Ohio River Foundation's

2013 Youth Conservation Teams

Hoosier National Forest – Summer 2013

Background Information

The Ohio River Foundation's Youth Conservation Team (YCT) program has completed more than 100 projects in Ohio, Indiana, and Kentucky since its inaugural season in the summer of 2011.

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 work to fix runoff and erosion problems. A Crew Director organizes the conservation projects and schedules work for the teams. A YCT Program Manager oversees the program, provides training for the Crew and Crew Director, serves as liaison to the participating communities, and meets with interested conservation needs that can be met through YCT.

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

During a three week period, six high school students completed 44 habitat conservation projects in Hoosier National Forest. The focus for this crew was creating erosion diverting sites and stream crossing sites on trails.

- Constructed 2 stream crossings on a multipurpose trail

- Repaired 2 switchbacks on a multipurpose trail

- Installed 19 waterbars on steep areas of two trails

- Removed 87 lbs. of trash from two campsites and one trail

- Built 3 wildlife habitats for native insects and animals

- Performed trail maintenance along 11.1 miles of trail

- Spread approximately 100 tons of gravel and stabilized 1,075 ft. of trail

Summary of Conservation Practices	
Type of Conservation Practice	**Number Completed**
Wildlife Habitats	3
Erosion Control	22
Trail Stabilization	3
Trail Maintenance	11
Park Maintenance	2
Campsite Clean Ups	2
Total	**44**

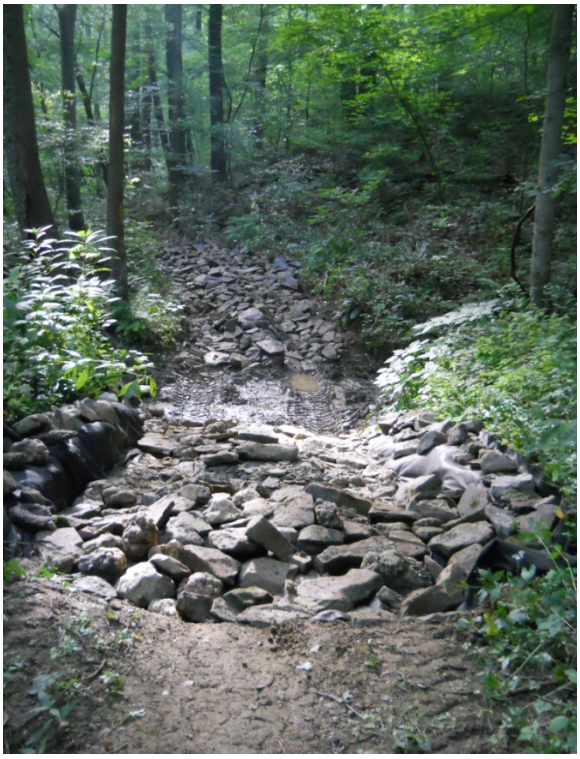
CAMPSITE/TRAIL CLEAN UPS

The YCT crew at Hoosier National Forest started their three weeks of conservation work with campsite and trail clean up. Crew members cleaned up two campsite areas (pictured left) and hauled trash along 1.5 miles of trail (pictured right). Clean ups help these areas return to their natural state and provides a safer environment for wildlife.

STREAM CROSSING SITES

Pictured above are the before and after photos for one of two stream crossing sites reconstructed on Hickory Ridge Trail #4. Horses cause most of the trail damage at these stream crossings and track sediment into the stream. By stabilizing each side of the stream crossing, the water that flows through these parts of the trail will remain clean.


The first step in the stream crossing reconstruction process was to cut pieces of geotech, then lay down the fabric on the slopes of the trail leading to the stream. The geotech provides the initial foundation and prevents vegetation from growing on the trail.

The second step in the process was to find riprap and lay it down on the geotech fabric in an even layer. Riprap is rock (weighing about 10 lbs each for this project) commonly used for shoreline protection against erosion. A tractor operated by National Forest Service staff helped transport the rocks to the geotech fabric. The rip rap helps keep the geotech fabric in place and stabilizes the slope.


The third step in the process was to lay gravel over the riprap to make the trail suitable for hikers. A tractor, dump truck, and ATV were operated by National Forest Service staff to bring gravel from gravel piles placed near the stream crossings prior to the start of the project. Finally, YCT crew members spread the gravel evenly with fire rakes.

TRAIL STABILIZATION

Before

After

Gravel was spread along 1,075 ft. of Hickory Ridge Trail #4 in low elevation areas to prevent the trail from becoming too muddy after heavy rains.

The gravel piles, where gravel was obtained to spread on the trail, was in place for many months and thus, acted to inhibit vegetation from growing. Brush (undergrowth, small trees, and shrubs) was spread evenly throughout the area to act as a natural deterrent to hikers so that the area will naturally fill in with vegetation again. Brush was also lined along the gravel trail to narrow it.

Before After

YCT crew hiked more than two hours to and from this switchback repair site. Switchbacks are sharp turns on trails that are located on steep slopes and are made to make the trail less steep and safer. The crew was able to change the slope from a 45° angle to 10° angle on the turnaround and extended it three feet. The crew also spread 3,600 lbs. of gravel along both switchbacks to stabilize them.

YCT crew members installed two postholes with shovels and posthole diggers, lined the trail with rocks, and filled in the space between with brush from the surrounding area to direct hikers to walk along the extended switchback.

TRAIL MAINTENANCE

Before After

“Brushing” trails is crucial to ensure hikers stay on the path and not damage nearby vegetation. Pate Hollow trail is a hike-only trail that had fallen trees/branches obstructing many areas from recent storms. The YCT crew hiked 13 miles along the Pate Hollow trail and used loppers to clear away minor brush. For bigger obstructions as pictured above, Pulaski axes and folding hand saws were utilized.

The YCT crew also performed trail maintenance along 4.5 miles of the Nebo Ridge trail.

YCT crew members pulled branches out of the way, used folding hand saws, and worked as a group to clear away large obstructions on pathways.

This small overhanging tree posed danger to hikers, due to being susceptible to falling at anytime. The HNF YCT posed with the small tree they removed.

WILDLIFE HABITAT CONSTRUCTION

The YCT enjoyed constructing and designing wildlife habitat for bees and other beneficial insects that have diminishing areas of habitat available. Bees prefer drier conditions and a small roof will be added to the habitat. The habitat may be used year round by different insect species.

To make the wildlife habitat, YCT crew members drilled holes of varying sizes into pieces of wood. Wood was gathered from nearby areas with fallen branches. Cedar wood was favored by the crew for its unique red color (pictured top left) and crew members had fun creating their own designs.

YCT crew posed with the wildlife habitat area they constructed in a formerly storm damaged location with lots of fallen branches. Their names from left to right are Catherine Kagemann, Callie Schulenburg, Lydia Cook, Rose Guardino, Brynn Taylor, and Rose Johnson. The branches were made into two small piles in a crisscross pattern with the largest on bottom and smallest on top. This arrangement allows for animals to make habitat out of the spaces between the branches. The crew also planted Butterfly Milkweed and Partridge Pea in the surrounding area to attract bees, butterflies, and other insects.

EROSION CONTROL

Grass was planted in a 1,600 sq. ft. severely eroded dirt area at Hardin Ridge beach. Grass roots hold soil and reduce erosion into nearby water (Lake Monroe).

The area was raked to loosen the soil for the grass to grow more efficiently. Then, 30 lbs. of grass seed was distributed evenly across the topsoil. Finally, hay was spread across the whole area to help retain moisture for the grass to grow.

Before After

Waterbars help prevent erosion on sloping trails by diverting water off the pathway. The YCT crew members repaired erosion damage and installed angled waterbars in intervals along steep areas of trails. The waterbars were constructed of dirt and gravel and a small trench was dug before each waterbar to capture most of the flowing water. Several waterbars were also constructed over wooden posts for additional support.

YCT crew members using fire rakes to fill the small channels on the trail caused by heavy rains.

EDUCATION DAYS

The education day with the Fuel Technician and Fire Crew provided an opportunity to develop a sense of the important and tough work Fire Crews perform. A Fuel Technician took the YCT crew to the fire tower at Hoosier National Forest to teach the benefits of prescribed fires. In the past, Oak and Hickory trees accounted for the majority of trees and provided habitat for many species of birds and other animals. Now, their numbers are much reduced while Maple and Beech trees have become more common. The prescribed fires are being used to help decrease the number of Maple/Beech trees so Oak/Hickory trees may thrive again. Regularly burned areas also have greater diversity than sites that are not regularly burned. Furthermore, Crew members learned about how to create the barrier so prescribed burns do not burn past their designated areas, which can be extremely dangerous.

The Fire Crew instructed crew members about the fire engine truck's features and drafted water from Lake Monroe to refill the water tanks.

The YCT crew was able to practice how to extinguish fire by setting up the hoses and spraying the edge of the forest with water. Afterwards, they were taught how to repack and store the hoses.

The YCT crew was able to observe some of the largest sinkholes, swallow holes, and pits (top left picture) located in Indiana. In the early 2000's many new species were discovered by taker a closer look at these caves/sinkholes. The Rise at Orangeville (top right picture) is a Registered Natural Landmark and is the second largest spring in Indiana. These springs fluctuate throughout the year and can rise or drop up to 50 feet.

A Wildlife Biologist educates the YCT crew just inside of a cave entrance about bats and the white-nose syndrome epidemic. Caves all over the United States no longer allow access to people to prevent the spread of the disease.

Thanks to everyone who made the 2013 Hoosier National Forest Youth Conservation Team season a resounding success!!

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