## **Final Abstract**

## Final Report Approved on March 1, 2024

## M.L. 2021 Project Abstract

For the Period Ending June 30, 2024

Project Title: Expanding Access to Environmental Education for Underserved Communities

Project Manager: Victoria Hall

Affiliation: U of MN - Raptor Center

Mailing Address: 1920 Fitch Avenue

City/State/Zip: St. Paul, MN 55108

Phone: (612) 624-3431

E-mail: hall2112@umn.edu

Website: https://www.raptor.umn.edu/

**Funding Source:** 

**Fiscal Year:** 

Legal Citation: M.L. 2021, First Special Session, Chp. 6, Art. 6, Sec. 2, Subd. 05g

**Appropriation Amount: \$178,000** 

**Amount Spent: \$166,685** 

**Amount Remaining: \$11,315** 

#### **Sound bite of Project Outcomes and Results**

The Raptor Center's "Expanding Access to Environmental Education for Underserved Communities" project expanded environmental literacy by delivering 303 programs to underserved schools, engaging 16,317 students with raptor-focused curricula. Through these efforts, we raised public awareness, fostering a greater understanding and appreciation for Minnesota's natural resources and wildlife conservation.

#### **Overall Project Outcome and Results**

With environmental issues being among the most pressing challenges that society will face in the coming decades, there is a critical need to expand environmental and scientific literacy in the next generation. The fates of our natural world lie in the hands of an informed public. While Minnesota has state standards for environmental education, not all students and teachers have equal access to effective tools for meeting these standards.

The Raptor Center's (TRC) project aimed to tackle the challenge of limited environmental education access in underserved communities across Minnesota. By integrating live raptors, environmental artifacts, and STEM-based curricula, we sought to inspire and educate students while fostering a deeper connection to nature. Through

partnerships with 201 urban and 102 rural classrooms, we successfully delivered 303 programs, engaging approximately 16,317 students from kindergarten to twelfth grade. The primary goal of these presentations was to spark students' interest and passion in both raptors and the natural world.

We partnered with University of Minnesota Evaluation Studies PhD students and a Hamline University graduate student to develop an evaluation of The Raptor Center's classroom presentations. Fifty-three teacher surveys, 13 observations of classroom presentations, and one group interview with TRC staff took place to document the extent to which TRC program goals were achieved. Key outcomes include positive feelings about nature and greater empathy for the environment, evident in the high satisfaction reported in teacher evaluations. Additionally, the project facilitated a greater understanding of environmental issues, particularly focusing on the connection to raptors in Minnesota.

Overall, the project's success underscores the importance of efforts in expanding environmental education and conservation messaging in Minnesota. By empowering students with knowledge and fostering a sense of responsibility towards the natural world, the project lays the groundwork for future environmental stewardship.

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

Dissemination efforts included school outreach, print materials (e.g. Raptor Release), conferences, and social media, spreading awareness and sharing stories about The Raptor Center's environmental education project. All efforts acknowledged the Environment and Natural Resources Trust Fund through appropriate logo usage and attribution. Additionally, a final set of activity sheets (attached) was given to participating classrooms, providing valuable resources for educators interested in promoting environmental literacy and conservation efforts.



## **Environment and Natural Resources Trust Fund**

M.L. 2021 Approved Final Report

#### **General Information**

Date: August 28, 2024

**ID Number:** 2021-323

Staff Lead: Tom Dietrich

Project Title: Expanding Access to Environmental Education for Underserved Communities

Project Budget: \$178,000

## **Project Manager Information**

Name: Victoria Hall

Organization: U of MN - Raptor Center

Office Telephone: (612) 624-3431

Email: hall2112@umn.edu

Web Address: https://www.raptor.umn.edu/

### **Project Reporting**

Final Report Approved: March 1, 2024

**Reporting Status: Project Completed** 

Date of Last Action: March 1, 2024

Project Completion: July 31, 2023

## **Legal Information**

Legal Citation: M.L. 2021, First Special Session, Chp. 6, Art. 6, Sec. 2, Subd. 05g

**Appropriation Language:** \$178,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota for the Raptor Center to build environmental literacy and engagement by delivering an environmental education program featuring live raptors and standards-based curriculum to approximately 300 classrooms in underserved communities throughout Minnesota.

Appropriation End Date: June 30, 2024

#### **Narrative**

**Project Summary:** The Raptor Center is proposing to build environmental literacy and engagement by bringing an integrated environmental education program featuring live raptors and standards-based curriculum to underserved communities throughout Minnesota.

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

With environmental issues being among the most pressing challenges that society will face in the coming decades, there is a critical need to expand environmental and scientific literacy in the next generation. The fates of our wildlife and the natural world around us lay in the hands of an informed public. While Minnesota has state standards for environmental education, not all students and teachers have equal access to effective tools for meeting these standards.

For forty-five years, The Raptor Center (TRC) has worked to build essential connections between people and wildlife by providing high quality environmental education programs. With support from Minnesota's ENRTF fund, TRC developed Raptor Lab to engage, inspire and captivate students' awareness, concern and action toward protecting our natural environment while teaching critical STEM concepts. The Raptor Lab curriculum is a coherent sequence of lessons that teachers can integrate into their classroom over time. Student engagement with Raptor Lab and other raptor-based curriculum is enhanced when they have the opportunity to experience the magnificence of a live raptor visit to their classroom. Many communities, however, are unable to access these passion-sparking experiences due to limitations of resources and geography.

# 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 Raptor Center is proposing to build environmental literacy and engagement by bringing an integrated environmental education program to underserved communities throughout Minnesota. This program will combine a standards-based curriculum using live raptors and environmental artifacts in the classroom with raptor-based coursework such as Raptor Lab to create an engaging and impactful learning experience. The live bird programs will be taught by highly skilled environmental educators and engage students (primarily focused on grades 6 through 8) in learning about environmental issues and solutions. Aligning with the live raptor programming, teachers will be provided an appropriate age-based curriculum, including lesson plans, curriculum guides, and activities, along with supplementary materials and resources to reinforce learning, such as outdoor activity kits in year 2. They will also receive support in integrating the coursework into their classroom. The foundation for classwork will be Raptor Lab, an interactive online curriculum aimed at having students investigate an important environmental issue impacting bald eagles in Minnesota. Raptor Lab's final module, Outdoor Investigator, guides students in conducting their own outdoor investigation. A comprehensive evaluation tool will be developed and implemented to measure impact.

# 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 Raptor Center will provide re-usable environmental education curriculum supplemented by an experiential learning experience with a live raptor program to 300 classrooms in underserved communities through Minnesota; around 200 programs will be presented in urban areas of the metro and at least 100 programs in greater Minnesota with expected reach of 20,000-30,000 students over two years. Students that take part in Raptor Lab's Outdoor Investigator curriculum will have the opportunity to present their projects at the University of Minnesota Science Ecology Fair.

## **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

### **Activities and Milestones**

Activity 1: Deliver environmental education curriculum supplemented by live bird programming to classrooms throughout Minnesota.

Activity Budget: \$178,000

#### **Activity Description:**

The Raptor Center will deliver 300 environmental education programs using live raptors and environmental artifacts in the classrooms as part of a raptor-based classroom curriculum. Staff will identify, contact, and schedule programs in schools with a student population 50% or greater receiving free and reduced lunch. Teachers will be assisted in choosing an appropriate science standards-based curricula for their class from a selection of Raptor Lab, Outdoor Investigator, Raptors of Minnesota, Endangered Species, Animal Adaptations or other raptor-based topics. They will be provided with lesson plans, teacher guides, activities, and resources. Additionally, teachers during year 2 will be provided outdoor science kits to further drive classroom exploration following programming. A web site will be developed to provide quick access to classroom tools (guides, activities) for course-delivery, supplemental materials for course enhancement and staff contact information for support in curriculum delivery. For classes using Raptor Lab's Outdoor Investigator, supporting materials will be provided to assist teachers in encouraging their students to present their outdoor investigations at the University of Minnesota's (UMN) Science Ecology Fair. To measure impact, a comprehensive evaluation program will be designed, developed, and implemented in partnership with evaluation graduate students at The University of Minnesota.

#### **Activity Milestones:**

Description	Approximate Completion Date
Develop website to include lesson plans, curriculum guides, activities, and resources for quick access	October 31, 2021
2021-2022 School Year: Present 100 programs to urban schools, 50 to rural schools	June 30, 2022
Develop and implement comprehensive evaluation program	June 30, 2023
2022-2023 School Year: Present 100 programs to urban schools, 50 to rural schools	June 30, 2023
Develop and deliver outdoor activity kits for classrooms to compliment learnings post programming	June 30, 2023

#### 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 Raptor Center will utilize its database of school listings to contact schools and identify those interested in participating. Email advertisements, direct calling to school districts and science educators, and in-person meetings will also be used to identify school connections. TRC will present at teacher conferences, administrator/principal conferences, Minnesota Educators Association conference and Minnesota Science Teachers Association conference to reach new audiences. This project will be shared with the general public through social media and print publications, as well as in media stories where possible. Finally, efforts and learnings from the project will be shared at professional conferences. The Environment and Natural Resources Trust Fund will be acknowledged through use of the trust fund logo or attribution language on all project print and electronic media, publications, signage, and other communications per the ENTRF Acknowledgment 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?

During this grant period we will establish new relationships with schools we have not been able to serve in the past due to funding issues. We will share the results of our evaluation program with teachers and administrators so they can see a measured impact from our program. Results will also be shared at teacher conferences. This direct experience of our program, in combination with our evaluation results, can be shared with local organizations and foundations to garner community support to continue funding this program into the future.

## Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount
		Awarded
Raptor Lab Integrating Online and Outdoor Learning	M.L. 2014, Chp. 226, Sec. 2, Subd. 09h	\$186,000
Environments		
Game and Nongame Bird Pesticide Exposure	M.L. 2016, Chp. 186, Sec. 2, Subd. 03m	\$349,000
Expanding Raptor Center Online Education	M.L. 2017, Chp. 96, Sec. 2, Subd. 05d	\$270,000
Spruce Grouse as Indicators for Boreal Forest	M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2,	\$350,000
Connectivity	Subd. 03e	

## **Budget Summary**

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineli gible	% Bene fits	# FTE	Class ified Staff?	\$ Amount	\$ Amount Spent	\$ Amount Remaining
Personnel										
Interpretive naturalist/educator		Classroom programs - scheduling, delivery and follow-through work with teachers and students			31.8%	2		\$100,674	-	-
Project and partner coordinator		Educational program content and adaptation for classes; program evaluation; teacher/school communications			36.5%	0.2		\$14,157	-	-
Project manager		Project oversight, coordination, reporting			36.5%	0.1		\$21,210	-	-
Graduate Student Evaluators		Conduct evaluations of programming in Year 1 and Year 2			8%	0.1		\$5,000	-	-
							Sub Total	\$141,041	\$141,039	\$2
Contracts and Services										
Copy editor and designer	Professional or Technical Service Contract	Copy editor/designer for printed materials (Pre/post activities, teacher's guide, and TRC program lesson plan with objectives, outcomes, content)				0.05		\$5,000	\$2,674	\$2,326
							Sub Total	\$5,000	\$2,674	\$2,326
Equipment, Tools, and Supplies										
	Tools and Supplies	Animal food	Raptor food for live bird programming for out-state visits to schools					\$1,800	\$1,800	-
	Tools and Supplies	Outdoor Science Kits	Providing additional hands on, science based curriculum and tools for classrooms to use after our visits- meeting state science standards. Includes items like Magnifying glass, binoculars, activity pages, photos- cost per unit is					\$8,000	\$8,000	-

Tools and Supplies   Environmental Artifacts for use during programming   As students cannot touch our live birds, environmental artifacts or learning, includes items like replica apptor skulls, talons, full size skeletions. Full size replica skeletion costs approximately \$1,2000-2,000, and talons and skulls/etc cost \$32-\$13.82/fmc. Aim to have 6-7 items in the kit with a couple backups when these fragilie objects break.   Sub Total   Sub Sub Total   Sub Total   Sub Total   Sub Total   Sub Total   Sub Sub Total   Sub Total   Sub Total   Sub Total   Sub Total   Sub Sub Total   Sub Total   Sub Total   Sub Total   Sub Total   Sub Sub Total   Sub Total   Sub Total   Sub Total   Sub Total   Sub Sub Total   S				estimated at \$53/kit and						
Risk in Year 2 Into la that will Stay with classrooms.										
Tools and Supplies   Environmental Artifacts for use during programming   As students cannot touch our live birds, environmental artifacts provide tactile experiences for learning, includes items like replica raptor skulls, talons, full size skeletons. Full size replica skeleton costs approximately \$1,2000-2,000, and talons and skulls/etc cost \$32-\$132/tem. Am to have 67 items in the kit with a couple backups when these fragile objects break.    Sub										
Tools and Supplies and Supplies and Supplies are during programming and supplies and Supplies are during programming and supplies are during programming and supplies are during programming and supplies are always and subject to the supplies are supplied as stated to our live birds, environmental artifacts provide tactile experiences for learning, includes items like replica raptor skulls, talons, full size replica skeletons. Full size replica skeletons. Full size replica skeletons. Full size replica skeletons. Full size replica skeletons and skulls/etc cost \$32-\$152/item. Aim to have 6-7 items in the kit with a couple backups when these fragile objects break.  Capital Expenditures  Acquisitions and Stewardship  Travel In Minesota  Miles/ Meals/ Lodging  Miles/ Miles/ Meals/ Lodging  Miles/ Mea										
Supplies       during programming       our live birds, environmental artifacts provide tactile experiences for learning, Includes Items like replica raptor Skulls, talons, full size selection costs approximately \$1,2000-2,000, and talons and skulls/etc cost \$32-\$1582/item. Aim to have 6-7 items in the kit with a couple backups when these fragile objects break.       \$3ub       \$13,327 <td></td> <td>Tools and</td> <td>Environmental Artifacts for use</td> <td></td> <td></td> <td></td> <td></td> <td>¢2 F27</td> <td>¢2 E27</td> <td></td>		Tools and	Environmental Artifacts for use					¢2 F27	¢2 E27	
environmental artifacts provide tactile experiences for learning, includes items like replica raptor skulls, talons, full size replica skeleton costs speroximately \$1,2000-2,000, and talons and skulls/etc cost \$32-\$13,200-2,000, and talons and skulls/etc cost \$32-\$12,000-2,000, and talons and sk								\$5,5Z <i>1</i>	35,527	-
provide tactile experiences for learning. Includes items like replica raptor skulls, talons, full size skeletons. Full size replica skeleton costs approximately \$1,2000-2,000, and talons and skulls/etc cost \$32-\$132/tem. Aim to have 6-7 litems in the kir with a couple backups when these fragile objects break.    Capital		Supplies	during programming							
for learning, Includes items like replica raptor skulls, talons, full size skeletons. Full size skeletons. Full size replica skeleton costs approximately \$1,2000-2,000, and talons and skulls/etc cost \$32-\$182/ftem. Aim to have 6-7 items in the kit with a couple backups when these fragile objects break.    Sub										
like replica raptor skulls, talons, full size skeletons. Full size replica skeleton costs approximately \$1,2000-2,000, and talons and skulls/etc cost \$32-\$\$13,2/(rem. Alm to have 6-7) items in the kit with a couple backups when these fragile objects break.  Capital Expenditures  Acquisitions and Stewardship  Travel In Milnes/ Meals/ Lodging  Milles/ Meals/ Septembly										
talons, full size seletons. Full size replica skeletons. Full size replica skeleton costs approximately \$1,2000-2,000, and talons and skulls/fetc cost \$32-\$182/item. Aim to have 6-7 items in the kit with a couple backups when these fragile objects break.    Capital Expenditures				_						
Full size replica skeleton costs approximately \$1,200-2,000, and talons and skulls/etc cost \$32-5182/item. Aim to have 6-7 items in the kit with a couple backups when these fragile objects break.  Capital Expenditures  Capital Expenditures  Acquisitions and Stewardship  Miles/ Meals/ Lodging  Miles/ Miles/ Meals/ Lodging  Miles/ Miles/ Miles/ Meals/ Lodging  Miles/ Miles/ Miles/ Miles/ Meals/ Lodging  Miles/ Miles/ Miles/ Miles/ Meals/ Miles/ Meals/ Meals/ Miles/ Meals/										
Costs approximately \$1,2000-2,000, and talons and skulls/etc cost \$32-\$182/ftem. Aim to have 6-7 items in the kit with a couple backups when these fragile objects break.										
S1,2000-2,000, and talons and skulls/etc cost \$32-5182/item. Aim to have 6-7 items in the kit with a couple backups when these fragile objects break.										
and skulls/etc cost \$32-\$182/item. Aim to have 6-7 items in the kit with a couple backups when these fragile objects break.   Sub Total   \$13,327   \$13,327   \$-1										
S182/item. Aim to have 6-7 items in the kit with a couple backups when these fragile objects break.										
items in the kit with a couple backups when these fragile objects break.    Sub										
Capital Expenditures				\$182/item. Aim to have 6-7						
Fragile objects break.				items in the kit with a						
Capital   Expenditures   Sub Total   Sub				couple backups when these						
Capital   Expenditures   Sub Total   Sub				fragile objects break.						
Capital Expenditures    Capital Expenditures   Capital								\$13,327	\$13,327	-
Expenditures    Sub   Total						To	otal			
Acquisitions and Stewardship    Sub Total   Sub Sub Total   Sub	=									
Acquisitions and Stewardship  Travel In Miles/ Meals/ Lodging  Miles/ Meals/ Se,600  Meals/	Expenditures									
Stewardship     Sub Total     Sub Total       Travel In Minnesota     Miles/ Meals/ Lodging     Mileage     Getting to schools (metro and out-state) for program delivery. 14,332 miles at 0.\$70/mile     \$10,032     \$7,231     \$2,801       Miles/ Meals/ Lodging     Per diem and hotels     Hotels and meals for overnight trips to out-state areas (approximately 46 overnight trips will be needed)     \$8,600     \$2,414     \$6,186       Sub     \$18,632     \$9,645     \$8,987								-	-	-
StewardshipSub TotalSub TotalTravel In MinnesotaMiles/ Meals/ LodgingMileageGetting to schools (metro and out-state) for program delivery. 14,332 miles at 0.\$70/mile\$10,032\$7,231\$2,801Miles/ Meals/ LodgingPer diem and hotelsHotels and meals for overnight trips to out-state areas (approximately 46 overnight trips will be needed)\$8,600\$2,414\$6,186	Acquisitions and									
Travel In Minesota  Miles/ Meals/ Lodging  Miles/ Mileage  Miles/ Mileage  Mil										
Travel In Minnesota  Miles/ Meals/ Lodging  Miles/ Meals/	·					Su	ub	-	-	-
Minnesota     Miles/ Meals/ Lodging     Mileage     Getting to schools (metro and out-state) for program delivery. 14,332 miles at 0.\$70/mile     \$10,032     \$7,231     \$2,801       Miles/ Meals/ Lodging     Per diem and hotels     Hotels and meals for overnight trips to out-state areas (approximately 46 overnight trips will be needed)     \$8,600     \$2,414     \$6,186       Sub     \$18,632     \$9,645     \$8,987						Т	otal			
Minnesota     Miles/ Meals/ Lodging     Mileage     Getting to schools (metro and out-state) for program delivery. 14,332 miles at 0.\$70/mile     \$10,032     \$7,231     \$2,801       Miles/ Meals/ Lodging     Per diem and hotels     Hotels and meals for overnight trips to out-state areas (approximately 46 overnight trips will be needed)     \$8,600     \$2,414     \$6,186       Sub     \$18,632     \$9,645     \$8,987	Travel In									
Miles/ Meals/ Lodging										
Meals/ Lodging  Miles/ Meals/ Lodging  Miles/ Meals/ Lodging  Per diem and hotels  Hotels and meals for overnight trips to out-state areas (approximately 46 overnight trips will be needed)  Sub \$18,632 \$9,645 \$8,987		Miles/	Mileage	Getting to schools (metro				\$10.032	\$7.231	\$2.801
Lodging delivery. 14,332 miles at 0.\$70/mile  Miles/ Per diem and hotels Hotels and meals for overnight trips to out-state areas (approximately 46 overnight trips will be needed)  Sub \$18,632 \$9,645 \$8,987		-						, ,	. ,	. ,
Miles/ Per diem and hotels Hotels and meals for overnight trips to out-state areas (approximately 46 overnight trips will be needed) Sub \$18,632 \$9,645 \$8,987										
Miles/ Per diem and hotels Hotels and meals for overnight trips to out-state areas (approximately 46 overnight trips will be needed) \$8,600 \$2,414 \$6,186										
Meals/ Lodging overnight trips to out-state areas (approximately 46 overnight trips will be needed) Sub \$18,632 \$9,645 \$8,987		Miles/	Per diem and hotels					\$8 600	\$2 414	\$6 186
Lodging areas (approximately 46 overnight trips will be needed) Sub \$18,632 \$9,645 \$8,987		-						75,550	<i>τ=,</i> ·= ·	+ 5, 250
overnight trips will be needed)         Sub         \$18,632         \$9,645         \$8,987				- · · · · · · · · · · · · · · · · · · ·						
needed)         Sub         \$18,632         \$9,645         \$8,987										
Sub \$18,632 \$9,645 \$8,987										
						Çı	ıb	\$18 632	\$9.645	\$2 927
								710,032	75,U <del>T</del> 5	70,507

Travel Outside Minnesota							
Willinesota				Sub	-	-	-
				Total			
Printing and							
Publication							
				Sub	-	-	-
				Total			
Other Expenses							
				Sub	-	-	-
				Total			
				Grand	\$178,000	\$166,685	\$11,315
				Total			

## Classified Staff or Generally Ineligible Expenses

Ī	Category/Name	Subcategory or	Description	Justification Ineligible Expense or Classified Staff Request
		Туре		

## Non ENRTF Funds

Category	Specific Source	Use	Status	\$ Amount	\$ Amount Spent	\$ Amount Remaining
State						
			State	-	-	-
			Sub			
			Total			
Non-						
State						
In-Kind	Waived facilities and administrative costs	The University of Minnesota is waiving the income normally generated from extramural research grants that contribute Facilities and Administrative (F&A). The current full rate is 55% of direct costs.	Secured	\$92,158	\$92,158	-
			Non	\$92,158	\$92,158	-
			State			
			Sub			
			Total			
			Funds	\$92,158	\$92,158	-
			Total			

### **Attachments**

## **Required Attachments**

## Visual Component

File: a27bff46-b66.pdf

#### Alternate Text for Visual Component

Image shows a live bird program being presented in a classroom situation along with screen shots of two on-line curriculum options that teachers and students will have access to....

## **Supplemental Attachments**

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

Title	File
University of Minnesota cover letter	7dbd9b31-88e.pdf
Background check certification	<u>e864d5b3-23e.pdf</u>
Activity Sheets for kits	<u>910735b2-fcf.pdf</u>
Final set of all activity sheets created and distributed	ed67eebf-d33.pdf
Evaluation Reports	<u>a0b7316a-514.pdf</u>
Final program statistics	<u>63220981-99f.pdf</u>
Teacher Evaluation Summary	<u>2c54793d-598.pdf</u>

#### Media Links

Title	Link
Online materials	https://z.umn.edu/ExpandingAccess

## Difference between Proposal and Work Plan

### Describe changes from Proposal to Work Plan Stage

Added dissemination information and reviewed all other information. Corrected mailing address in section 2. Added background check certification

7/13/2021 - Completion date changed in narrative as requested

## 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 UMN Policy.

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

## 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	Narrative	1) Adjust \$5k evaluator from Technical	December	Yes	December
	Request	Budget - Professional / Technical	contract to internal personnel category to	7, 2022		8, 2022
		Contracts	use University graduate evaluation			
		Activities and Milestones	students and staff for evaluation 2) Use			
		Budget - Personnel	projected travel budget excess due to			
		Budget - Capital, Equipment, Tools, and	increased travel efficiencies with program			
		Supplies	delivery (fewer miles/hotels/per diem			
		Budget - Travel and Conferences	needed) to enhance programming and			
			meet teacher requests. We propose to do			
			this by 1) creating science kits to offer year			
			2 classrooms and 2) acquire additional			
			environmental artifacts for tactile student			
			engagement during programming			

## Final Status Update September 14, 2023

Date Submitted: October 9, 2023

Date Approved: October 12, 2023

#### **Overall Update**

The Raptor Center successfully integrated education programming to expand environmental literacy in underserved communities. It combined live raptors, environmental artifacts, and a standards-based curriculum to engage and inspire students while teaching STEM concepts. Skilled environmental educators delivered live bird programs to 201 urban and 102 rural classrooms (see attachments for list of schools, map of schools served/counties, and breakdown by grade of programs), fostering a connection to nature and educating students about environmental issues. Additionally, teachers received curriculum materials and support to integrate coursework effectively. The program's core was Raptor Lab, an interactive online curriculum guiding students through investigating environmental issues impacting bald eagles in Minnesota. Outdoor activity kits and resources to reinforce learning were also offered to interested classrooms (see attachments for kit activity pages). An evaluation tool measured impact on students (see attachments for summary teacher evaluation and full report: teacher evaluation, program observations, and staff interview evaluations). 100% of teachers who responded to the survey reported they were glad their class participated and would recommend to others. By reaching underserved schools, the program addressed gaps in environmental education accessibility. It empowered students by fostering a sense of connection and responsibility toward the natural world.

#### **Activity 1**

Throughout the two-year grant period, The Raptor Center successfully delivered 303 environmental education programs in classrooms, utilizing live raptors and environmental artifacts. These programs specifically targeted schools with a student population where 50% or more received free/reduced lunch. Teachers were provided with a selection of raptor-focused curricula, such as Raptor Lab and Outdoor Investigator, and an easy-to-use website (https://z.umn.edu/ExpandingAccess). For classes using Raptor Lab's Outdoor Investigator, materials were provided to encourage students' participation in the University of Minnesota's Science Ecology Fair, but we were unable to track who ultimately participated. In the second year, outdoor science kits were offered to classrooms, promoting further exploration. Kits were created with 37% (56 of 150) allocated to participating classrooms and remaining to be allocated by the end of 2023, utilizing TRC volunteers for help with delivery (end of school year and teacher turn overs delayed deliveries). An evaluation program was developed to measure the program's impact. Overall, The Raptor Center's efforts have successfully delivered impactful environmental education programs to underserved schools, empowering teachers and an estimated 16,317 students in grades K-12 to engage with raptor-focused curricula and fostering a greater understanding of the environmental world.

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

#### Dissemination

The Raptor Center employed multiple dissemination strategies. TRC utilized their school database, conducted email advertisements, direct calls, and in-person meetings with schools and educators. Presentations were made at various conferences, including those for teachers and administrators, to reach new audiences. Public awareness was generated through social media, print publications, and media stories. Findings and experiences were shared at professional conferences, while acknowledging the Environment and Natural Resources Trust Fund through appropriate logo usage and attribution. These efforts effectively engaged schools, educators, and the general public, spreading awareness about The Raptor Center's environmental education project.

## Status Update June 1, 2023

Date Submitted: May 31, 2023

Date Approved: June 6, 2023

#### **Overall Update**

We have completed 301 programs as of 6/1/2023 to qualifying schools, an additional 157 programs since the December 1, 2022 status update. These 301 programs have included 101 rural and 200 urban school programs and have reached an estimated 16,448 students. Six programs are scheduled during the month of June and will be delivered before 6/30/23.

Evaluators have surveyed teachers following the programs and have given our Naturalists feedback to improve programs. They will also provide us with a thorough evaluation report during the month of June to aid in further development of future programming.

We have assembled 150 kits that encourage students to investigate the outdoors. These kits include items like monoculars and magnifying glasses, and are being offered to classrooms that have participated in the programming and have exciting activity sheets to accompany them (example in attachments). We will continue to deliver these kits to interested teachers at qualifying schools.

We were also able to purchase durable items to take along to programs to enhance student experiences. These items include replicas of an eagle foot, a red-tailed hawk foot, and similar artifacts that students can touch and manipulate.

#### **Activity 1**

We have completed an additional 157 programs since the December 2022 update, achieving both of our milestones of 100 rural and 200 urban school programs. We still have six programs remaining on the schedule for June, and so will pass our milestone marks by the final report. Classrooms continue to have access to the previously mentioned web based resources to augment learning.

We invested significant efforts in contacting teachers in qualifying schools, especially in rural areas. After Covid restrictions were lifted, our biggest challenge was finding accurate information regarding which schools qualified for our programs, and then getting in touch with interested teachers. However, we were able to develop an excellent resource list that we will be able to use in the future for similar programs.

Our team also developed classrooms kits to encourage nature investigation, complete with activity sheets (see attachment example). We were able to make 150 of these kits and are offering them to teachers whose classrooms have participated in our programs.

A final comprehensive evaluation of the program work is underway and will be complete by the end of the program.

#### Dissemination

This project was shared in our e newsletter and in our social media posts, and we plan additional social media posts in June as a wrap-up for the project. Additionally, the project will be mentioned in our upcoming newsletter, Raptor Release.

Our Naturalist traveled to rural areas on one occasion for three days, specifically to meet with local educators and discuss the project. Many other contacts were made directly through emails targeting teachers and administrators in qualifying schools.

## Status Update December 1, 2022

Date Submitted: December 7, 2022

Date Approved: December 8, 2022

#### **Overall Update**

We completed 144 programs as of December 1st to qualifying schools. These programs included 117 urban and 27 rural school programs. We currently have 17 programs already scheduled through January 31st, 2023. Progress has been slower than anticipated in reaching our goal of 100 programs for rural schools by June 2023 as the COVID-19 pandemic and the outbreak of highly pathogenic avian influenza (HPAI) in Minnesota greatly restricted our ability for longer travel/outreach to rural schools. With restrictions from HPAI and COVID-19 lifting, we will focus efforts to actively recruit rural schools and should be on track to meet the 300 total program goal (100 rural and 200 urban) by the end of the grant in June 2023.

An environmental education and curricular resource website was given to participating teachers. This included access to Raptor Lab online resources and supplemental materials to pair with live bird programming seen by participating schools. Our first year evaluation survey prompted feedback provided by participating teachers (including requests for additional post visit curriculum materials and additional tactile objects/environmental artifacts to use during live bird programs to engage students). Evaluators will observe programs/solicit feedback from teachers in the 2022/23 school.

#### **Activity 1**

We continued sharing online curriculum materials with participating teachers to pair with our live programs. We are also utilizing teacher feedback from our first year programming evaluation to create additional materials that align with state curriculum standards.

We have completed 144 programs for qualifying schools. For year 1, we completed our milestone of reaching 100 schools, yet did not reach our milestone of 50 rural programs. While schools in rural areas have been part of targeted efforts to recruit participation, we have had a low rate of response and the COVID-19 pandemic and HPAI outbreak in birds have further complicated our ability to travel with our ambassador birds. Thus, schools in rural areas have become the primary target in recruitment/advertising efforts. Since the beginning of the 22/23 school year we have communicated with 150 rural schools and will be meeting with school administrators in rural areas near Bemidji, Pelican Rapids, Chisholm, Lutsen to help with recruitment. With additional recruitment and advertising and travel restrictions lifted- we are confident we can complete our 300 program goal milestone by June 2023.

#### Dissemination

The Raptor Center (TRC) has continued to utilize the methods outlined in the grant proposal in identifying and contacting qualifying schools. Our primary communication with schools has been through email advertisements and direct calling to administrators and science educators. We have also presented at educator-specific events hosted by 3M, The Bell Museum, and the University of Minnesota's Community Outreach and Retention Program (CORE). Additionally, we are implementing additional one-on-one meetings with school and district administrators, focused on rural Minnesota, to discuss opportunities. Four regional trips by our education coordinator will further help publicize the program and the impact it is making across the state of MN. This project was shared on our e newsletter, our social media channels as well as media generated as a result of education program visits to participating schools.

## Status Update June 1, 2022

Date Submitted: May 24, 2022

Date Approved: July 6, 2022

#### **Overall Update**

The Raptor Center has completed 120 programs as of May 18, 2022 to underserved schools in Minnesota (schools with 50% or more of their student population qualifying for free or reduced lunch benefits). Of the 120 completed programs, 99 were to urban schools of the metro area while 21 were to rural schools outside of the metro area. There are 11 more scheduled before June 30, 2022 (5 urban and 6 rural schools). This is on track to meet the 300 program goal by the end of the grant in June 2023. A website with environmental education and curricular resources was given to participating teachers. This includes access to Raptor Lab online resources and other supplemental materials to pair with the live bird programming seen by participating schools. Students were able to take part in the University of Minnesota Ecology Science Fair if they wished to. This fair occurred in January 2022.

#### **Activity 1**

We have developed a website with curricular materials for participating teachers. The website includes access to Raptor Lab (online learning module on raptor medicine and ecology), Outdoor Investigator (tool to enhance scientific inquiry in outdoor settings), and other resources/curricula to pair with live bird programming. We have currently given 120 programs of the 150 goal during the 2021-22 school year. We anticipate delivering 11 more before June 30, 2022. 104 of the programs will be from urban metro schools which meets the milestone for those schools. 27 of the programs will be in rural, non-metro schools which is behind 23 programs for the rural school milestone. Programming is slightly behind this milestone due to suspension of in-person programming from COVID in January-February 2022 and program restrictions from HPAI (highly pathogenic avian influenza). However, we are confident those programs can easily be completed in the 2022-23 school year to make the final milestone (200 urban school programs & 100 rural school programs by June 30, 2023).

#### Dissemination

The Raptor Center (TRC) has been able to contact and find participating schools using methods outlined in the grant proposal. These methods have included connecting with program contacts from qualifying schools in our program contacts database. Much of the focus on dissemination of information to schools has been on direct reaching out to administrators and/or teachers at qualifying schools. Direct reaching out was often done via emails and/or phone calls to potential school contacts to inform them of this grant opportunity. In addition, one-to-one meetings with school administrators and teachers and TRC education staff have been set up to discuss programming opportunities and logistics. TRC has also shared news of the grant on our social media channels, as well as media generated as a result of education program visits to participating schools. TRC did not attend education conferences this year due to COVID surges and the shifting of many conferences to online events.