	68.3	31.8	23.0	23.8	30.3
22	19.8	191.7	231.8	128.8	99.8	100.0	70.1	67.6	31.9	22.9	31.9	29.5
23	19.5	174.0	161.6	263.9	161.2	90.6	81.3	71.3	35.4	22.2	118.3	29.1
24	19.1	632.8	153.5	176.1	148.8	80.8	119.6	67.1	31.8	22.3	53.1	28.5
25	19.1	403.0	152.0	138.5	118.5	72.3	107.9	62.7	38.4	21.9	41.5	28.2
26	18.9	189.1	176.9	115.4	127.5	66.6	91.9	62.9	44.0	21.4	46.3	27.9
27	55.1	142.6	139.2	99.1	119.2	62.5	91.7	59.8	39.5	21.6	69.8	27.2
28	30.3	114.4	121.4	89.2	144.3	59.4	81.5	60.4	36.0	21.5	176.5	27.1
29	24.4	97.0	174.0	79.4		58.6	76.4	62.6	34.2	20.9	372.2	26.7
30	22.4	86.3	160.6	73.2		65.1	76.8	64.0	32.5	20.9	189.5	26.0
31	22.7		123.9	68.8		59.3		64.5		20.7	139.6	
MEAN	22.5	169.4	216.7	181.4	153.5	122.3	73.8	104.8	41.3	24.9	55.9	41.7
MAX	96.6	1632.8	2798.9	1337.7	1259.5	668.4	133.7	398.6	65.7	31.4	797.9	118.0
MIN	18.9	20.3	80.6	66.8	51.2	57.2	54.1	59.3	30.6	20.3	18.3	25.2
IN	1.7	12.6	16.7	14.0	10.7	9.4	5.5	8.1	3.1	1.9	4.3	3.1

MEAN ANNUAL FLOW (cfs) 100.7

TOTAL RUNOFF (in) 91.1

Table 12

ARVID CREEK
BASIN AREA = 1600 ACRES

DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	2.3	2.2	13.7	20.2	9.2	61.6	8.0	13.1	9.0	3.6	2.1	17.3
2	3.1	2.1	16.1	19.3	8.6	151.1	9.7	30.0	7.9	3.4	2.1	12.9
3	2.4	2.1	21.3	19.6	8.3	66.3	8.7	80.1	7.3	3.3	2.0	10.5
4	2.2	2.1	48.8	18.8	7.6	37.0	8.2	56.4	8.0	3.3	2.0	9.1
5	2.2	3.8	36.1	36.9	7.1	24.8	7.9	36.3	7.6	3.2	1.9	8.0
6	2.1	9.2	33.4	30.1	8.1	18.8	7.7	25.7	6.5	3.0	1.8	7.3
7	2.1	6.1	25.8	27.3	19.7	15.1	7.5	20.3	6.0	3.0	5.6	6.7
8	2.1	13.8	21.4	48.2	13.4	15.0	8.1	18.3	5.7	2.9	3.3	6.2
9	2.2	16.9	30.8	26.7	46.7	14.1	7.6	22.3	5.6	2.9	2.4	5.8
10	2.2	12.3	73.3	19.2	69.7	11.9	8.1	24.1	5.7	2.8	2.2	5.3
11	2.2	33.8	51.2	17.2	33.7	10.6	10.4	21.3	5.4	2.7	2.1	5.0
12	2.0	100.3	39.2	212.0	237.0	11.4	14.4	16.8	5.0	2.7	2.0	4.7
13	2.0	24.9	35.0	51.4	84.4	10.4	14.4	16.5	4.8	2.6	2.0	4.5
14	2.0	14.9	35.9	31.8	37.7	11.0	12.5	17.9	4.6	2.6	1.9	4.3
15	2.0	11.3	34.2	25.3	26.1	16.3	11.2	15.4	4.4	2.7	1.9	4.2
16	1.9	9.4	65.0	33.5	19.9	14.9	10.4	14.1	4.2	2.6	2.0	4.1
17	1.8	24.4	46.8	146.1	16.5	24.0	10.0	12.4	4.1	2.6	2.2	4.0
18	1.8	34.7	59.0	132.2	14.8	43.8	10.5	12.6	3.9	2.6	4.9	3.8
19	1.8	67.7	70.7	49.4	39.9	32.7	11.5	12.2	3.8	2.6	3.4	3.6
20	3.0	247.0	371.1	35.4	28.6	22.3	10.4	10.3	3.7	2.4	2.6	3.5
21	2.1	88.9	183.8	26.4	20.7	17.9	9.8	9.9	3.6	2.4	2.4	3.4
22	2.0	39.3	50.7	23.3	16.6	16.6	10.5	9.9	3.6	2.3	3.8	3.4
23	1.9	34.8	31.3	60.7	31.9	14.5	12.6	10.5	4.2	2.3	21.4	3.3
24	1.8	193.7	29.4	35.2	28.1	12.5	21.1	9.8	3.6	2.3	7.2	3.2
25	1.8	108.0	28.9	25.5	20.8	10.8	18.4	8.9	4.7	2.2	5.2	3.1
26	1.8	38.7	35.3	20.0	22.9	9.7	14.8	8.9	5.6	2.2	6.0	3.0
27	7.8	26.6	25.8	16.4	21.0	8.8	14.8	8.4	4.8	2.2	10.5	2.9
28	3.4	19.8	21.5	14.2	27.0	8.2	12.7	8.5	4.3	2.2	36.7	2.9
29	2.6	15.9	35.4	12.2		8.1	11.6	8.9	4.0	2.1	99.4	2.9
30	2.3	13.7	31.1	11.0		9.4	11.7	9.2	3.7	2.1	38.7	2.8
31	2.3		22.1	10.0		8.2		9.3		2.1	25.9	
MEAN	2.3	40.6	52.4	40.5	33.1	23.8	11.2	18.7	5.2	2.6	9.9	5.4
MAX	15.8	674.1	1374.0	516.1	477.2	207.6	24.8	103.5	9.8	3.6	258.5	20.7
MIN	1.8	2.1	12.2	9.8	6.8	7.8	7.3	8.3	3.6	2.1	1.8	2.7
IN	1.1	18.0	24.1	18.6	13.7	10.9	5.0	8.6	2.3	1.2	4.6	2.4

MEAN ANNUAL FLOW (cfs) 20.5

TOTAL RUNOFF (in) 110.5

Table 13

PRECIPITATION

Tables 14-18

MORRISON CAMP
ELEVATION = 120 FEET

PRECIPITATION IN INCHES WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	.55		.30	.23	.22	.59	.92	.04				
2	.05		.26	.36	.35	.96	.48	3.29				
3	.05		.95	.39	.27	.11	.50	1.79				
4		.66	.34	.30				.07				
5		.42	.08	1.20			.90	.04				
6		.53	.38	.32	.69		.71	.02		.01		
7		.15	.02	.72	.40		.09				1.52	
8		1.04	.56	.16	.26		.02					
9	.01	.36	.61		.93	.64	.05					
10	.05		2.04	.08	.38			.08				
11		1.65	.09	1.25	3.08							
12		.13	.73	1.00	1.20	.20						
13			.34	.19	.22	.43	.06					
14			.24			.01	.06			.08		
15			.75	.13	.62	.86	.01		.04			
16		.01	1.16	2.28	.19	.29			.07		.30	.05
17		1.43	.56	1.10	.32	.79	.01				.46	
18		.22	1.37	.04	.23	1.46	.35			.07	.83	
19	.37	1.95	2.45	.06	1.20	.78	.02					
20	.21	2.15	1.86		.11	.37	.01		.01		.01	
21			.37			.85		.04	.02			
22		.71	.03	.89		.88	1.15	.40	.31		2.23	
23		.69	.01	.12	1.59	.74	.27	.22	.20		.64	
24		1.81	1.33	.13		.01	.87	.02				
25		.07	.17				.02		.37			
26	.18		.69		.34		.33	.10	.34		.33	
27	1.77		.16	.02	.18				.01		1.31	.21
28			.17	.13	.80				.05		1.80	.06
29			3.51	.05		.27					.23	
30	.15	.29	.03	.11							.29	
31			.72	.03								
TOTAL	3.44	14.27	21.68	11.11	13.47	10.24	6.83	6.02	.42	.16	9.95	.32

ANNUAL 97.91

Table 14

CHRISTMAS RIDGE
ELEVATION = 1200 FEET

PRECIPITATION IN INCHES WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	.76		.30	.78		1.50	.51					.01
2	.03		.62	.67	.06	1.63	.85	2.57				.03
3	.10		1.03	.46	.60	.18	.32	2.08				
4		.78	.80	.19	.10		.04	.21	.39			
5		.43	.10	.80			.12	.01	.91			
6		.92	.49	.20	.74			.02	.01			
7		.06		1.64	.55			.01			2.10	
8		1.24	.50	.05	.08	.66			.02			
9	.02	.49	1.19	.01	1.71	.01						
10	.21	.09	2.71	.06	.27			.16				
11		2.84	.22	1.99	1.70			.07	.01			
12		1.10	1.01	2.39	2.85	.77						
13			.31	.14	.39	.07	.05					
14	.03	.01	.39		.02	1.04	.09					
15		.05	.83	.20		.77		.09	.02			
16		.03	1.34	1.58	.56	.50		.07	.20		.50	.08
17		1.74	.25	3.43	.41	1.23		.36	.09		.30	
18		.53	1.41	.05	.14	.72	.24	.36			.79	
19	.40	1.64	1.68	.20	1.08	.47	.13	.38			.05	
20	.22	3.45	2.40	.01	.07	.06	.09				.04	
21			.43			.70		.04	.02		.03	
22		.70	.18	.63		.80	1.04	.29	.01		1.66	
23		1.21	.12	1.06	1.14	.08	.35	.21	.27		.98	
24		3.70	1.28	.12			1.15		.29	.01		
25		.16	.16	.01			.03		.01			
26	.20	.02	.70		.53		.33	.09	.56		.67	
27	1.33		.11		.15		.04		.54		1.61	
28			.21	.13	1.08		.04		.01		2.50	
29			2.60	.01		.18			.07		.71	
30	.08	.35	.14			.04					1.16	
31	.07		.02								.04	
TOTAL	3.45	21.59	23.51	16.87	14.23	11.41	5.42	7.02	3.23	.01	13.14	.12

ANNUAL 120.0

Table 15

CLEARWATER CAMP
ELEVATION = 800 FEET

PRECIPITATION IN INCHES WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	.55		.30	.41	.11	1.56	.53					
2	.07	.01	.69	.76	.37	1.80	.48	2.96				
3	.10		1.51	.29	.48		.55	3.27	.38			
4		.38	.87	.30	.01			.24	.03			
5		.44	.07	1.64			.88	.04	.01			
6		.65	.60	.35	.53		.68	.04				
7		.05		1.70	.51	.01	.08			.01	.89	
8		1.16	.48	.36	.09	.60	.02			.03	.01	
9	.01	.58	.85		1.47	.02	.04					
10	.08	.08	2.68	.02	.43			.17	.02			
11		1.90	.21	1.20	2.08	.04		.01				
12		1.12	1.06	1.35	2.90	.76						
13		.03	.37		.35	.04	.03					
14		.01	.46			.90	.06			.03		
15		.01	.78	.12	.46	.90		.19	.03	.01		
16		.02	1.40	1.70	.34	.76		.05	.02	.03	.32	.06
17		1.86	.35	3.15	.28	1.60		.15		.06	.39	
18		.61	1.06	.01	.06	.88	.25	.18		.02	.69	
19	.35	1.95	1.26	.16	1.31	.52	.10	.15		.02	.01	
20	.21	3.77	2.93		.13	.82	.02	.25	.01		.04	
21		.01	.55			.78		.03			.01	
22		.76	.06	.86		.15	1.09	.18	.28		1.03	
23		1.04	.12	.76	1.02	.17	.98	.20	.34		.84	
24		4.26	1.05	.16			.93	.02			.01	
25	.02	.25	.11				.05		.61			
26	.18	.01	.63		.50		.28		.59		.38	
27	1.09		.14	.01	.11		.06	.01	.03		1.22	
28	.05		.19	.16	.62		.03		.09		3.04	.04
29			2.55			.16					.52	
30	.10	.29	.02	.01		.09					.76	
31	.17		.47	.04							.01	
TOTAL	2.98	21.25	23.82	15.62	14.16	12.56	7.14	8.14	2.42	.21	10.17	.10

ANNUAL 118.52

Table 16

STEQUALEHO CREEK
ELEVATION = 800 FEET

PRECEIPITATION IN INCHES WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	.56		.30	.41	.10	1.87	.16					
2	.10		.65	.80	.35	1.87	.03	3.85				
3	.06		1.23	.48	.26	.19		2.23	.34			
4		.44	.66	.92	.01		.90	.28	.48			
5		.45	.11	2.49			.87	.03				
6		.85	.53	.33	.84		.66	.01		.01		
7			.01	1.73	.36	.01	.07				.95	
8		1.37	.44	.22	.05	.56	.01			.05		
9	.01	.79	1.12		2.04	.02	.03					
10	.03	.15	2.64	.12	.56			.20	.07			
11		2.38	.25	1.04	2.71	.15		.02				
12		.53	1.21	.55	2.61	.78						
13		.01	.69	.18	.49	.05	.04					
14		.01	.32		.01	.99	.05			.02		
15		.01	.63	.23	.67	.29		.21	.01			
16		.02	1.41	1.67	.25	.85		.07	.02	.01	.27	.03
17		2.35	.49	2.70	.35	2.06		.25		.02	.45	
18		.74	.97	.01	.33	.97	.27	.32			.72	
19	.37	2.44	1.43	.12	1.31	.59	.06	.21				
20	.21	3.49	2.69		.01	.89	.02				.01	
21			.63			1.33		.02	.01		.02	
22		1.17	.29	.98		1.06	.93	.12	.26		1.24	
23		1.15	.08	.29	.89	.08	1.01	.16	.12		.85	
24		3.00	.77	.14	.01	.01	1.37	.01				
25	.01	.20	.13				.02		1.00			
26	.22	.01	.78	.01	.70		.28	.06	1.00		.29	
27	1.72		.15		.13				.19	.01	1.55	
28			.26	.23	.73				.10		3.49	.03
29			3.54	.01							.39	
30	.07	.29	.04	.27							.70	
31	.15		1.42	.07							.30	
TOTAL	3.51	21.85	26.87	16.02	15.77	14.62	6.78	8.05	3.60	.12	11.23	.06

ANNUAL 128.48

Table 17

QUEETS RIDGE
ELEVATION = 2200 FEET

PRECIPITATION IN INCHES WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	0.60	0.01	0.34	0.45	0.11	1.84	0.10					0.01
2	0.04		0.73	0.86	0.37	1.84	0.07	3.82	0.01			0.01
3	9.95		1.38	0.51	0.27	0.16	0.50	2.20	0.59			
4		0.78	0.74	0.99	0.13		0.72	0.56	0.51			
5		0.49	0.12	2.69	0.20		0.85	0.03				
6		1.05	0.60	0.36	0.96		0.70	0.03		0.01		
7		0.02	0.01	1.87	0.75		0.01	0.02			2.05	
8		1.49	0.49	0.24	0.05	0.56				0.08		
9	0.10	0.88	1.26		2.16	0.06						
10	0.38	0.16	2.97	0.13	0.59			0.22				
11		2.60	0.28		2.86	0.10		0.03				
12		0.58	1.36	0.59	2.76	0.75						
13		0.01	0.77	0.19	0.52	0.48	0.01					
14		0.01	0.36		0.01	0.60	0.06		0.03	0.02		
15		0.01	0.71	0.25	0.71	0.39		0.19	0.02			
16		0.03	1.58	1.53	0.26	0.39	0.01	0.04	0.02	0.01	0.35	0.08
17		2.57	0.55	2.92	0.37	2.05	0.01	0.32		0.12	0.54	0.01
18		0.81	1.04	0.01	0.35	0.68	0.36	0.31	0.01	0.11	0.80	
19	0.32	2.67	1.56	0.12	1.38	0.17	0.06	0.20		0.03	0.01	
20	0.25	3.82	3.02		0.02	0.90	0.02		0.01		0.02	
21		0.05	0.70			1.35		0.04	0.01		0.03	
22		1.28	0.33	1.06		1.12	0.90	0.27	0.33		1.53	
23		1.29	0.09	0.31	1.45	0.44	0.95	0.12	0.32		0.89	
24		3.28	1.04	0.15	0.01		1.25	0.01			0.01	
25		0.21					0.03		1.10			
26	0.15		0.92		0.74		0.18	0.09	0.97		0.84	
27	1.64		0.17		0.13		0.03		0.01		1.53	
28			0.29	0.25	0.77		0.02		0.07		3.63	0.06
29			3.98			0.02			0.01		0.90	
30	0.15	0.45	0.04	0.29		0.05					1.48	
31	0.15		1.59	0.08							0.31	
TOTAL	3.84	24.55	29.02	15.28	17.93	13.56	6.84	8.50	3.93	0.37	14.93	0.17

ANNUAL 138.92

Table 18

CLIMATE

Tables 19-22

MORRISON CAMP
ELEVATION = 120 FEET

AVERAGE DAILY AIR TEMPERATURE (6am-12N-6pm) IN °F

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	62	48	49	44	36	49	42	48	55	56	58	56
2	57	47	49	41	38	48	40	47	51	57	59	61
3	54	45	50	40	40	44	40	47	44	59	63	59
4	50	46	50	43	43	42	44	47	48	65	56	64
5	50	52	45	44	41	42	43	46	53	50	58	69
6	57	52	48	39	44	42	47	49	50	59	55	51
7	54	48	46	38	48	45	49	49	52	57	55	60
8	59	50	44	37	39	48	47	57	50	58	59	57
9	54	46	48	33	46	43	51	54	55	57	56	61
10	55	45	49	34	43	42	55	55	58	56	59	63
11	55	51	47	34	39	43	49	51	53	58	58	67
12	56	54	44	48	47	45	47	52	53	57	61	69
13	51	53	41	42	41	43	48	61	52	61	63	60
14	51	51	45	43	39	42	45	48	50	58	57	55
15	57	49	46	39	36	42	48	48	47	58	58	55
16	55	48	50	45	37	42	49	46	49	56	53	53
17	53	48	44	48	39	45	51	48	51	57	55	55
18	55	45	47	49	44	48	48	45	55	57	52	57
19	48	48	47	44	45	41	47	43	53	60	52	62
20	51	50	51	43	41	39	46	46	54	57	60	60
21	48	42	42	41	38	41	47	38	51	58	63	64
22	52	45	42	42	44	44	40	39	52	60	64	55
23	49	48	37	48	43	46	41	40	57	66	62	61
24	54	52	40	44	41	45	44	42	52	59	62	57
25	47	45	43	41	40	43	43	51	52	63	62	55
26	55	41	43	36	47	45	42	49	52	66	62	56
27	53	43	39	31	45	45	44	48	53	70	59	56
28	46	40	36	35	48	45	47	51	53	59	58	55
29	48	41	42	34		45	48	50	56	58	56	56
30	47	49	41	37		45	53	51	62	55	57	62
31	51		39	36		45		58		57	58	
MEAN	53	47	45	40	42	44	46	49	52	59	58	59

Table 19

STEQUALEHO
ELEVATION = 800 FEET

AVERAGE DAILY AIR TEMPERATURE (6am-12N-6pm) IN °F

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	61	47	47	40	33	49	40	48	64	61	62	52
2	57	44	59	41	35	46	38	44	58	61	59	58
3	57	48	48	42	36	41	39	44	50	68	69	62
4	48	49	48	39	38	42	42	46	54	79	59	67
5	49	50	43	42	39	41	41	50	57	67	60	52
6	53	49	48	36	42	42	45	49	53	64	55	64
7	57	46	45	38	44	47	47	52	54	63	55	58
8	59	47	44	35	37	46	45	59	56	64	59	59
9	54	44	46	33	44	41	49	62	65	65	59	66
10	55	46	47	34	40	40	52	56	68	63	61	70
11	55	52	42	36	37	42	55	50	64	64	64	73
12	58	50	43	46	45	40	48	56	63	63	67	74
13	53	58	42	41	37	41	46	68	60	64	68	68
14	53	47	42	40	37	39	45	53	59	61	63	60
15	59	45	48	40	36	40	48	54	54	58	63	51
16	57	44	48	43	36	38	47	41	50	57	59	57
17	56	47	43	51	37	41	48	51	53	59	60	58
18	58	50	46	46	41	43	48	48	55	58	57	63
19	51	55	45	44	42	39	44	48	57	63	55	66
20	49	47	50	42	38	37	42	57	54	62	59	66
21	48	39	35	38	39	39	50	47	51	64	55	69
22	53	48	34	40	44	42	42	48	52	68	54	62
23	50	45	35	46	45	43	42	47	56	71	57	62
24	55	49	40	32	42	43	43	48	54	64	56	59
25	48	43	41	29	43	41	46	57	52	70	57	57
26	57	40	39	28	46	43	44	54	50	74	57	60
27	48	37	36	21	46	43	42	59	55	69	57	61
28	46	38	40	25	49	43	44	60	53	61	54	59
29	50	42	36	22		43	47	60	58	59	56	62
30	46	46	37	25		43	52	65	68	57	52	69
31	46		40	26		43		70		61	56	
MEAN	53	46	43	37	40	42	45	54	57	64	59	63

Table 20

MORRISON CAMP
ELEVATION = 120 FEET

AVERAGE DAILY RELATIVE HUMIDITY (6am-12N-6pm) IN%

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	67	82	92	84	90	90		78	83	70	95	82
2	80	84	89	87	79	92		92	83	62	97	83
3	77	80	91	90	86	81		93	76	87	92	82
4	70	81	89	82	77	81	No Data	97	87	95	83	75
5	69	90	93	82	73	74		88	73	95	98	73
6	70	87	86	91	91	72		80	74	90	97	85
7	72	89	85	92	78	73		80	94	85	91	84
8	73	92	92	68	93	85		69	75	89	88	88
9	84	91	88	92	86	86		81	76	88	88	79
10	90	88	90	91	85	80	75	87	81	70	87	45
11	86	89	80	88	91	69	77	80	78	75	80	74
12	81	92	87	91	90	80	79	81	75	75	82	70
13	85	88	92	94	87	80	68	56	79	84	81	92
14	79	90	85	94	78	92	70	87	91	89	93	98
15	67	90	94	95	92	89	83	95	78	85	79	91
16	71	87	90	93	86	81	82	94	98	92	79	98
17	76	86	85	94	92	86	81	88	95	85	87	86
18	72	90	87	90	86	83	90	84	98	87	92	90
19	90	90	93	94	79	88	71	78	95	93	74	73
20	84	89	93	85	63	91	76	67	93	87	74	75
21	81	87	75	88	64	85	74	97	85	84	75	72
22	78	90	81	86	71	82	92	99	96	86	68	89
23	84	93	85	90	90	68	83	98	84	80	61	82
24	77	88	94	93	79	80	31	90	82	86	89	91
25	90	81	90	88	78		82	86	79	89	72	86
26	76	91	93	89	84		89	81	94	89	70	84
27	90	84	84	87	83		62	76	95	80	81	85
28	90	90	93	91	80	No Data	72	77	93	89	70	95
29	82	89	89	89			72	79	91	77	73	91
30	87	79	86	76			74	71	92	61	80	83
31	84		84	85				60	85		83	
MEAN	79	88	88	88	83	82	78	83	86	84	83	84

Table 21

STEQUALEHO
ELEVATION = 800 FEET

AVERAGE DAILY RELATIVE HUMIDITY (6am-12N-6pm) IN%

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
1	78	88	95	92	87	89	No Data	75	60	86	75	91
2	75	90	91	92	94	95		89	64	87	82	74
3	83	85	98	91	87	91		90	93	82	71	73
4	79	87	98	95	80	77		94	99	69	79	71
5	77	95	97	92	74	80		85	76	95	64	59
6	74	100	95	93	95	72		77	72	93	70	73
7	77	90	98	91	93	69		77	75	85	91	86
8	77	98	96	90	96	89		61	69	77	76	79
9	96	100	93	97	89	89		65	60	70	70	76
10	97	96	95	95	94	81		83	73	70	78	67
11	92	98	95	91	96	74		88	62	62	66	61
12	84	100	91	95	94	94		72	63	68	65	55
13	84	95	93	96	93	86		64	79	71	65	70
14	84	94	93	97	94	94		82	84	87	84	57
15	77	99	96	97	94	90		80	85	83	71	58
16	77	100	92	96	95	91		93	93	78	97	95
17	75	98	93	96	95	91		72	85	85	90	78
18	73	94	96	93	88	93		81	89	87	98	62
19	87	96	95	95	97	96		86	91	77	91	57
20	95	95	95	88	76	93		55	91	67	90	59
21	87	93	93	90	76	86		84	91	64	84	57
22	80	97	93	94	80	85		89	83	68	94	78
23	95	97	94	92	93	77		85	92	60	79	76
24	94	94	96	96	87	82		71	92	78	83	77
25	93	89	94	94	84	No Data		64	92	59	80	72
26	83	97	96	95	86			72	92	60	88	70
27	99	100	95	93	90			69	85	68	97	71
28	99	100	93	93	95			67	94	71	97	87
29	86	99	91	92				67	82	71	92	70
30	100	100	91	78				61	66	78	98	63
31	97		94	89				57		75	90	
MEAN	86	95	94	93	89	86		76	81	75	82	71

Table 22