

# **Coldwater Heritage Partnership Implementation Grant Final Report Morrison Run Watershed Restoration Project Western Pennsylvania Conservancy**

## **Project Summary**

The goal of the Morrison Run Watershed Restoration Project is to restore and improve riparian and in-stream habitat along Morrison Run through the reduction of sedimentation, rehabilitation of riparian areas, and removal of fish passage barriers. Morrison Run is classified as an Exceptional Value (EV) stream by the Pennsylvania Department of Environmental Protection, and it supports isolated wild populations of eastern brook trout. The objectives of this Coldwater Heritage Program implementation project were to remove three undersize culverts at the intersection of Forest Road 156 (a.k.a. Morrison Run Road) and Morrison Run and replace them with a bridge, remove the sediment bar that had formed at the culverts' inlet, armor the road ditches with limestone rip rap, and resurface the road with limestone driving surface aggregate to reconnect aquatic habitat, reduce non-point source sediment pollution, and reduce flooding of the dirt and gravel road.

The implementation of this project began on Monday, September 22, 2014 and was completed on Thursday, September 25, 2014. Turner Enterprises of Youngsville, PA was contracted to implement the project, with daily oversight provided by representatives of Western Pennsylvania Conservancy and the Cornplanter Chapter of Trout Unlimited. The new bridge was fabricated and delivered by ADM Welding of Warren, PA and the stone for the project was purchased from New Enterprise Stone and Lime Company. The total cost of the completed project was \$60,620.81, with matching funds being contributed by several private and federal funding sources (see final financial report).

## **Project Accomplishments**

The project was successfully completed as originally planned. A total of 100 linear feet of streambank was stabilized, and 350 linear feet of dirt and gravel road was improved. This project has opened up approximately three miles of stream above the crossing to passage of fish and other aquatic organisms. In total, 5.3 miles of stream above and below the crossing have been reconnected.

The three undersized culverts were removed and replaced with a fabricated steel bridge with pine-wood decking. The bridge footers were installed and armored with limestone rocks to prevent scour. The bridge was 14 feet wide and 35 feet long, with 31 feet between the bridge footers to accommodate the average stream width of 20 feet. This increased capacity to accommodate stormwater flows should significantly reduce flooding of Forest Road 156 at this crossing. During removal of the culverts, the sediment bar that had formed in the stream channel above the culverts was excavated and removed. The excess sediment was used to regrade several upland parking areas near the project site. The stream banks and roadside drainage ditches were lined with limestone rocks to inhibit erosion and sedimentation and act as a pH buffer for road runoff. The dirt and gravel road approaches to the bridge were graded and finished with limestone driving surface aggregate (DSA), which stabilizes the road base and surface materials to prevent sediment runoff.

The project was implemented as originally intended, following the engineered designs for new bridge construction and installation. One slight alteration in the restoration work was encountered where the sediment bar was removed from the right descending bank above the inlet of the culverts. Due to a shallow gas pipeline located in the roadside ditch, the heavy excavator could not be driven over it while loaded with the stone intended to armor the streambank in that section (which was previously excavated by a smaller and lighter piece of machinery). Therefore, stone was only placed as far as the excavator's

hydraulic arm could reach, leaving a small section of disturbed bank exposed. While this bare section of bank is outside of the average streamflow, it may lead to erosion during high water events. Therefore, Western Pennsylvania Conservancy and the Cornplanter Chapter of Trout Unlimited will monitor natural vegetation regrowth on this bank, and are discussing plans to revisit the site in the spring of 2015 to plant or transplant vegetation to this bank to provide additional stabilization.

### **Project Partners**

Partners in the project included the cooperating landowner, Oak Hill Timber Holdings, LLC, and adjacent land and resource owners, Meade Oil and Oil & Gas Management. These three entities provided matching cash contributions to pay for the contractual services and materials for the project. In addition, David Clark of Oil & Gas Management assisted with coordinating logistics of the project implementation and engineering designs and fieldwork. The Cornplanter Chapter of Trout Unlimited assisted with securing grant funds for the project, acted as liaison between the land and resource owners and other project partners serving as the main point of contact throughout the planning process, and contributed cash match to cover the design and engineering costs as well as the permit application fees. The Warren County Conservation District assisted with project planning and permitting, and has been an active partner in other restoration, enhancement and monitoring efforts in the Morrison Run watershed. The PA Fish and Boat Commission assisted with prior baseline fish population monitoring in the watershed and is an active partner in other restoration and enhancement projects in the Morrison Run watershed. The U.S. Forest Service provided technical assistance with all aspects of the project, as well as matching cash contributions for the implementation of this project and also is an active partner in other restoration, enhancement, and monitoring efforts in the Morrison Run and greater Browns Run watershed.

### **Maintenance, Monitoring and Future Projects**

Since this project was completed on a U.S. Forest Service-owned road, the resurfaced road and bridge will be monitored and maintained by the U.S. Forest Service. The adjacent private land and resource owners who invested in this project and who frequently use the road to access their assets will also monitor and maintain the road and bridge.

The Western Pennsylvania Conservancy, Cornplanter Chapter of Trout Unlimited, Warren County Conservation District, and U.S. Forest Service will continue to lead restoration, enhancement, and monitoring efforts in the Morrison Run watershed. These project partners will work together to monitor fish populations and ecological responses to this and other restoration efforts in the watershed via backpack electroshock fishing surveys, macroinvertebrate surveys, water chemistry analysis, and habitat assessments. These same project partners, along with the PA Fish and Boat Commission, plan to continue aquatic habitat enhancement projects in the headwaters of Morrison Run for the next few years.

There is one remaining passage barrier, a dam, on Morrison Run just downstream of this project. The landowner of that dam has been engaged in discussion about removing the dam or possible alternatives to allow them to keep the dam and impoundment intact (as per their desire), while constructing a bypass channel to allow aquatic organism passage. The Cornplanter Chapter of Trout Unlimited will continue to lead and mediate that discussion with the landowner.

**Before and After Pictures:**



**Forest Road 156 culverts inlet BEFORE restoration**



**Forest Road 156 Inlet AFTER restoration**



**Forest Road 156 culverts outlet BEFORE restoration**



**Forest Road 156 Outlet AFTER restoration**



**Forest Road 156 AFTER resurfacing with DSA and limestone ditch lining**