Appendix B - Tire Creek

PEAK DISCHARGES FOR SELECTED FREQUENCIES

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Report prepared for:  autodelin
Time:  12:20                                        Date:  06/07/2007

Watershed Name: TIRE 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:

      WESTERN INTERIOR WATERSHEDS - > 2875 FEET AND < 3125 FEET

                   WATERSHED ELEVATION = 3080 FEET

For western interior watersheds with mean elevations between 2875 and
3125 feet, peaks are calculated as a weighted average of peaks esti-
mated by the prediction equation for interior watersheds above 3000
feet and the prediction equation for interior watersheds below 3000
feet - using this equation:

    --------------------------------------------------------------
            Qw(T)=Ql(T)*(3125-E)/250 + Qh(T)*(E-2875)/250
    --------------------------------------------------------------
    Qw(T)  = Weighted Average Peak Discharge for Return Period T
    Ql(T)  = Peak Discharge for Return Period T for Low Elevation
    Qh(T)  = Peak Discharge for Return Period T for High Elevation
    E      = Mean Watershed Elevation
    --------------------------------------------------------------
                Note: * = multiplication, / = division


        Prediction Equation for Interior Watersheds < 3000 Feet
-------------------------------------------------------------------------
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 watershed slope                    (degrees)
    X3       =  2-year 24-hour precipitation intensity  (inches)
    X4       =
    X5       =
-------------------------------------------------------------------------
             Note: * = multiplication, ^ = exponentiation

                   Prediction Equation Coefficients
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Return Period T	C0(T)	C1(T)	C2(T)	C3(T)	C4(T)	C5(T)
2	9.607E-01	9.004E-01	4.695E-01	8.481E-01		
5	1.162E+00	9.042E-01	4.735E-01	7.355E-01		
10	1.267E+00	9.064E-01	4.688E-01	6.937E-01		
20	1.351E+00	9.081E-01	4.633E-01	6.651E-01		
25	1.375E+00	9.086E-01	4.615E-01	6.578E-01		
50	1.443E+00	9.101E-01	4.559E-01	6.390E-01		
100	1.503E+00	9.114E-01	4.501E-01	6.252E-01		
500	1.620E+00	9.141E-01	4.365E-01	6.059E-01		

Required Watershed Characteristics

Drainage area	(square miles)	3.900
Mean watershed slope	(degrees)	20.800
2-year 24-hour precipitation intensity	(inches)	2.530

Prediction Equation for Interior Watersheds > 3000 Feet

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 watershed slope	(degrees)
X3	=	2-year 24-hour precipitation intensity	(inches)
X4	=	Mean minimum January temperature	(degrees F)
X5	=	Mean maximum January temperature	(degrees F)

Note: * = multiplication, ^ = exponentiation

Prediction Equation Coefficients

Return Period T	C0(T)	C1(T)	C2(T)	C3(T)	C4(T)	C5(T)
2	-2.506E+00	1.021E+00	8.124E-01	2.050E+00	3.541E+00	-1.867E+00
5	-2.107E+00	1.020E+00	9.022E-01	1.649E+00	3.611E+00	-2.017E+00
10	-1.811E+00	1.021E+00	9.506E-01	1.471E+00	3.620E+00	-2.137E+00
20	-1.551E+00	1.021E+00	9.844E-01	1.352E+00	3.623E+00	-2.246E+00
25	-1.475E+00	1.021E+00	9.930E-01	1.321E+00	3.624E+00	-2.278E+00
50	-1.260E+00	1.022E+00	1.014E+00	1.243E+00	3.624E+00	-2.366E+00
100	-1.071E+00	1.022E+00	1.030E+00	1.182E+00	3.621E+00	-2.440E+00
500	-7.047E-01	1.023E+00	1.053E+00	1.079E+00	3.601E+00	-2.566E+00

Required Watershed Characteristics

Drainage area	(square miles)	3.900
Mean watershed slope	(degrees)	20.800
2-year 24-hour precipitation intensity	(inches)	2.530
Mean minimum January temperature	(degrees F)	32.500
Mean maximum January temperature	(degrees F)	45.700

PEAK DISCHARGE ESTIMATES BASED ON PREDICTION EQUATIONS

Return	Weighted	< 3000 ft	> 3000 ft

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Period years	Peak Flow cfs	95% Confidenc Lower Limit cfs	95% Confidenc Upper Limit cfs	Peak Flow cfs	95% Confidenc Lower Limit cfs	95% Confidenc Upper Limit cfs	Peak Flow cfs	95% Confidenc Lower Limit cfs	95% Confidenc Upper Limit cfs
2	193	92.3	403	284	152	533	177	82.7	379
5	308	159	598	415	222	775	289	148	564
10	388	203	739	501	266	945	366	192	700
20	465	243	887	584	305	1120	442	231	843
25	489	255	938	611	317	1170	466	243	892
50	566	291	1100	691	353	1350	542	279	1050
100	644	324	1280	771	385	1540	619	312	1230
500	832	393	1760	955	453	2010	808	381	1710

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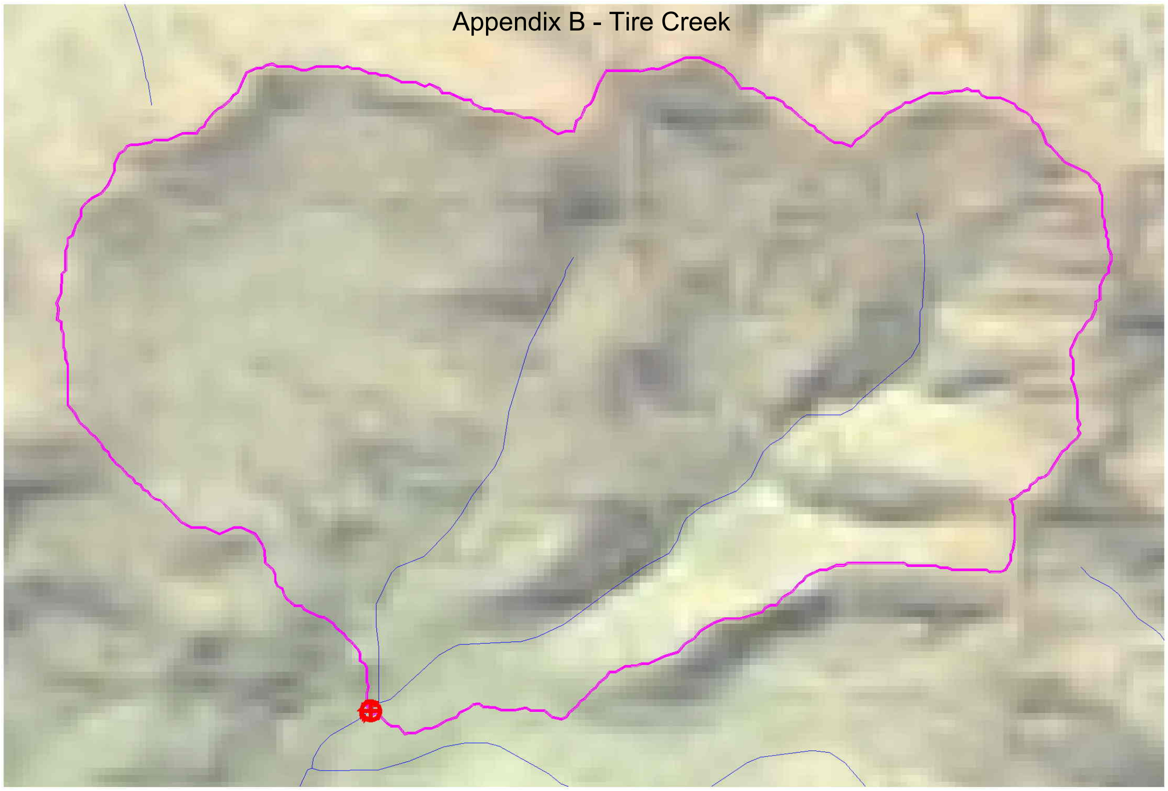
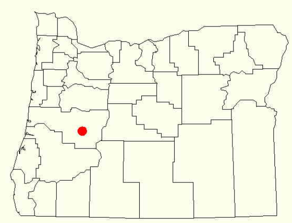


0 1 mile

Pour point

Watershed boundary

N



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