

After revamping and strengthening our sampling protocols and quality control procedures in 2001, our data has gained creditability because of the improved sampling consistency within the program. This protocol booklet helps preserve the quality and strength of our program by preserving the consistency of our sampling procedures. Each section of this booklet describes a water quality parameter that the St. Louis River - River Watch program measures, why we take the measurement, the correct sampling protocol, and an appropriate quality control procedure. By using information in this booklet a participant can collect water quality data that can be used to monitor the long-term health of a stream and address water quality concerns that a community might want addressed.

There are three main types of water quality parameters that we test in the St. Louis River - River Watch program are chemical, biological, and physical. Chemical testing is a good way to get a "snapshot" of water quality on the day you sample. Since all River Watch schools sample within constrained time periods, it is easy to compare these chemical water quality parameters across our watersheds and identify trends. A drawback to

chemical testing is that it is a reading of stream quality on the sampling day, hence the "snapshot" quality of the testing. Chemical parameters can not really tell us the whole picture of the health of the stream. A stream can be affected by some kind of stressor that is flushed out of the system by the time of chemical testing. The St. Louis River -



River Watch includes it's biological testing to better measure any long term stress experienced by the river. Macroinvertebrate sampling is a great example of a water quality parameter that gives a view of stream health over time. Since macroinvertebrates are not mobile enough to avoid environmental stressors, a decline in numbers and diversity can give monitoring groups a warning of any water quality degradation that is occurring at their stream site. The last type of measurement that is taken by River Watchers is physical. Physical parameters are a way of describing each sampling site, and a tool to track changes that occur either because of

man made obstacles (ex. parking lot) or natural