



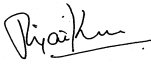
## Eastern District Innovative Grant Program

### Fiscal Year 2007/2008 Application Form

Completed application form should not exceed (3) pages, using a minimum font size of 11 point, retain form formatting, and no less than 1-inch margins. Submit completed application electronically to [karen.smiley@ces.uwex.edu](mailto:karen.smiley@ces.uwex.edu), and fax signature page (if electronic signature not available), by **noon on Friday, April 18, 2008**.

***Project must be completed by December 31, 2008, unless prior approval received for extended timeline.***

1. **Project Title: Garlic Mustard Management in Wisconsin (2008-2009)**
2. **Funding Requested: \$ 4992**
3. **Project Lead/Grant Applicant (Name & County): Vijai Pandian , Brown County**
  - a) **Project Collaborator(s) (if applicable) Mark Renz, UW Madison**

4. **Signature:**   
**(Vijai Pandian)**  
**Grant Applicant/Lead**

#### 5. Project Description

**Situation:** Garlic mustard is an invasive plant that has been rapidly spreading throughout Wisconsin, infesting a range of areas including urban forests, parks, and natural areas. This non-native plant has been documented to transform the ecosystem which it invades by reducing mycorrhizal associations with a range of native plants. This can result in reductions in plant establishment (especially hardwood trees) and cause large-scale shifts in species. While several management methods exist for garlic mustard that are effective at reducing populations, few land managers, park employees, and others who manage garlic mustard in urban areas are aware of how to use these methods successfully and efficiently as a part of their management program. For example it is widely known that glyphosate can control garlic mustard at 1-2% solutions, but often recommendations have been made for extremely high rates of application (3-4%) that are not necessary. In addition, other strategies are available and effective to land managers, but they are not aware of them or unsure how to properly apply these methods. Additional information is needed to educate practitioners on the benefits and costs of each management method, and the appropriate time to conduct such management. We propose to evaluate the effectiveness of seven management methods for garlic mustard at four different timings in 2008-9. In addition to the level of control we will also evaluate the costs of each method and the resulting impact on other resident vegetation. We propose to conduct this research at four locations in conjunction with county agents to collect data across Northeast Wisconsin and to address the need for information. This information would be of great benefit to the woodland owners, urban foresters, DNR, home owners, Master Gardeners in Northeast Wisconsin where garlic mustard is rapidly destroying the natural ecosystem in the woodland regions, making it inhospitable for wildlife, displacing native plants and causing decline in forest health.

## **Methods**

Plots will be established in four sites with representative garlic mustard populations in Eastern WI. Plots will be established in counties in cooperation with county agents interested in participating in the experiment. Seven treatments (see Table 1) will be established and replicated three times at two timings in the fall of 2008 and spring of 2009. Plots (5 x 20 ft each) will be established and all treatments will be conducted by Pandian and Renz. During the application of each treatment, the time to apply treatments and materials used will be recorded to estimate the cost of each management method. Effectiveness of treatments on garlic mustard and other plants will be visually evaluated by both agents and researchers at monthly intervals during the summer then areas will be visited the following summer after treatments. To minimize the spread of populations and confound long-term control, all nearby garlic mustard excluding untreated controls will be managed to prevent seed production. During 2009, a field-day will be scheduled to present data to the public and discuss how these results can be incorporated into management plans for managing garlic mustard in urban areas.

## **Expected Outcomes**

- Participants (agents, land managers, field-day attendees) will learn the appropriate timing to implement garlic mustard management techniques.
- Participants (agents, land managers, field-day attendees) will become familiar with the costs and benefits of common garlic mustard management techniques.
- Agents and land managers will view the costs and benefits of specific management methods on how to manage garlic mustard in urban areas.
- Information learned will be summarized and presented throughout the state (by Renz, Pandian, and other agents involved).
- Information will be summarized and written into an extension fact-sheet, published in a peer reviewed journal (e.g. Journal of Extension)

## **Activities Planned to Achieve Outcomes**

- Plots will be established in four sites with representative garlic mustard populations in Eastern WI
- Performance of the treatments will be evaluated by county agent in conjunction with land manager
- A field-day will be conducted to view results.
- Information will be analyzed and written so that it will be useful for extension agents to incorporate into other extension activities.

## **Project Time line:**

- October 2008 – Fall treatment application
- April – May 2009 – Spring treatment application
- June 2009- Treatment evaluation
- July 2009 - Treatment evaluation
- August 2009- Summer field day
- September – December 2009 – Fact sheet, presentations at meetings

## **Evaluation Plan:**

Evaluation of the program's success will be reported annually based on:

- Number of people that attended the field-day
- Number of people that results were presented to at various conferences
- Number of fact-sheets provided to people with regards to the results
- Number of individuals that changed management as a result of information (survey)

Table 1. Proposed treatments to conduct at 4 locations throughout Wisconsin.

#	Treatment	Rate	Application method
1	Glyphosate (Roundup) + AMS	0.0041 % (1.0 %) + 0.1 lbs/gal	Spot treat
2	Glyphosate (Roundup) + AMS	0.0082 % (2.0 %) + 0.1 lbs/gal	Spot treat
3	Glyphosate (Roundup) + AMS	0.75 lbs ae/A (22 fl oz/A) + 0.1 lbs/gal	Broadcast
4	Metsulfuron (Ally/Escort)	0.25 oz/A	Broadcast
5	Handpulling	NA	Spot treat
6	Mowing	NA	Broadcast
7	Untreated		

**6. Detailed budget breakdown (specifying the amount and purpose of funds requested from District Resource Management funds, and clarifying the source and amounts from other funds):**

**Budget: 2008 & 2009**

Category	Description	Pandian	Cost
Salary	LTE @ \$9.00/hr	400 hrs	\$3,600
LTE Travel	\$0.48/mile	1500 miles	\$720
State Specialist Travel (Dr. Renz)	\$0.48/mile	1400 miles	\$672
		<b>TOTAL</b>	<b>\$4992</b>

**7. If you have received Resource Management funds for a similar/related project, in the past, include the following information:**

- a) Briefly describe your past experiences with resource management grants – project focus, funding received, project collaborators
- b) How is this project proposal new or different?