

Fact Sheet

Volunteer Stream Monitoring Program

The Volunteer Stream Monitoring Partnership (VSMP) program originated at the Water Resources Center, University of Minnesota, in 2000. This program was designed to “support, strengthen and coordinate volunteer stream monitoring in the seven-county Twin Cities Metropolitan Area” by involving student and citizen volunteers in monitoring benthic macroinvertebrates (benthic=bottom-dwelling organisms; macro=large enough to see without a microscope; and invertebrates=without a backbone). Benthic macro-invertebrates include organisms such as aquatic insects, snails, leeches, clams and crayfish. A few of the many benefits gained from volunteer citizen monitoring include hands-on environmental education, a better understanding of the relationship between land use and water quality and river stewardship.



Grants from the Metropolitan Council Environmental Services, the McKnight Foundation and the Mississippi Watershed Management Organization funded the program through 2004. Although the program is no longer staffed by the University of Minnesota or funded by grants, the VSMP program name remains active.



Funding for the program in Scott County is provided by the Scott Watershed Management Organization (WMO), with technical and administrative support from Scott Soil and Water Conservation District (SWCD). Partners of VSMP include local government staff, educators and non-profit organizations such as the Metropolitan Council Environmental Services, the University of Minnesota, Anoka Conservation District, Carver County Environmental Services and Extension Service, Hennepin County Environmental Service, Scott SWCD, Scott WMO, the Vermillion River Watershed Joint Powers Organization and Washington Conservation District.

Volunteers (mostly schools) sample streams for a variety of reasons: awareness and education, continuous record or problem investigation (depending on the reason for monitoring and the skill level of the volunteers). Current volunteers in Scott County include students from Jordan High School and St. Michael’s Middle School. Samples are collected twice a year (spring and fall). Volunteers collect information on water conditions, stream bank and channel traits and local watershed characteristics (The Habitat Assessment).

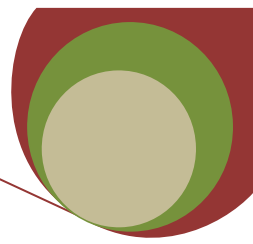
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If possible, chemical samples are also taken at this time. After the habitat assessment, the macroinvertebrate collection begins. To get a representative sample, macroinvertebrates are collected from various habitats within the stream (overhanging vegetation, the streambed, logs and riffle areas).

After the samples are collected, the bugs are preserved and transported back to the lab to be sorted and identified to the family level, using a dichotomous key. After identification, they are validated by a qualified professional to assure proper identification.

Interpretation of water quality is most useful when continuous data is available, preferably more than five years. Consistent data provides information that enables resource managers to evaluate the success of conservation practices and effects of land use changes and to assess general quality of the

streams. Biological and chemical monitoring compliment each other when determining water quality. Chemical monitoring takes a “snapshot in time;” which shows what is in the stream at that moment in time. Bio-logical monitoring represents the stream’s overall health. Some organisms are more sensitive to pollutants than others. For example; mayflies, stoneflies and caddisflies are very sensitive to pollution, while leeches and earth-worms are highly tolerant. By determining the types and quantity of organisms that are in the stream, a better representation of overall stream health is achieved.

Data generated by volunteers can be used for community awareness, formal education and local community decision-making. At this point, volunteer macroinvertebrate data is currently not used in the state assessment or for enforcement purposes. In-stead, data results are used as a “screen” or “supporting data” to observe which water bodies appear to need follow-up professional monitoring. Volunteer monitoring is very helpful, an affordable tool in assessing water quality.

