

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

STATION ID: 05A105
STATION NAME: S.F. Stillaguamsih at Jordan Rd Bridge
WATER YEAR: 2021
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Introduction

Watershed Description

The basin above this gage covers 181 square miles of steep forested terrain in the North Cascade Mountains. The mean elevation for the basin is 2,450 feet. Elevations range from about 196 feet at the gage to 6,690 feet at the highest point of the headwaters. The mean slope in the basin is over 43 percent. The forest canopy cover was computed in 2001 as 74 percent of the basin. Mean annual precipitation for the basin is 95.5 inches. Basin statistics are provided by the USGS.

Gage Location

The gage house is on the left bank of the South Fork Stillaguamish River at the south end of the Jordan Road bridge near Granite Falls. The primary gage index is a wire weight gage mounted on the downstream bridge rail.

Table 1. Basin Area and Legal Description

Drainage Area (square miles)	181
Latitude (degrees, minutes, seconds)	48.095249° N
Longitude (degrees, minutes, seconds)	-121.974555° W

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	1660
Median Annual Discharge (cfs)	1320
Maximum Daily Mean Discharge (cfs)	12700
Minimum Daily Mean Discharge (cfs)	147
Maximum Instantaneous Discharge (cfs)	23500
Minimum Instantaneous Discharge (cfs)	145
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	3370
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	213
Number of Days Discharge is Greater Than Range of Ratings	0
Number of Days Discharge is Less Than Range of Ratings	0
Number of Un-Reported Days	0
Number of Days Qualified as Estimates	0
Number of Modeled Days	0

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

Table 2 Discussion (Discharge Statistics)

Discharge at South Fork Stillaguamish River at Jordan Road bridge gaging station reached its lowest point September 09, 2021. Discharge in South Fork Stillaguamish peaked January 13, 2021.

In Water Year 2021, the discharge record was stable, and no days were less than or greater than the range of ratings. In addition, no data were qualified as estimates.

Table 3. Error Analysis Summary.

Potential Logger Drift Error (% of discharge)	0.8
Potential Weighted Rating Error (% of discharge)	9.8
Total Potential Error (% of discharge)	10.6

Table 3 Discussion (Error Analysis)

Logger Drift Error is based on a statistical analysis comparing continuous automated gage height readings with quality assurance gage height observations made during periodic stations visits.

Similarly, the Weighted Rating Error is calculated using a composite analysis of the level of quality assigned to each discharge measurement used to define each rating table.

Table 4. Stage Record Summary

Minimum Recorded Stage (feet)	4.80
Maximum Recorded Stage (feet)	14.48
Range of Recorded Stage (feet)	9.68

Table 4 Discussion (Stage Record)

Minimum stage occurred during a low flow period in early September 2021. Maximum stage occurred during high flow conditions caused by a storm event in mid-January 2021.

Table 5. Rating Table Summary

Rating Table No.	3		
Period of Ratings	10/1/20-9/30/21		
Range of Ratings (cfs)	45-42,800		
No. of Defining Measurements	32		
Rating Error (%)	9.8		

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 (%)			

Table 5 Discussion (Rating Tables)

Rating 3 is a carryover due to stable control conditions from WY 2020.
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Table 6. Model Summary

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

Table 6 Discussion (Modeled Data)

none

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

Type	Date
None.	None.

Table 7 Discussion (Surveys)

None.

Activities Completed

Nine streamflow measurements were conducted during Water Year 2021.

Appendix

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