

## Brushy Creek Stream Restoration Project

project description | stream restoration

### location

Greenup County, Kentucky

### client

Finance & Administration Cabinet  
Frankfort, Kentucky

### completion date

March 2007

### construction cost

\$701,000



*Restored Photo*

**background:** CDP was retained by the Finance and Administration Cabinet for Kentucky Department of Fish and Wildlife to develop a stream restoration plan for 4,755 LF of Brushy Creek to mitigate disturbances from other off-site construction projects.

**firm's role:** CDP developed the mitigation plan, stream restoration design, and obtained the required permits for the project. The existing stream habitat assessment was performed and stream restoration credits were determined using the Eastern Kentucky Stream Assessment Protocol (EKSAP). CDP also provided contract Administration and limited construction observation.

**stream restoration:** 4755 LF of Brushy Creek, a degraded stream in Greenup County, and tributaries were restored in 2006. Brushy Creek is a 3rd order stream with a watershed of 9.1 square miles. It was a C4/F4 stream based on the Rosgen Classification System with a high width/depth ratio. Additionally, the stream was void of pool habitat in most areas. Brushy Creek was degraded in the past by agriculture, lack of riparian vegetation, and straightening.

**solution:** Brushy Creek was restored to a stable C4/B4 stream with proper bankfull dimensions based on the design. By returning it to a stable plan form, profile, and cross-section the stream was stabilized and protected from further erosion, enhanced aquatic habitat by constructing stable riffles and pools, and improved water quality. Habitat was created by the installed rock structures, deep scour pools, and willows, alder and other tree species planted along the stream edge that, overtime, will grow their own root system along the bank. Water quality will be improved by greatly reducing the amount of sediment that was eroding from the unstable banks and fencing out livestock from the stream to reduce the fecal coliforms. A riparian buffer of native trees and shrub were planted to provide habitat and shade to reduce the water temperatures.