

**Environment and Natural Resources Trust Fund
2018 Request for Proposals (RFP)**

Project Title:

ENRTF ID: 110-C

Unlocking the Science of Minnesotas Moose Decline

Category: C. Environmental Education

Total Project Budget: \$ 300,000

Proposed Project Time Period for the Funding Requested: 2 years, July 2018 to June 2020

Summary:

The Minnesota Zoo will develop educational displays and engaging, hands-on components to summarize scientific findings about moose decline in Minnesota. Information will be integrated online to increase accessibility for all.

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Sponsoring Organization: Minnesota Zoological Garden

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Location

Region: Statewide

County Name: Statewide

City / Township:

Alternate Text for Visual:

Shown is an illustration of a portion of the Moose Conservation Cabin interior including permanent graphics, a wheelchair-accessible computer kiosk, touchable artifacts and a life-size sculpture of a moose calf. There are also photographs of a moose field reseracher and wild moose.

_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity Readiness	_____ Leverage	_____ TOTAL	_____ %



I. PROJECT STATEMENT

The moose is an iconic Northwoods mammal that has had an important presence in Minnesota and at the Minnesota Zoo. However, moose in Minnesota have experienced dramatic population declines in the last 25 years. They have nearly disappeared from northwestern Minnesota. Moose numbers have declined by almost 60% over the past decade in the northeastern corner of our state. Minnesotans are keenly aware of the moose decline and want to know more about its causes and what can be done to help.

Significant public resources have been invested in scientific research to understand Minnesota’s moose decline. The Zoo will develop state of the art interpretive displays and interactive materials to make these complex research findings accessible to all Minnesotans—to those who visit the Zoo’s popular moose exhibit and to those who visit the Zoo’s website. With an annual attendance of 1.3 million visitors, extensive experience in educational interpretation, and over 2.7 million website hits per year, the Minnesota Zoo is in a unique position to disseminate moose research findings in an understandable fashion.

To accomplish this goal, the Zoo will:

- Work with Minnesota DNR and other scientists to develop key messages that reflect the major research findings and management strategies pertaining to Minnesota’s moose decline.
- Create and build interpretive graphic displays, interactive exhibits with technological components and touchable artifacts to be housed at a new “Moose Conservation Cabin” to be located at the site of the Zoo’s existing moose exhibit. The Moose Conservation Cabin will be paid for with private funds.
- Develop and implement a website that explains moose research findings using plain language and providing online access to the information and technology components found onsite at the Zoo.

II. PROJECT ACTIVITIES AND OUTCOMES

Activity 1: Collaborate with moose biologists to interpret existing research **Budget: \$10,000**

The Minnesota Zoo will convene DNR and other scientists from across the state to review and summarize key findings from the existing scientific literature on various topics related to Minnesota’s moose decline. Topics likely to be addressed include: moose population estimates over time, habitat use and needs, predation, heat stress, parasites and other health issues. Messaging about current management tactics and conservation challenges will be also identified. The Zoo will then refine the information to make it more accessible and understandable for a general public audience, including both children and adults.

Outcome	Completion Date
1. Key messages regarding moose research results and moose management will be identified for use in Activities 2 & 3	December 31, 2018

Activity 2: Develop and fabricate interpretive displays at the Zoo’s moose exhibit **Budget: \$210,000**

For each major topic area identified in Activity 1, the Zoo will create onsite interpretive signage and displays for a new Moose Conservation Cabin at the Zoo’s moose exhibit. Displays will include customized, interactive components to allow visitors to examine moose biology and to use model research equipment. Touchable artifacts will also be created that encourage Zoo visitors to explore moose natural history and research. A state of the art sound system will be included in the Moose Conservation Cabin to allow Zoo staff to engage visitors during live presentations about moose biology, care and research.



Outcome	Completion Date
1. Concept development for interpretive displays and components completed.	October 31, 2018
2. Schematic designs for interpretive displays and components completed.	May 1, 2019
3. Final designs for interpretive displays and components completed.	September 1, 2019
4. Production and installation of interpretive displays and components completed	May 1, 2020

Activity 3: Develop interactive, web-integrated, moose research technology components Budget: \$80,000

The Zoo will use technology to expand access to and understanding of moose research and research methodologies. This includes development of customized, interactive programs that will allow users to become virtual moose managers, experimenting with real or simulated moose data to gain an understanding of the complex factors affecting moose survival in Minnesota. These programs will be beta tested with various groups to ensure usability and desired learning outcomes. The technology interactives will be integrated into educational displays at the Zoo’s moose exhibit and available online through the Zoo’s website. The Zoo’s website will also be expanded to include additional information about moose research.

Outcome	Completion Date
1. Concept development for interactive technology components completed.	June 30, 2019
2. Schematic designs for interactive technology components completed.	October 1, 2019
3. Basic moose research content developed for Zoo’s website	December 31, 2019
4. Beta testing of interactive technology components completed.	February 28, 2020
5. Final designs for interactive technology components completed.	April 1, 2020
6. Installation of interactive technology components completed. Integration of moose research content and technology interactives with Zoo’s website.	May 1, 2020

III. PROJECT STRATEGY

A. Project Team/Partners

Minnesota Zoo Interpretive Program Developer, Nicole Mattson, will serve as project manager and will lead Activities 2 and 3. Activity 1 will be led by Mattson and the Zoo’s Vice President for Conservation, Dr. Tara Harris. The Zoo will work on Activity 1 with scientists and wildlife managers in Minnesota, including but not limited to those at the DNR, University of Minnesota, Ojibwe bands and the National Park Service. All funds for this project would be received by the Minnesota Zoo.

B. Project Impact and Long-Term Strategy

The interpretive displays and interactive components at the Zoo’s moose exhibit will be viewable year-round by Zoo guests. Interpretive exhibits at the Minnesota Zoo are designed for a 10-20 year lifespan and will be maintained with Zoo funds. The website and interactive technology pieces will also be maintained with Zoo funding for years to come. The Zoo will update content as feasible, when new information is available. This project will help ensure that the public is informed about research focused on moose decline in Minnesota and what Minnesota residents can do to prevent further problems.

C. Timeline Requirements

This project will be fully completed within the 2-year grant period, although as noted above, the exhibits and online components will be available for many years to come. Funding for the Moose Conservation Cabin that will house the interpretive displays will be obtained through separate funding sources.

2018 Detailed Project Budget

Project Title: UNLOCKING THE SCIENCE OF MINNESOTA'S MOOSE DECLINE

IV. TOTAL ENRTF REQUEST BUDGET, 2 years

<u>BUDGET ITEM</u>	<u>AMOUNT</u>
Personnel:	\$ -
Interpretive Program Developer/Project Manager (1 person, 66% salary/34% benefits), 0.3 FTE for two years - \$52,000	\$ 52,000
Wildlife Research Advisor (1 person, 74% salary/26% benefits), 0.05 FTE for two years - \$14,500	\$ 14,500
Graphic Designer (1 person, 66% salary/34% benefits), 0.2 FTE for 5 months - \$8,000	\$ 8,000
Professional/Technical/Service Contracts:	\$ -
TBD (competitive bid): Exhibitory contract to develop indestructible, hands-on microscope interactive concept. Fabrication and installation of microscope.	\$ 6,000
TBD (competitive bid): Fabrication of permanent educational graphics able to withstand zoo audience for 10-20 years	\$ 15,000
TBD (competitive bid): Software development contract to create interactive technology components with web-integration. Production, beta testing and installation of interactive technology components. Purchase of associated monitors and computer equipment.	\$ 80,000
Equipment/Tools/Supplies:	\$ -
Display and touchable artifacts (real or fabricated--tbd)	\$ 12,000
Zoned, built-in audio system for delivering live public presentations about moose care, biology and research	\$ 70,500
Additional Budget Items:	\$ -
Professional stock photos or video footage to be integrated into technology interactives and signage	\$ 2,000
Life-size, touchable bronze moose calf sculpture	\$ 40,000
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =	\$ 300,000

V. OTHER FUNDS

<u>SOURCE OF FUNDS</u>	<u>AMOUNT</u>	<u>Status</u>
Other Non-State \$ To Be Applied To Project During Project Period: Not yet determined	\$ -	
Other State \$ To Be Applied To Project During Project Period: Not yet determined	\$ -	
The Zoo's general operating fund will provide additional support to the project, including utilities and administrative costs (15% of project budget). The Zoo's staff carpenters, welders, web developer and audio/visual technician will also work on this proposed project (\$15,000). The Zoo's Bio-Programs staff would review signage, hands-on interactives and technology components during design, development and production phases.	\$ 60,000	Pending
In-kind Services To Be Applied To Project During Project Period: N/A	\$ -	
Past and Current ENRTF Appropriation: N/A	\$ -	
Other Funding History: N/A	\$ -	

Unlocking the Science of Minnesota's Moose Decline

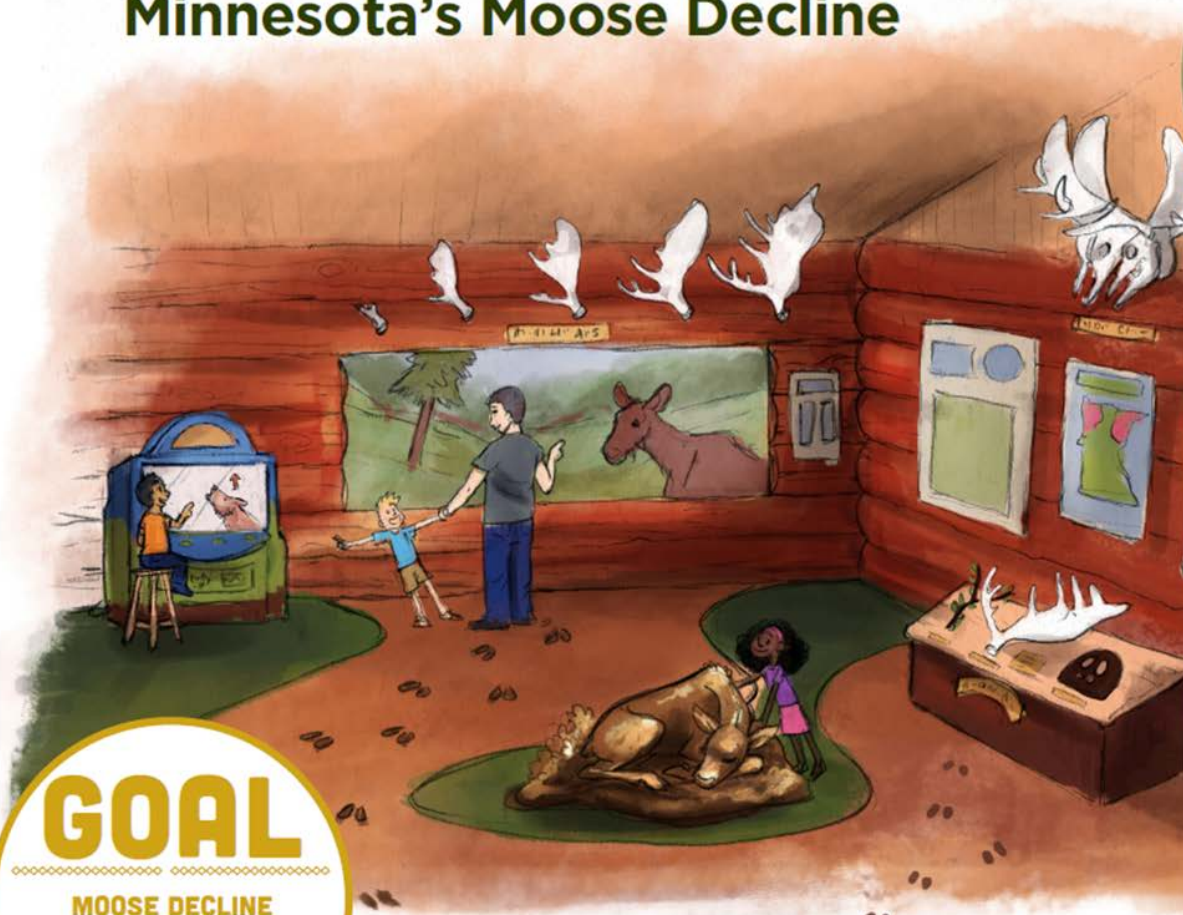


Moose have nearly disappeared from northwestern Minnesota. Moose numbers have declined by almost 60% in northeastern Minnesota.

This illustration shows just a portion of the educational graphics and interactive components at the Moose Conservation Cabin.



The Zoo will summarize findings from years of Minnesota moose decline research.



GOAL
MOOSE DECLINE RESEARCH IS UNDERSTANDABLE AND ACCESSIBLE FOR ALL



MINNESOTA ZOO

PROJECT MANAGER QUALIFICATIONS

Nicole Mattson, Minnesota Zoo's Interpretive Program Developer, will serve as project manager for the proposed work. She has 14 years of experience working in education and interpretation in a zoo setting, and an additional 5 years of informal environmental education experience. Additionally, Mattson has years of experience interpreting complex scientific information, making it understandable for a general audience. Mattson is responsible for all educational signage, sculptures and hands-on interactives onsite at the Zoo. She is a member of the construction planning committee for all exhibits at the Minnesota Zoo, and has worked with architects, graphic designers, software developers and contractors during construction of zoo exhibits.

For the proposed project, Mattson will lead Activity 1 along with Dr. Tara Harris, Vice President for Conservation at the Minnesota Zoo. Mattson will lead Activities 2 and 3, including writing educational content. She will lead planning to design, develop and produce educational graphics, interactive displays and technology components at the new Moose Conservation Cabin. Mattson will be responsible for budget management and reporting for the proposed project.

ORGANIZATION DESCRIPTION: Minnesota Zoological Garden

The Minnesota Zoo is a unique state agency. Established in 1978 to provide Minnesota residents and guests with an opportunity to experience animals from the exotic to the familiar in natural habitats, today the Zoo is one of the State's premier cultural, educational and conservation institutions.

The Minnesota Zoo's mission is ***to connect people, animals and the natural world to save wildlife***. With 1.3 million guests a year, over 2.7 million website hits annually and state-wide outreach programs reaching thousands more, the Zoo is in an excellent position to strengthen Minnesotans' awareness and understanding of our State's commitment to wildlife, science and conservation. The Zoo is the State's largest environmental educator with more than 500,000 participants in Zoo education programs.

The Minnesota Zoo is also a leader in conservation – directing efforts and partnering with others on a variety of conservation programs at the Zoo, in Minnesota and across the globe. Over the past five years, the Zoo has enhanced its efforts to focus on Minnesota wildlife and habitats, including projects to conserve Minnesota's native moose, bison, mussels, turtles and prairie butterflies. Advancing the science of wildlife conservation is an important part of the Zoo's work, as evidenced by the Zoo's research on wildlife behavior, ecology, genetics, disease and conservation techniques.

The Zoo has a proven record of using its resources efficiently and effectively, ***matching*** the State's investment with private funds and earned income.