Taking the Pulse of Tar Creek: A Lab and Field Study of Macroinvertebrates in Tar Creek Coupled with a Heavy Metal Water Analysis

Middleton, Macey

The purpose of this experiment is to identify macroinvertebrates and heavy metals present in Tar Creek and to study lab macroinvertebrates, Lumbriculus variegatus and Odonata anisoptera, in Tar Creek water samples. The four hypotheses are: It is hypothesized that there will be heavy metals present in both sites one and two at Tar Creek, that there will be a low number of macroinvertebrates in both sites one and two at Tar Creek, resulting in low river health, that Lumbriculus variegatus exposed to Tar Creek water will have a lower regeneration rate than those in a control of spring water, that Odonata anisoptera exposed to Tar Creek water will have a higher mortality rate than those in a control of spring water. The procedure for collecting water samples and macroinvertebrates at Tar Creek was started by collecting water in three different spots at site one and site two. For macroinvertebrate collection, the kick-sampling method was used. The remnants were taken to a lab where portions were viewed under the stereoscope and identified. The water samples collected were taken to the Arkansas Water Research Center were an ICPA was used detect heavy metals. The lab Lumbriculus variegatus were placed in sites one and two water and a spring water control and their regeneration rates were measured. The lab Odonata anisoptera was placed in sites one and two water and a spring water control. All four hypotheses were fully supported in this experiment.

Awards Won:

Serving Society Through Science: Second Award of $500