Targeted Stream Assessments to Support Sediment Reduction, Habitat Recovery & Watershed Improvement in the Wyoming & Southern Wyoming Valley Final Report

EPCAMR

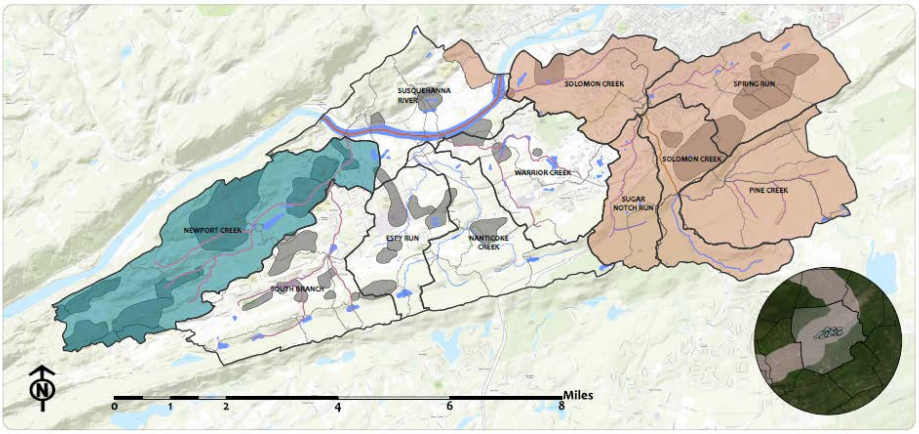
Eastern Pennsylvania Coalition for Abandoned Mine Reclamation

to the

NFWF

NFWF Project Study Area

2020 Small Watershed Grant Program



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Executive Summary

Historical documentation and inferred comparisons of surrounding unimpacted watersheds show that American Black Duck (ABD) and Eastern Brook Trout (EBT) were abundant in the southern Wyoming Valley watersheds of Solomon Creek, Warrior Creek, Nanticoke Creek, and Newport Creek before coal extraction began in the late 1700s. Extensive underground and strip mining of coal in the region impaired these streams to the point they could no longer support wildlife. In some cases, the streams dried up altogether due to surface water draining into the empty subsurface mines known as mine pools that exist under the valley. These mine pools discharge abandoned mine drainage (AMD) which is laden with heavy metals and often acidic.

ABD are more mobile thus they can escape to feed in cornfields, swamps and ponds instead of the polluted streams but EBT have no choice. Fish studies in this report show that EBT fled upstream into unimpacted tributaries and are often found in the headwaters of streams outside of the coal measures. In this study we have evaluated wetlands and ponds for EBT habitat and have found that a majority of the waterbodies in these watersheds are leftover strip mines that now hold groundwater which rises and falls with the same elevation of the mine pools. It can be inferred that they are connected. Mine pools are stratified and often the top water is cleaner than deeper water.

Improvements to both ABD and EBT habitat can and have been done. Reclaiming abandoned mine lands (AML) and resurfacing streams reconnect lost stream miles where wildlife can thrive. Treating AMD removes the contaminants from the water and reduces sediment transport into the Susquehanna River and eventually to the Chesapeake Bay.

An additional impact to both ABD and EBT in the study area are invasive vegetation species that have dominated large areas of the aquatic and wetland environments. Invasive vegetation reduces native insect populations, and habitat for birds, mammals and fish in the overall scope of habitat restoration needs. The damages throughout the food chain start with changes in vegetation lacking the symbiotic relationships to native species throughout the watershed areas. This invasive change has partially occurred due to the aggressive nature of invasive species to volunteer to abandoned mine lands and eventually create a monoculture of non beneficial plants.

This concern has brought forward a need to address invasive species in a systematic removal as part of a primary improvement for both ABD and EBT.

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