

FAUNTLEROY CREEK BENTHIC STUDY

LOUISA BOREN STEM K-8, October 30, 2025 Lila Greene, teacher

OBJECTIVES

Fourth-grade students from Louise Boren STEM K-8 sampled sites in upper and lower Fauntleroy Creek for benthic macroinvertebrates (BMIs) and reported the findings. A group of 24 students gained experience in

- employing teamwork to execute an established scientific protocol
- making site observations
- recording data
- posing and answering questions based on their findings
- evaluating the experience with an eye toward improvements

NOTE: As we did last year in order to keep the number of students manageable, one of Boren's fourth-grade classes participated in this study, and the other went to Longfellow Creek for a separate study. Also this year, construction work in the upper creek had recently deposited a new gravel at what was the customary collection site for this study. Because BMIs would not have had time to populate the new gravel, we moved our collection site farther upstream to the bridge where schools release fry in the spring.

METHODOLOGY

With their teacher, chaperones, and watershed volunteer Shannon Ninburg, the students followed scientific protocol to collect BMIs using a Surber sampler. The class took two samples in riffles: one in the upper creek east of the SW Barton St. entrance to Fauntleroy Park and one in the lower creek several yards upstream of the fish ladder. Both samples were taken in a riffle.

At each site, an environmental team noted site conditions while a collection team positioned the Surber sampler and stirred the gravel for one minute while. A sorting team then separated sample elements into shallow trays and used a dichotomous key to identify the macroinvertebrates they saw with the naked eye and hand-held magnifying glasses. They observed size in general.

Prior to the field trip, Shannon gave a short presentation about benthic macroinvertebrates to the class at school, followed by basic instructions in how they would do the sampling. On the day of the field trip, she divided students into two teams – one to do the collection activity while the other did a separate on-site activity with the teacher. After taking the sample in the upper creek and observing/recording the lifeforms they collected, the students walked down to Judy Pickens' house in the lower creek, where she led a question-and-answer session about salmon habitat while they had lunch. The sampling teams then switched roles so that the second team could collect a sample and observe/identify the species in it.

FINDINGS

SITE CONDITIONS

	Upper Creek	Lower Creek
Air temperature	12.0° C	12.0° C
Water temperature	11.0° C	10.0° C
Water depth	6.0 cm	15.0 cm
Weather conditions	cloudy	cloudy

LIFEFORMS COLLECTED

	2021		2022		2023		2024		2025	
	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower
Stonefly larvae	1	2	3	1	1	1		3	2	1
Mayfly larvae	4	1		4	1	3	2	2	4	3
Caddis fly larvae		5				2	1			
Aquatic worms	1			2	1	1	1	3		2
Black fly larvae			1		1			1		
Midge fly larvae				2					2	
Water penny		2								
Beetle larvae										
Riffle beetle										
Snail					1					
Scud		1				1		1		
No ID		3								
TOTAL	6	14	4	9	5	8	4	10	8	6

CONCLUSIONS

- Samples taken at both sites contained a variety of BMIs, many of which require good-quality water and are intolerant of pollution.
- BMIs were more abundant in the upper creek but generally larger in size in the lower creek. **NOTE:** Fall 2024 brought a record number of spawning salmon (347) to the lower creek. We expected that the abundance of nutrients they left would enhance the number of BMIs by the following spring but sampling did not bear out that expectation. Abundant nutrients may, however, have affected their size.
- The sample taken in the upper creek contained a lot of mud and silt, making the BMIs harder to see. Because we could immediately see them when the water cleared and then not see them when the sample was bumped or stirred, we concluded that the BMIs could well have been more abundant than we were able to record.

RECOMMENDATIONS FOR NEXT YEAR

- Laminate the macroinvertebrate ID sheets.
- Add another tray or two so students can spread out more to observe their samples.
- Devise a way to get basic measurements of the species found and add those measurements to the report.
- Select a different collection site in the upper creek as the one used this year was so silty.