Trout Out of the Classroom and Quality Control

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2019 Outings



<u>March 31st</u> Wildcat Hollow (Fauquier County)

Edinburg Gap Run (Shenandoah County) <u>April 6th</u> Mountain Run at Moreland Gap (Shenandoah County)

Tasker's Gap (Shenandoah County)

We send our data to the VDGIF and the Izaak Walton League, so it's crucial to get it done properly! Typical Procedure for 2019

As a part of every data collection outing, TOC measured the rate of flow of the stream at three different points with a flow meter. The procedure was as follows:

-measure width of the stream

-divide stream into 6 increments

-measure depth at each increment

-measure flow with meter at each increment

Calculations

distance (m)	meter counts	depth (m)	Flow veloc	city (m/s)		1st Central Site (South River, Stanardsville, VA)
0.73	86	0.15	0.123444			23-Apr-16
1.46	50	0.3	0.0927			flow taken at 0.4 of depth and not 0.6 due to numerous boulders
2.19	284	0.31	0.292536			
2.92	399	0.2	0.390746			Central Site was 3.0 meters wide; rectangular shape
3.65	176	0.3	0.200304			
		0.252				
		0.756	0.219946	0.55188	m^3/s	0.166279:
						0.2230599
Flow rate =	0.19 m^3/s					0.1946695 average of site #1 and site #2

Causes of Error

- Flow meter doesn't work with low flow
- Deviations from the manual

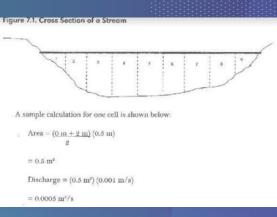


Calculations

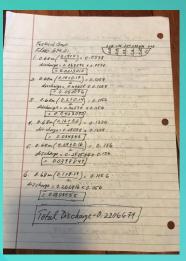
In order to calculate flow rate and discharge, we needed to hand calculate using the raw data because the data we collected was not compatible with the pre-existing spreadsheet that calculated for us.

How The Math Works

- . Divide the stream into cells
- 2. Calculate area of an interval with the formula: ((Side+Side)(width))/2
- Discharge of cell is calculated as: Discharge=(area)(flow rate)
- 1. To find total discharge, add all of the cells together.



Sophia's Calculations



Contract lines	
	Total Discharge For Yourtain Rus:
•	Calculations. [0.2382834495]
	Kourtain Run @ Kore land Cap:
	ma ala 1. 0.18 1.46 2.19 242 3.45 4.30
	1. 0.73 (2.075) (1 1) 1 1 5 2
	distre 0,03416 × 0.034675
	2 0.73 (0.28+0.085)
	dixhage = 0.433446 × 0.136875
	[= 0.0593279]
	3. 0.73 (0.29+0.20)
	dischage = 0.06/856 x & 20805
	(= 0.0128999) 7. 0.9.3 (. 1210 2) 2
	discharge = 0. 5797 × 0. 22265
	[= 0.1/57/12]
	[= 0,1157112] 5. 0.73 (0.18+0.52)
	discharge = 0.11746 × 0.1825
	Cardening = 0.11196 × 0.1825
	= 0.02/4375
	6. 0.73 (2020 + 0.08)
-	- Conservation
	discharge = a.055124× 0.0949
_	10.00523137
	Muchage : Statute & Marine
	Total Discharge = 0.21751613)
14	10th Distriction of the second
april 1	
	and the second sec

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Tacken's Gayo	of a hole subtacts
Flow Site 1:	
water velocity (m/s)	there is
1 0.393666	
2. 0.198596	
3. 0.795542	
4. 0.478708 5. 0.342068	
6. 0.670004	
Flow file 2:	
+ 0.368542	
2. 0.4940P	
3. 0.36598	
4. 0.28058	
5. 0.292536	1. 1. 1. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4.
6. 0.2669/6	Sarante a
Flow life 3:	
1. 0.272894	
2. 0.309616	
3. 0.213968	
4. 0.15675	
5. 0.337798	
6. 0.42149	

Mauntain tate @ M	tore land trap
water velocity (aufs)	
Flow Site 1:	A de calenda and
1. 0.08416	the designed
2. 0.423446	
3. 0.06/956	
4. 0.5197 5. 0.117466	6 C. STRIKE
6. 0.055124	general is
Flow Site 2:	Eday are al
1. 0.330.966	cherry.
2. 0.43003	anaparta .
3. 0.384968	
4. 0.288266	A 2 POTO
5. 0.3/6448	151192.4
6. 0.416366	
Flow Sike 3:	
1. 0.184932	
2. 0.190056	1.202.00
3. 0.243858	23 5012
4. 0.28912	
5. 0.120882	AREAS
6. 0.055978	
6. 0.000718	

	Mancher Para Der Bach Bage Mancher 3: (1647 22)
	2014/250/1991 20194 2 60/2591 2 80/(-1011) 2 80/(-1011)
•	[= a 239706 3. a eq (a 250 a) di cale para a 1939 [Dassa a 19 a 25 a 1939 [Dassa a 19 a 25 a 1939 [Dassa a 19 a 25 a 1939]
	1. 0 60% + 10 + 1019 Auction 0. 21912 + 019 [= 0. 04916 64]
	6 068 (122 + 61) durtuges o sigeones 0.1258 [0.01120696]
•	0.00/0000000 ANTONO 0.0057700 0.0118 Total (0.2000911(159) = 0.05738 7809) Discharge DA

What We Learned

Acknowledgements

Thanks to the JMHS Administration for their support. Special thanks to members of the TIA alliance—Trout Unlimited, the Izaak Walton League, and the American Fisheries Society.

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