



## Environment and Natural Resources Trust Fund

M.L. 2022 Approved Work Plan

### General Information

**ID Number:** 2022-026

**Staff Lead:** LCCMR General Universal Staff User

**Date this document submitted to LCCMR:** July 26, 2022

**Project Title:** Teacher Field School: Stewardship through Nature-Based Education

**Project Budget:** \$500,000

### Project Manager Information

**Name:** Patty Born

**Organization:** Hamline University

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**Web Address:** <https://www.hamline.edu/>

### Project Reporting

**Date Work Plan Approved by LCCMR:** July 27, 2022

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

**Project Completion:** June 30, 2025

**Final Report Due Date:** August 14, 2025

### Legal Information

**Legal Citation:** M.L. 2022, Chp. 94, Sec. 2, Subd. 05a

**Appropriation Language:** \$500,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with Hamline University to create an immersive, research-backed field school for teachers to use nature-based education to benefit student well-being and academic outcomes while increasing stewardship habits.

**Appropriation End Date:** June 30, 2025

## Narrative

**Project Summary:** We create an immersive, research-backed field school addressing a gap in teachers' preparedness and willingness to use nature-based education to benefit student well-being and academic outcomes while increasing stewardship habits.

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

Nature centers host short field trips that, while meaningful, seldom result in lasting educational outcomes. Most young people spend 1000+ hours annually in school, a clear opportunity to develop students' stewardship orientation by coupling academics with nature-based experiences. However, teachers identify lack of skills, knowledge, and confidence as barriers to teaching with nature. Existing training: 1) is too short to provide adequate content knowledge and confidence; 2) focuses on either content or pedagogy, missing teachers' need to practice nature-based approaches within their subjects; 3) ignores interdisciplinary learning opportunities, and 4) lacks explicit connections to standards, making it unlikely to be implemented. Students who are disconnected from nature become adults disinterested in supporting natural resource investments.

Immersive Nature-Based Education (NBE) supports positive educational outcomes by enhancing:  
intellectual, physical and mental health,  
conservation ethics,  
subject matter relevance,  
connection across disciplines, particularly for those most at risk.

NBE can be used across urban, rural, suburban, and wilderness settings once teachers are equipped with skills, knowledge, and confidence. It connects academic content with inquiry and meaningful stewardship.

Minnesota's future depends on residents who value our natural resources – values supported through access to, experience in, and understanding of our diverse landscapes.

**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.**

Two diverse teacher cohorts will have an immersive experience in Nature-Based Education (NBE), building content knowledge, confidence, and skills to use nature as a platform across their already existing curriculum. Teachers will be guided in integrating NBE with new and existing Minnesota Standards across ALL disciplines, many of which clearly connect to environmental, social, and historical events that invite teachers to venture outdoors. In line with the standards and the Governor's Due North plan for educational equity, we prepare a new wave of teachers who use inquiry in nature and pilot a new professional development program.

Teachers will work with PIs individually and in school-based teams with sustained support prior to and following immersive events to make effective use of nature to both teach about and within Minnesota's diverse natural environments. This project has a multiplier effect. If each teacher has 25 students, together, they reach 650 students/year. If teachers share with colleagues, program expansion is even greater.

PIs have experience in the research and pedagogical implications for NBE (Born, Jordan), academic content connections (Born, Jennings, Pound), and teacher education (Born, Jennings, and Pound).

The project directly addresses LCCMR priority area C; indirectly: A,B,D,F.

**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?**

1. Students and teachers engaged in NBE will develop a connection to Minnesota's natural places, which grounds sustained participation in the outdoors and development of conservation values and behaviors and support for conservation and preservation efforts.

2. The two cohorts of teachers will be selected to foster relationships between urban and rural teachers, with the aim of constructively closing the gap between rural and urban perceptions of natural resource use and conservation ideals.

3. We will have piloted a professional development opportunity in NBE that can be shared and adapted to be offered across the state.

## 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

## Activities and Milestones

### Activity 1: Year 1: Program Planning and Initial Cohort Selection

**Activity Budget:** \$83,217

**Activity Description:**

Objective: Plan for delivery, implementation, outcomes, and evaluation of Field School, with steps for mid-course corrections.

Tasks:

1. Establish goals for program outcomes and teacher confidence and efficacy.
2. Recruit initial cohorts of 9 teams (24-26 teachers; 3-4 per school), representing grades k-12 from urban, suburban, and rural schools. Selection criteria include:  
geographic and sociodemographic balance between urban and rural;  
support and participation from school or district leadership because this increases likelihood for system change, clear articulation of goals for integrating NBE into the existing curriculum.  
Intentional recruitment of schools with high populations of underrepresented/marginalized communities
3. PIs hold preparatory conversations with teams to create individualized support plans. Goals around culturally-sustaining practices that center students' lived experience and increase access to and enjoyment of natural resources will be translated into concrete steps to ensure smooth transition to NBE, and identification of NBE outcomes for individual teachers as well as teams and schools. This can help promote systems change as cohort members identify and articulate academic, social, and emotional outcomes for their students.

**Activity Milestones:**

Description	Approximate Completion Date
Establish program goals and measurable program outcomes including teacher confidence and efficacy for NBE	August 31, 2023
Recruitment through professional networks, social media, and Hamline's network of school partners	August 31, 2023
Application review and selection of teams	September 30, 2023
Consultations with teams to develop initial goals for participation prior to the first retreat	October 31, 2023

### Activity 2: (Year 1) Pilot Teacher Field School at Residential Environmental Learning Centers (RELC) with three immersive retreats with intervening support

**Activity Budget:** \$201,360

**Activity Description:**

Objective: Successfully launch cohort 1. Piloting the program involves hosting teachers for a working retreat at an RELC with a review of project purpose, their personal and team goals, and existing curricular goals and challenges. This will be followed by an immersive, field-based exploration in interdisciplinary teaching using the environment as a context. The second and third visits in different seasons will offer teachers the opportunity to hone their skills, troubleshoot and share successes, and learn from one another. Between retreats, teachers will develop and use NBE lessons, activities, projects and activities, and will practice NBE content and strategies including stewardship of Minnesota's resources. Ongoing support includes virtual or face-to-face individual meetings with PIs, small group gatherings hosted and organized by teachers, monthly check-in emails from PIs, and even physical visits to school sites by PIs. PIs will work closely with teachers to ensure that NBE content is grounded in antiracist, culturally relevant pedagogy so as to support and reflect all learners throughout the state and ultimately increase equitable access to and enjoyment of Minnesota's natural resources, and that it is inclusive of educational goals for equity as identified by Gov. Walz, as described in the Due North education plan.

**Activity Milestones:**

Description	Approximate Completion Date
First three-day retreat at the RELC	October 31, 2023
Second, three-day retreat at the RELC	March 31, 2024
Monthly check-ins with teacher teams during interim periods.	June 30, 2024
Third, three- day retreat at the RELC	May 31, 2025
Teachers will develop and "field-test" at least one lesson, activity or project following each retreat	May 31, 2025
Teachers produce and field-test NBE projects, lessons, etc with peer feedback and coaching	May 31, 2025

### Activity 3: (Year 2) Refinement of Program, Selection of Second Cohort and Field School Implementation

**Activity Budget:** \$215,423

**Activity Description:**

Objective: Refine program based on previous year, launch cohort 2. Second cohort recruitment and program content development and delivery will proceed generally as they did in year 1, with revisions made as necessary based on formative assessment. Any changes to the plan for cohort 2 will be informed by a debriefing retreat at the end of cohort 1. Formative evaluation data will provide insights into necessary enhancements or changes for continual improvement of the work. In addition, teachers from cohort 1 will be invited to help recruit the second cohort, visit cohort 2 to share their experiences, and provide support and mentorship to teachers in cohort 2. Throughout the project, the team will support teachers and administrators in implementing NbE. First, the team will offer individualized support after each retreat by hosting regular webinars, virtual meetings, and visiting school sites to provide coaching, support for in-classroom and school-adjacent outdoor activities. This individualized support will continue throughout the two-year period. Teachers are expected to continue to develop and field-test several nature-based approaches (be they units, activities, lesson plans, projects, etc)in the time between retreats. Teachers will use their stipends obtain necessary materials and supplies for implementing NbE at their sites.

**Activity Milestones:**

Description	Approximate Completion Date
Formative evaluation results in revised plan for year 2	July 31, 2024
First three-day retreat at the RELC	October 31, 2024
Second three-day retreat at the RELC	March 31, 2025
Third three-day retreat at the RELC	May 31, 2025
Monthly check-ins with teacher teams during the interim periods	June 30, 2025
Teacher support between retreats	June 30, 2025
Teachers develop and field-test NBE lessons, activities, and approaches	June 30, 2025

## Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Dr Cathy Jordan	University of Minnesota	Director of Leadership & Education at the Institute on the Environment and Professor of Pediatrics, University of Minnesota; Consulting Research Director, Children & Nature Network. Jordan will oversee the evaluation of this project, provide theoretical and evidence-based grounding for the NBE model, and serve as co-teacher during retreats.	Yes
Dr Carrie Jennings	Freshwater	Dr. Jennings will help teacher participants identify site-specific community science projects, develop landscape literacy, interpret the environmental history of the land, the connections between land use and water quality, the intersections of education and policy, and co-teach throughout the program in her role as director of Research and Policy.	Yes
Dr Kate Pound	Freshwater	Dr. Pound is a geology professor who works with pre- and in-service teachers to build earth science content knowledge and pedagogy in field settings. She will work with teachers at the Field School to build understanding of earth processes and help them integrate NBE, inquiry, and Minnesota standards into curriculum.	Yes

## Dissemination

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

In every context, the project will acknowledge Environment and Natural Resources Trust Fund. This will be done through use of the trust fund logo or attribution language on project print and electronic media, publications, signage, and other communications per the ENTRF Acknowledgment Guidelines.

Project leaders will:

Present a report on the project at relevant state and local conferences (such as Education Minnesota);

Upon conclusion of the project, submit an article to appropriate academic journals for publication;

Save copies of all curriculum materials, field notes, participant evaluations, and other relevant materials for further refining the model;

Conduct outreach to local media (MPR, Pioneer Press, Star Tribune, etc.) to disseminate information throughout the duration of the project to build visibility;

Produce a website which can be accessed by the public and teachers who wish to learn more;

Create a brief for policymakers in the legislature as well as staff of the Minnesota Department of Education

## 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?**

Teacher cohorts will be supported in implementing NBE, and in coaching and supporting colleagues at their schools.

Hamline University faculty will continue to support teachers in implementing NBE during the year after their cohort participation. Evaluation of program design and implementation will be published and shared with teachers across Minnesota.

After the grant period, project leads will use lessons learned to coordinate with Hamline in development of a more permanent Teacher Field School; financial barriers to participation in a permanent Field School due to tuition and travel costs will be offset by Freshwater's successful fundraising efforts.

## Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
<b>Personnel</b>								
Principal Investigator		One 4-credit course release in each academic year 22-23 and 23-24			25%	0.2		\$18,506
							<b>Sub Total</b>	<b>\$18,506</b>
<b>Contracts and Services</b>								
University of Minnesota	Sub award	Program development, teach evidence base, evaluate project, supervise graduate student research				2.2		\$135,646
Freshwater	Sub award	Planning professional development content, developing materials, performing standards review, and on-site leadership, mentoring, and presentations.				0.5		\$105,008
							<b>Sub Total</b>	<b>\$240,654</b>
<b>Equipment, Tools, and Supplies</b>								
	Tools and Supplies	field guides, waterproof pens/paper, dip nets, etc	Incidental needs that may arise during retreats					\$2,382
							<b>Sub Total</b>	<b>\$2,382</b>
<b>Capital Expenditures</b>								
							<b>Sub Total</b>	<b>-</b>
<b>Acquisitions and Stewardship</b>								
							<b>Sub Total</b>	<b>-</b>
<b>Travel In Minnesota</b>								
	Miles/ Meals/ Lodging	Facility rental expense for three, 3-day retreats in year 1	Rental of classroom space, facility fee, for field school site					\$17,919
	Miles/ Meals/ Lodging	Mileage Osprey wilds\$0.56/mile, assuming 1 PI and 14 teachers from the metro area (200 miles round-trip), 6 teachers with a 350 mi. RT expense, and 6	Travel expense reimbursement					\$14,728

		teachers with a 450 mi. RT expense. Assuming 9 administrators' mileage for 1 retreat, averaging 275 mi. RT. Mileage assumptions are based on averages from around the state to the retreat site.						
	Miles/ Meals/ Lodging	Mileage-Eagle Bluff \$.56/mile, assuming 1 PI and 14 teachers from the metro area (250 mi. RT), 6 teachers with a 400 mi. RT expense, and 6 teachers with a 600 mi. RT expense. Three separate retreats. Assuming 9 administrators' mileage for one workshop, averaging 300 mi. RT. Mileage assumptions are based on averages from around the state to the workshop destination.	Travel expense reimbursement					\$18,536
	Miles/ Meals/ Lodging	Facility rental expense Eagle Bluff for three, 3-day retreats year 2	Rental of Classroom space, facility fee for field school site					\$26,925
							<b>Sub Total</b>	<b>\$78,108</b>
<b>Travel Outside Minnesota</b>								
							<b>Sub Total</b>	-
<b>Printing and Publication</b>								
							<b>Sub Total</b>	-
<b>Other Expenses</b>								
		Stipend- 9 administrators	\$350 stipend for one administrator per team of teachers to attend 3 retreat sessions. \$350*9 administrators*3 sessions					\$18,900
		Stipend-26 cohort teachers each year	Stipend for each of the 26 teachers in each cohort year to cover classroom supplies and materials, other expenses as deemed necessary by teacher teams. \$2000 *26 * 2.					\$104,000
		Stipend, 10 guest instructors per year	Anticipating up to 10 guest instructors per year from state agencies and other natural resource organizations. \$250 * 10 guest instructors* 2 years					\$5,000
		Stipend- 5 cohort 1 teachers	one-time \$250 stipends for five year-one cohort teachers to visit, provide					\$1,250



			coaching and feedback to year 2 cohort teachers. \$250 * 5 teachers					
		Substitute teachers-3 teaching days per participating cohort teacher	Expense covers the cost of substitute teachers, permitting each participating teachers \$200 for substitute teacher costs for three teaching days \$200 * 3 days * 26 teachers *2 years					\$31,200
							<b>Sub Total</b>	<b>\$160,350</b>
							<b>Grand Total</b>	<b>\$500,000</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
State				
			State Sub Total	-
Non-State				
			Non State Sub Total	-
			Funds Total	-

## Attachments

### Required Attachments

#### *Visual Component*

File: [17610faf-123.pdf](#)

#### *Alternate Text for Visual Component*

Pathways with headings "Nature engagement," "Equity," and "Academic Achievement," leading to the Teacher Field school. Outside the Teacher Field school, teachers and children learning and exploring together outdoors, under trees with headings "Conservation Ethic" and "Academic Learning" depicting the positive outcomes of the Teacher Field School....

#### *Financial Capacity*

File: [a0952305-05f.pdf](#)

### Optional Attachments

#### *Support Letter or Other*

Title	File
Letter of Support-Children and Nature Network	<a href="#">e152ae69-5aa.pdf</a>
Letter of Support-Dr. L. Chawla	<a href="#">121927fc-f3d.pdf</a>
Partner support letter-Eagle Bluff	<a href="#">a9f2b120-afc.pdf</a>
Partner support letter-Osprey Wilds	<a href="#">a7d64c4e-51e.pdf</a>
Letter of Support-Hamline University	<a href="#">dab40f35-bf0.pdf</a>
Letter of Support-Freshwater	<a href="#">8b484755-8ca.pdf</a>
Letter of Support - Prairie Creek	<a href="#">84021247-65d.pdf</a>
Letter of Support-Prior Lake/Savage Area schools	<a href="#">03119735-40b.pdf</a>
Background check form	<a href="#">abdda186-b07.pdf</a>

## Difference between Proposal and Work Plan

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

We are requesting a delay in starting the project to March 2023. This will enable us to maintain the timeline established in our original submission. It will allow our team the necessary time to recruit teacher teams, spend time goal-setting and planning with individuals, teams, and school administrators. All project tasks and milestones will still be completed by the appropriation end date.

## 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 agree travel expenses must 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 agree to the Commissioner's Plan.

**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

# Teacher Field School

enhances teacher efficacy in nature-based education to improve student academic learning and development of a conservation ethic

