

**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:** 2010  
**AUTHOR:** Mitch Wallace

**Introduction**

Watershed Description

The Tucannon River Watershed is located in southeastern Washington State 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 the Tucannon River Road. The station is located on the left bank, downstream from the county bridge.

Table 1.

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

**Discharge**

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	128
Median Annual Discharge (cfs)	102
Maximum Daily Mean Discharge (cfs)	392
Minimum Daily Mean Discharge (cfs)	57
Maximum Instantaneous Discharge (cfs)	402
Minimum Instantaneous Discharge (cfs)	55
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	245
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	67
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**

Peak flow occurred on December 11, 2009.
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**Error Analysis**

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	6.3
Weighted Rating Error (% of discharge)	11.5
Total Potential Error (% of discharge)	17.8

**Rating Table(s)**

Table 4. Rating Table Summary

Rating Table No.	7	8	
Period of Ratings	10/1/09 to 6/19/10	6/8/10 to 9/30/10	
Range of Ratings (cfs)	39 to 1600	36 to 1600	
No. of Defining Measurements	9	7	
Rating Error (%)	11.0	12.4	

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 (%)			

## Narrative

Six discharge measurements were taken throughout the water year, ranging from 72 to 367 cfs.

## Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	3.85
Maximum Recorded Stage (feet)	6.16
Range of Recorded Stage (feet)	2.31
Number of Un-Reported Days	8
Number of Days Qualified as Estimates	68
Number of Days Qualified as Unreliable Estimates	0

## Narrative

Unreported days were due to ice-impacted data. The estimated days were a result of the mean daily flow difference between edited and unedited data being greater than 20 percent.

## Modeled Discharge

Table 6. Model Summary

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

## Surveys

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

Type	Date
n/a	n/a

## Activities Completed

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