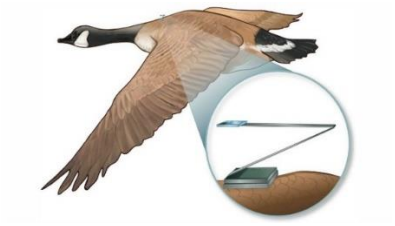
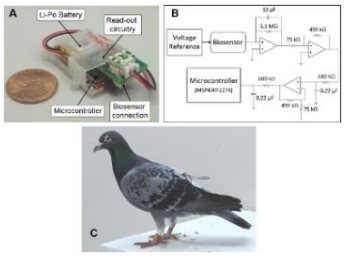
The Hills Above Possum Kingdom Nature Committee Newsletter
Fall/Winter 2023

INTRODUCTION: It's that time of year when the weather begins to change and the wildlife begins to get restless. Well, at least the birds do. The birds we've had through this long hot summer have survived and brought into the world their small families and have been successful in doing so. The mammals too have had their families and while they will remain with us through the wintertime many of the birds we have been so fortunate to observe will be leaving us for a different climate. Bird migration has always been something hard to imagine – small and large birds alike taking off and flying thousands of miles to reach their destination – in the fall and winter south for warmer weather and in the spring & summer back north for breeding. The birds we have who come to visit us and some to stay with us are a gift to us. Their song greets us in the morning and their beauty dazzles us during the day as well as at night when the Owls begin to sing. There is so much more we have here in The Hills that are gifts to us – the coyotes, the frogs, the toads, the Bob-cats, the deer and yes – even the crickets. (right now we have a lizard with a very large cricket in it's lips!!!) All playing their own part in in our lives as well as in the life of our community as a whole. It is our bio-diversity we have to share with them and with that bio-diversity is the seed of life. The plants, the insects, the animals the micro-organisms work together to maintain and support life on this earth and in so doing exist in a very delicate balancing act. We hope the following articles are enjoyable to you and work in bringing the wonder of nature to our community.

MIGRATION (Lynne Aldrich): We struggle to understand all of nature and migration is one of those things that we work to understand. How do the birds manage to fly thousands of miles as does the Bar-tailed Godwit who flies steadily across the Pacific for eight or nine days twice a year. What is in their metabolism that allows them to do this? What goes on inside their bodies? How do they constantly replenish their energy reserves, control their water loss and water balance, keep from overheating? The Cornell Laboratory of Ornithology has a study in place that has their scientists working with engineers in developing a mechanism to track their metabolism. They are working to build sensors to help in understanding what is happening inside the bodies of these migrating birds. They want to "put a lab on a bird". This is what it looks like and link to full research paper.

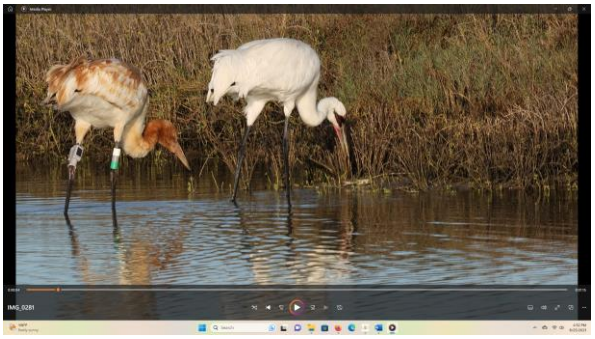




file:///C:/Users/lkald/Downloads/Lab-on-a-Bird_Biophysical_Monitoring_of_Flying_Bir.pdf

They say it is kind of like a tiny little back-pack – a small box that has some electronics in it that allow the research to commuinicate, dowload and upload information that includes the temperature and how much day light there is. The device stores the information on the birds energy use from it's motion. There is a needle like sensor that measures the metabolites of the bird. When the needle has chemicals on its tip that when it comes in contact with other chemicals allows them to measure the current. All this data is stored on a chip that is also located in this "back-pack". All of the data stored is downloaded remotely. A very complicated device and a very, very small device. Up to a year's worth of data can be stored in this device's mini chip. But the devices also need to have the capability of continually powering these devices. They will use the motion of flight itself – harnessing energy through a very tiny thin structure (sort of like a flagpole) that will flex in the wind and move up and down at the frequency of the wing beats of the bird. This will provide a trickle of energy that will charge the battery. I'd have to be an engineer (and a pretty bright one) to truly understand how all of this is accomplished. Researchers have great hope that this device will allow them to learn much more than they know now on how birds manage this tremendous feat of migrating. You may ask – how can something be that small. That in fact is an issue for them. Small songbirds will be a challenge. For now, they have devices that fit raptors and waterfowl. Songbirds are the greatest number of bird species so lots of work needs to be done to scale these devices down so that they can be fitted onto the songbirds and data be gathered for them. As the researchers say "Eventually we hope to have hundreds or even thousands of birds carrying labs, taking science on the wing."

To give a perspective on sizes of trackers, the picture below (Whooping Cranes from Rockport), show the size of trackers that are put on these birds. These trackers are used primarily to track their migration routes and their habitat use on both their breeding and wintering grounds. Totally different reasons for tracking but you can see how much more complicated tracking very small birds for information on how they metabolize in order to survive and accomplish their task of migration is. The research being done by Cornell Laboratory of Ornithology "Backpack" devices are currently in the three to five gram range. To fit onto a small passerine they will need to be less than a gram in weight. That's a pretty small device!!! You can see the vast difference not only in these two but in the ones the Whooping Cranes below are wearing. The Whooping Crane device weighs in at approximately 72 grams!!!



BEEP!! BEEP!! **(Wolf Patrick)**

Here in *The Hills* we have the privilege of witnessing the Greater Road Runner in their natural habitat. The Greater Road Runner is the species of Road Runner that we find in the U.S. The lesser Road Runner exists in Central America and is a smaller bird.

The Greater Road Runner ranges in height from 20 to 24 inches and typically weighs from 8 to 15 ounces. They boast a mohawk-like black crest on their heads and have a bit of blue and red around their eyes, which you “may” only see during mating season. Though the tail is long, the shortest feathers are on the outer edges and the bird will use the tail for steering and braking on the run. The wings are short but rounded, giving the bird the ability to leap and to glide. Its feather patterns consist of a lot of brown and black speckles and streaks which provide a unique camouflage for concealment.

The feet consist of four toes with two pointing toward the front and two pointing toward the back, which gives them formidable skill in climbing and grasping onto things. This trait leaves an X like foot track that makes it difficult to know whether the bird was coming or going (which way did he go…. sorry, different cartoon). One thing is for sure, these guys are fast, having been officially clocked at 15 mph. The male and the female have the same exact markings but, the female is smaller and has a shorter bill. When you see paired mates together you can see the difference.

Speaking of paired mates, I have a pair at my house – I named them Rudy and Rosie. Rosie is a very petite girl, often seen running within proximity of and behind Rudy. I suspect Rudy wooed her to my house with the promise of a full water bowl, lizards, a tall roof to survey his territory, and shade. Road Runners mate for life, so I expect to see Rudy and Rosie together for some time. The life span of a Road Runners is approximately 8 years and they do **not** migrate.

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Rudy and Rosie probably met up during the breeding season which runs from about March to June. During this time, they would have been working on finding a secure place to build a nest, incubating their white eggs, and the subsequent caring for the young.

In wooing Rosie, Rudy would have put on quite the display, showing off his dancing skills, whirring around and making soothing cooing sounds. He may even have dangled a dead lizard or even a small rattlesnake in front of her to prove how good a hunter he is. Then, he probably laid out the whole *I got my own water bowl and house* story (that's my theory anyway).

Jerry Ting

After Rosie bought into the matrimony, the hunt for a good spot for the family would have commenced. They would have looked for thorny or spiny desert plants to locate their nest. Prickly dwellings make it more difficult for predators to reach the eggs or chicks. When such habitat has been destroyed, they have been known to utilize larger shrubs, though this makes their young more exposed to danger. If they must use a tree, they prefer a mesquite tree or something similar in thorniness and will build the nest about 10 feet up from the ground, sometimes higher. As they built their nest, Rudy and Rosie would have buffeted out a flat area and lined it with leaves, snakeskin, feathers, and twigs.

When their young hatched, they would have brought them that old time favorite delicacy – lizards, as well as snakes, scorpions, rodents, and a variety of insects. For approximately twelve days a rotation of duties would have been exchanged between the pair. Rudy would have gone hunting while Rosie guarded the nest. Once Rudy returned

with a meal, Rosie would have left him to feed the young and guard the nest while she went hunting herself. The WWE must have learned the tap-in method from Road Runners (again, my theory). There would have come a short time though when the hunger of the younglings required both parents to hunt at the same time, but by three weeks, the hatchlings would have ventured from the nest. However, they would not have trekked far from mom and dad, as there was still training to do to teach them the ins and outs of being a respectable Road Runner in The Hills above PK.

©AZ Outdoor Photography/Shutterstock.com

Though my research indicates that the mated pairs meet back up each spring, indicating they part ways after the breeding season, I am not sure how accurate that is. Breeding season as I mentioned ends about June, as I write this article it is August 2023, and I still see Rudy and Rosie together. Rudy does his patrols around the house, flies up to the roof and clacks in rapid fashion as he peeks over the edge at me, as if to say *are you still here?* Then ultimately, I will see Rosie running behind him with her trim little torso chasing down a grasshopper (thank God). The other research info that I don't necessarily find accurate is that they display the blue and red skin on the sides of the head during mating season, as if that is the only time that they do that. However, I see those red cheeks flying past my window still.

So, you might be wondering what times of the day are best for spotting your Rudy and Rosie. Typically, the Road Runner starts their day just after dawn, so early mornings are the best opportunity to spot them. When the weather cools you may get the chance to see them positioning themselves, so their black back feathers are oriented towards the sun to absorb heat. In the late afternoon you get another chance to spot them before dusk when they again forage, patrol, and preen.

There are some conservation efforts for Road Runners. Though the Greater Roadrunner is not listed as threatened or endangered under the U.S. Endangered Species Act, it is listed as a species of concern" by the International Union for Conservation of Nature. This status indicates that there are conservation measures in place to monitor its status. If you would like to help, there are status watch activities that you can participate in for the Road Runner and other species of birds.

Project Feeder Watch Project FeederWatch and ebird eBird are a couple. This is a survey of birds that visit your backyard for instance. The data you provide helps scientists to understand the populations and their habitat needs.

Charles Lyon

I mentioned earlier that the Road Runner dines on Rattle Snakes. For this reason alone, we should make sure our Rudy's and Rosie's have plenty of fresh water and winter seeds to stick around! I found a fascinating and funny description of how a Road Runner kills a Rattle Snake. Basically, the Road Runner uses its agility to leap out of the way of the snake's fangs and flares its wings to change the strike picture that the snake sees. Ultimately if all goes the way of the Road Runner, it dashes in stabbing the snake with its beak, then pounds the snakehead repeatedly against a rock or the ground until the bones in the skull are broken and/or crushed. Brillant!!

I also located a video on youtube of a Rattle Snake vs Road Runner. See the link below – if you fast forward to about the two-minute mark in this three-minute video you will avoid all the slithering and get straight to the meal making.

https://youtu.be/r19MqpLJDCo?si=JNwD0NxTUoVqZ5uW

Finally, to keep this important part of the eco system working for us, we need to be aware of the risks to the Road Runner's survival - habitat loss, pesticides, and loose and/or feral cats are the largest threats to parents and hatchlings. We can do our part by allowing those native prickly plants to remain a part of our landscape, use more natural pesticides, and keep cats indoors. It is also important to know that the federal Migratory Bird Treaty Act of 1918 accords to almost all native North American birds, which includes Road Runners, full protection from intentional killing. **It is illegal to kill roadrunners**.

WHAT'S THE DEAL WITH ALL OF THESE CRICKETS? (Magyn Whitaker)

Oh, the joyous sounds of nature; Birds chirping, turkeys gobbling…so peaceful and tranquil. Then a noise of nature wakes you in the middle of the night and it's in your bedroom. You get up to find it and the noise stops. This not so joyous noise of nature is coming from a cricket. They are more than happy to let you know they are around but don't want you to find them. So annoying!

Crickets are insects in the order Orthoptera. They are distantly related to grasshoppers. Crickets have cylindrical bodies, round heads and a long antenna. Though it may look like they only have four legs instead of the requisite six, crickets have two smaller legs protruding from the middle of their torso.

Crickets play an important role in their ecosystem as both predator and prey. They are preyed upon by a variety of animals such as birds, reptiles, and mammals. They also help control populations of pests by eating other insects.

Crickets will generally invade homes and buildings when their food source outside becomes scarce. This happens in the late summer and fall when the plants they usually eat begin to die in the cooler months. Lots of rain can also cause a migration indoors. Crickets are also attracted to lights in a home.

The noise made by crickets is amplified in the fall because it is the crickets' last push to reproduce before winter. The frequency of their chirping varies according to the temperature. For instance, the higher the temperature, the faster the chirping rate is. https://www.youtube.com/watch?v=CQFEY9RIRJA&ab_channel=CheddarFox

Crickets aren't known to be harmful or dangerous. These vocal insects are essentially just a nuisance pest, particularly if their concerts keep you awake at night. However, once inside your house, field and house crickets may feed on fabric (cotton, silk, wool, fur and linen.)

Though crickets' nest and lay eggs in dark places, these insects are nonetheless attracted to bright lights at night. Consider altering the use of outdoor lighting near your home. Switch to motion sensor-activated fixtures (but be aware that the wind we have in The Hills may keep these activated for hours) or replace white bulbs with amber-colored anti-bug bulbs.

Around homes, they congregate near indoor heaters, kitchens, and fireplaces or in mulch and woodpiles; however, they may be found in other parts of a structure. Infestations occur when the pests come indoors for shelter or when crickets intended as pet food escape into the house.

Crickets dislike strong smells. Artificial scents like multi-purpose cleaners or musk cologne deter infestations. Crickets also dislike lemon juice and cinnamon. Crickets do not like the smell of strong peppermint. Much like getting rid of cockroaches or getting rid of sugar ants, peppermint can repel crickets away from your home and garden when applied to your property's perimeter, or if you plant mint plants in your garden.

You can also create a natural cricket bait by adding a few spoons of molasses in a shallow bowl, then fill the bowl up about halfway with water. Place the bowl in an area where crickets are a problem. The crickets will be attracted by the sweet odor and jump into the bowl where they will drown.

The most effective way to get rid of crickets and prevent future infestations is to reduce areas of moisture in and around your home. Mow the lawn, weed plant beds and move woodpiles away from your home. Provide adequate ventilation in crawl spaces and basements.

Crickets are, unfortunately, a part of living in the country and the changing season. Personally, I would much rather have them outside of my home, instead of inside. Hopefully some of the suggested natural remedies and best practices will help to minimize their activity or even rid you of them. They can really be a pain, just look at the picture of my pool filter as evidence!!

A pile of dead crickets after only two days of not sweeping our screened in porch.

Our pool filter after only two days.

THE SKY OVER THE HILLS FALL AND WINTER 2023 (Peter Gottschling)

I am going to repeat information from the summer issue because with two eclipses coming up this fall and spring everyone should know about them.

There will be a partial solar eclipse on Oct 14 starting at 10:21 AM in Graford. If you plan on watching you **MUST** be wearing eclipse glasses which you can order here. earthskystore eclipse glasses Save your eclipse glasses for the April 8, 2024 total solar eclipse coming to our area. Sun glasses do not block the intense light looking directly at the sun and will damage your eyes. The Hills is still a couple hundred miles from the center of this eclipse which is an unusual Annular Eclipse. The direct path of this eclipse is a 150-mile-wide swath of shadow that starts in Oregon and runs through Albuquerque NM and leaves Texas near Rockport. Annular eclipses happen when the moon lines up in front of the sun but is too far away from the earth to cover the sun completely and leaves a ring of the sun around the outside of the moon. In The Hills we will only see a partial eclipse that will obscure about 83% of the sun's surface. On the USNO navy website there is a computer that lets you figure out exactly the times of eclipses wherever you are. https://aa.usno.navy.mil/data/SolarEclipses Note that to figure out local times for CDT you must subtract 5 hours from Universal Time given by the USNO computer. So doing that you see that the eclipse starts in Graford at 10:21 AM, maximum eclipse is 11:50 AM and the eclipse ends at about 1:27 PM.

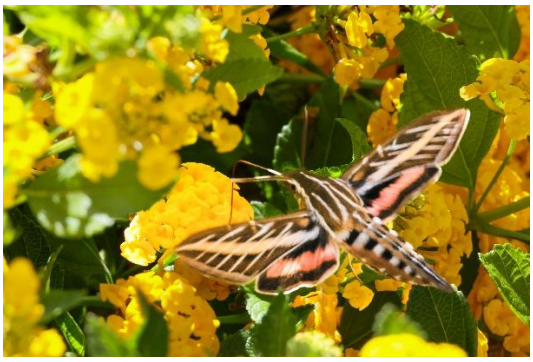
Lynne and I plan on being in the middle of the annular eclipse path on a ranch near Eldorado TX on October 14. If you want to see the actual annular eclipse here is some information on how to get to the path center at earthsky eclipse info . A few Texas cities

where the annular eclipse will be visible for over 4 minutes are Andrews, Alice, Big Spring, Corpus Christi (5 minutes 2 seconds), Kerrville, Midland, San Angelo, and San Antonio. I hope you have a sunny day wherever you are during the eclipse.

So, let's talk about the effects of anthropogenic light on our environment. For most of history the only light in the night sky besides the stars and moon were the flames of our ancestor's campfires. Anthopogenic light is man made light pollution from electric lights, bright outdoor signs and overly flood lit areas in the belief they improve security. I have selfishly written in past issues that light pollution brightens the sky so you can't see the stars. But light pollution also affects everything else in the environment including people, animals, and plants. Science magazine devoted a June 16, 2023 issue to all the different effects of light pollution and how we might mitigate it. https://www.science.org/toc/science/380/6650 In the articles you can read that excessive outdoor lighting and even in-home lighting can inhibit melatonin in humans leading to poor sleep which leads to other health problem such as increased risk of cancer and other chronic and psychological diseases. It causes night time pollinators such as bats to come out later in the evening which leads to less pollination of plants including agricultural plants and also shortens their time to forage for food which affects the health of the bats themselves. The uneaten insects could then harm the same plants that were not pollinated. Plants have been found to bloom earlier in the spring which could expose them to an early freeze and affect their growth. Birds nest earlier when exposed to light pollution which could also have the same effect as well as not finding enough food to raise their young. And of course, we all know about attracting hordes of crickets and other insects when lights are left on all night. These insects do not want to come to the light they are programmed to do so and they are trapped by it. A well-documented case of insect destruction by light pollution is fireflies. The night sky is so bright near cities that the male's mating signaling cannot be seen by the females and the local population crashes. So much of our lighting is wasted by going upward instead of only downward where it might be needed. This is a big waste of energy that contributes to the problem of global warming and costs people/taxpayers billions every year. If lighting was only strong enough to illuminate what is needed and also shielded for cutoff to prevent upward shining and sideways glare, everyone and everything would be better off.

IS IT A BEE? IS IT A HUMMINGBIRD? NO, IT'S A MOTH: (Lynne Aldrich) It's a Shpinx Moth, also called a Hawk Moth of the *Sphingida* family. It's one of the largest moths in the world!! They have thick bodies and a long-pointed abdomen and long thin wings. They can approach the size of hummingbirds. In fact, they may frequently be identified as hummingbirds as their foraging behavior is very similar. These moths can hover, fly backwards and are very fast flyers. And because they are sturdy, they can fly great distances. There are many different species and we have found two of them in our yard over the years.

Hovering around plants where their long tongues licking up the nectar from sweet smelling flowers, they collect pollen on their wings, legs and even their tongue. They can carry this pollen further than some birds and bees and deposit the pollen in new areas where new growth begins. They are one of the best pollinators we might have and vital to the survival of many native plants. They are very resilient insects – more so than bees – and in the face of habitat degradation are crucial pollinators of endangered and native plants. If you plant large tube-shaped flowers, you will find yourself enjoying these magnificent moths in the Fall. Below are pictures of two different species from our yard – madly feeding on Lantana. In these pictures you can easily see the very long tongue on the White-lined Sphinx Moth and in the Snowberry Clearwing you can see how transparent the wings are, making it easy to see through them.



White-lined Sphinx Moth

Snowberry Clearwng Sphinx Moth