FAUNTLEROY CREEK BENTHIC STUDY

LOUISA BOREN STEM K-8, OCT. 22, 2021 Marie Clevering and Elizabeth Mahrt, teachers

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. Because of the coronavirus pandemic, a team of eight students representing two classrooms did the sampling, analysis, and on-the-spot reporting. 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

METHODOLOGY

With their teachers, chaperones, and watershed volunteer Shannon Ninburg, the students followed scientific protocol to collect BMIs using a Surber sampler. The team took two samples near the church/YMCA in the upper creek directly downstream of where all creek tributaries come together to form the main stem. They took the second sample in the spawning reach, several yards upstream of the fish ladder in the lower creek. All samples were taken in a riffle, with gravel in the frame stirred for one minute.

The team 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. The team also noted weather conditions and water temperatures at each site. Adults took photos of the action.

Because of time constraints at school, Shannon and fellow volunteer Judy Pickens walked the students through a verbal report of their findings, comparison with 2020 findings, conclusions, and recommendations.

FINDINGS

	2016		2018		2019		2020		2021	
	Upper	**Lower**	**Upper**	**Lower**	**Upper**	**Lower**	**Upper**	**Lower**	**Upper**	**Lower**
Stonefly larvae			1		2	2		4	1	2
Mayfly larvae				1			1		4	1
Caddis fly larvae										5
Aquatic worms	1	7	1	2	2			2	1	
Black fly larvae								1		
Midge fly larvae										
Water penny							1			2
Beetle larvae										
Riffle beetle										
Snail				1						
Scud										1
No ID			1	3				1		3
Total	**1**	**7**	**3**	**7**	**4**	**2**	**2**	**8**	**6**	**14**

A gold-colored BMI in the lower-creek sample may have been a riffle beetle - a rarity since this study began in 2000. For the first time, students found two identical egg sacs in that sample, about 1cm in diameter and holding one to two dozen tiny green eggs. A macroinvertebrate such as a caddis fly may have laid the sacs.

The team noted light rain during their sampling and water temperatures at about 12^{o} C at each site.

CONCLUSIONS

- Various BMIs were in samples collected at both sites, most of which require good-quality water.
- BMIs were more abundant and diverse in the lower creek than in the upper creek.
- BMIs were the most abundant since 2016.
- Despite not having nutrients from spawners in 2020, BMIs did okay in the lower creek.

RECOMMENDATIONS FOR NEXT YEAR

- Limit sampling to a small group so that all can see and do and so that fourth graders have ample adult support to succeed.
- Sample during the school day as weekends are too busy, perhaps with one group sampling the upper creek in the morning and a second group sampling the lower creek in the afternoon.