



The REDHEAD

Red-headed Woodpecker Recovery



Fall 2021

A Special Committee of the Audubon Chapter of Minneapolis

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RHWO NEWS

Bioacoustics and Red-headed Woodpecker Conservation

Article by Dr. Elena West

My research on red-headed woodpeckers has taken many exciting turns over the last three years and I'm excited to share more about a new project that I initiated this past summer that builds on and expands this work to other areas of the state.

My research at the Cedar Creek Ecosystem Science Reserve has largely focused on a deep dive into the ecology and behavior of red-headed woodpeckers. My collaborators and I have collected a wide range of data that are helping to shed light on this species, its habitat, and other species that are a part of Cedar Creek's oak savanna ecosystem. The data we've gathered will also help inform best management practices and recommendations for land managers working on habitat restoration around the state.

In order for conservation and restoration efforts to be successful, however, we must first identify where red-headed woodpeckers are located—and this has been challenged by a number of factors including the species' apparent rarity on the landscape, survey coverage, and the fact that woodpeckers typically vocalize less frequently compared to most songbirds. There are currently only two known locations in the state with relatively stable red-headed woodpecker populations (Cedar Creek and Camp Ripley Minnesota National Guard Training Facility), and beyond that we have very little information on the species' statewide distribution and where individuals may be successfully breeding. This kind of information is critical for any effort to facilitate species recovery

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A Note from the Chair

Fall 2021

The Red-headed Woodpecker Recovery Project (RhWR) always has a lot going on. In the fall it seems like things should be winding down for the year, but that is not true this year. The huge amounts of data that have been collected for the past 5 years now need to be analyzed and organized in ways that can be presented to the scientific community, land managers and owners, and the public. At the same time, work on the new state-wide RHWO bioacoustics project is getting organized and ready for state wide action next spring. See article by Dr. Elena West in this newsletter for a good description of that project.

RhWR is working to assist Dr. West as much as possible with all of these tasks. Volunteers are still helping with specific activities at Cedar Creek Ecosystem Science Reserve (CCESR). Nest cameras will be up all winter again at CCESR finding out more about RHWOs and the use of their cavities. The international Zooniverse site has thousands of nest camera videos in the Woodpecker Cavity Cam project for volunteers to observe and answer questions about what happens in the videos. Inquiries by land managers about how to attract RHWOs to their land are being responded to as possible, while we wait for the Best Management Practices documents that will result from all the data that has been collected.

And, last, but not at all least, we are still raising funds that are needed to hire research techs and research assistants to accomplish field work state wide and to work on complex data analysis and much more, in the coming months. So please give as generously as you are able in the membership and fund raising activity coming up in the next few months. We have made commitments so Dr. West and the RhWR can plan, and now need to raise those funds. I hope all are staying safe but also getting out to see the colors, birds, and especially woodpeckers, this fall.

Siah St. Clair, Steering Committee Chair

Cavities, Cavities, Cavities

The RHWO nest cameras at Cedar Creek are bringing us a wealth of new information and documentation about RHWOs and the use of their nest and roost cavities. The last newsletter had some information about non-RHWO visitors to the cavities. Here is a short story about one RHWO family this summer and their use of more than one cavity.

The adults of this pair were named Boo and Spooky a few years ago. In 2020 Boo and Spooky had a successful nest in nest tree 218, which had and still has a nest camera attached, and after their nestlings fledged, they had a second successful nest in another tree about 40 yards away to the north west. While their second nest of 2020 was still active with

(Continued on page 2, Roost)

Note From the Editor

Late this fall the Redheaded Woodpecker Recovery completed a very significant phase of our research program. We finished the study of RHWO nesting sites and nesting activities. In the future we will only monitor nest sites and nest occupants. We don't know if we will continue to color band the RHWO's at Cedar Creek. We will be figuring this out in the coming months. We do expect to assist Dr. West in her new Bioacoustic project. In the meantime we are eagerly anticipating the writing of science-based Best Management Practices for red-headed woodpeckers. We anticipate this will be available in late spring or early summer.

Our need for volunteers to serve on the Steering Committee continues to be a top priority. Because we have completed the afore-mentioned research, the Steering Committees' major subcommittees will be undergoing a shuffle of goals. Please ask to help!!

Jerry Bahls, Editor

(Continued from previous column)

fledglings arrived from their first nest, begging for food and being fed by both parents at and inside nest cavity 218. It isn't known if the adults were still feeding a remaining nestling in the first nest cavity. Since this research had not documented this kind of behavior before, the research team decided to, at least temporarily, call the first nest cavity the primary cavity and nest 218 a secondary cavity. Boo (the male) was captured on camera removing old debris from the bottom of nest cavity 218, and could be heard pecking on the walls inside to make fresh woodchips for the bottom of the nest. Spooky, the female, also went inside and could be heard pecking on the walls, also making new bedding for the nest.



Boo w/fledglings

The family bliss only lasted a few days on camera. As the adults became more focused on the new nest, the begging fledglings were ignored and even chased away, until, by mid July, they were not seen on camera anymore. But a new family was growing, and in very early September another group of nestlings fledged from nest cavity 218, adding to Boo and Spooky's family.



Spooky feeding fledgling

This story helps explain why we see so many cavities in the dead trees and snags at Cedar Creek. By the end of summer, Boo and Spooky's "family" from this year needed at least seven cavities to roost in at night within their territory. I need more snags for cavities in my yard, and we need more snags for cavities as many places as possible.

Article by Siah St. Clair

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young, Spooky, the female, was using nest tree 218 as a night roost for herself while the male guarded the nestlings in the active nest at night.

In the early summer of 2021 Boo and Spooky had a successful nest in a new tree about 40 yards west of nest tree



Boo & Spooky

218. As the nestlings were getting ready to fledge, Boo and Spooky started thinking about a having a second nest for the summer, and for the first time all summer started visiting nest tree 218 and being

caught on camera. Their first visit together at the nest cavity was on June 26th, at least a week before their nestlings fledged from their first nest. As the days went by they became very frequent visitors, and soon two of the new

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Boo rebuffs fledgling

at the statewide scale.

To tackle this challenge, my team and I will be using acoustic recording units (ARUs) to survey for red-headed woodpeckers throughout the state. ARUs are small, relatively inexpensive devices that can be programmed to record sound for long



periods—and for many species they match the effectiveness of human surveys. ARUs can detect sounds from animals like birds and frogs, wind and rain, and even human-made sounds like cars and planes. The autonomous sensing approach is also a good alternative to in-person surveys because devices can be left out for long periods of time to gather as much data as needed across a much larger area and in areas that may be difficult to access. Sending out human observers to accomplish the same task at such a scale would require significantly more time, people and funding.

The autonomous sensing approach is also great for surveying rare species and species that vocalize less frequently (like red-headed woodpeckers!) because they can generate long, continuous recordings that vastly increase the amount of time that researchers can sample for those infrequent vocalizations.

Many acoustic monitoring tools evolved from the work of geophysicists who used long-term monitoring systems to detect low-frequency sounds underwater. Research using sound was historically cumbersome and imprecise, but this changed when companies like Microsoft and Google shared their artificial intelligence work that allowed for significant improvements in speech recognition. We're currently in the midst of a revolution in terms of autonomous sensing approaches that now allow us to combine autonomous recorders with computer programs that automatically identify the sounds captured on those devices.

These machine learning and artificial intelligence tools can now be applied to wildlife monitoring, ecological research, and conservation. Computer algorithms can be more easily trained to recognize and distinguish between sounds from birds, frogs, mammals, and even insects.

We still have a lot of work to do in terms of dealing with the mountains of data these devices can collect, improving the devices themselves, and refining the algorithms that are used to mine through the audio data. Researchers like myself are working hard to push this field forward in ways that make field work, data collection and analysis more efficient and effective so that we can address the myriad environmental challenges we face.

I began my bioacoustics research this summer with a pilot season at Cedar Creek, where we placed ARUs on the landscape to test their feasibility, record hundreds of hours of red-headed woodpecker calls to build a sound library, and trouble shoot. Next spring and summer we'll be setting up a network of recording devices throughout the red-headed woodpecker statewide range to capture "soundscapes" that we hope will provide the data we need to more accurately pinpoint where birds are located. We also hope to use what we learn from this study to develop a monitoring protocol to detect red-headed woodpecker population trends and responses to habitat management throughout the state.

Another exciting aspect of this work is that the audio data we collect are a permanent record of a soundscape and all of its biodiversity at a specific place in time, so although we might be studying a single species right now, down the road we (or someone else) can use our recordings to answer new questions or analyze different species.

This project is funded in part through grants from the Environment and Natural Resources Trust Fund, the University of Minnesota, the Audubon Chapter of Minneapolis, the Red-headed Woodpecker Recovery Project, Earth Cloud, Patagonia, and the Minnesota River Valley Audubon Chapter.

Please consider donating to this project! Donations are one of the best ways to help and support costs that allow us to carry out this research. Please visit <https://www.minneapolisaudubon.org/> to make a donation.

RhWR Volunteer Opportunities

The Red-headed Woodpecker Recovery (RhWR) has an increasing need for many volunteers now and through 2022.

Here is a list and a very brief description of the duties -

Communications Representative on Steering Committee -
Oversee website, newsletter and Facebook™ page and be
communications advocate on Steering Committee

Newsletter Editor - Coordinate publication of newsletter

Webmaster - Manage the RhWR website

Lead Citizen Science Projects - Recruit and organize volunteers of RhWR citizen science projects

Do Citizen Science Projects (2022) – *All projects on hold.*

Classify RhWR videos at <https://z.umn.edu/woodpeckercams>

Email rhwracm@comcast.net to sign up for any of these volunteer opportunities or to ask questions. Send this info to your friends and bird lovers.

Next RhWR Steering Committee

The RhWR Steering Committee usually meets on the 3rd Wednesday of the month at 7:00 pm. The next *virtual* meeting will be on November 17, 2021 at 7:00 pm. If you would like to participate, please contact Siah St. Clair to be added to the call list. All are welcome and encouraged to attend. Please encourage friends to attend also. For information check our website at www.RedheadRecovery.org.

Important Dates

Steering Committee Meeting	Nov 17, 2021
ACM Board Meeting	Nov 22, 2021
Research Team Meeting	TBA 2021

ALL meetings are *virtual* until further notice

Red-headed Woodpecker Recovery
Audubon Chapter of Minneapolis
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Red-headed Woodpecker Recovery Program Membership Application

I'd like to join! Please add me as a member of the Red-headed Woodpecker Recovery (RhWR) at the rate of \$20/year (\$50 is suggested rate)! Please send my membership information to the address at right.

I'd like to renew! Renew my RhWR membership for \$20/year (\$50 is suggested rate).

Yes, I'd like to join Audubon Chapter of Minneapolis also! Please add me as a member of the Red-headed Woodpecker Recovery (\$20, \$50 suggested) and the Audubon Chapter of Minneapolis (\$20) at the rate of \$40/year. Please send my membership information to the address at right.

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

E-MAIL _____

Send this application and make check payable to:

Audubon Chapter of Minneapolis - RhWR
PO Box 3801
Minneapolis, MN 55403-0801