

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

STATION ID: 35G060
STATION NAME: Joseph Creek near Mouth
WATER YEAR: 2012
AUTHOR: Mitch Wallace

Introduction

Watershed Description

Joseph Creek is the largest tributary of the Grande Ronde River, originating in the northeastern corner of Oregon on the south flank of the Blue Mountains and the North Wallowa Mountains, flowing north into Washington State. Less than 20% of the Joseph Creek drainage lies within Washington. Joseph Creek contains a spring run of Chinook salmon, bull trout, and a very strong run of wild summer steelhead. Land use in this watershed is primarily ranching and grazing.

Gage Location

This station is located on Washington Department of Fish and Wildlife property approximately 2.5 miles upstream from the mouth on the access road leading to the Chief Joseph Wildlife area at Green Gulch.

Table 1.

Drainage Area (square miles)	545
Latitude (degrees, minutes, seconds)	46° 01' 46" N
Longitude (degrees, minutes, seconds)	117° 00' 57" W

Discharge

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	154
Median Annual Discharge (cfs)	44
Maximum Daily Mean Discharge (cfs)	1460
Minimum Daily Mean Discharge (cfs)	13
Maximum Instantaneous Discharge (cfs)	1580
Minimum Instantaneous Discharge (cfs)	11
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	569
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	16
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

<p>Spring runoff peaked in early April 2011. Ten discharge measurements were taken, ranging from 16 to 1016 cfs. This includes a measurement taken on October 2, 2012.</p>
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Error Analysis

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	1.2
Weighted Rating Error (% of discharge)	13.4
Total Potential Error (% of discharge)	14.6

Rating Table(s)

Table 4. Rating Table Summary

Rating Table No.	802	11	803
Period of Ratings	1-11-11 to 12-24-11	12-25-11 to 4-5-12	4-6-12 to 10-2-12
Range of Ratings (cfs)	9.2 to 2900	22.6 to 2900	9.2 to 2900
No. of Defining Measurements	28	4	28
Rating Error (%)	12.8	15.0	12.8

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

WY 2012 began under rating 802. Rating 11 began in early January 2012, due to channel scour caused by a winter precipitation event. Rating 803 began in early April. This rating shift was a result of channel fill caused by seasonal run-off.

Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	3.85
Maximum Recorded Stage (feet)	8.45
Range of Recorded Stage (feet)	4.60
Number of Un-Reported Days	8
Number of Days Qualified as Estimates	27
Number of Days Qualified as Unreliable Estimates	0

Narrative

Unreported days were a result of ice-impacted data. The estimated data is the dataset following an ice-impacted period, without a manual stage reading for accuracy verification.

Modeled Discharge

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	Slope Conveyance
Range of Modeled Stage (feet)	8.0 to 10.0
Range of Modeled Discharge (cfs)	1300 to 2900
Valid Period for Model	4-13-08 to 10-2-12
Model Confidence	9.4%

Surveys

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

Type	Date
Station, X-section, Long.	8-30-2011

Activities Completed

Due to budgetary constraints, monitoring at this station was discontinued in October 2012.