

## Macroinvertebrate Monitoring (River Watch)

Hennepin County has 450 miles of streams, ranging from permanent watercourses to drainage ditches, with variable flow and stream sizes, from the broad Crow River to a small creek flowing through a backyard. Land use in the region is diverse, including agricultural, residential, industrial, rural, urban and forested areas.

To learn more about these local waterways, the Hennepin Conservation District initiated a benthic macroinvertebrate monitoring program in 1995 to provide hands-on environmental education for high school and college students, promote river stewardship and obtain water quality information on streams in Hennepin County. Intended to connect teachers and students with professionals to monitor the health of local streams, the River Watch program is now under the direction of Hennepin County Department of Environmental Services (HCDES). In 2008 students from 22 schools monitored 24 sites on eight waterways in Hennepin County.

The Pioneer-Sarah Creek Watershed Management Commission has been a sponsor of the River Watch program since 1998 and has two monitoring sites. Site 24, the program's first site on Pioneer Creek, is located adjacent to an Independence city park surrounded by agricultural land that is being converted to suburban housing developments on the north side of the creek. Several homes now border the creek and much of the native vegetation has been cleared around them. Future erosion of the bank due to vegetation removal is a concern. Students from Rockford High School and teacher Jason Hester have monitored this site since spring 2001. Results of the monitoring conducted at site 24 produced a letter grade of B+, the highest grade achieved in the nine-year period.

Site 12, located on the Crow River on the western edge of the watershed in downtown Rockford, was monitored by Steve Merten and his students from West Lutheran High School. The site, downstream of Lake Rebecca Park, often shows the best water quality of all the Hennepin County River Watch sites. It earned a grade of B in 2009; the highest grade of A- was earned in 1998 and 1996. The 13-year average grade is B+.

The grading scale used in River Watch takes into account three major biotic indices. The first is the *Family Biotic Index* which measures the overall community of invertebrates and their tolerance to pollution levels. The second is the *EPT*. EPT stands for Ephemeroptera, Plecoptera and Trichoptera (mayflies, stoneflies and caddisflies). Presence of these sensitive individuals indicates better water quality. Finally, the *number of families* measures the total diversity of family units. Again, the higher the number the better the water quality.

*River Watch 2009*, available from HCDES, includes results from all the Hennepin County monitoring sites and is available at <http://www.co.hennepin.mn.us>, keyword River Watch.