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TOP STORY

Assessment: Treatment systems, restoration projects needed to improve degraded tributaries

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This view, taken from the pollinator garden area and looking toward the coal region historic monument, shows the vicinity of the Veterans Memorial Sports Complex in Kulpmont.

THE NEWS-ITEM FILE PHOTO

A state-funded assessment that reviewed Quaker Run and Buck Run in the Shamokin Creek Watershed will serve as a “giant step” toward improving the degraded waterways, the Shamokin Creek Restoration Alliance (SCRA) says.

Since 1996, SCRA has worked to cleanup and restore the Quaker Run and Buck Run watersheds as part of its overall mission to improve water quality in the Shamokin Creek Watershed. Even with a quarter century of effort, the watershed remains severely impaired due to the extensive legacy of non-conservation minded land use.

The nonprofit organization in 2019 was awarded \$85,575 from the Department of Environmental Protection to identify ways to battle acid mine drainage and restore Quaker Run and Dark Run to acceptable levels. The funding was earmarked to address the unique characteristics of both waterways, such as location, topography, stream length and impairment.

The 102-page assessment and 57-page restoration plan was prepared by Clauser Environmental LLC based in Cape May Court House, New Jersey. It contains backgrounds of the sub-watersheds, past and current aerial photographs, habitat reviews and detailed results from water quality and macroinvertebrate samplings, among various other topics.

“These recently finished stream assessments and reclamation plans are a giant step for the Shamokin Creek Restoration Alliance. Buck Run and Quaker Run are two sub-watershed tributaries to Shamokin Creek,” said Stephen Motyka, a SCRA director who is also a Kulpmont Borough councilman. “The Scott Mine Tunnel, Maysville Mine Borehole, the Colbert Breach and Big Mountain Mine discharges contribute 18.3 million gallons a day, 40% of all the polluted water that flows into Shamokin Creek.”

The headwaters of Quaker Run are located just east of Kulpmont. Quaker Run flows southwest across the state highway and into Coal Township, eventually traveling through Ranshaw and emptying into Shamokin Creek near Route 901. Quaker Run has one major tributary known locally as Dark Run. The Dark Run sub-watershed includes both the Scott and Maysville mine discharges.

Anthracite production, which peaked in 1917, resulted in the construction of a multitude of underground mine workings in the Quaker Run and Buck Run watersheds. Underground mining tunnels and workings are known to extend beneath much of the watershed study area.

Mine discharges into tributaries of Shamokin Creek contribute both a large portion of base flow and contaminants to the creek. The discharges are sourced in slopes, shafts and tunnels that overlay mine complexes.

According to the assessment, the streams and tributaries of the Shamokin Creek Watershed are also impaired by pathogens, most likely due to sewage discharges to the stream.

The assessment states that the Quaker Run and Buck Run watersheds are places where previous generations have left a legacy of environmental degradation and severely-impaired water quality. The large-scale degradation of the environment in this area has created “an overwhelming” amount of work to be done to restore water quality.

It suggests that a holistic approach to improving the water quality and habitat within the Quaker Run and Buck Run watersheds should focus immediately on treating water quality coming out of the abandoned mine discharges and limiting the flow to the underground mine pools. It says a combination of treatment systems and restoration projects that keep clean surface water out of the mines will be necessary to restore a functional aquatic community in these streams.

Long term, the best course of action for the watershed is to promote reclamation of the abandoned mine-impacted land. Considering current economic, technological and societal conditions, the only feasible way to economically reclaim the land in these watersheds is to re-mine the impacted areas, the assessment says.

To have the greatest long-term benefit, the assessment says regulators permitting future mining work in the watershed should require that mining activities are comprehensive in eliminating all of the underground mine workings in the area being mined.

In order to address the impairment of pathogens in the stream, the assessment states that municipal officials should be proactive about eliminating wildcat sewers, separating storm sewers from sanitary sewers, reducing infiltration into the existing sewer system and preventing residents from piping rainwater and other clean water sources into the sewer system.

The restoration plan says costs associated with stream restoration in mining-impacted areas are quite variable depending upon the overall restoration goals, landowner objectives, availability of a location to place spoil materials, project funding requirements, availability of building materials and rock, site conditions, volunteer hours, level of detail required for survey, and design and permitting costs.

The total estimated cost to implement high- and medium-priority projects within the watersheds is estimated between \$78 and \$145 million. These costs include installation of buffer plantings, treatment facilities, floodplain reconnection, water obstruction replacement, streambank restoration, installation of in-stream structures and professional services.

“Most previous attempts to restore these streams have been held up because of the lack of a comprehensive stream assessment and reclamation plan,” Motyka said. “These documents are a prerequisite to most physical projects. Now that these studies are complete, we hope to see a large project funded soon, resulting in a cleaner, clear Shamokin Creek.”