

CHAPTER 5: DATA SHEETS

This chapter includes both printable blank data sheets and example data sheets for the following:

-  Biotic Index Data Sheet
-  Rock Pack Field Data Sheet*
-  Site Map Data Sheet*
-  Wentworth Pebble Count Data Sheet

Data sheets with an asterisk* are strongly recommended for a successful Rock Pack Experiment. All other data sheets are optional extensions.

BIOTIC INDEX DATA SHEET

1

Group 1: Sensitive	
☐	Stoneflies
☐	Mayflies
☐	Other Caddisflies
☐	Dobsonflies, Fishflies, and Alderflies
☐	Riffle Beetle Larvae/Adults
☐	Water Pennies
☐	Right-Handed Snails
☐	Aquatic Snipe Flies
☐	Number of TAXA

3

Group 2: Somewhat Sensitive	
☐	Damselflies
☐	Dragonflies
☐	Sowbugs
☐	Scuds
☐	Crane Flies
☐	Clams/Mussels
☐	Crayfish
☐	Net-Spinning Caddisflies
☐	Number of TAXA

Group 3: Tolerant	
☐	Midge Flies
☐	Black Flies
☐	Planarians
☐	Leeches
☐	Left-Handed Snails
☐	Aquatic Worms
☐	Rat-Tailed Maggots
☐	Number of TAXA

Date: _____

Investigator Names: _____

Time: _____ AM/PM

Leaf Pack Location: _____

2

Sum of All Individuals
(Add the values from all boxes next to the taxa names)

5

Pollution Tolerance Index (PTI) Score
(Add the three Index Values)

Number of TAXA x 1 = INDEX VALUE

Number of TAXA x 2 = INDEX VALUE

Number of TAXA x 3 = INDEX VALUE

Calculating the Biotic Index

Sort the macroinvertebrates into taxa groups.

- Count the number of individual macroinvertebrates for each taxa. Record the quantity in the box to the left of the taxa name.
- Determine the **Sum of All Individuals** by adding the numbers in the boxes next to all of the taxa names. Record the total in the **Sum of All Individuals** box on the far right.

- Count how many boxes in each sensitivity group column have a quantity entered. (Group 1 and Group 2: maximum 8, Group 3: maximum 7). Enter the **Number of TAXA** in the box at the bottom of each column.
- Multiply the **Number of TAXA** by the weighting factor (3, 2 or 1) at the bottom of the column to obtain the **Index Value** for each Sensitivity Group.
- Add the **Index Values** for the three groups to determine the **Pollution Tolerance Index (PTI) Score**. Enter the **PTI Score** in the box.
- Determine the **Pollution Tolerance Index Rating** from the PTI Score.

6

POLLUTION TOLERANCE INDEX RATING

23 or more	Excellent	
17-22	Good	
11-16	Fair	
10 or less	Poor	

BIOTIC INDEX DATA SHEET

Group 1: Sensitive		Group 2: Somewhat Sensitive		Group 3: Tolerant	
55	Stoneflies	0	Damselflies	13	Midge Flies
30	Mayflies	5	Dragonflies	5	Black Flies
16	Other Caddisflies	3	Sowbugs	8	Planarians
0	Dobsonflies, Fishflies, and Alderflies	0	Scuds	0	Leeches
4	Riffle Beetle Larvae/Adults	3	Crane Flies	0	Left-Handed Snails
6	Water Pennies	1	Clams/Mussels	1	Aquatic Worms
10	Right-Handed Snails	0	Crayfish	0	Rat-Tailed Maggots
2	Aquatic Snipe Flies	22	Net-Spinning Caddisflies		
7	Number of TAXA	5	Number of TAXA	4	Number of TAXA

1

3

2

Sum of All Individuals
[Add the values from all boxes next to the taxa names]

184

5

Pollution Tolerance Index (PTI) Score
[Add the three Index Values]

35

6

POLLUTION TOLERANCE INDEX RATING

23 or more	17-22	11-16	10 or less
Excellent	Good	Fair	Poor

Date: 04/22/2019

Investigator Names: Vince O., Tara M.

Time: 11:00 AM/PM

Leaf Pack Location: White Clay Creek above Spencer Rd

Calculating the Biotic Index

Sort the macroinvertebrates into taxa groups.

- Count the number of individual macroinvertebrates for each taxa. Record the quantity in the box to the left of the taxa name.
- Determine the **Sum of All Individuals** by adding the numbers in the boxes next to all of the taxa names. Record the total in the **Sum of All Individuals** box on the far right.

- Count how many boxes in each sensitivity group column have a quantity entered. (Group 1 and Group 2: maximum 8; Group 3: maximum 7). Enter the **Number of TAXA** in the box at the bottom of each column.
- Multiply the **Number of TAXA** by the weighting factor (3, 2 or 1) at the bottom of the column to obtain the **Index Value** for each Sensitivity Group.
- Add the **Index Values** for the three groups to determine the **Pollution Tolerance Index (PTI) Score**. Enter the **PTI Score** in the box.
- Determine the **Pollution Tolerance Index Rating** from the PTI Score.

4

Number of TAXA x 3 = INDEX VALUE

21

Number of TAXA x 2 = INDEX VALUE

10

Number of TAXA x 1 = INDEX VALUE

4



Rock Pack Field Data Sheet



SITE INFORMATION	Organization/Group Name: _____													
	Investigators: _____													
	Site Code: _____		Site Name: _____											
	Stream Name: _____		Total Time Spent Monitoring: _____ HH:MM											
	Major Watershed: _____		Number of Participants: _____											
	Sub-Watershed: _____		Latitude: _____											
	Closest town/city: _____		Longitude: _____											
PACK DATA	Placement Data		Retrieval Data											
	Date (Month/Day/Year)	_____	Date (Month/Day/Year)	_____										
	Number of Packs	_____	Number of Packs	_____										
	Air Temp (°C)	_____	Air Temp (°C)	_____										
	Water Temp (°C)	_____	Water Temp (°C)	_____										
	Avg. Weight of Packs: _____ grams													
Habitat type for placement: Pool ☐ Riffle ☐ Run ☐														
STORM & NON-STORM EVENTS	A. Did any storm events occur while your rock packs were in the stream?													
	Unknown ☐		If 'Yes' for A, list the following:											
	Yes ☐		<table border="1"> <thead> <tr> <th>Storm Date</th> <th>Precipitation (cm)</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr> <td>Total Amount (cm)</td> <td> </td> </tr> </tbody> </table>		Storm Date	Precipitation (cm)							Total Amount (cm)	
	Storm Date	Precipitation (cm)												
Total Amount (cm)														
No ☐														
B. Did flooding occur?														
Unknown ☐														
Yes ☐														
No ☐														
C. Was this site experiencing a drought during your monitoring?														
Unknown ☐														
Yes ☐														
No ☐														
BIOTIC DATA	From ALL Packs, # of Net-spinning Caddisflies (Order Trichoptera, Family Hydropsychidae): _____													
	From ALL Packs, # of Total Macroinvertebrates (including Hydropsychidae): _____													
	<i>Optional Data from the Leaf Pack Network® Biotic Index Data Sheet:</i>													
	Pollution Tolerance Index (PTI) Score: _____													
PTI Index Rating: Excellent ☐ Good ☐ Fair ☐ Poor ☐														

Please submit data to our online portal at MonitorMyWatershed.org

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EXAMPLE: Rock Pack Field Data Sheet

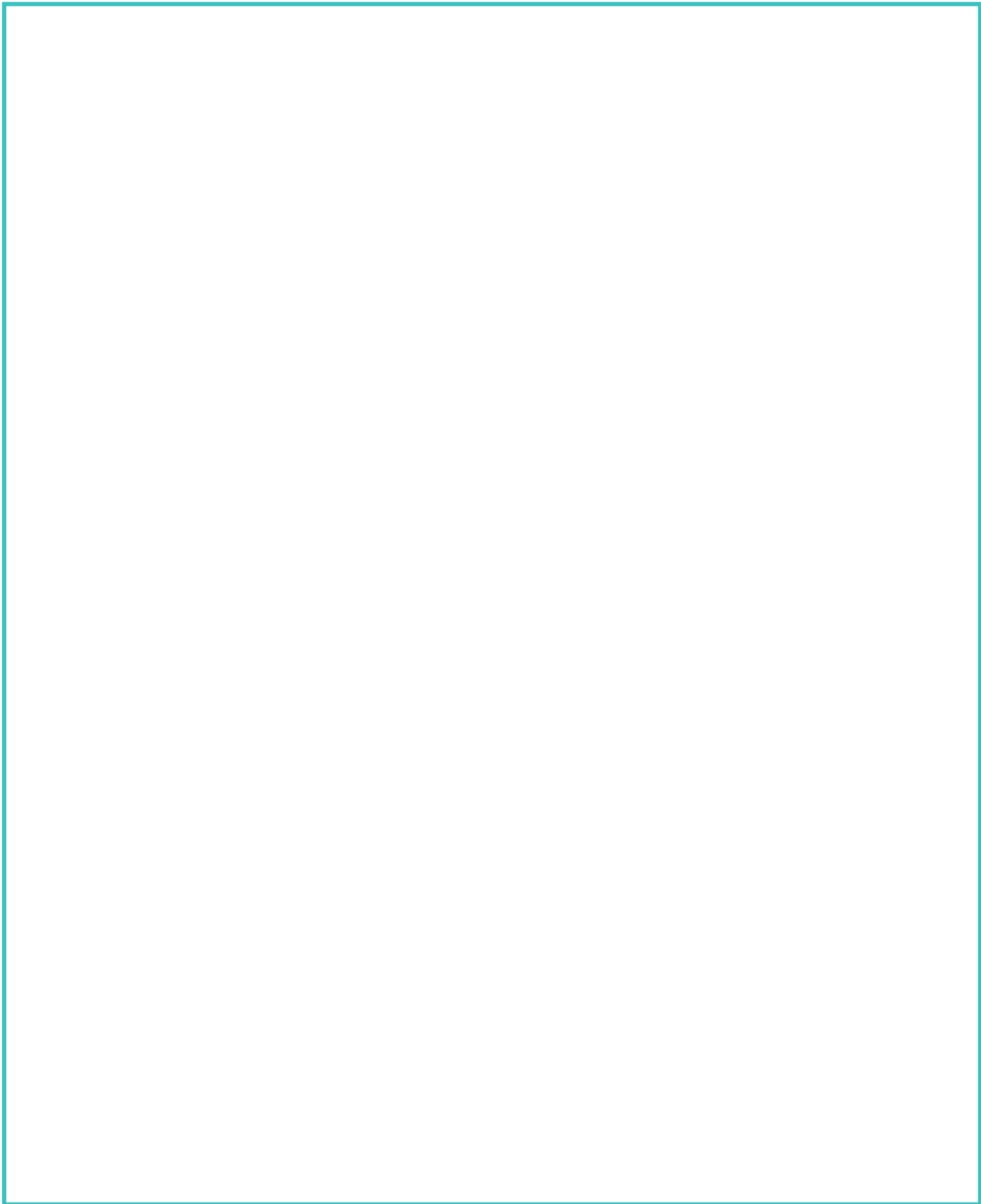


SITE INFORMATION	Organization/Group Name: <u>White Clay Creek Club</u>			
	Investigators: <u>Vince O., Mandy N, Steve K, and Tara M.</u>			
	Site Code: <u>WCC-US1</u>		Site Name: <u>White Clay Creek above Spencer Rd</u>	
	Stream Name: <u>White Clay Creek</u>		Total Time Spent Monitoring: <u>3: 15</u> HH:MM	
	Major Watershed: <u>Delaware</u>		Number of Participants: _____	
	Sub-Watershed: <u>Brandywine-Christina</u>		Latitude: <u>39.85914</u>	
Closest town/city: <u>Avondale</u>		Longitude: <u>-75.78369</u>		
PACK DATA	Placement Data		Retrieval Data	
	Date (Month/Day/Year)	<u>04/01/2020</u>	Date (Month/Day/Year)	<u>04/22/2020</u>
	Number of Packs	<u>4</u>	Number of Packs	<u>3</u>
	Air Temp (°C)	<u>15.5</u>	Air Temp (°C)	<u>16.0</u>
	Water Temp (°C)	<u>12.0</u>	Water Temp (°C)	<u>12.3</u>
	Avg. Weight of Packs: <u>750</u> grams			
Habitat type for placement: Pool ☐ Riffle ☒ Run ☐				
STORM & NON-STORM EVENTS	A. Did any storm events occur while your rock packs were in the stream?			
	Unknown ☐		If 'Yes' for A, list the following:	
	Yes ☒			
	No ☐			
	B. Did flooding occur?			
	Unknown ☐			
Yes ☐				
No ☒				
C. Was this site experiencing a drought during your monitoring?				
Unknown ☐				
Yes ☐				
No ☒				
BIOTIC DATA	From ALL Packs, # of Net-spinning Caddisflies (Order Trichoptera, Family Hydropsychidae): <u>22</u>			
	From ALL Packs, # of Total Macroinvertebrates (including Hydropsychidae): <u>184</u>			
	<i>Optional Data from the Leaf Pack Network® Biotic Index Data Sheet:</i>			
	Pollution Tolerance Index (PTI) Score: <u>35</u>			
PTI Index Rating: Excellent ☒ Good ☐ Fair ☐ Poor ☐				

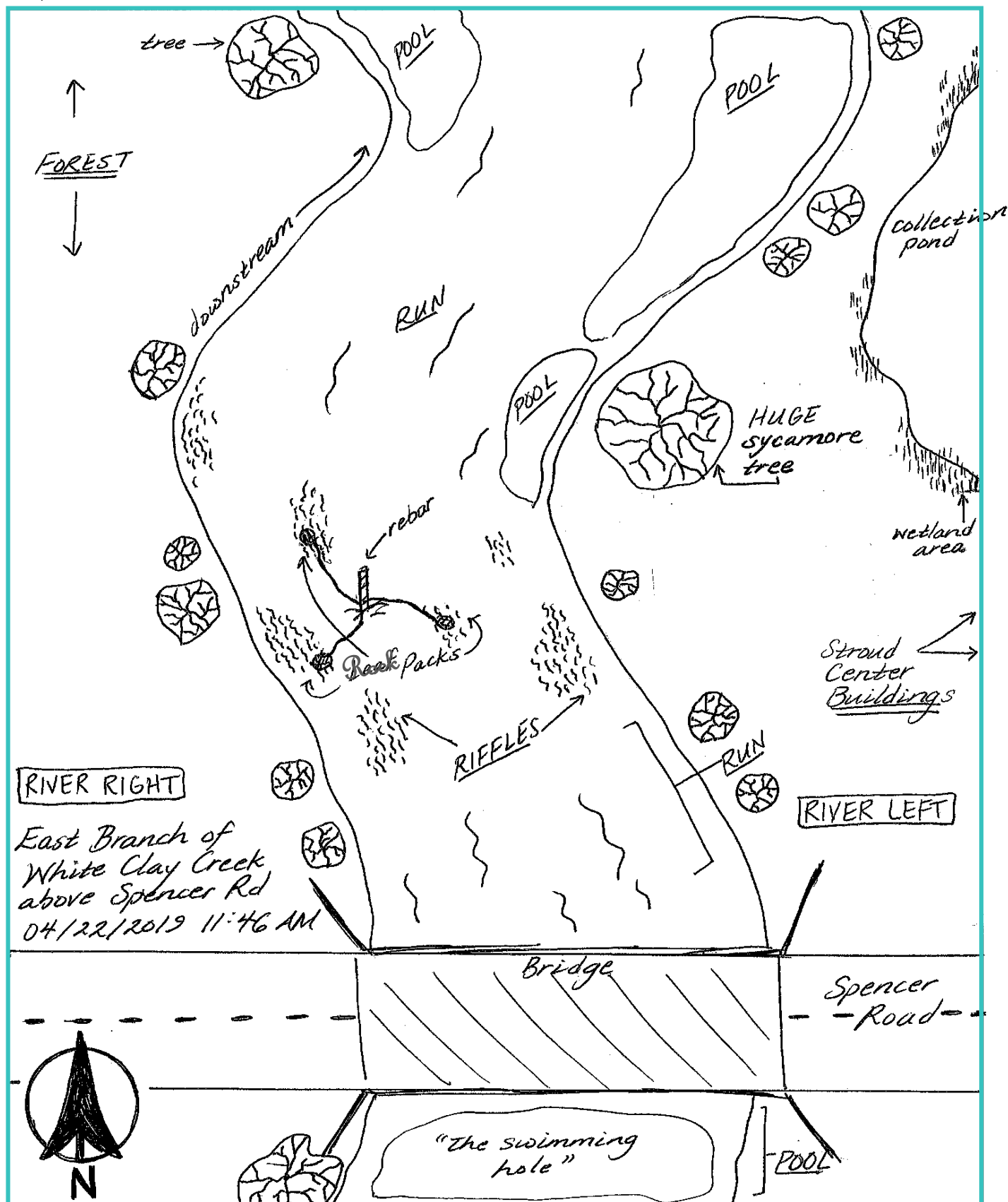
Please submit data to our online portal at MonitorMyWatershed.org

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Rock Pack Site Map



EXAMPLE: Rock Pack Site Map



Wentworth Pebble Count Data Sheet

Use this data sheet to quantitatively characterize the substrate particles in your streambed, including silt, sand, gravel, cobbles, and boulders. For instructions, please see the Wentworth Pebble Count Activity in Chapter 3.

COUNT	SIZE (mm)	COUNT	SIZE (mm)	COUNT	SIZE (mm)
1		39		77	
2		40		78	
3		41		79	
4		42		80	
5		43		81	
6		44		82	
7		45		83	
8		46		84	
9		47		85	
10		48		86	
11		49		87	
12		50		88	
13		51		89	
14		52		90	
15		53		91	
16		54		92	
17		55		93	
18		56		94	
19		57		95	
20		58		96	
21		59		97	
22		60		98	
23		61		99	
24		62		100	
25		63			
26		64			
27		65			
28		66			
29		67			
30		68			
31		69			
32		70			
33		71			
34		72			
35		73			
36		74			
37		75			
38		76			
Average gravel size is: _____(mm)					
TOTAL % GRAVEL within 10mm-60mm range is: _____(%)					

EXAMPLE: Wentworth Pebble Count Data Sheet

COUNT	SIZE (mm)	COUNT	SIZE (mm)	COUNT	SIZE (mm)
1	8	39	68	77	1
2	22	40	52	78	8
3	15	41	360	79	6
4	13	42	210	80	36
5	50	43	112	81	22
6	65	44	22	82	220
7	100	45	6	83	1
8	92	46	14	84	8
9	45	47	140	85	1
10	15	48	8	86	13
11	13	49	51	87	52
12	24	50	44	88	15
13	8	51	26	89	68
14	68	52	8	90	1
15	300	53	78	91	1
16	26	54	70	92	6
17	70	55	36	93	22
18	36	56	8	94	8
19	15	57	100	95	2
20	1	58	178	96	8
21	100	59	15	97	54
22	8	60	222	98	26
23	13	61	68	99	44
24	1	62	99	100	8
25	22	63	22		
26	68	64	60		
27	8	65	140		
28	8	66	8		
29	1	67	8		
30	1	68	76		
31	47	69	58		
32	12	70	32		
33	22	71	12		
34	52	72	8		
35	46	73	14		
36	8	74	13		
37	22	75	144		
38	13	76	68		
Average gravel size is: <u>47.27 (mm)</u> (mm)					
TOTAL % GRAVEL within 10mm-60mm range is: <u>74</u> (%)					