



Preservation Foundation
of the Lake County Forest Preserves

DATE: February 9, 2022

MEMO TO: Nels Leutwiler, Chair
Preservation Foundation Board

FROM: Nan Buckardt
Director of Education

RECOMMENDATION: Recommend approval of a \$7,000 contingent grant from unrestricted funds to establish a Motus Station at Ryerson Woods Welcome Center.

FINANCIAL DATA: The requested funds will be paid in full in Spring 2022. An individual donor will be solicited for some or all of the funding; if that request is successful in full or in part, this grant award will be reduced accordingly.

As of December 31, 2021, the Foundation's total of unrestricted funding was \$379,652.20. Grants payable from the unrestricted funds as of December 31, 2021 include:

Year	Amount
2022	\$131,406
2023	\$69,350
2024	\$12,000
Total Grants Payable from Unrestricted Funds	\$212,756

BACKGROUND: The Lake County Forest Preserves environmental educators lead the way in creating innovative environmental education programs about a variety of topics. Educators use the identification, life and habits, and adaptations of birds as primary themes in many programs. Birds are backyard examples for teaching ecological concepts, examining restoration results, and discovering conservation needs in education programming and social media.

All Forest Preserve school field trip programs (whether in-person or virtual) support Illinois State Learning Standards. These standards include teaching about local natural resources and technology uses in real-world situations. In fact, high school teachers attending a recent Forest Preserve focus group stressed the need for real-world scientific data for use in educating and engaging their students.

To help meet this need, we propose to install the Forest Preserves first Motus Station at the Ryerson Woods Welcome Center. The Motus Wildlife Tracking System is an international collaborative research network that uses coordinated automated radio telemetry to facilitate research and education on the ecology and conservation of migratory animals. Though used primarily to track birds, other animals that might be detected include butterflies, dragonflies, and bats. The Ryerson Woods Motus Station will primarily serve as a teaching tool, but it will also provide data for important scientific research.

Forest Preserve educators will customize the curriculum already developed to explore Motus data to enhance our existing programs and develop new programs based around the Motus Station and the data it provides. In addition, Forest Preserve educators will help teachers learn to use the same information with their students, utilizing data collected in the Chicago region. All will support State-mandated learning standards.

The system will be securely connected to the internet, and the data will be transmitted to the central repository. Information about the station will be available via the internet and easy to use at any location where Forest Preserve educators are teaching, whether at Ryerson Woods or a local school.

Project Plan and Budget

The \$7,000 grant will be used for the purchase and installation of the Motus station equipment, including the receiver, antennas, auxiliary cables, mounting station and installation (\$6,000). It will also provide program support including, the purchase of nano-tags, bird models, printed and framed flight path maps (\$1,000).

A funding request has been made to a donor for full funding of this project. Funding from the Foundation will only be needed if the original request is denied or fall short of the need. Ideal installation time would be in Spring or Summer of 2022.

REVIEW BY OTHERS: Education Manager, Director of Finance, Corporate Counsel, Preservation Foundation Executive Director

PRESERVATION FOUNDATION BOARD:

Date: _____ Roll Call Vote: Ayes: ____ Nays: _____
 Voice Vote Majority Ayes; Nays: _____

How does a Motus station work?

The purpose of Motus is to facilitate landscape-scale research and education on the ecology and conservation of migratory species. Researchers fit small lightweight radio-transmitters on animals such as birds, bats, and large insects. Receivers scattered across the landscape detect their signal. Each tag emits a unique signature so it can be determined where animals go, how fast they travel between points (migration ecology), and how long they stay in an area (stop-over ecology), as well as other aspects of their behavior and conservation status. The data is centralized at the Birds Canada National Data Centre, where it is filtered, analyzed, archived, and disseminated to all researchers and organizations in the network.

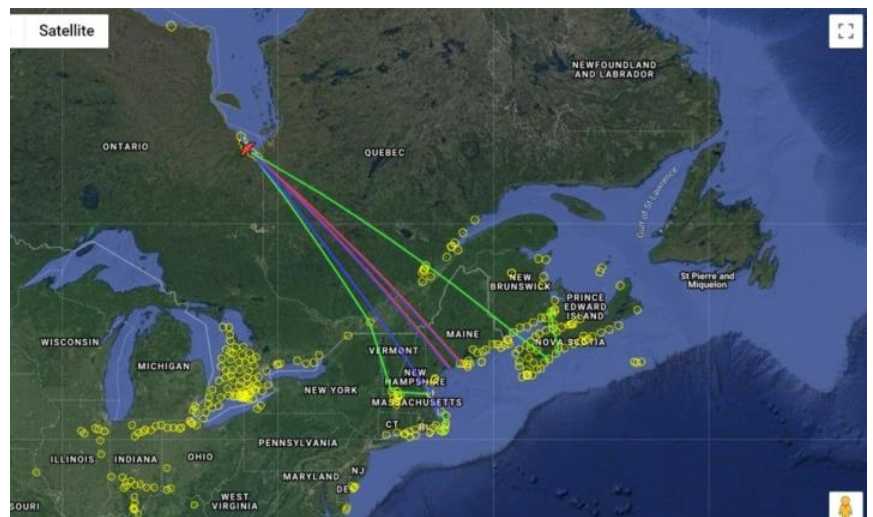
Why should Ryerson Woods have a Motus station?

A more robust network of Motus stations translates into stronger research results. Currently, there are two Motus stations in Lake County, one is located at Illinois Beach State Park and the other is at Chain O’ Lakes State Park. A Motus station at Ryerson Woods would be a tremendous asset to collect additional data about birds and bird migration and would add to our education programs.

Students learn best through hands-on, real-world experience. Imagine a middle-school student’s excitement when they learn that a tagged bird was tracked over Ryerson Woods the previous night! This station makes this experience possible for the approximately 25,000 students who are served through programs at Ryerson Woods each year.



Example of Motus antenna mounted next to a building.



Screen shot showing one night’s shorebird movement. Movements are animated on the Motus website.