Appendix B - Upper Eightmile Creek

PEAK DISCHARGES FOR SELECTED FREQUENCIES

Report prepared for: autodelin
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Watershed Name: EIGHTMILE CR

PEAK DISCHARGE CALCULATION BY PREDICTION EQUATION

Peak discharges for the ungaged watershed have been determined from a set of hydrologic prediction equations derived using generalized least squares. The models relate peak discharges to physical watershed characteristics such as area and precipitation. The equations take this form:

Q(T)=(10.0^C0(T))*(CHR1^C1(T))* . . . (CHRn^Cn(T))

Q(T) = Peak Discharge for Return Period T
Cx(T) = Coefficient x for Return Period T
CHR1 = The First Watershed Characteristic
CHRn = The nth Watershed Characteristic

Note: * = multiplication, ^ = exponentiation

For this ungaged watershed, peak discharges were estimated using prediction equations for this flood region:

EAST SIDE WATERSHEDS - NORTH CENTRAL

Prediction Equation for East Side Watersheds - North Central

Q(T)=(10.0^C0(T))*(X1^C1(T))*(X2^C2(T)*(X3^C3(T))*(X4^C4(T))*(X5^C5(T))

Q(T)	=	Peak Discharge for Return Period T	
Cx(T)	=	Coefficient x for Return Period T	
X1	=	Drainage area	(square miles)
X2	=	Mean January precipitation	(inches)
X3	=	Mean July precipitation	(inches)
X4	=	Soil storage capacity	(inches)
X5	=		

Note: * = multiplication, ^ = exponentiation

Prediction Equation Coefficients

Return Period T	Coefficients C0(T)	C1(T)	C2(T)	C3(T)	C4(T)	C5(T)
2	1.500E+00	7.947E-01	1.335E+00	-5.420E-01	1.337E+00	
5	2.175E+00	7.783E-01	1.037E+00	-7.030E-01	1.615E+00	
10	2.402E+00	7.706E-01	8.967E-01	-8.129E-01	1.622E+00	
20	2.533E+00	7.638E-01	7.993E-01	-9.225E-01	1.574E+00	
25	2.565E+00	7.617E-01	7.737E-01	-9.569E-01	1.556E+00	
50	2.648E+00	7.559E-01	7.050E-01	-1.059E+00	1.499E+00	
100	2.716E+00	7.507E-01	6.468E-01	-1.154E+00	1.445E+00	
500	2.847E+00	7.407E-01	5.300E-01	-1.348E+00	1.330E+00	

Required Watershed Characteristics

Drainage area	(square miles)	4.090
Mean January precipitation	(inches)	9.980

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Mean July precipitation	(inches)	0.940
Soil storage capacity	(inches)	0.150

WARNING: WATERSHED CHARACTERISTICS ARE OUT OF BOUNDS

One or more of the required watershed characteristics is an extrapolation from the set used to develop the regression equations.

PEAK DISCHARGES HAVE BEEN CALCULATED, BUT SHOULD BE USED WITH CAUTION.

EAST SIDE WATERSHEDS - NORTH CENTRAL
Bounds on Required Watershed Characteristics

Drainage area	(square miles)	0.29 to	1630.06
Mean January precipitation	(inches)	1.52 to	7.97
Mean July precipitation	(inches)	0.23 to	1.28
Soil storage capacity	(inches)	0.10 to	0.20

PEAK DISCHARGE ESTIMATES BASED ON PREDICTION EQUATIONS

Return Period	Peak Flow	95% Confidence Lower Limit	Upper Limit
years	cfs	cfs	cfs
2	171	52.0	562
5	237	99.1	567
10	285	133	613
20	336	162	698
25	353	170	733
50	406	191	863
100	460	206	1030
500	589	221	1570

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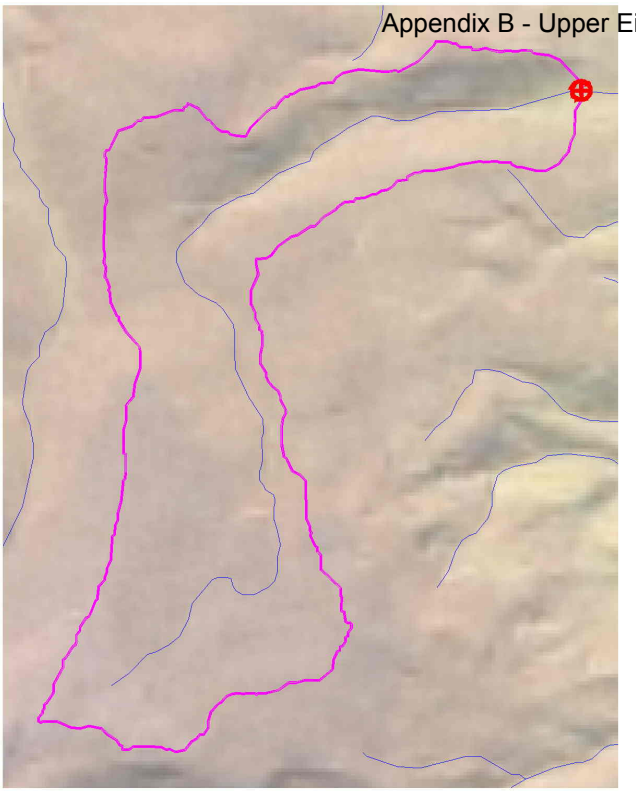
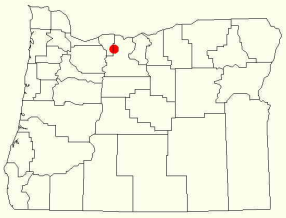


0 1 mile

Pour point

Watershed boundary

N



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http://www1.wrd.state.or.us/files/wars/070607.144742.zip

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