



Environment and Natural Resources Trust Fund (ENRTF)

M.L. 2020 ENRTF Work Plan

Today's Date: 8-9-19

Date of Next Status Update Report: April 1, 2021

Date of Work Plan Approval:

Project Completion Date: June 30, 2023

Does this submission include an amendment request? _____

PROJECT TITLE: Driving Conservation Behavior for Mussels and Water Quality

Project Manager: Emily Kalnicky

Organization: Minnesota Zoological Gardens

College, Department, or Division: Conservation, Education, and Nature

Mailing Address: 13000 Zoo Blvd.

City, State, Zip Code: Apple Valley, MN 55124

Project Manager Direct Telephone Number: (952) 431-9209

Email Address: emily.kalnicky@state.mn.us

Web Address: mnzoo.org

Location: Statewide

Total Project Budget: \$191,000

Amount Spent: \$0

Balance: \$191,000

Legal Citation: M.L. 2020, Chp. xx, Sec. xx, Subd. xx

Appropriation Language:

PROJECT STATEMENT:

In order to effectively conserve and preserve native mussels and improve water quality in Minnesota, we must engage the public in specific conservation actions that they can take to have a positive impact. Building upon the Minnesota Zoo's novel educational and large-scale informational campaign (*Show Us Your Mussels Challenge*) and research on the biology of native mussels, which have been previously funded through ENRTF, we propose to use social science to develop a research-supported public engagement campaign in order to foster conservation behaviors beneficial to Minnesota mussels and waterways.

Our innovative approach combines natural science research on native mussels with a public engagement campaign grounded in social science research on behavior change. This interdisciplinary approach will enable us to have broad public participation in conservation behaviors to conserve and benefit native mussels and water quality across the state. We chose to focus this project on native mussels as native mussels serve as critical ecosystem engineers, creating habitat for fish and other aquatic wildlife and helping to keep Minnesota's waterways clean. However, mussel populations in many of Minnesota's waterways have been significantly depleted, in part, due to behaviors many general public may be unintentionally participating in. Examples of these actions may include not scooping pet waste (i.e., improper pet waste disposal) or using too much road or sidewalk salt in winter. By using a social science framework for fostering conservation behavior change, we will identify the specific behaviors the public can participate in that will have the greatest impact on water quality and mussel health. We will then develop a strategy to reduce any barriers, and enhance any perceived benefits the public has with regards to participating in that specific behavior. Once we have developed the public engagement strategy, we will implement, evaluate, and refine so that we have the greatest positive impact on water quality and mussel health across Minnesota. We are asking for \$191,580 from ENRTF to complete the proposed project.

As a result of the proposed project, we will:

- Identify the specific conservation behaviors that would have the greatest benefit on native mussels and water quality in Minnesota.
- Implement strategies to encourage public participation in those conservation behaviors to benefit waterways and aquatic wildlife across Minnesota.

II. OVERALL PROJECT STATUS UPDATES:

First Update April 1, 2021

Second Update October 1, 2021

Third Update April 1, 2022

Fourth Update October 1, 2022

Fifth Update April 1, 2023

Final Report between project end (June 30) and August 15, 2023

III. PROJECT ACTIVITIES AND OUTCOMES:

ACTIVITY 1 Title: Broad Public Behavior Change Strategy Research, Implementation and Refinement

Description: Based on initial research at the Zoo, we are most interested in focusing the behavior change campaign on animal pet waste and winter road or sidewalk salt usage. These are two areas in Minnesota that have a large impact on water quality and mussel health. However, the actual behavior(s) selected will be determined from the data and initial selection in consultation with the contracted specialist. Once we have identified the behavior of interest we will then pilot strategies designed to encourage the public to change their behavior in order to positively impact water quality and native mussels. We will pilot, evaluate, and revise the strategy before a broad implementation of the strategy to the public. The Minnesota Zoo will contract an outside specialist to ensure that the public's needs are addressed and the behavior change strategy and selection is grounded in social science research.

ACTIVITY 1 ENRTF BUDGET: \$183,000

Outcome	Completion Date
1. Specialist contracted and research completed.	<i>April 2021</i>
2. Most effective conservation behaviors identified.	<i>Dec. 2021</i>
3. Developed strategy for engaging the public in the conservation behavior(s).	<i>Dec. 2021</i>
4. Implementation, revision, and evaluation of the strategy.	<i>May 2023</i>
5. Final report on effectiveness and impact of the implemented strategies.	<i>June 2023</i>

First Update April 1, 2021

Second Update October 1, 2021

Third Update April 1, 2022

Fourth Update October 1, 2022

Fifth Update April 1, 2023

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ACTIVITY 2 Title: Outreach to Visitors at Minnesota Zoo

Description: Based on the results of Activity 1, we will design an interpretive display and signage that will be placed onsite at the Minnesota Zoo's Mussel Conservation Cabin. Onsite interpretive displays and signage enable us to reach our more than 1.3 million annual visitors, and engage them in social-science supported actions they can take to positively affect mussels and water quality.

ACTIVITY 2 ENRTF BUDGET: \$8,000

Outcome	Completion Date
1. Content and design of display/signage completed.	<i>Feb. 2023</i>
2. Installation of display/signage.	<i>June 2023</i>

First Update April 1, 2021

Second Update October 1, 2021

Third Update April 1, 2022

Fourth Update October 1, 2022

Fifth Update April 1, 2023

Final Report between project end (June 30) and August 15, 2023

IV. DISSEMINATION:

Description:

As a part of Activity 1, we will be developing a strategy for engaging the public in selected conservation behaviors. This strategy will include disseminating the information to the public in the research-supported most effective manner (e.g. social media, website, trainings, decals, etc.). We will also share updates on the Minnesota Zoo's website (mnzoo.org) as relevant. We will update staff on the status of the project via internal newsletters and staff meeting presentations, as appropriate.

As a result of activity 2, we will be designing and installing an interpretive display and signage that will be placed onsite at the Minnesota Zoo. The lifespan of the sign is anticipated to be at least 10 years, allowing us to reach our more than 1.3 million annual visitors to engage them with this project.

As applicable, the project manager, Emily Kalnicky, or other Zoo staff, will present on the findings of this project at relevant meetings (such as other state agency meetings or the annual Association of Zoos and Aquarium conference) in order to share best practices with the broader field. We will also share our final report and findings with colleagues at other state agencies (e.g. DNR, BWSR, PCA, etc.) and other researchers or individuals focused on mussels in Minnesota, so that our findings and methods could be implemented more widely across the state.

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](#).

First Update April 1, 2021

Second Update October 1, 2021

Third Update April 1, 2022

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Fifth Update April 1, 2023

Final Report between project end (June 30) and August 15, 2023

V. ADDITIONAL BUDGET INFORMATION:

A. Personnel and Capital Expenditures

Explanation of Capital Expenditures Greater Than \$5,000: We anticipate there will be one capital expenditure that will exceed \$5,000 as a part of this project, which is the design and installation of the interpretive signage for Activity 2. The budgeted amount is \$6,000 and these expenditures are essential in order to achieve our goal of broadly disseminating our findings and extending the reach of the public participating in research-identified conservation behaviors to support mussels and water quality in Minnesota. These capital expenditures will extend beyond the 3-year duration of this grant, as the estimated lifespan for signage and interpretive displays at the Zoo is at least 10 years. This will allow us to continue to disseminate well beyond the granting period for this project.

Explanation of Use of Classified Staff: Three staff positions that will be partially supported by these ENRTF funds are classified (or in the process of becoming classified from current unclassified status). These personnel have the necessary expertise required to successfully implement Activities 1 and 2. The ENRTF funding will make it possible for these staff to work on this project for the percentage of time indicated in the budget. Without this funding they would not be able to support this project with their time. Further, the nature of the success of this project necessitates some level of expertise coming from the Zoo, which these staff will be instrumental in providing in order to have successful completion of the project. Responsibilities for the classified staff will be reprioritized and reallocated as necessary to support this project.

Total Number of Full-time Equivalents (FTE) Directly Funded with this ENRTF Appropriation:

Enter Total Estimated Personnel Hours for entire duration of project: 1,019 hours	Divide total personnel hours by 2,080 hours in 1 yr = TOTAL FTE: 0.5 FTE
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Total Number of Full-time Equivalents (FTE) Estimated to Be Funded through Contracts with this ENRTF Appropriation:

Enter Total Estimated Contract Personnel Hours for entire duration of project: 936 hours	Divide total contract hours by 2,080 hours in 1 yr = TOTAL FTE: 0.45 FTE
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VI. PROJECT PARTNERS:

Dr. Emily Kalnicky will serve as project manager. Zoo Conservation, Interpretive, Life Support, Education, and Aquariums staff will provide expertise for this project. Depending upon the behaviors and strategies identified in Activity 1, we may identify and seek a variety of partners to assist in implementing the public engagement behavior change strategy. However, the Minnesota Zoo, and successful contractors under competitive bid, would be the sole recipient of funds under this proposal.

VII. LONG-TERM- IMPLEMENTATION AND FUNDING:

This project is part of a larger, long-term, multi-partner effort to restore imperiled mussel populations in the Upper Midwest to historic levels and improve water quality. The specific project proposed in this application will contribute to these restoration efforts by focusing on actions the general public can take to support mussels and water quality across the state. We anticipate that the research and implementation conducted during this funding period will enable us to develop a foundation for an effective long-term campaign to encourage and sustain positive behaviors and public actions beneficial to native mussel conservation and water quality beyond the granting period. Having interpretive signs at the Zoo is one way we can ensure over 1 million individuals annually will be exposed to behavior change strategies resulting from this project in a sustainable way, requiring no additional resources beyond this grant. Interpretive signage has a lifespan of approximately 10 years at the Zoo. We also anticipate that Zoo staff will be able to maintain the strategy implementation across the state after the granting period for this project is complete. Depending upon the strategy identified, there may be additional costs for supplies (e.g. decals, signs, stickers) in order to continue to implement across the state. In this case, we will look for alternate, non-ENRTF sources/partners to offset any costs for continued long-term implementation.

VIII. REPORTING REQUIREMENTS:

- Project status update reports will be submitted April 1 and October 1 each year of the project
- A final report and associated products will be submitted between June 30 and August 15, 2023

IX. SEE ADDITIONAL WORK PLAN COMPONENTS:

A. Budget Spreadsheet

B. Visual Component or Map

Attachment A: Project Budget Spreadsheet
Environment and Natural Resources Trust Fund
M.L. 2020 Budget Spreadsheet

Legal Citation:

Project Manager: Emily Kalnicky

Project Title: Driving conservation behavior for mussels and water quality

Organization: Minnesota Zoological Gardens

Project Budget: \$191,000

Project Length and Completion Date: 3 years; June 30, 2023

Today's Date: August 6, 2019



ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET		Budget	Amount Spent	Balance
BUDGET ITEM				
Personnel (Wages and Benefits)		\$ 60,000	\$ -	\$ 60,000
E. Kalnicky, Evaluation and Research Specialist (1 person, 67% salary / 33% benefits), 0.10 FTE for 3 years: \$41,610				
Communication and Engagement Specialist (1 person, 67% salary / 33% benefits), 0.05 FTE for 3 years: \$14,250				
K. Quam, Graphic Designer (1 person, 86% salary / 14% benefits), 0.02 FTE in year 2 and year 3: \$4,140				
Professional/Technical/Service Contracts				
TBD (Competitive bid): Contract with Community Based Social Marketing specialists (averaging \$35,000 / year x 3 years). Consultant selected through a competitive application process.		\$ 105,000	\$ -	\$ 105,000
Equipment/Tools/Supplies				
Supplies for strategy implementation (e.g. decals, stickers, signs, etc)		\$ 20,000	\$ -	\$ 20,000
Interpretive display/signage at Minnesota Zoo		\$ 6,000	\$ -	\$ 6,000
Printing				
			\$ -	\$ -
Travel expenses in Minnesota				
			\$ -	
Other				
			\$ -	
COLUMN TOTAL		\$ 191,000	\$ -	\$ 191,000
SOURCE AND USE OF OTHER FUNDS CONTRIBUTED TO THE PROJECT				
	Status (secured or pending)	Budget	Spent	Balance
Non-State:				
N/A			\$ -	
State:				
The Zoo's general operating fund will provide additional support to the project, including utilities and administrative costs (est. at 15% of project budget).		pending	\$ 28,587	\$ -
In kind:			\$ -	
N/A				
Other ENRTF APPROPRIATIONS AWARDED IN THE LAST SIX YEARS				
	Amount legally obligated but not yet spent	Budget	Spent	Balance
N/A				

DRIVING CONSERVATION BEHAVIOR FOR MUSSELS AND WATER QUALITY



Minnesota Zoo will develop research-supported strategies to engage the public in specific conservation behaviors they can take in order to improve water quality and mussel health across the state.