

Meadowlark

The Newsletter of Genesee Valley Audubon Society

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The Motus Tracking System and Its Role in Understanding Bird Migration

By Linda Howell

This past July, June Summers and I had an opportunity to attend the National Audubon Leadership Conference in Montreal. One of the workshops I attended was on the Motus Wildlife Tracking System, or Motus. This is an international tracking system that was launched by *Birds Canada* in 2014.

Birds Canada is a non-profit organization that is dedicated to bird conservation.

Motus is an international collaborative research network that uses automated radio telemetry to track the movements of small animals such as birds, bats, and some large insects such as Monarch Butterflies. Signals from these radio transmitters are picked up by a network of over 1,800 receiving stations that are spread across North and South America and other global locations.

How It Works

Tagging: At a banding station, researchers can attach to the bird an ultra-lightweight radio transmitter called a nanotag. These nanotags are designed to minimize impact on the bird's natural behavior. Nanotags can weigh from 0.13 grams to 3 grams, depending upon the size of the bird to be tagged. Some Nanotags can be smaller than a paperclip.

Detection: As the tagged bird flies within range of a Motus receiver, the transmitter emits a unique radio signal. Each station logs all detections it captures, which are later uploaded to a centralized database.

Data Integration: Because all researchers share their data within the Motus network, scientists can track animal movements even if the tagged bird is detected far from its original study area. One of Motus's greatest

strengths is its 'collaborative, open-data model.' Researchers from across the globe contribute and access data, creating a powerful shared resource. This cooperative spirit allows even modest projects to contribute to and benefit from continental-scale research.



The Motus Dashboard is an interactive website that allows you to pick and explore the migratory path of a specific species of bird. *Birds Canada* has also contributed, along with nine other founding partners, in the

development of the [Audubon Society's Bird Migration Explorer Dashboard](#). For more information on this, see the **Further Exploration** Section below.

Applications in Bird Migration Research

Bird migration has long fascinated scientists and bird enthusiasts alike. Each year, billions of birds travel thousands of miles between breeding and wintering grounds, navigating vast landscapes and facing numerous threats along the way. Understanding the routes, timing, and behaviors associated with these journeys is critical for bird conservation. Motus has revolutionized the study of bird migration by offering fine-scale data on movement patterns that were previously inaccessible, especially for small songbirds.

Here are some key areas of impact:

Mapping Migration Routes: Motus data reveals the specific paths that birds take during migration, showing where they stop, how fast they travel, and how environmental factors affect their routes.

Stopover Ecology: Many birds require resting and feeding stops during migration. Motus helps identify these critical stopover sites, which are essential for conservation planning.

Timing and Behavior: Motus allows researchers to examine the exact timing of departures and arrivals

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Programs

December Program

What an Owl Knows: The New Science of the World's Most Enigmatic Birds

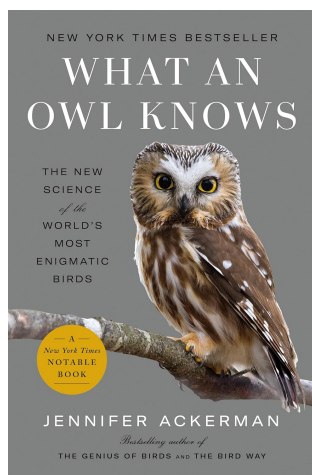
December 11, 2025, 7:00pm in Person and by Zoom

Presenter: Jennifer Ackerman

For millennia, owls have captivated and intrigued us. Our fascination with these mysterious birds was first documented more than 30,000 years ago in the Chauvet Cave paintings in southern France. With their forward gaze and quiet flight, owls are often a symbol of wisdom, knowledge, and foresight. But what does an owl really know? And what do we really know about owls? Scientists have only recently begun to understand in deep detail the complex nature of these extraordinary birds. Some 260 species of owls exist today, and they reside on every continent except Antarctica, but they are far more difficult to find and study than other birds because they are cryptic, camouflaged, and mostly active in the dark of night. Join Jennifer in a multimedia presentation on what we have learned lately about the nature of the world's most enigmatic birds. With remarkable photos, videos, and audio recordings, Jennifer explores the rich biology and natural history of owls and examines remarkable new scientific discoveries about their brains and behavior.

We encourage you to attend in person at the Fellowship Hall, of Asbury First United Methodist Church, 1050 East Avenue, Rochester, NY, where there will be a live connection to the speaker.

If you want to attend by Zoom email June Summers, summers@frontiernet.net. She will send you the link to meeting the day before. Bio. Award-winning science writer and speaker Jennifer Ackerman has been writing about nature and science for more than three decades. She is the author of seven books, including the New York Times bestsellers *The Genius of Birds* (Penguin Press, 2016) and *What an Owl Knows: The New Science of the World's Most Enigmatic Birds* (Penguin Press, June 2023), which was named a New York Times Notable Book of 2023.



Jennifer's previous books include *The Bird Way* (2020), which won the 2021 Whitley Book Award and was a finalist for the 2021 PEN/E.O. Wilson Literary Science Writing Award. It was named a Nature Book of the Year by the London Sunday Times. Her book on bird intelligence, *The Genius of Birds*, was a finalist for the 2017 National Academies Communication Book Award and was named one of the ten best nonfiction books of 2016 by the Wall Street Journal. It has been published in 28 languages.

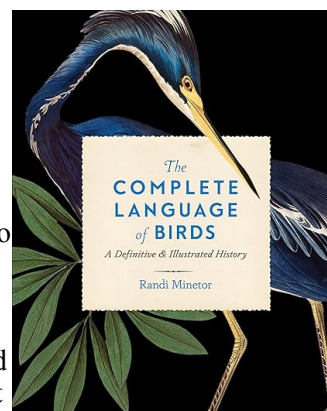
January Program

"How Birds Created the World ... and Other Stories from The Complete Language of Birds."

January 27, 2026, at 7:30 pm by Zoom

Presenter: Randi Minetor, author and journalist Ancient Egyptians believed that the Earth began as an egg laid by a giant goose. Ojibwa people of America's northern plains tell of a Great Flood that swept away the world's evils, and the bird that braved the deep waters to bring a bit of soil up from the bottom to restart the continent. European scientists once believed that geese survived the winters by turning themselves into barnacles and adhering to the bottoms of ships, transforming back into birds in spring. These and many other tales told in Randi Minetor's latest book, *The Complete Language of Birds*, bring us back to a time when birds seemed like magical beings with the answers for so many of the world's questions.

Bestselling author Randi Minetor has written more than 90 books, including books for the Birdfinding and Best Easy Bird Guides series for Falcon Guides/Globe Pequot Press. She is the author of *Backyard Birding* and *Butterfly Gardening* for Lyons Press, as well as books on birding in New England, Florida, and Texas. Her recent book *The Complete Language of Birds* is an encyclopedia that unites classic illustrations, science, folklore, and mythology about more than 400 bird species around the world. She writes for *Birding Magazine*, is a regional report editor for *North American Birds*, and served for three years as president of the Rochester Birding Association. Look for Randi's books on Amazon, <https://www.amazon.com/author/randiminetor> or at



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Field Trips

Chickadee Walk

Mendon Ponds Park

27 Pond Rd, Honeoye Falls 14472

February 14, 2026 at 10:00 am

Register by Wednesday Feb 11 at <https://mobilize.us/s/fin791>

All are welcome to participate in this outdoor adventure. Come get up close and personal with nature. We will hopefully hand-feed chickadees, tufted titmice, and nuthatches while enjoying the park. Fun for the whole family!! We will meet Saturday, February 14, 2026 @ 10:00 am in the Nature Center Parking lot on



Pond Rd off of Clover St (the southernmost of the 3 park entrances off Clover). Binoculars may enhance your enjoyment. GVAS will have some pairs available, if you don't have your own. Dress for the weather (wear boots, warm clothes, etc.). Seed will be provided.

Registration is required by Wed Feb 11. For trail details, check out the Birdsong trail assessment on Birdability here <http://tinyurl.com/yrpudn4u>

If you have any questions or concerns, feel free to contact Joni Dubner at bajacool416@gmail.com

Upcoming change in our email communication with you. Be on the lookout for an email with subject: Welcome to GVAS - your local Audubon chapter

Birding by car: Short-Eared Owls, Nations Road in Avon

Meet at Tops Parking Lot, 270 E Main Street in Avon.

Saturday, January 10 at 3:00 pm until dark.

Registration by Thursday, January 8 at

<https://mobilize.us/s/IryX3I>

Everyone is welcome. Participants will caravan, looking for target species of Short-Eared Owls and Northern Harriers from the warmth of our vehicles, with short stops along

roadsides. Be sure to dress for the weather. Binoculars will enhance your enjoyment. We will meet in the Tops parking lot at 270 E Main Street in Avon (Rtes 5 and 20). Park in the lot near



the road. For questions or concerns, email summers@frontiernet.net or leave a message at (585)865-6047.

Congratulations to GVAS on its 50th anniversary! 50 years of advocating for birds and the environment!

Board of Directors

Genesee Valley Audubon Society, Inc.

Officers: *President*, June Summers; *Vice President*, vacant; *Secretary*, Joni Dubner; *Treasurer*, Karen Curtis.

Committee Chairpersons: *Field Trips*, vacant; *Fundraising*, Lisa McKeown; *Publications*, Joanne Mitchell; *Programs*, vacant; *Publicity*, vacant; *Conservation*, June Summers; *Membership*, Loretta Morrell; *Education*, vacant; *Hospitality*, vacant; *Directors-at-Large*, Nancy Strong, Linda Howell, and Catherine Rainwater; *Webmaster*, vacant; *Web Host*, vacant.

The Meadowlark is published online the first week of March, June, September, and December. If you are interested in receiving a reminder when the new Meadowlark is released, send an email to gvaudubon@gmail.com.

Meadowlark staff: *Editor & Layout*, Joanne Mitchell; *Business Editor*, vacant; *Distribution*, vacant.

Motus, continued from page 1

during migration, as well as how factors like wind, weather, and landscape influence behavior.

Understanding Threats: By tracking birds across entire continents, Motus can help identify where birds face the greatest risks—such as habitat loss, collisions with structures, or predation.

Species Conservation: Motus has been used in studies of endangered or threatened species, helping scientists better understand their full life cycle and inform management decisions.

Examples of Impact

Blackpoll Warblers: Using Motus, researchers discovered that these tiny songbirds make a non-stop transoceanic flight from the northeastern U.S. to South America—an astonishing journey of over 1,550 miles.

Shorebird Conservation: Species like the Red Knot have been tracked to pinpoint essential stopover areas along the Atlantic Flyway, leading to targeted conservation actions.

Further Exploration

Audubon Society and its Bird Migration Explorer (Article from Fall 2022 Audubon Magazine <https://tinyurl.com/mt5jmkc3>)

Audubon Society, in partnership with nine founding partners, have created this interactive map that shows the journey of over 458 bird species migration journeys. You can explore migration pathways by species and by location. Founding partners who have contributed to the development of this interactive map are: Birds Canada, Bird Conservancy of the Rockies, Bird Genoscape Project, Bird Life International, The Cornell Lab, ESRI, Georgetown University: the Earth Commons, Movebank, Smithsonian Migratory Bird Center and USGS. Link to the Bird Migration Explorer website: <https://tinyurl.com/h37s6fh7>

Birds Canada website <https://www.birdscanada.org/>

Birds Canada – A YouTube video on the overview of the Motus Tracking System <https://tinyurl.com/ypnxczth>

Motus Wildlife Tracking System Website <https://motus.org>

Programs, continued from page 2

the BirdHouse on Monroe Ave; sometimes she even has book signings there.

Join us for an interesting trip into the tales and legends of birds.

Register by using the Mobilize link <https://mobilize.us/s/yG2810>. The link to the Zoom presentation will be sent to you upon registration

February Program

American Oystercatchers: How Audubon Connecticut is Monitoring Their Reproduction and Movements

February 24, 2026, at 7:30 pm by Zoom

Presenter: Elizabeth Amendola, Senior Coordinator, Coasts, Audubon Connecticut.

Audubon Connecticut has been monitoring nesting shore birds for several decades: American Oystercatchers, Piping Plover and Least Terns.

With the help of volunteers and young interns they have been able to learn a lot about how to help these birds nest more productively by putting fencing around some of the nests, educating



beachgoers about not getting too close to the nesting birds, and keeping dogs on leash and away from the nesting birds as well. It isn't easy being a nesting shore bird and they need all the help they can get.

Beth Amendola, Senior Coordinator for Coastal Ecology, will tell us about these wonderful shore birds that she has worked so hard to conserve for the last several years. She will tell us about what she has learned about the nesting birds on these islands off the coast of CT and which animals, both four footed and two footed, they have had to outsmart to help the birds stay safe. Last summer Beth and the people she works with started a new program using MOTUS tags to learn even more about the American Oystercatchers they are studying. Join us for this fascinating adventure to the Atlantic Coast to dream of warm days and beautiful birds.

Register by using the Mobilize link <https://mobilize.us/s/FioQvJ>. The link to the Zoom presentation will be sent to you upon registration