Abstract #202

Old Mans Creek and Clear Creek, East-Central Iowa – The Role of Volunteers in a Snapshot Sampling

Jacklyn Neely[1] and Dave Ratliff[2]

[1]Iowa Department of Natural Resources – IOWATER Program, 502 E. 9th St., Des Moines, IA 50319
[2]Dave Ratliff, K.D. Engineering, PO Box 2593, Iowa City, IA 52240, kdeng@msn.com

Biographical Sketches of Authors

Jacklyn Neely is the IOWATER Field Coordinator for the Iowa Department of Natural Resources. Jacklyn's primary duties include training volunteers and coordinating watershed groups. She holds a BS in biology and earth science from the University of Wisconsin. Jacklyn has participated in a variety of biological research projects including herpetological studies with the University of Wisconsin - Stevens Point, a study on caddisflies with the University of Wisconsin - La Crosse, and a fish-monitoring program with the Upper Mississippi Long Term Resource Monitoring Program, the University of Wisconsin, and the Iowa DNR. Jacklyn has been with the Iowa DNR since May 2000.

Dave Ratliff was project leader for the first snapshot of Old Mans Creek and Clear Creek in Johnson and Iowa counties in September, 2003. Dave attended the first IOWATER workshop held at Springbrook Conservation Education Center in Guthrie Center, IA and then continued his Water Quality Monitoring education to receive his Level 2 Certification. His work with the United States Geological Society allowed Dave to start K.D. Engineering in 1976, which later evolved into the development and implementation of the first Microprocessor-controlled RJE station to be built. Today, Dave still heads K.D. Engineering, which is involved in computer systems support.

Abstract

In September 2003, 50 volunteers sampled more than 50 sites throughout Old Mans Creek (245 sq. mi.) and Clear Creek (103 sq. mi.) watersheds as part of a snapshot sampling. A snapshot sampling is when multiple sites throughout a geographic area are sampled within a short period of time. While these events enable collection of baseline data and can highlight areas for follow-up monitoring, they are beneficial in getting volunteers in the IOWATER Program (Iowa's volunteer water monitoring program) involved in collecting water quality data on a watershed or county scale. This snapshot was one of the most intensive studies conducted by volunteers in Iowa, as it included chemical, physical, biological, and discharge measurements. Monitoring of 16 sites on the main stem of Old Mans Creek under low-flow conditions showed a relationship between the number of microhabitats and benthic macroinvertebrate diversity, as well as the impact of a small community's wastewater facility, located within the watershed, on ammonia, chloride, and phosphorus concentrations in the creek. Elevated chloride concentrations were also reported for Clear Creek, with chloride concentrations declining downstream in both streams. Monitoring of many of these same sites one month later revealed the same elevated chloride trend. Results from this sampling provide a baseline for future events, as monitoring of these sites will occur on a tri-annual basis (spring, summer, fall).