



# Environment and Natural Resources Trust Fund

## 2026 Request for Proposal

### General Information

**Proposal ID:** 2026-452

**Proposal Title:** Phenology Database Enhances Resource Management and Public Engagement

### Project Manager Information

**Name:** Rebecca Montgomery

**Organization:** U of MN - College of Food, Agricultural and Natural Resource Sciences

**Office Telephone:** (612) 624-7249

**Email:** rebeccam@umn.edu

### Project Basic Information

**Project Summary:** Phenology data supports resource management and engages Minnesotans with nature. We will update the Minnesota Phenology Network database, analyze trends, share data, and produce video profiles of inspiring data collectors.

**ENRTF Funds Requested:** \$289,000

**Proposed Project Completion:** June 30, 2029

**LCCMR Funding Category:** Small Projects (G)

**Secondary Category:** Fish and Wildlife (D)

### Project Location

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

Statewide

**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.**

Phenology, the timing of season activity of plants and animals is a critical aspect of their biology. Knowledge of phenology supports natural resource management by informing planning of the timing of actions and activities. Over ten years ago, LCCMR funded a project to digitize tens of thousands of phenology records to serve the people of Minnesota. The Minnesota Phenology Network's dataset was housed on a digital platform of the USA-National Phenology Network. That platform is no longer supported and thus the data is no longer easily available. In addition, the dataset has not been updated with new data from the past ten years and is now out of date. Updating and analyzing this dataset and making it available again would continue support of an important resource for developing strategies to effectively manage, maintain, protect, restore and monitor the health of natural systems to support and improve species management and conservation strategies. Finally, many of the core naturalists that have been meticulously collecting these data are aging (most in their 70s and 80s). Their years of experience and inspirational personal stories are at risk of being lost.

**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.**

In this project, we propose to update the Minnesota Phenology Network's phenology database with the past ten years of data and create a new website that serves the data to the public. In addition, we will conduct an analysis of the updated dataset looking at trends in phenology through time. These trends will be disseminated broadly through fact sheets, state-wide webinars, the new website and regional natural resource conferences. Trend analysis will also be used to update the existing Season Watch website that was created in conjunction with KAXE Northern Community Radio with past LCCMR funding. In addition, we propose to record the personal stories and oral histories of phenology data collectors. These Minnesotans are aging and if not captured on film or voice recording their experiences are at risk of being lost. Videos produced will target broad audiences such as park managers, K-12 teachers, nature centers and residential environmental learning centers. These are stories of inspirational lives lived connected to nature. They encourage people, especially youth, to get out and engage with the natural world and inspire them to become the next generation dedicated to managing, maintaining, protecting, restoring and monitoring the health of natural systems.

**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?**

The project will result in an updated publicly available database of phenology records of plants and animals. The past use of the current database includes thousands of downloads by a range of users ranging from natural resource managers to K-12 teachers. Further, the project will result in updated analysis of trends or lack thereof in seasonal timing of plant and animal activity and associated dissemination products. Lastly, the project will result in a series of seasonal videos that profile data collectors whose stories are inspiring testaments to the importance protecting, conserving, preserving, and enhancing Minnesota's natural heritage for all.

## Activities and Milestones

### Activity 1: Update Minnesota Phenology Network database with the past 10 years of observations, analyze and share trends

**Activity Budget:** \$203,000

#### Activity Description:

The objective of this activity is to increase knowledge of phenology to support natural resource management and inform planning the timing of actions and activities. The Minnesota Phenology Network (MNPN) database was created in 2015 from data compiled from ten sources across the state of Minnesota. We will update the database adding new data from the last ten years. Data represent daily to weekly observations on >50 plant and animal species for a total of >500,000 individual observations. We will analyze these datasets examining trends through time (or lack thereof) and model the relationship between weather and phenology. These data will help predict timing of activities for planning management. For example, the timing of fishing, trapping, or hunting seasons are based on the biological activities of the fish, birds or mammals. Timing of weed control aims to have maximum impact on weed populations. We will create a website that shares the new, updated MNPN database. The past MNPN phenology database was downloaded on a weekly basis by a broad array of users. We will update the Season Watch website (<https://seasonwatch.umn.edu/>) with trend analyses. The Season Watch website provides an accessible platform for educators and the public.

#### Activity Milestones:

Description	Approximate Completion Date
Database updated with new data	June 30, 2027
Data analyzed, Season Watch website updated with trends, fact sheets created	June 30, 2028
New Minnesota Phenology Network website completed and database publicly available	June 30, 2029

### Activity 2: Produce videos that document the amazing stories of Minnesota residents who have collected phenology data over the last 50 years

**Activity Budget:** \$86,000

#### Activity Description:

The objective of this activity is to create inspiring season themed videos that share the story of Minnesota's natural heritage through the voices of four residents who have been collecting data on seasonal change of plants and animals. They have been meticulously collecting these data continuously over the last 50 years and are aging (most in their 70s and 80s). Thus, we propose to record their personal stories and oral histories of their many years of data collection. These voices include a retired Minnesota Teacher of the Year, a retired U.S.P.S. rural mail carrier, and retired engineer and an avid Northwoods fisherman. Wild Carrot Productions will collaborate with the UMN content expert team to produce four short (10 minute or less) videos structured around the four seasons. We anticipate 16 total days of shooting footage and interviews with four phenologists, plus Dr. Rebecca Montgomery. The UMN team will offer collaborative support in locating and vetting historical elements and collaborate with Wild Carrot in shaping prompts for the interviews and content to include in the final videos. Videos would be available to via MNPN website and shared with schools and nature centers to support season focused STEM education.

#### Activity Milestones:

Description	Approximate Completion Date
Conduct interviews with the four phenologists in 4K, 4096x2160 pixels	December 31, 2026
Shoot seasonal supporting footage and interview with Dr. Montgomery	October 31, 2027

Rough cuts of the videos shared throughout project period	June 30, 2028
Final HD, 1920x1080 digital movies complete and shared	June 30, 2029

## Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Audrey Favorito	Wild Carrot Productions	Lead creation of videos in Activity 2	Yes

## 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?**

The database and videos will be available through the University of Minnesota's Department of Forest Resources (UMN FR) websites that are centrally supported by the Office of Information Technology. The project will result in a submission process for new records that will allow the database to be updated on a periodic basis. Other dissemination materials such as fact sheets, reports and recorded presentations will be hosted by UMN FR.

## Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Prescribed Burning For Brushland-dependent Species-Phase II	M.L. 2021, First Special Session, Chp. 6, Art. 5, Sec. 2, Subd. 08i	\$147,000

## Project Manager and Organization Qualifications

**Project Manager Name:** Rebecca Montgomery

**Job Title:** Professor

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

Rebecca A. Montgomery is Professor in the Department of Forest Resources in the College of Food, Agricultural and Natural Resource Sciences at the University of Minnesota. She holds a bachelor's degree in Biology from Occidental College, a Ph.D. in Ecology from the University of Connecticut. Dr. Montgomery's research interests include forest ecology, ecophysiology, global change biology, and phenology. She has worked in tropical, temperate, and boreal ecosystems. Montgomery teaches a number of ecology courses for which she has received several collegiate teaching awards. She is board chair of Green Again Madagascar, a non-profit organization focused on community-based forest restoration in eastern Madagascar.

Dr. Montgomery has more than 20 years of experience leading grants and training students in ecology and natural resource stewardship. She has led several LCCMR and MITPPC projects and collaborated on numerous others.

**Organization:** U of MN - College of Food, Agricultural and Natural Resource Sciences

**Organization Description:**

The Department of Forest Resources is one of the country's oldest and most highly-regarded forestry programs. Its mission is to inform and advance the science and management of forest and related natural resources. The Department has 18 faculty members and approximately 50 full-time researchers, scientists, postdocs, and staff representing a breadth of disciplines in the biological, physical, social, and managerial sciences. The Department hosts BS, MS, and PhD programs, supports nationally and internationally recognized research programs, and has a long tradition of public engagement and outreach.

## Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
<b>Personnel</b>								
Rebecca Montgomery		Principal Investigator			36.6%	0.06		\$14,290
Stephan Carlson		Researcher			36.6%	0.45		\$57,681
To Be Determined		Post Doc			25.9%	2		\$166,943
							<b>Sub Total</b>	<b>\$238,914</b>
<b>Contracts and Services</b>								
							<b>Sub Total</b>	-
<b>Equipment, Tools, and Supplies</b>								
							<b>Sub Total</b>	-
<b>Capital Expenditures</b>								
							<b>Sub Total</b>	-
<b>Acquisitions and Stewardship</b>								
							<b>Sub Total</b>	-
<b>Travel In Minnesota</b>								
	Miles/ Meals/ Lodging	Eight to ten trips; 2-3 people; 400 miles per trip; GSA mileage, lodging and per diem rates	Support interviews and video footage filming of data collectors; consult with collectors on database updates					\$21,086
							<b>Sub Total</b>	<b>\$21,086</b>
<b>Travel Outside Minnesota</b>								

							<b>Sub Total</b>	-
<b>Printing and Publication</b>								
							<b>Sub Total</b>	-
<b>Other Expenses</b>								
		Professional Service	Professional videographer (Audrey Favorito) to create videos including interviewing phenologists, shooting footage and producing the videos. This will include creating shoot outline and interview guide, interviewing a minimum of four data collectors/phenologists, shooting B roll footage, and editing and post production.					\$29,000
							<b>Sub Total</b>	<b>\$29,000</b>
							<b>Grand Total</b>	<b>\$289,000</b>

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
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## Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
<b>State</b>				
In-Kind	Unrecovered Indirect Costs UMN (54% overhead)	Indirect Costs	Secured	\$156,060
			<b>State Sub Total</b>	<b>\$156,060</b>
<b>Non-State</b>				
			<b>Non State Sub Total</b>	-
			<b>Funds Total</b>	<b>\$156,060</b>

**Total Project Cost: \$445,060**

**This amount accurately reflects total project cost?**

Yes

## Attachments

### Required Attachments

#### *Visual Component*

File: [81d3409f-026.pdf](#)

#### *Alternate Text for Visual Component*

Top half has a MN map with dataset locations spanning Rochester to Grand Rapids, a graph showing a trend towards earlier leafing in aspen, and line drawings of other events (e.g., bird migration, insect emergence). The bottom half has photos and bios of data collectors profiled in seasonal videos....

### Supplemental Attachments

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

Title	File
UMN SPA Approval Letter	<a href="#">cb215acd-a17.pdf</a>

## 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?**

Yes, I understand the UMN Policy on travel 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?**

No

**Does the organization have a fiscal agent for this project?**

Yes, Sponsored Projects Administration

**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:**

Rick Huismann, University of Minnesota

**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**

N/A

