Tree Regeneration at Tifft Nature Preserve

Year Two Project Update

Funded by the Greenway Ecological Standing Committee

Goals of the Project:

1. Stewardship/Management
2. Environmental Education
3. Ecological Research
4. Public Enjoyment

We've Made Progress on All These Objectives

Brush Removal

Additional Mowing

Augering Holes

Invasive Species Control and Site Prep on 12 acres


350.org


RE-TREE WNY
RE-TREEWNY.ORG

Tree Planting Project

- These hardwood tree species grow in floodplain forest communities, which occur naturally in New York state on sites with similar conditions.
- These trees will eventually replace the existing canopy of trees and provide important habitat for wildlife, especially migratory songbirds.
- This project is funded by a grant to the Buffalo Museum of Science from the Niagara River Greenway Ecological Standing Committee.

Red Maple

Swamp White Oak

Silver Maple

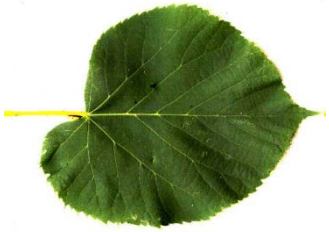
Sycamore

Black Willow

Eastern Cottonwood

Butternut

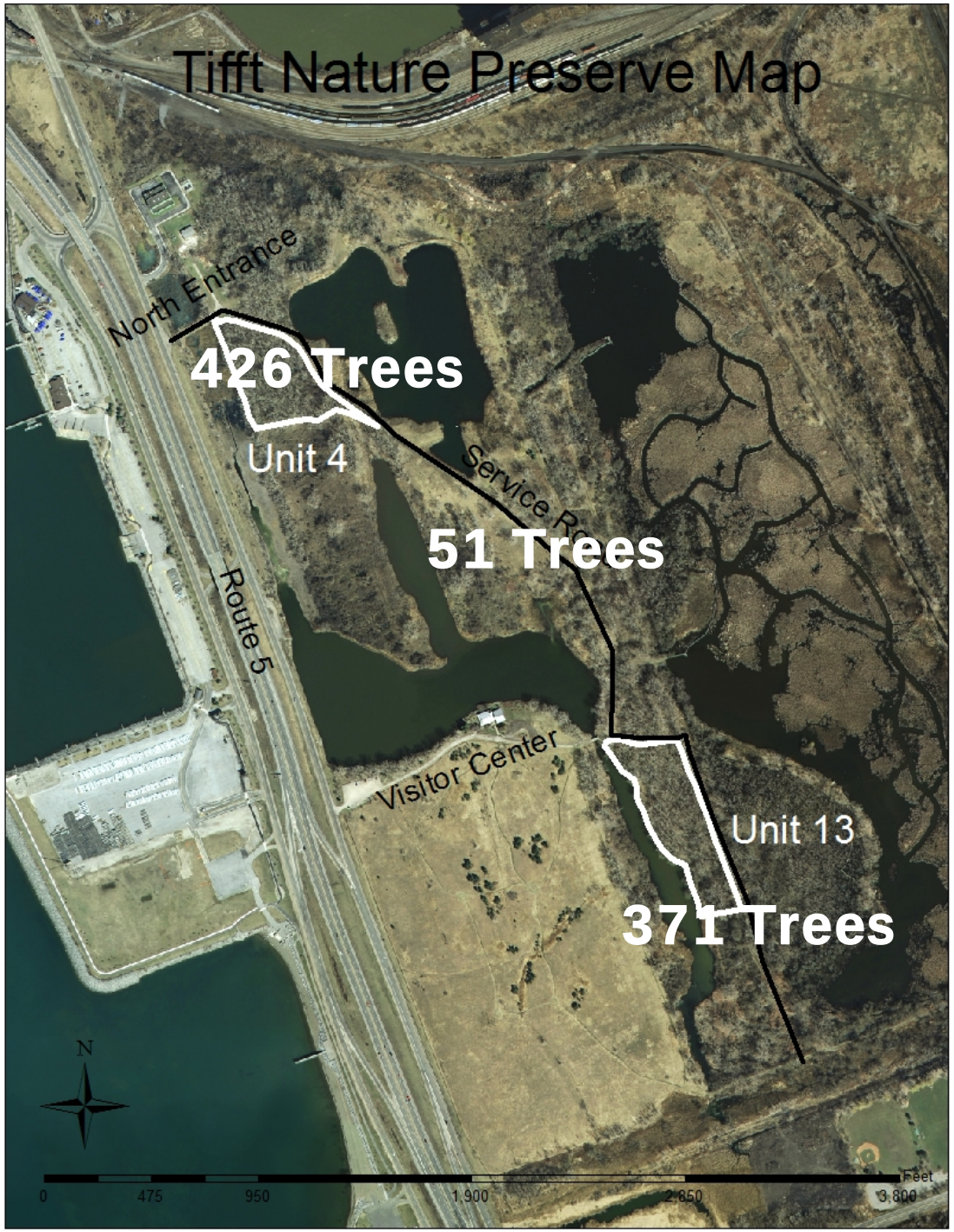
Shellbark Hickory



Basswood

Tifft Nature Preserve
Urban Nature Sanctuary
Buffalo Museum of Science

For more information stop by the visitor center or call us at 825-6397.



2011 Planting Total

848 Trees

Two Year Project Total

1227 Trees

27 Species

Watering Trees


06.07.2011

Summer Science Institute – Forest Dynamics

Wildlife Cameras for Education and Research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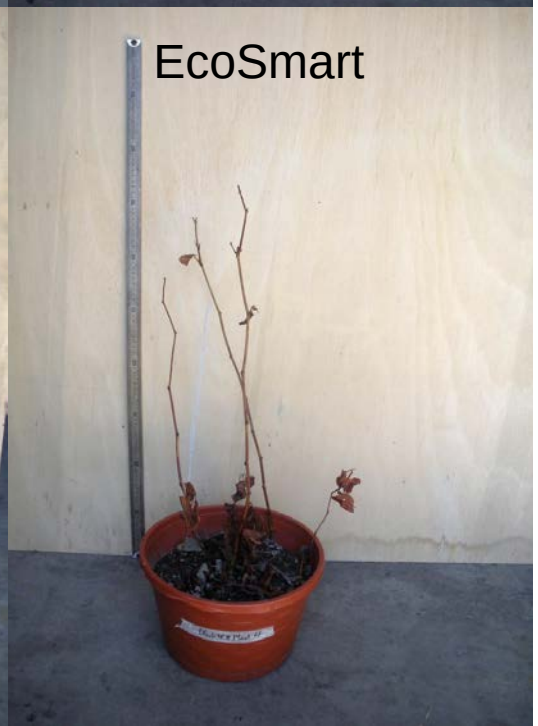
RECON
OUTDOORS

Deer Exclosure



Invasive Species Research

Bulletin of the Buffalo Society of Natural Sciences, Volume 40, 2011

EFFECTIVENESS OF TWO ALTERNATIVE HERBICIDES COMPARED TO A CONVENTIONAL CHEMICAL HERBICIDE FOR CONTROL OF JAPANESE KNOTWEED (*POLYGONUM CUSPIDATUM*)

David J. Spiering
Buffalo Museum of Science – Tifft Nature Preserve
1200 Fuhrmann Boulevard, Buffalo, New York 14203
dspiering@sciencebuff.org

ABSTRACT – Japanese knotweed is a non-native invasive plant that can establish large monotypic stands and have negative impacts on native species and ecosystems. Due to an extensive system of rhizomes it is difficult to control with mechanical techniques alone and herbicides are often used. This study was designed to collect pilot data on the effectiveness on controlling Japanese knotweed by two less toxic herbicides (EcoSMART, Phydura) compared to a conventional chemical herbicide (Roundup PROMAX). All herbicides reduced the number of leaves per plant compared to control plants, but only EcoSMART caused reductions similar to Roundup. Roundup may have more systemic effects on plants and also reduce the number of resprouts from rhizomes. Management implications for controlling invasive plants and impacts on non-target organisms from herbicides are discussed and future research is proposed.

KEYWORDS – Japanese knotweed, *Polygonum cuspidatum, Fallopia japonica, Reynoutria japonica,* herbicide, glyphosate, invasive plant control

INTRODUCTION

Japanese knotweed (*Polygonum cuspidatum* Sieb. & Zucc.; also *Fallopia japonica* Houtt., and *Reynoutria japonica* Houtt.) was introduced to Europe and North America from Japan in the 1800s and has become highly invasive. This herbaceous dioecious perennial grows in tall dense stands that can form large monocultures. The leaves and hollow bamboo-like stems die back at the end of the growing season and new shoots sprout from large system of rhizomes. Reproduction is mainly from the rhizomes, but internodes on cut or broken stems can also produce new sprouts. It can also produce viable seeds if male and female plants are present in a population. Japanese knotweed readily invades riparian areas and pond edges with moist nutrient-rich soils in full sunlight, but also grows in wetlands, woodlands and roadsides under a wide range of soil, moisture and light conditions (Seiger, 1991).

Japanese knotweed impacts the ecosystems it invades in many ways. It can influence soil organic matter and nutrient concentrations in the topsoil (Maurel *et al.*, 2010, Dassonville *et al* 2007). Native plant species richness and percent cover are significantly reduced along transects into knotweed stands (Muarel *et al.*, 2010), with no native plants occurring beyond 10 meters into knotweed stands (Maerz *et al.*, 2005). Terrestrial invertebrate communities are also changed by reductions in herbivores and increases in predators (Kappes *et al.*, 2007). In streams, aquatic invertebrates and hypomycete fungi assemblages that break down leaf litter differed in sites with and without knotweed in the riparian zone (Lecerf *et al.*, 2007). These effects can progress up through trophic levels to affect vertebrates. Green frogs (*Rana clamitans*) gained body mass during a captive feeding experiment in foraging buckets in non-invaded plots, while there was no increase in body mass and little evidence of feeding by frogs in foraging buckets within stands of knotweed (Maerz *et al.*, 2005).

Due to the negative impacts of Japanese knotweed on ecosystems, there is a desire by land managers to find effective control techniques. The extensive root system of established stands and prolific sprouting from rhizomes make mechanical techniques for invasive plant species management, such as pulling or cutting plants, ineffective unless

Budget

Trees & Supplies	**$30,342.96**
Site Prep	**$12,750.72**
Research & Education	**$492.03**
Salary & Administration	**$35,000.00**
Total*	**$78,585.71**

*As of 20 August 2011,
Fiscal year ends 30 September 2011

My Time

734 Hours (50% Match)

Friends of Tifft Nature Preserve

$2,500 Cash Match

$370 Buy-A-Tree Campaign

Volunteer's Contribution

9 Work Days

191 Volunteers

562 Hours

$4,074.50


Questions?