Shobers Run, Great Trough Creek, Buffalo Run, Brush Creek, and Standing Stone Creek. Aughwick Creek Watershed had the most sites with the best possible site conditions in each category. Some of the most degraded watersheds were Burgoon Run, Beaverdam Branch, Shoups Run, Sixmile Run, and the Morrison Cove area. The Frankstown Branch was the section with the most impairment overall, with AMD, agriculture, and urban influences. The Raystown Branch had isolated sections of impairment (Ecoregion 69 and Morrison Cove), contributing AMD and agricultural pollution near the start of the impoundment of water from the dam. Unfortunately, numerous stations could not be sampled for macroinvertebrates due to high flow conditions, which reduced the information available in 2004 for many streams.

Efforts should be made to restore the most degraded watersheds within this subbasin and to protect the higher quality ones. Agriculture BMPs can be used to limit the impacts associated with farming operations. Information on these practices and other conservation methods can be gathered from the County Conservation District Offices (Table 1). Grant opportunities to cleanup AMD and more information on remediation technologies also are available in County Conservation District Offices and from the Western PA Coalition for Abandoned Mine Reclamation (Table 1). Urban stormwater problems can be minimized with low impact development and by allowing for groundwater recharge areas. More information on urban pollution remediation can be obtained from the Center for Watershed Protection in Ellicott City Md., through its Urban Subwatershed Restoration Manual Series (http://www.cwp.org/).

Further study and research would be needed to identify the source and cause of the higher aluminum values found in this survey. It appears that the higher aluminum concentrations were not adversely impacting macroinvertebrate communities. Aluminum is not toxic to aquatic life, such as fish, unless the pH of the stream is lower than approximately 5.2, when the aluminum is present in dissolved form (Gagen and Sharpe, 1987; Baker and Schofield, 1982).

A second year of more intensive sampling began in the Morrison Cove area in Spring 2005. The streams sampled in this Year-2 survey include Yellow, Beaver, Hickory Bottom, Potter, Three Springs, Halter, Cabbage, Plum, Clover, and Piney Creeks. The streams in the Yellow Creek Watershed (Beaver, Hickory Bottom, Potter, and Three Springs Creeks) have been impaired for agricultural pollution, and Halter Creek was impaired due to urban and industrial runoff and storm sewer problems (Table 5). Furthermore, the Morrison Cove area has been identified as a potentially stressed groundwater area. Quarterly water sampling of streams, springs, and seeps is being conducted to gather information on groundwater influence on stream quality. Macroinvertebrates were collected in spring 2005 in order to assess the biological health of these streams. More information on this project is available from SRBC.

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For additional copies of this subbasin survey, contact the Susquehanna River Basin Commission, 1721 N. Front Street, Harrisburg, PA 17102-2391, (717) 238-0423, fax: (717) 238-2436, e-mail: srbc@srbc.net.

For raw data from this survey or more information concerning SRBC, visit our website: www.srbc.net.