

# Ohio River Foundation's 2013 Youth Conservation Team – Campbell County, KY

## Background Information

The Ohio River Foundation's Youth Conservation Team (YCT) program began in summer 2011, with 2 teams working in Hamilton County, OH. For 2013, we have 4 teams working in Oh, IN, and KY. This report showcases the variety of conservation projects that the Campbell County crew completed during their summer 2013 work.

## What is a Youth Conservation Team?

The Ohio River Foundation's Youth Conservation Team (YCT) project comprises groups of local high school students hired for summer work to fix runoff and erosion problems. A Crew Leader organizes the conservation projects and schedules work for the teams. A YCT Program Manager oversees the program, provides training for the Crew and Crew Leader, and serves as liaison to the participating communities.

During the summer, the crews work six hours per day four days per week to install conservation projects that reduce erosion and runoff in the target watershed. Potential projects include planting trees and shrubs along streams and lakeshores; removing winter sand from ditches, culverts, and settling basins; rock lining ditches and culverts; and installing water bars and other diversions to direct water from dirt roads and paths to vegetated areas. Landowners that receive YCT services provide the materials necessary for construction, but the YCT labor is provided free of charge.

There is also an educational component to the program. Expert scientists, professors, and educators supplement the students' labor with one day per week of information and hands-on instruction relative to the watershed protection and restoration work being performed.

The goals of the YCT Project are to: (1) improve water quality in the Ohio River watershed, (2) foster local stewardship, (3) provide students a work-study hands-on professional experience, and (4) build strong town and community support to sustain the program through local funding.

## Why do we need Youth Conservation Teams?

In other parts of the country these types of programs have proven to be one of the most effective ways for local communities to correct soil erosion problems and protect water quality long term. Despite improvements, water quality in the Ohio River watershed remains degraded. As rivers, creeks, and streams are cleaned up, development along the shoreline is resulting in significant soil erosion and a loss of vegetated buffers. Increased runoff and erosion has also altered stream channels and continues to degrade the river's once thriving fishery. Ohio River Foundation is working to reverse these impacts on both private and public lands through the implementation of recognized BMPs (Best Management Practices).

## 2013 YCT Campbell County Team Accomplishments



The crew sitting on the bridge for which they built a new base.

In just three weeks, the team, comprised of four high school students led by a Crew Leader and Program Manager, successfully completed 32 habitat conservation projects in the Ohio River Watershed located on Campbell County Conservation District property at St. Anne's convent in Northern Kentucky. By the end of the session, the team had saved the district thousands of dollars in labor costs, and:

- ★ Placed 550 ft. of water diversion bars
- ★ Laid 960 lbs. of concrete
- ★ Hand-placed 2.5 tons of stone
- ★ Removed 5,500 **ft.<sup>2</sup>** of invasive plant species
- ★ Cleared 2,800 lbs. of debris

### Summary of Conservation Practices

Type of Conservation Practice	Projects Completed
Erosion Control	7
Trail Stabilization	6
Invasive Removal	7
Bridge Work	12
<b>Total</b>	<b>32</b>

## Trail Stabilization and Erosion Control



Before - Culvert blocked by debris



After

Access to parklands via trails and roads is essential for the public enjoyment of natural resources. It is necessary for these roads and trails to be safe, serviceable, and require minimum maintenance. However, trail and road erosion can make these paths dangerous and cause excess sediment and runoff pollution that overwhelm small streams.



Natural water bar at post invasive removal site.



Crew member stuffing branches and leaves under bar gaps.

Stormwater pollution takes many forms. In this Campbell County Conservation Area, 40 feet of severely eroded gravel paths were repaired and reengineered to help prevent future deterioration, sediment loading, and stormwater runoff into the stream. The chief issues were path slope and water flows from adjacent upland areas. The erosion was most evident as furrows were cut in the paths by stormwater and rainwater. Overland flow volume, water velocity, and erosion increased progressively down slope.



The crew is ready to dig a ditch for a water bar.



Crew members burying a water bar.

To address these problems, logs, branches, and leaves were collected from surrounding areas to prevent rain from washing away the newly loosened soil at the invasive removal site, which does not yet have enough roots to sufficiently secure the exposed soil. These water diverter bars will prevent additional sediment from continuing to erode into the stream, and keep the adjacent path intact for use by park visitors. Also, 54 feet of man-made 6x6 wooden water diverter bars were strategically placed across the path at an eroded site to reduce the net volume of water flowing down that hill. At the bottom of this hill, the crew also cleared out debris that had collected at a culvert.



The bridge was dug out and moved to the side to prepare footers.



Placing stones and filling gaps with concrete.

A bridge was raised and re-fitted, after it had moved and was blocking the flow of a stream. In order to do this, built up mud and debris was removed and a new, solid concrete and stone foundation was built. A second bridge was also dug out and lifted by simply placing some temporary bricks and stone under one side. Finally, they cleared off dirt that had built up and washed over some steps, making them safer for hikers.

## Invasive Species Removal and Green Infrastructure

Plants that are not indigenous or native adversely affect the habitats and bioregions they invade. They out-compete native species, putting at risk plants and animals that are dependent on the native species for survival.



Before - Burning Bush



After

Throughout the Campbell County Conservation District, Burning Bush (*Euonymus alatus*) out-competes native trees and other plants. As pictured above, the removal of this aggressive non-native plant allows sunlight to reach the forest floor so young native trees can grow. Also, as pictured above, existing trees are visible and no longer choked out as the competition for root space is greatly reduced. The YCT removed approximately 5,500  $\text{ft.}^2$  of invasive burning bush, amur honeysuckle, and 10 large vines of invasive English ivy.



Crew member with a *Euonymus* root.



Working together to pull a large burning bush.

## Education Days



To enrich the YCT experience, one day per week student crews worked with university professors and agency scientists. The student field scientists explored the connections between the habitat protection work they were performing and watershed ecology. They visited a local USEPA facility, where they performed several types of tests with different equipment to discover the effects of varying concentrations of sodium bicarbonate on streams. They also studied macroinvertebrates, soil characterization, mechanisms to slow water in a stream, green roofs, and the effects of solar radiation on evaporation at the UC Center for Biological Field Studies with Emeritus Professor Mike Miller, University of Cincinnati. Finally, the crew visited the Center for Ohio River Research and Education-Thomas More Field Station and tested water quality parameters, used electrofishing equipment, and learned about various ongoing experiments at the field station.



# Thanks to everyone who made the 2013 Campbell County Youth Conservation Team season a resounding success!!

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