

Environment and Natural Resources Trust Fund

2026 Request for Proposal

General Information

Proposal ID: 2026-089

Proposal Title: Salvage Wildlife Phase 2: Roadkill to Scientific Records

Project Manager Information

Name: Keith Barker Organization: U of MN - Bell Museum of Natural History Office Telephone: (612) 624-2737 Email: barke042@umn.edu

Project Basic Information

Project Summary: We will expand and support the statewide Salvage Wildlife network, prepare dead wildlife as museum-quality specimens, and build biodiversity resources for research, education, and conservation of Minnesota's wildlife.

ENRTF Funds Requested: \$730,000

Proposed Project Completion: June 30, 2029

LCCMR Funding Category: Fish and Wildlife (D)

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

Narrative

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

Every day wild animals are injured or killed due to both natural and anthropogenic causes, such as collisions with windows, powerlines, and vehicles. Many local organizations and agencies have permits to salvage deceased wildlife for scientific or educational use, and new federal guidelines make this process more accessible to the public. Unfortunately, only a portion of these animals can be made available for scientific research, although they are informative regarding multiple aspects of environmental health, including tracking disease outbreaks, tracing toxin prevalence, and understanding ecological interactions. Each animal carries a wealth of information: not just what species it is, but also a record of where, when, and how it existed - offering a powerful lens into an ecosystem that humans share. Given ongoing disease outbreaks (e.g., HPAI) and declining populations of animals critical to ecosystem health (e.g., pollinators), building a strong network of environmental surveillance is key to managing future impacts. By developing the Salvage Wildlife network, we sought to convert deceased wildlife into museum specimens to provide these critical data. This network now provides more specimens annually than we currently have the capacity to process, an opportunity for growth that we are now well positioned to develop.

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.

We propose to support and expand the Salvage Wildlife network, with an emphasis on specimen production and data capture. To date, we have recruited 22 institutions in 14 counties statewide into this network, significantly increasing salvage rates for wildlife from throughout the state. However, we lack members from far southwestern and northwestern Minnesota, and we propose to recruit new institutions from these critical regions. We estimate that our museums have accepted over 6000 salvaged birds and mammals from the existing network, exceeding our current capacity to process this backlog and keep up with new accessions. We propose to double our specimen production capacity by supporting full-time specimen preparators at both the Bell Museum and the Science Museum of Minnesota. These skilled museum professionals will prepare museum-quality specimens as well as train and supervise a cadre of undergraduate student and volunteer curatorial assistants. In addition, both institutions have full-time collections managers who will dedicate 10% of their time to support of this project, primarily focusing on data capture and dissemination for salvaged specimens. This increased effort will allow us to convert this backlog of salvaged wildlife into useful biological data and specimens, and will streamline processing of incoming material.

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 Bell Museum and Science Museum of Minnesota hold thousands of scientific specimens and data collected from 1872 to the present day. Our project will expand and support the LCCMR-funded Salvage Wildlife Network to provide an ongoing record of Minnesota's biodiversity. This network collects thousands of wildlife carcasses annually that museum professionals prepare as scientific specimens for research, education, and environmental monitoring. These records provide critical data to understand risks impacting wildlife, including changes in distributions, disease outbreaks, and toxin accumulation. This project will develop biodiversity resources that provide key information for making informed management decisions to preserve Minnesota's wildlife.

Activities and Milestones

Activity 1: Roadkill to salvage: maintaining and growing Minnesota's salvage wildlife network

Activity Budget: \$73,000

Activity Description:

With previous LCCMR funding, the Bell Museum and Science Museum of Minnesota (SMM) established a network of 22 partners statewide, ranging from state agencies to wildlife rehabilitators to environmental consultants. These partners accept salvaged wildlife carcasses and store them in freezers until they can be brought to the museums for specimen preparation and data collection. Through this network, we have accepted over 4000 birds and 2000 mammals for processing at the Bell Museum and SMM; it takes substantial effort to convert these carcasses into an invaluable resource to study wildlife. Here, we seek continued support to acquire specimens from these partners and to build this network to include additional participants. We will travel to partner institutions at least twice per project year to collect specimens, and we will solicit new partners from underrepresented regions of the state (e.g. far southwestern and northwestern Minnesota; see accompanying map). Since we launched our initial LCCMR-funded project, the Salvage Wildlife Network has proven to be tremendously popular. Maintaining and growing this network will continue the significant collections and data growth made possible by our collective efforts.

Activity Milestones:

| Description | Approximate |
|--|-------------------|
| | Completion Date |
| Recruit new partners from underrepresented areas of Minnesota, providing critical wildlife salvage | December 31, 2027 |
| from these regions. | |
| Travel twice per year to acquire specimens for preparation (years 1, 2, and 3) | June 30, 2029 |
| Host annual meetings to assess partner needs and capacity for growth (years 1-3) | June 30, 2029 |

Activity 2: Salvage to specimens: scaling up data acquisition from salvaged wildlife

Activity Budget: \$554,800

Activity Description:

Preparation of museum-quality specimens is technical work that requires a skilled preparator to convert carcasses into skeletons, dried skins, and frozen tissues. With previous LCCMR funding, we hired an outstanding preparator, who assembled, trained and led a team of part-time student assistants (4 high-school students and 11 undergraduates). These students represent a broad swath of the community, and include future veterinary students, wildlife managers, artists, and educators. Through the Salvage Wildlife project, they experience the diversity of Minnesota's vertebrate fauna, while they learn comparative anatomy, natural history, parasitology, and other aspects of biology that aren't taught in the standard curriculum. Although few of them will be employed as preparators or taxidermists, they value the skills they learn in this program, and we currently have a long waitlist of interested students. Over the past year, this team has prepared over 400 bird and 200 mammal specimens from the Salvage Wildlife program (~10% of backlog). Here, we seek to (1) continue funding for the lead preparator at the Bell Museum, (2) hire a second preparator at the SMM, and (3) continue employing a team of part-time student workers, who will be trained in all aspects of specimen processing.

Activity Milestones:

| Description | Approximate Completion Date |
|---|--------------------------------|
| Employ two museum preparators, enhancing production of the state's biodiversity data (years 1-3) | June 30, 2029 |
| Provide professional development opportunities for curatorial staff through professional conference | June 30, 2029 |
| attendance (years 1-3) | |

| Train students in specimen preparation, data collection, and data management (years 1-3) | June 30, 2029 |
|--|---------------|
| Prepare at least 1000 museum-quality specimens per year (years 1-3) | June 30, 2029 |

Activity 3: Specimens to data: digitizing Minnesota vertebrate specimen data

Activity Budget: \$102,200

Activity Description:

The specimens created from salvaged wildlife only become available to the research community when their associated data have been captured electronically and served through public databases. Thus, digitization of specimen data is a critical component of this work. This is a highly skilled process that requires careful training by an expert in both organismal biology and museum data curation. For instance, one of the most critical pieces of data is where a specimen was collected (georeferencing), and carefully and repeatably quantifying the precision in that data is paramount for downstream users. Collections managers at the Bell and SMM are experts in this process and will take the lead in this, including training several graduate-level curatorial assistants. Both the Bell Museum and Science Museum of Minnesota make their specimen data available through the Minnesota Biodiversity Atlas, a database of Minnesota biodiversity developed with support from the LCCMR and a critical resource for researchers and natural resource managers statewide. In addition, these data are shared with international data repositories such as iDigBio and the Global Biodiversity Information Facility, making them easily accessible to the global community.

Activity Milestones:

| Description | Approximate Completion Date |
|---|--------------------------------|
| Support trained museum data managers to digitize specimen data into electronic biodiversity databases (years 1-3) | June 30, 2029 |
| Train one graduate student annually in museum data curation (years 1-3) | June 30, 2029 |
| Publish Salvage Wildlife data to online databases including the MN Biodiversity Atlas (years 1-3) | June 30, 2029 |

Project Partners and Collaborators

| Name | Organization | Role | Receiving |
|--------------|---------------|---------------------------|-----------|
| | | | Funds |
| Sharon Jansa | University of | co-Principal Investigator | Yes |
| | Minnesota | | |
| Sushma Reddy | University of | co-Principal Investigator | Yes |
| | Minnesota | | |
| Catherine | Science | co-Principal Investigator | Yes |
| Early | Museum of | | |
| | Minnesota | | |

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?

We have successfully created a statewide network to collect and archive samples of Minnesota wildlife, but that is just the beginning. Recent staffing investments by the Bell Museum and Science Museum of Minnesota have enhanced our capacity to be the stewards of Minnesota's biodiversity data. The acquisition of thousands of samples statewide further stimulates research and connects scientists who are interested in analyzing them for studies of environmental health and resource management. The success of this project has already excited students to participate in innovative and integrative science and will continue to do so into the future.

Other ENRTF Appropriations Awarded in the Last Six Years

| Name | Appropriation | Amount Awarded |
|---|---|-------------------|
| Salvaged Wildlife to Inform Environmental Health, | M.L. 2023, , Chp. 60, Art. 2, Sec. 2, Subd. 03i | \$486,000 |
| Ecology, Education | M.L. 2023, , Cnp. 60, Art. 2, Sec. 2, Suba. 031 | |

Project Manager and Organization Qualifications

Project Manager Name: Keith Barker

Job Title: Associate Professor

Provide description of the project manager's qualifications to manage the proposed project.

Dr. Barker has managed multiple federally- and state-funded projects with budgets over a million dollars. He was trained in specimen preparation, data collection and management at the Field Museum of Natural History (Chicago) and the American Museum of Natural History (New York), and is currently curator of Genetic Resources at the Bell Museum, with nearly 20 years of experience in museum science.

Organization: U of MN - Bell Museum of Natural History

Organization Description:

The Bell Museum is the state natural history museum of Minnesota, established by statute in 1872.

Budget Summary

| Category / Name | Subcategory or Type | Description | Purpose | Gen. Ineli gible | % Bene fits | # FTE | Class ified Staff? | \$ Amount |
|--------------------------------------|------------------------|--|--|------------------------|-------------------|----------|--------------------------|-----------|
| Personnel | | | | | | | | |
| F. Keith | | Project Director | | | 36.3% | 0.06 | | \$10,000 |
| Barker | | | | | | | | |
| Sharon Jansa | | Faculty | | | 36.6% | 0.06 | | \$12,000 |
| Sushma | | Faculty | | | 36.6% | 0.06 | | \$10,000 |
| Reddy | | | | | | | | |
| Angela | | Collections Manager | | | 36.6% | 0.3 | | \$37,000 |
| Hornsby | | | | | | | | |
| Samantha | | Curatorial Research Associate | | | 32.3% | 3 | | \$198,000 |
| Getty | | | | | | | | |
| Curatorial | | Curatorial Graduate Student-50% time during the | | | 23.2% | 0.39 | | \$31,000 |
| Graduate | | summer only | | | | | | |
| Student | | | | | | | | |
| Undergrad | | Undergrad curatorial assistants-Approximately 60 | | | 0% | 2.25 | | \$152,000 |
| curatorial | | hrs/week | | | | | | |
| assistants | | | | | | <u> </u> | <u> </u> | |
| | | | | | | | Sub Total | \$450,000 |
| Contracts and Services | | | | | | | | |
| Science | Subaward | Collections Manager(.1 FTE/year for 3 years \$31,000); | | | | 3.9 | | \$234,000 |
| Museum of | | Research Technician (1 FTE/year for 3 years | | | | | | |
| Minnesota | | \$177,000), Curator (.2 FTE/year for 3 years \$16,000), supplies (\$10,000) | | | | | | |
| | | | | | | | Sub | \$234,000 |
| | | | | | | | Total | |
| Equipment, Tools, and Supplies | | | | | | | | |
| | Tools and | Sample tubes, boxes and preparation supplies | Supplies to collect, prepare and store | | | | | \$30,000 |
| | Supplies | | samples | | | | | |
| | | | | | | | Sub | \$30,000 |
| | | | | | | | Total | |
| Capital Expenditures | | | | | | | | |
| | | | | | | | Sub | - |
| | | | | | | | Total | |

| Acquisitions and Stewardship | | | | | | |
|------------------------------------|--|---|---|--|----------------|-----------|
| | | | | | Sub Total | - |
| Travel In Minnesota | | | | | | |
| | Miles/ Meals/ Lodging | Pickup trips to partner institutions | To conduct outreach activities and carcasses collection, 3 times per year, includes lodging, per diem for 1 person for 3 days (\$96 lodging, \$59 M&I). | | | \$13,000 |
| | Conference Registration Miles/ Meals/ Lodging | Conference/Meeting Registration. Once per year. | Development opportunities for curatorial associates | | | \$2,000 |
| | | | | | Sub Total | \$15,000 |
| Travel Outside Minnesota | | | | | | |
| | | | | | Sub Total | - |
| Printing and Publication | | | | | | |
| | Printing | Printing of informational brochures | Informational brochures to make sure organizations throughout MN are informed about project and steps needed to take with samples collected | | | \$1,000 |
| | | | | | Sub Total | \$1,000 |
| Other Expenses | | | | | | |
| | | | | | Sub Total | - |
| | | | | | Grand Total | \$730,000 |

Classified Staff or Generally Ineligible Expenses

| Category/Name Subcategory or Type | Description | Justification Ineligible Expense or Classified Staff Request |
|--------------------------------------|-------------|--|
|--------------------------------------|-------------|--|

Non ENRTF Funds

| Category | Specific Source | Use | Status | Amount |
|-----------|-----------------|-----|-----------|--------|
| State | | | | |
| | | | State Sub | - |
| | | | Total | |
| Non-State | | | | |
| | | | Non State | - |
| | | | Sub Total | |
| | | | Funds | - |
| | | | Total | |

Total Project Cost: \$730,000

This amount accurately reflects total project cost?

Yes

Attachments

Required Attachments

Visual Component File: 6e9cb3d5-134.pdf

Alternate Text for Visual Component

This document illustrates the three phases of this project: 1) Supporting and growing the Salvage Wildlife network and continuing to acquire deceased animals, 2) Processing carcasses into high quality museum specimens, and 3) Capturing data associated these specimens and adding them to biodiversity databases including the Minnesota Biodiversity Atlas....

Supplemental Attachments

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

| Title | File |
|----------------------------------|-------------------------|
| UMN Approval Letter | <u>927697a6-9ce.pdf</u> |
| Science Museum Letter of Support | edb21957-59c.pdf |

Administrative Use

Does your project include restoration or acquisition of land rights?

No

Do you understand that travel expenses are only approved if they 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 understand the UMN Policy on travel applies.

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?

No

Does your project include the pre-design, design, construction, or renovation of a building, trail, campground, or other fixed capital asset costing \$10,000 or more or large-scale stream or wetland restoration?

No

Do you propose using an appropriation from the Environment and Natural Resources Trust Fund to conduct a project that provides children's services (as defined in Minnesota Statutes section 299C.61 Subd.7 as "the provision of care,

treatment, education, training, instruction, or recreation to children")?

No

Provide the name(s) and organization(s) of additional individuals assisting in the completion of this proposal:

Holly Menninger (ED, Bell Museum); Jennifer Olson (Finance Professional, Bell Museum)

Do you understand that a named service contract does not constitute a funder-designated subrecipient or approval of a sole-source contract? In other words, a service contract entity is only approved if it has been selected according to the contracting rules identified in state law and policy for organizations that receive ENRTF funds through direct appropriations, or in the DNR's reimbursement manual for non-state organizations. These rules may include competitive bidding and prevailing wage requirements

N/A