

# **CONTINUOUS STREAM MONITORING FOR A HIGH QUALITY WATER RESOURCE: SILVER CREEK, WASHINGTON COUNTY, MINNESOTA**

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## **Biographical Sketch of Author**

Robert Fossum is employed as a Water Monitoring Technician at Washington Soil & Water Conservation District and is involved in monitoring the water quality of 17 stream sites and 35 lakes. The author produces yearly water quality reports based on the water quantity and water quality data collected, which facilitates sound decision-making for water resource management in Washington County.

## **Abstract**

Silver Creek, a tributary to the St. Croix River (a federally designated Wild and Scenic River), is located in east-central Washington County, Minnesota. Silver Creek, which drains a 2,631-hectare watershed, has excellent water quality and is a valuable natural resource for Washington County. Historically, water quality monitoring efforts throughout the nation have been heavily focused on already degraded water resources. Maintaining the excellent water quality of Silver Creek will continue to be a high priority as this watershed is rapidly urbanized. Early detection of water quality degradation is essential for identification of possible problems and effectively managing the water resource. Automated stream sampling, which automatically records stage and discharge, has been conducted on Silver Creek since 1995. The automated monitoring station was programmed to take integrated composite samples during both storm runoff and base flow conditions. During 2000, 7 storm flow samples and 14 base flow samples were collected. These samples were analyzed for total phosphorus and total suspended solids among others. The results of this analysis were used to calculate an estimated total suspended load and phosphorus load in the system. Estimated total phosphorus export during 2000 was 0.0082 kg/ha/yr (0.0608 mg/l) and average suspended solid concentration was 12.7 mg/l. These concentrations are exceptionally low for a basin of any land use type. Continued water monitoring on Silver Creek is an integral part of maintaining excellent water quality for this valuable resource.