

RESTORING SPRING CREEK

McCoy-Linn Dam Removal and Habitat Enhancement Project

photo-PFBC archives

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and Spring Reilly*

After 200 years, Spring Creek is once again a free-flowing stream. In 2007, the McCoy-Linn Dam was removed to restore Spring Creek to its natural, free-flowing condition. Then, in 2009, a follow-up habitat enhancement project was implemented in the formerly impounded reach. Results of fishery monitoring conducted before and after the projects indicate that the wild brown trout population has positively responded to the improved conditions.

McCoy-Linn Dam

The original dam was built on Spring Creek in 1796 to drive waterwheels and turbines for the Harmony Forge and Milesburg Iron Works. After World War I, the ironworks declined and the complex was dismantled. The dam was rebuilt after the 1936 flood to generate hydroelectric power for West Penn Power. This operation ceased in 1950.

In the mid-1800s, the dam became part of a canal system that the Bald Eagle and Spring Creek Navigation Company

established from Lock Haven to Bellefonte. Work was completed in 1848, and the canal operated until the spring flood of 1865. The canal sustained massive damage from the flood. Repairs were considered, but train travel was already marking the end of the canal transportation.

The Pennsylvania Fish & Boat Commission (PFBC) purchased the dam and surrounding property, including the canal system, in the early 1980s. After exploring the feasibility of refurbishing the infrastructure for hydro-power operations, it was determined that the best long-term management of the site included removal of the dam and follow-up habitat restoration.

Why remove the dam?

Since the late 1700s, the 12-foot high McCoy-Linn Dam impounded a half-mile of Spring Creek resulting in degraded habitat. While some dams are beneficial to society, many have exceeded their usefulness and continue to age and deteriorate. Dams change the physical, biological and chemical functions of streams and alter natural stream flow. They warm water temperature, trap sediment and prevent passage of fish and other aquatic life. Dams can also increase flood risks and threaten lives of anglers, boaters and swimmers.

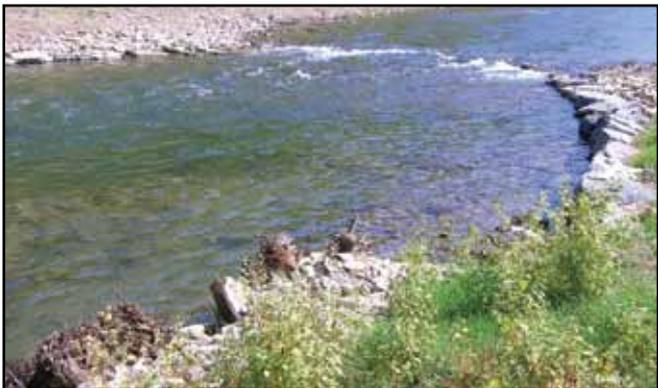
Spring Creek

Spring Creek is a 22-mile long limestone stream that drains a 144-square-mile watershed in Centre County. Spring Creek arises near Boalsburg and flows north-east through State College and Bellefonte to its confluence with Bald Eagle Creek in Milesburg. The watershed is geographically and geologically unique, characterized by a series of long, high ridges and broad limestone valleys. The Spring Creek watershed is home to a number of rare, threatened and endangered plants and animals. It also harbors one of the most productive wild trout fisheries in Pennsylvania. Significant ground-water input provides a stable source of cold, fertile water—ideal conditions for wild trout populations. The high abundance (number) and biomass (weight) of wild brown trout that Spring Creek harbors makes it one of the best wild trout streams in Pennsylvania.

Project results

As a result of this dam removal project, over 2,000 feet of Spring Creek has been restored. Public access for fishing, boating and other recreation has been greatly improved, and portions of the historic canal system have been preserved with improved visibility of this unique artifact.

In addition to the removal of the dam, the resulting stream channel was adjusted to appropriate dimensions, and in-stream habitat improvement structures were installed throughout the former impoundment to enhance fish habitat and stabilize the stream banks. Structures included multi-log vane deflectors, root wads, mudsills, rock vanes, rock cross vanes and boulder placements. These structures are all made of natural materials and are designed to blend into



In-stream structure consisting of two rock arms connected in the middle by additional rock control the slope of the stream bottom and channel water to the center of the stream and away from stream banks.



photo-courtesy of the Centre County Library Historical Museum

This is Milesburg Ironworks, probably in the 1870s. In this photo, the furnace stack and casting house is on the far side of the canal basin above lock no. 4 (which is out of the frame to the right) as well as the charging bridge that brought ore and fuel to the furnace top. The building in the foreground is the casting shed, and the canal basin spillway drains just in front of it. The second rolling mill, across the river, was built sometime before 1887.

the surrounding environment. A variety of native trees and shrubs were planted along the stream bank to improve and expand the riparian buffer, which will provide further habitat benefits as it grows over time.

Fishery monitoring at the McCoy site from 2007-2010 showed a substantial improvement in the abundance (number) and biomass (weight) of brown trout inhabiting the study site before work in 2007 and after the dam removal in 2008-2010 (*Figure 1*). Control sites were also sampled to provide information on trends in the wild brown trout population at upstream and downstream locations where no habitat changes occurred. It is important to note that we also documented considerable increases in brown trout at the control sites from 2009 to 2010 (*Figure 1*).

Thus, the improvement at the McCoy site from 2009–2010 may be a function of an upward trend in the population as a whole, not just the improved habitat conditions. Additional fishery monitoring at these sites over the next few years will provide more insight into trends of the population. It is expected that the McCoy site will either maintain itself at the current high level or may even continue to increase over the next few years as the brown trout continue to take advantage of the improved conditions. Improving the wild brown trout population at the McCoy site was a major objective of the project.

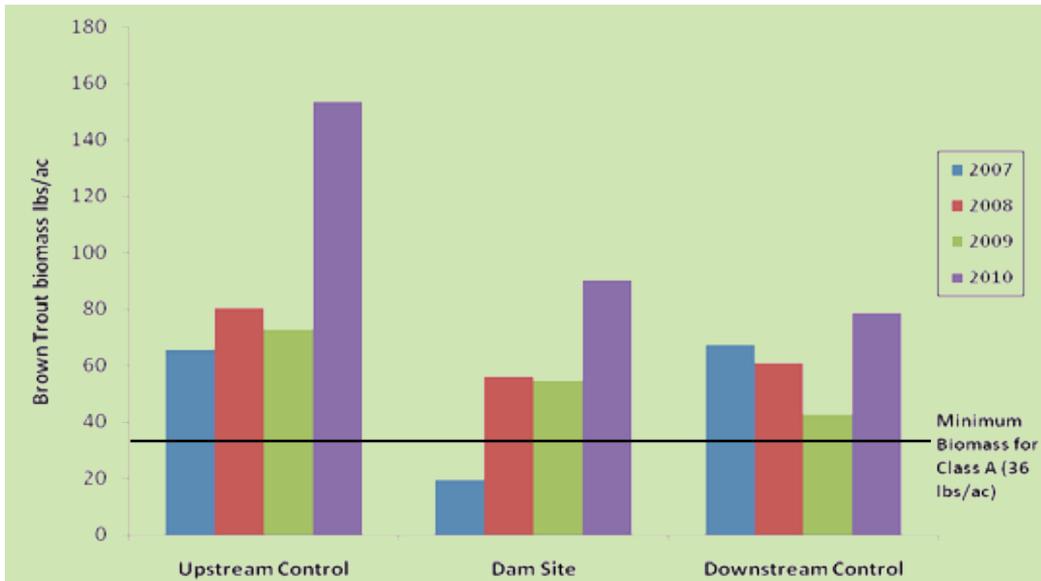


Figure 1. Brown trout biomass before (2007) and after (2008–2010) dam removal and habitat enhancement in the former impoundment and control reaches. Note: The biomass estimates are based on single-pass electrofishing data, not a population estimate, because only single-pass electrofishing was used when conducting the pre-dam removal survey in the former McCoy impoundment.

Project partners

Of special recognition are the efforts of ClearWater Conservancy and Spring Creek Chapter Trout Unlimited who have provided substantial assistance with obtaining project funding, sponsoring the projects and assisting with project coordination and management. Project partners have worked together to leverage over \$700,000 in funding, services and materials. ☐

American Rivers
 Benner Township
 Centre County Conservation District
 Centre County Historical Society
 Centre County Office of Planning and Community Development
 ClearWater Conservancy
 Gleim Construction
 G.O. Hawbaker, Inc
 National Fish and Wildlife Foundation
 Pennsylvania Department of

Conservation and Natural Resources
 Pennsylvania Department of Environmental Protection
 Pennsylvania Fish & Boat Commission
 Penn State University
 Spring Creek Chapter Trout Unlimited
 URS Corporation
 U.S. Army Corps of Engineers
 U.S. Department of Agriculture, NRCS
 U.S. EPA Chesapeake Bay Program
 U.S. Fish and Wildlife Service



photo-Katie Ombalski
 McCoy-Linn Dam prior to the dam removal in 2007.

McCoy-Linn Dam Access Area in September 2010.
 photo-Spring Reilly

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