



Environment and Natural Resources Trust Fund

2024 Request for Proposal

General Information

Proposal ID: 2024-131

Proposal Title: Accelerated Migration of Oaks Phase 2

Project Manager Information

Name: Wiley Buck

Organization: Great River Greening

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Project Basic Information

Project Summary: Collect and disseminate the 5-10 year data on growth and survival, of 3 bur oak ecotypes planted in 4 restoration sites under ML2015 "Enhancing Restoration Techniques for Improved Climate Resilience"

Funds Requested: \$144,000

Proposed Project Completion: December 31, 2027

LCCMR Funding Category: Small Projects (H)

Secondary Category: Methods to Protect, Restore, and Enhance Land, Water, and Habitat (F)

Project Location

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

Region(s): Metro

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

Region(s): Metro

When will the work impact occur?

During the Project and In the Future

Narrative

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

Trees, particularly oaks, are both slow-growing and key species for many of our natural communities. Growth and survival information for different oak ecotypes in the 5-10 year time period following planting, needs to be collected in order to inform restoration practices. While tree planting innovations abound, an earlier ML2015 planting offers a longer-term data collection opportunity, and is one of the few initiatives that used an 'extreme climate' ecotype from NW MN, in addition to southern and local ecotypes, presenting an opportunity to compare these three ecotypes in terms of growth and survival during the last 5-10 years, to inform successful bur oak planting practices in the face of climate change which includes weather extremes and weather 'whiplash', in addition to overall warming.

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.

Partnering with the U of M Center for Forest Ecology, we will collect the available 5-10 year growth and survival data on three (3) bur oak (*Quercus macrocarpa*) ecotypes planted using standard restoration techniques, in four (4) restoration sites - Allemansratt Wilderness Park (Lindstrom), Bald Eagle-Otter Lakes Regional Park (White Bear Lake), Fish Creek Natural Area (Maplewood) and South Washington Central Corridor (Cottage Grove/Woodbury) - using 'common garden' research design. Over 5800 of these bur oak trees were planted in Phase 1 with a previous Trust Fund ML2015 allocation; first year growth and survival data was collected and analyzed with the same allocation.

We will return to each of the four planting sites to collect and analyze this subsequent set of data. We will also enhance the plantings equally using typical restoration practices as warranted, including such treatments as mulching, fencing, mowing and establishing nurse crops, to increase overall growth and survival rates.

Data will be analyzed and a final report prepared. We will then disseminate the results, including development of additional materials, to be presented by U of M, via GRG presentations to practitioners, and a 50-person volunteer/engagement community and/or school event(s).

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?

Inform the state-of-the-art for bur oak restoration planting, to help maximize success of future plantings through climate resilience, in the face of climate change. Bur oaks are keystone species for many of Minnesota's rarest and most important natural communities including oak savanna. Natural rates of migration for bur oaks will not meet the need for rapid migration and recolonization rates with our forecasted climate change. This data will inform future bur oak planting activities.

Activities and Milestones

Activity 1: Monitor Site Plantings

Activity Budget: \$20,000

Activity Description:

Great River Greening and Landowner will perform a walk-through monitoring visit at each of the four (4) original planting sites. During this site visit, we will assess accessibility and access for researchers; identify restoration/enhancement needs for the tree plantings. We will write management briefs for each individual site, including a timeline for enhancement, and in conjunction with the U of MN, a data collection timeline.

Activity Milestones:

Description	Approximate Completion Date
Complete 4 site visits with all partners and landowners	November 30, 2024
Coordinate Data Collection and Enhancement Timelines and Plans	March 31, 2025

Activity 2: Collect and Analyze Data, Create Report

Activity Budget: \$65,000

Activity Description:

Activity 2. Data collection and analyses by Dr. Lee Frelich with student assistance. This consists of relocating trees of three ecotypes—Roseau (north), Rice County (central) and Des Moines (south)—planted at each of four metro sites in 2016. Trees were individually located with GPS in 2016 (5899 trees). Those that are missing in 2024 will be considered as mortality since 2016. A subset (2589) of trees had height and diameter growth measured during their first full growing season (summer of 2017), and these will be remeasured at the end of eight years of growth (summer 2024). We will test the hypotheses that: (1) survival was equal among the three seed sources (taking into account differences in survival among planting sites to isolate the effects of seed source), and (2) height and diameter growth were equal among the three seed sources (taking into account growth rate differences among planting sites to isolate the seed source effect). The key item of interest is whether there is a difference in mortality, height growth and diameter growth among the three seed sources. South seed source trees should perform best because they may be preadapted to the climate warming that has occurred.

Activity Milestones:

Description	Approximate Completion Date
Data Collection protocol developed and finalized	April 30, 2025
Data Collection	September 30, 2025
Data Summary, Analysis and Final Report	December 31, 2025

Activity 3: Enhancement of Existing Plantings

Activity Budget: \$42,000

Activity Description:

At each site, equal treatment to all plantings to increase success following typical restoration practices will be applied.

Anticipated activities may include but are not limited to mulching, mowing, herbivore protection repair/replacement, planting woody nurse crop, and non-native invasive species control. Activities will be determined and planned in earlier

activities, and implemented here.

This work will be completed via subcontract(s) with service provider(s) chosen through RFP process and vendors, along with GRG crew and landowner in-kind assistance and coordination.

Activity Milestones:

Description	Approximate Completion Date
Identify Enhancement Needs	September 30, 2024
Implement Pre-Winter Enhancement Needs	October 31, 2024
Implement Growing Season Enhancement Needs	September 30, 2025

Activity 4: Dissemination

Activity Budget: \$17,000

Activity Description:

U of MN and GRG, independently and/or together, will disseminate information about methods, objective, results and data analysis of this project.

GRG will disseminate this information through our practitioner partnerships and membership, including but not limited to: Anoka Sand Plain Partnership; Metro Big Rivers Partnership; Cannon River Partnership; Camp Ripley Sentinel Landscape Partnership, and; Metro Conservation Network.

GRG will present at one (1) or more Minnesota-based workshops and/or conferences totaling 50 or more attendees, and present / discuss with five (5) or more Minnesota practitioner organizations, other Minnesota landowners, and/or government units. GRG will present and discuss results with the four (4) landowners.

GRG will present at one (1) out-of-state regional conference that includes Minnesota representatives, such as the Midwest Society for Ecological Restoration annual conference, or equivalent.

GRG will conduct student and/or volunteer engagement activities totaling 50 attendees that includes a robust interpretive component and may include enhancement activities at one or more sites.

Dissemination by UMN: Results of the study will be presented by students at regional professional meetings, used in classroom teaching, submitted for publication in a peer-reviewed journal article, and discussed in varied news media outlets.

Activity Milestones:

Description	Approximate Completion Date
UMN Final Report	March 31, 2026
Engage 50 Volunteers and/or Students: GRG	May 31, 2026
Present at Out-of-State SER Conference or Similar :GRG	June 30, 2027
Present at Academic Conference or equivalents	June 30, 2027
Share with Practitioners via Workshops, Partnerships, Small Group Meetings	June 30, 2027

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Dr. Lee Frelich, Ph.D.	Center for Forest Ecology, University of Minnesota	Lead Researcher	Yes
John Loomis	South Washington Watershed District	Landowner	No
Carole Gernes	City of Maplewood	Landowner	No
Michael Goodnature	Ramsey County Parks	Landowner	No
Melissa (Missy) Glenna	City of Lindstrom	Landowner	No

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?

Dissemination of this round of data, along with initial growth and survival data from ML2015, will be disseminated to add to the knowledge base of tree planting. Ongoing efforts for future data collection are planned, with funding to be determined, but may include re-approaching LCCMR in the future.

Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Pollinator Central: Habitat Improvement with Citizen Monitoring	M.L. 2021, First Special Session, Chp. 6, Art. 5, Sec. 2, Subd. 08a	\$750,000
Pollinator Central II: Habitat Improvement With Community Monitoring	M.L. 2021, First Special Session, Chp. 6, Art. 6, Sec. 2, Subd. 08c	\$631,000
Engaging a Diverse Public in Environmental Stewardship	M.L. 2022, , Chp. 94, Art. , Sec. 2, Subd. 05d	\$300,000

Project Manager and Organization Qualifications

Project Manager Name: Wiley Buck

Job Title: Senior Program Manager

Provide description of the project manager's qualifications to manage the proposed project.

Wiley Buck, Senior Program Manager (M.S., Department of Fisheries, Wildlife and Conservation Biology, University of Minnesota):

Wiley manages GRG's Central Minnesota program. Duties include leading the Anoka Sand Plain Partnership, a group of NGOs and LGUs, committed to conserving the Anoka Sand Plain ecoregion on a landscape scale. Wiley also leads GRG's participation as a restoration/enhancement and community engagement partner in the Camp Ripley Sentinel Landscape (CRSL) Partnership, including our work funded by the Minnesota Environment and Natural Resources Trust Fund (ENRTF) ML2021_08a CRSL Forest Restoration and Enhancements, and the National Association of Conservation Districts (NACD).

Prior to GRG's geographic re-structuring, Wiley managed GRG's ENRTF allocations in the Metro Conservation Corridors Partnership Phases 1-10. Integral to his grant management, Wiley is a key member in GRG's climate resilience team, with his accelerated migration projects, spearheading GRG's first gravel bed project, and as an active member of our biochar initiative team. Prior to joining GRG, Wiley worked at MnDNR – SNA Program for six years, and had seasonal stints with UofM Extension, MnDNR - Biological Survey, private firms, McHenry County (IL) Conservation District, and TNC Chicago Wilderness Program (volunteer).

Organization: Great River Greening

Organization Description:

Great River Greening's mission is to inspire, engage and lead local communities in conserving and caring for the land and water that enrich our lives.

Using nature-based climate solutions, Great River Greening (GRG) restores, adapts, and sustainably manages ecosystems to address climate change, providing benefits for both people and the environment. Our geographic footprint spans from the Mississippi Headwaters in Minnesota through the Twin Cities and south into the MN River Basin.

To achieve our vision of healthy, climate change resilient ecosystems throughout MN, GRG leans into the practices and projects that can truly impact our shared climate future. Our land-based restoration centers on three pillars of impact: (1) Restoring resilient landscapes, (2) Addressing critical biodiversity loss, and (3) Increasing carbon sequestration and storage.

Environmental stewardship of the land we restore is one of our core commitments. We partner with the communities we serve to increase environmental connection, teach environmental restoration, and ultimately empower committed individuals to join us in caring for our shared natural resources, engaging 3,000+ volunteers annually across 100s of project sites. GRG is committed to environmental equity, intentionally incorporating DEI goals into our work.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Grant Manager		Grant Management, Project Management, Professional Services Contract Management, Dissemination			21.83%	0.1		\$11,600
Grant Administration		Budgets, Invoicing, Filing, Reports/Amendments			21.83%	0.14		\$10,100
Program Manager		Peer Review			21.83%	0.04		\$2,500
Project Manager Ecologist		Surveys, Planning, Monitoring, Contract Management, Dissemination			21.83%	0.07		\$6,300
Field Crew		Field implementation, assist for volunteer and education events			21.83%	0.04		\$900
Events & Outreach		Volunteer and/or Student Engagement, Dissemination			21.83%	0.25		\$2,700
							Sub Total	\$34,100
Contracts and Services								
University of Minnesota	Professional or Technical Service Contract	Data Collection, Data Analysis, Reporting, Research Design, Dissemination of Results		X		0.92		\$76,000
Restoration Service Contract(s), TBD via RFP	Professional or Technical Service Contract	Fencing, Mulching, Mowing, Planting, Non-Native Invasive Species Control				0.1		\$25,000
							Sub Total	\$101,000
Equipment, Tools, and Supplies								
	Tools and Supplies	Plants, Mulch, Fencing, Herbicide, Equipment Fuel; Work Gloves, Hand Tools, Plant Supplies, Healthy Refreshments for 50 Volunteers/Students	Enhancement and Engagement	X				\$6,900
							Sub Total	\$6,900

Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
	Miles/ Meals/ Lodging	32 trips of 50 miles each	Site Visits, Meetings, Procurement					\$1,100
							Sub Total	\$1,100
Travel Outside Minnesota								
	Conference Registration Miles/ Meals/ Lodging	One presentation at Society for Ecological Restoration (SER) Midwest Chapter, or equivalent	Presentation. Dissemination of Results	X				\$600
							Sub Total	\$600
Printing and Publication								
	Printing	Posters, Handouts	Conference and Workshop Presentations					\$300
							Sub Total	\$300
Other Expenses								
							Sub Total	-
							Grand Total	\$144,000

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
Contracts and Services - University of Minnesota	Professional or Technical Service Contract	Data Collection, Data Analysis, Reporting, Research Design, Dissemination of Results	Up to \$3,000 for out-of-state travel for Lead Researcher and/or student(s) presenting at regional conference(s)
Equipment, Tools, and Supplies		Plants, Mulch, Fencing, Herbicide, Equipment Fuel; Work Gloves, Hand Tools, Plant Supplies, Healthy Refreshments for 50 Volunteers/Students	Up to \$600 (\$12 each) for healthy food and beverage for volunteers and/or students
Travel Outside Minnesota	Conference Registration Miles/Meals/Lodging	One presentation at Society for Ecological Restoration (SER) Midwest Chapter, or equivalent	Premier regional conference, including Minnesota chapter

Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
State				
			State Sub Total	-
Non-State				
In-Kind	Volunteer / Student Restoration activities @\$25/hr	Restoration and Enhancement Needs	Potential	\$1,250
In-Kind	Landowner In-Kind	Restoration and Enhancement Needs; Assist with Engagement	Potential	\$2,000
Cash	Great River Greening	GRG direct expenses required to do the work for this grant	Pending	\$51,000
In-Kind	Great River Greening	GRG staff indirect administrative expenses required to do the work for this grant	Secured	\$1,300
			Non State Sub Total	\$55,550
			Funds Total	\$55,550

Attachments

Required Attachments

Visual Component

File: [0c9fa204-9de.pdf](#)

Alternate Text for Visual Component

Summary of proposal in words and pictures, including a county overlay map showing planting sites, a regional map showing seed sources, and three photos of planting activities from ML205 Phase 1, all including volunteers....

Financial Capacity

File: [85f1b84b-9b6.pdf](#)

Board Resolution or Letter

Title	File
GRG Board Resolution Letter for Accelerated Migration of Oaks Ph 2	f765fdc1-0b8.pdf

Optional Attachments

Support Letter, Photos, Media, Other

Title	File
2015_08f Final Report - see Activity 1	abf03330-829.pdf
Dr. Lee Frelich, Ph.D short cv	00694742-3eb.doc
2015_08f Accelerated Migration of Oaks Activity 1 Final Report	c63126c5-867.pdf
Dr. Lee Frelich, Ph.D long cv	7b21659f-715.doc

Administrative Use

Does your project include restoration or acquisition of land rights?

No

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

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?

No

Does the organization have a fiscal agent for this project?

No

Does your project include the design, construction, or renovation of a building, trail, campground, or other capital asset costing \$10,000 or more?

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?

No