



Environment and Natural Resources Trust Fund (ENRTF)

M.L. 2013 Work Plan

Date of Status Update Report: October 2, 2012

Date of Next Status Update Report: January 2014

Date of Work Plan Approval: June 11, 2013

Project Completion Date: June 30, 2016

Is this an amendment request? ____

PROJECT TITLE: Controlling Terrestrial Invasive Plants with Grazing Animals

Project Manager: Suzy Meneguzzo, Executive Director

Affiliation: Hiawatha Valley Resource Conservation & Development Council

Mailing Address: 3936 E Frontage Road, Suite 114

City/State/Zip Code: Rochester, MN 55901

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Location: Olmsted County plus one other site within the eleven county area including: Rice, Steele, Dodge, Freeborn, Mower, Fillmore, Houston, Winona, Wabasha, Goodhue, Olmsted.

Total ENRTF Project Budget:

ENRTF Appropriation: \$52,000

Amount Spent: \$0

Balance: \$52,000

Legal Citation: M.L. 2013, Chp. 52, Sec. 2, Subd. 06g

Appropriation Language:

\$52,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with Hiawatha Valley Resource Conservation and Development, Inc. to develop cost effective best management practices to control invasive terrestrial species through planned grazing. This appropriation is available until June 30, 2016, by which time the project must be completed and final products delivered.

I. PROJECT TITLE: Controlling Terrestrial Invasive Plants with Grazing Animals

II. PROJECT STATEMENT: Terrestrial invasive plants including buckthorn, wild parsnip, garlic mustard and others are becoming dominate species at an alarming rate in many ecological sites in SE Minnesota. Present chemical and mechanical control methods are costly, effective only in the short-term or have other negative environmental impacts. Prescribed grazing for invasive plant management has been used in many parts of the western US to manipulate patterns of defoliation and disturbance to place target plant species at a competitive disadvantage. This is often done by grazing at a time and frequency when target plants are most vulnerable to prevent flower and seed production. Grazing management that employs multispecies (goats, sheep and cattle) grazing techniques takes advantage of each animal’s inherent dietary preferences among different livestock classes. Benefits include reducing the competitive advantage of one plant over another by creating equal pressure on grasses and forbs in a community.

The goal of this project is to: 1) develop a cost effective and environmentally friendly alternative to chemical and mechanical control methods for these species, 2) demonstrate that multispecies grazing techniques can be used effectively to control invasive plants, 3) distribute results during field day demonstrations to connect livestock producers with landowners in the SE Minnesota Driftless Area and 4) develop a Best Management Practice for invasive species control using sustainable grazing management as a component of an overall management plan.

Sites with the target species will be selected and grazed at different durations and intensities using multispecies grazing techniques. The grazing duration, intensity, frequency and timing will be evaluated to determine the most successful method for invasive plant control. Monitoring will be conducted during the spring, summer and fall for three years to document the effect of prescribed grazing management. Control plots will also be established and managed with mechanical or chemical treatments for comparison.

This project will allow Hiawatha Valley RC&D to continue grazing efforts already initiated during the 2011 and 2012 growing seasons to expand federal funds previously earmarked for the Driftless Area Initiative. We envision this project will be the mechanism to transfer small localized prescribed grazing knowledge and sustainable techniques to a broader audience across the SE Minnesota Driftless Area.

III. PROJECT STATUS UPDATES:

Project Status as of January 2014:

Project Status as of July 2014:

Project Status as of January 2015:

Project Status as of July 2015:

Project Status as of January 2016:

IV. PROJECT ACTIVITIES AND OUTCOMES:

ACTIVITY 1: Inventory, Monitoring, Evaluation and Documentation

In this project, at least two sites will be selected with terrestrial invasive species present and herdsman available to graze animals on these sites in an attempt to disrupt the growth of these plants in favor of more desirable species. We will carry out a detailed monitoring plan to include information on vegetative change, general animal health and weight gains, and the related economic implications.

Site conditions will be documented through photographs and vegetation transects at initiation and as the project progresses (spring, summer and fall).

Grazing management techniques will be monitored and evaluated to determine grazing duration, intensity, frequency and timing modifications required to determine the most effective management for target and non-target species.

Animals will be monitored to determine optimal animal and herd size. Producers will be asked to monitor weight of animals at initiation of grazing and at conclusion, amount of supplemental feed provided to animals, any other supplements received, types of veterinary treatments received, and amount of time for caring for herd and moving fences.

Control plots will be established using alternative methods of species control including chemical controls, burning, and physical removal. These plots will be monitored for method comparisons for outreach at field demonstration days.

Summary Budget Information for Activity 1:

ENRTF Budget: \$ 18,000
Amount Spent: \$ 0
Balance: \$ 18,000

Activity Completion Date:

Outcome	Completion Date	Budget
1. Baseline data collection, vegetation transects, and photograph documentation	September 2015	\$3,000
2. Evaluation of grazing modifications (if necessary) for targeted and non-targeted species.	May 2015	\$8,000
3. Inventory, evaluate & document control sites receiving mechanical and chemical treatment	September 2015	\$7,000

Activity Status as of January 2014:

Activity Status as of July 2014:

Activity Status as of January 2015:

Project Status as of July 2015:

Project Status as of January 2016:

Final Report Summary:

ACTIVITY 2: Prescribed Multispecies Grazing of Target Species

Description: At least two sites will be used for this project. One has already been identified (and used in the past) and the other will be identified through an RFP process. Once identified, these sites will be inventoried as to the type of ground cover, presence of invasive species, and other relevant factors as outlined in the previous activity.

Next, livestock producers will be sought to implement prescribed grazing. These producers would need to have the capacity to provide a large enough herd and appropriate animals for the grazing project. Producers would also need to have the capacity to move fences and animals as needed. Finally, any producer chosen for this

project would have to have the ability to measure and provide data on the evaluation points outlined in the previous activity.

The final decision on producers has not yet been made. Currently, a veterinarian with a small goat herd has provided the grazing herd. It may also be possible to use this project as an opportunity to work with young people managing herds or diverse members of the population. A side benefit of this project is to determine whether managing herds to control invasive species is a viable business model.

Once the site and producers are identified, a grazing plan will be developed for each site. In addition to involving the producers and landowners, grazing and other technical experts will also be involved in the development of this plan including Soil and Water Conservation District, NCRS, DNR and others. The plan will identify paddock locations, grazing duration, intensity and frequency during the plants' most vulnerable stage in the reproductive cycle to interrupt flower/seed production. Producers will implement the grazing plan, monitor, and adjust stocking rates as needed. They will also gather the data outlined in Activity 1.

Summary Budget Information for Activity 2:

ENRTF Budget: \$ 24,000
Amount Spent: \$ 0
Balance: \$ 24,000

Activity Completion Date:

Outcome	Completion Date	Budget
1. Select sites with target species & develop site-specific grazing plans (annually)	March 2014	\$8,000
2. Commit to management plans including grazing strategy, paddock enclosures & water sources	September 2015	\$12,000
3. Adjust stocking rates and duration to provide desired control of target species	July 2014	\$4,000

Activity Status as of January 2014:

Activity Status as of July 2014:

Activity Status as of January 2015:

Project Status as of July 2015:

Project Status as of January 2016:

Final Report Summary:

ACTIVITY 3: Outreach, Education, BMP Development and Reporting

Description: As the grazing implementation progresses, information will be distributed using a variety of methods. At least twice during each year of the grant, field days will be held. The field day will educate the public and land use professional about effective alternative control methods for invasive plant management. Field days will include tours and will request input from participants for BMP development. Additional information will be shared in press releases and articles in appropriate publications. Information will also be shared with other partners (for example site partners Gamehaven Ranch).

Summary Budget Information for Activity 3:

ENRTF Budget: \$ 10,000
Amount Spent: \$ 0
Balance: \$ 10,000

Activity Completion Date:

Outcome	Completion Date	Budget
1. Host 2 field demonstrations per year (6 total)	May 2016	\$6,500
2. Develop multispecies prescribed grazing BMP for invasive plants	March 2016	\$2,000
3. Distribute results and final reporting	June 2016	\$1,500

Activity Status as of January 2014:**Activity Status as of** July 2014:**Activity Status as of** January 2015:**Project Status as of** July 2015:**Project Status as of** January 2016:**Final Report Summary:****V. DISSEMINATION:**

Description: At least twice during each year of the grant, field days will be held. The field day will educate the public and land use professional about effective alternative control methods for invasive plant management. Field days will include tours and will request input from participants for BMP development. Additional information will be shared through written and on-line media. Media to be included are regional farm publications, local news sources, and through related agency publications such as USDA and Soil and Water Conservation District Newsletters. Finally, information will be shared with other partners (for example, site partners Gamehaven Ranch).

Activity Status as of January 2014:**Activity Status as of** July 2014:**Activity Status as of** January 2015:**Project Status as of** July 2015:**Project Status as of** January 2016:**Final Report Summary:**

VI. PROJECT BUDGET SUMMARY:

A. ENRTF Budget:

Budget Category	\$ Amount	Explanation
Personnel:	\$ 0	
Professional/Technical/Service Contracts:	\$ 46,000	Herdsman/Monitoring contractors (0.32 FTE), Inventory and monitoring contractor (0.35 FTE), project manager (0.13 FTE)
Equipment/Tools/Supplies:	\$ 1,000	Chemicals for control plots
Printing:	\$ 4,000	General copying required for detail site plans and evaluations; publication of results as handouts for related tours and meetings; and, publication and printing of the BMP document to be shared with conservation professionals and livestock farmers.
Travel Expenses in MN	\$1,000	Mileage, Lodging, Meals
Other:	\$0	
TOTAL ENRTF BUDGET:	\$ 52,000	

Explanation of Use of Contracted Staff Also Serving as Executive Director: The Hiawatha Valley RC&D is a small nonprofit serving southeast Minnesota. At this time staff assistance is provided through contracted services of an executive director/program manager, a temporary part-time contracted program manager assigned a specific project during the funding period of that project (ending September 30, 2013), and bookkeeping services. The contracted executive director/program manager would be assigned this project due to the three year timeframe associated with the project, and the experience of that individual in working with farmers of southeast Minnesota. Time and expenses of this individual are accounted for in detail, and not comingled with the responsibilities carried out in service as executive director. We do request approval to utilize the contracted executive director/program manager for project management of this proposal.

Explanation of Capital Expenditures Greater Than \$3,500: N/A

Number of Full-time Equivalent (FTE) funded with this ENRTF appropriation: N/A

Number of Full-time Equivalent (FTE) estimated to be funded through contracts with this ENRTF appropriation: 0.80

B. Other Funds:

Source of Funds	\$ Amount Proposed	\$ Amount Spent	Use of Other Funds
Non-state			
In-kind	\$ 24,000	\$	NRCS development and monitoring of Grazing plans
In-kind	\$ 36,000	\$	Grazing land (value of rental)
State			
TOTAL OTHER FUNDS:	\$ 52,000	\$	

VII. PROJECT STRATEGY:

A. Project Partners:	John Zinn	NCRS-USDA	\$0
	George Poch	Private Soil Scientist	\$0
	Mike Muzzy	NRCS-UDSA	\$0
	Kurt Hinz	Minnesota DNR	\$0

B. Project Impact and Long-term Strategy:

Terrestrial invasive plants including buckthorn, wild parsnip, garlic mustard and others are becoming dominate species at an alarming rate in many ecological sites in SE Minnesota. Present chemical and mechanical control methods are costly, effective only in the short-term or have other negative environmental impacts. Establishing a BMP using grazing for wider spread use to control invasive species has potential in several areas: minimizing use of physical or chemical interventions, cost effectiveness, introduction of a business model for managing herds for invasive species management, and of course, controls of invasive plants and return to native species.

This project builds on grazing efforts already initiated by Hiawatha Valley RC&D during the 2011 and 2012 growing seasons and expands on federal funds previously earmarked for the Driftless Area Initiative. We envision this project will be the mechanism to transfer small localized prescribed grazing knowledge and sustainable techniques to a broader audience across the SE Minnesota Driftless Area.

C. Spending History:

Funding Source	M.L. 2007 or FY08	M.L. 2008 or FY09	M.L. 2009 or FY10	M.L. 2010 or FY11	M.L. 2011 or FY12-13
USDA-NRCS Conservation Technical Assistance Program-Driftless Area Initiative					\$16,500

VIII. ACQUISITION/RESTORATION LIST: N/A

IX. MAP(S): N/A

X. RESEARCH ADDENDUM: N/A

XI. REPORTING REQUIREMENTS:

Periodic work plan status update reports will be submitted not later than January 2014, July 2014, January 2015, July 2015, and January 2016. A final report and associated products will be submitted between June 30 and August 1, 2016 as requested by the LCCMR.

Environment and Natural Resources Trust Fund

M.L. 2013 Acquisition/Restoration List

Project Title: Controlling Terrestrial Invasive Plans with Grazing Animals

Project Manager Name: Suzy Meneguzzo

M.L. 2013 ENRTF Appropriation: \$52,000

#	Acquisition or Restoration Parcel Name	Geographic Coordinates		Estimated Cost	Estimated Annual PILT Liabilities	County	Ecological Significance	Activity Description	# of Acres	# of Shoreline Miles	Type of Landowner	Proposed Fee Title or Easement Holder (if applicable)	Status
		Latitude	Longitude										
1	Rochester Site	43.9454	-92.43849	\$ -	\$ -	Olmsted	Wooded Area with significant Buckthorn and Wild Parsnip Infestation	Removal of Invasive Species (Buckthorn, Wild Parsnip)	200 Acres		City Government		In discussion with Landholder
2	Spring Valley Site	43.70673	-92.35277	\$ -	\$ -	Fillmore	Wooded Area with significant Buckthorn and Wild Parsnip Infestation	Removal of Invasive Species (Buckthorn, Wild Parsnip)	65 Acres		City Government		In discussion with Landholder
3													

NOTES:

Attachment A: Budget Detail for M.L. 2013 Environment and Natural Resources Trust Fund Projects

Project Title: <i>Controlling Terrestrial Invasive Plants with Grazing Animals</i>											
Legal Citation: M.L. 2013, Chp. 52, Sec. 2, Subd. 06g											
Project Manager: <i>Suzy Meneguzzo</i>											
M.L. 2013 ENRTF Appropriation: \$ 52,000											
Project Length and Completion Date: <i>July 2016 (Three Years)</i>											
Date of Update: 5/23/2013											
ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET											
	Activity 1 Budget	Amount Spent	Balance	Activity 2 Budget	Amount Spent	Balance	Activity 3 Budget	Amount Spent	Balance	TOTAL BUDGET	TOTAL BALANCE
BUDGET ITEM	<i>Inventory, Monitoring, Evaluation & Documentaiton</i>			<i>Prescribed Multispecies Grazing of Target Species</i>			<i>Outreach, Education, BMP Development and Reporting</i>				
Professional/Technical/Service Contracts											
Suzy Meneguzzo, Project Manager: project facilitation, coordination, monitoring, outreach and reporting	2,000		2,000	2,000		2,000	4,000		4,000	8,000	8,000
TBD (competitive bid): vegetative monitoring, grazing plan development, manage and monitor control plots, BMP development	14,400		14,400	4,400		4,400	1,700		1,700	20,500	20,500
Landowner/Herdsman (TBD): Service Contract to manage herd, plan decision maker, implement and manage BMP, monitor economic, herd and vegetative status.				17,500		17,500				17,500	17,500
Equipment/Tools/Supplies											
chemicals/manual removal for control plots	1,000		1,000							1,000	1,000
Printing											
General copying (Sharing of Inventory and Evaluation Plans as well as Grazing Plans and Findings between partners, Outreach for Field Days)	100		100	100		100	300		300	500	500
Publications and Information (Development, Printing and Distribution of final print piece on Project Findings/Best Practices)							3,500		3,500	3,500	3,500
Travel expenses in Minnesota mileage, lodging, meals. (To Field Days and for management of herders/supervision of sites)	500		500	0		0	500		500	1,000	1,000
COLUMN TOTAL	\$18,000	\$0	\$18,000	\$24,000	\$0	\$24,000	\$10,000	\$0	\$10,000	\$52,000	\$52,000



Controlling Terrestrial Invasive Plants with Grazing Animals
ENRTF Restoration and Enhancement Requirements
May 24, 2013

Terrestrial invasive plants including buckthorn and wild parsnip are becoming dominate species at an alarming rate in many ecological sites in southeastern Minnesota. Through this project, Hiawatha Valley RC&D will demonstrate the use of grazing animals as an effective alternative method of invasive control and evaluate and share best practices of this method.

The goal of this project is to: 1) develop a cost effective and environmentally friendly alternative to chemical and mechanical control methods for these species, 2) demonstrate that multispecies grazing techniques can be used effectively to control invasive plants, 3) distribute results during field day demonstrations to connect livestock producers with landowners in the SE Minnesota Driftless Area and 4) develop a Best Management Practice for invasive species control using sustainable grazing management as a component of an overall management plan.

Restoration and Enhancement Plans

The scope of this project will allow Hiawatha Valley RC&D to work intensively on two sites. While negotiations are ongoing with both landowners, we anticipate selecting sites owned by the city of Rochester and city of Spring Valley.

Both sites are wooded areas in which the invasive species of buckthorn and wild parsnip have gotten a significant foothold. Both sites also have road access, fresh water available, and enough plants to sustain the grazing animals with minimal supplements. When this project is successful, these sites will have reduced the presence of these invasive species and be ready for reintroduction of native plants.

Once site selection is final, Hiawatha Valley RC&D will move to the assessment stage. Photos and transects of each parcel will determine and document the current site conditions in relation to the presence of buckthorn and wild parsnip. Photos and transects evaluating the presence of these species will be conducted at least three times annually for each year of this grant to track our progress.



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Concurrently, grazing plans will be developed for each site and herd. Working with a National Conservation Service Grazing Specialist, as well as the herdsman, Hiawatha Valley RC&D will establish a grazing plan that considers current vegetation, development stage of invasive species, and nutritional needs of grazing herds to manage the frequency and intensity of grazing on each site.

Both the site assessment and the grazing plans will be monitored on an ongoing basis so that adjustments can be made as needed to achieve optimal impact.

Long Term Maintenance

Upon completion of this grant, there will be a reduction in invasive species present on the identified parcels. Hiawatha Valley RC&D will work with each city to identify opportunities to reestablish native species to prevent reemergence.

This type of project allows Hiawatha Valley RC&D to take advantage of its local networks to provide labor for this type of project. It also fits within our mission to aid the cities in seeking out funding, whether through our connection to state funders such as the Department of Natural Resources or federal agencies such as Natural Resource Conservation Service or through private funders.

Minnesota Conservation Corps

In our efforts to demonstrate the effectiveness of grazing in controlling invasive species, Hiawatha Valley RC&D will manage control plots adjacent to the grazed plots. This will allow for a side by side comparison of various methods. The control sites will either be chemically treated or manually cleared of buckthorn and wild parsnip.

Hiawatha Valley RC&D will look to work with the Minnesota Conservation Corps to provide those clearing services.



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Evaluation

Evaluation is a key component of this project. Hiawatha Valley RC&D will conduct regular assessment of the sites and the animals (via the herdsman) to maximize our impact on the Invasives. Sharing these findings as they develop is fundamental to this request.

In addition to sharing our findings with the landowners, herders, and the general public at least twice annually, Hiawatha Valley RC&D will provide the Project status reports as outlined in the original work plan.

Finally, at the conclusion of the grant, Hiawatha Valley RC&D will assess our progress on controlling invasive species on each site. Again using transects and photos, we will determine and document the presence of invasive species. This will both evaluate the condition of the sites as well as inform the grazing best practices. Hiawatha Valley RC&D further commits to revisiting the sites after three years to again assess, ideally with photos and transects, the condition of the sites in terms of invasive species.

To see all the details that are visible on the screen, use the "Print" link next to the map.



Potential
Rochester
Site

Gamehaven
Reservoir Park

Gamehaven
Lake

Gamehaven Roads

45th St SE 45th St SE 45th St SE 45th St SE

50 St SE

St Bridgets Rd SE

5/24/2011

<https://maps.google.com/>

Spring Valley Bike Trail

Trail



County Road 8

County Road 8

County Road 8

Waste Water Treatment Plant

Potential
Spring
Valley Site



0.5 Miles

0.25

0