Environment and Natural Resources Trust Fund

2026 Request for Proposal

General Information

Proposal ID: 2026-074

Proposal Title: Mapping Leech Lake Vegetation: A Closer Look

Project Manager Information

Name: Raining White

Organization: Leech Lake Band of Ojibwe

Office Telephone: (218) 335-7408

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Project Basic Information

Project Summary: Survey Leech Lake's aquatic plant community to better understand changes happening across Leech Lake and create an updated data set for agencies to reference.

ENRTF Funds Requested: $488,000

Proposed Project Completion: June 30, 2029

LCCMR Funding Category: Fish and Wildlife (D)

Project Location

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

Region(s): Central

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

Narrative

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

Leech lake is culturally and economically important to those who live near and those who travel to fish, recreate, and enjoy the natural beauty of Minnesota's 3rd largest lake. The last comprehensive vegetation survey of Leech was completed in 2005 . Since 2005 there have been major changes to Leech Lake including increased shoreline development, more pressure on the fisheries, introduced aquatic invasive species and changes in the climate. A close look at the plant community will help steer management decisions and give direct insight to the ecology and overall health of Leech Lake. Aquatic vegetation is important for a healthy lake. Anglers, local citizens, and professionals have anecdotally noted changes in 'weed beds' including 'cabbage', manoomin or wild rice, and other vegetation. The introduction and subsequent increase of the rusty crayfish population is a possible factor in decreased vegetation cover which provides habitat for fish species of all life stages, water fowl, amphibians, reptiles, and invertebrates. The invasive Eurasian watermilfoil population has boomed in recent years and starry stonewort, an invasive macroalga, was confirmed present in 2022. Tribal and non-tribal wild rice gatherers are concerned about the health of rice beds in Leech, specifically in the Steamboat and Headquarters Bays.

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.

Aquatic vegetation is often mislabeled as 'weeds' by many Minnesotans. While some plants, particularly non-native species, can act invasively, native plants provide critical functions in the ecology of lakes. Aquatic vegetation helps balance water quality, provides habitat for multiple species of aquatic life, can provide food and medicine and can be visually pleasing. Aquatic plants are integral to healthy water. By cataloging the aquatic plant community, and comparing it to a 2002-2005 study, we can look at changes across these last 20 years. This data can help management activities including reassessing aquatic plant management (APM) permits, fishing regulations, water level control and AIS prevention.

This proposal would also like to collect interviews with those who use Leech Lake for subsistence, professionally, and recreationally.

Genetic mapping, specifically of Eurasian watermilfoil, will be valuable to AIS management on Leech and other infested lakes. Combined with vegetation surveys, managers can use this data to pinpoint populations within Leech for management meaningful management activities. The possibility of hybridization between native and non-native milfoil is known. Using genetics to identify milfoil will give a better understand of populations within Leech that otherwise can be difficult using traditional identification practices (eg. Taxonomic characteristics).

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?

Provide an updated inventory of aquatic vegetation of Leech Lake using the 2002-2005 survey points to compare vegetation 20 years later.

Collect traditional and local knowledge of a wide variety of Leech's stakeholders to compare to vegetation maps, lake use and increase awareness and public engagement.

Genetically categorize milfoil populations to determine non-native, native and hybrid species within Leech. Genetics can provide direction formanagement plans.

Activities and Milestones

Activity 1: Aquatic Plant Survey of Leech Lake

Activity Budget: $443,000

Activity Description:
Utilize crew(s) to survey Leech Lake using survey points from the 2002-2005 aquatic plant survey. Using previous, precise locations of the past comprehensive survey will give the project a more refined look at the plant community. Crews will use the rake toss method of survey preferred by the LLBO DRM, MN DNR and other research institutions. Crews will identify plants to the species and collect abundance metrics. If milfoil is found, crews will take a sample to submit for genetic testing. Milfoil samples will occur for both EWM and NWM, and samples will be taken throughout the defined bays of Leech. Surveys will be conducted from roughly Jun 15th to October 15th, depending on seasonal conditions. Outcome: Plant community survey of plots on leech lake based on the last full lake aquatic plant survey.

Activity Milestones:

Description	Approximate Completion Date
Plant ID workshop to train survey crew, local students, and other aquatic plant professionals.	July 31, 2026
Finish 1/3 of Surveys	September 30, 2026
Finish second third of surveys	September 30, 2027
Finish last third of surveys	September 30, 2028

Activity 2: Genetic Testing of Milfoil

Activity Budget: $10,000

Activity Description:
Survey crews will submit both northern water milfoil and Eurasian watermilfoil, and any other suspected milfoil species, to a genetics lab to understand potential hybridization. Submission of samples will be continuous throughout the surveys, as milfoil is located and collected.

Activity Milestones:

Description	Approximate Completion Date
Receive genetic results	December 31, 2028
Complete mapping locations of milfoil within Leech Lake using survey points	December 31, 2028

Activity 3: Collect Community Input on the state of Leech Lake

Activity Budget: $35,000

Activity Description:
Conduct interviews with citizens who utilize Leech Lake to understand changes of the health of Leech Lake. These interviews will provide insight to the public perception to Leech Lake's health, management, and changes of use of the lake. This project will collect common themes using phrases and keywords and relate interviews to specific areas of the lake using GIS. Interviewees will be provided a honorarium for their participation and input their input will guide final outcomes of the results.

Activity Milestones:

Description	Approximate Completion Date
Identify Interview participants	March 31, 2027
Complete interviews	March 31, 2028
Create product (interactive map) that relates interviews with Leech Lake's geography.	December 31, 2028

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?
Results from this proposal will be shared with agencies and stakeholders working on Leech Lake including the MNDNR, Cass County, and LLBO. Genetic identification of milfoils will influence AIS management. Giving a voice to local stake holders in the forms of interviews will strengthen public awareness and engagement. This funding is needed to take on such a project of this size as agencies listed above currently do not have budget or capacity to complete a lake wide veg survey. This data will benefit on going work being done by each respective agency using traditional funding methods.

Project Manager and Organization Qualifications

Project Manager Name: Raining White

Job Title: Plants Program Assistant Manager

Provide description of the project manager's qualifications to manage the proposed project.
7 years of experience in terrestrial and aquatic invasive species management for Leech Lake Band of Ojibwe. Trained in aquatic plant identification through multiple DNR hosted Aquatic Plant ID classes. Experience working with MNDNR on characeae identification and surveying. Supervisor experience for seasonal crews and other department employees. Experience in grant management and grant writing, from mini grants with MDA to Federal BIA grants. Experience in navigating lakes, especially Leech Lake with various projects. PADI Scuba certified, boat safety trained, drone (sUAS) part 107 trained. Coordinated multiple outreach events involving aquatic plants.

Organization: Leech Lake Band of Ojibwe

Organization Description:
Leech Lake Band of Ojibwe - Federally Recognized Tribe, Division of Resource Management, Plant Resources Department.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	$ Amount
Personnel								
Project Lead		Lead Surveyor, organizer, grant administrator			30%	1.5		$130,000
Seasonal Aquatic Plant Specialist 1		Assist project lead with surveys, data collection			30%	1.5		$91,000
Seasonal Aquatic Plant Specialist 1		Assist project lead with data collection and processing			30%	1.5		$91,000
Seasonal Aquatic Plant Specialist 2		Data management, surveys, preserve specimens for herbarium, GIS			30%	1.5		$91,000
							Sub Total	**$403,000**
Contracts and Services								
University of Montana	Service Contract	Genetic mapping of milfoils collected during survey. Quoted at 100 samples for $5000 minimum for whole lake sampling. Lab fees, sample kits. Priced for 140 samples at $50/sample.				0		$7,000
New York Botanical Garden	Service Contract	Lead a freshwater macroalga class & identification of characeae samples down to species. Chara is a common macro alga that can be difficult to identify to species level. NYBG will provide expert support in identification services and will travel to Leech Lake to provide identification training at in-person workshops.				0		$15,000
							Sub Total	**$22,000**
Equipment, Tools, and Supplies								
	Equipment	White HDPE Developing Tray x 6	Photo developing trays are used to float plant material for identification. The structure and color of these trays make aquatic plant field identification effecient					$300
	Equipment	2 GPS	to record survey locations.					$1,500

	Tools and Supplies	Gas for boat & Truck	Transportation costs of boat and in-lake activities. Premium gas for boat motor.					$5,000
	Tools and Supplies	Fieldmaster Aquavue Uderwater Viewer x 2	To see aquatic plants under water.					$100
	Equipment	Waders x 3	PPE for surveyors to examine and survey aquatic plants in shallow areas.					$800
	Equipment	Tablet	Tablet will make data entry and collection more efficient.	X				$2,000
	Tools and Supplies	Shipping milfoil samples to genetic lab	Pay for shipping costs for samples.					$300
	Tools and Supplies	Herbarium supplies (blotter paper, cotton paper, wax paper)	To preserve aquatic plants for identification, education and data for Leech Lake Band's herbarium collection					$2,000
	Equipment	Personal floatation devices	PPE for survey crew					$500
	Equipment	Coolers	Coolers to preserve plant specimens for herbarium preservation or more in-depth identification in a lab setting.					$500
							Sub Total	**$13,000**
Capital Expenditures								
		Boat with motor and trailer for large lake survey crew	Leech is a large lake with difficult variables to navigate including weather and depth. Aquatic plant surveys also require a boat with space for crew and survey gear as well as room to lay out aquatic plants for ID.	X				$50,000
							Sub Total	**$50,000**
Acquisitions and Stewardship								
							Sub Total	**-**
Travel In Minnesota								
							Sub Total	**-**
Travel Outside Minnesota								

							Sub Total	**-**
Printing and Publication								
							Sub Total	**-**
Other Expenses								
							Sub Total	**-**
							Grand Total	**$488,000**

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
Equipment, Tools, and Supplies		Tablet	Tablet required for efficient data collection.
Capital Expenditures		Boat with motor and trailer for large lake survey crew	LLBO DRM will continue to monitor and manage lakes within the Reservation past this grant cycle. Leech Lake has 3 of the 10 largest lakes in MN and does management activities on all. The DRM plants dept. currently has a boat that is older and cannot handle much wind while on Leech Lake or similar sized lakes. DRM has trucks with towing capacity and mechanic on staff to maintain assets. **Additional Explanation :** LLBO DRM will continue to monitor lakes within the Reservation past this grant cycle. Leech Lake has 3 of the 10 largest lakes in MN and does management activities on all. The DRM plants dept. currently has a boat that is older and cannot handle much wind while on Leech Lake or similar sized lakes. DRM has trucks with towing capacity and mechanic on staff to maintain assets. A dedicated watercraft for this project will allow the execution of grant goes more effecient.

Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
State				
In-Kind	DNR Game & Fish	In-kind support to help with surveys and data analysis	Pending	$60,000
			State Sub Total	**$60,000**
Non-State				
In-Kind	Federal (Self-Governance)	Leech Lake Band of Ojibwe Division of Resource Management will provide in-kind support in the form of: administration/ program management (Plants Program Director), vehicle provided for grant activities (2018 Ford F150), high resolution imagery services as needed (drone flights), building/facility use, software (ArcPro for GIS services, data collection, interview editing)	Pending	$60,000
			Non State Sub Total	**$60,000**
			Funds Total	**$120,000**

Total Project Cost: $608,000

This amount accurately reflects total project cost?

Yes

Attachments

Required Attachments

Visual Component

File: ea87f667-926.pdf

Alternate Text for Visual Component

Brief overview of grant, map of 2002 survey points....

Board Resolution or Letter

Title	File
TribalAuthorizationLetter_Placeholder_LLBO	dddcaa44-06c.docx

Administrative Use

Does your project include restoration or acquisition of land rights?

No

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?

N/A

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?

No

Does the organization have a fiscal agent for this project?

No

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 proposal:

Kate Hagsten (Leech Lake Band of Ojibwe, Division of Resource Management)

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