

## Observations in Nature – A Year in the Life of Spring Creek

Spring Creek is a small waterway that cuts through the southern edge of Laramie, Wyoming, USA. It originates east of town and terminates when it confluences with the Laramie River.

I have often wondered how a microenvironment might change with the different seasons. For the next year, I plan to monitor a small portion of Spring Creek and document the changes. I chose Spring Creek due to the ease of access, and the proximity to my home. It is within walking distance. The creek itself is more or less centered in a wider channel. Storm drains empty into this channel. The channel also provides runoff and damage control during flooding incidents, however, it is prone to severe erosion in some places.

The portion I will be observing is bordered by city streets on two sides, and a University of Wyoming mass transit parking lot on the other two. One of those sides is a bridge over the creek that provides an entrance to the parking lot. That is where I began my observations. A seventeen-foot (5.182 meters) stretch of the creek exits from the west side of the bridge and culminates in a waterfall with a ten-inch (0.25 meters) drop. The start of this seventeen-foot section is five feet, two inches (1.58 meters) wide. The south side gently curves and the creek bed narrows to two feet, seven inches wide. The waterfall is four feet, one inch wide. The depth of the bank at the start of the observation section is one foot, four inches (0.4 meters), with a water depth of six inches (0.15 meters). The grasses, thistles, and other plants on the channel bed were flattened by a flash flood earlier in the summer.



A small waterfall on the observed portion of Spring Creek, Laramie, Wyoming USA.

The waterfall empties into a wider area that is eight feet long (2.44 meters), and seven-feet, ten inches wide (2.39 meters). It is lined on either side with rock, probably as a result of human intervention to prevent erosion. These rocks provide a perfect home for macroinvertebrates.

I made my initial observations on October 8, 2022, at 12:37 Mountain Daylight Time. The air temperature was 57 degrees F, 13.899 degrees C. ( $[(57F-32) \times 5/9 = C]$ ). It was a sunny day, with the only fair-weather cumulus clouds being over the Snowy Range mountains, 30 miles to the west. The wind was from the WNW at four miles per hour.

The water temperature in the flowing stream was 52.7 degrees F, 11.5 degrees C. In a still pool created by the rocks near the waterfall, it was 52.88 degrees F, 11.6 degrees C. A piece of horse chestnut shell traversed the surface of the seventeen foot (5.182 meters) section of the creek in 8.23 seconds, and 9.12 seconds in two trials for an average of 8.675 seconds. The average speed was 1.96 feet/second, or 0.598 meters/second. (A third trial was unsuccessful.)

Macroinvertebrates that I observed included a pond snail, numerous small leeches (*Hirudinea*) less than an inch, or 2.54 centimeters long, and empty caddis fly cases. I was fortunate to also observe a caddis fly (*Order Trichoptera*) in its case.



The caddis fly is just peeking out of its case.      It is starting to emerge.

Shortly after this photo was taken, the case fell off the rock and back into the water. I am not sure if the insect was just moving its case, or whether it was fully emerging.



There were numerous pond snails on the underside of the rocks, along with clumps of aquatic vegetation, probably watercress.

Perhaps the most curious find, however, was a pile of shelled horse chestnuts, (*Aesculus hippocastanum*), on the bank. Other common names for these seeds are buckeyes or conkers. The pieces of their shells were also present. That is not a tree normally seen in Laramie. A quick look around revealed a number of these trees, obviously planted on the university property.



Fruits on an *Aesculus hippocastanum* tree.



Seeds from the shelled fruits.

How or why the chestnuts and their shells were by the water remains a mystery. Did people place them there? Did an animal create a stash? Are the trees going to survive in Laramie's normally harsh climate? That is the best part about science...there is always something new to wonder about!

By Jennie Lawrence, email missjennae AT yahoo DOT com  
All photos by the author.

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