

# Final Abstract

Final Report Approved on March 3, 2025

## M.L. 2020 Project Abstract

For the Period Ending June 30, 2024

**Project Title:** Peatland Restoration in the Lost River State Forest

**Project Manager:** Tracy Halstensgard

**Affiliation:** Roseau River Watershed District

**Mailing Address:** 714 6th St SW

**City/State/Zip:** Roseau, MN 56751

**Phone:** (218) 463-0313

**E-mail:** tracyh@roseauriverwd.com

**Website:** <http://www.roseauriverwd.com/>

**Funding Source:**

**Fiscal Year:**

**Legal Citation:** M.L. 2021, First Special Session, Chp. 6, Art. 5, Sec. 2, Subd. 08h

**Appropriation Amount:** \$135,000

**Amount Spent:** \$129,278

**Amount Remaining:** \$5,722

### Sound bite of Project Outcomes and Results

The project identified common trends in drained peatlands and developed metrics to assess restoration potential based on suitable materials on-site, accessibility to an individual site, and land use. The results of the Decision Matrix grouped transect locations into nine future phases, with estimated construction costs.

### Overall Project Outcome and Results

The Lost River State Forest consists of approximately 85 square miles of forest and peatlands located along the Canadian border between the cities of Roseau and Warroad. The project aim was to develop methods to assess peatland restoration on state lands, balancing the environmental benefits with the existing land use. Field data collection included cross section surveys, plant inventory, and soil sampling at predetermined distances from the ditch. Elevation data was collected with handheld GPS survey equipment. Vegetation data was collected using protocols developed by the Army Corp of Engineers 1987 manual for use in wetland delineation. Soils data was recorded using Von-post humification method to describe the decomposition of peat soils at various depths. Soils, vegetation, and elevation data can be used in both assessing impacts of the ditch and providing a baseline for comparison if future restoration or modification to the ditch should occur. In addition to the three variables collected, land use, utilities, access, spoil berms, timber, and

other factors were documented to provide a more complete assessment of all features that may influence restoration. The Decision Matrix was used to synthesize the field collected and spatial data, assigning scores for variables at each transect, selecting potential BMP's, and assigning a cost range for construction. The entire project area was grouped into nine individual phases that will allow the project partners to systematically restore peatland hydrology. The methodology is repeatable and can be performed by technical staff within local, tribal, state, or federal agencies, or can be performed by environmental consultants. The primary outcome of the project was to evaluate peatland restoration within the Lost River State Forest, developing a comprehensive and repeatable method to restoring individual known sites and creating a process that would be applied in similar landscapes within Minnesota and the upper Great Lakes.

### **Project Results Use and Dissemination**

Methods for assessing habitat conditions, scoring restoration feasibility, and selecting appropriate BMP strategies are repeatable and can be used to assess restoration of peatlands statewide. Project partners have provided copies of the report and supporting documentation to individuals and organizations interested in peatland assessment and restoration. The final report is available for review and download on the Roseau River Watershed District website. <https://www.roseauriverwd.com/> The project has identified 9 potential phases of construction to restore hydrology across the Lost River State Forest. Phases and their estimated cost range will be used in acquiring future funding.



## Environment and Natural Resources Trust Fund

M.L. 2020 Approved Final Report

### General Information

**Date:** March 13, 2025

**ID Number:** 2020-048

**Staff Lead:** Mike Campana

**Project Title:** Peatland Restoration in the Lost River State Forest

**Project Budget:** \$135,000

### Project Manager Information

**Name:** Tracy Halstensgard

**Organization:** Roseau River Watershed District

**Office Telephone:** (218) 463-0313

**Email:** tracyh@roseauriverwd.com

**Web Address:** <http://www.roseauriverwd.com/>

### Project Reporting

**Final Report Approved:** March 3, 2025

**Reporting Status:** Project Completed

**Date of Last Action:** March 3, 2025

**Project Completion:** June 30, 2024

### Legal Information

**Legal Citation:** M.L. 2021, First Special Session, Chp. 6, Art. 5, Sec. 2, Subd. 08h

**Appropriation Language:** \$135,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with the Roseau River Watershed District to collect physical attribute data from drained peatlands, incorporate the data into a decision matrix, and generate a report detailing peatland restoration potential throughout the Lost River State Forest.

**Appropriation End Date:** June 30, 2024

## Narrative

**Project Summary:** The project will collect physical attributes from the Lost River State Forest and generate model and report detailing comprehensive hydrologic restoration strategies for future restorative efforts.

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

The problem this proposal seeks to address is; establishing a repeatable methodology to assess and prescribe restorative measures on large partially drained peatlands. Drained or partially drained peatlands comprise many of the headwater regions to large watersheds in northern Minnesota. Restoring hydrology to peatlands have benefits to water quality downstream, peak flow reduction, protection/preservation/enhancement of unique habitat and allow for carbon sequestration. Restoration, while beneficial in many aspects can have impact on adjoining land uses or ownership. This conflict can be a deterrent to establishing a project, or transitioning a project from design phase to construction. This proposal will assess the physical potential of restoring peatlands and compare the data collected in the field with GIS datasets of land use, ownership and LiDAR to determine potential conflicts. Restoration, preservation and enhancement of peatlands has been achieved by the state, individuals and private consultants, however these efforts vary in project scope, land use composition and methodology to achieve the intended goal. Establishing a repeatable methodology for restoring large tracts of peatlands would provide a roadmap for additional restoration of drained peatlands within the State of Minnesota with the intent of accelerating efforts to restore peatlands.

**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.**

The project will collect physical characteristics of the drained corridors of the peatland at every 1' interval of elevation along the jurisdictional ditch within the project footprint. The elevation, peat humification and vegetation data collected will be converted into GIS files and compared with existing land use, landownership and LiDAR datasets. All GIS data will be incorporated into the decision matrix, a model which will evaluate the potential degree of physical restoration of hydrology and contrast that with potential impacts on land use within the forest or inundation on private lands. The decision matrix will also provide a suite of restorative measures applicable to any individual site on a 1' contour interval. The output of the decision matrix, maps of the project, supporting data collected, literature review and detail of methodology will be compiled in a final report. The report will serve as a roadmap to acquire funding for restoration, provide a baseline of conditions prior to any restoration and serve as a template for assessing restoration of other peatlands throughout Minnesota.

**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 outcome of this project is a document detailing prescriptive restoration strategies within the Lost River State Forest peatlands. The restoration of hydrology and vegetation of these wetland complexes will provide numerous ecological and water quality benefits both within and downstream of the Lost River State Forest. A result of the project will develop a methodology that can be replicated on similar watershed scale wetland restoration projects throughout northern Minnesota and a "road map" for watershed scale restorations that provide sustainable strategies to improve water quality, ecological integrity and resiliency to climatic change.

## 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?**

Region(s): NW

**When will the work impact occur?**

In the Future

## Activities and Milestones

### Activity 1: Existing Data Review and Data Collection Selection

**Activity Budget:** \$4,604

**Activity Description:**

Review of all available existing historic data that includes aerial photos, geotechnical, county soil survey, NWI and geologic data. Complete pre-selection of data cross sections to create efficiency during field assessments. Licensed Minnesota professional soil scientist in cooperation with Watershed Specialist will review all available historic data. GIS specialist in cooperation with Watershed Specialist will determine cross section locations prior to field assessments.

**Activity Milestones:**

Description	Approximate Completion Date
Data Review Completion, Selection of Data Collection Transects	October 31, 2021

### Activity 2: Collect peat humification data and elevation data

**Activity Budget:** \$94,375

**Activity Description:**

Peat samples and elevation data will be collected at each cross section, located at each 1- foot interval drop in elevation across the ditch laterals. The peat samples will be located 10 meters and 100 meters from the edge of ditch or edge of spoil/roadway. MN Professional Soil Scientist/Classifier will determine humification using VonPost method. Elevation data will be collected 100 meters on either side of the ditch by Watershed specialist. Watershed Specialist will collect peat sample locations and cross section data of roadways or spoil bank, where present.

**Activity Milestones:**

Description	Approximate Completion Date
Field Data Collection - Phase 1	October 31, 2021
Field Data Collection - Phase 2	October 31, 2022

### Activity 3: Input data into Decision Matrix, generate report

**Activity Budget:** \$36,021

**Activity Description:**

Data collected from the field will be converted to a shapefile format, the elevation and soil data will be combined with existing GIS datasets to create a decision matrix. The results of the decision matrix will be compared to potential constraints of adjacent properties and infrastructure landscape position. A final report will be generated, detailing the process, data results and restoration strategy best suited to the health of wetlands and water quality benefits.

**Activity Milestones:**

Description	Approximate Completion Date
Summary of Phase 1 Field Data	December 31, 2021
Summary of Phase 2 Field Data	December 31, 2022
Decision Matrix for Phase 1 and 2	June 30, 2023
Final Project Report	June 30, 2023



## Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Minnesota Department of Natural Resources Warroad Forestry Office	Department of Natural Resources	The Warroad Forestry office is the local land manager for the project footprint. The Forestry office has provided data and input in regards to timber resources and issues related to water to the project manager. This partner will have an active role in providing input throughout the project.	No
Roseau County Board of Commissioners	Roseau County	The Legal Ditch system is administered by the County of Roseau. The outcomes of the project will be reviewed by the Board of Commissioners, who will then determine the proper steps forward through MN 103E.	No

## 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.**

The report, methodology, and documentation of data collection will be available on the Roseau River Watershed District website : <http://www.roseauriverwd.com/index.html>. The project will be listed in the projects tab of the website, reference to the project will be share on social media via facebook and Instagram. The watershed district will distribute the report to local government and agency partners.

The Minnesota Environment and Natural Resources Trust Fund (ENRTF) will be acknowledged through use of the trust fund logo or attribution language on project print and electronic media, publications, signage, and other communications per the ENRTF Acknowledgement 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?**

Additional funding requests will be required for engineering and construction of peatland restoration in the Lost River State Forest. The prescriptive strategies outlined in the final report will be utilized in seeking future funding from local, regional, state and federal sources to implement phased restoration within the project footprint. The report will serve as a roadmap, providing sufficient data to applicable best management practices to address ongoing peatland degradation and the subsequent impacts it has on water quality, water quantity and climate change.



## Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount	\$ Amount Spent	\$ Amount Remaining
<b>Personnel</b>										
Watershed Specialist		Data Collection			0%	0.22		\$35,966	-	-
Administrator		Project Coordination, Report Writing			0%	0.06		\$8,000	-	-
							<b>Sub Total</b>	<b>\$43,966</b>	<b>\$43,966</b>	-
<b>Contracts and Services</b>										
WSB Engineering	Professional or Technical Service Contract	Soil Scientist, provide descriptions of peat humification. Contribute applicable information to final report. GIS Specialist, Generate Decision Matrix and map products for the report. Environmental Technician, report writing and data review. Water Resources Engineer, Hydraulic Analysis.				0.26		\$72,080	\$72,080	-
							<b>Sub Total</b>	<b>\$72,080</b>	<b>\$72,080</b>	-
<b>Equipment, Tools, and Supplies</b>										
	Equipment	Survey equipment rental	Survey equipment required to collect elevation data					\$9,000	\$6,425	\$2,575
	Equipment	All terrain vehicle rental	Vehicle required to access remote sites within the project					\$7,854	\$6,807	\$1,047
	Tools and Supplies	Purchase Peat Sampling Probe	Specialty equipment required for collecting peat and muck soils					\$2,100	-	\$2,100
							<b>Sub Total</b>	<b>\$18,954</b>	<b>\$13,232</b>	<b>\$5,722</b>
<b>Capital Expenditures</b>										
							<b>Sub Total</b>	-	-	-

<b>Acquisitions and Stewardship</b>										
							<b>Sub Total</b>	-	-	-
<b>Travel In Minnesota</b>										
							<b>Sub Total</b>	-	-	-
<b>Travel Outside Minnesota</b>										
							<b>Sub Total</b>	-	-	-
<b>Printing and Publication</b>										
							<b>Sub Total</b>	-	-	-
<b>Other Expenses</b>										
							<b>Sub Total</b>	-	-	-
							<b>Grand Total</b>	<b>\$135,000</b>	<b>\$129,278</b>	<b>\$5,722</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	\$ Amount Spent	\$ Amount Remaining
State						
			State Sub Total	-	-	-
Non-State						
			Non State Sub Total	-	-	-
			Funds Total	-	-	-

## Attachments

### Required Attachments

#### *Visual Component*

File: [355ee864-b34.pdf](#)

#### *Alternate Text for Visual Component*

Project location within the State of Minnesota, with inset LIDAR graphic of Roseau County and project limits shown within...

#### *Board Resolution or Letter*

Title	File
Roseau River Watershed Board Resolution	<a href="#">d030068b-c8a.pdf</a>

### Supplemental Attachments

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

Title	File
Roseau County Board, Letter of Support	<a href="#">63087b68-452.pdf</a>
MNDNR, Letter of Support	<a href="#">7dad851e-113.pdf</a>
Background Check Certification Form	<a href="#">a6abed86-b02.pdf</a>
Map showing Phase 1 and Phase 2	<a href="#">683376b6-956.pdf</a>
Lost River Forest Peatland Restoration Study	<a href="#">5e339498-a4e.pdf</a>

#### *Media Links*

Title	Link
Roseau Watershed District Project Site	<a href="http://www.roseauriverwd.com/Project_Hay_Creek_Peatland.html">http://www.roseauriverwd.com/Project_Hay_Creek_Peatland.html</a>

### Difference between Proposal and Work Plan

#### *Describe changes from Proposal to Work Plan Stage*

Unchecked restoration box, clarified equipment rental and purchase descriptions in the budget

## 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?**

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

## Work Plan Amendments

Amendment ID	Request Type	Changes made on the following pages	Explanation & justification for Amendment Request (word limit 75)	Date Submitted	Approved	Date of LCCMR Action
1	Amendment Request	<ul style="list-style-type: none"> <li>Budget - Professional / Technical Contracts</li> </ul>	WSB was hired to preform professional services for the project, these tasks include collection of field data, report writing and developing the decision matrix. Prior to hiring WSB, professional/technical contracts was listed as "TBD"	December 23, 2022	Yes	December 27, 2022
2	Project Manager	Previous Manager: Torin McCormack (rrwd@mncable.net) New Manager: Tracy Halstensgard (tracyh@roseauriverwd.com)	Original PM has left organization.	July 7, 2023	Yes	July 7, 2023
3	Amendment Request	<ul style="list-style-type: none"> <li>Project Collaborators - Project Manager Info</li> </ul>	Due to unexpected staffing changes there was a need to change the mobile phone number as well as the job title. apparently this is required by the LCCMR staff. They seem to be adamant about having the correct information.	July 7, 2023	Yes	July 7, 2023
4	Completion Date	Previous Completion Date: 06/30/2024 New Completion Date: 11/30/2025	Administrative workaround to approve previous updates.	November 22, 2024	Yes	November 22, 2024
5	Completion Date	Previous Completion Date: 11/30/2025 New Completion Date: 06/30/2024	Administrative workaround to approve old updates.	November 22, 2024	Yes	November 22, 2024

# Status Update Reporting

## Final Status Update August 14, 2024

**Date Submitted:** February 7, 2025

**Date Approved:** February 7, 2025

### Overall Update

The Lost River Forest Peatland Restoration Study was an extensive effort to gather data in the Lost River State forest and identify potential locations to focus restoration efforts. The report also provides a template that can be utilized in to determine suitability for projects in other peatland restoration areas. The Decision Matrix incorporates field collected data, and spatial data to determine a suite of BMPs based on access, available resources, and site characteristics. Final scoring is based on a number of factors. The RRWD, along with project partners, will use this scoring to select BMPs for implementation. BMPs proposed include, sheet pile structures, spoil pile breach, wood weir, rock weir, and hinge cut trees. Selection of BMP will be site specific. The project(s) will be phased and which phases are implemented will depend on various factors, including funding availability.

### Activity 1

This activity was previously marked complete.

*(This activity marked as complete as of this status update)*

### Activity 2

This activity was previously marked complete.

*(This activity marked as complete as of this status update)*

### Activity 3

Data collected from the field was converted to a shapefile format, the elevation and soil data was combined with existing GIS datasets and a decision matrix was created. The results of the decision matrix was compared to potential constraints of adjacent properties and infrastructure landscape position. A final report has been finalized, detailing the process, data results and restoration strategy best suited to the health of wetlands and water quality benefits. Utilizing this report, the RRWD, along with it's partners, will begin planning project phases for implementation.

*(This activity marked as complete as of this status update)*

### Dissemination

A copy of the report is available on the RRWD's website at

[https://www.roseauriverwd.com/Project\\_Hay\\_Creek\\_Peatland.html](https://www.roseauriverwd.com/Project_Hay_Creek_Peatland.html)

We have also provided copies to BWSR and the MN DNR.



# Additional Status Update Reporting

## Additional Status Update August 14, 2024

**Date Submitted:** September 13, 2024

**Date Approved:** November 22, 2024

### Overall Update

All field data has been collected. The field data has been digitized and incorporated into the final report and the decision matrix, all spatial data has been generated. The project was presented at the February 2023 Peatland Symposium held by The Nature Conservancy. Exhibits and data from the Peatland Symposium have been uploaded to the Nature Conservancy's national web map story, tracking peatland restoration efforts. The final report is in draft form. The finalization of the report has been delayed. Once completed and accepted the Report and Decision Matrix will be submitted to LCCMR and digital copies will be published on the Roseau River Watershed website. Report writing is the only activity since previous status update. We understand that no costs incurred after June 30, 2024 are eligible for reimbursement under this grant.

### Activity 1

This activity was previously marked complete.  
*(This activity marked as complete as of this status update)*

### Activity 2

This activity was previously marked complete.  
*(This activity marked as complete as of this status update)*

### Activity 3

The final report is in draft form. The Decision Matrix is taking longer than anticipated to develop and this activity has been delayed due to that difficulty. Once we are able to finalize the Decision Matrix, project partners and their consultants have provided comment and feedback which are being incorporated into the final draft. Once completed and accepted the Report and Decision Matrix will be submitted to LCCMR and digital copies will be published on the Roseau River Watershed website.

### Dissemination

The Legacy Logo is displayed on the Roseau River Watershed District website, within the project page for the Lost River State Forest Peatland Restoration and will be included in the report and any other materials. Information was also presented at the Feb 2023 Peatland Symposium as previously stated.

# Status Update Reporting

## Status Update April 1, 2024

**Date Submitted:** September 13, 2024

**Date Approved:** November 22, 2024

### Overall Update

All field data has been collected. The field data has been digitized and incorporated into the final report and the decision matrix, all spatial data has been generated. The project was presented at the February 2023 Peatland Symposium held by The Nature Conservancy. Exhibits and data from the Peatland Symposium have been uploaded to the Nature Conservancy's national web map story, tracking peatland restoration efforts. The final report is in draft form. There have been delays in developing the Decision Matrix. We are working to have the report completed by the June 30, 2024 deadline understanding that no costs to the grant can be accrued after that date.

### Activity 1

This activity was previously marked complete.  
*(This activity marked as complete as of this status update)*

### Activity 2

This activity was previously marked complete.  
*(This activity marked as complete as of this status update)*

### Activity 3

The final report is in draft form. The Decision Matrix is taking longer than anticipated to develop and this activity has been delayed due to that difficulty. Once we are able to finalize the Decision Matrix, project partners and their consultants have provided comment and feedback which are being incorporated into the final draft. Once completed and accepted the Report and Decision Matrix will be submitted to LCCMR and digital copies will be published on the Roseau River Watershed website.

### Dissemination

The Legacy Logo is displayed on the Roseau River Watershed District website, within the project page for the Lost River State Forest Peatland Restoration and will be included in the report and any other materials.

# Status Update Reporting

## Status Update October 1, 2023

**Date Submitted:** September 13, 2024

**Date Approved:** November 22, 2024

### Overall Update

All field data has been collected. The field data has been digitized and incorporated into the final report and the decision matrix, all spatial data has been generated. The project was presented at the February 2023 Peatland Symposium held by The Nature Conservancy. Exhibits and data from the Peatland Symposium have been uploaded to the Nature Conservancy's national web map story, tracking peatland restoration efforts. The final report is in draft phase, approximately 95% complete. Project partners and their consultants will be providing comment and feedback for edits and eventual submittal of the Final Report. Once completed and accepted the Report and Decision Matrix will be submitted to LCCMR and digital copies will be published on the Roseau River Watershed website.

### Activity 1

This activity was previously marked complete.

*(This activity marked as complete as of this status update)*

### Activity 2

This activity was previously marked complete.

*(This activity marked as complete as of this status update)*

### Activity 3

The final report is in draft phase, approximately 95% complete. Project partners and their consultants will be providing comment and feedback for edits and eventual submittal of the Final Report. Once completed and accepted the Report and Decision Matrix will be submitted to LCCMR and digital copies will be published on the Roseau River Watershed website.

### Dissemination

The Legacy Logo is displayed on the Roseau River Watershed District website, within the project page for the Lost River State Forest Peatland Restoration.

# Status Update Reporting

## Status Update April 1, 2023

**Date Submitted:** May 15, 2023

**Date Approved:** May 17, 2023

### **Overall Update**

All field data has been collected. The field data has been digitized and incorporated into the final report and the decision matrix, all spatial data has been generated. The final report is nearing completion and the decision matrix is being calibrated against existing hydrologic models created within the watershed. Field data collection methods and data cataloging protocols have been shared with local government agencies and non-profit organizations to aid in assessment of peatlands subject to drainage impacts. The project was presented at the February Peatland Symposium held by The Nature Conservancy.

### **Activity 1**

This activity was previously marked complete.

*(This activity marked as complete as of this status update)*

### **Activity 2**

This activity was previously marked complete.

*(This activity marked as complete as of this status update)*

### **Activity 3**

All field collected data has been digitized for inclusion in the final report and utility in the Decision Matrix. Shapefile data and attribute data have been finalized and incorporated into the decision matrix. The data generated from the decision matrix is being calibrated with existing hydrologic models. The final report is nearing completion.

### **Dissemination**

The project was presented in February to the Peatland Symposium, sponsored by The Nature Conservancy. The Trust Fund logo was displayed within the presentation, and a description of the funding source was provided to those in attendance.

# Status Update Reporting

## Status Update October 1, 2022

**Date Submitted:** December 23, 2022

**Date Approved:** December 27, 2022

### Overall Update

To date approximately 70% of the targeted sites have been inventoried, raw data and methods have been shared with MN DNR staff and The Nature Conservancy staff to help inform similar studies in drained peatlands as they relate to habitat and climate change. There are some notable trends that correlate vegetative composition with humification of peat and general subsidence within the ditch corridor. Once phase 2 of field data collection is complete in October (2022) all data will be input into the decision matrix and a final report will be generated outlining methodology, BMP suitability and future restoration phasing.

### Activity 1

This activity was previously marked complete.

*(This activity marked as complete as of this status update)*

### Activity 2

Phase 2 of field collection is scheduled to begin on October 6th and be completed on October 21st. Access corridors along snowmobile trails and logging roads have been cleared, all permits and leases through the Department of Natural Resources have been acquired and land manager has been updated on planned field work.

*(This activity marked as complete as of this status update)*

### Activity 3

Once Phase 2 of field data collection is complete, the entirety of data collected will be incorporated into the decision matrix and the final report will be developed.

### Dissemination

The Watershed District's website has the project listed under the project tabs with a description of the overall goals, the funding source and a link to the project workplan. Methodology used for the this project have been shared with The Nature Conservancy(TNC) staff, TNC staff were trained in the field on procedures for collecting date and provided literature and shapefile datasets to assist in their modeling efforts to target peatland restoration to reduce greenhouse gas emissions.

# Status Update Reporting

## Status Update April 1, 2022

**Date Submitted:** April 20, 2022

**Date Approved:** May 5, 2022

### Overall Update

At the completion of Phase 1 of the Peatland Restoration in the Lost River State Forest project, 81 cross sections were completed with 324 unique soil boring and vegetative sampling locations. In addition to the 3 unique characteristics, data collected in the field, site conditions and any abnormalities in the ditch corridor or within the sample set were recorded to inform the decision matrix and final report. Phase 1 of data collection found correlations between vegetation composition, degree of humification and level of subsidence within the ditch corridor. These findings will aid in informing restorative measures in the future and will provide context of existing conditions within the Final Report. All field data collected during the fall of 2021 was generated into data tables for use within the Decision Matrix and the Final Report.

### Activity 1

Activity 1 consisted of historic data collection, collection of applicable spatial data and development of field assessment plans and maps. All applicable data was collected, this included historical documents of the legal drainage system, interviews with residents and users of the public lands, and correspondence with the applicable land managers. Field maps detailing cross section and sampling locations were generated detailing 140 potential cross section locations applicable to the project with 560 soil boring and vegetation sampling plots. Activity 1 has been completed.  
*(This activity marked as complete as of this status update)*

### Activity 2

Activity 2 consisted of collection of field data, soil sampling, vegetation sampling and survey. Within Activity 2, there were milestones for Phase 1 of field data collection (Milestone 1), to be completed by October 31st of 2021, and Phase 2 of field data collection (Milestone 2) to be completed October 31st of 2022. Milestone 1 of Activity 2 has been completed. At the completion of Milestone 1, 81 cross sections were collected and 324 soil boring and vegetation sampling locations were recorded. Milestone 2 of Activity 2 is on schedule to be completed by October 31st of 2022.

### Activity 3

Activity 3 consisted of data input into the Decision Matrix and generating a final report. Within Activity 3 there are 4 milestones, Milestone 1 is summary of phase 1 field data, Milestone 2 is summary of phase 2 field data, Milestone 3 is completion of the Decision Matrix from data input of Milestones 1 and 2, and Milestone 4 is completion of the Final Report. Milestone 1 for Activity 3 has been completed. All cross section data, soil boring data and vegetation data has been consolidated into the appropriate data tables for incorporation into the decision matrix. Information completed through Milestone 1 has been incorporated into the draft version of the Final Report. Milestone 2 is on schedule to be completed by December 31st 2022, and Milestone 3 and 4 are on schedule to be complete by June 30th 2023.

### Dissemination

Updates on the project have been shared on social media outlining the projects status, goals and funding source. Links to the LCCMR facebook page and the Legacy Logo were attached in all social media posts. The Roseau River Watershed District website is currently under construction, the once the latest updates are complete the Lost River State Forest Project will be live on the website within the project tab. The Nature Conservancy (TNC) is currently working on a research project related to green house gas emissions within peatlands focusing on restoration of drained peatlands. TNC staff have received the workplan and draft data from this project to complete their efforts. Watershed staff will be training TNC staff in June 2022 on field level data collection developed through this project, so the methodology can be

replicated in their greenhouse gas study. Adjacent watershed districts have contacted the Roseau River Watershed District regarding methodology to restore drained peatlands in their headwaters. Information from the project workplan along with methods developed in the field and spatial data requirements were distributed to interested watershed districts. Additional information distribution, in the form of social and traditional press release format is planned as the project progresses.