



Ohio River Foundation's 2014 Youth Conservation Team

Background Information

The Ohio River Foundation's Youth Conservation Team (YCT) program has completed more than 150 projects in Ohio, Indiana, and Kentucky since its inaugural 2011 summer season.

What is a Youth Conservation Team?

The Ohio River Foundation's Youth Conservation Team (YCT) project comprises groups of five or six local high school students hired for summer habitat protection and restoration work. A Crew Supervisor organizes the conservation projects and schedules work for the teams. A YCT Program Manager oversees the program, provides training for the Crew and Crew Supervisor, 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).



Accomplishments



The Kenton YCT crew

In just three weeks, the team, comprised of six high school students led by a Crew Director and Program Manager, successfully completed 17 habitat conservation projects in the Ohio River Watershed. By the end of the session, the teams had saved Kenton County Conservation District in labor costs, and:

- ★ Planted 23 rare Shorts Goldenrod plants
- ★ Installed rain gauge and flags for Shorts Goldenrod monitoring project
- ★ Transported 65 gallons of water for new plants
- ★ Installed two 21' x 21' study plots in invasive removal sites
- ★ Removed 12,000 **ft.²** (36,000 lbs.) of invasives
- ★ Removed 900 lbs. debris



Summary of Conservation Practices

Type of Conservation Practice	Projects Completed
Plantings	1
Environmental Study Installation	3
Invasive Removal	10
Debris Cleanup	3
Total	17

Invasive Species Removal and Green Infrastructure



Hacking through a wall of Hemlock.



Chopping through some prickly Multiflora Rose.



Plants that are not indigenous or native can 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 (Multiflora Rose)



After

Grasslands in the watershed have many invasive species. Throughout the Morningview Heritage Area and the Kenton County Conservation District, multiflora rose (*Rosa multiflora*) suffocates the 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 is greatly reduced. The YCT took down about 12,000 ^{ft.²} (36,000 lbs.) of invasive Japanese honeysuckle (*Lonicera maackii*), grapevines, hemlock, multiflora rose, garlic mustard, and autumn olive.

Plantings



A crew member planting Short's Goldenrod with a U.S. Fish & Wildlife employee.



The Kenton YCT crew spent a large portion of their time removing invasive plant species. By planting native species this improves the chances that the native species will make a comeback. Furthermore, Shorts Goldenrod (*Solidago shortii*) is a federally listed endangered plant with few known populations only in Indiana and Kentucky. There was not previously a population in the Morningview Heritage Area, where the students worked.



A numbered freshly planted young Shorts Goldenrod.

The students placed numbered flags as they planted each plant, and surrounded them by rocks. This is to allow the county and state employees involved in the project to monitor the health and success of this attempt to establish a new population in this area.



Environmental Study Installation



Rain gauge in Shorts Goldenrod study area.

As previously mentioned, the crew installed numbered flags with each Shorts Goldenrod plant to allow their progress to be monitored. The crew also took soil samples and installed a rain gauge to allow monitoring of environmental conditions which may affect the success of this project.



Crew members using a chart to determine percentage of canopy cover over a plot.

To assess the effectiveness of the huge effort to remove invasives, two 21' x 21' study plots were installed. All invasive species were removed in one plot, and in the other, they were left alone as a control. The students also recorded the percentage of canopy cover over each plot, and observed the slope in each plot to ensure their initial conditions were approximately the same.



Debris Cleanup



The crew poses with their trash from a hard day's work.

In 2011, a tornado ripped through Northern Kentucky and deposited a large amount of debris in the Morningview Heritage Area. The crew picked up several bags of trash almost daily, removing nearly a thousand pounds of debris. This not only improves the aesthetic appeal of the area, but can protect local wildlife that may get stuck in or eat a piece of the garbage.



Education Days



Crew member finding some 'macros'. Professor Mike Miller teaching about turbidity.

To enrich the YCT experience, one day per week student crews worked with professors from area universities. The student field scientists explored the connections between the habitat protection work they were performing and watershed ecology. They learned about watersheds and riparian zones, different soil types and qualities, how to use a compass and create a field study plot, and pervious versus impervious surfaces. They studied what affects rates of light absorption in water, nutrients in water, runoff and absorption rates of different surfaces and soil types, macroinvertebrates and water quality, and how to assess stream health by its morphology through sediment erosion and deposition at the UC Center for Field Studies with professor emeritus Mike Miller, University of Cincinnati.



Crew members counting minnow eggs for a study. Student recording water chemistry data.

The students also took a trip to the Thomas More Field Station on the Ohio River to see professor Chris Lorentz, where they learned about the types of pollution, went electrofishing, used a YSI (a water quality testing instrument, capable of measuring multiple parameters) to take water chemistry, learned about the mussel life cycle and current ongoing mussel research, and learned about riparian trees on an interpretive hike. They also got to participate in a Bluntnose Minnow study by counting fish eggs on different color pvc pipes to determine substrate preference for breeding.

Thanks to everyone who made the 2014 Kenton County Youth Conservation Team season a resounding success!!

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ORF Youth Conservation Team Staff

Rich Cogen, Program Manager

Sarah Borgman, Crew Supervisor

Student Crew

Stella Childress and Natalie Woodward (Cooper HS), Crystal Nichols (S. Dearborn HS), Matt Harris (Beechwood HS), Jared Neiser (Campbell Cnty. HS), Cooper Hayes (Mariemont HS).