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Environment and Natural Resources Trust Fund 2018 Request for Proposal (RFP) Submission Form

* Is this a **DRAFT** of a proposal intended for staff review? (enter Y if draft or N if final submission) N

* **Project Title:** Unlocking the Science of Minnesota's Moose Decline

LCCMR 2018 Funding Priority C. Environmental Education

* **Environment and Natural Resources Trust Fund \$ Request:** 199,000

* **Proposed Project Time Period for the Funding Requested:** 2 yrs, July 2019 to June 2021

Other Non-State Funds - specific to these proposed activities:

Project Manager: * **Firstname:** Nicole * **Lastname:** Mattson

* **Affiliation:** Minnesota Zoo

* **Address:** 13000 Zoo Blvd

* **City:** Apple Valley * **State:** MN * **Zipcode:** 55124

* **Telephone Number:** (952) 431-9540

* **Email Address:** nicole.mattson@state.mn.us

Web Address: www.mnzoo.org

Location:

* **Region:** Statewide

* **Counties:** Statewide

City/Township:

* **I. PROJECT SUMMARY RESULTS**

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

* **Alternate Text for Visual or Map:** Shown is an illustration of a portion of the Moose Conservation Cabin interior including permanent graphics, a wheelchair-accessible interactive computer kiosk, and touchable moose artifacts. There are also photographs of a moose field researcher and wild moose.

ATTACHMENTS - Main Proposal, Budget, Map or Graphic (if applicable), Acquisition List (if applicable), Letter or Resolution (if applicable), 990 Tax Information and Guidestar Report (if applicable)

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PROJECT TITLE: Unlocking the Science of Minnesota's Moose Decline

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 separate 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

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.

ENRTF BUDGET: \$10,000

Outcome	Completion Date
1. Key messages regarding moose research results and moose management will be identified for use in Activities 2 & 3	December 31, 2019

Activity 2: Develop and fabricate interpretive displays at the Zoo's moose exhibit

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. Audio speakers and wiring will be included in the Moose Conservation Cabin to allow Zoo staff to engage visitors during live presentations about moose biology, care and research.

ENRTF BUDGET: \$113,000



**Environment and Natural Resources Trust Fund (ENRTF)
2019 Main Proposal**

Outcome	Completion Date
1. Concept development for interpretive displays and components completed.	October 31, 2019
2. Schematic designs for interpretive displays and components completed.	May 1, 2020
3. Final designs for interpretive displays and components completed.	September 1, 2020
4. Production and installation of interpretive displays and components completed	May 1, 2021

Activity 3: Develop interactive, web-integrated, moose research technology components

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.

ENRTF BUDGET: \$76,000

Outcome	Completion Date
1. Concept development for interactive technology components completed.	June 30, 2020
2. Schematic designs for interactive technology components completed.	October 1, 2020
3. Basic moose research content developed for Zoo's website	December 31, 2020
4. Beta testing of interactive technology components completed.	February 28, 2021
5. Final designs for interactive technology components completed.	April 1, 2021
6. Installation of interactive technology components completed. Integration of moose research content and technology interactives with Zoo's website.	May 1, 2021

III. PROJECT PARTNERS:

B. Partners NOT receiving ENRTF funding

All partners will collaborate and advise on Activity 1.

Name	Title	Affiliation
G. DelGuidice	Research Scientist, Moose & Deer Proj Leader	Minnesota Department of Natural Resources
R. Moen	Senior Research Associate & Assoc. Professor	Univ of MN Duluth & Nat Res Research Institute
M. Schrage	Wildlife Biologist	Fond du Lac Band of Lake Superior Chippewa
S. Windels	Wildlife Biologist	National Park Service (Voyageurs National Park)
S. Moore	Director of Biology & Environment	Grand Portage Band of Lake Superior Chippewa

IV. LONG-TERM- IMPLEMENTATION AND FUNDING:

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.

V. TIME LINE 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.

2019 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 - \$54,000	\$ 54,000
Wildlife Research Advisor (1 person, 74% salary/26% benefits), 0.05 FTE for two years - \$15,000	\$ 15,000
Graphic Designer (1 person, 66% salary/34% benefits), 0.2 FTE for five months - \$8,300	\$ 8,300
Professional/Technical/Service Contracts:	\$ -
TBD (competitive bid): Exhibitory contract to develop indestructible, hands-on microscope interactive concept. Fabrication and installation of microscope.	\$ 6,500
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, computer equipment and audio components. See preliminary breakdown below. Approx \$45,000 for software development & testing Approx \$16,000 for housing kiosk with heat & cooling Approx \$5,000 for 46"-55" touchscreen monitor Approx \$1,800 for computer or media player Approx \$2,000 for directional audio dome, speaker & wiring Approx \$600 for web domain & host Approx \$5,600 for installation & misc	\$ 76,000
Equipment/Tools/Supplies:	\$ -
Display and touchable artifacts (real or fabricated--tbd)	\$ 14,000
Audio speakers & wiring for delivering live public presentations about moose care, biology and research	\$ 8,000
Acquisition (Fee Title or Permanent Easements):	\$ -
Travel:	\$ -
Additional Budget Items:	\$ -
Professional stock photos or video footage to be integrated into technology interactives and signage	\$ 2,200
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =	\$ 199,000

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.	\$ 44,850	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	\$ -	



GOAL

Moose decline research is understandable and accessible for all

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

UNLOCKING THE SCIENCE OF MINNESOTA'S MOOSE DECLINE



MINNESOTA ZOO



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



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

PROJECT MANAGER QUALIFICATIONS

Nicole Mattson, Minnesota Zoo's Interpretive Program Developer, will serve as project manager for the proposed work. She has 15 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 six 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.