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Inside

American Kestrels in the Sax-Zim Bog:
Citizen Science and Research

by Clinton Dexter-Nienhaus

The Sax-Zim Bog Important Bird Area (IBA) is a significant and well-known birding location in Minnesota, perhaps best known for winter birding. The IBA consists of 147,000 acres of mixed forest, upland and lowland conifer forest, agricultural fields, river basins, alder swamps, and lakes, and it is home to a wide diversity of species, including Great Gray Owls, Boreal Chickadees, winter finches, and other birds of the boreal and lowland conifer forests. While no one entity owns or manages the Sax-Zim Bog IBA, the Friends of Sax-Zim Bog work to preserve, promote, and protect this vast landscape through land preservation, education, research, and communication with local communities and beyond.

As Head Naturalist for the Friends of Sax-Zim Bog, I lead the education and outreach program in "The Bog." I also coordinate our American Kestrel Nest Box Project in the Sax-Zim Bog IBA. This project was started by Frank and Kate Nicoletti during the summer of 2015, when they placed the initial 14 nest boxes. I have been involved in the project since 2016, coordinating volunteers, maintaining boxes, and helping with research. As this article goes to press, we will be starting the sixth season of monitoring.

Typical next box in the Bog, by Clinton Dexter-Nienhaus

The American Kestrel is the small-

View into a nest box, by Clinton Dexter-Nienhaus

est falcon in North America and has an immense range, from Alaska to the southern reaches of South America. Unfortunately, the species is experiencing population declines across its range, as documented by Breeding Bird Atlas surveys, migration count data, and the Raptor Population Index data. These beautiful falcons of grassland habitats rely on trees for nesting cavities and perches for hunting, and they require abundant populations of large insects. But tree lines in agricultural areas are disappearing, and resulting in fewer nesting options; insect populations are seeing dramatic declines; and increases in populations of potential predators, like Cooper's Hawks, are impacting the survival of kestrels across their range. One way that we can all directly aid American Kestrel conservation is by supporting restoration of native grassland habitats and by putting up nest boxes, which are readily used by American Kestrels.

The Sax-Zim Bog IBA lies on the eastern fringe of appropriate habitat for this species in Minnesota: there are pockets of grassland nestled among the black spruce and tamarack bogs, white cedar swamps, and mixed conifer forests. Missing from the area, though, are appropriate nesting options. This is where the nest box project comes in: its purpose is to provide kestrel nesting opportunities for kestrels by placing nest boxes across the landscape of the IBA. To date we have placed 52 boxes in the Sax-Zim Bog, of which we will be monitoring 49 during the 2021 season (three are not accessible at this time). This is our greatest monitoring effort yet.

Although we have monitored the nest boxes since 2016, our data collection efforts and monitoring protocol have changed, with the most consistent protocols established for the 2018 monitoring season. Volunteers, who receive training before the start of each season, monitor the boxes. They check the boxes at least once every ten days, with visits always lasting less than five minutes in length. We take a short recording of the inside of each box with a GoPro camera mounted on an extendable pole. All of the data collected by our citizen scientist volunteers during a monitoring session is shared with the American Kestrel Partnership. Biological samples like feces, prey remains, and feathers from nestlings collected while banding kestrel chicks are shared with agencies, universities, or organizations studying kestrels. These samples are being used for projects working on American Kestrel genetics across the U.S., studies looking at prey composition, and more.

Most of the boxes in the Sax-Zim Bog IBA are placed on utility poles, though a few are attached to dead or living trees. Over half of these boxes face a southerly or easterly direction, and they are situated away from roadways, near appropriate habitat, and away from farms with abundant populations of European Starlings. We clean and maintain the boxes in late March or early April prior to the arrival of kestrels. We place them nine to ten feet above the ground and fill them with wood shavings. Uniquely, we do not have a need for predator guards below our boxes. American Martens are a known nest predator in the area, but our boxes are not in habitats that support martens, and the Sax-Zim Bog IBA is far enough north that nest predators like raccoons are

Female American Kestrel nestling, around 18 days old by Clinton Dexter-Nienhaus

Male American Kestrel nestling, around 23 days old by Clinton Dexter-Nienhaus

fairly uncommon outside of urban areas. Over the course of our monitoring, we have only experienced two predation events out of six nest failures from 2018-2020.

We have been fortunate to have a good record of success with kestrel nesting in our boxes. American Kestrels generally start to return to the Sax-Zim Bog IBA sometime in the first week of April, with males arriving before females. On average, 45% of the boxes in the Sax-Zim Bog IBA are occupied, and the birds will lay their first eggs between May 10 and 15. We have documented first eggs laid as early as April 11 and as late as June 10. American Kestrels lay from 3-5 eggs per season, and our boxes average 4.7 eggs, with a hatch rate of 93.6%. We try to band the nestlings between 17-26 days of age, when their feathers have emerged enough to indicate sex and they are not too old to jump out of their nest box when disturbed. We typically do the banding from late June to early July. Since the project started in 2015 we have banded 192 nestlings, with 153 nestlings banded from 2018-2020. During this time, 55% of chicks banded have been female. The 2020 season was the most successful nesting season to date, with 17 boxes occupied, 15 successful nests, and a total of 61 chicks banded. We hope that, with the additional boxes placed during the fall of 2020 and spring of 2021, the 2021 season will be even more successful.

As the project moves forward, I will write a report that examines five years of standardized data. We will continue to monitor the boxes beyond this point, with the initial data analysis providing an important window into nesting success, habitat use, and monitoring strategies of American Kestrels in our region. Another hope for this project is that someday we will be able to color-band adult kestrels in order to monitor nest box site fidelity, and perhaps even attach MOTUS transmitters to kestrels in our nest boxes to better understand the migration of this species.

This project would not be possible without cooperation from land owners who have allowed us to place boxes; our new, former, and returning volunteer citizen scientists who monitor these boxes, including Mary Gabrys, Jean Elton-Turbes, Sarah Beaster and her daughters, Sally and Eliza Grames, Victoria and Kim Harthorn, Kristina Dexter-Nienhaus, Jerri Schwerin, Brian Scott, Jessica Phoenix, and Dawn Shold, as well as Kellie Hoyt and Gregg Severson; and to everyone who has supported this project by building boxes, providing funding, or donating time, especially Frank Nicoletti. The future is looking bright for American Kestrels in the Sax-Zim Bog!

More information about American Kestrels, their conservation, or this project can be found on the American Kestrel Partnership's website (kestrel.peregrinefund.org), the Minnesota Breeding Bird Atlas Website (https://mnbirdatlas.org/species/american-kestrel/), and the Friends of Sax-Zim Bog's website and Bog Blog (https://saxzim.org/category/scientific-research/). A video recording about this project can also be found on the Minnesota Ornithologists Union YouTube page.

Clinton Dexter-Nienhaus is the Head Naturalist for the Friends of Sax-Zim Bog, as well as an environmental educator, naturalist, and avid birder.

Male American Kestrel nestling, around 23 days old by Clinton Dexter-Nienhaus

Message from the President

Spring is a wondrous time. Nature awakes and reminds us that there is an ongoing pattern to life, no matter what is happening with us. Birds that are traveling far to get to their breeding grounds excite us as they wonder through the woods and fields and our yards. The morning chorus provides a start to the day that matches the greatest symphony or opera ever written. This is the time of the year that we all look forward to with great anticipation.

Unfortunately, many awful things are happening now that produce emotional exhaustion and angst rather than excitement for spring and for the future. It is overwhelming to me to think about what is happening. The Covid-19 pandemic continues, now associated with covid fatigue. Resistance to useful public health measures is not helping. There has been no pause or retreat from people being killed by others who have access to a gun (there have been 11 mass shootings in 2021, *New York Times* April 17, 2021). Police shootings continue, even during the trial of Derek Chauvin for murdering George Floyd. More than 60 people have died by law enforcement since the Chauvin trial started, more than half of them Black or Latino (J. Eligon and S. Hubler, *New York Times*, April 18, 2021). Black men are stopped by police at an alarming rate, often for minor or no violations, and some, like Daunte Wright, are killed when a gun is mistaken for a Taser. People are attacked for their Asian, Indigenous, or other background, or for their sexual orientation. Systemic racism is overwhelming. The numbers are staggering. And it goes on and on.

What can we do as individuals? We cannot solve all of these problems, but we can start by being kind to and accepting of others. Use words and actions to create a space of safety that shows our support, where we listen to, value and care for each other. One easy and natural thing is to smile and acknowledge the presence of others as we would for our own family members. Tension is high and people are hurting because of all that is happening, and providing a space where we are kind will be a big help. Our passion is birds, so we can use this as a way to reduce the tension by sharing the wonders of color, flight, and migration. Providing a kind and accepting space is important.

What can the MOU do as an organization? A just society represents all of the people, not just a few at the top. We all have biases and desires to be with people like us, which is natural and generally OK, but this leaves others out. The diversity of the Minnesota population is changing, and the MOU needs to adapt. We can reach out to people who have not been part of our activities, listen and learn why, and then develop new approaches that are inclusive and equitable. To start this process, we are forming a **MOU Inclusion and Equity Working Group** to provide guidance for moving forward, and we are looking for ideas, input, and volunteers to help with this. Please contact me at richardallenking@gmail.com with your stories, suggestions, and thoughts. This is an opportunity to make the MOU better and more exciting, and help us share our love of birds with others. As with the birds in spring, now is the time for the MOU to move forward.

The MOU Board of Directors held its spring meeting on April 3. At it, the Board learned that the virtual Spring Birding Primer with Carpenter Nature Center on March 27 was a great success, with more than 200 watching over Zoom. The Board welcomed Garrett Wee as the new chair of the Field Trips Committee. Garrett will be proposing a series of new field trips, and we are excited to have him direct these activities. The University of Minnesota Bell Museum will kick off its 150th anniversary year celebration with an exhibit, "Seeing Birds," which will run January through June, 2022, and the MOU signed on as a major sponsor for this exciting exhibit. "Seeing Birds" will draw on the legacy of the Bell's contributions to the field of ornithology and will highlight its rich collection of wildlife art to dazzle visitors and explore discoveries made from observing birds and their incredible ability to fly.

These are trying times for all. Remember, be kind and supportive of others. Help us make the MOU a better organization.

– Richard A. King, MOU President

Blackburnian Warbler, by Liz Stanley

Conservation Column:

Radar Surveys Inform Habitat Conservation for Migratory Birds across the Great Lakes

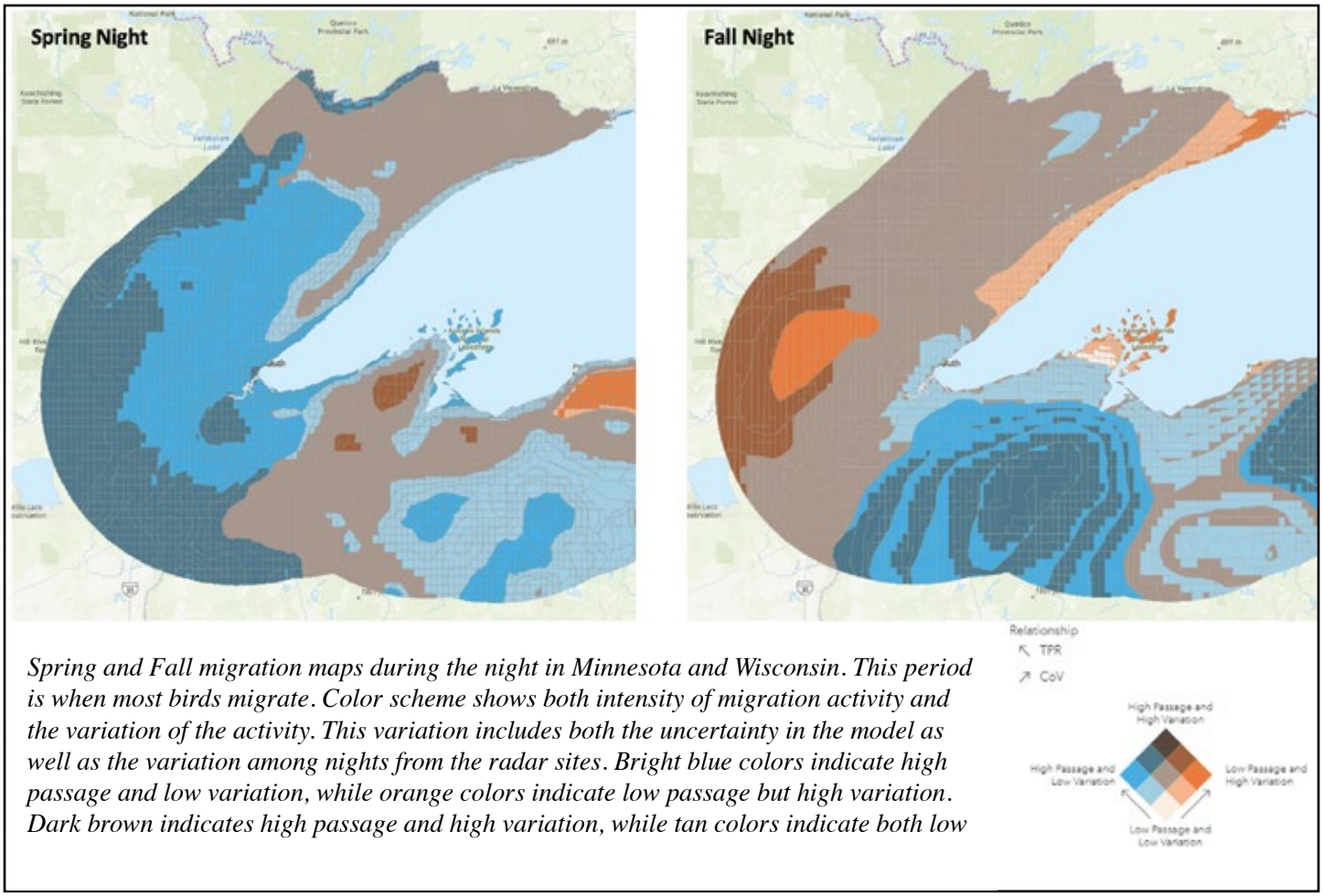
by Michael Wells

Every night during spring and fall the skies across North America are host to one of the greatest natural phenomena known: the annual migration of birds. Birds travel from wintering grounds as far away as Argentina and New Zealand to return to breed across North America. These some of the most sweeping journeys undertaken by any animal.

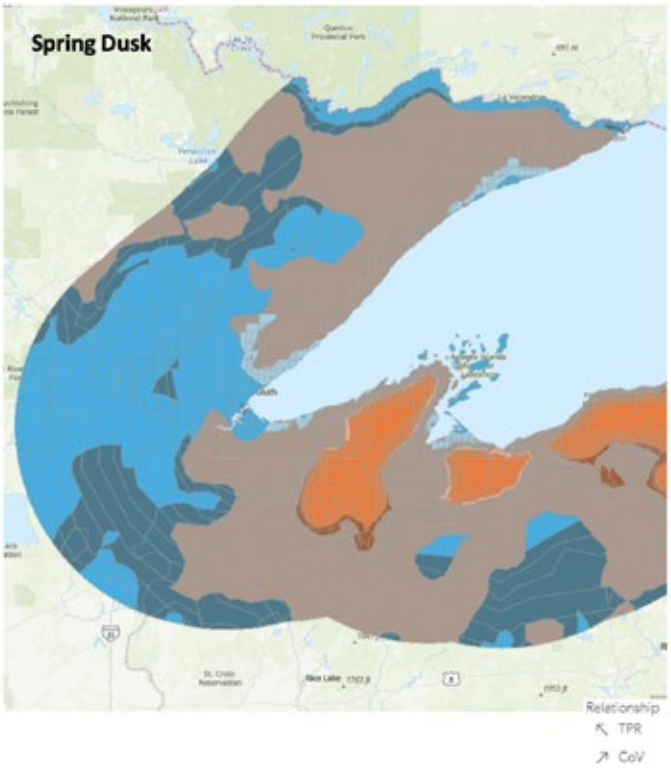
As birds traverse the globe, their flight takes them across various hazards. One area of heightened risk is large expanses of open water, a prime example being the Gulf of Mexico. This is due to the inability of most birds, especially songbirds, to land on water, and that increases the danger from predators and inclement weather. Less clear is how these same hazards may play out farther north, such as along the Great Lakes. In addition to having large areas of open water, the Great Lakes area is also home to 33 million people and considerable development along the shoreline that could affect the survival and route of migrating birds. In recent years, the Great Lakes have been a priority for remediation and restoration efforts. In 2010, Congress passed the Great Lakes Restoration Initiative to fund work to restore the waters, habitat, and wildlife of the Great Lakes. As part of this funding, the U.S. Fish and Wildlife Service set out to determine how migrants use the Great Lakes Basin.

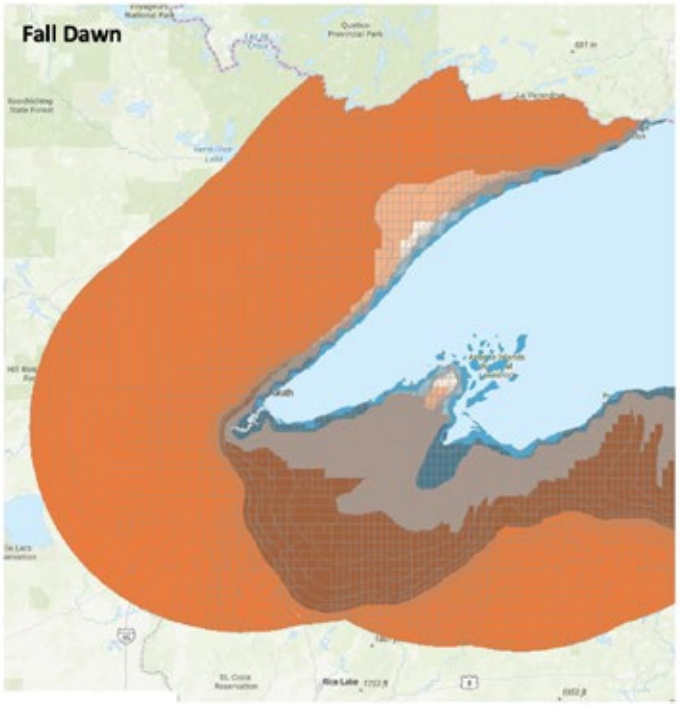
Documenting migration is unusually challenging. While migrants like ducks and geese move in large flocks during the day, most migrating birds, especially small songbirds, migrate exclusively at night, when traditional methods of observation are not effective. To address this issue, we used two mobile radar units to collect data on migration. These units have two antennas, each of which captures different parts of the airspace. One looks "up," capturing important information on altitude, and samples the abundance of birds in the area. This antenna reaches 2.8 kilometers (1.7 miles). The other antenna looks "out" parallel to the ground, providing a wider view of migrant movement and behavior, and it reaches 3.7 kilometers (2.3 miles) out from the radar unit.

Using these units, we documented migration during spring and fall at 42 sites across the Great Lakes, including



Spring and Fall migration maps during the night in Minnesota and Wisconsin. This period is when most birds migrate. Color scheme shows both intensity of migration activity and the variation of the activity. This variation includes both the uncertainty in the model as well as the variation among nights from the radar sites. Bright blue colors indicate high passage and low variation, while orange colors indicate low passage but high variation. Dark brown indicates high passage and high variation, while tan colors indicate both low





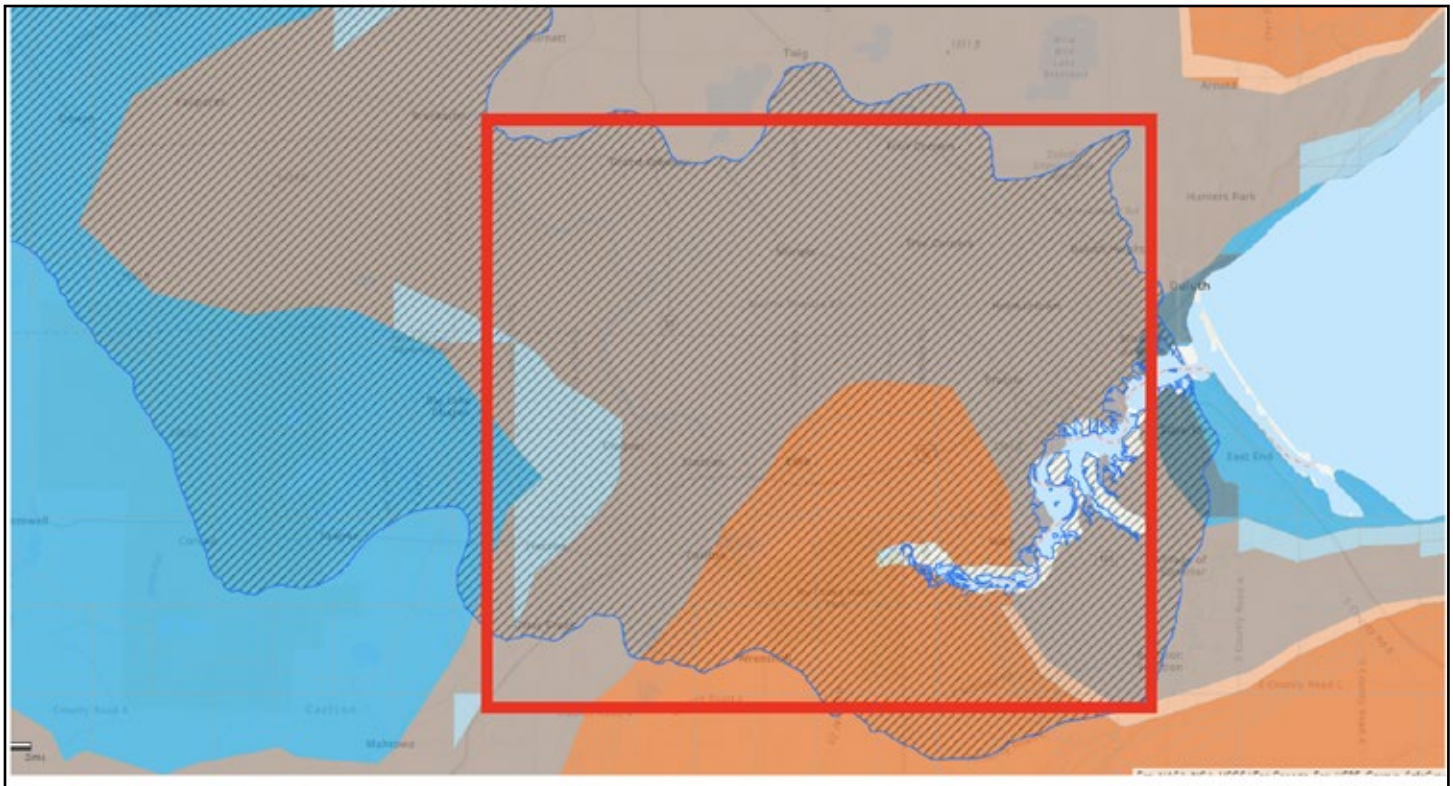
Spring Dusk and Fall Dawn migrant use. Note the uniformly high (blue) use of the coastal areas during dawn, and the potential staging areas to the west of Duluth (blue) at dusk. See Spring and Fall migration panels for explanation of color coding and migrant passage.

a spring and fall season at each of the five lakes. This data provides valuable information on how migrants are using the coasts and local airspace. But the range of the radar is limited. We wanted to build a way to understand how migrants were using the airspace and stopover habitat across the basin as a whole. To do this, we combined the radar data and locations with other data from the Great Lakes, including proximity to the lakeshore, vegetation type, and nighttime light pollution, to build a model of migration across the entire Great Lakes area. The results of this model allow us to map the intensity of migration, as well as the variation around that intensity at a variety of levels—from season to time period to altitude—cross the Great Lakes basin.

Along Minnesota's north shore, for intance, migrating birds differ in their use of various areas, depending on the season and time of day. Most broadly, spring and fall migrations produce very different patterns of nighttime migration, the period of strongest migration activity. During spring, there is high migration activity around the Duluth area and to the west. This pattern is consistent with the overall pattern across the Great Lakes in the spring, where migrant activity is strongest along the western edge of the basin from western Lake Erie to western Lake Superior. We believe this indicates that migrating birds may perceive the Great Lakes as a single unit and navigate around it, thus producing the strong activity at Duluth as birds round the "corner" of Lake Superior. The coastline also has high activity, which may indicate that birds are crossing the lake or using the coastline itself as a navigational guide. In contrast, during the fall migration, migrant movement is lower overall and is more variable, although there is still relatively strong activity around Duluth. This pattern could be due to the differences in timing of migration: spring migration tends to be shorter and more intense. This is because birds are attempting to arrive at breeding sites as quickly as possible to begin breeding and to occupy the best territories. By contrast, fall migrants are under fewer constraints, and the young of the year and adults often migrate at different times.

While nighttime maps provide information about where large numbers of birds are migrating, dawn (half-hour before and after sunrise) and dusk (half-hour before and after sunset) time periods can also provide important information about migratory bird stopover habitat and important take off points. One important pattern that we observe across all of the Great Lakes is an increased use of coastal areas during the dawn period. The north shore of Lake Superior is no different, with the coastal areas showing heavy use during dawn. This is likely due to birds that find themselves over the lakes at night moving towards shore in the morning to find refuge from predators, and to rest and feed in order to fuel the next night's migration.

During dusk we may be able to determine where mi-



Using migration maps to enhance other restoration efforts. The hatched area outlined in blue is a Great Lakes priority lake sturgeon area for spawning, while the background colors are from spring dawn migration use. Note higher inland use (solid blues) and an area of lower use and higher uncertainty (red box). Restoration of streams and riverbanks in this area with an eye toward improving both erosion control (for Lake Sturgeon) and food resources (for migrating birds) could change these areas from moderate use to higher use and enhance bird migration conservation.

grants may have massed during the day as they moved below the range of radars, and where important staging areas may be. For the north shore of Minnesota, we see strong use around the western end of the lake in the Duluth area and points inland, but also portions of the north shore.

Our intention is to have these maps be used to plan and implement conservation and restoration to help the continued protection and recovery of migratory birds around the Great Lakes during migration. Our maps can identify important migration stopover areas to protect, as well as areas where conservation restorations or enhancements may improve migrant use. One exciting prospect is to use these maps to tie disparate projects together and thus improve conservation success across multiple groups of animals; this would allow us to leverage limited conservation funds in order to do the most for the most species. Using these maps, we can tie conservation of migratory birds to other priorities as diverse as fish and flowers. For example, in Minnesota the St. Louis River system is a conservation priority for Lake Sturgeon (*Acipenser fulvescens*). We also find some strong areas of migrant use during spring in the St. Louis watershed. By understanding where and how migrant birds are using sturgeon areas, we can tailor the sturgeon restoration objectives to enhance migratory bird habitat as well. For instance, Lake Sturgeon restorations include plantings along rivers and streams for erosion control. These plantings can include native species beneficial to migrating birds. Plants that carry fruits or nuts through the fall, winter, and spring, such as high bush cranberries (*Viburnum trilobum*) and native hazelnuts (*Corylus* spp.), or that host large numbers of insects and caterpillars during the spring, such as oaks (*Quercus* spp.), birches (*Betula* spp.), and willow (*Salix* spp.), can provide important resources for birds during migration.

Understanding migrant movements and identifying areas of high activity can provide conservation solutions for many different animals and plants simultaneously. Migratory birds are under threat, with an estimated three billion birds having been lost in the past 50 years (https://www.3billionbirds.org/). By understanding where migration occurs and where migrants stop over, we can conserve and restore these areas to help halt the decline of the birds we all know and love. Check out www.fws.gov/radar for updates, tutorials, and reports for individual radar sites.

Note: *The findings and conclusions in this article are those of the author and do not necessarily represent the views of the U.S. Fish and Wildlife Service.*

Besides being a member of the USFWS radar team, Michael Wells works in evolutionary biology, does population monitoring for several bird species, and employs radiotelemetry to track migrating warblers.

Minnesota Ornithologists' Union
Summary of Minutes from the April 3, 2021 Board Meeting

Submitted by Kathrynne Baumtrog. (Note: These minutes have not yet been voted on by the Board.*)*

In attendance: Kate Snow, Bob Janssen, Ann Kessen, Michelle Terrell, Anthony Hertzel, Liz Stanley, Steve Wilson, Susan Barnes-Elliott, Carol Henderson, Tom Tustison, Garrett Wee, Kathrynne Baumtrog, Mark Lystig, Bob Dunlap, Cindy Smith, Gerry Hoekstra, Jennifer Vieth, Kate Kelnberger, Dick King, Dave Cahlander

Call to Order and Approval of December 2020 minutes.

Committee Reports

1. **Treasurer's Report** (Ann Kessen, Treasurer)
   –Report covering dates 11/1/2020 - 2/28/2021 submitted for the record.
   –Income for the Savaloja Grant was low due to the lack of a Book Sale at the Paper Session.
   –Bob Dunlap noted that the MOU Planner was a great source of income, and that there are plans to continue this project in the future.
   –A generous Life Member donated to the Savaloja Fund.
   –State of MOU filing MN Charitable Organization form.

2. **Membership Report** (Cindy Smith, Membership Secretary)
   Membership numbers are slightly up. One reason was the Spring Primer.

3. **Savaloja Grant Committee** (Steve Wilson, Chair)
   –Savaloja Grant proposals & recipient recommendations were submitted for the record.
   –With a budget of $12,000, the committee awarded $13,475 in grants. The difference was provided by the Savaloja family ($1420) and Steve Wilson & Mary Shedd ($55). Thank you! The Savaloja family gave for a project in NE Minnesota on the Gunflint Trail in Honor of John Savaloja's Memory.
   –Steve and. Mary also gave in excess of $500 toward Urban Bird Collective Succession Plan.

4. **Information Technology Committee** (Liz Stanley, Chair)
   –Liz reviewed the progress this committee has made in studying the way members use the MOU website, as well as data collection and management. A good understanding must be obtained in order to create the model and then write proper code. This is all done with the goal of keeping all data previously obtained and future data intact.
   –The work process is recorded on an application (TRELLO), and team members are working to include all stakeholders.
   –Ann Kessen suggested asking for more MOU members' involvement.
   –Liz explained to the board the difference in time for this project when looking at outsourcing work versus having all volunteer work. One thing that is unique to MOU is that we maintain and manage our own data. Also, the amount of education and specialty expertise for this type of project is great.

5. **Regional eBird Portal for Minnesota** (Michelle Terrel and Tom Tustison)
   –Plans are to launch the Minnesota eBird portal around the end of April 2021.
   –Tom noted that work by Liz and Michelle is going well and is impressive.
   –It was again noted that MOU website is technical and has high standards: eBird is meant to augment data collection and assist in education and awareness, not replace the MOU site.
   –Members asked for clarification regarding coordination between and the eBird reviewers MOU Records Committee.

6. **Field Trips** (Garrett Wee, Coordinator)
   –Garrett outlined his plans for MOU Field Trips.
   –Jennifer recommended checking CDC protocol for Covid-19 precautions.
   –Bob Dunlap offered to help with technology and spreading the word about trips; he also recommended contacting Ben Douglas.
   –Youth Birding Program has a few sets of binoculars to that Garrett could use for this program.
   –Garrett will look at working with Urban/City trips for more diversity in birding.

7. **Paper Session 2021** (Kara Snow)
   –The 2020 Paper Session went well and was well received.
   –At this point, plans call for an in-person session in 2021, with the possibility to add Zoom/YouTube for those not able to travel into the Metro area.
   –Request was made to have the Savaloja Grant recipients share their findings as well.

8. **Education Committee** (Jennifer Vieth and Susan Barnes-Elliott)
   –Hopes were expressed to have the MN State Fair booth in operation this year
   –The Spring Primer via Zoom was a huge success, with 300+ online registrations
   –Plans for the Youth Birding Competition 4/24/2021
   –Need to work for better advertising support of MOU-supported programs on MOU web page
   –MOU still needs a Youth Coordinator

9. **Avian Information Committee** (Bob Janssen)
   Bob submitted a proposal for an Ad Hoc committee for Bird Preservation in Minnesota and how the MOU can support that effort.

10. **MOU By-Laws Revision Committee** (Ann Kessen, Chair)
    Working diligently to update the By-Laws

New Business

1. **Bell Museum**:
   Mr. Kevin Curran of the Bell Museum joined the meeting to request MOU financial support for the Bell Museum's 150th Anniversary. This is a six-month long celebration, with 60,000 people expected to attend. Members discussed the benefits of supporting such an event and what the MOU would ask for in return. Board Members in favor with need for agreement finalization of specifics
   –Support moved and approved with one abstention.

2. **Memorial Land Acquisition and Investment Planning Group Proposal** (Bob Janssen)
   –Members discussed supporting the acquisition of lands, supporting programs that work for this effort, such as Sax Zim Bog, and advising governmental institutions on land protection/preservation efforts. Carroll spoke to the need to address State of MN tax fund moneys dedicated to game/hunters idea of habitat preservation and protection. The MOU could advise and contribute data.
   –Steve Wilson mentioned SNA management and other appropriate places to direct this effort.
   –Tabled in the interest of time

3. **Inclusion & Equity Working Group** (Dick King)
   –Dick is working with Monica Bryant and Pam Perry. It was suggested that it would also be good to involve Garrett Wee, Field Trip Coordinator, in this program.
   –Tabled for time

Next meeting: August 7, 2021, 10 a.m.

New MOU Members

Please remember to notify the MOU Membership Secretary (membership@moumn.org) when you change your address or email. If you are renewing for more than one year, please so indicate on your check. Also, a special thank you to the members who have set up a monthly donation (via PayPal) to the MOU General or Savaloja Funds. We appreciate your continuing support.

Laura Benjamin, *Maple Grove, MN*
Alice Berquist, *St. Paul, MN*
Mark Boxrud, *Mora, MN*
Steve Bozeman, *Savage, MN*
Mark Brigham, *Andover, MN*
Lynn Cornell, *Rochester, MN*
Martha Douglas, *St. Paul, MN*
Damien Dunphy, *St. Cloud, MN*
Sherman Eagles, *St. Paul, MN*
Jonathan Ferguson, *Minneapolis, MN*
Sheila Frenzel, *Eden Prairie, MN*
Anne Fry, *Savage, MN*
Karen George, *Grand Forks, ND*
Bonita Hill, *Minneapolis, MN*
Diane Hirigoyen, *St. Paul, MN*
Sarah Jones & Joseph Musco, *Minneapolis, MN*
Joy Knopp, *St. Paul, MN*
Sarah Kocher, *Sauk Rapids, MN*
Laurel Mochinski, *Lakeville, MN*
Terry Moffatt, *Coon Rapids, MN*
Robin Murie, *St. Paul, MN*
Gail Murton, *Silver Bay, MN*
Dan Newton and Elizabeth Rowan, *St. Paul, MN*
Patricia Norton, *Minneapolis, MN*
Carol Novak, *St. Paul, MN*
Mark & Barbara Owens, *Austin, MN*
Scott & Faye Propsom, *Burnsville, MN*
Jim Rue, *St. Paul, MN*
Patricia Shortall, *Kasota, MN*
Lawrence Thomforde, *Zumbrota, MN*
Lisa Thornquist, *Minneapolis, MN*
Nancy Verba, *Maple Grove MN*
Samantha Warren, *St. Cloud, MN*

Report on 2021 MOU Spring Primer

by Susan Barnes-Elliott

This spring, identifying migrants and properly submitting that information to eBird will be a breeze for the 200-plus birders who attended the MOU's fourth annual Spring Primer. Organized by Jen Vieth of the Carpenter Nature Center (a Primer co-sponsor) and Susan Barnes-Elliott, the Primer took place via Zoom on March 27, and it may well have been the best Primer yet. Each of the presenters put dozens of volunteer hours into his or her presentation, and as a direct result the MOU gained a number of new members and donations. We are deeply grateful to each presenter. Additional thanks go to Ben Douglas, who not only offered a presentation but also has posted the Primer in its entirety on YouTube at https://youtu.be/wAv6APylQiY. Because the Primer is available online, I will only briefly summarize the presentations and focus instead on the presenters themselves.

MOU President Dick King welcomed the participants, and Tom Lewanski, Natural Resources Manager for Dakota County, did a great job of introducing each speaker and keeping the Primer on track.

Alyssa DeRubeis led off the presentations with detailed and very helpful pointers on how to identify those tricky sparrows. Alyssa is originally from Minnesota, but she obtained a bachelor's in wildlife ecology from the University of Wisconsin-Stevens Point, and she has worked and volunteered in Alaska, Arkansas, Belize, South Dakota, the Upper Midwest, and Quebec surveying grassland and wetland birds, counting raptors, writing Wisconsin seasonal bird reports, and teaching children about ecology. Her travels also led her to the University of Arkansas, where she studied nesting and non-breeding birds in remnant and restored tallgrass prairies for her master's degree in 2019. Alyssa now resides in Montreal, Quebec, but she remains involved with the MOU as a member of the Savaloja Grant Committee. Alyssa loves sparrows, and her presentation on these charismatic songbirds clearly showed that.

Ann Kessen, a past MOU President, current Treasurer, and a seasonal report compiler, gave a fascinating presentation entitled "Hybridization: When Good Birds Make Bad Choices." Ann has a Ph.D. in Biology, with an emphasis in avian systematics, and has taught biology for 13 years at Century College in White Bear Lake. Ann described the circumstances under which two species of birds might hybridize and the impacts of hybridization on bird species. Her pictures of hybridized birds were in and of themselves well worth the "price" of admission.

Ben "Beast Mode Birder" Douglas is arguably the highest energy birder in the state of Minnesota. So, what does someone like Ben do with all that energy during a pandemic, when the safest and best thing to do is to stay close to home? Well, he drills down on the birds and stud-

Screen Shot from Alyssa DeRubeis's presentation on sparrow identification at the Spring Primer

ies their behaviors and patterns in his own local patch. Ben reported that, in the process of doing just that, he learned more about birds than he did in 2019, when he visited every Minnesota County three times in a successful quest to notch over 10,000 county ticks in a single year. Ben is currently a member of the MOU Social Media and Awards Committees, writes occasionally for this newsletter, provides guiding support for MOU-sponsored bird walks, and volunteers in many capacities at Carpenter Nature Center.

Townsend's Solitaire, by Tom Gilde

Ezra Hosch walked us through what he sees as recommended eBird practices, and along the way gave us tips on ways to increase the scientific value of our eBird lists. Ezra's advice comes from experience: although he is only in his early twenties, he has used eBird to guide his birding plans for the past eleven years, and he has submitted his own observations to eBird for the last seven. Two years ago Ezra joined Minnesota's eBird review team, assisting in evaluation of reports for Washington County. Organizing and vetting information collected by birders is a passion of Ezra's: he also serves as one of the compilers for the Spring and Fall Seasonal Reports for the MOU journal, *The Loon*. At the December 2020 MOU Paper Session, Ezra was presented with two MOU Awards: the Young Birder of the Year Award and one of the two Theodore Voelker Awards given out last year.

Do you enjoy watching horror films? Then be sure to watch the thankfully short video of mosquitos literally swarming Kara Snow while she attempts to conduct avian field studies. Kara, who offered a presentation on her many adventures in avian field work, is a graduate student at the University of Minnesota Duluth. Her master's research examines the diet of nestling Boreal Chickadees and the factors that influence nestling body condition, post-fledging survival, and post-fledging dispersal patterns. Kara received her bachelor's degree in wildlife management from the University of Minnesota in 2010. After graduation she worked as a naturalist at Eloise Butler Wildflower Garden and Bird Sanctuary. During this time she began to develop an interest in wild birds and birding, which led to volunteering on an EarthWatch project in which she studied Flammulated Owls in Utah and later to conducted surveys for Flammulated Owls in Idaho. During the last few years, she has been doing field work in the peatlands of northern Minnesota. In addition to describing the ups and downs of her field research, Kara shared with us the many ways that each of us can get involved and contribute to avian science.

If you haven't heard of Laura Erickson, then you haven't been birding in Minnesota for very long. Laura, who said that she fell in love with warblers during her first spring birding in 1975, walked us through tips on identifying warblers (including the confusing fall-plumaged birds) and how to attract them to our yards. Laura has spent 46 years birding and inviting other people to discover the wonder of birds. When she moved to Minnesota in 1981, she became active with Duluth Audubon and Hawk Ridge Bird Observatory, began producing a radio program (now also a podcast) called "For the Birds," became a wildlife rehabilitator focused on birds, wrote twelve(!) books about birds (most recently, *The Love Lives of Birds*), and served for two and a half years as the Science Editor at the Cornell Lab of Ornithology. She has won just about every award possible in the national birding community, and in 2020 Laura was presented with the highest MOU Award, the Thomas S. Roberts Memorial Award, a lifetime achievement award for Outstanding Contributions to Minnesota Ornithology and Birding.

It cannot have been easy to follow Laura, but Erik Bruhnke gave a great presentation on how to identify raptors not just by shape but also flying patterns, offering spirited demonstrations in the process. Erik brings a wealth of knowledge to his topic: he graduated from Northland College in Ashland, Wisconsin in 2008 with a degree in natural resources and taught field ornithology at Northland College. For several years after graduating, his springs and summers were spent conducting bird surveys through northern forests, vast prairies, and western mountains. He worked as an interpreter for six fall seasons at Hawk Ridge Bird Observatory in Duluth; counted migrating raptors at the Corpus Christi HawkWatch in Texas in 2015; and was the 2016, 2017, and 2018 hawk counter at the Cape May Hawkwatch in New Jersey. Last fall he worked at the Cape May Hawkwatch as an interpreter, connecting people with the spectacle of migration and raptor identification. Erik's wildlife photography has won national awards, and his writings have been featured in birding magazines. Erik now leads birding tours for Victor Emanuel Nature Tours as well as his own business, Naturally Avian.

If you missed the Spring Primer, be sure to make time to watch it on YouTube. Each of the presentations was superb. The MOU once again extends heartfelt thanks to Tom, Alyssa, Ann, Ben, Ezra, Kara, Laura and Erik.

MOU Calendar

May / June 2021

Sun	Mon	Tues	Wed	Thur	Fri	Sat
						May 1 Monthly Bird Walk, ZVAS MN Campus bird hike, CNC
2	3	4	5	6	7	8 Shorebird Slam, MOU Field Trips WI Campus bird hike, CNC Crane Meadows NWR Bird Walk, Crane Meadows NWR
9 Hok-si-la Park Field Trip, ZVAS	10	11	12	13	14	15
16 Dakota Co. Warblers, MOU Field Trips	17	18	19	20	21	22 Koester Prairie WMA Bird Walk, Friends of KPWMA
23	24	25	26	27 “Birding in Panama,” MN Global Birders	28	29
30	31	June 1	2	3	4	5 Monthly Bird Walk, ZVAS MN Campus bird hike, CNC
6	7	8	9	10 “Birding Brazil,” MN Global Birders	11	12 WI Campus bird hike, CNC
15	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

MOU Calendar

May / June 2021

Note: ***Readers are advised to check the web sites of the respective organizations before going.***

CARPENTER NATURE CENTER

Minnesota Campus:
12805 St. Croix Trail S., Hastings, MN
Wisconsin Campus:
300 East Cove Road, Hudson, WI

May 1: MN Campus Bird Hike
Details: 8–10 am. Join an expert birder on a morning hike around the Nature Center. Learn to identify birds by sight and sound. Field guides and binoculars are available to use or bring your own. Program fee: $5.00 or free for "Friends of CNC," Hastings Environmental Protectors, Hastings High School students, and St. Croix Valley Bird Club members. Pre-registration is required. Call 651-437-4359 to reserve your spot.

May 8: WI Campus Bird Hike
Details: 8–10 am. Hike various trails on our Wisconsin campus and learn to identify birds with local experts from the St. Croix Valley Bird Club. Face masks requested during check-in and when participants are closer than 6 feet. Meet at 300 East Cove Road, Hudson, WI. Program fee: $5.00 suggested donation, free for SCVBC members and Friends of CNC.

June 5: MN Campus Bird Hike
Details: 8–10 am. See May 1 description above.

Northern Parula, by David Cahlander

June 12: WI Campus Bird Hike
Details: 8–10 am. See May 8 description above.

CRANE MEADOWS NATIONAL WILDLIFE REFUGE

May 8: Crane Meadows NWR Bird Walk
Details: 8 am. Join us for a guided bird hike at the refuge. To allow for an enjoyable, safe hike, the refuge will host three small groups of nine participants, each led by a knowledgeable volunteer guide. In light of the continuing Covid-19 pandemic, and to comply with refuge policy, face masks are required. Preregistration is required. Please call the 320-632-1575 or email nicole_ellingson@fws.gov. Please indicate interest in the bird walk and provide your name and the best phone number to reach you. We will respond as soon as possible to complete your registration. Wear your walking shoes and bring binoculars if you have them. All birding levels are welcome, no experience is necessary, and binoculars are available to borrow. For more information, call the office at 320-632-1575 or visit the website at www.fws.gov/refuge/crane_meadows/. Location: Crane Meadows National Wildlife Refuge, 19502 Iris Rd., Little Falls, MN.

FRIENDS OF KOESTER PRAIRIE WMA BIRD WALK

May 22: Koester Prairie WMA Bird Walk
Details: 8:30–10:30 am. The Friends of Prairie Creek WMA is pleased that Gerry Hoekstra and Kevin Smith will lead a birding walk at the Koester Unit of the Prairie Creek Wildlife Management Area. We will begin with a brief presentation on the prairie birds of Minnesota and an orientation to Prairie Creek Wildlife Management Area. Leaders for the event will have scopes, but participants are encouraged to bring their own binoculars and scopes as well. We will be hiking in prairie grass (no maintained trails), so participants should come prepared with boots suitable for wet areas, bug repellent, and water. There are no restroom facilities on the WMA. Preregistration is not required, but if you plan to participate, please contact Craig Koester (ckoester@luthersem.edu). That will help us plan. Location: 13371 Lamb Ave., Dennison, MN (one mile west and one mile south of Dennison). Parking is on the east side of the road. For more information about this remarkable grassland see our website (https://prairiecree-kwma.wixsite.com/fopc/directions).

Bobolink, by Mike Lentz

MINNESOTA GLOBAL BIRDERS

May 27: Birding in Panama

Details: 7 pm. Online presentation via Zoom. Despite its relatively small size, the country of Panama hosts an impressive 1002 bird species. Gerry Hoekstra will report on a trip to Panama made several years ago with five other Minnesota birders. Although the trip lasted only ten days and covered only the eastern half of the country, he was able to chalk up 296 of them (unfortunately, not including the Harpy Eagle). Details will be available on the Minnesota Global Birding and Minnesota Birding Facebook pages and sent out over MOU-NET lists; or you can type "tinyurl.com/globalbirding/43" into your browser.

June 10: Birding Brazil

Details: 7 pm. Online presentation via Zoom. Michael Hurben and Claire Strohmeyer will discuss their birding trip to Brazil last December. It will focus on their travels in the Amazon region and around Saõ Paulo in the southeast, plus a bit on the drier northeast. Details will be available on the Minnesota Global Birding and Minnesota Birding Facebook pages and sent out over MOU-NET lists; or you can type "tinyurl.com/globalbirding/44" into your browser

MOU FIELD TRIPS

The MOU is excited to announce that the MOU field trips will be restarting this year! There are a few things we will be doing differently to ensure that everyone is safe during this time. The field trip policies are listed below:

- Maximum of 12 per trip (not including trip leaders)
- Mask wearing is mandatory when birding in close proximity (within 6 feet).
- Any covid symptoms or a positive test within the last 14 days, exposure to a covid positive test will be politely asked to refrain from attending the trip.
- Registration required ahead of time. Name and contact information required to attend the trip. No walk-ins accepted. Registration requests send to: garrettwee@hotmail.com or text/call 507-829-8187

We are glad to be able to restart the MOU field trips, but we remind all participants to be courteous to others and maintain a safe distance when not wearing a mask. Sanitize when necessary, especially when sharing equipment. Please bear with us during these challenging times in the pandemic. We want to do our best to keep everyone safe and for all to have an enjoyable experience as well.

May 8: Shorebird slam

Details: 7:30 am. Meet at Cottonwood Cenex (Gas Station) in Lyon. Binoculars and spotting scope recommended. Whether you're looking to brush up on your shorebird ID skills or find new year/county/state birds, this trip is the one for you! We will be starting at the Lyon/Yellow Medicine Conservation easement west of Cottonwood and work our way southeast from there. Many sites will be viewable from a road, which allows for easy access. We typically find around 20 species of shorebirds each year and some years even more: both godwit species, American Avocet, White-faced Ibis, and Willet, as well as Cinnamon Teal, Cattle Egret, and many other species have been found on this trip in previous years.

May 16: Dakota County Warblers

Details: 7:30 am. Join Matthew Thompson and Garrett Wee at YMCA Day Camp Spring Lake in a search for warblers on the scenic Mississippi River. This hotspot has recorded nearly 200 species and 25 warbler species. The location of this trip makes it perfect for migrant neotropical passerines as they return to their breeding grounds. This area is also a prime location for migrating raptors. There's no better way to spend the weekend so come join us! Equipment needed: binoculars. Location: Day Camp Spring Lake, 13690 Pine Bend Trail, Rosemount, MN, Fahey Ave Trailhead.

MRVAC FIELD TRIPS

Due to the current social distancing guidelines in place, there are no field trips sponsored by MRVAC for the months of May and June.
Please find updates at https://MRVAC.org.

THREE RIVERS PARK DISTRICT

There are no scheduled events for May and June. Check https://threeriversparks.org *for updates or changes.*

ZUMBRO VALLEY AUDUBON

May 1: ZVAS Monthly Bird Walk
Details: 9 –10 am. Join Terry and Joyce Grier on a casual walk through Quarry Hill Park. Free and open to the public; no registration required. Masks and social distancing may still be required. Location: Quarry Hill Nature Center, Rochester

May 9: Hok-si-la Park Field Trip
Details: 8 am–mid-afternoon. Leaders: Terry and Joyce Grier. Meet at the east parking lot of the Heintz Center (1936 Collegeview Road East, Rochester) to car pool/caravan to Lake City. Located along the Mississippi River, Hok-Si-La Park is a magnet for migrating birds. Bring a snack or a bag lunch. This park has nice walking trails and good diverse habitat for a wide variety of birds. Masks and social distancing may still be required.

June 5: ZVAS Monthly Bird Walk
Details: 9–10 am. Join Terry and Joyce Grier on a casual walk through Quarry Hill Park. Free and open to the public—no registration required. Masks and social distancing may still be required. Location: Quarry Hill Nature Center, Rochester

A Rochester Scout Troop's Bird House Project

by Nathan Ewert

A Rochester scout troop shows that even being separated during Covid-19 and in the deep of winter they could still work together on a conservation project. Scouts from Rochester Troop 83 worked together over the winter to build a dozen bluebird houses for Oxbow Park.

Boy Scout Troop 83, along with Buena Vista apartments, collected several hundred pounds of aluminum cans. With funds from the cans, they purchased lumber materials to build bluebird and duck houses.

To keep scouts safe during Covid, they worked in small groups. One group cut and drilled the lumber and sorted the pieces into buildable kits. Another group wrote and tested instructions. Then scouts were able to pick up kits that they could assemble safely at home.

Scouts are encouraged to "think globally" and "act locally" to preserve and improve our environment. The program makes youth aware that all nations are closely related through natural resources and interdependent with our world environment.

The Rochester scout troop is working on several projects. The scout leading the bird houses project is Nathan Ewert, who is working on the BSA Distinguished Conservation Service Award, for which he must plan, lead, and carry out at least two significant conservation projects. The BSA Distinguished Conservation Service Award is the BSA's highest conservation award. The award encourages learning by the participants and increasing public awareness about natural resource conservation through sound stewardship. In his other project, Nathan worked with the Izaak Walton League's stream monitoring program. Other scouts are working toward the Conservation Good Turn Award.

The decision to build bluebird houses was made in response to a decline in habitat noted by the local Audubon Society survey. The bluebird houses are now completed and were delivered at the end of March. The troop is continuing to explore other conservation projects to pursue once restrictions are lifted.

Nathan Ewert with bird houses

Savaloja Grant Report

Improving Knowledge of Natal Origins and Migratory Patterns of Raptors at Hawk Ridge

by Emily Pavlovic, University of Minnesota, Duluth

If you are a birder in Minnesota, you are probably aware of the spectacular fall migration witnessed at Hawk Ridge every year. Hawk Ridge is located in Duluth, at the westernmost tip of Lake Superiorb on a basalt ridge about 300 meters above sea level. This unique location concentrates large kettles of raptors during migration, and, on average, the banding station captures over 2,600 raptors each fall.

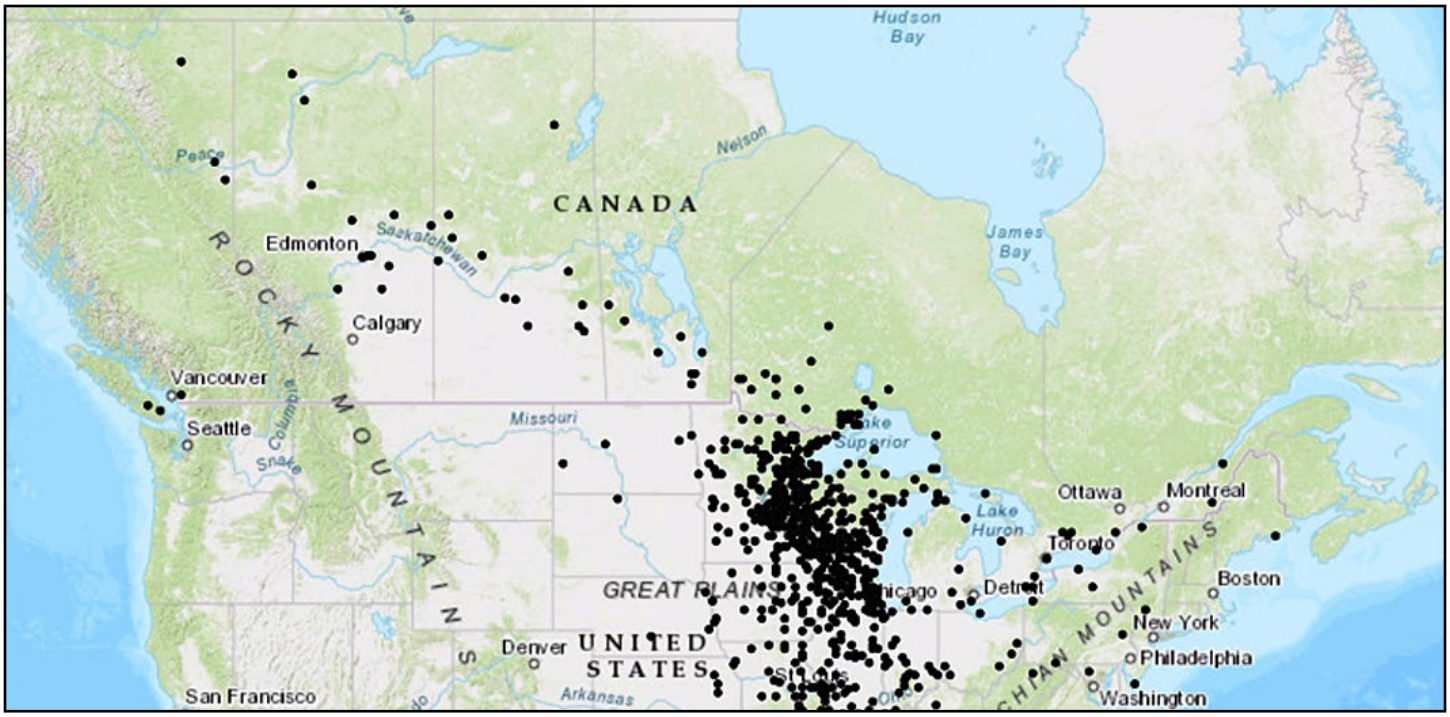
Since 1972, when the land for Hawk Ridge Nature Reserve was purchased, counting and banding of raptors has occurred daily throughout the autumn season. Hawk Ridge's extensive long-term dataset, containing almost 50 years of consistent counting and banding data, can be used to ask really interesting ecological questions. However, one important piece of the puzzle that would help us understand this long-term dataset is knowledge of where these birds are coming from. This is what we hope to answer.

How can we learn where these raptors spend their time during the breeding season? Determining breeding location can be challenging, since many birds are very secretive on their breeding grounds, but during migration these species are relatively easy to study as large groups of individuals move through migration corridors like Duluth. Sometimes we get lucky and a bird that we band is captured north of Duluth, but these occasions are very limited, and most of the banded birds at Hawk Ridge are recaptured to the south. Unfortunately, this doesn't tell us a lot about their breeding locations. Based on the limited band returns that we do have, we think most of the raptors that migrate through Duluth are breeding in northern Minnesota and western Canada. Because of the limited knowledge from banding returns, other techniques like satellite telemetry, genetic studies, and stable isotope analysis are required to get the full picture of where our birds are breeding. To begin answering this question, in the fall of 2020 we sampled raptor feathers for hydrogen stable isotope analysis.

Isotopes are variants of an element that differ only in the number of neutrons in their nucleus. They are considered stable if they don't undergo radioactive decay. The element hydrogen has two stable isotopes, protium and deuterium, which react differently, due to the large mass difference between the two atoms. The ratio of abundance between these two isotopes varies predictably with precipitation across a continental, latitudinal gradient. Generally, there is less deuterium farther north, as average annual temperature decreases. This continental gradient is subsequently incorporated into animal tissues through diet and drinking water. By measuring the isotope ratios in animal tissue, we can assign that individual a geographic origin. This phenomenon relies on the fact that hydrogen in organisms is derived almost exclusively from precipitation; therefore, an animal that grows tissues on a specific geographic location will have isotope values that reflect the environment in which those tissues were grown. Feathers provide an ideal tissue, since they are inert once grown.

Emily Pavlovic with juvenile Red-tailed Hawk, by Allie Pesano

In addition, most species of birds reliably molt their feathers on breeding grounds before migrating. This means that the feathers of birds caught during migration should possess the isotopic signature of their breeding grounds.



Map showing recapture data for the three species in this study, USGS Bird Banding Laboratory. 2021. North American bird banding and band encounter data set. Patuxent Wildlife Research Center, Laurel, MD. March 23, 2021.

With knowledge of feather molt patterns, a researcher can analyze feather hydrogen stable isotopes to determine latitudinal origin of feather growth and therefore estimate the natal/breeding origins.

During fall 2020, we collected feather samples from three species of raptors at Hawk Ridge for hydrogen stable isotope analysis: Sharp-shinned Hawk (*Accipiter striatus*), Northern Saw-whet Owl (*Aegolius acadicus*), and Red-tailed Hawk (*Buteo jamaicensis*). Our plan is to analyze 100 individuals from each species, spanning the fall migration season. This winter, the feathers were cleaned, cut, and packaged into tiny silver capsules for isotope analysis. We sent our first round of samples for analysis and are eagerly awaiting the results.

With knowledge of breeding grounds and migratory patterns, we hope to interpret Hawk Ridge's long-term dataset through a geographic lens. Knowing where these birds spend time during the entire year will help improve our undestanding of individual fitness, population dynamics, gene flow, and community structure and is an essential piece for effective conservation.

I would like to give a tremendous thank you to MOU's Savaloja Grants program for funding the analysis of almost 200 feathers for hydrogen stable isotope analysis. Without the support from MOU donors and Hawk Ridge Bird Observatory staff and volunteers, this research would not be possible.

Emily Pavlovic is a master's student in the Integrated Biosciences program at the University of Minnesota Duluth.

Emily Pavlovic with juvenile Sharp-shinned Hawk, by Abbie Valine

Birder Bio: Marcia Johnson

My name is Marcia Johnson, and I live in rural Isanti County about 6 miles east of Zimmerman. I was born and raised in south Minneapolis, attended the University of Minnesota, and after graduation began teaching in the Anoka Hennepin School district.

I had bird feeders in my yard for many years and enjoyed watching to see what came in to feed but I never really got "hooked." After retiring from teaching, I did some traveling in the winters. One winter I stayed in Mission, Texas, and after golfing with some friends, I were sitting on someone's deck overlooking a small pond on the golf course. There was a small island in the pond, and I recognized the Great Blue Heron, but there was another large pinkish bird with an unusual bill. After checking a bird guidebook, we figured out it was a Roseated Spoonbill, and I decided I really needed to learn more about birds.

When I came back, I talked to another friend about birding, and she said I should take Lyle Bradley's community ed. birding class. (Lyle has been a long time member of MOU.) This really started my fascination with birding. I learned about the MOU from Lyle, and he really encouraged us to join. In fact, for many years I went to the MOU paper sessions with him.

My favorite places to bird in Minnesota are Carlos Avery and the Sherburne Wildlife Refuge. I am fortunate in that I live about equidistant from these two wonderful places, which host a wide variety of birds.

This past summer I was always birding alone because of covid and frequently wished someone else was there to help identify some of those dratted sparrows! Normally I enjoy birdwalks with small groups so I can pick some of the better birders' brains.

I don't really have a favorite bird or bird family. Because I have gotten hooked on bird photography, I am partial to any bird that will sit still enough for me to get a good picture! Because I am not the greatest birder, I sometimes use my photos to help me identify the species.

Whenever I see some of the great pictures of Snowy Owls or Great Grays, I know I would love to see these birds, but I'm not giving up my winters in Arizona to walk through all that snow and cold in order to find them! I'm very happy down here in the winter warmth and sunshine of Arizona seeing very different birds than I would in Minnesota.

One of the great things about birding is that you can do it just about anywhere, either alone or with a group. I also think birding helps keep you sharp, since being out in nature is always healthy and birding uses multisensory input, allowing our brains to continue functioning properly—or at least as close to normal as my brain ever gets!

My recommendatsion? Just have fun with your birding. It doesn't matter if you can't identify every bird you see. Many of us can't. You can just file it away for reference and ask a better birder about it when your paths cross, or perhaps when you see it again you will have gained enough knowledge to be able to identify it. I figure if the birds would all wear name tags birding would be a breeze!

Minnesota Ornithologists' Union
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We foster the study and conservation of birds by amateurs and professionals. We promote the conservation of birds and their natural habitats. We support these aims primarily by publishing and sharing information, by serving as a repository for records, by conducting field trips, by awarding grants for research, and by supporting programs that educate members and the public about birds.

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