

## ESRM 304 2017 Fall Homework and Lab Report – Stream Ecology

Homework (scanned and pdf or hardcopy) is due no later than noon on the day of your next field trip (ie, noon on Tue or Wed of the following week). Each student must turn in an individual homework

### Discussion questions

1. Briefly describe how the hydrologic, organic, nutrient, sediment, and light inputs to the stream we looked at St. Edwards StatePark vary seasonally. What difference did you see at Juanita Creek compared to St. Edwards. 8 pts
2. Why would someone doing a watershed assessment collect and identify aquatic insects? 2 pts

### Field measurement questions

**Remember to show your work: computations, equations, etc. and turn in your completed data sheet. You can turn in an excel sheet electronically if you wish. Otherwise show examples of your calculations.**

3. Turn in your filled in data sheet 3 pt.

#### Using data from the velocity meter compute the following:

4. What is the cross-sectional area of the stream? Show your calculations. 5 pts
5. What is the discharge? Show your calculations or attach a spreadsheet. 2 pts
6. Compare the discharge you computed with the data recorded by King County at about the same time for Juanita Creek 2

[http://green2.kingcounty.gov/hydrology/DataDownload.aspx?G\\_ID=34&Parameter=Stream%20Flow](http://green2.kingcounty.gov/hydrology/DataDownload.aspx?G_ID=34&Parameter=Stream%20Flow)

#### Using data from the float method, compute the following:

7. What is the average stream surface velocity? What is the expected average subsurface velocity? Show your work! 3 pts
8. What is the calculated stream discharge based on the float method? Show your calculations. (you can attach your excelspreadsheet) 2 pts
9. How does the discharge computed using the float method compare to that computed using the velocity meter method? Explain. 3pts

**Data Sheet for Velocity Measurements  
(Remember to turn in with homework)**

Right and left in a stream is determined facing downstream

**Hint:** It's easier to enter the data in excel if your distance measurements go from small to large

Date:

Time:

Site description:

All Team members:

Weather:

Location:

Sediment size:

## Table for velocity meter

**Assess your site and decide where to take your 6 in-stream measurements. Don't forget to indicate the location of the edge of water on both sides of the stream as 2 of your 8 measurements**

	X - Location (number on tape measure) units:	Y - Depth of water (from rod) units:	V - Velocity (from velocity meter) units:
edge of water		0	0
edge of water		0	0

**For float method**  
do at least 3  
tosses

Distance float travels  
(units)

Travel time (seconds)
