



Environment and Natural Resources Trust Fund

M.L. 2025 Final Work Plan

General Information

ID Number: 2025-176

Staff Lead: Tiffany Schaufler

Date this document submitted to LCCMR: July 14, 2025

Project Title: Evaluating Native Seed Mixes for Grazing

Project Budget: \$208,000

Project Manager Information

Name: Joshua Lallaman

Organization: Restoravore

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Web Address: www.restoravore.org

Project Reporting

Reporting Schedule: March 1 / September 1 of each year.

Project Completion: June 30, 2028

Final Report Due Date: August 14, 2028

Legal Information

Legal Citation: M.L. 2025, First Special Session, Chp. 1, Art. 2, Sec. 2, Subd. 08j

Appropriation Language: \$208,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with Restoravore to assess the use of native hay and pasture mixes to benefit biodiversity, soil health, and Minnesota farmers. A fiscal management plan must be approved in the work plan before any trust fund money is spent.

Appropriation End Date: June 30, 2028

Narrative

Project Summary: Assess the use of native hay and pasture mixes to benefit biodiversity, soil health, and Minnesota farmers.

Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.

Native prairie habitat has suffered a tremendous decline throughout the US largely as a result of agricultural conversion into non-native pasture grasses or row crops. Less than 2% of Minnesota's native prairie remains, yet there is an estimated 3.9 million acres of land currently used for pasture and hay production. Restoravore sees an opportunity to significantly enhance millions of these acres in Minnesota by encouraging farmers to replace non-native grasses with native prairie species. The deeper root systems of native prairie plants foster greater soil building and water filtration capacity. As climate change continues to alter temperature and hydrologic patterns, these deeper root systems will also have greater resilience against drought and climate instability. In addition to the below ground biomass, the shoots, leaves, and flowers of native species provide more diverse habitat and food resources that support an overall higher abundance of insects, birds, and mammals. Lastly, research from other parts of the country show that adding native warm-season grasses to traditional grazing rotations increases overall livestock productivity.

What is your proposed solution to the problem or opportunity discussed above? Introduce us to the work you are seeking funding to do. You will be asked to expand on this proposed solution in Activities & Milestones.

Although various organizations are researching the grazing of native prairie species in the southeastern and western portions of the US, we see an opportunity for Minnesota to lead this type of research within the Midwest. Over the past several years, Restoravore has been working to restore prairie and savannah habitat in southeast Minnesota. The integration of removing non-native species, replanting native species, and reintroduction of grazing animals are all important components of this process. We are asking LCCMR to support the expansion of our native species demonstrations into a larger scale model across multiple farms in southeast Minnesota. We are seeking to collect regional data that demonstrates the benefits of converting non-native pasture and hay into more diverse native species mixes. This grant will allow us to partner with multiple farmers willing to convert significant portions of their agricultural land into native species. We will analyze and share this data with the farming community and land managers so they can understand the direct benefits of implementing a more integrated ecological approach.

What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state's natural resources?

We will assess both the nutritional quality and overall biodiversity of three native prairie seed mixes and an enhancement mix that have been developed in cooperation with the Xerces Society, local Soil and Watershed Conservation Districts, and NRCS. Based on studies from other regions, we expect to demonstrate a significant benefit to soil health, biodiversity, and forage quality. Data from our study will provide farmers, ranchers, and ecosystem managers with knowledge of how native species can be incorporated into best management practices to enhance potentially millions of acres in pasture or hay production.

Project Location

What is the best scale for describing where your work will take place?

Region(s): SE

What is the best scale to describe the area impacted by your work?

Statewide

When will the work impact occur?

During the Project and In the Future

Activities and Milestones

Activity 1: Year One: Baseline surveys and field site preparation

Activity Budget: \$63,000

Activity Description:

We have identified several farmers in southeast Minnesota who are willing to convert portions of their current fields into our native seed mixes. We will finalize agreements with these farmers to begin the conversion process. Once the agreements are in place, we will conduct initial surveys of biodiversity, soil health, and forage to establish a baseline for comparison. Biodiversity surveys will use a line transect protocol to identify invertebrates, small mammals, and birds present in our experimental plots. We will also collect three soil samples along each transect to test water infiltration, % organic matter, and the Haney test, which will determine the amount of available nutrients for microorganisms. We will collect random samples of vegetation present for forage analysis, including crude protein, neutral detergent fiber (NDF), and mineral content. Successful establishment of prairie seed requires the use of herbicides to remove non-natives which can outcompete slower growing native species. Past experience has demonstrated that a minimum of two or three herbicide applications are needed to suppress highly aggressive non-native species. Consequently, we will conduct two herbicide treatments in our initial year to prepare for seeding in late spring of the following year.

Activity Milestones:

Description	Approximate Completion Date
Secure agreements with farmers willing to establish experimental sites and control sites	July 31, 2025
Get fiscal agent agreement executed and approved by DNR and LCCMR before spending occurs.	July 31, 2025
Complete initial vegetation, biodiversity, soil health, and forage surveys on experimental and control sites	August 31, 2025
Conduct initial herbicide application to remove non-native species	August 31, 2025
Conduct follow-up herbicide application for resistant species	September 30, 2025

Activity 2: Year 2: Plant seed mixes and establish native vegetation

Activity Budget: \$82,500

Activity Description:

We will conduct one final herbicide application prior to planting our seed mixes to eliminate extremely persistent species or early emerging species missed in previous applications. Plots at each location will be divided into three equal sections and randomly assigned one of our three seed mixes. Seeds will be planted using either a no-till drill or pendulum seeder to minimize impacts to soil disturbance. As seedlings are establishing, we will monitor plant density and reseed any areas that have less than the recommended density of one seedling per square foot. Additionally, we will continue monitoring for any non-native species and spot treat with an appropriate herbicide.

Activity Milestones:

Description	Approximate Completion Date
Conduct follow-up herbicide application to remove persistent species	April 30, 2026
Plant native seed mixes in experimental plots	May 31, 2026
Reseed any areas with low seedling establishment	July 31, 2026
Establishment mowing and spot treatment for non-natives	August 31, 2026

Activity 3: Year 3: Evaluation of seed mixes and dissemination of results

Activity Budget: \$62,500

Activity Description:

Native prairie plants invest a significant amount of energy into developing their roots in the first year of growth. Consequently, surveys of forage and biodiversity may not be accurately reflected above ground until the second year of growth. We will follow all of the same survey protocols for biodiversity, soil testing, and forage analysis in year 3 to see if there are significant improvements. After all sample collection is complete, the data will be analyzed and published on our website. We will also share our results with our partner agencies: Xerces Society, regional Soil and Watershed Districts, and the NRCS. Over the last year, we have been invited to share some of our proposed work at several sustainable and regenerative agriculture conferences. We have received very positive feedback on our proposed project and look forward to sharing our results at these conferences once our analysis is complete.

Activity Milestones:

Description	Approximate Completion Date
Complete follow up vegetation, biodiversity, soil health, and forage surveys on experimental and control sites	July 31, 2027
Analyze the results of the surveys comparing initial, native species, and control plots	December 31, 2027
Complete a "final" report evaluating the overall changes to biodiversity, soil health, and forage.	June 30, 2028
Disseminate the results of the analysis with landowners, agency partners, and at regional conferences	June 30, 2028
Submit manuscript of work for publication	June 30, 2028

Dissemination

Describe your plans for dissemination, presentation, documentation, or sharing of data, results, samples, physical collections, and other products and how they will follow ENRTF Acknowledgement Requirements and Guidelines.

We plan on presenting the results of our project at two major regional conferences, including the Marbleseed Organic Farming Conference. In 2023, we presented our preliminary research idea at this conference and received very positive feedback which helped refine this proposal submitted to the LCCMR. We are very excited to return to this conference with results and data. In 2024, Restoravore was also asked to present some of our very early work at a Regenerative Livestock Symposium hosted by the University of Minnesota. We expect that once the results of our study are finished, we will be welcomed back by the symposium organizers. Depending on the quality of results, our hope is also that this data will be submitted and published in a peer reviewed journal.

Our project planning and implementation requires working with many different collaborators in the community. The first of which is local farmers, which we hope will provide a demonstration of concepts which encourage greater adoption of native grasses in the region. We have also worked with several governmental and non-governmental organizations (NRCS, Winona County SWCD, Xerces Society, The Prairie Enthusiasts, Prairie Moon Nursery) to develop our native seed mix. We anticipate all of these organizations will be interested in our results and adopting practices based on our data. Lastly, we plan on posting updates and results on our website, which is frequently visited by collaborators and general members of the public.

The ENRTF will be acknowledged through use of the trust fund logo or attribution language on any media, publications, and signage per the ENRTF Acknowledgment Guidelines.

Long-Term Implementation and Funding

Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this work be funded?

This project will inform grazing practices and demonstrate how incorporation of native species can provide significant improvements to biodiversity, soil building, water filtration, and climate change resiliency. We have been awarded funding from the Laird Norton Family Foundation to assist local farmers with purchasing native seed and restoring habitat in southeast Minnesota. This work will also integrate with statewide initiatives, such as Audubon's Conservation Ranching program, Minnesota's Prairie Plan, and One Watershed, One Plan. We are actively seeking future funding to further analyze the increased performance of livestock directly grazing or consuming hay from our native seed mixes.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Program Coordinator		Supervise project employees and contractors along with handling grant administration			20%	1.5		\$39,500
Prairie Habitat Manager		Responsible for overseeing onsite activities including sample collection, herbicide application, and seeding			20%	2.25		\$70,000
							Sub Total	\$109,500
Contracts and Services								
TBD	Service Contract	Physical and chemical analysis of soil including percent organic matter, water infiltration, and available micronutrients				0.8		\$15,000
TBD	Service Contract	Nutritional analysis of forage including crude protein, neutral detergent fiber (NDF), and mineral content				0.8		\$12,000
TBD	Service Contract	Broadcast herbicide application to remove non-native species				0.4		\$10,500
TBD	Service Contract	Native seed application with a low-impact seed broadcaster (no-till drill or pendulum applicator)				0.1		\$5,000
Eagle Bluff Environmental Center	Service Contract	Eagle Bluff is providing fiscal agency and will provide financial assistance with managing the grant funds and financial reporting.		X		0		\$17,000
							Sub Total	\$59,500
Equipment, Tools, and Supplies								
	Tools and Supplies	Native seed mixes	We will purchase our three specially designed seed mixes and filler to establish our native species plots					\$35,000
	Tools and Supplies	Soil sample containers	Sample containers will be necessary to transport soil samples from the field to the analytical lab					\$500
							Sub Total	\$35,500

Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
	Miles/ Meals/ Lodging	Approximately 50 trips of around 15 miles each trip at \$0.61/mile	We will visit each field site multiple times per year to conduct surveys and monitor progress					\$500
	Conference Registration Miles/ Meals/ Lodging	Conference attendance, travel, lodging, and meals for 2 people to attend 2 separate conferences	Both the project manager and prairie habitat manager will present our results at a regenerative grazing conference and sustainable ag conference					\$3,000
							Sub Total	\$3,500
Travel Outside Minnesota								
							Sub Total	-
Printing and Publication								
							Sub Total	-
Other Expenses								
							Sub Total	-
							Grand Total	\$208,000

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
Contracts and Services - Eagle Bluff Environmental Center	Service Contract	Eagle Bluff is providing fiscal agency and will provide financial assistance with managing the grant funds and financial reporting.	LCCMR is requiring that we obtain a fiscal agent to receive funds.

Non ENRTF Funds

Category	Specific Source	Use	Status	\$ Amount
State				
			State Sub Total	-
Non-State				
			Non State Sub Total	-
			Funds Total	-

Total Project Cost: \$208,000

This amount accurately reflects total project cost?

Yes

Attachments

Required Attachments

Visual Component

File: [6bd4c73f-9c1.pdf](#)

Alternate Text for Visual Component

Aerial map highlighting areas where native seed mixes will be planted and also showing proximity to other native prairie and savannah restoration projects...

Financial Capacity

Title	File
Restoravore Financial Capacity Statement	06770168-e33.pdf

Board Resolution or Letter

Title	File
Restoravore Resolution Letter	34e582d2-d94.pdf
Fiscal Agency Resolution Letter	b9a251f9-61c.pdf

Supplemental Attachments

Capital Project Questionnaire, Budget Supplements, Support Letter, Photos, Media, Other

Title	File
2025-176 Research Addendum revised_final	3f6c2e3c-03a.pdf

Difference between Proposal and Work Plan

Describe changes from Proposal to Work Plan Stage

After submitting our initial proposal, we contacted a local contractor capable of applying herbicide and seeding native species with a drone. This technology provides significant benefits to our project as well as demonstrates novel farming practices. However, the cost of this work is slightly above our original cost estimates. Consequently, we increased the herbicide application costs from \$4,500 to \$10,500 and seeding costs from \$2,500 to \$5,000. Since we are able to use the same contractor across all sites, this will significantly decrease the need to coordinate and plan these activities. So, we have adjusted the program coordinator budget by \$8,500 to maintain the total overall budget request of \$208,000.

Revisions were made on May 23, 2025 to address comments made following the approval of our research addendum.

Additional Acknowledgements and Conditions:

The following are acknowledgements and conditions beyond those already included in the above workplan:

Do you understand and acknowledge the ENRTF repayment requirements if the use of capital equipment changes?

N/A

Do you understand that travel expenses are only approved if they follow the "Commissioner's Plan" promulgated by the Commissioner of Management of Budget or, for University of Minnesota projects, the University of Minnesota plan?

Yes, I understand the Commissioner's Plan applies.

Does your project have potential for royalties, copyrights, patents, sale of products and assets, or revenue generation?

No

Do you understand and acknowledge IP and revenue-return and sharing requirements in 116P.10?

N/A

Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF?

N/A

Does your project include original, hypothesis-driven research?

Yes

Does the organization have a fiscal agent for this project?

Yes, Eagle Bluff Environmental Learning Center

Does your project include the pre-design, design, construction, or renovation of a building, trail, campground, or other fixed capital asset costing \$10,000 or more or large-scale stream or wetland restoration?

No

Do you propose using an appropriation from the Environment and Natural Resources Trust Fund to conduct a project that provides children's services (as defined in Minnesota Statutes section 299C.61 Subd.7 as "the provision of care, treatment, education, training, instruction, or recreation to children")?

No

Provide the name(s) and organization(s) of additional individuals assisting in the completion of this project:

Gabe Ericksen, Restoravore Prairie Manager

Do you understand that a named service contract does not constitute a funder-designated subrecipient or approval of a sole-source contract? In other words, a service contract entity is only approved if it has been selected according to the contracting rules identified in state law and policy for organizations that receive ENRTF funds through direct appropriations, or in the DNR's reimbursement manual for non-state organizations. These rules may include competitive bidding and prevailing wage requirements

Yes, I understand