WASHINGTON DEPARTMENT OF ECOLOGY

ENVIRONMENTAL ASSESSMENT PROGRAM

FRESHWATER MONITORING UNIT

STREAM DISCHARGE TECHNICAL NOTES

STATION ID: 01C070

STATION NAME: Hutchinson Cr. nr Acme

WATER YEAR: 2010

AUTHOR: Chuck Springer

Introduction

Watershed Description

Hutchinson Creek is a tributary of the South Fork Nooksack River. The origins of the creek begin near Bowman Mountain in the Cascade foothills and drain to the confluence near river mile 10.3 of the South Fork. The watershed above this streamgaging site is comprised entirely of State-managed commercial timber land. Hutchinson Creek supports populations of steelhead and coho salmon as well as cutthroat trout.

Gage Location

This streamgage is located on the left bank at an unmarked Washington State Department of Natural Resources bridge off Mosquito Lake Road in Whatcom County, WA.

Table 1.

Drainage Area (square miles)	14.0
Latitude (degrees, minutes, seconds)	48° 43' 25" N
Longitude (degrees, minutes, seconds)	122° 9' 16" W

Discharge

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	50
Median Annual Discharge (cfs)	39
Maximum Daily Mean Discharge (cfs)	385
Minimum Daily Mean Discharge (cfs)	4.9
Maximum Instantaneous Discharge (cfs)	569
Minimum Instantaneous Discharge (cfs)	4.7
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	105
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	7.4
Number of Days Discharge is Greater Than Range of Ratings	0
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

A stormy September 2010 resulted in summer low flows that were several cfs higher than those in 2009.

Error Analysis

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	19.1%
Weighted Rating Error (% of discharge)	9.2%
Total Potential Error (% of discharge)	28.3%

Rating Table(s)

Table 4. Rating Table Summary

Rating Table No.	8	9	10
Period of Ratings	10/1/09 - 11/26/09	11/3/09 - 6/8/10	4/20/10 - 9/30/10
Range of Ratings (cfs)	0 - 1,490	16 - 1,490	0 - 1,490
No. of Defining Measurements	8	4	4
Rating Error (%)	14.9%	8.8%	7.8%

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

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

Narrative

A series of large storm events in October and November 2009 scoured the channel at this site, shifting the rating curve. The resulting rating (Table 9) did not exist long enough to establish the low-flow regime. Another channel scour occurred between late April and early June 2010, resulting in Rating Table 10.

Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	1.31
Maximum Recorded Stage (feet)	4.34
Range of Recorded Stage (feet)	3.03
Number of Un-Reported Days	0
Number of Days Qualified as Estimates	191
Number of Days Qualified as Unreliable Estimates	0

Narrative

Beginning in March 2010 the pressure transducer at this site started drifting substantially, resulting in a high number of days that are qualified as estimates. However, all data met the criteria for being reportable.

Modeled Discharge

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	Slope-conveyance
Range of Modeled Stage (feet)	3.5 - 6.2
Range of Modeled Discharge (cfs)	292 - 1,490
Valid Period for Model	WY 2010 - WY 2013
Model Confidence	3.6%

Surveys

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

Type	Date
Stn, X-sec, Longitudinal	8/16/2010

Activities Completed

There was nothing of note.