

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

STATION ID: 32A105
STATION NAME: Walla Walla River at Beet Road
WATER YEAR: 2006
AUTHOR: Mitch Wallace

Introduction

Watershed Description

The Walla Walla River is a tributary of the Columbia River, joining the Columbia just above Wallula Gap in southeastern Washington. The headwaters of the Walla Walla River lie in the Blue Mountains of northeastern Oregon. The Walla Walla River supports populations of spring Chinook salmon, summer steelhead, and bull trout. Land use in the watershed is mostly dryland and irrigated agriculture.

Gage Location

The gage house is located on the left bank near the Frog Hollow and Beet Road intersection at river mile 36.5. It is located approximately a quarter mile downstream of the Gardena Farms Irrigation District #13 diversion. The period of record for this station is June 2002 to the present.

Table 1.

Drainage Area (square miles)	125(Streamstats)
Latitude (degrees, minutes, seconds)	46° 01' 25" N
Longitude (degrees, minutes, seconds)	118° 25' 33" W

Discharge

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	207
Median Annual Discharge (cfs)	88
Maximum Daily Mean Discharge (cfs)	1760
Minimum Daily Mean Discharge (cfs)	15
Maximum Instantaneous Discharge (cfs)	1910
Minimum Instantaneous Discharge (cfs)	11
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	492
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	17
Number of Days Discharge is Greater Than Range of Ratings	0
Number of Days Discharge is Less Than Range of Ratings	37

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

Narrative

The days in which the reported discharge is less than ratings indicate that the reported discharge is 1/2 lower than the lowest measured flow. The actual discharge may be lower than the reported discharge for these days.

A recreational swimmers' dam was built directly downstream of the gage. This activity falsely elevates stage readings, leading to higher-than-actual discharge reports. The data from early July through September should be considered questionable estimates. The dam was removed by WDFW and Gardena Irrigation District #13 in early October.

Error Analysis

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	0
Weighted Rating Error (% of discharge)	12.3
Total Potential Error (% of discharge)	12.3

Rating Table(s)

Table 4. Rating Table Summary

Rating Table No.	7	601	8
Period of Ratings	10/01/05 to 11/16/05	10/01/05 to 4/12/06	4/6/06 to 7/25/06
Range of Ratings (cfs)	23 to 2850	8.5 to 2850	10 to 2850
No. of Defining Measurements	9	16	20
Rating Error (%)	11.8	11.8	14.1

Rating Table No.	501	602	
Period of Ratings	7/25/06 to 9/30/06	9/11/06 to 9/30/06	
Range of Ratings (cfs)	11 to 2850	8.5 to 2850	
No. of Defining Measurements	14	16	
Rating Error (%)	11.4	11.8	

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

Narrative

Spring runoff peaked on April 6, 2006.

Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	2.61
Maximum Recorded Stage (feet)	6.50
Range of Recorded Stage (feet)	3.89
Number of Un-Reported Days	0
Number of Days Qualified as Estimates	71
Number of Days Qualified as Unreliable Estimates	0

Narrative

Sixty-seven of the seventy-one estimated days were quality coded as a questionable estimate due to the recreational swimmers' dam that was built downstream of the gage. The additional three estimated days were to due uncertainty caused by suspected upstream icing.

The data was adjusted to correct for differences between logger and staff gage readings. These differences were minimal throughout the water year, ranging up to 0.03 feet.

Modeled Discharge

Table 6. Model Summary

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

Surveys

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

Type	Date
n/a	n/a

Activities Completed

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