

# Ohio River Foundation's 2013 Youth Conservation Teams

## Daniel Boone National Forest – Summer 2013

### ACCOMPLISHMENTS

During a three week period, six high school students completed six habitat conservation projects at Daniel Boone National Forest. The focus for this crew was invasive plant removal using only hand tools.

- Removed 2,968 square feet of Chinese Silverplume Grass (169,176 grass plants) from a clearing in the forest
- Removed 144 Paulownia trees from a site previously opened by a forest fire
- Removed 210 lbs of trash from a 2 mile stretch of a stream
- Removed 184 lbs of Japanese Stiltgrass near a protected rare plant named White-haired Goldenrod

Summary of Conservation Practices	
<u>Type of Conservation Practice</u>	<u>Number Completed</u>
Creek Clean Ups	1
Invasive Species Removal	5
<b>Total</b>	<b>6</b>

## INVASIVE PLANT SPECIES -- CHINESE SILVERPLUME GRASS REMOVAL



The dominant invasive plant species removed was Chinese Silverplume Grass (*Miscanthus sinensis*). The plant is native to East Asian countries.



Chinese Silver Grass had invaded this open clearing in the forest (above). This plant colonizes in dense patches crowding out native species. Furthermore, when fire strikes the area these plants burn at a very high temperature that damages all the native trees.



Some of the *Miscanthus sinensis* grew in clumps, making it much more difficult to remove. Here, two crew members first use loppers to make it easier to access the plant roots. They then, continue to dig out the huge mound with shovels.



Crew members digging out Chinese Silverplume Grass.



Other invasive plants were also found in the open clearing like the Autumn Olive tree pictured left and the Multiflora Rose pictured on the right. Although these plants were not the main focus of activity, they were also removed to clear away space for native plants.



Making sure that roots of grass were completely removed was extremely important so that the grass would not grow back.



During the grass removal activity, the crew avoided damaging native species like this young pine tree and sumac tree. Native Poplar and oak trees were also found and left to grow.



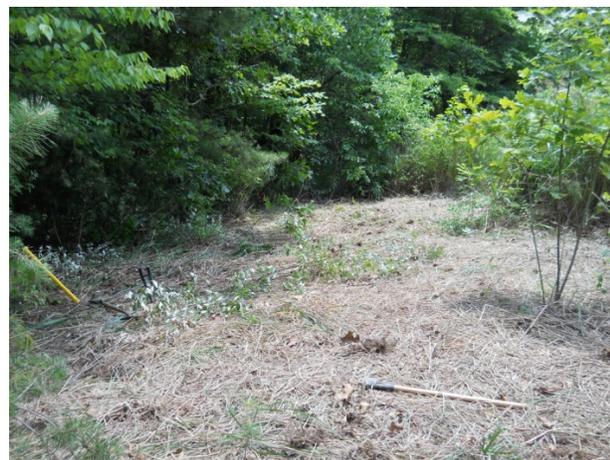
Crew members carried the Chinese Silverplume grass with wheelbarrows from the open field to the trailhead so that they could easily load up trucks later on. The open clearing was about 1,000 ft. down the trail from the trailhead. Pictured right was one of several large piles of Chinese Silverplume Grass removed from the clearing.



Crew members loading up pick-up trucks with the grass that will be taken to dumpsters.



AFTER



BEFORE

In only 7 days, crew members cleared away about 1/3 of the open clearing of invasive species. Wheat will be planted to deter the Chinese Silverplume Grass from re-establishing itself in the area.

## INVASIVE PLANT SPECIES -- PAULOWNIA REMOVAL



After a large fire struck in 2010, invasive Paulownia trees started growing in the burned areas. Although the tree does provide some benefits for the environment, it is not preferred by the native birds and animals. So removal is important before the trees become too large (thus, difficult to remove) and also spread many seeds.



Burned trees are damaged and have black sides at burn sites from the fire in 2010.



Paulownia trees are tagged to keep track of removal, and their GPS location is also recorded.



Crew member dig out Paulownia with hand tools, then hang them upside down to ensure they don't grow back. These trees are so resilient they will grow back even if left horizontal on a dead tree trunk.

### **INVASIVE PLANT SPECIES -- JAPANESE STILTGRASS REMOVAL**





## CREEK CLEAN UP DAYS



Swift Camp Creek is a special stream that flows into a Wilderness Area and eventually into the Red River which is Kentucky's only nationally designated "Wild and scenic" river.



Unfortunately the stream is polluted and many wheels like this one were found in the creek. Along with tires, trash included lots of plastic bags/containers, glass, and clothing. A propane tank was also found.



Crew members carried trash they picked up along a 2 mile stretch of the creek.



Another group joined the YCT crew to help clean up the creek. The yellow metal object was part of a broken abandoned boat.



These pictures show crew members hauling tire/trash up steep trails from the creek and loading them into trucks for proper disposal. Due to the steepness of some trails and being slippery from mud, instead of a person carrying a tire all the way up the trail themselves, everyone would work together to pass them to the next person. 11 tires were carried up 2-3 miles of trails from the creek.

## EDUCATION DAYS



National Forest Service staff educated the YCT crew on all the conservation practices they perform.



On this education day, crew members learned forestry plotting techniques such as using a prism to determine which trees to include in forest plots. Using these prisms can help loggers or forest staff determine trees per unit area (acre).



A YCT crew member learns how to take the circumference of a tree with measuring tape.



Forest plots evaluate the diversity/quantity of vegetation of a forest. Crew members learned to plot circular and square plots on different terrains to obtain a variety of samples. To make a plot, the quantity of all types of vegetation present in a small circular/square area is recorded. They took turns either measuring with the measuring tape, recording information, or identifying plants to be recorded.



Crew members were able to learn how to identify many plants such as rhododendron (pictured top left), chestnut oaks, wintergreen, sedge, sassafras, blueberry (pictured top right), briar, red maple, black oak, big leaf magnolia, black gum, sumac, Virginia pine, summer grape, loosestrife, Indian pipe flower, and many more. The students also compared species diversity and populations between burn and non-burn sites. By plotting the two different sites, crew members found that burn sites commonly have fewer trees. They also found that blueberries often grow quickly after a fire before other vegetation re-populates the area.



Crew members had a lot of fun getting their feet wet and finding different organisms in the stream. They learned how to take samples of aquatic invertebrates of the stream. A hydrologist from the forest service holds a hellgrammite found from the net. The crew also took a pebble count to determine the size of rocks/pebbles in streambeds and banks. Pebble counts give a great deal of information about streams such as how the stream is eroding, sediment supply, hydraulics, and much more.



Analyzing different organisms gathered from the stream, members compared the different invertebrates. Crew members learned different aquatic invertebrates and how dragonflies, mayflies, houseflies, crane flies, etc. all have an aquatic stage. A crew member in the top right photo holds an aquatic invertebrate.



This picture shows members seining to take a sample of the fish in the stream. Lots of creek chubs, darters, and shiner fish were found. The fish were placed in open containers that permitted further observation.



To get a variety of samples, it was important to take a sample of fish in different areas. Here a crew member is obtaining a sample near vegetation. Other areas included still water, in ripples, and under roots.



On this education day crew members learned all about wetlands and the different types of soils- dirt, clay, and sand. To identify a wetland, one must look at the water, vegetation, and soil in that area. Water does not need to be present year round for the area to be a wetland. During periods where there is not water in a wetland, it will normally be a few feet below ground level. In regards to vegetation, many ferns are a good indicator of wetlands. Regarding soil, clay is a good indicator of soil since clay holds water well. Pictured above is a crew member learning how to take soil core and afterwards analyzing the sample.



In this picture, a crew member is taking a tree core which can tell a lot of information about an environment. Things to look for while looking at a core are how far apart rings are from each other to examine the growth rate of the tree over a period of years.



BNF crew members

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

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