

## Middle Creek Stream Restoration Project

project description | stream restoration

### location

Prestonsburg, Kentucky

### client

Kentucky Dept. of Fish and Wildlife Resources  
#1 Sportsman's Lane  
Frankfort, KY 40601

### completion date

Design - 2007  
Currently Under Construction

### budget

\$650,000



**background:** CDP was retained by the Kentucky Department of Fish and Wildlife to design a stream restoration plan for approximately 9175 LF of Middle Creek to mitigate disturbances from other off-site construction projects.

**firm's role:** CDP has performed the stream survey and assessment of Middle Creek Currently, as well as developed the mitigation plan, obtained the required permits for the project, performed the stream restoration design, and developed the construction documents. CDP is currently performing construction administration and will perform the post construction monitoring and reporting. The existing stream habitat assessment and vegetation surveys have also been completed.

**stream restoration:** 9175 LF of Middle Creek and tributaries will be restored. Middle Creek is a 4th order stream with a watershed of 53.2 square miles, including 26.5 square miles for the Left Fork and 26.1 square miles for the Right Fork. Based upon the Rosgen Classification System, Middle Creek is a E5/G4 stream. It has a low width/depth ratio and in most reaches is severely incised. Additionally, the stream has poor riffle habitat in most areas and has been degraded in the past by straightening.

**solution:** Middle Creek will be enhanced through various Natural Channel and bioengineering techniques and the lowering of the immediate floodplain. By applying different methods, the stream will be stabilized and protected from further erosion, enhance aquatic habitat, and improve water quality. Much of the Left Fork will be relieved from impoundments by lowering 2 streams crossings. Log toes, log vanes, log cribbing, Newbury Riffles, in-stream crossings, and step/pool systems will all be installed on the project. Habitat will be created by the installed root wads below the water surface, log vanes, Newbury Riffles, and willows, alder and other tree species planted along the stream edge that, over time, will grow their own root system along the bank. Water quality will be improved by greatly reducing the amount of sediment that is eroding from the unstable banks. A riparian buffer of native trees and shrubs will be planted to provide more habitat and shade.

