

## Susquehanna River Basin Commission Information Sheet

# BEAR RUN ABANDONED MINE DRAINAGE REMEDICATION – WATERSHED RENAISSANCE PROJECT



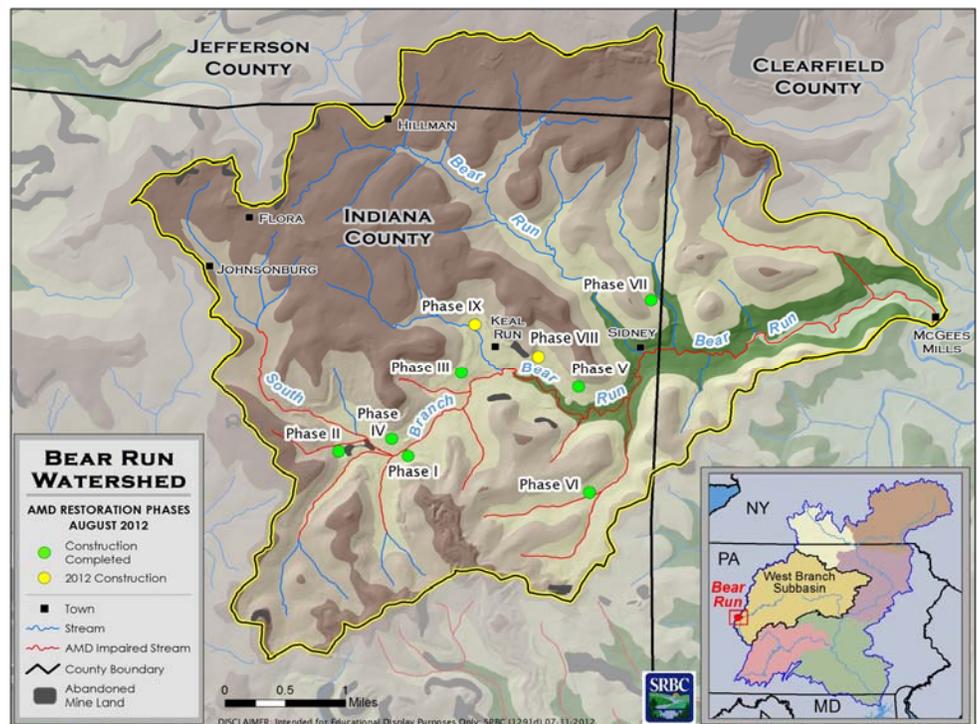
### The Watershed

The Bear Run Watershed drains an area of about 19.3 square miles to the West Branch Susquehanna River (West Branch) in Indiana, Jefferson and Clearfield Counties. Bear Run has its headwaters near Hillman, Indiana County, and flows 4.5 miles southeast to its confluence with the South Branch of Bear Run at the mining ghost town of Sidney. Bear Run then flows 3.25 miles east to its confluence with the West Branch at McGee's Mills, Clearfield County.

### AMD Impacts

In 2005, the Susquehanna River Basin Commission (SRBC) prepared a draft total maximum daily load study for the Bear Run Watershed. As a result of coal mining dating back to the 1880s, 17.85 stream miles of Bear Run are listed as impaired by abandoned mine drainage (AMD) on the Draft 2012 Pennsylvania Integrated Water Quality Monitoring and Assessment Report.

Bear Run, which is one of the largest AMD impacts to the headwaters section of the West Branch, contributes about 327 tons/year acidity, 34 tons/year iron (Fe), 29 tons/year manganese (Mn) and 20 tons/year aluminum (Al). In 2006, the Indiana County Conservation District (ICCD) completed the Bear Run Restoration Plan, which documented that eight of the 27 AMD discharge sites in the watershed are contributing 72 percent of the AMD loading into Bear Run.



### Remediation Funding and Benefits



*Bear Run native brook trout*

By the end of 2008, two of the eight construction Phases of this restoration effort were completed. The Evergreen Conservancy, with funding obtained from the Pennsylvania Department of Environmental Protection (PADEP) County Environmental Initiative and the Federal Office of Surface Mining (OSM), constructed a passive wetland treatment system on the largest iron loading discharge in the watershed (Phase I). In addition, the ICCD completed a passive AMD treatment system on one of the largest acidity loading discharges in the watershed (Phase III). Both projects have been successes and have led to significant water quality improvements.

**Remediation Funding and Benefits (continued)**



*Phase II Project Pre- (left) and Post-reclamation (right)*

Also in 2008, SRBC and the ICCD obtained the first PADEP Watershed Renaissance Grant awarded in the Commonwealth, which funded the construction of the remaining Phases. All Phases are slated to be complete by early 2013. Given that every construction Phase came in at or under budget, SRBC and the ICCD will be able to take advantage of this cost efficiency and complete nine Phases instead of the originally projected eight.

The *Bear Run Mine Drainage Remediation – Watershed Renaissance Project* involved a combination of techniques and technologies to restore Bear Run. Of the eventual nine Phases, six utilize passive treatment system technology and two have installed Swedish-Bucket Lime Dosers. In addition, three of the nine phases included mine refuse/abandoned mine land (AML) removal and/or reclamation.

In fall 2012, SRBC completed fish surveys throughout the watershed. For the first time in possibly a century or more, every station in Bear Run contained fish. In addition, three of the eight mainstem stations contained either native brook trout or wild brown trout populations.

Other very notable benefits and improvements:

<b>In 2007 Before Remediation Project Started</b>	<b>In 2012 After Remediation Project Implemented</b>
Only 1 fish species found at the mouth of Bear Run at McGee’s Mills	9 fish species captured, including wild brown trout
Only 1 fish species found downstream of South Branch confluence	6 fish species captured, including native brook trout

The benefits and improvements should continue to build as the final two Phases are constructed and as fish continue to move and recolonize.

This remediation project supports the goals/objectives of the PA WILDS initiative and the West Branch Task Force and complements other West Branch headwaters restoration efforts such as the Barnes and Watkins coal refuse pile removal and the Lancashire #15 discharge remediation project. Finally, the improved water quality will enhance recreation on the West Branch Water Trail and at Curwensville Lake in Clearfield County.

For more information on this effort, contact Thomas Clark, Mine Drainage Coordinator, at (814) 521-0093 or at [tclark@srbc.net](mailto:tclark@srbc.net).