

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

STATION ID: 35B150
STATION NAME: Tucannon River at Marengo
WATER YEAR: 2015
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Introduction

Watershed Description

The Tucannon River Watershed is located in southeastern Washington in Garfield and Columbia counties. It flows into the Snake River, four miles upstream of Lyons Ferry.

Historically, the lower elevation areas were covered with canyon grasslands and shrub-steppe vegetation. Much of this land has now been converted to livestock and crop production. Coniferous forests still dominate the higher elevations of the watershed.

The Tucannon River is one of the few Snake River tributaries in this area that contains a spring run of Chinook salmon, *Oncorhynchus tshawytscha*.

Gage Location

The Tucannon River at Marengo stream gage is located 12 miles east of Hwy 12, off of Tucannon River Road. The station is located on the left bank, downstream from the county bridge.

Table 1. Basin Area and Legal Description

Drainage Area (square miles)	161 (Streamstats)
Latitude (degrees, minutes, seconds)	46° 26' 25" N
Longitude (degrees, minutes, seconds)	117° 45' 01" W

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	132
Median Annual Discharge (cfs)	114
Maximum Daily Mean Discharge (cfs)	434
Minimum Daily Mean Discharge (cfs)	58
Maximum Instantaneous Discharge (cfs)	479
Minimum Instantaneous Discharge (cfs)	52
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	221
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	64
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)

Eight discharge measurements were taken throughout the water year, ranging from 67 to 176. Measurement 87 was discarded and not used in any rating development.

Table 3. Error Analysis Summary.

Potential Logger Drift Error (% of discharge)	0
Potential Weighted Rating Error (% of discharge)	13.1
Total Potential Error (% of discharge)	13.1

Table 3 Discussion (Error Analysis)

The discharge measurements taken in WY 2015 were rated good to fair.

There was one exception, at higher flow, in which the measurement was rated as an estimate. At higher flows the cross section choices are limited to measuring from the bridge. This location is less than ideal for flow measurements.

Table 4. Stage Record Summary

Minimum Recorded Stage (feet)	4.08
Maximum Recorded Stage (feet)	5.26
Range of Recorded Stage (feet)	1.18

Table 4 Discussion (Stage Record)

The potential weighted rating error is based on the quality of discharge measurements used to define the rating and how those defining measurements relate to the rating curve.

Maximum recorded stage occurred February 11, 2015 caused by early snowmelt. The lowest stage recorded occurred August 4, 2015.

Table 5. Rating Table Summary

Rating Table No.	502	402	
Period of Ratings	10/1/14 to 2/20/15	2/11/15	
Range of Ratings (cfs)	36 to 1510	29 to 1510	
No. of Defining Measurements	25	26	
Rating Error (%)	13.2	13	

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)

The early snowmelt event in February led to the shift to rating 402.
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Table 6. Model Summary

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

Table 6 Discussion (Modeled Data)

No model has been developed for this site.
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Table 7. Survey Type and Date (station, cross section, longitudinal)

Type	Date
n/a	n/a

Table 7 Discussion (Surveys)

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Activities Completed

No significant activities were completed during the water year other than the normal site visits and flow measurements.
