ABSTRACT

Thirty-one fifth grade students at the Genesee Community Charter School studied the health of Round Pond Creek in Greece, New York because it flows into Lake Ontario within the Rochester Embayment, which is listed by the Environmental Protection Agency as an "area of concern." Visual surveys were performed at six sites, and three sites were chosen to study further. At those three sites, researchers tested dissolved oxygen, pH, alkalinity, conductivity, fecal coliform bacteria, chloride, fluoride, nitrates, phosphates, sulfates, air and water temperature and streamflow volume. Researchers used the percent model affinity method to sample macroinvertebrates. While gathering and interpreting data, researchers consulted with experts from the University of Rochester. Round Pond Creek rated in "fair/good condition" overall. Exceptions were macroinvertebrates ("severely impacted") and dissolved oxygen (16.6 to 22.2 ppm). One site had high levels of *E. coli*. Researchers concluded that just because water looks clean, does not make it healthy. The study makes recommendations for further testing and for taking action to help keep our environment clean.

Macroinvertebrates

We sampled for macroinvertebrates on May 25, 2007 between 9:00 a.m. and 12:00 p.m. at Greece United Methodist Church, Sawyer Park, and Apple Creek Lane/Latta Road.

The materials we used to sample were waders (important if the water is dangerous and for comfort), buckets (to hold the sample), and "D" nets (for sampling). We sampled macroinvertebrates by pushing the "D" net on the bottom of the stream bed about one foot downstream from us and using the kick method. The kick method is when we got the toe of our waders slightly under the streambed and kicked strongly until we filled the net about 25% of the way. Furthermore, we put the sample in buckets one handful at a time to get out glass and anything else that could harm the macroinvertebrates. After that, we lugged the bucket onto the stream bank. We repeated this enough times so we could easily have 100 macroinvertebrates.

On the bank, we separated 100 macroinvertebrates into a shallow pan with extra water in it. After we counted out 100 macroinvertebrates we sorted them into 7 groups: *Oligochaeta* (worms), *Ephemeroptera* (mayflies), *Plecoptera* (stoneflies), *Coleoptera* (beetles), *Trichoptera* (caddisflies), *Chironomidae* (midges) and Other. We had a jar for each. (Note, at Greece United Methodist Church we only had time to count 50 macroinvertebrates, but we then doubled our numbers.) To count how

many macroinvertebrates (and what kinds) we used spoons, forceps, shallow pans, and buckets. Finally, we recorded our findings on the recording sheet (see Appendix B) and safely returned the macroinvertebrates to the stream.

When the recording sheet says "lesser value," it means whichever number is smaller in that row goes there. The total for that is just adding those numbers together. The higher the total number, the healthier the stream.