



Environment and Natural Resources Trust Fund

M.L. 2023 Approved Work Plan

General Information

ID Number: 2023-139

Staff Lead: Mike Campana

Date this document submitted to LCCMR: June 6, 2023

Project Title: Assessing Status of Common Tern Populations in Minnesota

Project Budget: \$199,000

Project Manager Information

Name: Annie Bracey

Organization: U of MN - Duluth - NRRI

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Project Reporting

Date Work Plan Approved by LCCMR: June 22, 2023

Reporting Schedule: April 1 / October 1 of each year.

Project Completion: June 30, 2026

Final Report Due Date: August 14, 2026

Legal Information

Legal Citation: M.L. 2023, Chp. 60, Art. 2, Sec. 2, Subd. 03h

Appropriation Language: \$199,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota for the Natural Resources Research Institute in Duluth to assess the population status of Common Tern breeding colonies in Minnesota, implement management activities, and develop a standardized monitoring protocol and online database for accessing current and historic monitoring data to help prioritize conservation and restoration actions for this state-threatened species.

Appropriation End Date: June 30, 2026

Narrative

Project Summary: Common Tern populations across inland North America are significantly declining. Information on the status of breeding colonies in Minnesota is necessary to prioritize conservation and restoration actions.

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

Common Tern (*Sterna hirundo*) populations have declined significantly across inland North America since the 1970s. In Minnesota, the Common Tern is listed as a Species of Greatest Conservation Need (SGCN) and is state threatened. Habitat loss and degradation associated with water-level fluctuations, vegetation encroachment, and Ring-billed Gull (*Larus delawarensis*) competition are on-going issues. As a result, Common Terns are not currently nesting in Lake Mille Lacs, where they have nested since at least the late 1800s. Currently only three long-term breeding sites remain in the state which are located on Lake of the Woods, Leech Lake, and in the Duluth-Superior Harbor. Despite the importance of these breeding sites for sustaining a viable population of Common Terns in Minnesota, all except Lake of the Woods, continue to experience significant declines in the number of nesting pairs. Information on breeding success for these colonies is limited and the current population status is unknown. Therefore, a comprehensive assessment is critical to determine colony-specific threats, identify opportunities for increasing breeding season productivity, and to determine the current population status of this species in the state.

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.

Minnesota's Common Tern breeding colonies are currently managed by the Minnesota Department of Natural Resources and Leech Lake Band of Ojibwe. However, the extent to which these colonies have been monitored and actively managed to mitigate habitat degradation has varied over time and largely been dependent on available funding and agency support. To achieve conservation goals for Common Tern, a robust monitoring program and access to data sharing resources is essential to inform best management practices and to prioritize conservation and restoration actions for this species in Minnesota. Our objectives are to: 1) conduct monitoring and management activities at the remaining three colonies to determine the current population status and assess whether or not population goals are being met, based on the state's recovery plan of maintaining $\geq 1,000$ pairs, 2) develop standardized monitoring protocols for managing Common Terns that will provide a tiered approach to data collection that can be adapted based on annual resource availability, and 3) develop an online database where historical (> 35 yrs) and current monitoring data will be archived and maintained.

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?

We will work directly with wildlife managers at the main colony locations in Minnesota to facilitate monitoring and identify projects that will enhance site quality for nesting terns. This information will allow us to assess whether recovery goals are being met for this species and identify which factors may be limiting breeding success. We will develop standardized monitoring protocols and an online data management system to facilitate long-term monitoring and management goals. Results from this project will be shared with state and tribal agencies as well as federal government agencies working to conserve Common Terns.

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

Activities and Milestones

Activity 1: Monitoring and Management Activities

Activity Budget: \$90,000

Activity Description:

We will work directly with project partners; Leech Lake Band of Ojibwe and Minnesota Department of Natural Resources, to identify priorities for long-term management and monitoring based on critical needs for sustaining individual colonies at Lake of the Woods, Leech Lake, and the Duluth-Superior Harbor. To do this, we will collect updated information on the number of nesting pairs, document nesting success, and describe site conditions at each colony. We will assess predation risk, nest site competition, and habitat characteristics at each colony and document annual breeding activity and overall colony productivity. We will use remote cameras to document predation events, document the number of co-nesting species, and document habitat features within the tern nesting area and surrounding area. We will also identify areas for vegetation removal and build nesting enclosures where feasible to prevent egg and chick predation. This information will improve knowledge of the status, distribution, and conservation needs of Common Terns in Minnesota. We will also work directly with Mille Lacs Band of Ojibwe who have historically managed and collected data at one of the most long-term active colonies in the state which has recently become inactive. They will provide input on historical information from Mille Lacs.

Activity Milestones:

Description	Approximate Completion Date
Summarize past and current monitoring efforts at breeding colonies	March 31, 2024
Conduct comprehensive bird and site monitoring and management	August 31, 2025
Identify factors limiting colony stability and prioritize management actions	June 30, 2026
Final report summarizing population status, monitoring data, limiting factors influencing colony stability, and future priorities	June 30, 2026

Activity 2: Develop a Standardized Monitoring Protocol

Activity Budget: \$39,000

Activity Description:

We will develop a standardized monitoring protocol to provide technical guidance to resource managers monitoring Common Terns. We will assess available data for active colonies and determine the type and frequency of data needed to assess population status and trends. This information will allow us to develop and implement a strategy for conducting surveys that will provide a tiered approach to data collection that can be adapted based on annual resource availability. The protocol will allow for varying levels of monitoring intensity while maintaining a baseline structure necessary for cross-colony comparisons. The resulting protocol can be made available to any agency interested in collecting data on Common Terns in the state or region which will aid in collaboration, data sharing, and data comparability. Developing a formalized protocol is essential for documenting monitoring and management activities in a manner that is reproducible and that provides different options based on agency objectives.

Activity Milestones:

Description	Approximate Completion Date
Develop data collection standard operating procedures for bird and site monitoring	September 30, 2024
Establish a comprehensive monitoring protocol	May 31, 2025
Determine key metrics needed for long-term monitoring of terns	December 31, 2025

Activity 3: Develop an online database and data sharing resource

Activity Budget: \$70,000

Activity Description:

We will develop a data sharing resource and web-based tools to facilitate management and conservation plans for Common Terns in Minnesota. Developing a shared database will provide access for a greater number and diversity of people directly engaged in conservation of this species and will enhance the capacity of the Minnesota Department of Natural Resources to provide information needed for effective wildlife conservation. Using a web-based resource for data storage will allow for instantaneous access to monitoring data and built-in features capable of producing basic summaries of annual monitoring efforts. The structure and function of the database will be designed for managers and developed with input from project partners and expert wildlife ecologists to ensure both a user-friendly format and data structure that can be directly incorporated into modeling efforts to meet management needs. Once the structure exists, we can seek additional resources to include data from other colonies in the state and throughout the region.

Activity Milestones:

Description	Approximate Completion Date
Compile historical monitoring data available from each breeding colony	December 31, 2025
Design a database structure that supports historical data	April 30, 2026
Develop web-based tools to produce basic summaries of annual monitoring data	May 31, 2026

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Tanya Roerick	Leech Lake Band of Ojibwe	Tanya Roerick will be responsible for the monitoring and management activities at the Leech Lake colony. Tanya along with Steve Mortensen who has been responsible for monitoring and management of Common Terns on Leech Lake for > 30 years will provide input to database development and standardized monitoring protocols.	Yes
Gaea Crozier and Amy Westmark	Minnesota Department of Natural Resources	Gaea Crozier and Amy Westmark are both Nongame Wildlife Program Biologists that will provide in-kind support for this project. They will provide technical guidance for decision making on design and functionality of the database as well as input to the standardized monitoring protocol.	No

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.

This project will provide foundational information necessary to assess the status of the Common Tern population in Minnesota by documenting threats to each colony, identifying opportunities to increase productivity, and developing data archiving resources and monitoring protocols to better detect population changes over time. Results from this project will be shared with state and tribal agencies as well as federal government agencies working to conserve Common Terns. We will provide a standardized monitoring protocol developed for long-term monitoring and provide access to data sharing resources essential for informing best management practices and to prioritize conservation and restoration actions for this species in Minnesota. These materials will be distributed to stakeholders and results will also be disseminated through webinars and through local, regional, and national conferences. We will acknowledge the ENRTF funding in signage and other public communications and outreach related to work associated with the project using the trust fund logo or inclusion of language attributing support from the trust fund as appropriate.

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?

Achieving conservation goals for a species, such as the Common Tern, that require long-term investment by resource managers obliges a commitment by project partners to work together to identify and secure any sources of funding that may be available to maintain or restore colonies into the future. The results of this project will provide management agencies that have historically and currently monitored and managed the colonies in Minnesota the tools necessary to create a robust monitoring program that can provide up-to-date critical information to inform best management practices and to prioritize conservation and restoration actions for this species in Minnesota.

Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Conserving Black Terns And Forster's Terns In Minnesota	M.L. 2021, First Special Session, Chp. 6, Art. 5, Sec. 2, Subd. 03o	\$198,000

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Annie Bracey		Principal investigator; Project management and coordination.			25.1%	0.45		\$40,764
Alexis Grinde		Co-Principal investigator; assist with project management and coordination.			25.1%	0.16		\$19,565
Stephen Kolbe		Co-Principal investigator; assist with project management and coordination of field efforts..			22.3%	0.4		\$28,236
Francesca Cuthbert		Co-Principal investigator; assist with project management and coordination with partners.			25.1%	0.02		\$2,306
Todd Arnold		Co-Principal investigator; assist with project management and coordination of data and database management.			25.1%	0.04		\$8,587
TBD Researcher 2		Breeding colony bird and habitat assessments.			22.3%	0.24		\$16,628
Temp/Casual		Data collection and data entry.			7%	0.4		\$15,408
Graduate Student		Summer graduate student (50% GRA Y1 and Y2, no tuition benefits) to assist with data collection and analysis.			19.1%	0.26		\$14,255
							Sub Total	\$145,749
Contracts and Services								
Leech Lake Band of Ojibwe subcontract	Sub award	Leech Lake Wildlife Program common tern site maintenance and monitoring efforts during the 2024-2025 nesting season. This includes staff time to construct the nesting enclosure, maintain and conduct any maintenance needed on the enclosure, and time needed for common tern population monitoring.				0.04		\$15,425
Contractors TBD	Professional or Technical Service Contract	Common Tern monitoring at Interstate Island and Lake of the Woods breeding colonies: \$11,000 annually for hiring a contractor for monitoring including: \$9,000 - contractor's time for surveys and report writing \$2,000 - mileage reimbursement and boat expenses				0.2		\$22,000

							Sub Total	\$37,425
Equipment, Tools, and Supplies								
	Tools and Supplies	Monitoring supplies	Colony survey equipment. Drone batteries (6 @ 200 ea.) = \$1,200. Trail cameras and SD cards (12 @ 220 ea.) = \$2,640. Banding supplies = \$500					\$4,340
	Tools and Supplies	Fencing Supplies	Needed to construct a fenced in enclosure for nesting birds at Leech Lake. This includes u-posts, fencing, wire, and hardware).					\$1,000
							Sub Total	\$5,340
Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
	Miles/ Meals/ Lodging	Monitoring supplies	Hotels for field season (double occupancy) 40 nights @ 100 / night = \$4000. Travel to and from field sites: 7000 miles x 0.585/mile = \$4095. Per Diem for field technicians 40 @ \$45.00 / day = \$1800. Boat use = \$514					\$10,486
							Sub Total	\$10,486
Travel Outside Minnesota								
							Sub Total	-
Printing and Publication								

							Sub Total	-
Other Expenses								
							Sub Total	-
							Grand Total	\$199,000

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
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Non ENRTF Funds

Category	Specific Source	Use	Status	\$ Amount
State				
In-Kind	Minnesota Department of Natural Resources	In-kind Support from MN DNR: from Nongame Wildlife Staff (estimated 40hrs at \$50/hr). Estimated \$2,000. Letter from DNR was received	Secured	\$2,000
			State Sub Total	\$2,000
Non-State				
In-Kind	UMN unrecovered indirect costs are calculated at the UMN negotiated rate for research of 55% modified total direct costs.	Indirect costs are those costs incurred for common or joint objectives that cannot be readily identified with a specific sponsored program or institutional activity. Examples include utilities, building maintenance, clerical salaries, and general supplies. (https://research.umn.edu/units/oca/fa-costs/direct-indirect-costs)	Secured	\$109,450
In-Kind	Leech Lake Band of Ojibwe	Leech Lake Band of Ojibwe will provide in-kind contributions as effort, equipment, and supplies.	Secured	\$15,000
			Non State Sub Total	\$124,450
			Funds Total	\$126,450

Attachments

Required Attachments

Visual Component

File: [f9a30761-701.pdf](#)

Alternate Text for Visual Component

Title reads "Assessing Status of Common Tern Population in Minnesota".

Three text boxes summarize problem, solution and outcomes associated with project.

Pictures include three pictures of Common Tern, a map of colony locations in the state, and two pictures of breeding colonies....

Optional Attachments

Support Letter, Photos, Media, Other

Title	File
Minnesota Department of Natural Resources In-Kind Letter	c4dfbe5b-9df.pdf
Leech Lake Band of Ojibwe letter of support	f65af7c0-942.pdf
UMD Sponsored Projects Administration transmittal letter	ba4beb02-c18.pdf
Background check certification	26f25353-48a.pdf

Difference between Proposal and Work Plan

Describe changes from Proposal to Work Plan Stage

There are no differences between the proposal and work plan to report.

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, or sale of products and assets?

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?

Yes

Does the organization have a fiscal agent for this project?

Yes, Sponsored Projects Administration (UMD)