Volume Two, Number Three
July 3, 2019

The Black Range Naturalist

Published in Hillsboro, New Mexico

CONTRIBUTORS AND THEIR CONTRIBUTIONS

(Unattributed articles and photographs are by the editor)

3 - Pack Rats: Genus Neotoma - by Walt Whitford

In this article, Walt Whitford discusses the biology of the pack rats (wood rats) which are found in much of the Black Range. Dr. Whitford has extensive experience in the natural history of the American Southwest. He was a Senior Research Ecologist at the U. S. Environmental Protection Agency (1993-2000), a professor at NMSU (1964-1992), an Adjunct Professor in the Department of Fishery and Wildlife Sciences at NMSU (2000-present), and a Collaborator/Research Ecologist at the USDA-ARS-Jornada Experimental Range north of Las Cruces (2000-present). He is widely published, and the second edition of his book "Ecology of Desert Systems" is in the final stages of preparation. His seminal book, Exploring a Desert - Experiences of an Ecologist/Naturalist in a New Mexico Desert is available as a free download at the link.

4 - Packrat Tales - by Harley Shaw

A graduate of the University of Arizona and the University of Idaho, Harley Shaw spent his professional career with the Arizona Department of Game and Fish. His primary research topics included Wild Turkey and Mountain Lion although Desert Big Horn Sheep were thrown in for good measure. He is the author of several books including Soul Among Lions and Twelve Hundred Miles by Horse and Burro. In "Packrat Tales" he shares the many adventures, and misadventures, he had with packrats during those years of research in the wilds of the southwest. Shaw is the associate editor of this magazine.

8 - Nesting Eurasian Collared-Dove - by Bob Barnes

In this article Bob Barnes describes the documentation of a nesting pair of Eurasian Collared-Doves. From March 3 to April 8, Barnes recorded the pair of birds, from inception to fledging. The resulting videos (edited from 2.34 TB of raw video) are linked to, and framegrabs showing the maturation of the young doves are shown. Barnes is the editor of this magazine.

12 - Mourning Cloak Butterfly - by Stephen Siegfried

Among other things, Steve Siegfried is the retired outdoor editor for the Silver City Daily Press. Many of his articles on natural history have been published in magazines and journals. In this article Siegfried describes the life of a Morning Cloak, one of the earliest butterflies of the season, a sign of warmer weather and flowering plants.

13 - Dragonflies of the Black Range

This preliminary checklist of the dragonflies of the Black Range draws heavily from information found on the Odonata Central website. This is a call for information. Please provide information about your sightings to the editor so that we can build a comprehensive checklist for the Black Range. A free dragonfly ID app is available for Android devices (see article).

18 - Letters to the Editor

Including photos provided by our readers as follow-ups to previous articles.

19 - Black Range Bluebirds - Photos by Véronique De Jaegher and Bob Barnes

This article discusses the three Bluebird species we find in the Black Range, focusing on the differences between the Eastern and Western Bluebirds. Multiple links to photos and video are provided.

21 - Insect Eggs or Pollen Mystery - by Ned and Gigi Batchelder

Ned and Gigi Batchelder are a husband and wife team, federally permitted and state licensed hummingbird banders who have relocated to Las Cruces, New Mexico to continue their studies, which have included nine western states since 2001. They are self-funded and volunteer independent hummingbird researchers for USGS. In this article, they describe how they were able to identify the dusting on the foreheads of several hummingbirds they banded during 2018.

Front Cover: Flame Skimmer, *Libellula saturata*, in the Percha Box east of Hillsboro.
Back Cover : Red-rock Skimmer, *Paltothemis lineatipes*,

A Barn Owl became the 154th yard bird species seen in a yard in Hillsboro in late June.

I bet you have been wondering what Zugunruhe means. It is a research term (German Zug meaning move or migration and Unruhe meaning anxiety or restlessness). It describes the, apparently, innate behavior that birds exhibit just prior to and during migration. Caged birds, for instance, which would be getting ready to migrate if they were not locked up, are often seen to become agitated and sometimes to orient themselves in the direction in which they (believe) they would be migrating. The parenthetical because experiments which proved the existence of the phenomenon purposely disoriented the birds being studied.

Contact the Editor: Bob Barnes (rabarnes@blackrange.org) or
The Associate Editor - Harley Shaw
The Black Range Naturalist is a "Not For Revenue" Publication
Previous editions are available for download at this link.
(www.blackrange3.org/the-black-range-naturalist/)

Pack Rats: Genus Neotoma

Walt Whitford

Pack rats (Neotoma spp.) are also known as wood rats or trade rats. Pack rats are found in North America and Central America from just south of the Arctic Circle to Nicaragua. Pack rats occupy a variety of habitats from boreal forests to tropical woodlands. There are two species of pack rat that may be present in the Black Range region, with one of the species limited to the desert grasslands of the foot hills (the Southern Plains Wood Rat). The pack rat that ranges into the forested areas of the Black Range is the White-throated Wood Rat. The eyes and ears of pack rats are large and the limbs are adapted for grasping and climbing. In desert grasslands pack rats climb up to 15 feet above the ground to collect the leaves of soaptree yuccas (see photo of Yucca plant browsed by pack rats).

Both species of pack rats are large: males achieve body weights of one half pound or more and females are smaller but with body weights of a little less than one half pound. Pack rat pelage (skin with hairs) is gray on the back and sides and the Southern Plains Wood Rat has gray pelage on the ventral side, but the White-throated Wood Rat not only has a white throat as the name implies but the underside is white also. The name pack rat was coined because these animals collect sticks and other building materials from areas around a nest site and also adorn the nest (midden) with shiny metal objects such as sardine cans, soft drink cans, beer cans, etc. Middens are typically home to a single pack rat. The only middens with more than a single occupant are occupied by females with their young.

White-throated Wood Rats reach their highest abundance in Chihuahuan Desert habitats but also occur in pinon-juniper-oak associations at elevations up to 9,500 feet. Pack rats collect a variety of materials to construct a midden: sticks, plant fragments, dung, bones, pads of prickly pear cacti, freshly cut plant stems, and grasses. Middens are large structures more than 3 feet tall and often up to 3-4 feet in diameter. The accumulation of plant materials in middens concentrates lots of organic material in a single location. As that organic material decomposes, mineral nutrients are incorporated into the soil under the midden. Even after middens are abandoned with very little of the original midden material remaining, the soils affected by the pack rats are enriched with nitrogen, phosphorus, and other nutrients.

Animals that modify either the structure or function of ecosystems have been called ecosystem engineers. Pack rats meet all of the criteria for ecosystem engineers. In the process of producing middens, pack rats change some of the living parts of the environment as well as some of the non-living components of the environment. The middens represent not only essential habitat for the wood rat but become habitat for many other species. We recorded more than 50 invertebrate species from wood rat middens. Twenty of the pack rat midden invertebrates were spiders. The most numerous invertebrate species in the middens were beetles: predatory carabids, dung beetles (two species), and tenebrionid beetles (four species). Other midden inhabitants that are relatively abundant include crickets and roaches. The fine nest material at the base of the midden (mostly shredded grasses) was home to an abundant assortment of microarthropods including mites, collembolans, and book lice. An early study documented that a variety of small vertebrates are often found as inhabitants of pack rat middens: small rodents, lizards, and snakes. Pseudoscorpions are known to be transported by young pack rats to the new nest constructed by dispersers.

Middens are constructed of materials that are collected from the vicinity (distances of 100 to 160 feet) of the midden shelter. Rock crevices, small caves, and overhang rocks are preferred sites for middens, but middens may be found under junipers or pinons, along water courses, and associated with oaks, Apache plumes, cacti, plus other shrubs and trees. The size of pack rat middens appears to be related to the availability of construction materials within 150 feet of the nest. Middens modify the temperature and humidity environment of the nest. In summer the nest interior ranges from 34 degrees F lower than the outside temperature in early morning to 50 degrees F lower at mid day. The relative humidity in the interior of a midden is 16% to 20% higher than the humidity outside. Midden temperatures are also higher than temperatures outside during the winter, but the relative humidities remain about the same.

Middens protect the occupant from many predators such as foxes, coyotes, badgers, etc., but do not keep snakes out. Rattlesnakes and gopher or bull snakes can easily enter a midden. The adult occupant of the midden can escape but the pups (young) who cannot may be killed and eaten by snakes. Young are most vulnerable when forced from the nest by the adult female. Dispersing young are subject to predation by medium to large mammals and by hawks and eagles. The relative success of predators is dependent upon the number of dispersing young pack rats and the relative abundance of the predators.

Middens in or under rock shelters are important to paleoecologists in order to reconstruct the past vegetation of the region. Fossil middens have been described as "resembling blocks of asphalt with the consistency and mass of adobe bricks." Fossil pack rat middens are protected from microbial decomposition by crystallized pack rat urine. Plant materials like pollens are protected from decomposition, and the organic materials can be dated by carbon 14 decay. Paleoecologist have concentrated on analyzing fossilized pack rat middens to reconstruct vegetation changes over the past 8000 years. Fossilized pack rat middens provided paleoecologists in the western U. S. A. a system that provides information on past climates and vegetation similar to that provided by lake and pond cores with pollen in the sediments in wetter environments. Materials preserved in fossil pack rat middens have been used to reconstruct past climates and vegetation. This has been a boon to personnel at national parks and monuments. Fossilized pack rat middens provided scientific evidence of why the native inhabitants of Chaco Canyon and Mesa Verde abandoned the structures at those

locations. Fossil middens also provide a record of past fauna because small invertebrates are entombed in the pack rat urine and there may be excrement collected by pack rats and used in the midden. These coprolites (fossilized poop) provide evidence of other vertebrate neighbors of the pack rats.

If you park your auto or truck outside and there are pack rats in the vicinity, they may get into the engine compartment and attempt to build a nest. Pack rats are known to cut electrical wires for nest materials. If a pack rat is in an engine compartment for more than one day, they may do irreparable damage to the vehicle. This is only one of the problems of living in areas where there is habitat for White-throated Wood Rats. In towns with high density housing, pack rats are not a problem, but properties on the outskirts of town may have sufficient vegetation to provide shelter and building materials for wood rat middens.

Soaptree yucca pruned by pack-rats during an extremely dry winter. The yucca in theforeground is more than fifteen feet tall and the rats clamored up the caudex (trunk) of the plant to get to the green leaves.

A packrat nest partially hidden by mesquite in summer. Note the white items of man-made trash added to the nest. (Photo by Vic Crane)

Packrat Tales
by Harley Shaw

Black Range Naturalist is fortunate to have someone contributing articles who has the knowledge and depth of experience possessed by Dr. Walt Whitford. Probably no one has spent an equal number of years studying Chihuahuan desert plants, animals, and their interrelationships. His lifelong focus on the smaller and less charismatic animals is unique in an era where much of the available wildlife research monies go to study of species that provide sport or do economic damage. Reading through Walt's essay on woodrat biology brought forth memories of encounters I had during my years afield. I was one of the people that focused on those more "charismatic" and consumable creatures, hence paid only passing attention to the lowly "packrat." But in truth, if you spend much time in the wilds, you can't quite ignore them. They force themselves upon you.

Probably my first encounter with packrats was during my 16th year, ergo 1952. I had a brand new driver's license, and I became the proud owner of a beat up 1940 Ford woody station wagon that my dad had purchased for $10. That was his way of giving me a car, so I'd quit asking to use his. Trouble was, the woody didn't run. The engine was frozen up, because the previous owner had failed to add crankcase oil as needed. I spent most of the first summer of ownership in the corner of an un-cooled Phoenix construction company shop, rebuilding that engine under the tutelage of my dad's cousin, the construction company's mechanic. In retrospect, it was a good experience, providing me with confidence that I could handle just about any vehicle breakdown that might come my way. At age 82, I still do my own auto repairs.

But I was chomping at the bit to get afield with my new "fishing vehicle." Sweating over a flathead V8 wasn't my idea of owning a car. I might mention that the woody was pretty ugly. The previous owner, the one who had forgotten that cars need oil, also "customized" the paint job. The metal fenders and hood were a glaring metallic green, and the badly-weathered wooden portions of the body were painted pea green. It wasn't the kind of "hot rod" that some of my richer peers at Tempe High were sporting. I don't remember any girls at school asking me for a ride. But girls weren't much on my mind as yet, and the woody was my pass to remote streams and the Great Outdoors.

Very quickly, Jim Eischen, my best friend and fellow aspiring woodsman, and I planned an expedition. Our destination was Whiteriver on the Fort Apache Reservation, some 200 road miles northeast and 7000 feet upward from our homes in Phoenix. If our parents doubted our ability to take on such a trip in such a rickety beater, recently overhauled by an inexperienced 16-year-old, they didn't let on. Back then, cell phones were non-existent. Once we disappeared up the highway to Globe and onward through Salt River Canyon, we were out of communication. We were instructed to find a pay phone and call home when we reached Showlow, but we forgot and discovered too late that the tiny logging town of McNary didn't have a pay phone. So we went to the postoffice, bought a penny postcard, and mailed a note home saying we were all right. The mails at the time weren't rapid, and that card didn't arrive until the day before we were due home.

Anyway, we arrived at Whiteriver and poked along up a two-track looking for a campsite. Within a mile or so, we found an aged and deteriorating log cabin with a leaky roof. It was perfect for two teenaged mountain men, who hadn't bothered with either a tent or a tarp to protect them from the (guaranteed) summer thunderstorms of Arizona's high country. Actually, other than fishing gear and thin and inadequate sleeping bags, we had little camp gear. Most

of our load space in the woody was taken up by three used 600X16 tires. Those were old rayon cord tires of the era and were known to break easily on rocky roads. With a set of iron tire tools and a rubber patch kit, we were ready for flats; and replacement tires seemed more important than food. We planned to live off of all the trout we were going to catch. As it turned out, that we would catch enough trout was a legitimate assumption, and we learned how fast one can get tired of a steady diet of fish.

The cabin solved our need for shelter. Being two confident teenagers, oblivious to the propriety of moving into a building without asking permission (and who would you ask?), we homesteaded. Over the course of our ten-day residence, we turned the place into a livable camp. Part of the adventure, it turned out, was living with the resident who already occupied the cabin. I'm not sure either of us had ever heard the term woodrat, but we had read stories of escapades of packrats, so packrat this was. It added to the authenticity of our wilderness experience. And "pack" it did. I don't remember anything of serious value that disappeared over our stay, but we quickly learned to not leave small and shiny objects, such as coins, lying loose. The one item that the rat particularly coveted was our bar of Ivory soap. Amazingly, each night it would drag that bar of soap from its place beside the battered galvanized bucket we had found and commandeered to be a wash pan, to the hole the rat used to enter our upper reaches from its domicile below the plank floor. But it couldn't get it through. I don't remember it trying to eat the soap. It left only tooth marks where it grasped the bar. This always happened at night. We were sound sleepers, and never heard it's efforts.

A younger Harley Shaw at the "Rat's Haven".
The spring box at the cabin is in the background.

I can't remember if we ever saw the rat that summer. Odds are that it was a member of the most common species in the Southwest, white-throated woodrat (Neotoma albigula), although it could have been a Mexican woodrat (Neotoma Mexicana). At that time, a packrat was a packrat, and we were much more interested in catching trout than in studying rodents.

By the time we returned home in the old Ford, somehow without breakdown or tire trouble, we had named the cabin Rat's Haven. After ten days camping, we might have passed for rats ourselves, so the cabin's name was ambiguous.

We returned to Rat's Haven the following summer. We had told so many tales about our summer adventure that two members of our "gang" came along. The additions were Joe Wilkins and Lewis Watson, fellow fishing devotees. Our wheels were improved for the trip. Jimmy's father had purchased a 1953 Jeep and allowed us to drive it. I was still the only one of the group with a driver's license, so became the official chauffeur. We explored a bit en route, stopping briefly to scope out fishing in Chevelon Creek on the Apache-Sitgreaves National Forest. After fishing Whiteriver, Chevelon's deep, open holes didn't fit our notion of what a trout stream should look like, so we opted to go on to our old digs at Rat's Haven. On the way, we blew out a tire on the Jeep. Since it had nearly new tires all around, we hadn't packed any additional spares. And besides, four boys and their camp gear filled the tiny interior of the Jeep. Being foolishly optimistic lads, we merely changed the spare onto the vehicle and went our way, spending the next week or so miles from any town and making the long trip home without a backup tire. Sometimes Fate cares for the young and foolish.

Rat's Haven was unchanged when we arrived, and we again homesteaded, tucking our gear into the dry portions of the cabin. Fresh rat droppings confirmed that the sub-floor resident was present, and we warned our buddies about leaving small valuables lying loose. The packrat again became obsessed with our bar of soap, so each morning we found it at the rodent's hole in the floor. By this time, we considered it part of the ritual of the camp.

We fished each day, keeping only enough to eat. At night, the four of us stayed up late playing a domino game called "Moon." The resident rat became bolder, or perhaps impatient, and we occasionally saw it running along one of the logs in the cabin wall.

One morning after a particularly late night game of Moon, we slept past sunrise. We were dragged from our slumber by the steady ringing of a bell outside the front door. It didn't leave, so we groggily arose and went out to confront the intruder. Turned out the intruder was multipl–four fierce-looking Apache cowboys with a string of pack horses. The bell was attached to one of the horses–no doubt the "bell mare." The group was sitting horseback, all sternly surveying our camp. Tales we'd heard of Geronimo quickly came to our minds. Up until now, we hadn't considered that anyone might own the cabin. I realized that we might be trespassing and that the grouchy looking natives might be planning eviction, or worse. Being the "elder" of our group, I approached the nearest Apache, who also appeared to be the boss, and told him that we'd be happy to move, if they needed the cabin. His face broke into a broad smile, and his companions all exchanged glances and chuckled. "No way, kid!" he shook his head and pointedly scanned the motley group at the cabin door. "Too damn many rats." He kicked his horse to a trot off up the road, and the cowboys and their remuda moved on.

We never made it back to Rat's Haven after that summer. Going the way of all teenagers, dating, school, and summer jobs filled our schedules. Each of us drifted into other walks of life–Jimmy a successful owner of a construction company and Joe a Ph. D. geologist for an oil exploration firm. Lewis became a successful regional outdoor writer in Idaho, and I ended up in wildlife research. Lewis and I stayed in touch until his premature death in 1991. I have lost track of Jimmy and Joe. For me, at least, those two trips to Rat's Haven remain my best memories of being a teenager. Life became more complicated after those two summers.

Once I finished college and became employed as a field biologist, woodrats became common neighbors in innumerable camps and cabins over the years. With modest caution and acknowledgement of our respective needs, we nearly always got along. In retrospect, I now wonder how I and my coworkers came through without some kind of chronic ailment. Once, after an extended stay at Buck Ridge Cabin on the edge of the Sycamore Canyon Wilderness Area, I and houndsman Dick Marshall decided that we probably should clean out the water cistern. I don't think we had been drinking water from it, but we had used it for washing ourselves and dishes. When we finally managed to lift the lid of the cistern, we found a dead and decayed woodrat floating on top. It had obviously been there for some time. Similarly, when my coworker Bill Powers and I decided that the big water tank at Arizona Game and Fish Department's Ryan Station on the North Kaibab needed cleaning, we found an abundance of woodrat hairs and bones settled to the bottom. None of us got sick, and I can only assume that if any diseases resided in the water as a result of drowned rats, we became carriers.

Late in my career with Arizona G&F, I had a more notable experience with a woodrat. We were conducting a study of Merriam's turkey nesting behavior and mortality near Chevelon on the Apache-Sitgreaves national forest. We had a goodly sample of turkeys fitted with tiny back pack radios that helped us locate nests. Also, if a turkey failed to move for some four hours or so, the radio would double its beep rate, signaling to us the possibility of a dead turkey. We would respond as quickly as possible to determine the cause of death. We were also learning about how far these turkeys would move between summer and winter ranges; seasonal shifts could be 40 miles or more.

Late one winter, we lost track of one of the radio-marked hens. Either she had moved too far for us to locate her, or the radio had gone dead. We had about decided the problem was the latter, when a biologist flying in search of transplanted thick-billed radioed us that he was getting a mortality signal from our bird some 50 miles south. A two hour drive over rough roads brought us to the area the aircraft described, and we quickly began to receive the transmitter signal. It didn't take long to find a pile of feathers. The bird had been dead too long for us to assign a cause of death, but the missing carcass led us to suspect bobcat or coyote. The radio signal was strong, saturating our directional antenna, but we couldn't find the transmitter. Usually a bird's radio would be with the remains. We gridded the area, always coming back to a point some 15 yards away from the feathers. Scratching our heads and looking around, biologist Ron Day suddenly said, "Ah!" He had an idea. Nearby was a large woodrat nest, no doubt one belonging to a white-throat. Ron went over to an entrance hole, got down to his knees and looked inside. Reaching back nearly arms length, he extracted the radio by its antenna--proving once more that you don't want to leave anything small and out of the ordinary laying around in "packrat" country.

Because I've spent most of my adult years living in older houses in country or small town settings, woodrats have continued to be close neighbors–at times closer than we could tolerate. Patty and I lived for 10 years in a 100-year-old two story brick house north of Chino Valley. Like most old structures, it was permeable to small wild creatures. Normally I would simply catch any intruders, be they mammal or reptile, and set them back outside. In the case of woodrats, I usually hauled them several miles away to release them. I don't know if they survived such treatment, but I felt better not killing them.

Woodrats usually were easy to catch in a small live trap. However, one especially destructive denizen eluded my every effort. It had an affinity for leather and was rapidly making off with all of the fringes of my chaps. I didn't use these much anymore, but they carried with them nostalgia of my days horseback during a decade of mountain lion research. And, conceivably, I might want to use them again, although some weight loss might have been needed to get them on. After trying both kinds of live traps at my disposal and a host of different baits, I decided the situation had become a crisis and shifted to lethal snap traps. I had never had a woodrat ignore a dab of peanut butter on the trigger of a snap trap, but this one did. The traps remained unsnapped, and the fringes on my chaps continued to disappear. This was all happening in the upstairs room I used for an office–a room with a sloping ceiling conforming to the roofline. I had determined that the rat was entering via a hole in a low corner where the ceiling met the floor. In spite of its wariness of traps, it had began

to show itself at night in annoying disdain of our presence. It had apparently decided we were stupid and harmless. Thus its demise became a challenge. One night after going through the motions of retiring in our bedroom which was adjacent to my office, I quietly slipped back into the office with a low-powered pellet pistol. It was a warm evening, and I didn't bother to get dressed, so was in nothing but my underwear. I turned on the office light and positioned myself where I could see the point where the rat normally appeared. It didn't disappoint, and within a half hour began to probe around the room. I let it get a reasonable distance from the hole, because I didn't want a wounded rat darting into a space where we couldn't reach and dying there. The stench of even a small dead mammal remains for months. And I had no idea what kind of vengeance the creature might devise if it survived the injury.

I held for the head and nailed it cleanly the first shot. Nonetheless, it made a dash for the hole and disappeared. Patty had heard the pop of the airgun and came in. I sheepishly explained my dismay—it looked like we were going to live with the stink of a dead animal lodged somewhere in the wall. Patty, however, being more intrepid and agile (and also in her nightwear, which at the time amounted to about nothing) decided to explore. She crawled back into the low angle of the ceiling, reached down and lifted the dead rat from the hole by its tail. We still tell the story of our primitive big game adventure, stripped down for the hunt, with Patty being the Nimrod brave enough to approach wounded game unarmed. Such can be bonding experiences for couples.

Another woodrat at the Chino Valley residence, however, became a friend and acquired some local fame for performing on demand. The site where we lived had an interesting history. Named Puro, it was near the place the first territorial government of Arizona had convened and camped for a month or more before moving on to establish a territorial capitol at Prescott. It was also an abandoned railroad siding, a leftover from the days of steam engines. Deep wells at the site had provided water in tank cars for multiple other remote sidings in northern Arizona, including the village at the south rim of the Grand Canyon. The surrounding fields had been summer pasture for Fred Harvey's mules. A live spring ran through the property and our house was within a stand of large, old cottonwoods. In our second story bedroom, we slept in the treetops and could listen to the hunting great-horned and barn owls at night. Patty daily watched the sunrise from bed, communing with a host of local bird species just outside her window. In the summer, this included a pair of vermillion flycatchers. Sleeping with and waking to such neighbors properly set the mood for every day.

Among the structures and artifacts abandoned at the railroad siding was a 1970s-vintage Pontiac—one of the last of GMC's effort to tap the muscle car market. Pontiacs have now gone the way of the Studebaker and the Willys, but they were once considered to be somewhat of a poor-man's luxury car. Essentially they were just a fancied up Chevy, but were symbolic, perhaps, of moving from lower middle class to upper middle class in the days when one could actually tell cars apart.

Because of both the historic and natural historic amenities of Puro, one of the fourth grade teachers at the Chino Valley school regularly brought her class to the site for a day-long field trip. This happened every year we were there, and Patty and I becams history and natural history lecturers for a day. One of the highlights of the trip for the students occurred when I would lead them up to the dilapidated Pontiac, gather them around, and quickly lift the hood. A woodrat had built its nest atop the engine, and without fail, it would leap from the car and dash off through the children, yielding the expected squeals and kid-dispersals. We followed this with a short discourse about packrats and their nest building behavior. Perhaps those fourth graders make up the last generation that will remember there was ever a car called Pontiac. They definitely will remember woodrats.

When a 500-home development threatened the pasture lands around Puro, Patty and I moved to Hillsboro, thus bringing us to the Black Range. We weren't particularly surprised to find that woodrats were as common in New Mexico as they had been in Arizona, and the old house we purchased on Elinora street was just as permeable as the house at Puro. My old chaps had been relegated to the back of a rocking chair in the guest bedroom—a room we seldom entered, especially during cold weather. I can't quite remember how long we had been here, when I found the chaps nearly completely consumed. The telltale chisel teeth marks identified the culprit. All that was left of the chaps was the tops, rather a brief apron that might have been used for some sort of cowgirl cheesecake cartoon in the 1950s. The ghost of the Puro rat had followed us and gotten even! Out came the live traps.

One winter, we caught nine woodrats in rapid sequence in our guest bathroom, rather defying the notion that woodrats live alone. Even now, I'm not sure about the biology of that situation. A couple down the road caught seven in their house that same winter. Undoubtedy, something had triggered a woodrat irruption. And newcomers to Hillsboro may wonder why so many vehicles around town sit with their hoods up. In Hillsboro, people walk a lot, and an auto or pickup can go un-driven for days. The warm, dark space under the hood is perfect for a young, dispersing, woodrat seeking a nest site. They start by hanging out there in the daytime, depositing remains of seeds and plants they bring home to eat. Given time, they will begin to bring construction material—horse droppings, fragments of cholla, bits of stems of dead shrubs--and pile them into a nest. Undiscovered, such debris can create a fire hazard when the vehicle is started and the engine gets warm. And the rats may spend their idle under-hood time nibbling on the soft wiring insulation, sometimes to the point of separating the wire. This can cause a vehicle to fail to start or, worse yet, create a short and a spark that ignites the kindling provided by the homesteading rat. Thus the lifted hoods to eliminate the attractive cover.

Truth is that Patty and I enjoy the presence of wildlife in Hillsboro, including the rats. Presence of wild creatures is one of the traits we like about small towns in the western U. S.

If woodrats weren't so indiscreet in their excretions and more respectful of our leather goods and rations, we'd probably live with them. As it is, Patty and I still make occasional runs a few miles up Highway 152 to introduce our unwanted neighbors to a new home. How well they adapt, we'll never know. Could be some even find their way back. Certainly the supply remains endless. We'd not have it any other way.

Nesting Eurasian Collared-Dove
by Bob Barnes

Last year I reported on the efforts we made to document the nesting of a Black-chinned Hummingbird. This year's effort involved the recording of the nesting of a Eurasian Collared-Dove (March 3 to April 8).

The Eurasian Collared-Dove first appeared in North America when roughly 50 of them escaped from their owner in Nassau, Bahamas in 1974. Since then the species has spread to many areas of North America, including Hillsboro, where I live.

The videos which document the nesting effort of this pair of doves falls within two categories. The long-form videos are designed with the researcher and masochist in mind; there are four of these volumes. There is also a composite video for those who are interested in natural history but may not be as interested in masochism.

This effort involved the review and editing of 214 hours of raw video (2.34 TB of material).

All of these videos have been added to our new The Black Range Naturalist video portfolio. That portfolio includes all of the videos which have been referenced in The Black Range Naturalist and which are original to this area.

And, for those of you who are not videophiles, the following photo sequence (framegrabs from the videos) may be interesting.

On March 3 we noticed that a pair of Eurasian Collared-Doves had set up shop and were mating in a shed at our house in Hillsboro. On March 19 we noted that an adult was removing part of an egg shell from the nest and by the 21st saw that feeding of the nestlings was visible (camera angle precluded a definitive assessment of this earlier - although it most certainly was happening). Both adults shared in incubation and feeding duties.

The nestlings were being fed crop milk, an incredibly rich liquid which is secreted from glands in the crop of the adults, and grew very quickly.

Mating at the nest March 3

March 4 to March 18 - sitting

March 19 - Adult removes part of egg shell

March 21 - Adult feeding young nestling

March 22 - Adult removes part of egg shell

March 26 - Nestling feathers developing nicely.

March 23 - Adult feeds nestling with crop milk. Nestling growing very fast.

March 27

March 24 - Nestling already noticeably larger.

March 28 - Wing feathers of nestling developing.

March 25 - Two nestlings

March 29

March 30 - Young doves standing in nest

April 2

March 31

April 2

April 1

April 3 Wing feathers well developed

April 2 - Adult feeds young doves almost as large as it is.

April 3

April 4

April 5

April 6

April 7

April 8 - No birds at the nest.

By March 26 the nestlings were well feathered and growing very fast. A change in the adult behavior occurred during this period. The adults would be away from the nest for longer durations.

By early April, the wing weathers were quite well developed, wing stretching and flapping was underway, and the adults were away from the nest for longer periods. The young doves were approaching the size of the adults.

On April 5, one of the young doves departed the nest for 41 minutes, perching a few feet away. The following day both of the young doves were leaving the nest for periods of time. But they did not roam far, perching a few feet away.

April 7 was the last day birds were seen at the nest. During the day the young doves would perch near the nest and fly to the nest to be fed by the adults when the adults would fly in to feed them.

Adults feeding young doves were observed in the general area for a few days afterward.

Those of you using paper quadrangle maps of the Black Range should be aware that the earth's magnetic north is moving away from northeastern Canada and toward Siberia, currently at the rate of 55 kilometers a year. If you live in Hillsboro that means that the declination has changed from 9° 4′ 20″ in 2014 to 8° 41′ 25″ in 2018. Obviously you are not going to get lost, even if you are using a compass but… (See calculators at the NOAA National Centers for Environmental Information site, Magnetic Field Calculator page).

Mourning Cloak Butterfly

by Stephen Siegfried

Every school kid who has seen a chrysalis or cocoon, kept in a classroom through the winter, knows that the caterpillar inside is changing into a butterfly or moth. It's a process called metamorphosis, and its how butterflies and moths evolve into adults.

But one winter day, weeks before the leaves are on the trees or early flowers are in bloom, months before the classroom butterfly is ready to emerge from its chrysalis, a bright New Mexico sun and a gentle breeze from the south put the termperature on the rise. A fifth grader, who is supposed to be working on long division, looks out the window and sees a butterfly flying over the snow.

Chances are the butterfly is a Mourning Cloak, and in all probability, a female. The butterfly that will emerge on the school windowsill, however, could be any of approximately 250 New Mexico species.

One of the most widespread and beautiful species in the hemisphere, *Nymphalis antiopa* contradicts much standard butterfly behavior. Easily identified, the dorsal surface is a deep plum-purple, bordered by a single row of bright blue dots and yellow margins (pale in older butterflies, bright in newly emerged ones). The edges of the wings are sharply angular. The mourning cloak's appearance makes confusion with other species unlikely.

Its behavior is like no other butterfly either. The approximate life span for most butterflies in the U.S. is from four days to two weeks. The Mourning Cloak is the longest-lived of North American butterflies, some individuals living as long as 10 months.

Adults overwinter in hibernation (usually in hollow trees) and emerge on warmer winter days to feed on tree sap or, if available, fermented fruit. Like all insects, it is cold-blooded, but warms itself by seeking sunlight, basking with its dark wings open to absorb warmth. When the temperature rises, the photosensitive butterfly moves into the shade, closing its wings to reduce heat absorption.

The seemingly blind prediction - that the butterfly flying over the snow is a Mourning Cloak - has foundation. What about the claim that it's a female? The species name, antiopa, was given to the butterfly by Linnaeus, who named a lot of things in the 1700's and who was one of the species' keenest observers. Antiopa was queen of the Amazons, a tribe of women in Greek mythology. Of course Linnaeus many have picked the name for some other reason, but only in the past 10 years have studies shown that Mourning Cloaks that live through the winter are exclusively female.

Mourning Cloak, Nymphalis antiopa, North Percha Creek, Black Range, photo by Bob Barnes

Later in the spring, after leaves have turned green and the chrysalis in the classroom has hatched, butterflies of all descriptions are visiting flowers and mud puddles - all but the Mourning Cloak. There is a spring hiatus when adults are rarely seen. Before she dies, the female has laid her eggs on one of several host plants (in New Mexico, the leaves of Black Willow, Aspen, cottonwood, stinging nettle, and daily flowers).

Hatched caterpillars are black with several rows of spines, a row of red spots down the back, and white specks along the sides. Mature larvae undergo a quick metamorphosis in the chrysalis (two to four weeks) and emerge as adults. The second of two broods emerges in late summer or early fall.

It is then, when the butterflies of summer have begun to fade in color and die, when leaves have begun to turn and the new school year is about to begin, that the Mourning Cloak is freshest and most beautiful.

The text of this article first appeared in the September-October 1989 issue of "New Mexico Wildlife".

Libellula saturata, Flame Skimmer, in the Percha Box, east of Hillsboro.

Dragonflies of the Black Range

What follows is a preliminary list compiled from the resources at Odonata Central. The list is a compilation of the dragonfly listings for Sierra and Grant Counties. As such, some species may be listed which have not been found in the Black Range, but which are found elsewhere in the counties.

Information you provide will lead to a more accurate list (additions, corrections, deletions) and will be received with relish. We will publish the updated list and changes when warranted.

A free dragonfly identification application is now available for Apple IOS and for Android.

Species	Sierra County	Grant County	Black Range
Aeshna interrupta Variable Darner	Yes		
Aeshna palmata Paddle-tailed Darner	Yes		• Ladder Ranch
Aeshna persephone Persephone's Darner		Yes	• Mimbres River along Hwy 61, southeast of Royal John Mine Road
Anax junius Common Green Darner	Yes	Yes	• Ladder Ranch • Bear Canyon Reservoir west of Hwy 35
Anax walsinghami Giant Darner	Yes		• Alamosa Creek, NW of Monticello
Archilestes grandis Great Spreadwing		Yes	• East of City of Rocks SP Hqs at 32.5935 -107.9477
Argia apicalis Blue-fronted Dancer	Yes		
Argia fumipennis Variable Dancer		Yes	
Argia hinei Lavender Dancer		Yes	
Argia lugens Sooty Dancer	Yes	Yes	• Near intersection of Animas Creek Road and Alto Road along Animas Creek
Argia moesta Powdered Dancer	Yes	Yes	
Argia munda Apache Dancer		Yes	
Argia nahuana Aztec Dancer	Yes	Yes	• Black Canyon Campground, North Star Road
Argia oenea Firey-eyed Dancer	Yes		• Percha Box, east of Hillsboro
Argia pallens Amethyst Dancer		Yes	
Argia plana Springwater Dancer	Yes	Yes	• Percha Box, east of Hillsboro • Black Canyon Campground along North Star Road
Argia tonto Tonto Dancer		Yes	• Black Canyon Campground, North Star Road
Argia translata Dusky Dancer	Yes	Yes	
Argia vivida Vivid Dancer	Yes	Yes	
Brechmorhoga mendax Pale-faced Clubskimmer	Yes	Yes	• Near intersection of Animas Creek Road and Alto Road along Animas Creek • Mimbres River along Hwy 61, southeast of Royal John Mine Road at 32.7314 - 107.8661
Celithemis eponina Halloween Pennant	Yes	Yes	
Cordulegaster diadema Apache Spiketail		Yes	
Dythemis fugax Checkered Setwing	Yes	Yes	

Species	Sierra County	Grant County	Black Range
Enallagma annexum Birtgerb Bluet		Yes	
Enallagma basidens Double-striped Bluet	Yes	Yes	
Enallagma boreale Boreal Bluet		Yes	
Enallagma carunculatum Tule Bluet	Yes	Yes	• Bear Lake Reservoir
Enallagma civile Familiar Bluet	Yes	Yes	• East of City of Rocks SP Hqs at 32.5935 -107.9477
Enallagma praevarum Arroyo Bluet	Yes	Yes	• Bear Lake Reservoir • Black Canyon Campground along North Star Road
Erpetogomphus compositus White-belted Ringtail	Yes	Yes	
Erpetogomphus designatus Eastern Ringtail	Yes		
Erpetogomphus heterodon Dashed Ringtail		Yes	• Mimbres River along Hwy 61, southeast of Royal John Mine Road at 32.7314 - 107.8663 • NM-152 at Mimbres River Crossing
Erpetogomphus lampropeltis Serpent Ringtail		Yes	
Erythemis collocata Western Pondhawk	Yes	Yes	
Erythemis simplicicollis Eastern Pondhawk	Yes		
Erythemis vesiculosa Great Pondhawk		Yes	

Species	Sierra County	Grant County	Black Range
Erythrodiplax basifusca Pleateau Dragonlet	Yes	Yes	
Gomphurus lynnae Columbia Clubtail		Yes	
Hesperagrion heterodoxum Painted Damsel	Yes	Yes	• Percha Creek Box above Ready Pay Gulch • Just east of NM-35 north of Bear Lake Reservoir 32.8979 -107.9968 • Black Canyon Campground along North Star Road
Hetaerina americana American Rudyspot	Yes	Yes	
Hetaerina vulnerata Canyon Rubyspot	Yes	Yes	• Percha Creek Box above Ready Pay Gulch • Near intersection of Animas Creek Road and Alto Road along Animas Creek • Mimbres River along Hwy 61, southeast of Royal John Mine Road at 32.7314 - 107.8661 • Just east of NM-35 north of Bear Lake Reservoir 32.8979 -107.9968 • Mimbres River at NM-152 crossing 32.79085 -107.91544
Ischnura barberi Desert Forktail		Yes	
Ischnura cervula Pacific Forktail		Yes	
Ischnura damula Plains Forktail	Yes	Yes	• Just east of NM-35 north of Bear Lake Reservoir 32.8979 -107.9964
Ischnura demorsa Mexican Forktail	Yes	Yes	• East of City of Rocks SP Hqs at 32.5936 -107.9475 • Black Canyon Campground along North Star Road 33.18548 -108.02818
Ischnura denticollis Black-fronted Forktail	Yes	Yes	
Ischnura hastata Citrine Forktail	Yes		
Lestes alacer Plateau Spreadwing	Yes	Yes	• East of City of Rocks SP Hqs at 32.5935 -107.9477
Libellula composita Bleached Skimmer	Yes		
Libellula luctuosa Widow Skimmer	Yes	Yes	
Libellula nodisticta Hoary Skimmer		Yes	
Libellula saturata Flame Skimmer	Yes	Yes	• Percha Creek Box above Ready Pay Gulch. The cover photo, of this species, was taken by Bob Barnes in the Percha Box where it is common in season. • Just east of NM-35 north of Bear Lake Reservoir 32.8979 -107.9964 • Bear Lake Reservoir 32.8846 -107.9999 • East of City of Rocks SP Hqs at 32.5935 -107.9477
Ophiogomphus arizonicus Arisona Snaketail		Yes	• Off of North Star Road 33.16254 -107.98865

Species	Sierra County	Grant County	Black Range
Oplonaeschna armata Riffle Darner	Yes	Yes	• Upper Gallinas Campground on NM-152
Orthemis ferruginea Roseate Skimmer	Yes	Yes	• City of Rocks State Park 32.57252 -107.96456
Pachydiplax longipennis Blue Dasher	Yes	Yes	
Paltothemis lineatipes Red Rock Skimmer	Yes	Yes	
Pantala flavescens Wandering Glider	Yes	Yes	
Pantala hymenaea Spot-winged Glider	Yes	Yes	
Perithemis intensa Mexican Amberwing		Yes	
Perithemis tenera Eastern Amberwing	Yes	Yes	• Bear Lake Reservoir 32.8846 -107.9999 • East of City of Rocks SP Hqs at 32.5935 -107.9477
Phyllogomphoides albrighti Five-striped Leaftail		Yes	
Phyllogomphoides nayaritensis West Mexican Leaftail	Yes		
Plathemis lydia Common Whitetail	Yes	Yes	• Ladder Ranch • East of City of Rocks SP Hqs at 32.5935 -107.9477
Plathemis subornata Desert Whitetail		Yes	
Progomphus borealis Gray Sanddragon	Yes	Yes	• Mimbres River along Hwy 61, southeast of Royal John Mine Road at 32.73066 - 107.86653
Pseudoleon superbus Filigree Skimmer	Yes	Yes	• 100 yards in from the entrance to the Monticello Box Canyon, riparian area
Rhionaeschna dugesi Arroyo Darner	Yes	Yes	• Percha Creek at Hillsboro
Rhionaeschna multicolor Blue-eyed Darner	Yes	Yes	• Ladder Ranch • East of City of Rocks SP Hqs at 32.5935 -107.9477
Stylurus plagiatus Russet-tipped Clubtail	Yes	Yes	
Sympetrum corruptum Variegated Meadowhawk	Yes	Yes	• Bear Lake Reservoir 32.8846 -107.9999
Sympetrum illotum Cardinal Meadowhawk		Yes	
Sympetrum semicinctum Band-winged Meadowhawk	Yes		
Telebasis salva Desert Firetail	Yes	Yes	
Tramea lacerata Black Saddlebags	Yes	Yes	
Tramea onusta Red Saddlebags	Yes	Yes	• East of City of Rocks SP Hqs at 32.58968 -107.97405

Letters to the Editor

RE: Rattlesnake Bite and Coati Articles in April 2019 Issue

"I was so interested in reading about Cindy's experience - how horrible! And I loved Catherine's story about the Coati family. I live right next door (between the Lodge and the Percha Bank), and have some similar experiences. One of Catherine's peach trees hangs over the top of the straw bale wall between our properties. The Coati would sit on the wall, safe from my dogs and me, and munch on the peaches. I've seen scat around the yard, on my patio table, and in front of my kitchen door so I know they've been checking things out when I'm not there.

One day I was hosting a Kingston Schoolhouse Museum committee meeting at my home. I was outside preparing the BBQ and heard a dog barking. Everyone gathered at the kitchen door watching the tiny Chihuahua's standoff with the Coati. I think it may have been the Coati's first experience with a Chihuahua as he seemed to be thinking "What is this? Is it dangerous? Can I eat it?" I began to worry that the Coati would jump down on the poor dog so called the dog back. The Coati went on his way and we sat down for a nice meal excited about our Coati encounter! I sure hope they return this year. If we don't get a late freeze we'll have loads of fruit."

Sherry Litasi
Kingston, New Mexico

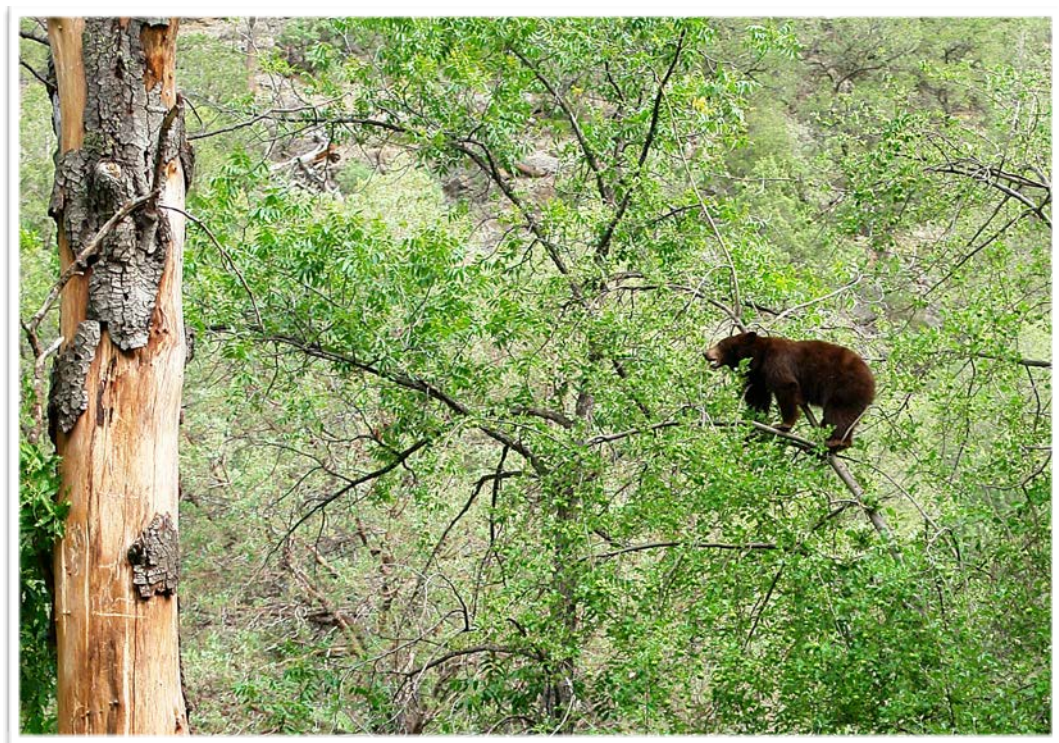
"I wanted to let you know that I sighted a coati within a few months of moving here in September 2014, while driving on Hwy 152. It was in what I call the "bottleneck" area approaching Hillsboro (where radio reception goes blank for a bit). I saw what I presume to be the same animal a couple more times in 2015-16 in the same general area. (One of the sightings was with friends visiting from Miami and Germany, what a thrill for them!) I was astounded when I first saw it–I knew what it was but had no idea they might be in this area; I thought of them as a Mexican and S. American animal. I didn't think to report my sightings to Fish and Game. Who knows, maybe this was the Pioneer Coati moving into our area!"

Betsy Arehart
Kingston, New Mexico

RE: Carl Woese Article in April 2019 Issue

When I taught, I had to overcome the neglect about the 3rd member of the kingdoms so the article by Lloyd brought back memories.

Ed Barr
Houston, Texas



More mammal sightings at The Black Range Lodge in Kingston, New Mexico; Catherine notes that the Black Bear (above) is actually in the tree eating apples. Below, Javelina or Collared Peccary. Photos by Catherine Wanek.

Greater Short-Horned Lizard - *Phrynosoma hernandesi*
Photographed in Hillsboro, New Mexico by Steve Elam. See Randy Gray's article in Volume 2, Number 1 of this magazine.

Those of you who are serious students probably use the Google Scholar search engine; those who don't or who do not know about it may wish to take it for a spin.

Black Range Bluebirds

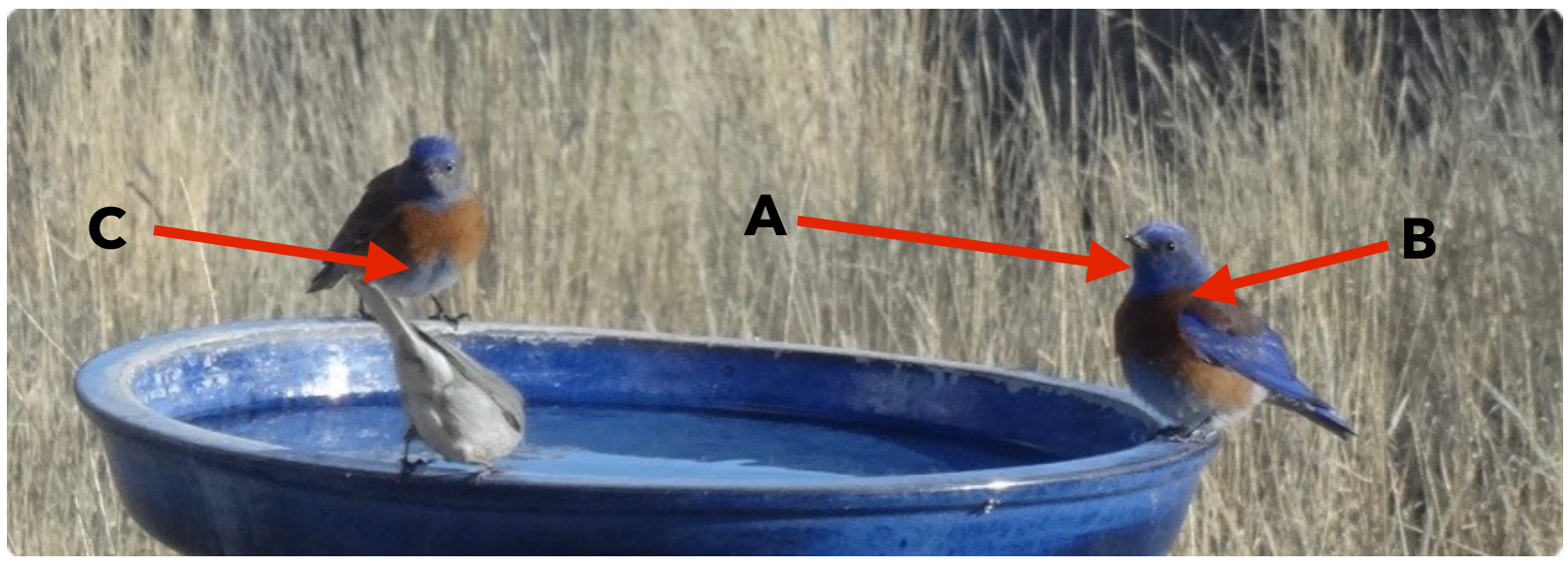
Photos by Véronique De Jaegher and Bob Barnes

We have all three of the North American Bluebird species in the Black Range. That may come as a surprise to some who assume that we have only the Mountain Bluebird and the Western Bluebird. During December 2018 we had a number of Eastern Bluebirds in Hillsboro. Since some readers may not be familiar with that species we thought we would take a moment to note the significant differences and to dispell the assumption that Eastern Bluebirds found here would be vagrants from the east.

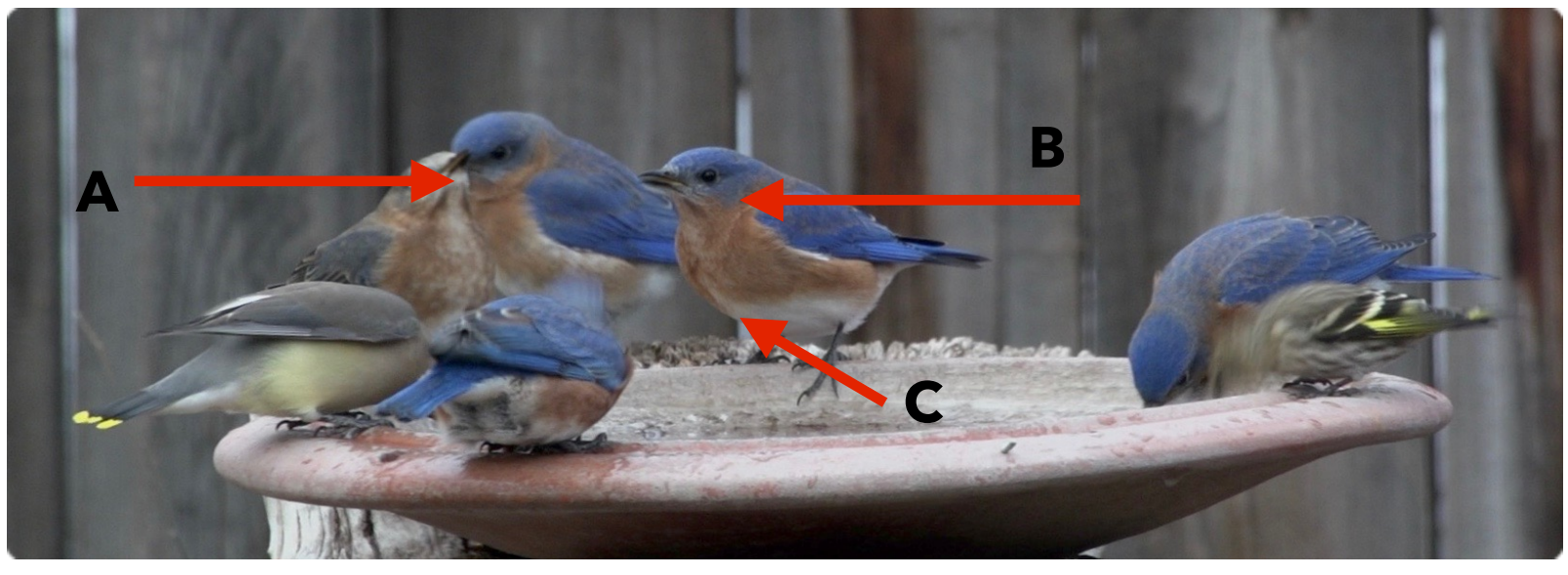
Note the following in the comparison photographs shown below. A. The throat is blue in the Western Bluebird compared to rufous in the Eastern Bluebird. B. The rufous coloring extends up the side of the neck on the Eastern Bluebird but not on the Western. C. A bluish cast can be seen on the belly of the Western Bluebird in many cases, being absent on the Eastern.

There are seven subspecies of Eastern Bluebird. The birds

Eastern Bluebird - *Sialia sialis sialis* December 30, 2018 Hillsboro, NM Photo by Bob Barnes

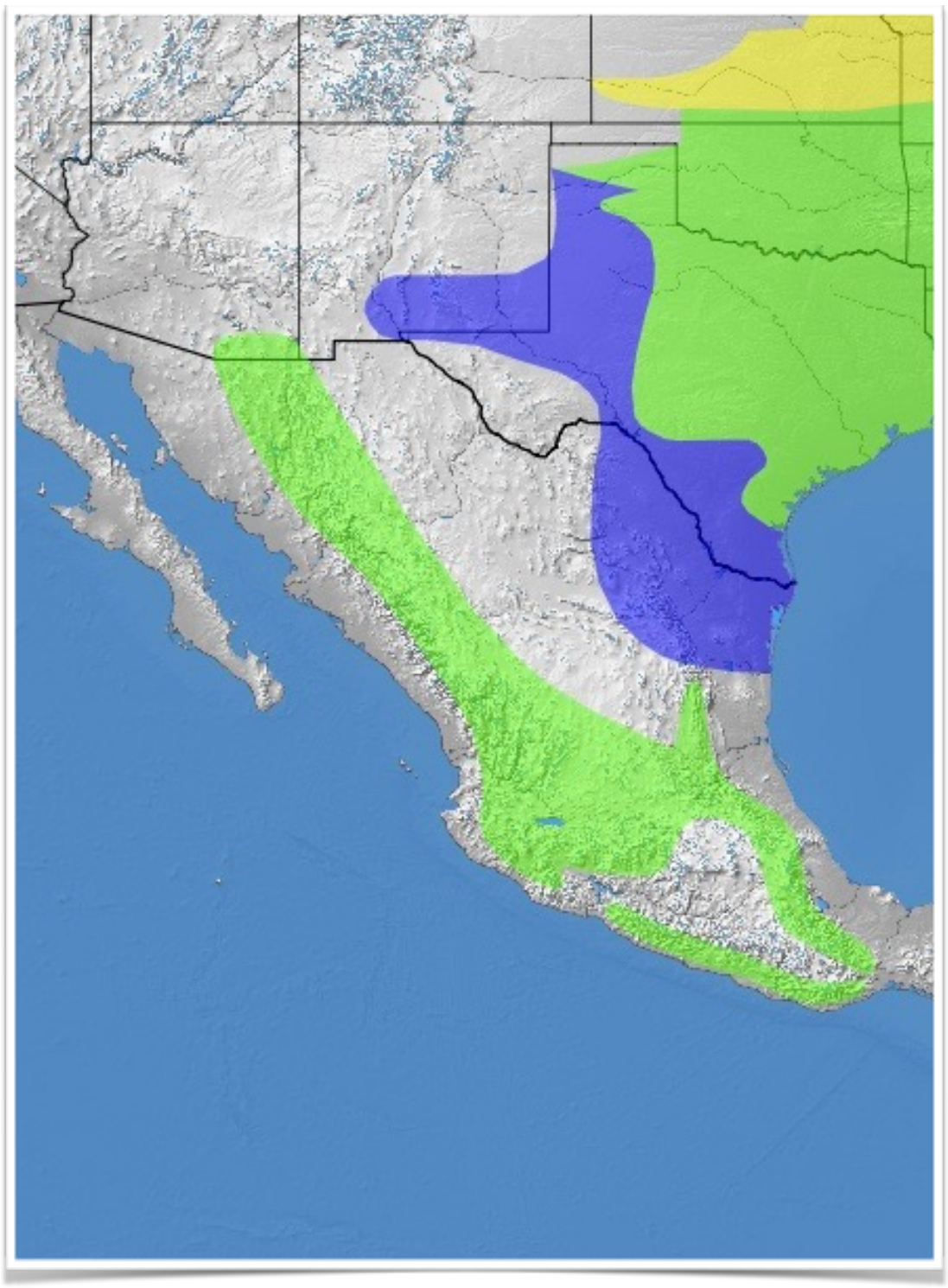


Western Bluebird - *Sialia mexicana* - Kingston, NM. Photo by Véronique De Jaegher



Eastern Bluebird - *Sialia sialis sialis*

shown here are most likely the nominate form, *Sialia sialis sialis*. That subspecies is typically found in the eastern United States. On the range map below its range is shown, in part, on the right side of the map. Note that during the nonbreeding period it extends its range west. The other possibility would be *S. s. fulva* which has a range which extends from southeastern Arizona south to the Isthmus of Tehuantepec. Its coloration is typically more "washed out" - contrast is diminished.



Green represents year round range while blue is nonbreeding range.
Map curtosy of rbrausse via Wikipedia

By appearance you might think that the Western and Eastern Bluebirds are closely related. They are thought to have diverged in the late Pliocene or about 2.5 mya.[1] It is the Mountain Bluebird which is most closely related to the Eastern Bluebird.[2]

Video of these species is available at the following links. (These videos have been taken over a period of several decades, so some are low resolution while others are HD. Links with larger text are to higher resolution video.)

- **Eastern Bluebird - Hillsboro, New Mexico**
- **Eastern Bluebird - Tennessee**
- **Mountain Bluebird - Oregon**
- **Mountain Bluebird - Wyoming**
- **Mountain Bluebird - Wyoming**
- **Mountain Bluebird - Oregon**
- **Western Bluebird - Oregon**
- **Western Bluebird - Oregon**
- **Western Bluebird at Percha Dam State Park, NM**

Photo galleries of these species are available as follows;

- **Mountain Bluebird - Nutt Grasslands (south Black Range)**
- **Western Bluebird - Near Hillsboro, NM**

1. **John Klicka and Robert M. Zink, "*The Importance of Recent Ice Ages in Speciation: A Failed Paradigm*", Science, Vol. 277, 12 September 1997, pp. 1166-1169.**

2. **John Klicka, Gary Voelker, Garth M. Spellman, "*A molecular phylogenetic analysis of the 'true thrushes'*", Molecular and Phylogenetics and Evolution 34 (2005) pp. 486-500**

Mountain Bluebird - Sialia currucoides - Photo by Bob Barnes
Nutt Grasslands - SE of the Black Range

The study by Klicka and Zink estimated the age (in millions of years) of divergence between several bird species found in the Black Range. Some of the findings are:

Eastern and Western Meadowlark	2.65 mya
Yellow-rumped Warbler (Myrtle and Audubon)	300,000 ya
Scarlet and Western Tanager.	3.2 mya
Indigo and Lazuli Bunting	3.3 mya
Northern Cardinal and Pyrrhuloxia	4.35 mya
Rose-breasted and Black-headed Grosbeak	2.2 mya
Baltimore and Bullock's Oriole	2.35 mya

Insect Eggs or Pollen Mystery

Ned and Gigi Batchelder

It was another productive year during the 2018 season (banded about 3500 hummers of 7 species), and we had an interesting challenge with noticing small round ball-like objects on the heads of some southern migrating hummingbirds in the mountain foothills. Many times we see the normal yellow and dusty smaller looking pollen grains on the bill and head/throat area of hummers when in hand, but there was something different about that this year. These objects on hummers heads just didn't look like pollen with the off-white color. Plant pollen grains under a microscope are usually odd shaped and all sizes, and can have random spikes, but these objects were much larger than normal pollen dust and roundish looking without using a microscope. We have seen these roundish off-white and ball-like objects on hummers' heads and throat area before when banding in southwestern Utah during 2012, and at higher elevation. We were curious then also about what the large-grain pollen was from. The color there was more of a light green, and we assumed it was the common western ponderosa pine pollen. While banding in mountain ponderosa pine habitat then, I had read that this pine tree species was known to have larger pollen grains. But after researching further and viewing the shape and size of that particular pollen grain magnified, it was not correct for what we were currently seeing. Our thoughts were that maybe these round objects could possibly be some sort of insect eggs? Hummers do glean eggs and tiny larvae from under leaves and on tree bark, and do eat small insects, spiders, etc., for essential protein. Nothing new about that, but we had read another comment, "and they just Love spiders' eggs".

Hummingbird with mysterious objects on forehead from the summer of 2018. Photo by the authors.

Then we began to think, well, a little outside of the box, to possibly learn something new about hummingbirds finding their protein food sources. Maybe in this banding area, the hummers were finding local spider sacs filled with hundreds of eggs, or possibly clusters of round moth eggs, under leaves or on tree bark, and some eggs stuck to their heads when they were doing so? The insect eggs would be a great protein source and easy opportunity for the tiny birds, and it was also the time when hungry young were in the nest. We do find ourselves thinking like hummingbirds at times.

With some luck maybe a few other insect researchers could shed some light on this with field experience, or possibly having observed some of these feeding events, and then maybe we could also get some clues of where to look for clusters of eggs? We were easily observing these roundish objects more closely with a hand magnifier that we use to record the percent of grooving on a young hummingbird's bill. We use the magnifier to confirm and document its age as under one year old during the banding process. A mature hummer or one over a year of age will have a bill more filled in, appearing much smoother with no grooving observed along the bill. In other words, it takes a year for the young hatched hummer's bill to fill in and look smooth.

Back to the mystery, we had begun to take samples of these round objects from the feathered heads of several hummers, both of adults and juveniles, for further study. This event seemed more frequent at one very busy remote foothills banding location in the mountains. Some of the roundish samples were put aside at home to see if they would possibly hatch into some sort of insect. We maintained mutiple feeders at this banding site and would see the eggs or pollen on the heads daily.

So it had to be something common in the area, and we began to be watchful of local plants, flowers, pollen from trees, and common insects. Gathering samples from hummers was easy with a turning motion of a fine-pointed paint brush on top of the head feathers and the round objects sticking easily to fine camel hairs of the paint brush. Then with a tap or two, the objects would fall into a proper waiting container. This process was quick and easy, and we had many samples. One sample of the objects was shared with some field entomologists doing thier annual studies and gatherings, and two of three researchers said they were insect eggs. The other said pollen, but not sure from what plant. Another source at a local university said pollen, not eggs, but admitted she was not a botanist. We sent a couple of emails asking for comments with explanations, stating that we were willing to send samples and photos if needed, to a retired spider expert and also a moth expert, but these had yielded no response.

When I talked with a local butterfly expert, and after he viewed the objects, he indicated that butterfly eggs are elongated, not roundish like these. He agreed with us that there are many species of moths, and many do lay roundish clumps of eggs, and I also had seen that information on the internet search.

So then, now it was time to get an opinion or comment from a botanaist, and we did that. After we sent photos and comments about what we were experiencing, he did have a short comment. We liked his experience, plus his website is an interesting one, including several short and educational field videos about trees, flowers, and insects on them, and including events during the different parts of the seasons. His kind response was that, actually, he was stumped with the objects. But he did send us to a family of plants as requested for pollen size and possible matching ideas. That proved a dead end as well, but we continued to check several common flowers and trees in the remote banding area, and even in town taking a closer look into the pollen world .

It was not known how long the objects were remaining on the migrating hummers heads, but they did seem somewhat tacky. Some hummers would have many of these round objects on top of the head while others just a few single-looking round balls. On some hummers, I could actually count individual objects while viewing with our hand magnifier of 10x power. The round egg-looking objects also seemed fresh, not like the smaller and dusty yellow pollen that sometimes gets caked on the bill or top of the head. But again, these whitish round objects had to be something common. One day a recaptured banded female hummer that we had collected from the day before, had more of the objects again the next day. Hmmmmm, not giving up.

When looking for a pollen size match, we would continue on with our morning banding and at times look more closely at tree and wildflower pollen when finished with our banding just before noon. We would also gather several other flower heads in town during our morning

Black Widow egg sac above and spider eggs below. Photographs by Janiece Ward.

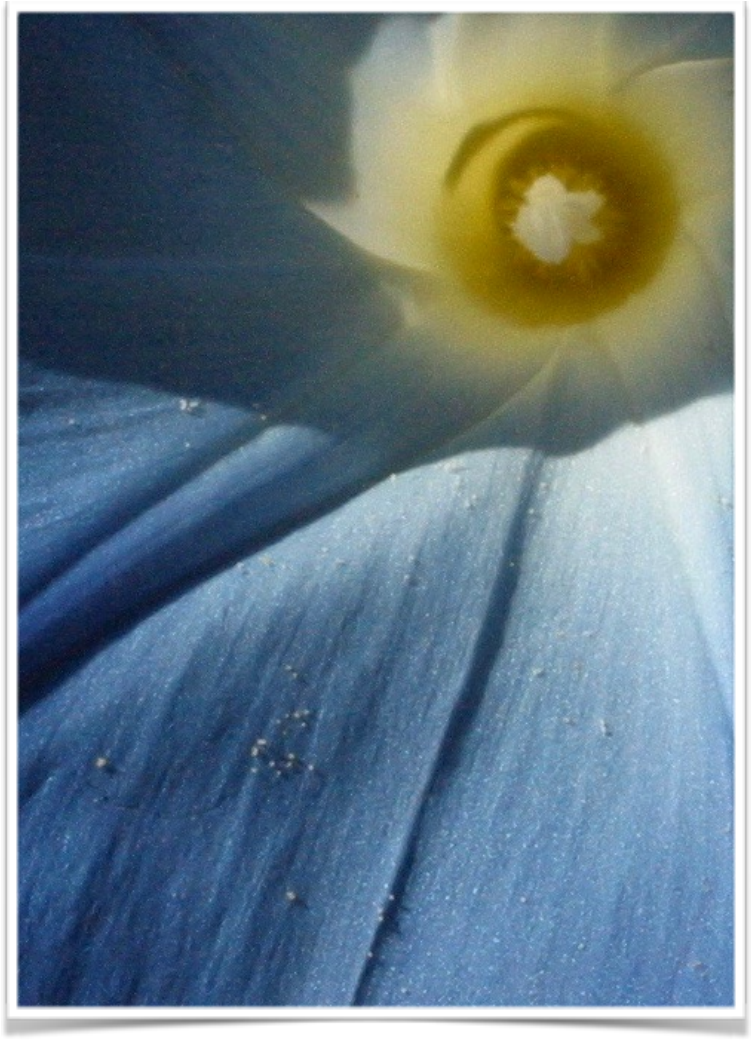
walks for closer inspections. Some of the common flowers taken to compare for a pollen grain match were desert willow, oleander, trumpet vine, yellow bells, and any other flowers or tree we noticed. The closer inspection later with dissecting these flowers when back home did not yield a match with the sampled objects from hummers heads.

When banding at a regular specific homeowner location, the hummingbird enthusiast also had many flower beds of colorful flowers, and when looking at her landscaped yard, we got a clue. She is an active member with the local master gardeners group and was puzzled with the hummingbird head object photos we shared. When finally looking up close at the dark blue morning glory flowers that volunteer every year between the other flowering plants, I could see deep into the flower. My eye headed for a closer look inside the funnel-shaped flower with my hand held magnifier. Inside this opened flower, there were about five tall stand-up stamens. At the extended end of the five or six stamens were small clusters of off-white round balls. It quickly became obvious to me that this was a large grained pollen for the flower size, and not the finer or usual dusty yellow flower pollen. I touched my finger to the end of the stamen head clusters and several tiny round plant pollen grains stuck to my finger. After holding the magnifier up to my finger, it looked like a match! I asked to have about four flowers for taking home for a closer look, she agreed, and the pollen matched at home with the hummer head samples. Mystery solved, it was a match.

Funny thing, when arriving at our banding station in the foothills about 9:00 in the mornings, we did notice a few of the attractive lighter blue flowers facing the morning sunshine, and fewer, smaller orange/red flowers known as morning glory flowers, or to some, bindweed. But when after finishing our banding sessions close to 12:00 noon in this area, and checking for plant pollen, these flowers were already closed up and less obvious, thus the name "morning glory". The flowers can close up during the day at times.

Well, we were outsmarted again by the hummingbirds pollinating a nearby flower, and obviously, we were not paying attention to nature……

A google search of "morning glory pollen grains", will show a higher magnification of this round-looking (to the human eye) larger flower pollen grain. One can also see with a higher zoomed in image that it actually does have a few short spikes. I guess that would be the idea for holding onto something such as a hummingbird feather for pollen transport, and also onto the end of my finger when touched. The magnified pollen grain reminds me of a floating naval explosive mine that ships and subs could run into.



Photograph by Rebecca Hallgarth

We're going to keep some samples just to make sure they don't hatch … they looked like eggs with first observations.

There was also a magnified image on the internet showing a bee species holding a single pollen grain with the legs/feet, and eating it like an apple. Probably tastes like chicken….

Some do not like the morning glory plant due to the fact it can take over, spreads too much, and is hard to control. But if allowed to grow in a desired area and to spread, it is a plant with a nice flower and can work well on a border fence, for example. It does a great job covering, has nice looking colored and nectar rich flowers, and hummers and bees like it. There are a variety of morning glory flower colors, and seeds are available.

When I shared this event with a fellow hummingbird bander

and researcher near New Orleans, she said that she had tested many flowers for the nectar/sugar or sucrose percent, and would check this flower after I asked. She had two morning glory plants at her home, and she was surprised the next morning to find her two flowers testing 21% and 32% sucrose, or being nectar rich. Morning glory was much like honeysuckle at 33%, and had a similar percent to trumpet vine, columbine, bee balm, and other flowers visited that are also nectar rich.

Recent Readings in Natural History

The following is a listing of works in Natural History (broadly defined) which are being read by the readers of this magazine. If you have recently read works which might be of interest to others, please let us know, and we will list them.

Geology

Timefulness: How Thinking Like a Geologist Can Help Save the World by Marcia Bjornerud - An exploration of geologic time and how being aware of those timescales can effect your perspective.

The Map That Changed the World: William Smith and the Birth of Modern Geology by Simon Winchester - How William Smith developed the first large-scale geologic map - by himself - and in doing so changed our perception of the world.

The Ends of the World: Volcanic Apocalypses, Lethal Oceans, and Our Quest to Understand Earth's Past Mass Extenctions by Peter Brannen. An explanation of how carbon, carbon dioxide, and oxygen have played a role in all of Earth's mass extenctions - preparing us for what we have now created.

Biology

The Tangled Tree: A Radical New History of Life by David Quammen - How the work of Carl Woese and others led to fundamental changes in our understanding of the domains of life and how they are related.

Mycophilia: Revelations From the Weird World of Mushrooms by Eugenia Bone - An exploration of fungal America.

A Naturalist at Large: The Best Essays of Bernd Heinrich by Bernd Heinrich - Some of the best essays by the famed naturalist.

The Hidden Life of Trees: What They Feel, How They Communicate - Discoveries from a Secret World by Peter Wohleben - A survey of the current knowledge about how plants interact with the rest of the world.

Physics

The Order of Time by Carlo Rovelli - A thorough exploration of our current understanding of time and how it evolved, from the Greeks, through Newton, to the edges of quantum mechanics.

Birds of the Black Range
by Bob Barnes

The number of bird species which reside in or pass through the Black Range is significant. Some proof of that is reflected on the Black Range Website (www.blackrange3.org) which has 607 images of 116 species photographed in the Black Range. That site also has links to a video portfolio, "Birds of New Mexico", which contains video of 83 species recorded in the Black Range.

In our yard in Hillsboro, we have seen 153 bird species. In this issue we finish our frequency report for bird species in our yard with data from 1 July through 30 September. (The first half of the year was printed in the January issue.)

These data have led me to some conclusions which I find interesting. First of all, and most significantly I think, I have been struck by the lack of a "typical" year. In eleven years of observation we have yet to see a year which replicates some previous year in terms of species seen or of the number of individuals seen.

The charts clearly indicate the regularity of the common resident yard birds: House Finch, House Sparrow, White-winged Dove, Eurasian Collared-Dove, etc. The charts also show the seasonal regularity of some species: Dark-eyed Junco, White-crowned Sparrow, etc. A review of charts for these species will indicate some years in which they are not shown as present in the yard. This is generally because there were no observations made during that week. It does not indicate that theses species were, in fact, not present during the week. In all likelihood, they were present.

The most lightly shaded entries on the charts indicate the one-offs. In some cases this is evidence of periodic but very irregular visits to the yard by the species. In other cases, these entries indicate a visit by a vagrant - a visit which is not likely to be repeated. The two cases can generally be distinguished by reviewing the yearly record for the species.

Some birds which are generally considered rare in this part of New Mexico have been seen with some frequency, and the data tell an interesting story. Take, for instance, Rose-breasted Grosbeak, Harris's Sparrow, and White-throated Sparrow. We regularly see Rose-breasted Grosbeak in passage, and White-throated Sparrow is dependable in winter. In both of these instances there are (generally) numbers of individuals. On the other hand, for a number of years we saw Harris's Sparrow in the yard, but only one, and then there were no more. This is most likely an example of a singular bird - a bird which in its wanderings far from home decided it liked to return to a particular yard on the eastern slopes of the Black Range, year after year.

Bird Sightings - 3rd Quarter - Hillsboro Yard List

During the third quarter of the calendar year (July to October) we have recorded bird species sightings in our yard in Hillsboro, New Mexico. The yard has both water and feeding stations and is located near a raparian zone along Percha Creek, on the east side of the Black Range. The house is bordered by a row of houses to the north and south. To the south there are two unpaved roads before an undeveloped hill and mesa. To the north there is a paved road, a row of homes and Percha Creek. Observations are shown here by week, and the number of yearly observations for each week varies between 8 & 9.

	Jun 25-Jul 1	Jul 2-8	Jul 9-15	Jul 16-22	Jul 23-29	Jul 30-Aug5	Aug 6-12	Aug 13-19	Aug 20-26	Aug 27-Sep2	Sep 3-9	Sep 10-16	Sep 17-23	Sep 24-30
No. Of Years	8	8	8	8	8	8	8	8	8	8	9	9	9	9
Blackbird, Brewer's														
Blackbird, Red-winged													11	
Blackbird, Yellow-headed	17		12	14	12				16		11			
Bluebird, Western														
Bunting, Indigo	11		11	11										
Bunting, Lazuli				11		11,12	16	11,15	11,16	11	11			
Bunting, Lark								11						
Bunting, Painted			11				12	14	16					
Cardinal, Northern	13,15,16,18	14,18	14,16,18	14,16	14,16,18	16,17,18	16,17,18	16,17,18	16,18	16,17,18	11,16		16	
Catbird, Gray														
Chat, Yellow-breasted				18		17						18		
Chickadee, Mountain														
Collared-Dove, Eurasian	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	9,11,12,13,14,15,16,17,18	9,11,12,13,14,15,16,17,18	9,11,12,13,14,15,16,17,18	9,11,12,13,14,15,16,17,18
Cowbird, Bronzed	12,13,14,16,17,18	12,13,14,15,16,17,18	12,13,14,16,17,18	12,13,14,16,18	13,14,16,18	14,18		12						
Cowbird, Brown-headed	11,12,13,14,16,18	11,12,13,14,16,17,18	11,12,13,14,15,17,18	11,12,13,14,16,17,18	11,12,13,14,15,16,17,18	11,12,17,18	11,12	11,16	11		12			
Crane, Sandhill														
Creeper, Brown														
Crossbill, Red														
Crow, American														
Dickcissel											11,12		11	11
Dove, Inca	11,13,14,15,16,17,18	11,12,13,14,16,17,18	11,12,13,16,17,18	11,12,13,14,16,17,18	11,13,14,17,18	11,12,14,15,16,17,18		11,12,13,15,18	11,12,13,14,15,17,18	11,12,15,17,18	9,11,12,13,15,17,18	9,11,12,13,17,18	9,11,12,13,14,16,18	9,11,12,13,17,18
Dove, Mourning	12,13,14,15,16,18	11,12,13,14,16,18	11,12,13,14,15,16	11,12,13,14,15	11,12,13,14,16	11,12,13,14	11,12,13	11,12,13,14,15	11,12,13	11,12,13,18	11,12,18	11,12,13	11,14	18
Dove, White-winged	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	9,11,12,13,14,15,16,17,18	9,11,12,13,14,15,16,17,18	9,11,12,13,14,15,16,17,18	9,11,12,13,14,15,16,17,18
Eagle, Golden														
Falcon, Peregrine												12		
Falcon, Prairie														
Finch, Cassin's														
Finch, House	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,17,18	11,12,13,14,15,16,17,18	9,11,12,13,14,15,17,18	9,11,12,13,14,17,18	9,11,12,13,14,15,16,17,18	9,11,12,13,14,17,18
Finch, Purple														
Flicker, Northern (Red-Shafted)														
Flycatcher, Ash-throated											17			
Flycatcher, Brown-crested	15	18	18											
Flycatcher, Vermillion														
Flycatcher, Willow											12		11	11
Goldfinch, American	17				11							12		
Goldfinch, Lawrence's														

	Jun 25-Jul 1	Jul 2-8	Jul 9-15	Jul 16-22	Jul 23-29	Jul 30-Aug5	Aug 6-12	Aug 13-19	Aug 20-26	Aug 27-Sep2	Sep 3-9	Sep 10-16	Sep 17-23	Sep 24-30
No. Of Years	8	8	8	8	8	8	8	8	8	8	9	9	9	9
Goldfinch, Lesser	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15 16,17,18	11,12,13,14,15,16,17,18	9,11,12,13,14,16,17,18	9,11,12,13,14,16,17,18	9,11,12,14,16,17,18	9,11,12,13,14,16,17,18
Goshawk, Northern														
Grackle, Common														
Grackle, Great-tailed														
Grosbeak, Black-headed	11,13,18	11,12,13,18	11,12,16,18	11,12,13,17	11,12,13,15,18	11,12,13,14,16	11,14,15	11,15,18	11,12	12,16,18	9,11,17	9,18	9,11,18	
Grosbeak, Blue	11,12,13,14,16,18	11,12,13,14,16,17,18	11,12,13,16	11,12,13,14,17,18	11,12,13,16,18	11,12,18	11,12,13,18	11,12,14	11,12,18	11,12,17,18	9,11,12	11,12	11,15	12
Grosbeak, Evening														
Grosbeak, Rose-breasted														
Ground-Dove, Common														
Ground-Dove, Ruddy														
Harrier, Northern								14						
Hawk, Cooper's		11		11					15	18			13,18	
Hawk, Red-tailed			16				14				12,15			16
Hawk, Sharp-shinned											9	15	9,11	11,14
Hawk, Swainson's					12									
Hawk, Zone-tailed				12	13					17				
Heron, Great Blue											11			
Hummingbird, Anna's					12				13	13				11,14
Hummingbird, Black-chinned	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	12,13,14,15,16,17,18	12,13,14,15,16,17,18	12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	12,13,14,15,16,18	11,12,13,14,15,16,17,18	9,11,12,13,14,15,16,17,18	9,11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	9,12,13,14,15,16,17,18
Hummingbird, Broad-billed													18	
Hummingbird, Broad-tailed				11,17	14,16,17,18	16,17,18	14,15,16,17,18	11,13,14,15,16,17,18	11,12,14,15,16,18	11,12,14,15,16,17,18	9,11,12,13,14,16,17,18	11,16,17,18	9,11,14,16,17	9,11,14,17
Hummingbird, Calliope					12							12		
Hummingbird, Costa's							15							
Hummingbird, Rivoli's														9
Hummingbird, Rufous	18	12,14,15,17	11,12,13,14,15,16,17	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	11,12,13,14,15,16,17,18	9,11,12,14,16,17,18	9,11,12,14,16,17,18	9,11,14,16,17,18	9,14,16,17
Jay, Pinyon												18		
Jay, Steller's														
Junco, Dark-eyed (GH)														
Junco, Dark-eyed (PS)														
Junco, Dark-eyed (O)														
Junco, Dark-eyed (SC)														
Junco, Dark-eyed (WW)														

There have been 12 years of observations in all. For various reasons, few weeks have observations for all 12 years. During that time, 153 bird species have been seen in the yard, as well as many subspecies. Seasonal variation is obvious, but other factors also contribute to an overall pattern which is not stable around the edges. Generally, the core species are dependable. (Note the darkest entries on the chart.) But many species seem to come and go with variations in temperature and moisture which are not necessarily seasonal. This area is subject to strong spring winds, for instance, and especially strong storms often bring in species more regular to the higher elevations in the Black Range and from western New Mexico and Arizona. Likewise, monsoonal storms coming up from Mexico also bring their share of vagrants. This locale is near the Rio Grande flyway. The Rio Grande is about 20 miles to the east.

The number of species seen during one day varies from the mid-teens to somewhat over 30. Four groups of Dark-eyed Juncos may be seen during a winter day, and two subspecies of White-crowned Sparrow are often seen together during passage. Other subspecies are also present.

Observations are generally made during the early morning and late evening, usually for an hour to 90 minutes in duration in the morning and for 30 minutes to an hour in the evening. Lest you be concerned that we are fanatical about the effort - this is our coffee time.

During the 12 years of observation we have seen several birds that are rare to the area: Ovenbird, Common Ground-Dove, Ruddy Ground-Dove, Eastern Kingbird, etc. We have also seen several species which are uncommon, with some regularity, like Rose-breasted Grosbeak. On the other hand, some species which are quite common in the surrounding area are rare in

	Jun 25-Jul 1	Jul 2-8	Jul 9-15	Jul 16-22	Jul 23-29	Jul 30-Aug5	Aug 6-12	Aug 13-19	Aug 20-26	Aug 27-Sep2	Sep 3-9	Sep 10-16	Sep 17-23	Sep 24-30
No. Of Years	8	8	8	8	8	8	8	8	8	8	9	9	9	9
Kestrel, American														
Killdeer														
Kingbird, Cassin's	13,14,15,16 17,18	11,13,14,15 ,16,18	12,13,15,16, 17,18	11,12,13,14 ,15,16,17,1 8	13,14,15,16, 17,18	12,14,15,16, 17,18	12,14,16,17, 18	14,15,17,18	14,15	17	15,17	15,17	15,16,17,18	13,14,15,16,17
Kingbird, Eastern														
Kingbird, Western	14,15,16,17, 18	14,15,16,17, 18	15,16,17,18	15,16,17,18	14,15,16,17, 18	14,16,17,18	16		15,18	17,18				
Kinglet, Ruby-crowned													13,16	11,18
Meadowlark, Eastern (Lilian's)														
Meadowlark, Western														
Mockingbird, Northern	12,15,18			15,17	15	15								
Nighthawk, Common	13			15	12,15,16	13								
Nuthatch, Red-breasted														
Nuthatch, White-breasted								17		17	17	12,17	11,17	11,12
Osprey											12			
Oriole, Baltimore														
Oriole, Bullock's	11,12,13,14, 15,16,18	11,12,13,14 ,15,16,18	11,12,13,14, 15,16,17	11,12,13,14 ,15,16,17,1 8	11,12,13,14, 15,16,17,18	11,12,13,15, 16,17,18	12,15,16,17	15,16,17,18	16	16,18	16	16	13	
Oriole, Hooded	11,12,13,14, 15,16,17,18	11,12,13,14 ,15,16,17,18	11,12,13,14, 15,16,17,18	11,12,13,14 ,15,16,17,1 8	11,12,13,14, 15,16,18	11,12,13,14, 15,16,17,18	12,13,14,15, 16,17,18	12,13,14,15, 16,17,18	12,13,14,15, 16,18	13,15,16,17,18	13,15,16,17	16,17		
Oriole, Scott's														
Ovenbird														
Owl, Great Horned														
Phainopepla	12,14,15,16 17,18	12,13,14,15 ,16,17,18	12,14,15,16, 17,18	15,16,17,18	15,16,17,18	12,14,15,16, 17,18	12,15,16	15,16	13,16	12,13,15,16	12	12,17	16	12,14,15,17,18
Phoebe, Black														
Phoebe, Say's	11,12,13,14, 15,16,17,18	11,12,13,14 ,15,16	12,13,15,16, 17	12,15,16	12,16	13		14		13,16	12,15	9,12,15	9,12,13,15	11,13,15
Pigeon, Band-tailed	11,13	11,12,13	12	11,12		11								
Pipit, American														9
Pyrrhuloxia		17	17	17	17									
Quail, Gambel's												15		
Raven, Chihuahuan												11	12	
Raven, Common	12,16	14		14,15	13,14,16	12,15,16,17, 18	15,16	11,15,17,18	15,16,18	14,17,18	12,14,15,16,17, 18	11,12,14,15,1 7	14,18	9,12,13,14,15, 16,18
Redstart, Painted														
Roadrunner, Greater														
Robin, American	11,13,14,16, 17,18	11,12,14,15 ,16,17,18	11,12,14,15, 16,17,18	15,16,17,18	11,15,17,18	15,17,18	12,15,16	16					15,16	15,18
Sapsucker, Red-naped														9,16
Sapsucker, Williamson's														
Scrub-Jay, Woodhouse's										12	12	12	9,12	9,12

	Jun 25-Jul 1	Jul 2-8	Jul 9-15	Jul 16-22	Jul 23-29	Jul 30-Aug5	Aug 6-12	Aug 13-19	Aug 20-26	Aug 27-Sep2	Sep 3-9	Sep 10-16	Sep 17-23	Sep 24-30
No. Of Years	8	8	8	8	8	8	8	8	8	8	9	9	9	9
Shrike, Loggerhead														
Siskin, Pine				12	12	12,14	12	17	17		9,17	9	9	9,17
Sparrow, Black-throated										12				
Sparrow, Brewer's										17	17	11	11	15
Sparrow, Cassin's														9
Sparrow, Chipping					11	11	11,12,16	11,12,17	17,18	17,18	9,15,16		11,16	9,11
Sparrow, Clay-colored											11,12	11	11	15
Sparrow, Fox														
Sparrow, Harris's														
Sparrow, House	11,12,13,14, 15,16,17,18	11,12,13,14 ,15,16,17,18	11,12,13,14, 15,16,17,18	11,12,13,14 ,15,16,17,1 8	11,12,13,14, 15,16,17,18	11,12,13,14, 15,16,17,18	11,12,13,14, 15,16,17,18	11,12,13,14, 15,16,17,18	11,12,13,14, 15,16,17,18	11,12,13,14, 15,16,17,18	9,11,12,13,14, 15,16,17,18	9,11,12,13,14, 15,16,17,18	9,11,12,13,14, 15,16,17,18	9,11,12,13,14, 15,16,17,18
Sparrow, Lark	13	11,13		11,13	11,14	11,12	11,12	11,12	11,12	11,12	11,12	11,12	11	11
Sparrow, Lincoln's											12,18	9,11,12,17	11,12	9,18
Sparrow, Savannah														
Sparrow, Song														9
Sparrow, Vesper											11			
Sparrow, White-crowned											12	12,17,18	9,12,17	9,11,12,18
Sparrow, White-throated	13													
Starling, European	12,14,18	11,12, 13,14	12,15,16	15,17			14	12			12		11,13	9,11,13
Swallow, Barn	11,12,13,14, 15,16,17,18	11,12,13,14 ,15,16,18	12,15,16,17, 18	11,12,15,16 ,17,18	12,15,16,17	12,15,16,17, 18	15	12,15,16,18	15,16,18	15,17				
Swallow, Cliff	13													
Swallow, Northern Rough-winged			16											
Swallow, Tree											16			18
Swallow, Violet-green			16		16			16	16		16	13	13,17	
Swift, White-throated			17									12		
Tanager, Summer	12,13,14,15 18	11,12,15,16 ,18	14,15,16,17	14,15,18	14,15	14,15,16	14,15,18	12,16,18	13	12,13,15,17,18	17,18	15,16,17	14,16,18	14,15,16
Tanager, Summer x Western														
Tanager, Western				15	11	15,17,18	17,18	16,17,18	17	17	15,16,17,18	15,16,17,18	9,15,17,18	9,15,17,18
Thrasher, Curve-billed	12,13,14,15 16,17,18	11,12,13,14 ,15,16,17,18	11,12,13,14, 15,16,17,18	11,12,13,14 ,15,16,17,1 8	11,12,13,14, 15,16,17,18	11,12,13,14, 15,16,17,18	11,12,13,14, 15,16,17,18	13,14,15,16, 17,18	13,14,15,16,17 ,18	11,13,15,16,17 ,18	16,17,18	16,17,18	9,11,14,15,16, 18	9,13,15,16,17, 18
Thrush, Hermit														
Thursh, Swainson's														
Titmouse, Bridled								18						
Titmouse, Juniper														
Towhee, Canyon	11,12,13,14, 15,16,17,18	12,13,14,15 ,16,18	13,15,16,17, 18	11,13,14,15 ,16,17,18	11,13,14,15, 16,17,18	11,12,13,14, 15,17,18	11,12,15,16, 17,18	11,13,14,,15 ,17,18	11,13,15,18	11,14,18	9,11,12,15,16, 18	9,11,15,18	9,13,18	13,18
Towhee, Green-tailed											12	17	11,17	9,18
Towhee, Spotted														
Turtle-Dove, Ringed														
Vireo, Cassin's									18					
Vireo, Plumbeous														

our yard. Greater Roadrunner, Scaled Quail, Black-throated Sparrow, and Gambel's Quail fall within this category.

I suspect that the list for Hillsboro is easily 175 and may reach 200. Recently some birders have begun a disciplined survey of the townsite, and at some point we will probably augment our yard list with information gleaned from those sources. How that works is still to be determined.

Many species are actually present in our yard more often than is indicated by our observational list. The front of the yard actually has a different set of birds than does the back, for instance, and if one area is not surveyed a particular set of birds is not recorded.

No. Of Years	8	8	8	8	8	8	8	8	8	8	9	9	9	9
Vireo, Warbling							14,18	15		18	13	12,18		9
Vulture, Turkey	11,12,13,14, 15,16,17,18	11,12,13,14 ,15,16,17,18	11,12,13,14, 15,16,17,18	11,13,14,15 ,16,17,18	12,13,14,15, 16,17,18	11,12,13,14, 15,16,17,18	11,13,14,15, 16,17,18	12,13,14,15, 16,17,18	11,13,14,15, 16,17,18	11,12,13,14, 15,16,17,18	9,11,12,13,14, 15,16,17,18	9,11,12,13,14, 15,16,17,18	9,11,12,13,14, 15,16,17,18	9,11,13,14, 15,16,17,18
Warbler, Black-throated Green														
Warbler, MacGillivray's								18	15	15,18	9,18	12	17	
Warbler, Nashville													11	
Warbler, Orange-crowned											12,18	9,12	11	18
Warbler, Virginia's							12	12	12		12	12		
Warbler, Wilson's									12,17	13,15,17,18	12,17,18	12,14,16,18	11,13,16,17, 18	18
Warbler, Yellow								15		17	9,18	11,15		
Warbler, Yellow-rumped (Aud.)													15	16,18
Warbler, Yellow-rumped (Myrtle)														
Waxwing, Cedar											17			
Woodpecker, Acorn	11													
Woodpecker, Downy														
Woodpecker, Hairy	17	16,17	16,17,18	16	16,17	16,17	16,17	16,17	16	16,17	16,17	16,17	16,17	17
Woodpecker, Ladder-backed	11,12,13,14, 15,16,17,18	11,12,13,14 ,15,16,17,18	11,12,13,14, 15,16,17,18	11,13,15,16 ,17,18	11,12,14,15, 16,17,18	14,15,16,17, 18	11,14,15,16, 17,18	13,14,15,16, 17,18	13,14,15,16, 17,18	13,15,16,17,18	13,14,15,16,17, 18	13,14,15,16, 17,18	12,13,14,15, 16,17,18	13,14,15,16, 17,18
Wood-Pewee, Western										18	12	11,12	12	17
Wren, Bewick's	11,12,13,14, 15,16,18	11,12,13,14 ,15,16,18	13,15,16,18	11,13,14,15 ,16,18	11,14,15,16, 18	15	14,16,18	13,15,16,18	13,15,16	18	14,15,17,18	11,15,18	14,16,18	15,18
Wren, Canyon						15	12,18		14,18		15			16
Wren, (Northern) House								15					11	
Wren, Marsh														12
Yellowthroat, Common													11	

Seen during this week in 80% or more of the years

Seen during this week in 50-79% of the years

Seen during this week in 20-49% of the years

Seen during this week in less than 20% of the years

July 27-28, 2019
Hummingbird Festival
Mimbres Culture Heritage Site
See the July Issue of the Mimbres Messenger for details.

Common Black Hawk, *Buteogallus anthracinus*. A trail-cam shot from the A-Spear Ranch, furnished by J. R. Absher. The nesting black hawks patrol this section of the stream for crayfish.

White-eyed Vireo

by David Cleary

This White-eyed Vireo was found along Tierra Blanca Road, aka Gila NF 522, around 7AM on June 1, 2019. It was using the distinct riparian patch around 3.2 miles in from NM27. This species is considered rare in the west, as well as the northern tier of US states and all of Canada.

So, why New Mexico on June 1. The very latest migrant white-eyes reach their breeding grounds by early May. This fact makes for our visitor to be an unlikely migrant. On the other hand, the species begins nesting in some breeding areas by early April. The entire breeding process from egg laying to abandoning fully fledged juveniles takes about 5 - 6 weeks. That would leave plenty of time for an adult male to become a post-breeding wanderer and make its way to Sierra County. Not that the bird is going to stay, because all the singing in the world is not going to attract a mate. This bird, like other species who get bit by wanderlust, tends to show up in a lot of different unusual places throughout the summer.

The unique white eyes set off by yellow "spectacles" make this species a must-see for birdwatchers. But, it is a skulker. The bird can stay concealed in heavy cover while singing up a storm for over an hour without giving you a decent look. If you have pursued good views of a Yellow-breasted Chat you know the drill. I heard this vireo at 7AM, traded my camera in for a recording device around 7:25, picked up the camera again and finally got a couple of so-so photos around 7:45.

Tierra Blanca Road leaves NM27 about 8 1/2 miles south of Hillsboro. The first 6 miles are a mix of BLM land, private holdings, and then a cattle guard about 6 miles on puts you in the Gila NF. The graded road ends at the Tierra Blanca Ranch, but Gila 522 turns into a primitive road that dead ends several miles up and back near NM152. I bird the 7 mile graded stretch by parking and walking along the road so as to not intrude on private property. In truth, other than in deer season, you pretty much have the easily accessible portion of the road to yourself. A variety of songbirds use the habitat in all seasons. Right now there are 4 active Northern Cardinal territories, and a slow crawl along the road will put your Blue Grosbeak numbers into double digits. Five species of owls use the area with great horned, western-screech, barn and elf breeding along with long-eared in the winter.

Worth a trip? Indeed.

White-eyed Vireo, *Vireo griseus*, photographed along the Tierra Blanca Road - east slope of the Black Range - on June 1 of this year by Dave Cleary. Dave has furnished the Macaulay Library with audio of this bird. You can listen to it at this link.

***Rocky Mountain Larkspur, Delphinium scopulorum*, Railroad Canyon, Black Range**

Railroad Canyon Campground to Holdon Prong Saddle

by Rebecca Hallgarth & Bob Barnes

This trail starts at the Railroad Canyon Campground and climbs northward to Holden Prong Saddle. The round-trip distance is 8.8 miles with a gross elevation gain of about 2,000 feet (net 1,703'). This trail is good for wildflowers, butterflies, the occasional mammal (Rebecca has seen cougar at "2"), and insects (all in the appropriate season). Some examples of what you can expect to see along this trail follow. Numbering is keyed to the map at the end of this article.

1. Gentiana affinis (Rocky Mountain Gentian) - September 19 - Photograph by Rebecca Hallgarth

2. Fendlera rupicola Gray var. writhtii, Fendlerbush, June 10. Near the site where cougar has been seen.

3. Mecaphesa sp., Crab Spider. A small (smaller than a U.S. 1-cent piece) white spider, June 10.

4. Lonicera arizonica, Arizona Honeysuckle, June 10.

5. Maianthemum racemosum, False Solomon's Seal, June 10. The Honeysuckle and two species of Maianthemum were found within a few feet of each other.

6. On one summer walk we encountered a Striped Skunk also using the trail. It wandered off to a snag heap before the camera could be utilized.

7. Conopholis aplina var. mexicana, Alpine Cancer-Root, May 9, at the junction with the East Railroad Canyon "Trail".

8. Limenitis weidemeyerii, Weidemeyer's Admiral, June 10. There are many butterfly species along the stream, including Western Tiger Swallowtail.

9. Myioborus pictus, Painted Redstart, is easy to find in August, as is Red-faced Warbler.

10. Sciurus aberti aberti, Abert's Squirrel, July

11. Scrophularia macrantha, New Mexico Figwort, July

12. Hystricia abrupta, Tachinid Fly, late July

Railroad Canyon Campground to Holden Prong Saddle