

Mill Creek Natural Area Forest Stand Improvement Invasive Species Control

Fall 2014 - Spring 2015



Mill Creek History

Mill Creek contains approximately 100 acres of predominantly dry-mesic upland forests

As well as four small crop fields, totaling about 15 acres, which will be enrolled in the Conservation Stewardship Program.



Mill Creek History

A stream, Mill Creek, flows within a beautiful sandstone community throughout much of the site.

The 115 acre property is in close proximity to Piney Creek Ravine Nature Preserve and Swayne Hollow Nature Preserve.



Mill Creek History

In 2012 Heartlands Conservancy and Clifftop jointly purchased Mill Creek Natural Area, in Randolph County.

It is the intent of both organizations to ensure the site remains in a high-quality natural state in perpetuity.



Past Treatments

In 2013 a Forest Stewardship Management Plan was developed by IDNR District Forester Mark Brown

In the fall of 2013 an initial round of invasive species control was conducted on 70 acres of the site by Martin Kemper



The Forest Management Plan indicated needs in two areas

An overabundance of less desirable tree species, including sugar maple, elm, sassafras, and box elder exists throughout the site



The Forest Management Plan indicated needs in two areas

Efforts will include removal of less desirable species on 100 acres to encourage regeneration of native oaks and hickories



The Forest Management Plan indicated needs in two areas

While invasive plant species are not
overrunning Mill Creek Natural Area, they are
sporadic throughout and heavy in some areas

Invasive species management will be
conducted on 100 acres



Long Forestry's Assignment

Provide forest stand improvement on the entire 100 acres

Targeting:

- Sugar Maple
- Box Elder
- Sassafras
- Elm



Long Forestry's Assignment

Provide initial treatment of invasive species control on 30 acres

Targeting:

- Autumn Olive
- Multi Flora Rose
- Bush Honeysuckle



Long Forestry's Assignment

Provide follow up invasive species treatments on the remaining 70 acres

Targeting:

- Bush honeysuckle
- Multi flora rose
- Tree of Heaven
- Japanese honeysuckle
- Autumn olive



Application Methods

Forest Stand Improvement

Cut stump
treatments and
single ring girdles



Application Methods

Invasive Species Control

Foliar spraying,
basal bark
applications, and
hand pulling



Forest Stand Improvement

Results - 2015

- Remove undesirable species like maple, elm, and box elder
- Get more sunlight to the forest floor
- Promote the growth of oak and hickory



Cut maples did not re-sprout after herbicide treatments



Patches of sunlight reach the forest floor after the FSI



Oak seedlings enjoying the sunlight 6 months after the FSI



**An oak seedling enjoys
the sunlight after it's
maple competitor is
removed**



**Oak seedlings
growing beneath
cut maples**



**Other competitors emerge in the
opened canopy, like sassafras**



A white oak over story



Invasive Species Control

Results - 2015

- Killed mature stands of Autumn Olive
- Eliminated Bush Honeysuckle from 70 acres
- Killed a Tree of Heaven patch without re-sprouts
- Treat patches of Japanese honeysuckle to allow native species to return



A patch of dead autumn olive treated via basal bark application



A patch of dead autumn olive treated via basal bark application



**A dead autumn
olive**

**Treated via a basal
bark application**



**A missed patch of autumn olive was found by LFC during a follow up inspection the following spring
LFC crews immediately returned to the site to clean it up**



**This is why Follow Up treatments are
so important when dealing with an
invasive species infestation**



An autumn olive seedling grows in front of mature bushes that were recently killed

New seedlings, re-sprouts, and missed plants are all reasons for follow up treatments



A dead Tree of Heaven treated via basal bark application



A patch of treated Japanese honeysuckle



A patch of Japanese honeysuckle is replaced with native jewel weed



Native flora return after the removal of invasive species like bush honeysuckle and multi flora rose



A forest under story free of invasive species



Lasting Results Fall 2016

**Illinois District Forester, Mark Brown,
inspected Mill Creek in September 2016**

“I re-conned Mill Creek last week and was pleasantly surprised by the results. When I initially checked the cutting work, few of the big maples were showing any signs of dying.”



Lasting Results - Fall 2016

“Last week I couldn’t find any that hadn’t died and many already failed at the girdle and fell. That can be a difficult call for us ... but that is typical for sugar maple.”

“Also, the oak regeneration looks to be coming along nicely and could be found in decent numbers over much of the woodland where sufficient seed sources were present.”



Lasting Results - Fall 2016

“We are planning on burning it this fall if conditions present themselves. Just wanted to let you know about a success story...

Kudos to you and your crew on a job well done!”



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Sustainable Forest Management