

WASHINGTON DEPARTMENT OF ECOLOGY
ENVIRONMENTAL ASSESSMENT PROGRAM
FRESHWATER MONITORING UNIT
STREAM DISCHARGE TECHNICAL NOTES

STATION ID: 29G060
STATION NAME: Panther Creek
WATER YEAR: 2011
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Introduction

Watershed Description

Ecology's telemetry stream gage on Panther Creek located at river mile 2.0. The watershed is mainly Forest Service land.

Gage Location

The gage is located on Bear Creek Road at the bridge. The station is on the left bank.

Table 1.

Drainage Area (square miles)	41
Latitude (degrees, minutes, seconds)	45 46 16
Longitude (degrees, minutes, seconds)	121 50 54

Discharge

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	208
Median Annual Discharge (cfs)	187
Maximum Daily Mean Discharge (cfs)	782
Minimum Daily Mean Discharge (cfs)	61
Maximum Instantaneous Discharge (cfs)	910
Minimum Instantaneous Discharge (cfs)	60
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	73
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	359
Number of Days Discharge is Greater Than Range of Ratings	22
Number of Days Discharge is Less Than Range of Ratings	0

Note: Statistics displayed in Table 2 may not include values in which the predicted discharge exceeds the range of ratings.

Narrative

Twenty-five days were estimated because of uncertainty in the logger record due to instrument drift. There were 11 days where flow values are estimated based on other stations. Twenty-nine days were above the range of measured discharges but are considered reliable extrapolations. Discharges from 22 days throughout the water year exceeded the range of measured flows by two times the highest measured discharge and did not report.

Error Analysis

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	6.3
Weighted Rating Error (% of discharge)	17.5
Total Potential Error (% of discharge)	24

Rating Table(s)

Table 4. Rating Table Summary

Rating Table No.	1		
Period of Ratings	06-18-08 to 10-02-12		
Range of Ratings (cfs)	58 to 471		
No. of Defining Measurements	36		
Rating Error (%)	18		

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Narrative

The rating is strong due to bedrock edges and generally good channel conditions. The control is bedrock and boulders. Seven discharge measurements were taken. Measured discharges ranged from 86 to 335 cfs.

Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	9.60
Maximum Recorded Stage (feet)	14.33
Range of Recorded Stage (feet)	4.73
Number of Un-Reported Days	22
Number of Days Qualified as Estimates	25
Number of Days Qualified as Unreliable Estimates	0

Narrative

To correct for instrument drift, the stage record has been adjusted to known weekly laser level readings.

Modeled Discharge

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	
Range of Modeled Stage (feet)	
Range of Modeled Discharge (cfs)	
Valid Period for Model	
Model Confidence	

Surveys

Table 7. Survey Type and Date (station, cross section, longitudinal)

Type	Date
All	2009

Activities Completed

More flow measurements are needed at this station to augment both the high and low ends of the rating curve.