

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

STATION ID: 29G060
STATION NAME: Panther Creek
WATER YEAR: 2010
AUTHOR: Howard Christensen

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)	184
Median Annual Discharge (cfs)	154
Maximum Daily Mean Discharge (cfs)	780
Minimum Daily Mean Discharge (cfs)	39
Maximum Instantaneous Discharge (cfs)	838
Minimum Instantaneous Discharge (cfs)	38
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	354
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	67
Number of Days Discharge is Greater Than Range of Ratings	2
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

There were 29 days of data estimated based on other stations. Eighteen days were above the rating but are reliable extrapolations. One day was below the rating, but the extrapolation is reliable. Four days were ice-impacted. Discharges from 33 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)	5.9
Weighted Rating Error (% of discharge)	17.5
Total Potential Error (% of discharge)	23

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

Eight measurements were taken ranging from 58 to 315 cfs.

Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	9.41
Maximum Recorded Stage (feet)	12.52
Range of Recorded Stage (feet)	3.11
Number of Un-Reported Days	0
Number of Days Qualified as Estimates	32
Number of Days Qualified as Unreliable Estimates	0

Narrative

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

Modeled Discharge

Table 6. Model Summary

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

Surveys

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

Type	Date
None	

Activities Completed

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