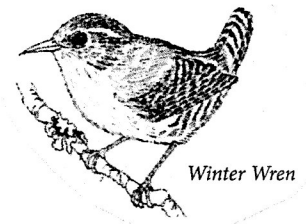


# BROCKWAY LOOKOUT

Copper Country A. Bird Club Newsletter, Volume 30, Number 2, Oct/Nov 2023



## **UPDATE: Acoustic Monitoring of Bird Migration in the Keweenaw** by Zach Gayk

Last year, I started a research project to document songbird migration along the tip of the Keweenaw using automated acoustic recorders to capture the calls of migratory birds as they flew overhead. For nearly ten years, we have been aware of massive movements of songbirds making landfall at the tip of the Keweenaw, which continue west along the coasts regardless of the season. However, these observations were largely anecdotal and we had no idea how many birds regularly move through the Keweenaw, which species make these journeys, and why the birds are moving west rather than north or south towards their ultimate breeding and wintering destinations. To study this, last year we collected a huge amount of data from both spring and fall migration at 12 sites throughout the tip of the Keweenaw. The sound recorders were set up at each site, and automated to turn on each morning and record the calls of migratory birds flying overhead. We then collected each unit at the end of the season.

Faced with the new challenge of thousands of hours of acoustic recordings to search through, I used a computer program called *Vesper* that does the hard work of sifting through the recordings to find, but not identify, the flight calls of migratory birds. We recorded about 2.6 million potential calls of migratory birds at our 12 sites, focusing only on spring 2022. With 2.6 million calls detected, I then had to identify the birds that made the calls. How could I do this?

A newly-released program called *Nighthawk*, which is based on Cornell Lab's Merlin phone app, has extended Merlin's ability to identify the calls of migratory birds on the wing. I used *Nighthawk* on my spring 2022 dataset with the help of Alex Hirzel of Lake Superior Algorithmic Solutions to winnow down the count of 2.6 million potential migratory calls to a count of 822,636 identified calls. Why is there such a change? This is because my initial efforts with *Vesper* were crude and the computer sometimes got confused by short high-frequency segments of birdsong, which were not actually calls of migratory birds in flight. Therefore, the initial count of 2.6 million was inflated, and the new count of 822,636 represents an accurate estimate of the total calls of migratory birds in the Keweenaw in spring 2022. I believe that this number is approximately equivalent to the total number of birds passing through the Keweenaw, as in my past research we believe most birds are flying overhead fast enough to only be detected once by each recorder. Therefore 822,636 can be considered a rough estimate of the number of songbirds we recorded in spring 2022.

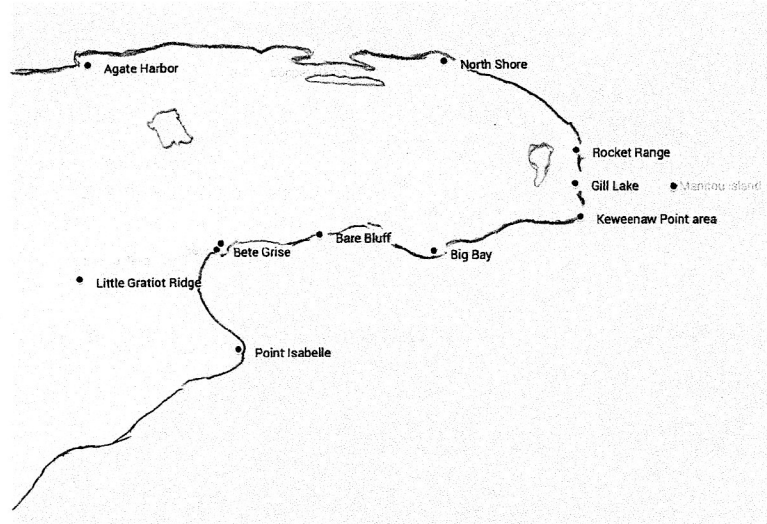
There was considerable variation in the number of calls detected at each of our 12 sites, with Fadner Point (Manitou Island) Agate Harbor, and Bete Grise each recording over 100,000 calls of migratory birds (Figure 1). The most abundant species we detected were White-throated Sparrows, with over 40,000, American Redstarts (over 20,000), and Cape May Warblers (over 9,000). The computer program is still a work in progress, which is reflected by the fact that over 200,000 calls could not be identified beyond the category of "warbler", and over 250,000 calls could not be identified beyond the category of "songbird." However, we have many exciting new results including mixed-species flocks of shorebirds flying along the Little Gratiot Ridge site, abundant Gray-cheeked and Swainson's Thrushes flying over Big Bay and Keweenaw Point, and numerous species of warblers.

One of the exciting things is that I can zoom in on any species' migration through the Keweenaw to see exactly when each was most abundant and where. In the winter, I will be using these data to try to understand why songbirds are moving west along the Keweenaw Peninsula in large concentrations, and to determine if using acoustic recorders gives a more accurate picture of the timing of migration than what birders happen to see during stopover. I think it is highly likely that the Keweenaw is regularly visited by large numbers of fast-moving migrants that exit the area as quickly as possible. Therefore, I don't think birders on the ground intercept these movements unless they are lucky enough to be out towards the tip of the Keweenaw when these birds are moving through.

There are many mysteries remaining as to why songbirds make these westerly movements, and that is what I will continue to work on. In December, I will transition from working as an independent researcher generously supported by the Copper Country Audubon and Keweenaw Community Forest Company to a full-time postdoctoral researcher at the University of Illinois. There, I will be focusing on the Keweenaw migrations, as well as expanding our scope to the Ontario shore of Lake Superior. As part of this work, we hope to use the calls I recorded to improve the computer's ability to recognize more species of migratory birds. Someday in the not too distant future, one will be able to point their phone skyward to get a list of the birds producing the insect-like buzzes, tseeps, and chips as they fly overhead.

Continued, see map on next page...

Station	Total calls
Agate Harbor	143,763
Bare Bluff	51,470
Bete Grise	114,988
Big Bay	33,341
Fadner Point	183,463
Gill Lake	15,641
North Shore	61,707
Keweenaw Point	49,009
Little Gratiot	55,214
Point Isabelle	36,516
Rocket Range	29,290
Smith Fisheries	48,234
<b>Total</b>	<b>822,636</b>



Acoustic monitoring sites in the Keweenaw.

## **NEST BOX AND WEB CAM UPDATE**

When Finlandia went out of business the Jutila owl cam streaming stopped since it was a joint Finlandia/Copper Country Audubon project. However the camera is again online thanks to generous help from the Copper Country Intermediate School District and their internet provider REMC1. Hopefully, the GHO will nest there again this season. The people that helped and deserve big thanks are Emily Geiger at CCISD and Josh Hiner and Doug Jarvi at REMC1. Although the camera is back online now, when the building has a new owner, which might happen in December, things could change. **The nest box site can be reached on the home page of [coppercountryaudubon.org](http://coppercountryaudubon.org).** ...*Phil Quenzi*

## ***Keweenaw Trumpeter Swan Survey - 2023*** ... *Joseph Youngman*

For the fourth year running I've spent hundreds of hours chasing Trumpeter Swans in the forests of the Keweenaw. This year was SO much easier and more fruitful. I was able to use a small drone to find and monitor 34 swan nests in the three Keweenaw counties: Baraga, Houghton and Keweenaw. I had a list of known swan nests from my past efforts, and I also used the drone to check 49 'new' wetlands for swans. Of those 49 new sites I found territorial pairs of swans at 10 sites and 8 of those 10 pairs actually nested this year.

The drone was an amazing 'force multiplier'! Using the drone, I was able to accurately assess the presence or absence of swans on a given pond in literally minutes instead of hours. Of course, I still had to do a lot of driving. The project still has a few weeks to go and I've driven just under 4,500 miles so far.

The 34 nests produced 114 cygnets initially and, as of 5 September, there were at least 42 cygnets left. From past years experience that massive die-off of young swans was expected. Since Trumpeters are generally long-lived birds, producing one healthy offspring at the end of each year will surely maintain and pretty clearly increase their local population.

Seven nests were found north of the Lift Bridge and 28 were found south of it. The thickest cluster of swans was in the Ottawa National Forest north of Sidnaw. One area there had seven successful nests in an area of only 950 acres. That patch also seemed to be most successful in raising their young. That group had 17 cygnets still alive and well in early September – a much higher average than the overall Keweenaw.

Thanks for much financial help from the CCA - mileage reimbursement and a few hundred dollars for 'drone rental'. My wife Lynn generously purchased the drone. Zach Gayk has agreed to co-author an article on the project for an ornithology journal. Scientists are always interested in the "productivity" of wild animals. The final tally of cygnets I get in late September (just before the young birds fledge and fly south) divided by the total number of nests (34) will equal the productivity of our Keweenaw swans in 2023. We might go one more year because more data is always better.



## **THANK YOU TO DONORS AND MEMBERS OF COPPER COUNTRY AUDUBON!**

**THANKS** to everyone for your membership in Copper Country Audubon, and especially for your extra donations that make our projects possible! Your donation is for the birds! We couldn't do it without you!

*New Life Members: Lynne and Jamie Robertson of Allouez, Michigan*



## **Using Acoustic Deterrents to Reduce Bird-Building Collisions**

*by Jenna Brewer*

Stretching from the boreal forests of Canada to the tropics of South America, the Mississippi Flyway connects migrating songbirds from their breeding grounds to their overwintering grounds, acting as a nighttime freeway for many species. However, the once vast expanses of dark sky have become tainted with the ever-encroaching stain of light pollution as residential America continues to expand.

Navigating by aid of celestial light, migratory songbirds are particularly vulnerable to light pollution, as illuminated city-buildings cause disorientation, resulting in bird-building collisions. These collisions cause as many as one billion bird fatalities each year, constituting two to nine percent of all birds in North America and making building-strikes the second largest source of human-caused avian mortality in the United States.

A cauldron of glimmering constellations, the Keweenaw's nighttime sky is likely a welcome refuge for migratory songbirds traveling along the Mississippi flyway. The inky depths of our atmosphere evade the ominous threat of light pollution, far from the brazenly illuminated streets of the big city. It is under this blanket of stars that my research team and I searched for a solution to birds' building collisions this May.

The team, consisting of myself, Dr. Jared Wolfe, and Dr. Zach Gayk, working in collaboration with a group of electrical engineering students at Michigan Technological University. We developed a portable, solar-powered speaker system that broadcasts sounds to deter birds from flying near unsafe areas, such as skyscrapers. Specifically, we programmed the deterrent to play two candidate sounds, one comprised of common "predators" from across the Mississippi flyway which included interspersed screech-like alarm calls from a Merlin, Peregrine Falcon, Northern Saw-whet Owl, Broad-winged Hawk, Red-shouldered Hawk, Sharp-shinned Hawk, and Cooper's Hawk. The other sound was a "synthetic" sound engineered to interfere with a bird's ability to hear. Migratory birds regularly communicate with flockmates by producing simple vocalizations while flying. Thus, interfering with a bird's ability to receive such information may discourage their approach. To target this, our synthetic sound was a continuous high-pitched static noise in the frequency range of bird's flight calls (3 to 11 kHz).

To test our device, we tucked the deterrent behind a swath of paper birch trees in a forested meadow near Phoenix, in mid-May when spring migration through the Keweenaw was in full swing. We set the speaker to broadcast the sounds in the early morning hours, when birds were passing through the forest patch along their migratory journeys.

To assess the impact the sounds had on birds, we recorded bird songs and calls on a pocket-size waterproof microphone we attached to a snag nearby the speaker. Referred to as autonomous recording units (ARUs), these tiny data recorders are widely-used by avian ecologists to passively monitor bird communities. We also measured bird detections at four nearby control sites, that did not have deterrents, to assess the background number of birds that may have influenced our results.

As spring migration came to an end, we collected the ARU and analyzed the hundreds of hours of bird calls it had recorded. We found that the number of birds decreased significantly when we used both the "predator" and "synthetic" sounds, although the "synthetic" sound had a much stronger effect on deterring birds. After the speakers were shut off, there was a large increase in the number of birds detected, while the number of birds detected at the four other control sites remained relatively stable throughout spring migration. Our experiment suggests that the "synthetic" sound may effectively dissuade birds from unsafe airspace around dangerous buildings and other infrastructure.

Our next step is to partner with Chicago Bird Collision Monitors to conduct an additional field trial at a city skyscraper in Chicago, with historically high collision numbers. We hope to place the speaker in a greenspace directly under the building to determine if it has the same effect outside of the safe, dark skies of the Keweenaw Peninsula. In the future we hope that our research will lead to the widespread adoption of acoustic deterrents in urban areas to shepherd birds away from dangerous skyscrapers, cell towers, and wind farms. With success, we believe that this new technology has the profound capacity to greatly reduce bird mortalities in cities, offering exciting conservation opportunities for our rapidly declining bird species. (*Jenna is a Graduate Student in Forestry and Wildlife at Michigan Tech.*)

## **MOTUS BIRD TRACKING ANTENNAS EQUIPMENT UPDATE** *from Joseph Youngman*

Copper Country Audubon has Motus receivers at Calumet Sewage Ponds and on a tower on the ridge at Phoenix along US 41. In August I found our Motus receiver at Calumet Sewage Ponds was not functioning. It turned out that it had suffered an unexplained power surge and it was “toast.” So the CCA board voted to replace that receiver with a new improved model at a cost of \$2,800. Sorry to say there are no new bird “hits” to report from there this fall.



## **Preliminary Results from Copper Country Audubon’s Motus Project** *...by Jared Wolfe*

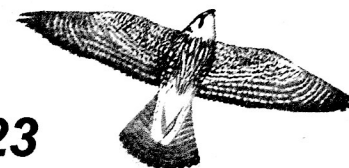
These antennas have been instrumental in providing invaluable insights into the migratory journeys of various bird species. **Key Findings:** Motus antennas have been at the forefront of tracking movements of a diverse array of avian species. Notably, the Calumet antenna alone has detected six individual birds of five distinct species: American Woodcock, Swainson's Thrush, Short-billed Dowitcher, Semipalmated Plover, and Dark-eyed Junco. These birds were originally tagged across the Midwest, Mid-Atlantic, and Canada, including Dr. Chris Tonra's research from Ohio State University on Swainson's Thrush migratory movements and Luke DeGroot's research at the Powdermill Avian Research Center, focusing on Woodcock behaviors. These data have not only deepened our understanding of individual species but have also made significant contributions to collaborative research efforts. For instance, the detections of Plovers and Dowitchers have provided data for a project led by Trent University, which aims to explore how age and sex affects the timing and migratory routes of individual shore birds.

To date, we have safely captured and marked over 20 individual songbirds with Motus transmitters, including species such as Indigo Bunting, Scarlet Tanager, Dark-eyed Junco, Gray-cheeked Thrush, Red-eyed Vireo, and six species of warblers. One of the most intriguing findings from our efforts was the detection of a Scarlet Tanager, initially captured at Nara Nature Park, subsequently tracked to several migration stopover locations outside of Milwaukee. This discovery underscores the pivotal role of Motus in unveiling the unexpected paths birds take during migration and the importance of preserves protected as stopover habitat for migratory bird conservation.

As we persist in our endeavors with the Motus project, our objective remains clear: to identify the unique paths that birds departing from the Upper Peninsula pursue on their journey to southerly wintering grounds. Our ultimate aim is to identify the vital stopover locations these birds utilize for refueling, facilitating the successful completion of their semiannual journeys. The preliminary results we have acquired represent just the tip of the iceberg, with the data collected thus far constituting a crucial step towards unlocking the mysteries of bird migration. The support of the Copper Country Audubon Club for this project has been pivotal in advancing our local knowledge of avian movements and is poised to continue yielding captivating insights in the future.



## **Brockway Mountain Hawk Count 2023**



Over the course of the spring 2023 survey, from 15 March to 21 June, 15,221 raptors were counted migrating east past the count site on top of Brockway Mountain near the tip of the Keweenaw Peninsula. Last year 13,711 raptors were counted, so this was about an average year, even though the count ran a few days longer than most years. The usual 16 raptors were observed. Broadwing Hawks accounted for 61.8% of the raptors counted (9,399). Sharpshin Hawks as usual came in second with 1,419 observed. Astoundingly, Bald Eagles came in third with 1,251 birds counted – many will remember when it was rare to see a Bald Eagle anywhere. Fourth were Turkey Vultures (1,040), and fifth were Red-tail Hawks (1,008). Bob Baez was the hawk counter again having done the count for several past years. The Brockway Hawk Count is conducted by the Keweenaw Bird Research Group with help from Copper Country Audubon and many others. For complete species accounts and daily totals see the web site [hawkcount.org](http://hawkcount.org). Find more detailed information on the Brockway Mountain Hawk Watch website [www.thekbrg.org](http://www.thekbrg.org).



## 50th YEAR of THE ESTIVANT PINES

by Dana Richter



2023 marks the 50<sup>th</sup> year after protection of the Estivant Pines Nature Sanctuary near Copper Harbor by the Michigan Nature Association. This 508-acre nature preserve protects the last remaining old-growth forests of white pine in Keweenaw County. Here there are white pine trees measuring three to five feet in diameter towering over 100 feet tall. Charles Eshbach, one of the founders of the sanctuary, is documenting the history of the Estivant Pines soon to be published in a book. There were several expansions of the original sanctuary over the years. Susan Andres, a past president of Copper Country Audubon, and I joined the Pines Committee in 1988 to help add additional acres of old-growth forest to the sanctuary. Susan conducted a survey of breeding birds of the Estivant Pines in 1996. The following is based partly on that survey.



### BIRDS OF THE ESTIVANT PINES by Dana Richter



The birds you'll enjoy in the Estivant Pines are either year-round residents or migrants. The residents are the birds we see and hear any time we go to the Pines that also raise their young there: chickadees, nuthatches, blue-jays, woodpeckers, crows, ravens and many others. The migrants are birds that come here from the south to make their nests and some that pass through on their way farther north. These migrants are the songsters, like warblers, vireos, flycatchers, sparrows and thrushes. The best time to see these colorful songbirds is early spring just before the leaves emerge. After that, hidden in the forest, you might only hear them. But any season is a good time to enjoy birds in the Estivant Pines.

Go to the Estivant Pines on a beautiful spring morning in June and most of the birds will be nesting, as this is the breeding season. The first bird you hear will probably be a warbler, with a loud "teacher-teacher-teacher" low in the underbrush or on the forest floor. This is the Ovenbird, a tiny warbler with a streaked breast and an orange stripe on the top of its head. The Ovenbird makes its nest of sticks and leaves on the ground, entirely enclosed and concealed, like a little oven with a hole on the side to get in. You'll probably also hear the long clear song of the White-throated Sparrow saying, "Oh, Sweet-Canada-Canada-Canada," – this is the song of the north woods in spring. And also the Red-eyed and Blue-headed Vireos declaring their home all day long, with their two- and three-note cheeping high in the pines – so hard it is to find them, it is as if the trees themselves are singing their joy for spring.

In June and July 1996, a study of breeding birds for the Michigan Nature Association found 43 species in 17 families nesting in the Pines. In 1988 an MNA newsletter reported 82 species of birds found in the Pines, which likely included residents, nesting migrants and birds just passing through. One might see up to 16 different raptors during migration, like on nearby Brockway Mountain, but only about five raptors actually nest in the Pines. Three or four different owls might also nest here also. Over the course of a year, a careful and experienced birder might find over 100 different species of birds in the Pines.

In the 1996 study, most of the breeding birds were warblers, with 12 species found. There were 13 pairs of Ovenbirds, but first in abundance was the Nashville Warbler. This is a mostly gray and yellow warbler that, like the Ovenbird, also nests on the ground. Its song is a simple musical two-part trill only slightly different from several other kinds of warblers. Except for a few that are easy to tell, many of the warblers are difficult to distinguish by song alone. Next was the Blackburnian Warbler, a brightly colored orange and yellow and black and white bird, with the males brighter than females, as usual among birds. They have the typical high-pitched, repetitive, squeaky song similar to other warblers. This warbler nests high in pine, spruce and fir trees. One might catch sight of a bright Blackburnian Warbler, carrying an insect to its fledglings. Like most birds, both males and females feed the young. Other nesting warblers to watch for in spring and early summer in order of abundance are the Black-throated Green, Yellow-rumped, Magnolia, Parula, Black-throated Blue, Black-and-white, and Bay-breasted Warblers. *(continued next page)*

Second to the warbler family nesting in the Pines were the Flycatchers with six species found. Yellow-bellied Flycatchers were the most; a tiny mostly gray and yellow bird that also nests on the ground. The other five species were: Olive-sided-, Alder-, Least-, and Great-crested Flycatchers and Pewee. Their songs are varied, mostly sweet and cheery, but the smaller flycatchers only make a sound like a stapler: "CHEBEK!"

Another abundant group of birds found nesting was the melodic thrush family with four species. There were seven pairs of our beloved musical Robin. The other thrushes were Swainson's and Hermit Thrushes, and Veery. These are the songbirds that sound like flutes and windchimes tinkling and may sing their songs and notes long after sunset – sometimes late into a full moon night. The Hermit Thrush and Veery also make their nests on the ground -- visitors to the Pines must always stay on the paths in spring!

Five kinds of woodpeckers (Hairy, Downy, Pileated, Flicker, and Yellow-bellied Sapsucker) and three kinds of sparrows (Chipping, Swamp and White-throated) were also found nesting in the Pines. These are just some of the birds of the Estivant Pines. For thousands of years these families of birds have lived and bred there. Listen carefully to the birds and you will hear what the Pines mean to them. Year after year, season after season, they will go on living in this forest sanctuary, raising their young and singing, because first and foremost these Pines belong to them.

**NOTE:** For a great description and short history of the Estivant Pines Nature Sanctuary -- and all the other Michigan Nature Association sanctuaries and other protected areas in the Keweenaw -- see the 2009 booklet, *Walking Paths and Protected Areas of the Keweenaw*, edited by CCA life member, Joan Chadde.

**P.S.** Joan reports that the Brockway Mountain Drive CCA Sanctuary trail needs some work, like clearing and re-marking. Want to help? Spring is best. Contact Joan ([jchadde@gmail.com](mailto:jchadde@gmail.com)) or Dana R. ([drichte@mtu.edu](mailto:drichte@mtu.edu)). Thanks!

**The *COPPER COUNTRY BIRDING EMAIL LIST*** If you would like to join the *Copper Country Birding* Email hot-line list, go to [groups.google.com](http://groups.google.com) and search for: ***Copper Country Birding***. Follow the prompts to send a **join request** to the list owner, and within a day or so, you should be approved and ready to participate. The purpose of this list is for local birders to discuss local birds. Please give locations of your bird sightings. We discourage a lot of chatter that is off subject. Also, you must be a member of the list to post to it. Postings from outside the list are discarded. For information about the list contact Ted Soldan, [tjsold@gmail.com](mailto:tjsold@gmail.com).



### ***Great Numbers of White-Crowned Sparrows Migrating Through the Keweenaw this Fall!***



Wonder of Wonders! From Copper Harbor to L'Anse, White-crowned Sparrows were reported in flocks of great numbers from mid-September to early October this year. Four miles north of Hancock where I live, 20 to 30 birds at a time were feeding around the brush-pile bird feeder. There I spread mixed millet and cracked corn on the ground and the birds use the brush pile for cover. They were also feeding on a platform feeder on the deck where I feed only sunflower seed. I have never seen White-crowned Sparrows on a raised feeder before. Among them were Juncos and White-throated Sparrows.

White-crowned Sparrows only pass through the Keweenaw on their way north in spring and on their way back south in fall. They breed in northern and northwestern Canada to Alaska, and winter in the southern U.S. There are also populations in the Rocky Mountains and Northern California.

White-crowned Sparrows are closely related to our White-throated Sparrows that do breed here, being in the same genus, *Zonotrichia*. White-crowned Sparrows are one of the handsomest of the sparrows, with their boldly striped black-and-white head, plain gray breast and lighter throat. Males and females are similar, like White-throated Sparrows. The White-crowned Sparrow is a large sparrow, slightly larger than the White-throated. An even larger sparrow is the Harris's Sparrow, also a *Zonotrichia*, which also comes through here in migration. On October 7, among the flock of White-crowned and White-throated Sparrows was a young Harris's Sparrow. There are only five species of *Zonotrichia* in North America, and there were three in my yard all at the same time! ...Dana Richter

# WHAT'S IN A NAME PART TWO .....

## SIMPLER, MORE DESCRIPTIVE NAME

### for LOCAL BIRD CLUB SUPPORTED!

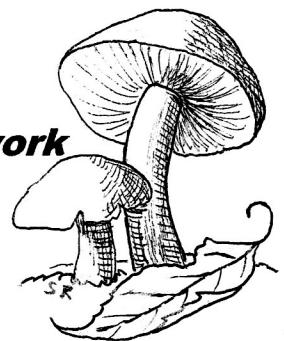


After learning of the racial, elitist, and science fraud issues surrounding the name "Audubon," many members have suggested alternative names for our wonderful local bird club. Some have already started using the name Copper Country Bird Club – that name that has been suggested most often. Some other suggestions have been Copper Country Birding Club, Copper Country Bird Watchers, Copper Country Naturalists, and Copper Country Nature Club. It has also been said that having the name "Copper Country" is a recognition of an exploitative past, and using "Keweenaw" or "Western UP" might be better. The Marquette Audubon group recently dropped the name "Audubon" from their name, like many small clubs are doing. They formerly went by the name "Laughing Whitefish Audubon," but recently changed its to "Laughing Whitefish Birding Alliance."

Only two objections to dropping the name "Audubon" have been voiced. The strongest one is that the name "Audubon" has been so long established with all things about birds and bird watching that the negativity the name carries with racism is moot, and we can't keep changing names because of past indiscretions that were not bad at that time in history. This is a valid point, however it does not address the elitism that the name "Audubon" carries or that J.J.A. perpetrated scientific fraud. The other objection to changing names was that it would be difficult to change things like our web site, accounts, address, state and federal non-profit status, etc. It is inevitable that the club will always be known as, "formerly the Copper Country Audubon Club" – the transition to a new name is not going to take place overnight, and for a time we will likely be known by both names.

All things change. There are reasons a name change for Copper Country Audubon could be welcome and refreshing. "Bird Club" or "Birdwatchers" is simple and says what we are about. It would also disconnect us from other Audubon groups and eliminate the confusion that often arises. As mentioned in the previous article, I knew our founder quite well, Mr. Arthur Weaver (1925-2013). He was a considerate and progressively-minded person. He also had issues with the big Audubon groups, once relating to me that he thought they were too big and impersonal. I am pretty sure Art would consider all of the issues that have come to light surrounding the name "Audubon" and be in favor of a name change, too. Keep ideas coming. Thanks! ...Dana Richter

**THANKS to the Leuthold Family Foundation  
for the generous annual grant that helps fund the work  
of Copper Country Audubon!**

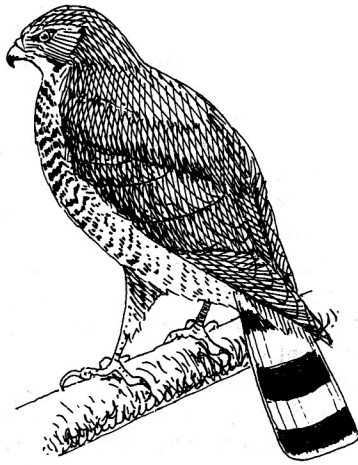


## UPCOMING EVENTS

**Wednesday Nov. 8, 2023. Presentation.** "Using a Drone to Locate Trumpeter Swan Nests in the Forests of the Keweenaw (Baraga, Houghton and Keweenaw Counties)", by Copper Country bird researcher, Joseph Youngman. This year a drone was used extensively to find swan nests and monitor their nesting success. (See Joe's article page 2). **7:00 PM, MTU Forest Resources and Environmental Science Building, Hesterberg Hall, Rm. G002.**

**Saturday, December 16, 2022 - All Day! Copper Country Audubon Christmas Bird Count:** Help count birds within our 15-mile diameter circle centered in Portage Lake. Free and open to all! Keep an eye out for unusual birds just before and just after the count. **Count week birds are included, too!** Contact Nancy Auer, 906-337-2690 home or email [naauer@mtu.edu](mailto:naauer@mtu.edu) with your count week birds. Details about the Christmas Bird Count will be announced on the Copper Country Birder email list and the CBC site in November.

\*\*\*\*\*  
**Newsletter Note!** Submit bird news and nature notes for next newsletter to [drichte@mtu.edu](mailto:drichte@mtu.edu), 906-482-3361. **THANK YOU!**



Broad-winged Hawk

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**WATCHING BIRDS  
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***Injured Birds?***

**Michigan DNR, Baraga 906-353-6651**

**Raptor Rehab: Beth Maatta, 906-370-3825**

**Small Birds Rehab: Michelle Anderson, 906-299-2149**



Copper Country Audubon Membership: \$25 Regular, \$10 Student, \$300 Life. CC Audubon is a 501(c)3 Nonprofit Organization. *Is your Renewal Due?* After your name on the mailing label is the date your membership is due; your last donation was sent one year prior to this date. Life members and courtesy mailings have no date. We're sorry for any mistakes; please let us know! **Thanks!**

**Copper Country Audubon  
P.O. Box 124  
Houghton, MI 49931**



*There's Always Great Birdwatching in the Keweenaw!*