

# Environment and Natural Resources Trust Fund 2020 Request for Proposals (RFP)

**Project Title:****ENRTF ID: 048-AH**

Enhancing Bat Recovery by Optimizing Artificial Roost Structures

**Category:** H. Proposals seeking \$200,000 or less in funding**Sub-Category:** A. Foundational Natural Resource Data and Information**Total Project Budget:** \$ 190,271**Proposed Project Time Period for the Funding Requested:** June 30, 2024 (4 yrs)**Summary:**

Project will identify characteristics of successful artificial bat roost structures. Data will be used to optimize bat use and reproduction in these structures to improve survival of WNS impacted bats.

**Name:** Ed Quinn**Sponsoring Organization:** MN DNR**Job Title:****Department:** Division of Parks and Trails**Address:** 500 Lafayette Road, Box 39

St. Paul MN 55155

**Telephone Number:** (651) 259-5594**Email:** Edward.Quinn@state.mn.us**Web Address:** [https://www.dnr.state.mn.us/parks\\_trails/parks-and-trails-resource-management-program.ht](https://www.dnr.state.mn.us/parks_trails/parks-and-trails-resource-management-program.ht)**Location:****Region:** Statewide**County Name:** Statewide**City / Township:****Alternate Text for Visual:**

It shows a map of the US and Canada depicting the locations of White Nose Syndrome confirmed and suspected locations. There are also pictures of bat roosting structures.

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



**Environment and Natural Resources Trust Fund (ENRTF)**  
**2020 Main Proposal Enhancing Bat Use/survival through Optimizing Artificial Roost Sites**

**PROJECT TITLE:**

Enhancing Bat Recovery and Survival by Optimizing Artificial Roosting Structures

**I. PROJECT STATEMENT**

White-nose Syndrome (WNS) is a devastating disease responsible for the deaths of millions of bats in eastern North America. In Minnesota, WNS has caused declines of over 90% in Minnesota's populations of hibernating bats. Bats are infected during winter hibernation, but those that survive have a chance to recover and raise young during the summer. Summer roosting sites are one of the most important habitat components for Minnesota's hibernating bat species. Natural roosts typically consist of tree cavities or loose bark. Unfortunately, roost in dead trees and even live trees are ephemeral and not always in optimal locations. Artificial roost structures, appropriately designed and located, provide critical habitat where natural roosts have been lost or do not exist (Mering and Chambers, 2014).

This project will (1) assess bat use of existing artificial bat roost structures on state park and state recreation area lands; and (2) identify characteristics of successful bat roosts. Characteristics include such things as: artificial roost structure design, location and orientation, internal temperature and humidity, bat species utilization and approximate numbers. Results of this assessment will be used to install or relocate artificial bat roost structures in optimal locations for bat utilization and reproduction on state park and state recreation area lands.

Outcomes of this project will be shared with the North American WNS Conservation and Recovery Working Group which is developing best management practices for artificial bat roosts. Their findings will be distributed throughout the United States and Canada as part of accomplishing action item 3.4 (3.4.4) in Implementation of the National Plan for Assisting States, Federal Agencies and Tribes in Managing White-Nose Syndrome in Bats.

Results will also be shared by the MN Dept. of Natural Resources to aid citizens and staff in construction, placement and maintenance of artificial roost structures for maximum benefit to Minnesota's hibernating bats. This effort will help landowners and land managers by providing strategies to relocate bats roosting in structures which need to be demolished or renovated.

Mering, E. D. and C. L. Chambers. 2014. Thinking outside the box: a review of artificial roosts for bats. Wildlife Society Bulletin 38: 741-751.

Multi-Agency, 2014 - Implementation of the National Plan for Assisting States, Federal Agencies and Tribes in Managing White-Nose Syndrome in Bats.

<https://s3.amazonaws.com/org.whitenosesyndrome/assets/prod/2aa0e9e0-8122-11e8-a212-178e58894de5-WNS%20Implementation%20Plan%202016.pdf>. Accessed 4/10/19.

**II. PROJECT ACTIVITIES AND OUTCOMES**

**Activity 1: Assessment and Analysis of Artificial Roost Structures, and Application of Information to Optimize Bat Occupancy and Reproduction**

**Description:** *This project will collect and analyze data on existing artificial bat roost structures on state park and state recreation area lands. These data will be used to install or relocate existing roosting structures to maximize bat utilization. Best management practices for constructing, installing and maintaining bat roosting structures will be communicated to the public via the DNR website and other outreach*



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products. The information will also be shared with the North American WNS Conservation and Recovery Working Group which is assembling similar data from across the United States and Canada.

**ENRTF BUDGET: \$190,271**

<b>Outcome</b>	<b>Completion Date</b>
1. Inventory of existing artificial bat roosting structures on state park and SRA lands.	Fall 2020
2. Summarize data and identify locations of structures to monitor	Spring 2021
3. Construct and install certain structure styles, locations or orientations if needed	Spring 2021
4. Collect environmental and bat utilization data	Fall 2021
5. Analyze data to identify optimal roost structure parameters for bat utilization	Spring 2022
6. Install or relocate structures at optimal locations, orientation and style	Fall 2022
7. Continue data compilation and initiate web page and outreach products	Spring 2023
8. Monitor structures installed to provide optimal conditions for bat utilization	Fall 2023
9. Summarize findings and finalize web page and outreach products	June 2024

**III. PROJECT PARTNERS AND COLLABORATORS:**

Minnesota Biological Survey, MNDNR  
WNS Conservation and Recovery Working Group

**IV. LONG-TERM IMPLEMENTATION AND FUNDING:**

Outcomes from this project will increase the number of bats surviving WNS and raising offspring in state park and state recreation area lands. The Division of Parks and Trails has adequate funding and staffing to ensure that structures are regularly maintained so as to provide optimal roost sites for the foreseeable future. It will also provide best management practices that can be utilized by citizens, other agencies and organizations to provide more and better summer roosting sites for Minnesota's hibernating bat species. Information developed as part of this project will be incorporated into the work of the North American WNS Conservation and Recovery Working Group to provide guidelines for artificial roosts that will be distributed by this group throughout the United States and Canada.

**V. SEE ADDITIONAL PROPOSAL COMPONENTS:**

- A. Proposal Budget Spreadsheet**
- B. Visual Component or Map**
- F. Project Manager Qualifications and Organization Description**

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

**Legal Citation:**

**Project Manager:** Ed Quinn

**Project Title:** Enhancing Bat Recovery and Survival by Optimizing Artificial Roost Structures

**Organization:** MNDNR

**Project Budget:** \$190,271

**Project Length and Completion Date:** 4 years, June 30, 2024

**Today's Date:** 4/12/2019

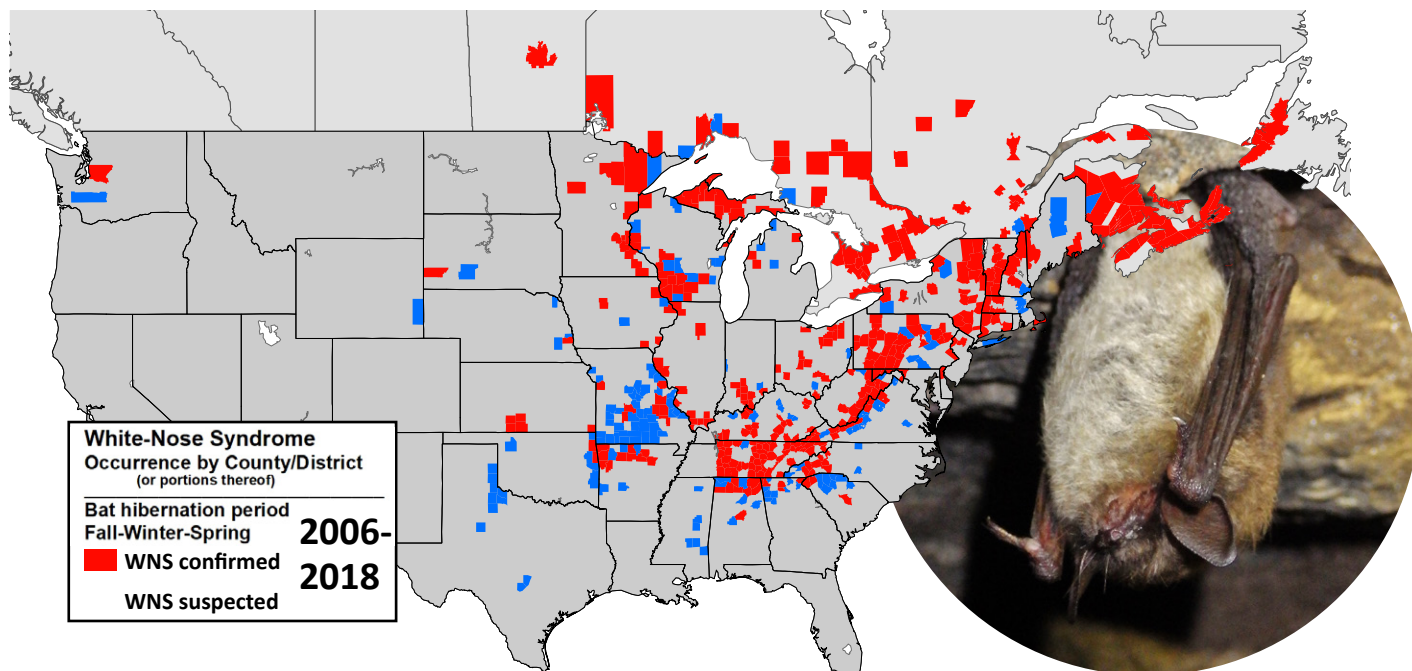


ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET		Budget	Amount Spent	Balance
BUDGET ITEM				
Personnel (Wages and Benefits)		\$ 128,000	\$ -	\$ 128,000
Bat specialists, \$110,000 (75% salary, 25% benefits), 0.5 FTE each year for 4 years				
Park staff \$7,000 (70% salary, 30% benefits), 0.15 FTE each year for 4 years				
Information Outreach Specialist (64% salary, 36% benefits), 0.07 FTE each year for 4 years				
Professional/Technical/Service Contracts				
Equipment/Tools/Supplies				
Field equipment to monitor bat occupancy (bat detectors, night vision glasses, data loggers, associated supplies)		\$ 9,000	\$ -	\$ 9,000
Supplies and materials to build artificial bat roosts		\$ 5,000	\$ -	\$ 5,000
Outreach supplies		\$ 1,000	\$ -	\$ 1,000
Printing				
Printing of outreach materials, roost building instructions		\$ 2,000	\$ -	\$ 2,000
Travel expenses in Minnesota				
Travel to monitor bat roosts, attend outreach events (mileage, lodging, meals)		\$ 25,000	\$ -	\$ 25,000
Other				
Direct and necessary costs to cover HR support (\$4,414), Safety support (\$799), Financial support (\$2,034), Communication support (\$1,388), IT support (\$10,499), Planning support (\$1,138)		\$ 20,271	\$ -	\$ 20,271
COLUMN TOTAL		\$ 190,271	\$ -	\$ 190,271
SOURCE AND USE OF OTHER FUNDS CONTRIBUTED TO THE PROJECT	Status (secured or pending)	Budget	Spent	Balance
Non-State:		\$ -	\$ -	\$ -
WNS Aid to States and Tribes (USFWS)	pending	\$ 10,000		
State:		\$ -	\$ -	\$ -
General Fund for zoologist supervision, oversight, guidance	pending	\$ 40,000		
General Fund and Parks & Trails Legacy -oversight, direction		\$ 25,000		
In kind:		\$ -	\$ -	\$ -
Other ENRTF APPROPRIATIONS AWARDED IN THE LAST SIX YEARS	Amount legally obligated but not yet spent	Budget	Spent	Balance
		\$ -	\$ -	\$ -



# PROJECT TITLE: Enhancing Bat Recovery and Survival by Optimizing Artificial Roost Structures

*Minnesota's Bats Need Our Help to Fight White-nose Syndrome*



White-nose Syndrome has caused declines of over 90% among Minnesota's hibernating bats.



## **Environment Trust Fund 2020 Project Proposal**

Project Title: Enhancing Bat Recovery and Survival by Optimizing Artificial Roosting Structures

### **Project Manager Qualifications**

Ed Quinn oversees the natural/cultural resource management program for the Division of Parks & Trails. He provides direction for and coordination of 18 Parks & Trails resource management specialists and technicians. The program is responsible for protecting, managing and restoring natural/cultural resources on division-administered lands. Annually the division restores approximately 800 acres of prairie, forest & wetlands, conducts prescribed burns on about 6,000 acres and manages invasive species on approximately 11,000 acres.

Ed has worked in the natural resource field for over 35 years. He has been employed as a naturalist, wildlife biologist and natural areas manager. He has overseen the MNDNR Parks & Trails resource program since 1998. He holds a bachelor's degree in Fish & Wildlife from Michigan State University and a master's degree from the University of Minnesota. He has been a certified wildlife biologist since 1994.

### **Organization Description**

The Department of Natural Resources-Division of Parks and Trails operates 67 state parks, 9 state recreation areas, 25 state trail segments, 1,496 water access sites, 33 water trails and 8 state waysides throughout Minnesota. The Division is responsible for protecting, managing & restoring natural and cultural resources and providing outstanding park, trail and water recreation experiences for visitors.