

Final Report

Wildlife Preservation Fund

Project Title: Control Exotics on the Ballard Nature Center

Grant Agreement Number: #13-001W

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Project Objective

Funding through the Wildlife Preservation Funds was awarded to Ballard Nature Center (BNC), for the purpose of assisting the center in efforts to control the spread of invasive exotic species on the center's grounds in Effingham County and at satellite areas located in Fayette and Cumberland Counties. The invasive species control was planned, following the Illinois Nature Preserves Commission guidelines and recommendations for the control of exotic invasive species in Illinois. Also the project was designed to focus primarily on forest communities but not to ignore the prairie restoration areas and wetlands.

To restore and maintain natural communities at BNC has been a primary objective for years at the center. The management process has included an exotic species control program. Many various exotic species have been kept in check on center's lands due to the diligence of the staff, consulting biologist, and volunteers. Yet, the work of invasive species control is an on-going task. Funding from the WPF grant enabled herbicide to be purchased. It also allowed a contractor to be hired for exotics control; thereby, the labor-intensive job could be completed without relying on inexperienced volunteers or the multi-tasking staff.

Introduction

BNC staff consulted with IDNR personnel and developed a strategy for controlling exotics plant species which had become invasive on BNC's lands. The strategy for invasive species control was formulated to align with the Illinois Nature Preserves Commission guidelines and recommendations. The WPF grant funds enabled the BNC staff to purchase herbicide for the control of invasive exotic plant species and to hire contractual help for herbicide application.

Completed restoration projects at the center are representative of prairies and forests that historically occurred in the Southern Till Plain Natural Division of Illinois. BNC staff and volunteers have restored approximately 100 total acres of prairie plots ranging from a few acres to 47 acres in size at the established Ballard Nature Center site and are ready to apply best practices in restoration at the sites in Fayette and Cumberland Counties. Also the BNC staff and volunteers have implemented timber stand improvement methodology for the purpose of augmenting forest habitat at the Effingham County site and plan to do so at the satellite sites. BNC staff members have learned that the eradication of invasive exotic plant species is a task requiring constant vigilance and intense labor. The staff members know that it is a task of utmost urgency.

Materials and Methods

The species found to be most prevalent of the exotic invasive plants growing upon BNC lands are bush honeysuckle and Japanese honeysuckle, *Lonicera spp.*; autumn olive, *Elaeagnus umbellata*; burning bush, *Euonymus alatus*; garlic mustard, *Alliaria petiolata*, and multi-flora rose, *Rosa multiflora*. Research indicates that the control of such invasive plants requires physical removal of individual plants, cutting or abrading stems and application of herbicide, and/or repeated prescribed burns.

The herbicide glyphosate (brand name of Round-Up) has been found to be effective in killing plant species under certain conditions, such as when the plant is actively growing, especially when applied liberally to the plant's foliage. Glyphosate was purchased and applied appropriately. Other herbicides such as triclopyr (brand name – Garlon) from the center's stores were also utilized.

Upon receiving the grant funds, the contractor who was hired was experienced in natural areas management, knowledgeable in plant identification, and familiar within herbicide application procedures. The contractor began work during late summer and early autumn. He selected days during which the weather was most appropriate for herbicide application. He chose his eradication technique (plant removal or treatment) according to the species and nature of the individual plant (size, amount of foliage, etc.) At times the contractor pulled selected plants. In treatment of woody plants, the contractor abraded the stems and applied herbicide to the abrasion or cut the stem and applied herbicide to the stump. Foliar application of glyphosate was conducted on the leaves of both woody and herbaceous exotic plants. The contractor worked a total of ninety hours with much evidence of his efforts. Staff and volunteers worked a number of hours. In addition, youth, involved in service-oriented projects, have participated in land management procedures. For example, a high school group from Ramsey volunteered their time and pulled winged wahoo.

Results

The completion of the contractor's work in eradication of invasive exotic plant species at Ballard Nature Center and its satellite sites brings much anticipation. The coming of spring will bring with it the chance to learn how effective the eradication procedures have been.

Careful and repeated observation of the treated areas will be executed by staff and volunteers, including a consulting biologist. Hopefully, those stems which were treated with herbicide will not show budding and will not leaf out this spring. Hopefully, stumps will not show sign of root sprout. Because techniques which follow guidelines and recommendations by the Illinois Nature Preserves Commission were employed, the result should be a marked decline in the population of invasive exotic plant species.

Discussion and Summary

Of much significance at BNC is the use of the restored prairie areas and improved woodland areas as outdoor classrooms for environmental education. The BNC lands and wetlands are also utilized as outdoor laboratories for biological research. Always procedures for exotics control have been decided upon after much research and thought. Procedures have been documented, and results will be surveyed. Thus, the acquisition of scientific insights into effective exotics

control will be consequence of the work at BNC. Those insights will contribute to a body of knowledge about land management and will add to education.

For Education of the General Public

Those benefiting: Plant species which will benefit from the eradication of exotic invasive species will include a great variety of woody species and forbs. Garlic mustard competes with understory wildflowers such as bluebells and Dutchman breeches for nutrients and water and sunlight; consequently stopping the spread of garlic mustard would enable the native woodland flora to proliferate. Likewise control of the woody invasives, such as the honeysuckles and autumn olive and multi-flora rose, would allow the emergence of tree saplings, such as oak and hickory trees, and the growth of native shrubs, such as serviceberry and the viburnums. Wildlife benefiting from restoration projects and exotic control projects would be a very diverse group ranging from brown thrashers and mockingbirds feasting upon the berries of the serviceberry bushes to monarch butterflies' caterpillars eating milkweed.

Specific Audience: All patrons of Ballard Nature Center stand to benefit. They will be afforded easy access to natural communities. As a result of a decrease in invasive exotics and improvements in habitat, patrons will have greater opportunities to view a diversity of plant and animal species. They will be able to educate themselves as they walk the interpretive trails, discovering Illinois's natural heritage in seeing the native plants rather than exotic ones.

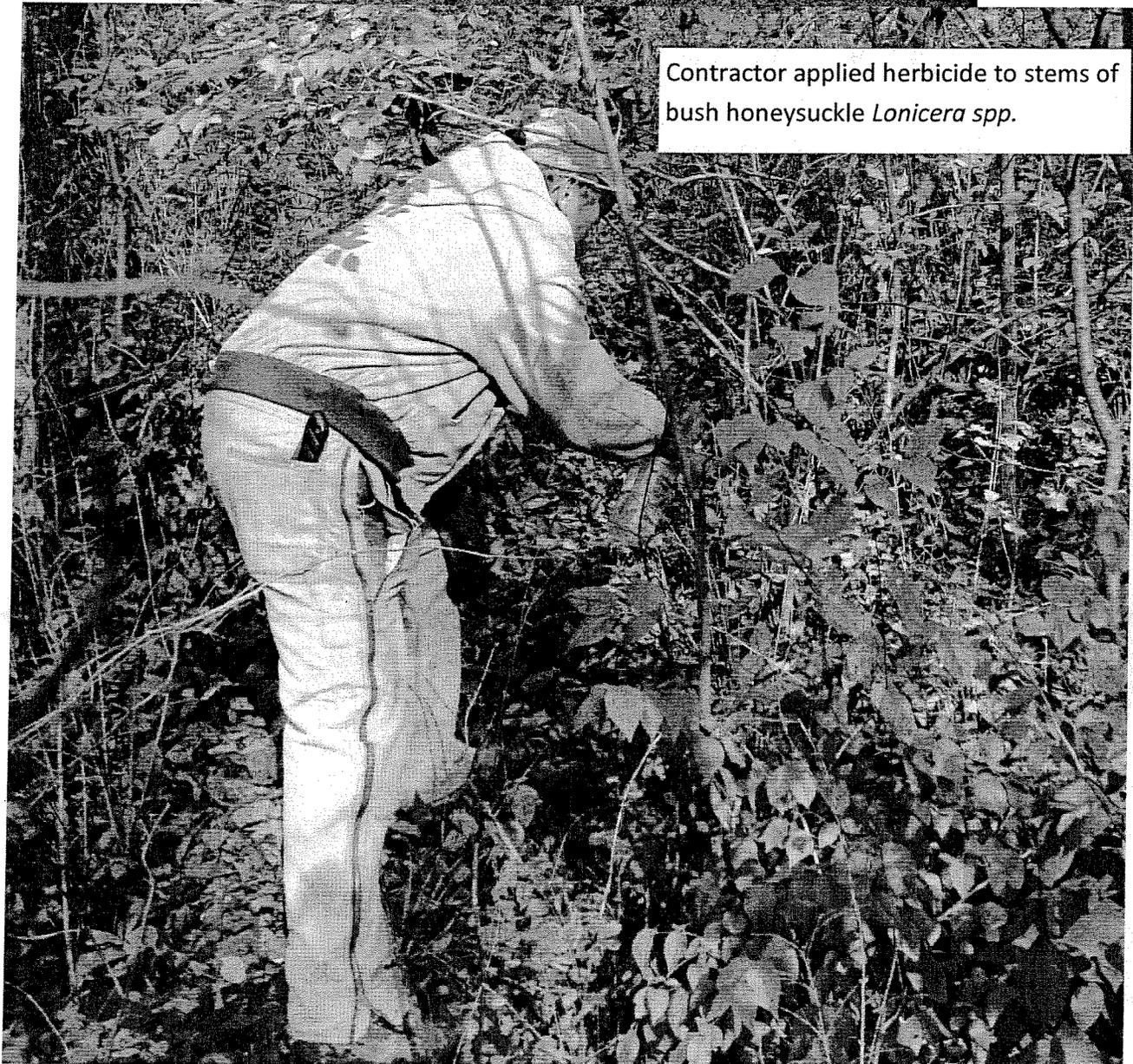
Measurable Outcomes: An observable outcome is the increase in the existence of certain botanical species which were earlier absence or lacking in number at the center's lands. Efforts to control exotics and to restoration natural communities will surely allow native species to proliferate. Since monitoring or surveying of the natural communities have been ongoing and will continue, the viewing of an enhancement in the diversity of plants (and possibly animals) will allow for a noticeable outcome. Acquisition of understandings, developed through field observations and the use of educational materials, although difficult to assess, is a hoped-for outcome.

Products: Enhanced diversity in natural communities and greater understandings among the center's explorers are expected.

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Images depicting study species, project site, project activities, etc.





Strategies for exotic species eradication included cutting stems and treating stumps as seen in photo. Woody stems were treated with triclopyr.



The leaves of this treated bush honeysuckle show signs of wilt. It is hoped that this plant has been eradicated through the use of herbicide glyphosate.



This photo of a springtime woodland, which reveals a dead autumn olive shrub, was taken prior to the fall of the WPF grant's project to control exotics. Land management strategies at BNC have included exotic eradication efforts for many years. This photo documents results.

Control of exotic invasive plant species have been successful at BNC.



Wooded area in Fayette County was treated for exotic invasive species during fall 2012. Area is designated approximately by the outlined rectangle.



Primarily the wooded areas of the nature center were treated for invasive exotic plant species. The outlined boxes indicate the areas where the contractor worked most thoroughly.

Grant helps Ballard Nature Center

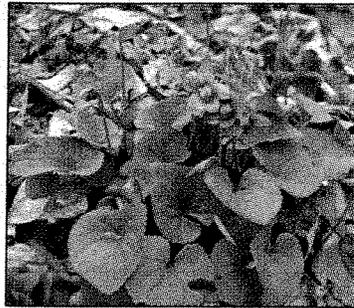
Visit the woodlands at Ballard Nature Center in the springtime and you will see lovely wildflowers, such as bluebells and violets, intermingled with tree saplings growing beneath a great number of tall trees, such as oak and hickory.

Work is being done at the center to assure that the spring wildflowers will bloom again despite the threat of competition from exotic invasive species. A healthy woodland community of plants and animals presently exists on the center's land, yet exotic species which spread rapidly and compete with native plants are an ever-present threat to the center's natural communities.

A grant from the IDNR's Illinois Wildlife Preservation Fund (IWPF) has allowed Ballard Nature Center's personnel to continue their efforts in the eradication of invasive exotic species on the center's lands.

The center's staff and volunteers, with help from scientists and experts, have developed and instituted timber-stand-improvement management techniques and prairie restoration procedures. Keeping the spread of invasive exotic plant species to a minimum is quite an undertaking. One way to prevent the growth of exotics is to pull them, root and all.

One spring, even some high school students contributed when they pulled winged wahoo or burning bush from the forest floor during a service-oriented field trip. Controlling invasives requires physical removal of individual plants, cutting or



abrading stems and application of herbicide, and/or repeated prescribed burns.

Support through the Illinois Wildlife Preservation Fund is an indication that Ballard Nature Center has been successful in providing high-quality environmental education, in maintaining balanced natural communities, and in offering wonderful opportunities for recreation in the outdoors.

Please remember to donate to the Wildlife Preservation Fund on your Illinois income tax returns. These donations effectively help preserve wildlife habitats and provide environmental education programming for the citizens of Illinois.