



B O S Q U E



Photo: Wikimedia commons



Woodhouse Toad *Bufo Woodhousii*

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T R A C K S



Records show we have just endured the hottest summer in over 100 years. The river went dry early and stayed dry through much of the summer. The cottonwoods became visibly stressed and began to drop their leaves months earlier than normal. As we witness the bosque change before our eyes, we can trust that nature will adapt to the new climate and, while it may look different than when we have grown accustomed to, we can stay grateful that the Nature Center will always be a safe haven for animals and the citizen of Albuquerque.

The upcoming season will be one of great changes for the Nature Center. In November, operations will temporally be relocated to the Education Building to accommodate extensive renovations of our beloved Visitor Center. The renovations are currently scheduled to be completed in the Spring of 2027. Visitor Services will be available in the Education Building through the project.

I want to take a moment to welcome new permanent Education Ranger, Jenny Parsons and new Seasonal Ranger, Mackenzie Hall, to the team. They both have been doing great things so far in helping with our education programs. Jenny comes from the Friends of Valle Del Oro National Wildlife Refuge where she served as their Education Coordinator, and Mackenzie most recently worked as an environmental educator with Hawks Aloft nonprofit. Please give them a warm welcome when you see them at the park.

Patti Plagge for Greta Roskom, 2025-2026 President of the Friends

THANK YOU JEAN MASON!!

This Fall/Winter edition of our *Bosque Tracks* newsletter will be the last one published by Jean Mason. Jean has been providing the Friends with the quarterly newsletter for many years. We very much appreciate the beautiful layout, the captivating articles on wildlife and relevant issues, book reviews, events at the Nature Center, the colorful photos, and so much more. Who hasn't tried their skill at her word search puzzle?! Jean put her heart and soul into every issue and it is reflected in the professional quality of her efforts. We all want to thank Jean for her devotion to the Friends and to the *Bosque Tracks*. Job well done!



Bosque Tracks

Published quarterly by the Friends of the Rio Grande Nature Center State Park



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Nature Center hours: Open daily
Gates 8-4, Building 9-4
Closed

Thanksgiving, Christmas,
and New Year's Day

Nature Shop 10-2 (M-Th),
10-4 (F-Su)

Masks encouraged inside,
social distancing outside

Nature Center Staff

Superintendent Levi Dean
Interpretive Ranger Jenny Parsons
Interpretive Ranger Olivia Martinez
Seasonal Ranger Mackenzie Hall
Park Technician Mark Leyba
Park Technician Shannon Campbell
Entrance for Friends' members and those
with displayed applicable annual permit:
Free. Non-member day use: \$5/vehicle,
\$15/bus, \$50 bus.

Cover: A wetland seeker from Montana to Mexico, the Woodhouse toad is also a Nature Center homebody, burrowing in shallow soil near pools. Adapted to drought conditions, he's provided with a "seat patch" that acts as a rear end blotter, absorbing ground water. His warty skin emits a sticky poison, nasty to predators but not dangerous to humans. Summer rains bring breeding and sheeplike "wa-wa" from males.

FALL FESTIVAL

SUNDAY, SEPTEMBER 20, 8:30 A.M.-2:30 P.M.



Herpetology is the hot topic among presentations this year, featuring talks on freshwater turtles at 9, bosque snakes at 12:30, and northern leopard frogs and other amphibians at 2 p.m. BioBlitz offers a bird walk, bug walk for kids, plant walk for adults, a tour of Mariposaville, and a wildlife track and sign tour. Be sure to visit the Discovery Pond, Ribbit Refuges for Woodland toads, and the kids' activity table. You'll find a solar telescope set up for viewing, too.

For more festival details, check rgnc.org

Stories Under the Cottonwood

Children ages 5-10 with their adult companion join ECO Storyteller and Master Naturalist Dianne Rossback for a nature story in the Outdoor Classroom near the Native Plants Garden. Join her there on the third Saturday of every month at 10:30 a.m. Here's the upcoming schedule of topics with some key tales:

Sept. 19: Travelling Tales: *Lon PoPo, a Wolf Tale*

Oct. 17: Who Cooks for You? Plus, a little more

Nov. 21: Thanksgiving in the Bosque: *Hummingbird and Puma*

Dec. 19: Stories of Other Animals: The World's Strangest Creature

Guided Walks

Search for birds or amble down bosque trails to the river.

Guided bird walks every Saturday and Sunday at 8:30 a.m.

Guided nature walks the second Saturday of the month at 10:30 a.m.

No registration required!

Poetry in the Park

Join us for a poetry and creative writing series where nature becomes both muse and classroom.

Through guided exercises, and reflection, participants will original work inspired by the landscapes and stories of the Rio Grande.



Upcoming poetry dates, Sundays at 10:30 a.m.:

October 18

November 15

December 6

Call 344-7240 to RSVP



Photo: Olivia Martinez

New volunteers with ranger instructors, summer 2026:

From left, volunteer David Smith, NM State Park ranger Gianna Farrell, volunteer Barbara Kelly, FRGNC coordinator Arlene Buchholz, and volunteer Bonnie Bassan. Not pictured: volunteer Tariro Mutimusakwa.



The fear of fowl

By Jenna McCullough

Biology Department, UNM



You might be surprised to learn that many people are scared of birds. Perhaps it's knowing that birds are the remaining dinosaurs on our planet. Or it's Alfred Hitchcock's famous movie that inspired people to think that birds might attack them at any time, unprovoked. Or perhaps some had been attacked by a bird as children. To an ornithologist, however, birds represent a source of curiosity and beauty, rather than fear.

That's not to say that birds can't be dangerous in some instances. Recently, I've been contemplating a look into what species could be considered the most dangerous in terms of human health.

Ask an ornithologist (or zookeeper) what the most dangerous bird is and they'll probably tell you it's either a cassowary or an ostrich. Though ostriches are very large flightless birds, there are few records of humans being attacked by them. Cassowaries, however, have a ferocious reputation. Standing upwards of 5 1/2 ft. tall, cassowaries are massive,



A cassowary's clawed foot

flightless birds that have large clawed feet capable of kicking tourists that get too close.

In their native New Guinea and

Northeastern Australian ranges, the three species of cassowary are generally shy and reclusive. Yet, as humans encroach into their natural habitats and (*heaven forbid!*) feed them, they become more aggressive. One news report estimated that there are nearly 200 cassowary attacks in Australia each year, all due to the birds habituated to being fed. Though there are many reports of tourists being kicked, headbutted, or chased down by the birds, there are only two reports of a cassowary-inflicted death: one in 1926 from a cassowary defending itself against a hunter and severing a vein, and in 2019, when a Florida man fell into his pet cassowary's enclosure and the bird killed him.

Danger doesn't always need to be circumscribed as direct bird attacks. Though it is no fault of their own, birds are often hit by planes or, worse yet, sucked into a passenger jet's engines, causing the plane to crash. And it happens more than you'd think: in 2018, there were more than 14 thousand bird-strikes by planes that year alone!

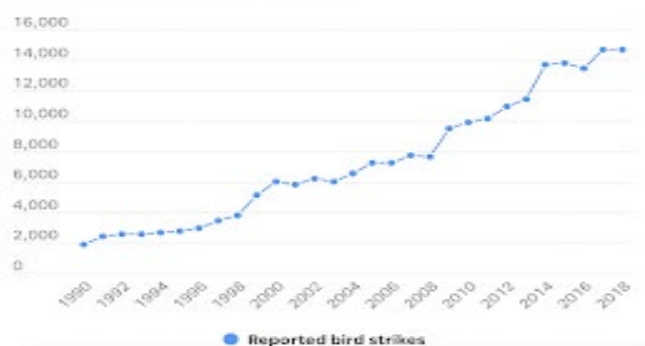
You may remember in January 2009, when a flock of Canada geese were sucked into a commercial jet's engines, causing them to fail. This resulted in Captain Sullenberger



making a historic landing on the Hudson River. Though there were only a handful of serious injuries (and no deaths!) in this case, other aircraft have been less lucky. For example, the same year of the "Miracle on the Hudson", a red-tailed hawk was hit by a helicopter destined for a Shell drilling station in the Gulf of Mexico. It crashed and eight of the nine passengers died. The most serious bird-strike crash was in 1960, when a turbo-prop airliner flew into a large flock of starlings as it was taking off, causing all four engines to fail and subsequently crash into Boston Harbor, killing 62 of 72 passengers.

Overall, the US Federal Aviation Administration attributes nearly 300 human deaths globally due to bird-strikes of passenger and military aircraft during the last two decades. The USDA highlights red-tailed hawks, Canada geese, and turkey vultures as among the birds with the highest risk and damage to be hit in the United States. Indeed, the Smithsonian even has a

Reported bird strikes, 1990-2018



The increase of birds hit by planes in the last 30 years is attributed to quieter engines and changing bird migratory routes. Graph from USA Today.

dedicated team to identify birds based on remains from aircraft strikes.

However, one could consider disease transmission as an indirect aspect of danger. Like many animals, birds are also vectors of zoonotic diseases. To be clear, the most dangerous animal title definitely belongs to the mosquito which causes hundreds of thousands of people to die from malaria and a handful of different viruses each year. For my own musings on the most dangerous bird, we have to consider birds as disease reservoirs.

Take, for example, the influenza strains that have jumped from infecting primarily birds to also infecting humans (i.e., “bird flu”). Some of these strains cause more disease than others. Though it’s difficult to assess human mortality of all strains of bird flu over the past 50 years, let’s focus on just one, reported by WHO in 2022: the highly pathogenic avian influenza H5N1 virus [HPAI A(H5N1)], which is carried by wild birds and can spread to poultry. The virus has caused 863 cases and 455 deaths in 18 countries since 2003. An outbreak of the bird flu virus has also been reported recently in commercial and backyard poultry farms.

Another disease indirectly related to the birds themselves is West Nile Virus. To infect humans, a mosquito needs to bite an infected bird and then bite a human. Between 1999 and 2020, there have been >52,000 cases and 2,456 deaths in the United States of this mosquito-borne pathogen. Unfortunately, over 300 bird species have been identified as having been infected with West Nile Virus and many bird species, primarily waterfowl, have been identified as reservoirs of pathogenic avian Influenza, which hampers answering my question of the most dangerous bird.

However, I think I have my answer to my question of the “World’s Most Dangerous Bird.” There is one species that is clearly a danger to humans in many ways — the chicken.

In terms of *direct* danger, chickens have a short rap sheet: the one death caused by a chicken was in 2019 when an Australian woman died after being pecked by a rooster while collecting eggs in her backyard. It severed a vein in her foot and she bled out before she could get medical attention.

But in terms of *indirect* danger, chickens pose a major reservoir of disease and contribute to worldwide climate change.



In early 2022, an American widgeon was identified as the first record of HPAI H5N1 virus in the USA since 2016.



The US commercial chicken population is huge: nine billion chickens are processed every year for consumption.

Packed into massive commercial farms, high population

densities of millions of chickens contribute to rapid disease transmission that can impact the public.

Large poultry farms have been connected with salmonellosis infections in humans that eat infected meat. Indeed, the CDC estimates that about one

million people get sick each year from eating contaminated poultry/products. Even backyard poultry enthusiasts are

at risk of contracting salmonellosis from their chickens. Even more insidious are the outbreaks of avian influenza that stem from poultry farms. This threat from chickens doesn’t even cover how many workers are injured at poultry packing plants, which could be the most indirect aspect of danger from a bird.

But overall, the most indirect danger from chickens would be greenhouse gas emissions from commercial farms and how this contributes to worsening climate change.

In summary, more people have died from choking on chicken bones than cassowary attacks. So, let me be clear: cassowaries are not the world’s most dangerous bird. It’s chickens.



The Story of Birds:



A New History from Their Dinosaur Origins to the Present

By Steve Brusatte

I have been a birder for more than thirty years, so I thought I knew something about them, but Steve Brusatte's *The Story of Birds: A New History from Their Dinosaur Origins to the Present* revealed wonder after wonder. Did you know, for instance, that many, if not most, dinosaurs had feathers? That it's possible to know the color of dinosaur feathers? Or that birds are not just descended from dinosaurs, they **are** dinosaurs, members of the same suborder that includes *Tyrannosaurus rex*?

Brusatte, a paleontologist rather than an ornithologist, brings a fresh perspective to our understanding of the evolution of birds. Bestselling author of *The Rise and Fall of Dinosaurs*, he has participated in fossil digs around the world, including an annual pilgrimage to New Mexico with his Scottish students to hunt for fossils in the Bisti Badlands with Tom Williamson, curator of paleontology at the NM Museum of Natural History (I took his dinosaur course at CNM about a dozen years ago).

The oldest and most famous bird fossil to date, the 150-million-year-old *Archaeopteryx*, was discovered in 1861, two years after Darwin published *On the Origin of Species*. Darwin's ardent advocate, Thomas Henry Huxley, persuasively argued that this fossil with its reptile-like tail and claws and bird-like feathers proved Darwin's theory of evolution. However, as more and more huge dinosaur fossils were unearthed, the prevailing consensus insisted that dinosaurs were slow moving, dim witted, and not the precursor of birds. As a result, scientists no longer could see what is now obvious — that *Archaeopteryx* is as much dinosaur as bird, and Huxley's theory fell out of favor for a hundred years. Then, in the 1960s, a Yale professor, John Ostrom, discovered a new species of dinosaur, *Deinonychus*, with long arms, a nimble build, and a light body; that is, it had bird-like characteristics. He argued that birds did, in fact, evolve from dinosaurs. His many detractors refused to accept that birds evolved from dinosaurs until someone found a dinosaur with feathers, which is precisely what happened in 1998. Since then, many feathered dinosaurs have been discovered.

Birds are classified as theropods, bipedal dinosaurs that include not only T-rex and *Giganotosaurus* but also dog-sized velociraptors (made famous, and enlarged, in the *Jurassic Park* movies), as well as *Archaeopteryx* and *Deinonychus*. As T-rexes

got larger, velociraptors and other *coelurosauria* (the group birds belong to) got smaller and lighter.

Brusatte convincingly argues that the origin of feathers had nothing to do with flight. They probably originated for insulation, then for sexual display, features that still characterize birds today. To enhance display, the arms of some dinosaurs got longer (but obviously not T-rex). Fortuitously, the quills of feathers are made from corneous beta-protein, or CBP, that is far stronger than fingernail keratin and capable of withstanding the rigors of flight and wind. Tweaks to body weight and wing size enabled some coelurosaurs to propel forward after prey or away from predators. As feathers became more specialized, they became capable of gliding and eventually of flying. Along the way, birds reduced the size their tails, got rid of claws, developed lighter bones filled with air sacs, and enlarged the keel of their breastbone for attachment of the two flight muscles: one for powering the downward stroke (think chicken breast)

and the other for the upward stroke (chicken tender). Thus, flight developed over a long evolutionary journey. Things needed for flight did not originate for flight; they were later repurposed. Flight happened because it could.

It is likely that flight evolved in a dozen or more coelurosaurian species, but only one of these survived when an asteroid the size of Mount Everest

abruptly ended the Cretaceous Period 66 million years ago, wiping out 75 percent of all species, including all non-bird dinosaurs. In this newly vacated world, birds thrived, eventually evolving into more than 10,000 species alive today. Birds dominated for tens of millions of years. Some grew larger and lost the power of flight in exchange for physical prowess. Six-foot-tall penguins were the top predator in the southern oceans. Land birds up to twenty feet tall, huge relatives of ostriches, emus, and rheas, filled the niche vacated by large dinosaurs.

Other birds continued to get smaller, developing extraordinarily flexible beaks that took the place of hands. They also grew smarter, with greater brain-to-body ratio than many mammals and even a few primates. Brusatte argues that during Paleocene and Eocene epochs 66-34 MYA when birds dominated, they were actually smarter than mammals.



Artist's rendering of *Deinonychus* showing sickle claws covered with feathers. *Creative Beast Studio*

Continued on p. 7



THE VARIED LIFE OF A VOLUNTEER

BY

PATTI PLAGGE

The Rio Grande Nature Center has been my volunteering life for over 14 years. What began as a pre-retirement plan for keeping active has evolved into what I have come to love about being a part of the community. The Native Plant Garden was my first stop as a volunteer at the Nature Center. When my volunteer training class was coming to a close and the “job fair” was opened for sign-ups, I literally ran to the table to be the first to sign up. I wanted to be outdoors and get my hands dirty while enjoying the quietness of nature and the sweetness of bird sounds all at the same time. I have never left. I still look forward to my garden days.

Volunteering has evolved to more than just working in the garden. I have made friends that have become my garden family. Those days in the garden expanded my shyness into a love of sharing the garden with visitors of all ages and backgrounds. Yes, I am by nature, an introvert but this environment opened up my world. It is very rewarding to show a young child the lizard running up the tree, or the dragonfly sculpture hiding among the plants. And as a wannabe birder, I can show a visitor the Cooper’s hawk swooping among the trees, or the difference between a mourning dove and a white-winged dove, or when one might see a hummingbird. The visitors who wander through the garden are as varied as the plants and birds; people come from the local community and from all over the world. If I am working in the garden, I can offer a friendly wave and hello that makes them feel welcome, and gives me a very happy feeling of making a small difference in their day.

My volunteer career at the Nature Center, however, didn’t keep me in the garden. I was asked to participate on the Board of Directors to give the Native Plant Garden a voice. Again, that experience expanded my involvement with the Nature Center as I became aware of many more activities at the park.

There was a need for some accountability in the Nature Shop, keeping track of inventory and expenditures along with a need for some database management of memberships. The board seemed a good fit for me; I expanded my volunteering there and my world kept growing into being more involved with the finances and office work, eventually leading up to being President of the Board. I’m now the current Treasurer. Who would have thought that’s where I would land?

Other times I have helped with/coordinated the Summer Wings festival, did setup and takedown of festival tents, tables

and chairs, assisted with parking fees, and wherever I felt there was a need for a volunteer. I am always a willing volunteer. All of these experiences helped me grow as a volunteer and more importantly, as a person. I have made many friends and acquaintances over the years that I never would have made if not for the RGNC.

Being a volunteer at the Nature Center for me, and I believe for most of our volunteers, provides a sense of giving back to the community and in doing so, receiving so much more in return. Whatever one chooses to do as a volunteer at the Nature Center, it all makes a truly valuable contribution to oneself and to our community.

My experience as a volunteer at the Nature Center may be similar to many of our volunteers. Some find their happy place in the gardens or outside work, others love interacting with visitors at the Welcome Desk. And others volunteer when and where they are needed. Finding the right place at the right time makes being a volunteer as varied as each individual. Thank you RGNC!

From p. 6

Thanks to Steve Brusatte, I will never look at birds in the same way again. Now when I see birds, I see dinosaurs: real, live survivors of 150,00 million years of evolution, whose relatives once included velociraptors and T-rexes. And I will never see dinosaurs the same way again, knowing that many had colorful feathers revealed by cell shapes detected via electron microscopes. When I now imagine a Jurassic or Cretaceous riverside setting, I see colorful, lively dinosaurs, included birds, a scene far more exciting than the museum dioramas of my childhood.

Prairie Dogs: Town Criers

--Jean Mason

The first light of a summer morning slides across a wide stretch of grassland in northern New Mexico, cooled after a rare evening rain. Breezes hustle leftover clouds into a scattered mist, gone in seconds.

Below, stands of blue grama, tobosa, western wheat, and dropseed range into the distance, dewed and revved with new life across a speaking landscape.

Prominent at first sight are rimmed mounds topped with volcano points, some three feet tall and moated with dirt piles. Shorter hills then appear, followed by banked, flat depressions. Moving in closer, multiple entrance holes define all these as hallmarks of deep-burrow, carefully constructed homesites, some with air pocket tunnels - nature's air conditioning. Doing double duty, these chambers were also channels for last night's rain, sending water, minerals, and nutrients seeping into the surrounding mat of grass roots, feeding the land.

This town belongs to members of a black-tailed prairie family.

Members of the 1804 Lewis and Clark Expedition had a good look at the townfolk:

"The Village of those little dogs is under the ground a considerable distance. We dig under 6 feet thro rich hard clay without getting to their lodges. Some of their wholes we put in 5 barrels of water without driving them out. Ther mouth resemble the rabbit, head longer, legs short & toe nails long. Ther tail like a ground Squirrel which they Shake and make chattering noise. Ther eyes like a dog, their colour Gray and Skin contains Soft fur."

Rodent Rulers

Members of the genus *Cynomys*, part of a ground squirrel group in the Family *Sciuridae*, prairie dogs are grassland and high desert specialists that have modified and adapted themselves into five species over time, with fossils dating back 1.8 million years to the mid-Pleistocene Epoch. Formerly called barking squirrels, their towns stretch from southern Canada to the U.S. west of the Mississippi and south to Mexico's upper states, marking the border of the Great Plains. In the Southwest, New Mexico, Colorado, and Arizona, are home to *Cynomys gunnisoni* or Gunnison's prairie dog, the black-tailed variety. Deep burrows provide relief and refuge for all *Cynomys* species, allowing them to ride out 100° summer days and -35° winter nights. Some of the one-foot three-pound diggers will enjoy a ten-year lifespan.

Just as the central stone in the apex of a great arch anchors the entire structure fixing it to the ground, so mound-building prairie dogs are a keystone species on the land. Their maze of burrows improves soil, hard-packed by cattle grazers, and encourages plant development attracting flowers and their bee and butterfly pollinators. Burrows also serve as hibernation sites for mice, rabbits, and squirrels, for snakes, plovers and burrowing owls, and for many insects. Grazing bison, pronghorn, and mule deer move into prairie dog land, munching on the humus-enriched grasses which the burrowers provide.

Where some give, others take. Prairie dogs are prey for coyotes, wolves, hawks, eagles, foxes, and badgers: 75% of eagle chicks are fed prairie dogs. The severely endangered black-footed ferret lives among them and feeds on nothing else.



Photo: Wikimedia commons

On The Town

Suited to their social temperament, prairie dogs are town planners for a community of 20 separate families that build burrows, bordered by rocks or trees, six to eight feet underground across some 200-plus acres of grassland habitat. Chosen sites are firm, dry plains with short, fine, good-tasting grasses. Should taller grass move in around a burrow, a maintenance crew will quickly mow it down, clearing obstruction around their critical watchtower. Employing the skills of project engineers, prairie dogs design, repair, and expand their individual homesites. Burrows have chambers for nurseries, latrines, night rests, winter shelter, plus a sentry site for spotting predators. Groups of several females and young occupy their family territory of about two and a half acres, defended by one or more adult breeding males.

Photo: National Park Service



Nest bedding builder

Eyes to spy, Ears to Hear and Steer

Prairie dogs have dichromatic eyesight, or blue and yellow retinal cones only, and many of them. Their vision is fine-tuned for movement and high color contrast perception, maximizing detection of predators at a great distance.

Hearing and communication are unusually acute with them. Coping with the press of many bodies living together in close quarters, and ever conscious of enemies eager to kill all of them, prairie dogs have strong, loud voices and a well-developed, varied repertory of calls, squeaks, chirps, and barks for getting the message out. While family groups of prairie dog species in other parts of their range will meet and greet others beyond their own known family members, the blacktail habit is kin only, always with a good deal of kissing. It doesn't extend beyond single families. Standing tall on their boundary borders, males defend their breeding unit from all intruders, choosing calls from an extensive learned catalog.

The jump-yip: A crack of thunder, the sudden crumble of dirt collapsing the side of a mound, the sighting of a coyote passing by, or the end of a territorial male-on-male fight: unsettling events like these will bring on a sight and sound jump-yip display from an uptop witness. Stretching tall on hind legs and barking "EEE-eee," the reporter announces an unsettling territorial event, followed by a chorus of jump-yips from the crowd. The call may be repeated for several minutes and throughout the day.

True alarm/predator calls: Threatening survival, these cries are of a special magnitude and strength. Simple, loud, and

repetitive, they are barks resounding far and wide so everyone hears them, including the predator who raised the alarm. Depending on the degree of threat, a call may last seconds only, or many minutes. As a predator closes in, the call will increase in speed.

Although the alarm call makes the caller more vulnerable by drawing attention to himself, the overriding urge of prairie dogs is to share vigilance against threats; alarms help the community survive. It's both the cause and effect of their community lifestyle.

Several researchers have suggested that prairie dogs have developed numerous features in calls to give descriptive, detailed information about a predator including identity, size, color, and speed of approach. Scientists have

identified three mid-pitched bird calls: for spotting red-tailed hawks,

golden eagles and bald eagles as well as four quick barks for mammals including coyotes, dogs, and humans.

Prairie Dogs vs People

Scientists now know that the presence of prairie dogs greatly affects and improves the structure and diversity of all life on the ecosystem when they are present. In the past, farmers, ranchers, and urban developers had a different view: they saw the rodents as pests that caused undesirable brush, supposed cattle injuries from their mounds, carried disease, and interfered with cultivation. As a result, populations of the rodents have declined 98% across their grassland range. Negative attitudes have modified in recent years, and prairie dogs have adapted to urbanization, building their towns in open areas of western cities.

After studying existing town sites in Mexico, University of Arizona scientists identified suitable areas in their state for reintroduction; since 2008, animals have remained in several areas today. A reintroduction effort made in central New Mexico was less successful after several years, due to severe drought, lack of rainfall, and heavy predation. Hopefully, return efforts will continue as knowledge of the benefits that prairie dogs provide disseminates widely to all kinds of land managers.

Sources: Gunnison's prairie dog; inaturalist.org.46175-Cynomys; wikipedia.org: wikipedia; black-tailed prairie dog.



Super Sugar Guts

Hummingbirds, along with parrots and sunbirds, survive on very high diets of sugar without developing health problems experienced by humans, such as diabetes. How do they do it? When scientists compared genomes and gene activity of these birds, they found key genetic differences affecting metabolism, blood pressure, and energy use.

Patterns in genes and regulatory pathway control that process and manage high sugar levels. One of these genes that was tested in human cells showed improved response to sugar, a hopeful sign for more research.

Harvard Magazine June 2026

A Lizard's Offence

Although several fire ant species occur naturally in the U.S., they are smaller and far less aggressive than the red fire ants invading from South America, now growing in numbers across the country and common in the Southwest. Scientists in Pennsylvania have studied how their local fence lizard species *sceloporus undulatus*, also common in New Mexico where it's called prairie lizard, has responded to the invasion. While fire ants, the team found, attack and kill the lizards, the reptiles have changed in response. Instead of freezing to camouflage themselves, they now thrash and twitch before fleeing. They also now eat the ants, stimulating their immune systems to resist the fatal bites. "We see a pattern among lizard populations now," said one researcher. "When ants first arrive, lizard populations decrease but after a time, they rebound."



Natural History December 22, 2023

Wolf Smarts



The Heiltsuk nation in British Columbia have a long tradition of non-hunting respect for wolves, allowing them agency in their actions and time to learn. Caught on camera in 2024 was a likely example. First, a female wolf fetched a fishing float attached to a crab trap and laboriously brought it ashore, pulling and backing up over and over, till she saw the trap emerge. She tore it open and ate her reward: tempting herring for crab bait. The whole effort took just five minutes. Said a scientist reporting in the journal *Ecology and Evolution*, it may be the first documented instance of a wild wolf using a tool. The wolf's capture speed indicates prior experience, that she knew exactly what she was doing, said the observer, with every motion important for getting the trap out fast.

Ecology and Evolution 2024

Honey Bees Get a Black Eye

Long known as vital pollinators of crops, observers have now found that non-native honey bees have a definite downside. Establishing experimental plots, scientists at the University of California/San Diego found that honey bees monopolize pollen; overwhelming native bees; they remove 80% of pollen in a single day, depriving native bees of essential food. "Honeybees comprise some 98% of this region's biomass," noted a researcher. They can cause a serious ecological threat to natural ecosystems. When it comes to conservation issues in North America, honeybees are likely more part of the problem and not a solution" Beekeepers should exclude these nonnative bees from natural preserves and areas sheltering threatened native bee populations.



Natural History Spring 2026

Butts in the Nests

House finches in Mexico, thrushes in New Zealand, and other birds put cigarette butts in their nests. But why? A new study of urban blue tits in Poland gives a clue. The toxins in cigarette butts have 4,000 chemical compounds including nicotine, arsenic, heavy metals, and polycyclic hydrocarbons that ward off pests that harm birds and young. Blue tit nests are prime habitat for ticks, fleas, and blowflies. Researchers monitored the health of 99 cavity-nesting tits, separated into three groups: nests with butts, nests made sterile, natural nests in a control group. Thirteen days after young had hatched, blood drawn showed that health was higher in the sterile and butt-laced nests; analysis of the parasite population after the young had fledged showed best results in the sterile nests and definitely fewer in those laced with butts.

Animal Behavior 2026

SURPRISING EYES

By Jean Mason

1. **C**__: Lizard's eyes independent, **e**__ one focuses separately.
2. **M**__: Flowers reflect UV light to eyes of big bat, or flying fox.
3. **C**__ eyes: term for many lenses each attached to optic nerve.
4. **R**__: Eyes of Santa's power team blue in winter, gold in summer.
5. **G**__: lizard eyes color-sharp, 350 times over human eyes.
6. **O**__: Bird eyes larger than brain, largest of **I**__ animals.
7. **B**__: Dam builder good near sight, poor **f**__ off.
8. **O**__: Huge tube eyes for night hunter birds, cones for details, depth.
9. **R**__: Eye receiver of lens images.
10. **L**__: It focuses light on retina.
11. **C**__: retina cells for color.
12. **R**__: low light, night vision cell.
13. **D**__ fly; 28,000 lenses, 360° sight.
14. **P**__ light: vibrates in patterned waves.
15. Ocelli: Term for **s**__ sight, light only.
16. **D**__ or antlion: Digger has polarized sight, model for drones.
17. **M**__: 1,000's of lenses for insect biter, sharp motion sense.
18. Blue-ringed **o**__: Shoots **v**__ into eyes of sea **u**__ prey.
19. Mantis **s**__: crustacean eyes unique, see ultra **v**__, circular polarized light.
20. **S**__: headtop eyes for NC's amphibian burrower.
21. **P**__: Raptor has one million cones, packed rods for low light.
22. **H**__ bird: Biggest eyes per size of all birds; "telechromatic" sight.
23. **K**__ fisher: eyes overlap for adjustable depth sight in dives.
24. **S**__: Dynamic wide view focus, largest eyes of all cranes.
25. **R**__: bunny sleeps with eyes open, reception stays active.
26. **M**__: waterfowl sees one eye at a time; adjusts to water depth.
27. Garden **s**__: Eyes on retractable stalks.
28. **E**__: Two fovea per retina give super-sharp visual telephotos of visual field for raptors.
29. **V**__ roy: Butterfly has thousands of lenses linked to optic nerve.
30. **K**__: Excellent vision in super-curious, **n**__, Aussie parrot.
31. **V**__: White eyeline aids bird's search for insects in thickets.
32. California **s**__ lion: large eyes for deep water dives.
33. **S**__: Gastropod has simple eye perched on tentacle **t**__.
34. **O**__ birds: Cavers highest photoreceptor density ever record
35. Giant **s**__: Ocean swimmer has 10" eyes, largest of all animals.
36. **H**__ fly: Polarized **s**__ rays from prey hair points to food.
37. Grassh__ : Five eyes with many lenses pinpoint color and movement.
38. **S**__: Stinger insect has up to 200 eyes, Is most light-sensitive of all animals.
39. Praying **m**__: Motion detector insect, alone in seeing **t**__ dimension.
40. **C**__ spider: 8 eyes, 360° sight.
41. **K**__ did: Red-orange eyes help with motion.
42. **L**__: Amphibian below-eye muscles contract to push food into stomach.
43. Paper **w**__: Eyes see patterns made by others.
44. **T**__ beetle: Compound eyes, 360° vision. Super runner blinded if runs too fast.
45. **B**__ bee: Five lenses, hairs between them sense wind direction.
46. **D**__ beetle: Insect unique with six underwater bifocal lenses.
47. **S**__: Big-jawed Lucanus insect has split vision, separate views seen simultaneously.
48. Four-eyed **f**__: Swimmers' eyes split in two, one above, one below water.
49. **G**__: Ruminant pupils stretch to minimize glare.
50. **C**__ fish: W-shaped eyes use high polarization.
51. **J**__ spider: 8 eyes; central are telephoto-style, high resolution.
52. **C**__: Desert beast has third eyelid to clean dirt.
53. **G**__ whale: Pupils contract circle down to crescent in dives.
54. **F**__: Male sends light signals to find females

Friends of the Rio Grande Nature Center
2901 Candelaria NW, Albuquerque, NM 87107

Name _____
Address _____
City, State, Zip _____
Email _____

Membership Categories (check one):

--Regular** \$30
--Special* \$20

*Circle one:

*Senior (62+), Teacher, Disabled, student (23& under)

**Individual, Family

Donation in Addition to Membership***

***The Friends of the Rio Grande Nature Center is a non-profit
501©(3) corporation

--Donor \$50
--Sponsor \$100
--Life Member \$1000

**Thank you for helping FRGNC preserve,
protect, and educate**

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___ Please send information about volunteering

___ Enclosed is my check

___ Please charge my ___ Visa ___ MasterCard

Card # _____

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Office use only

Date rec'd _____

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Sold by _____



From *Surprising Eyes*, p. 11.

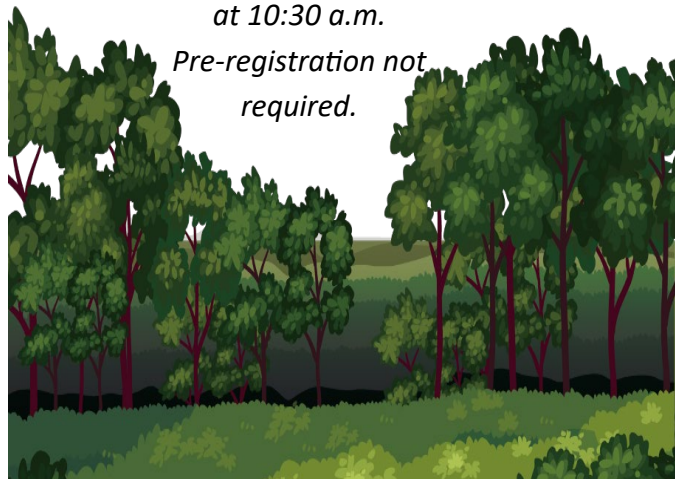
- | | | |
|-------------------------------|--------------------|-------------------|
| 1. Chamelion, each | 19. Shrimp, violet | 37. hopper |
| 2. Megabat | 20. Spadefoot toad | 38. Scorpion |
| 3. Compound | 21. Peregrine | 39. Mantis, third |
| 4. Reindeer | 22. Humming | 40. Crab |
| 5. Gecko | 23. King | 41. Katy |
| 6. Ostrich, land | 24. Sandhill | 42. Leopard frog |
| 7. Beaver, far | 25. Rabbit | 43. wasp |
| 8. Owls | 26. Merganser | 44. Tiger |
| 9. Retina | 27. slug | 45. Bumble |
| 10. Lens | 28. Eagles | 46. Diving |
| 11. Cones | 29. Vice | 47. Stag beetle |
| 12. Rod | 30. Koa, nosy | 48. fishes |
| 13. Dragon | 31. Vireo | 49. goat |
| 14. Polarized | 32. sea | 50. cuttle |
| 15. simple | 33. Snail, tip | 51. jumping |
| 16. Doodlebug | 34. Oil | 52. camel |
| 17. Mosquito | 35. Squid | 53. Grey |
| 18. Octopus, venom,
urchin | 36. Horse, sun | 54. Firefly |

***Guided Bird and
Nature Walks***

*Bird walks every Saturday and Sunday
at 8:30 a.m.*

*Nature walks 2nd Saturday of the month
at 10:30 a.m.*

*Pre-registration not
required.*



The mission of the Friends of the Rio Grande Nature Center is to support the Rio Grande Nature Center State
Park's mission: To preserve and protect the Rio Grande bosque, educate the public about Rio Grande
ecosystems, and foster positive human interactions with those ecosystems.