

2. Emmaus Community Park Stream Restoration – Lehigh County, Pennsylvania

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This restoration project was undertaken on a quarter-mile stretch of stream located in the Borough of Emmaus Community Park. The project was undertaken to demonstrate a number of objectives. The first was to re-grade the steep eroding stream banks and plant a native riparian buffer. The second objective was to establish fish habitat improvement structures by installing single and double-log cross vanes and stone deflectors to narrow the low-flow channel. A fish ladder was constructed to deepen the flow on a section of the concrete that was impossible to remove. This allowed fish to travel both up and downstream through the channel, and also decreased the warming of the water that flowed over the hot concrete that occurred during the warm summer months.

Besides the stream improvements, other aspects of the project extended into areas of the park that had rarely been used prior to the improvements. One area of mowed turf grass was converted into a wildflower meadow for bird watchers, in conjunction with the installation of a new footbridge and walking trail. New fencing to



**Community Park
before the stream
bank improvements.
Note the erosion and
lack of vegetation.**

protect the native plantings in the high-use area was installed, along with a series of interpretive signage to educate the public on the scope of the project. To compliment the project and enhance its educational value, a series of educational signs and brochures were developed by the Lehigh County Conservation District and the Borough of Emmaus for middle school students who use the park as an outdoor classroom. Each year, all eighth grade students in the district use the facility for the Annual Watershed Awareness Day.

Another element of the project that was successfully completed was the modifications to the wire gabion baskets. The Borough Council identified these as an “eyesore” and requested that they be made less unsightly. After considerable thought, the gabions were planted, using soil “pillows” sewn onto the tops of the baskets to enhance their appearance. Shortly after their installation, the pillows withstood the impact of Hurricane Ivan with minimal damage. This successful application warrants consideration in other stream bank restoration projects.

During the project construction, several upstream landowners, who were experiencing similar erosion problems, approached the project partners and requested that their properties be included in the restoration. Through a collaborative effort with the borough, excess plant and seed materials were used on these properties, extending the project well over 200 feet. The project was further enhanced by the placement of bird boxes that were made by a local Boy Scout troop. One of the boxes provided a home for a pair of red-tail hawks that raised two young in the new meadow.

All the project's successes were due to the excellent relationship between the project partners. From the beginning, the Conservation District provided the Borough with a very clear picture of how the process would unfold, so no aspects came as a surprise. In addition, the project had overwhelming positive public support. The project went as planned, with all the original problems addressed in the intended ways. Stream bank erosion has been eliminated, the native plantings are doing well, and the educational aspects of the project have been very successful in informing the community about the stream and its needs.

Community Park after the restoration. Note the stabilized banks and abundance of vegetation.

