



NOVEMBER EDITION 2023

Out on a Limb by Dan Groebner (Arizona Game & Fish Department): Using Motus to Study Migration

There is a new type of radio-telemetry system out there called the Motus Wildlife Tracking System (Motus.org). The purpose of the new hardware and software is to study long range migrations and landscape use of habitats by mobile animals such as birds, bats, and even insects.

Tracking wildlife with radio-telemetry has traditionally used transmitters that emit a signal on a unique frequency, thereby identifying the specific animal. Tuning the receiver to a slightly different frequency allows the biologist to hear signals from many different transmitters each on a different animal.

Recently, satellite transmitters have become dependable and affordable to use for wildlife tracking. They use an internal GPS chip in the radio-collar to send its location over the Iridium satellite network to the biologist's email inbox. Unfortunately, the satellite modem adds weight to the collar and requires a much larger battery to power it, so these types of transmitters are currently only feasible for larger birds and mammals.

The concept of the Motus system is fundamentally different from normal radio-telemetry tracking of wildlife. Instead of the researcher looking for the radio-tagged critter, biologists wait for that same animal to fly by a stationary receiver station strategically placed to be within radio-telemetry range of the animal on its way north or south during the migration movements. Since the Motus antennae can only hear signals that are within about 5 miles, an array of aligned stations can create a virtual "fence" that will hear the signals of any birds flying by.

Another major difference between Motus and traditional telemetry is that Motus only uses 2 different radio frequencies carrying a coded pulsed message that digitally identifies the transmitter to a specific animal. Therefore, receiving stations only have to listen on 2 frequencies to be able to detect all of the animals wearing a Motus type transmitter. And the "radios" used to receive the signals have been shrunk down to the size of a large USB thumb drive, called a software defined radio or SDR. The extra complexity of decoding the Motus signals is easily handled by an inexpensive miniature computer called a Raspberry Pi that was developed for geek type hobbyists.

Motus stations can be connected directly into the internet so when a tagged bird is detected at a station its information is immediately relayed to the Motus central database where researchers can be

informed of the detection as they follow their study animals north or south. The strength of the system lies in the many receiving stations that are being erected every year which can allow for more detections and more information collected on important migratory routes and specific migratory behavior of birds and insects.

More details on the Motus system and a demonstration of the data it produces will be presented at the November Audubon meeting by Dan Groebner, AGFD Biologist, who has set up a station at the Pinetop office. The meeting will be at the White Mountain Nature Center, November 1 at 6:30 p.m.

White Mountain Audubon Society (WMAS) 2023 Chapter Officers:

President: Mary Williams	480-235-1792
Vice-President: Tom Jernigan	928-892-3004
Secretary: Liz Jernigan	928-245-8633
Treasurer: Tom Jernigan	928-892-3004
Field Trips: Rob Bettaso	928-368-8481
Newsletter: Rob Bettaso	928-368-8481
Membership: Susie Walker	480-205-6119
Webmaster: Alan Vickers	

2023 Board Members:

Mary Williams, Tom Jernigan, Liz Jernigan, Mary Freemon, Susie Walker, Gerry Hodge, Carol Axford, & Rob Bettaso.



President's Corner by Mary Williams:

Are you ready for winter? Let's get ready by thinking about our local birds and wildlife along with getting out our boots and gloves. If you have a yard, it's good to let it go a bit wild. Allowing seed heads to remain on grasses and flowers till spring will provide food for your bird friends. And this is a good time to plan your Spring planting and consider replacing large grass areas and non-native landscape plants with habitat that attracts the birds and butterflies as well as is more friendly to our environment overall. Habitat loss is the #1 cause for bird populations declining by the billions in the past few decades. Winter shelter from cold and storms is important for the birds and the bunnies, so consider building a brush pile if you don't have dense shrub and tree areas. Water is important year-round, so consider a heating element for a bird bath – and be sure to keep your water feature clean just as you do in summer.

So many of us enjoy attracting birds to our yards with supplemental feeding so, again, keeping feeders clean is very important in this era of bird flus and the continuing contagious eye disease that usually starts in our sweet House Finches. To protect from disease, as well as from cats and rodent infestation, keep feed off the ground and rake up and discard old piles of it. Treat windows that are in the flight paths of the beautiful birds you are attracting to your home. Window strikes are the #3 cause for bird declines.

Try to solve the outdoor cat problem that so many of us experience. People who love their cats don't risk their lives and health by allowing them to roam, and we all know that even well-fed cats kill birds. Get the excellent 'Keeping Cats Indoors' pamphlet by AZ Game and Fish that is available at our meetings and classes and give it to offending friends and neighbors – or put it in their mailboxes. Call me if you want some mailed to you or someone you know.

Talk to animal control about removing feral cats. Perhaps there will be some action if enough of us complain! Also tell anyone about the killing of our native species if they think trapping, neutering, and releasing feral cats back into the wild is a good idea. Humane euthanasia is better for our environment. I don't understand why anyone believes one feral cat's life is worth more than the lives of many birds and small mammals. According to the ornithology scientists, cats – both domestic and feral – are the #2 reason bird populations have declined by the billions.

Many of our wintering birds will make our lives merrier and brighter with their songs and babies in the months ahead. Others have come a long way to shelter here before returning to their breeding grounds in the spring. Let's help make their winters merry and bright too.

Note Fall Color: which of my photos along some lovely paved fall streets do you think shows an area that attracts and feeds more birds? Does our use of non-native landscape planting – beautiful as it may be – contribute to habitat loss and the decline of bird populations? What can we do about that?



Wishing you good birding and many blessings, Mary

WMAS NOVEMBER CALENDAR:

For 2023 we expect that **all monthly programs** will continue to start at **6:30 pm on the first Wednesday of the month (except in January, February & March** when there are no meetings). The programs are free and open to all. Monthly meetings are **held at the White Mountain Nature Center, 425 Woodland Road, Pinetop-Lakeside.**



November 1 Making Bird Migration Discoveries with New Technology - Dan Groebner from AZ Game & Fish will tell us about technology that uses miniature tracking devices to follow migrating birds and other creatures for extended periods of time over very long distances such as thousands of miles. Telemetry receiving stations are established along migration corridors that can hear and send to the internet the locations of specific birds as they fly by the antennae. Arizona Game and Fish has begun a program to establish these receiving stations across Arizona, including the White Mountains.

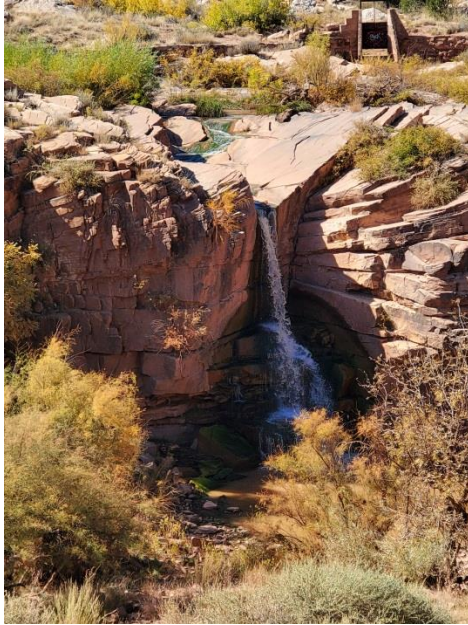
The Regular Monthly WMAS Birding Field Trip: Monthly bird watching field trips on the **3rd Sat of every month**, alternating between Rob Bettaso & Jon Orona. If you're interested in attending, feel free to give me a call and leave a message so that I can return your call to give you the details for the upcoming trip. The **next outing is Nov 18**. Also, on the **fourth Sat of each month** I lead a "Fitness Birding" outing that combines slightly strenuous activities (longer hikes, bicycling, paddling, X/C skiing) with birding. The next **Fitness Birding trip will be Nov 25**. Feel free to give me a call if you're interested (Rob: 928-368-8481).

MOST RECENT 3rd & 4th SATURDAY FIELD TRIPS (Rob Bettaso):

On our Oct 21st field trip, our guide Jon Orona took us to several sites in the Holbrook & Woodruff areas where we saw such diverse species: Prairie Falcon, N. Harrier, Sandhill Crane, Sora, Greater Roadrunner, & many passerines (shrike, pipit, larks, wrens, etc). Hopefully Jon will find time in his incredibly busy schedule to write up another of his excellent field trip reports so that I can email that out with the next Newsletter.

For our Oct 28th outing ("Fitness Birding") I was joined by Gaston and we hiked in the back-country of Fools Hollow Reservoir. We covered approximately 5 miles through a variety of habitats and enjoyed close views of Red-tailed and Sharp-shinned hawks, a male Williamson's Sapsucker, and about a dozen common passerines. All in all, it was a glorious autumn ramble.

A quartet of beautiful photos by Gaston Porterie (clockwise: a falls near Woodruff; an American Pipit at Hidden Cove; Sandhill Crane & Lesser Goldfinch also at Hidden Cove)



MEMBER PROFILE OF RON PEDERSEN: by Rob Bettaso

It is rare that I have a conversation that shifts from identification tips for various duck species, over to a discussion of gamma rays, thermal systems, and what goes on inside New Mexico's Sandia National Labs. But yes, I recently had such a chat, and I had it right along the banks of the Big Springs pond. No, I wasn't talking to the grandson of Robert Oppenheimer; I was, in fact, talking with Ron Pedersen, one of our White Mountain Audubon Society members, who, along with Susan Lodato, has attended various Audubon events over the past few years.

A few weeks back, Ron was asked by Mary Williams (Audubon President) if he would be interested in serving on the WMAS Board of Directors, beginning in January of 2024. Ron generously agreed to give it a whirl. As such, Mary asked me if I would do one of my "member profiles" for the November

Newsletter. I am always happy to do the profiles as it allows me to get to know Audubon members better. And Ron is a guy worth getting to know. Ron's expertise is in Mechanical Engineering, and he spent much of his career at the Sandia National Labs, named after the famous mountain near Albuquerque (and, as Ron enlightened me, Sandia the mountain, is itself named for the Spanish word for watermelon; this because the mountain takes on stunning reddish hues when lit by the setting sun).

Not all of Ron's knowledge is focused on such technical subject matter as heating and cooling systems. Indeed, Ron is keen on some of the fundamental tools that humans began using to shape the modern world -- including wood and metal working. In recent years, Ron has even begun exploring 3-D printing as a way to produce the parts he needs for very specific fabrication projects. Add to this, his interest in history, science-fiction, and cycling, and Ron is clearly a well-rounded individual.

Not surprisingly, Ron and Sue also have a deep passion for the natural world and have done a lot of camping during their explorations of the American Southwest. During the time they lived in New Mexico, Ron and Sue got to know many of the birds around Albuquerque. Later, their camping trips took them to the portions of TX, NM & AZ and, upon seeing their first Vermillion Flycatcher, their passion for birds & birding became even more intense. When they retired and decided to settle in the Pinetop area, it didn't take them long to find the Audubon Chapter and soon they were adding new species to their life lists.

We look forward to Ron and Sue's continuing membership and in their participation in Audubon events. We will also welcome Ron to the Board this coming January and Ron has already begun considering how some of his local contacts (folks involved in such groups as Pet Pals & the BRHS's Fab Lab) might prove useful to our Chapter's goal of recruiting diverse membership.

One of the last things Ron & I discussed before departing from the Big Springs area was an idea he had for using his background in engineering to modify the audio bird ID tool known as Merlin. Specifically, Ron wondered if the Merlin software could be expanded to provide not only species ID, but also location information (where a bird is in a nearby bush). For example, Ron wondered if Merlin might be engineered to offer the following guidance: "At approximately 30 feet to the northeast of your present location, a House Wren is singing." Now wouldn't that be an innovation that every birder in the world could put to excellent use!

UPDATES & REMINDERS:

Have you paid your annual membership dues? If not, a friendly reminder that WMAS relies on membership dues for such important Chapter actions as our annual Scholarship Awards to White Mountain area graduating seniors who have expressed an interest in pursuing a career in natural history, conservation, and other related fields. Thank you for helping us to continue to make such programs a regular part of our Chapter mission. Note that the Donation form is at the end of every Newsletter. Dues are for the year in which they are paid and not good for 12 months following payment (unless you pay in January).

Also, if you are not a member of the National Audubon Society, we encourage all Chapter members to join the national organization. Information on joining the national organization is easy as you only need to type "National Audubon Society" into your internet search engine to obtain the simple instructions for joining.

And remember, you can always feel free to offer your assistance to the Board. For that matter, there are some on the Board who are interested in moving on from the Board to focus on other aspects of their lives, so, we are always interested in hearing from anyone who might want to accept the fun challenges of filling a Board position! **We are especially keen to recruit diverse candidates to be a part of WMAS, including more people below the age of 60 (so that we can plan for our Chapter's future) and also more people that are representative of the various demographic groups found in the White Mountains. And remember, you can be on the Board without being an Officer – in fact, you can even just attend a Board meeting as a guest. Please feel free to join us (call Rob: 928-368-8481).**

Membership/Donation Form

White Mountain Audubon Society chapter membership dues are: Individual \$15 or Family \$25 per year. Please renew your membership every January. Your tax-deductible membership supports our on-going programs and activities, as well as future new projects. Your membership and donations do make a difference!

MEMBERSHIP _____ DONATION _____

Individual _____ Family _____

Name _____ Date _____

Mailing Address _____

E-mail _____

Phone _____

Send this form and your dues or donation to: White Mountain Audubon Society; P.O. Box 3043; Pinetop, AZ 85935 You may use this form for either your Membership renewal or a Donation to WMAS. Please designate above which you are doing. Thank you very much for your support of White Mountain Audubon Society! LIKE US ON FACEBOOK and visit our website.

White Mountain Audubon Society is dedicated to the enjoyment of birds and other wildlife by providing environmental leadership and awareness through fellowship, education, community involvement, and conservation programs in the White Mountains and surrounding areas.