

New Mexico

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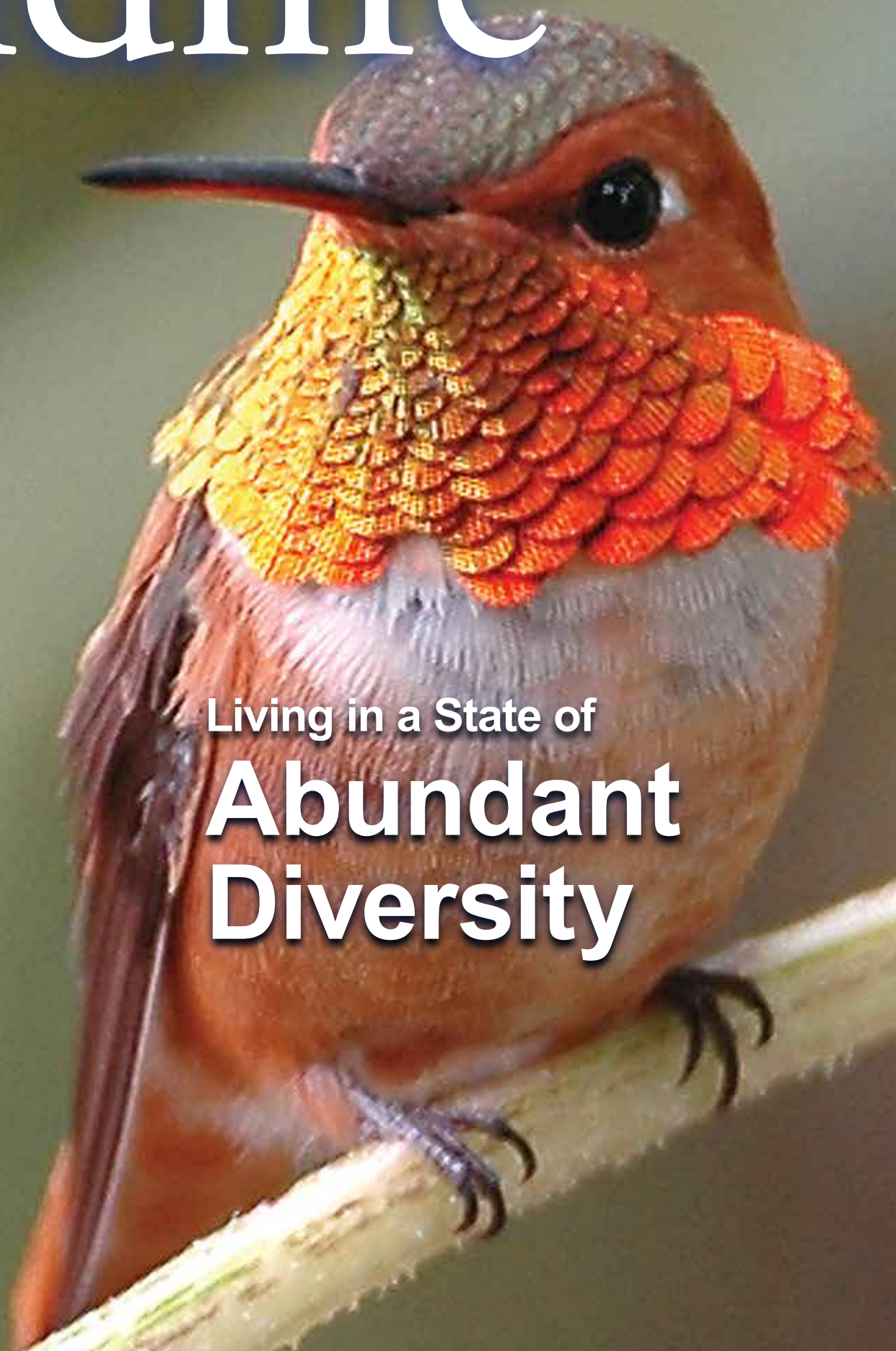
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Living in a State of

**Abundant
Diversity**



Awards handed out at banquet ceremony

By Zen Mocarski, N.M. Wildlife Editor

In recognition of contributions made in the field of wildlife conservation, three New Mexico Department of Game and Fish awards were handed out to deserving recipients at the Governor's Special Hunt Auction and Banquet in February.

Director's Wildlife Conservation Professional of the Year



Heavily involved in a number of high-profile projects, Eric Frey, sportfish program manager for Game and Fish, was honored as the Professional of the Year.

Frey accepted the responsibility for habitat restoration projects on the Red River and at Eagle Rock Lake. Despite limited budgets, poor concrete, bad weather and last-minute engineering

concerns, nearly the entire project was completed in 2015 as a result of his dedication to the resource.

In addition, Frey coordinated the department's response to the Gold King Mine spill, was an integral part in a restoration project for Rio Grande cutthroat trout, and tested new methods to measure angler satisfaction and catch rates.

Commissioner's Wildlife Conservation Partnership Award

Any number of reasons can be cited for the Dona Ana County Associated Sportsmen Group winning the Conservation Partnership Award, but high on the list is the organization's commitment to engaging youths.

The group has encouraged and supported youth hunting opportunities, contributed thousands of dollars in support of the Butterfield Shooting Range, contributed funds to a local 4H shooting team, and supplies scholarships to New Mexico State University students in the fish, wildlife, and conservation ecology department.

Members have also provided volunteer hours in support of conservation projects and hunter safety education.

Governor's Conservationist Lifetime Achievement Award

Tod Stevenson's storied three-decade career at Game and Fish, culminating in his appointment as director of the department, resulted in his earning the Lifetime Achievement Award.



Stevenson's career began in 1977 at a state hatchery and concluded in 2011 when he retired as the director. He served as an assistant foreman at the Red River Hatchery, began his law enforcement career in 1981, was named the Wildlife Division division chief in 1999, assistant director in 2002, deputy director in 2003 and served as director from 2008-2011.

Among his many achievements was the Shikar Safari New Mexico Wildlife Officer of the Year award and receiving a National Performance Review Letter of Appreciation and Award from then Vice President Al Gore.

In the 1980's Stevenson was instrumental in the arrest of "The Gila Monster," a dangerous, heavily armed vagrant and poacher. The arrest was made without incident.

Get involved in conservation

Many organizations in New Mexico are dedicated to wildlife conservation, habitat improvement and wildlife-related recreation. Whether you are interested in hunting, fishing, trapping or wildlife watching, chances are there is an outfit you'll deem worth supporting. Here are some of them:

New Mexico Quail, Inc.
John Moen, (575) 644-3936

Ducks Unlimited, New Mexico
Cindy Wolfe, cjwolfe@gilanet.com, (575) 854-3365

New Mexico Chapter, Wild Sheep Foundation
Lanny Rominger, (505) 821-5064

New Mexico Trout
newmexicotrout@gmail.com, www.newmexicotrout.org

The Nature Conservancy
www.nature.org/newmexico

New Mexico Wildlife Federation
(505) 299-5404, www.nmwildlife.org

Rocky Mountain Elk Foundation
(505) 892-1250, www.rmef.org

Sportsmen for Fish & Wildlife
(505) 486-4921

Trout Unlimited, New Mexico
(505) 470-4878, www.newmexicotu.org

Audubon New Mexico
(505) 983-4609, <http://nm.audubon.org>

New Mexico Muskies, Inc.
Chris Nordquist, (505) 294-8937, www.newmexicomuskiesinc.org

Friends of the Bosque del Apache National Wildlife Refuge
(575) 878-2320, www.friendsofthebosque.org

Albuquerque Wildlife Federation
(505) 281-4609, <http://abq.nmwildlife.org>

New Mexico Council of Outfitters and Guides
(505) 440-5258, www.nmoutfitters.com

Southwest Consolidated Sportsmen
(575) 526-5056

New Mexico Wild Turkey Federation
(505) 869-3837, www.nwtf.org

Safari Club International
Brian Payne, b_payne10@msn.com.

Southeast New Mexico Wildlife, Inc.
(575) 393-2895

New Mexico Trappers Association
(505) 897-0719, www.newmexicotrappers.com



New Mexico Department of Game and Fish
Conserving New Mexico's Wildlife for Future Generations

It is the mission of the New Mexico Department of Game and Fish to conserve, regulate, propagate and protect the wildlife and fish within the State of New Mexico, using a flexible management system that ensures sustainable use for public food supply, recreation and safety—and to provide for off-highway motor vehicle recreation that recognizes cultural, historic and resource values while ensuring public safety.

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 Hunter Education Program Information (505) 222-4731
 Off Highway Vehicle (OHV) Information (505) 222-4712
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Cover: Rufous hummingbird.

Photo by Dan Williams.

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Don't let their size fool you

Hummingbirds
are unique

By Zen Mocarski

Among the benefits of living in the United States, and in particular the Southwest, is the visibility of some of the most beloved and photographed birds on the planet . . . hummingbirds.



Native to the Americas, the largest number of species of these diminutive birds occurs in the tropical areas of South America, but a number of them can be found in the Desert Southwest.

There are over 20 species in North America, and New Mexico is among the nation's hot spots for hummingbird viewing with 17 species documented. Half of those are commonly seen, while the others are considered rare. The four most common are the black-chinned, broad-tailed, calliope and rufous.

About Hummingbirds

While they are the second largest group of birds on the planet, hummingbirds aren't taking up a lot of space.

They're small. Really small. So small in fact, they include the tiniest birds of the avian world.

It doesn't matter whether it is the largest or smallest hummingbird, they're all slight in size and are so light they are capable of perching on the thinnest of branches. Some weigh less than a penny, but even the largest will tip the scale at just 20 grams (28 grams equals an ounce).

With over 300 species, hummingbirds are second only to flycatchers – which number over 400 species – in overall diversity in the avian world.

Indigenous only to the Americas, hummingbirds can be found from Alaska to Chile and Argentina in South America, including the Caribbean.

In New Mexico, hummingbirds can be found statewide, especially during the summer months, but the largest diversity is in the southern part of the state.

"New Mexico is a great place to bird watch," said Peggy Darr, nongame avian biologist with the New Mexico Department of Game and Fish. "When it comes to hummingbirds, the best location for overall diversity is the southwestern part of New Mexico, but the entire state can produce large numbers of migrating hummingbirds during the spring and fall.

"Find some flowers or feeders and pay attention. They feed throughout the day."

Feeding

And when it comes to feeding, these birds are heavyweights.

Hummingbirds spread pollen and pollinate plants by feeding on nectar. They have tongues specially designed to pull nectar from flowers, although they'll also take flying insects and spiders for protein.

Depending on the species, some will consume up to three times their body weight each day. With the average North American human weighing in at 180 pounds, that would be an equivalent daily diet of 540 pounds per day, and yet hummingbirds don't gain weight.

"They use a lot of energy and the amount of food they consume is necessary to survive," Darr said. "When they're active, there are few animals that come close to burning the same number of calories."

How It Works

Depending on conditions and what the birds are trying to accomplish, their wings can beat between 50 and 200 times per second with an average heart rate of about 1,200 beats per minute. As a result, they need to take approximately 250 breaths per minute.

In contrast, a typical healthy human at rest takes about 12 to 20 breaths per minute. A hummingbird workout for a human would mean certain death.

But the hummingbird is built for this level of activity. Proportionally to the body size, a hummingbird's heart is five times the size of a human's and this adaptation allows for the birds to accept and distribute oxygen throughout the body while being able to handle a high level of activity.

These birds also can function at a body temperature about 8 degrees higher than a human.

Doing What Can't Be Done

Human ingenuity has allowed for the duplication of some of the amazing feats previously seen only in wildlife.

Hot air balloons aside, just over a century ago birds, bats and insects were the only creatures that could sustain flight.

Watching birds had humans dreaming of flight and the plane was born.

And it wasn't until the creation of helicopters that hummingbirds were joined in having the ability not just of flight, but also of moving forward, backward, sideways and hovering.



Opposite: A silhouetted hummingbird. NMDGF photo by Dan Williams.

Top: NMDGF photo by Martin Perea.

Center: NMDGF photo by Martin Perea.

Bottom: Female broad-tailed hummingbird. NMDGF photo by Dan Williams.



Top: A rufous hummingbird perches on a backyard feeder. NMDGF photo by Martin Perea.

Bottom: A broad-tailed female hovers in front of a penstemon flower. Spring and summer are the best times to catch a glimpse of this bird in most of the state. NMDGF photo by Dan Williams.

The hummingbird, however, also has the ability to be inverted.

“They’re pretty amazing,” Darr said. “They can do things in flight other birds could only dream about doing.”

The key to their vast repertoire of in-flight skills lies in wing design.

About 25 percent of a hummingbird’s weight lies in the muscles most responsible for flight, and they are able to rotate their wings approximately 180 degrees to achieve a desired action.

“For those with a video camera, record a hummingbird around flowers and then replay the video in slow motion,” Darr said. “You’ll have a chance to witness how it all works.”

Critical to Environment

Hummingbirds may fall into the bird family Trochilidae, meaning “small birds,” but they are large in stature when it comes to environmental health.

“They can be so much fun to photograph and watch that it is easy to forget their importance within the ecosystem,” Darr said. “People may be more likely to look at bees and butterflies in relation to pollination, but hummingbirds play a critical role as well.”

Darr said hummingbirds are attracted to all brightly colored flowers, but red flowers are particularly enticing.

It is believed that more than 150 plant species depend on hummingbirds for long-term survival.

“There’s a reason the most successful hummingbird feeders feature red flowers,” Darr said. “The color of the liquid in the feeder doesn’t matter, just the color of the flower on the feeder.”

Hummingbirds have little to no sense of smell, so a flower’s scent plays no role in their willingness to approach and feed. Color is the sole attractant.

Identification: Where it gets tricky

Females are much more difficult, and sometimes nearly impossible to identify by sight. As with a good portion of the avian world, the males are more colorful, making it easier

to figure out what species is being viewed or photographed.

However, even with males, the way the light is hitting the bird is important. The reason for this is that the feathers act a bit like a flat bathroom mirror and the direction at which light hits the feathers will result in a variety of appearances.

“When it comes to identification, it’s best to first learn what species occur in a particular area,” Darr said. “While 17 species have been documented in New Mexico, far fewer occur in most of the state. In many areas, you can probably narrow identification down to three or four potential species.”

Have a field guide handy, Darr suggested.

Attractants

Feeders with red flowers will produce the best results for those wishing to attract hummingbirds. There are a number of good food products available, or you can make your own.

Using only pure cane sugar, mix four parts water to one part sugar and make sure it is dissolved completely before placing it out for the hummingbirds.

It’s important to clean the feeders regularly.

A better option is to plant native flowering vegetation. Hummingbirds are attracted to a number of plants native to New Mexico and will visit as long as the plants are flowering. Visit a local nursery to discuss your options.

With any luck, you’ll have an opportunity to watch these small, agile birds and begin to understand that their value in nature is substantially larger than their body size. 🐦

Photographing Wildlife

Master the basics to harvest the best images

By Zen Mocarski

For those who photograph wildlife, hunting season never ends.

Whether you are looking through a rifle scope or viewfinder, hunting and photography have similar challenges.

Both activities share a few common terms, such as the word “shoot” in its various conjugations. Whether your goal is to harvest game or make a beautiful photograph, you must be prepared to “take the shot” when the time is right.

Both activities take a lot of practice and it helps to know your subject’s behavior.

It might sound simple enough: Point and shoot. However, there’s a great deal of work that goes into getting great wildlife shots. Yes, some can happen by luck, but, just as in hunting, consistent success is the result of skill and practice.

So, what can you do to get wildlife pictures that are worthy of framing? It depends, of course, on how much time and effort you’re willing to invest. Martin Perea, professional videographer and photographer with the New Mexico Department of Game and Fish, offers some advice:

Learn your subject

As with hunting, it’s important to learn everything you can about your subject. Knowing behavioral habits of wildlife will help you capture the moment you want.

A good example would be bighorn sheep during the mating season. You might be aware that rams spar for dominance by slamming heads, but do you know when they’re getting ready to battle? If you see a ram rubbing or bumping its horns against another’s body, or kicking with one of its front legs, get ready to shoot.

Have everything framed and in focus when the rams rear up on their hind legs in preparation for a charging clash. There likely will be a brief pause as they reach peak height, so be ready. It happens quickly.

In addition, a bighorn’s escape route almost always is upward, so be aware of your positioning. If you are at a higher point than a bighorn, it can become nervous if it sees you because its natural predators typically hunt from above.

Consider a raptor sitting on a power pole. Knowing that raptors tend to ruffle their feathers just before taking flight can help you anticipate their next movement so you will be composed and ready for an amazing shot.

Bigger birds are a better starting point for beginning photographers. Because they’re large, they give a photographer a better focus point than smaller birds. Large birds, such as great-blue herons, often will stand still to allow time to focus, and when they take flight, it is easier to stay composed on them for a few in-flight shots. As your skills improve with large birds, move to smaller birds.

Be patient

While it can happen, accidentally finding a picture of wildlife being wild is not a common occurrence.

Casual photographers may find it’s a good idea to leave a few minutes early on their morning commute. You may see raptors sitting on fence posts or other wildlife in open grasslands. Leaving a few minutes early provides an opportunity to capture some photos before continuing to your destination.

When you see wildlife, it can be a challenge getting close enough to get the image you want. While doing errands you may not want



to be dressed in full camouflage, but you can wear earth-tone clothing that can help you blend into the surroundings.

With raptors, move slowly. Start shooting from a distance, take a few steps and shoot a few more. Continue moving closer and shoot as many frames as you can before the bird flies away. Remember to keep your distance when you encounter nesting birds. Many species are sensitive to disturbance, especially just after their young have hatched.

What you need

Getting a keeper shot of wildlife with a point-and-shoot camera is possible, but not likely. Decide how serious you want to be about wildlife photography and outfit yourself with the best photo equipment your budget will allow. The variety and price range of photography equipment can be daunting, so it will take a little research and shopping to find the right combination for your needs. Used equipment in good condition is worth considering.

The types of images you wish to make will determine the focal length of lens you will need. Sweeping landscapes with flocks of birds or herds of elk can be made with a shorter lens. However, if you want to fill the frame with up-close pictures of wildlife, you will need a telephoto lens. You will need a 400- to 600-millimeter (mm) lens if you shoot a full-frame DSLR.

Telephoto lenses accentuate camera movement, so you will need to use fast shutter



speeds and a rock-solid camera support. A good-quality tripod is always your best bet, but a monopod also works and is quicker to reposition. In a pinch, you can support your lens on a fence post or even the hood of your vehicle. Just make sure the engine is not running. Many animals are accustomed to the sight of cars in their environment, so you may get some great shots by remaining in your vehicle and resting the lens on the door or a slightly rolled up window.

A shutter speed of at least 1/500 of a second or faster is needed for sharp pictures. The shutter speed you are able to use will depend on the amount of available light, your ISO (light sensitivity) setting, and the maximum aperture of your lens. Higher ISO settings enable faster shutter speeds, but image quality suffers the higher you go. It is best to use the lowest ISO needed for a good exposure at an adequate shutter speed. Some modern lenses are equipped with a vibration reduction feature. This slightly reduces the shutter speed needed when using a telephoto.

Experiment

Digital cameras provide options that didn't exist with film. You paid for all the pictures taken with film, but with digital photography it is possible to experiment with settings and delete unwanted photos at no additional cost.

Think of specific pictures you want to take and look in the camera manual for proper settings. Then experiment and adjust the settings until you get the image and lighting you had hoped for when you started.



Most digital cameras come with a variety of settings. Some people like to pick just one setting such as "auto," and leave it there. While this works for snapshots, it is not a good practice for making good wildlife photos. There are too many variables to depend on your camera's automatic setting. In-flight birds will pose a different challenge than a squirrel sitting perfectly still, so study your user manual and find which settings work for the pictures you're trying to take.

Experimenting also will help you become familiar with the camera, and before long you'll be able to change a setting without moving your eye from the finder.

Look before you shoot

Review your camera settings before taking to the field. Many great shots can be lost because settings from a previous excursion weren't reviewed.

Respect wildlife

A telephoto lens allows you to make photos while minimizing the disturbance to wildlife. Most often, if you try to get too close to wildlife, it will simply flee and the opportunity is lost.

Now go out and shoot

The more photos you take, the better and more predictable the results will be. You will become more consistent in creating photographs that you will be proud to show. 📷



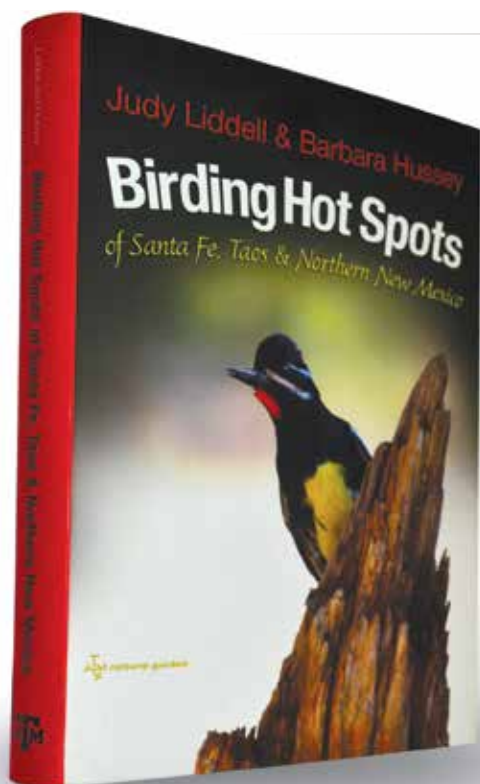
Left: A telephoto lens and a tripod can help a photographer get sharp close-up images of small birds such as this mountain bluebird. NMDGF photo by Dan Williams.

Center: Lesser prairie chicken. NMDGF photo by Dan Williams.

Right: When hiking through thick forested areas, your ears can play a big part in finding potential subjects such as this red squirrel. Photo by Zen Mocarski.

Below: A high-quality DSLR camera with a telephoto lens is recommended for wildlife photography.





New guide provides public with

Birding Hot Spots

By Kevin Holladay

Finding the best spots to locate birds in northern New Mexico got easier this past year with the publication of "Birding Hot Spots of Santa Fe, Taos, and northern New Mexico" by Judy Liddell and Barbara Hussey and printed by Texas A&M University Press.

Like their earlier field guide to finding birds ("Birding Hot Spots of Central New Mexico"), this guide is an indispensable resource to anyone interested in birds and exploring the north-central part of the state.

It is carefully researched, concise and thorough. The hundreds of interviews they conducted in writing this guide is testimony to their detailed research.

The text covers seven counties and reviews the best birding spots in-and-around Santa Fe, Taos, Enchanted Circle byway (Questa, Eagle Nest, Angel Fire), Jemez Mountains and Los Alamos, along Rio Chama, Cochiti Lake, upper Pecos River, along I-25 north of Santa Fe and, best of all, two high-elevation sites in the Carson and Santa Fe National Forests.

Under each of these larger areas, they delve into the particular hotspots to visit. Besides the usual description of facilities, camping, gas, food and lodging they have a bulleted list of "target" birds with a couple sentences about where to look and what time of year targeted birds are likely to be found. The book also includes a longer list of "other birds" that might be encountered.

"Birding Hot Spots" has 13 crisply done line maps to help navigate to desired locations. While the print is small on some maps, they are quite helpful. There

are just enough sharp, descriptive photos to keep things interesting and the sturdy binding and book cover will hold up nicely in your pack or back seat.

The book includes natural and cultural history as well as an excellent summary of vegetation types and life zones. Just to make sure you are prepared, the authors include a list of safety concerns for the areas you plan to visit.

This is the first guide I've seen to mention which sites already have been identified on eBird as a "hotspot." The eBird website is the place for birders to report the birds they have seen, maintain their own lists and search for what others have found. It also provides valuable information for researchers collecting mega-data on bird distribution and abundance.

It was exciting to see several New Mexico Department of Game and Fish Wildlife Management Areas and hatcheries included as hotspots. Many of these protected areas are relatively unknown to the public, but offer outstanding wildlife viewing opportunities. The authors do a fine job of explaining the current process (stay tuned for updates in 2016) for obtaining the necessary permits for access to department areas.

Easy access urban sites such as the downtown section of the Santa Fe River are included along with more remote destinations such as the strenuous hike up to Jicarita Peak to find the white-tailed ptarmigan.

An annotated checklist of birds is a welcome addition and well done.

Even if you are not wild about birds, this is a fantastic site-based guide for camping, hiking, fishing and exploring northern New Mexico's wildlife areas, parks, monuments, nature centers, refuges and forests.

Who knows, you just might head down that slippery slope of watching birds.

Although I would like to see an updated edition of the "2002 New Mexico Bird Finding Guide" (by the New Mexico Ornithological Society) "Birding Hot Spots" ranks among the best of any regional bird finding guide in the country.

I hope the authors already have plans for writing more guides for the southwestern and northeastern corners of New Mexico. 🌍



Kevin Holladay is Conservation Education Coordinator for the New Mexico Department of Game and Fish. He provides educational outreach programs and services and can be contacted at (505) 476-8095.

Dust off the fly rod

and visit local streams
for some fun

By Ross Morgan



The temperatures are nice and the weather is beautiful, which means it's time to get out for some small-stream trout fishing in the mountains.

This time of year it should be amazing. For those who enjoy catching a 24-inch trout to claim bragging rights, the northwest area will provide a host of opportunities. For me, however, there's nothing more fun than catching and releasing 20 or 30 pan-size trout while getting some much-needed exercise.

It's the time of year when stream temperatures have risen and the trout are biting. Water has its greatest density at 38 to 39 degrees and trout usually don't bite when the water temperature is below 40. It doesn't mean you can't catch trout when the water is cooler, but for the best chance at success, the time has come to get outdoors and wet a line.

With this in mind, choosing the right flies for your trip can make all the difference.

There are a few flies I like to have in my box. When it comes to dry flies, parachute Adams and elk-hair caddis are among my favorites. While the parachute Adams passes for a bunch of insects, including the mayfly, the elk hair caddis floats well and, depending on the color, can look like a lot of caddis species and stoneflies.

Because most feeding occurs beneath the surface, I try to limit the amount of dry fly fishing. So, when it comes to nymphs, the pheasant tail is my go-to because the brown-and-olive pattern represents most mayflies.

Choosing the best fly for a day on the water should involve some research on the stream of your choice, which will help determine the best fly based on the insects that occur in the area.

For those new to the sport, it is possible to get carried away with fly-fishing equipment and the expenses can quickly add up. However, it is possible to purchase a fly rod-and-reel for around \$60 and, for those wishing to continue mastering this craft, a decision on how much to spend on gear can be made later. I spent a year fishing the San

Juan River with a rod-and-reel that cost me \$35.

For those anxious to hit the road but still wondering where to go, the northwest area of New Mexico has a number of options. Some of my favorites include the Jemez River, Rio De Las Vacas, Rio Chama and above Gilman Tunnels on the Rio Guadalupe.

However, if you're itching to catch a big trout, head to the San Juan River. The fish on the San Juan average 16 to 18 inches and it's rated one of the best trout rivers in the country.

In the end, it really doesn't matter which of these waters you visit, just get out and fish.

Tips for an enjoyable experience

- Practice your casting before you go fishing. This will make your time in the field more enjoyable and productive.
- Make sure to choose the right fly size. This can make all the difference whether a fish bites or not.
- Do a quick aquatic vertebrae sample to see what is in the stream. This will help determine which fly will work best.
- Pick a spot in the stream where fish are most likely to be present to increase your odds of success. Finding their hiding spots – outside of bends, merging currents, and drop-offs – will help increase your odds of catching some fish.
- Pay attention to the presentation of the fly in or on the water. This is the most important part of fly fishing.
- Most fish feed under the surface, so limit the amount of dry-fly fishing you do. 🐟

Opposite: A Rio Grande cutthroat trout reared at Seven Springs Fish Hatchery. NMDGF photo by Martin Perea.



Ross Morgan is a wildlife biologist and the Department of Game and Fish public information officer for the Northwest Area. He can be reached in Albuquerque at (505) 222-4707 or ross.morgan@state.nm.us.



Educators see value in getting youths outside

By Zen MocarSKI

As society's disconnect with nature has become more pronounced, the New Mexico Department of Game and Fish is making an effort to not only get youths outdoors, but also to get them involved.

Call the class Conservation 101. It's a class about the satisfaction of getting out and helping while reconnecting with nature.

The department conducts several events and programs designed to restore the younger generation's relationship with the vast wonders of the outdoors, including getting them involved in actual conservation.

"Agencies are getting better at integrating management activities with education," said David Gilroy, science teacher at Taos High School.

In early 2016, students from two schools experienced howling winds and bitter cold as they helped department biologists in their conservation efforts.

Stepping off a bus at Eagle Nest Lake on Feb. 9, 13 Moreno Valley High School students were greeted by single-digit temperatures, an auger to drill holes in the thick ice, some fishing rods and bait.

A little more than a month later, 47 students from Questa Junior and Senior High School and 15 more from Taos High School were greeted with a strenuous hike and heavy winds.

All in the name of conservation and education.

The Moreno students were ice fishing in an effort to catch perch for disease testing. The Questa and Taos students hiked down 800 feet with strong winds howling through the Rio Grande Gorge canyons to

release approximately 3,200 Rio Grande cutthroat trout as part of an ongoing effort to restore the native fish to New Mexico waters.

The students, while providing valuable help to Game and Fish biologists, got to experience an outdoor adventure.

"I think the kids were thinking of the little guppies you win at a county fair," said Maria Cintas, an English teacher at Questa. "When they saw the fish and how many there were, they were excited about doing something with a purpose. They took great pride in getting the fish down to the river alive."

"It was a much more difficult hike than some of them had anticipated, but they honestly enjoyed the challenge," Gilroy said. "This was a mission and they had fun doing it."

That sense of purpose and pride are not generally the rewards a student gets from sitting in front of a television or computer. It was hard work and students from the schools were in the field for hours trying to fulfill specific goals.

"They loved it," Cintas said. "It would be beneficial to have more involvement with the outdoors. I think we need more opportunities to connect students on a hands-on basis."

"The majority of students felt it was difficult, but they felt it was something that needed to be done. An opportunity like this is important."

The Moreno students arrived dressed for a day of ice fishing, with winter jackets, hats and gloves. Holes were drilled in the ice and students dropped lines in hopes of catching some perch that would assist researchers in disease testing.

"I can stand in front of the class and talk all day," said Micah Daboub, science teacher at Moreno Valley. "I can lecture and have the students watch videos, but until we get in the field, it doesn't stick."

Daboub believes the hands-on approach is critical for students.

"There's a level of personal enrichment they gain from being in the field," Daboub said. "There's a sense of accomplishment."

Daboub combines the field trips with pre- and post-classroom education related to the trip. Before the ice-fishing trip, he discussed wildlife diseases and how easily they can spread through a population.

"So, we combine the trip with education on disease," he said. "That trip was the hands-on process of collecting data. Then we discussed it more afterward."

"You get them out to get them connected with the world that they'll be caretakers of in the future," Gilroy said. "Getting them out motivates them to do more and it sparks new ideas."

For Cintas, the field trip was a reward for the junior and senior Honor Society students.

"I do think there is a correlation between outdoor activities and grades because the students must maintain their academics in order to participate, just like sports and extra-curricular activities," she said.

Daboub agreed that getting youths outdoors helps improve grades as well as attendance.

"Absolutely their grades improve," he said. "The level of retention improves dramatically."

"I was at another school and kids that were habitually absent were not absent leading up to a trip."

If Daboub appears to be passionate, there's good reason.

"I think we're losing our future stewards," he said. "They don't understand the connection with the land. Water comes out of the faucet and electricity out of the wall. They don't always understand how everything is connected."

As students spend some time in the field, that connection is being reestablished. 🐟



Left: Game and Fish coldwater fisheries biologist Laurence D'Alessandro provides instructions to students from Questa Junior and Senior High School and Taos High School prior to a hike down to the Rio Grande to release cutthroat trout.

Right: Julianna Sandoval and Anastacia Gonzalez, from Questa Junior and Senior High School take the lead down to the Rio Grande. The 47 students from Questa are members of the Junior and Senior Honor Society.

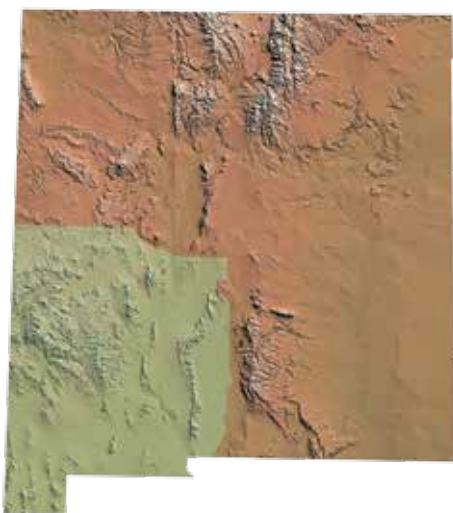
NMDGF photos by Zen MocarSKI.

Herping, an outdoor activity appreciated by some but unknown to most, can be an experience to treasure.

Herping

Often overlooked as an activity all can enjoy

By Jeremy Lane



Top: Found in a good portion of the western states, the common sagebrush lizard will feed on a variety of insects and spiders. These lizards are easily frightened and will quickly flee. NMDGF photo by Charlie Painter.

Herpetology is the branch of zoology concerned with reptiles and amphibians, and the search for these interesting creatures can be an entertaining, fun-filled activity enjoyed by an entire family.

For those interested in giving herping a try, New Mexico is a great place to start.

The Land of Enchantment ranks third among the states with the greatest reptile diversity, with at least 123 species of reptiles and amphibians, including four species of horned lizards (“horny toad”), several endemic salamanders and over 45 snakes.

Herping often can be completely free. If collecting for commercial purposes, a permit is required and a fee might apply to access certain areas; otherwise the hobby is a fun and economical.

Know Before You Go

The world of herping can open a whole new, fascinating and stunning world.

While feathered and furry creatures have their

charms, consider the bright greens and yellows of a collared lizard sunning itself on a fence post, or the western hognose snake, which will feign death like a possum.

If fear is the roadblock to such adventures, approach creatures with caution and don’t touch what you don’t know. In New Mexico, the primary threat to human health will have a rattle at the end of its tail. Even newborn rattlesnakes will sport nonfunctioning buttons.

Venomous Gila monsters are not often encountered and only occur in the southwestern portion of the state. These large, orange-and-black lizards are easily identified by what appear to be beads on the skin. Although rarely encountered, the “red-on-yellow” venomous coral snake should not be handled.

For those interested in getting pictures, these venomous creatures always should be photographed with both eyes open to be sure of its location and movement.

Now, it’s time to hit the trail.

Gear Up

A pair of hiking boots – open-toed shoes provide little protection – water, hat and sunscreen is all you need to begin, although a camera, GPS and a pair of leather gloves are good additions.

Seasoned herpers might bring along a few extra tools, such as a field hook for lifting things to check under while keeping fingers at a safe distance. Old golf clubs or walking sticks can do the trick, too. Snake tongs are grabbers for keeping venomous species at arm's length, but should be left to professionals because of dangers associated with incorrect use.

the loop. It helps to have a friend standing by to help capture the quarry.

Note of caution: Avoid using fishing line or wire for lizard noosing. Those materials could cause lacerations to the animal. Also avoid the lizard's tail when capturing. Many lizard species can drop their tail in response to a perceived threat. The lizard can regrow the tail, but it takes extra caloric intake to do so, meaning a greater burden on the lizard.

Where to Look and How

Herps are ectothermic, relying on their environment to regulate their body

When ready to expand the adventure, just visit a favorite hiking spot and pay attention to the trail. Listening can help as lizards dart under and over dry plant matter, making rustling sounds.

Herps seek thermal refuges under things in their environment, so log rolling and rock flipping are great for finding them. But be sure to keep your hands away from the edges of potential hiding places. The possibility exists for something venomous, including spiders and scorpions, to be underneath. It's safest to use one of the tools to do the initial lifting and remember to leave everything the way you found it.

For those that aren't much for hiking, "road cruising" is another effective method for finding herps. Concrete, asphalt and even gravel roads build up and store heat during the day. On great herping nights, those roads remain warm after sunset and act as an attractant.

For safety, low-traffic, rural roads are best. Drive slowly and look for irregularities in the road, such as a rock or stick, which might actually be a toad or snake. Train your eyes to distinguish between the objects. When stopping, move your vehicle safely off the road and out of the way of any oncoming traffic.

Develop a fascination for all the wildlife around and there will never be a shortage of opportunities to enjoy the outdoors.



Left: The twin-spotted spiny lizard can be found primarily in the southeastern portion of New Mexico. For those interested in finding one of these lizards, don't just look, but listen; they often can be heard scratching at tree bark. NMDGF photo by Charlie Painter.

Catching Lizards

Viewing is one thing, but catching a lizard can be an adventure in itself. An approaching hand will send most lizards running for the hills, but an inanimate object like a branch or fishing pole is largely ignored.

By placing a slip noose of dental floss or string at the end of a pole, a lizard can be caught by gently coaxing it over the lizard's neck and slowly applying tension to close

temperature. So the best time of the year for herping is spring through summer, with an activity peak during the monsoon season.

There's no need to travel vast distances. For many, an interest in the subject begins at home in the yard. It might start with a bug-eyed, translucent-skinned, wall climbing non-native Mediterranean gecko. Spiny and/or tree lizards, box turtles passing through and spadefoot toads after rains are all easily viewed in an urban environment.

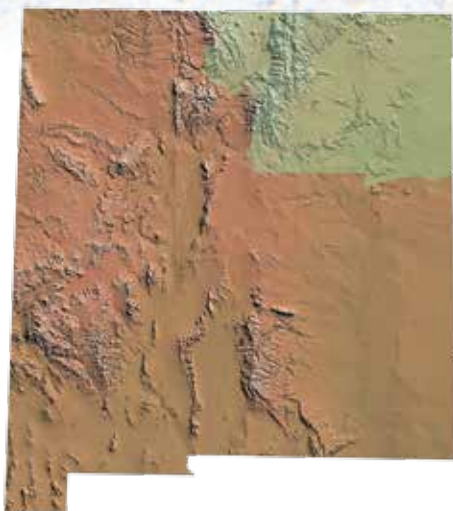
Jeremy Lane is a wildlife biologist and the Department of Game and Fish public information officer for the Southwest Area. He can be reached in Las Cruces at (575) 532-2100 or Jeremy.lane@state.nm.us.



Efforts at Eagle Nest Lake seem to be

keeping pike numbers at bay

By Zen Mocarski



Above: Following the discovery of northern pike at Eagle Nest Lake, New Mexico Department of Game and Fish biologists became concerned about the potential impacts this aggressive predatory fish might have on rainbow trout and kokanee salmon. NMDGF photo by Dan Williams.

Five years after rules were put into place to protect a northeastern lake, New Mexico Department of Game and Fish biologists are reporting what appears to be positive results.

Following the 2010 discovery of northern pike in Eagle Nest Lake, discussions ensued about what actions might best protect the thriving rainbow trout and kokanee salmon fishery.

“Northern pike are aggressive, predatory fish,” said Laurence D’Alessandro, coldwater fisheries biologist for Game and Fish. “The discovery of these fish at Eagle Nest continues to be a real threat to the future of salmon and trout fishing at the lake.”

Options such as chemical treatment would be costly for a large body of water, so what followed in 2011 was a mandatory catch-and-kill regulation on northern pike at the lake.

More information is needed, but early results suggest it has the potential to be effective.

“While they can spawn at Eagle Nest, we haven’t been documenting younger age classes,” D’Alessandro said. “The catch trends on pike have been reducing the last two years, but that’s not enough data to say the population is decreasing. We need to continue monitoring.”

D’Alessandro said trends from the last two years were promising, but that it is obvious from recent surveys that pike successfully spawned in 2015.

The department knows the northern pike were illegally introduced to the lake, but why and how remains a mystery. It is possible someone intentionally placed the fish into Eagle Nest to control white sucker and yellow perch populations.

“Yellow perch don’t belong in this lake, either,” D’Alessandro said. “They were illegally introduced some time in the 1990’s, possibly from a bait bucket, and their population exploded.”

Fortunately, predatory fish such as northern pike – which find rainbow trout and kokanee salmon more palatable than yellow perch – tend to increase in numbers at a slower rate than their prey.

“Ironically,” D’Alessandro said. “Whoever introduced this fish thinking it might control yellow perch probably didn’t realize it would actually feast heavily on trout and salmon.”

“Illegal stockings are detrimental to our waters,” D’Alessandro said. “Not only does Game and Fish have to put resources into addressing these predators, the public loses as well by having a productive fishery taken over by an illegally introduced species.”

Before the introduction of northern pike, department biologists found fingerling-size fish could grow quickly at Eagle Nest Lake, and stocking smaller fish costs the agency less than having to grow them to larger sizes within a hatchery.

Now, D’Alessandro said, there are plans to look at the survival rates of the smaller fish

“The fingerling study will tell us a lot as to which direction we need to go in order to manage Eagle Nest Lake in a productive manner.”

For anglers wishing to help, D’Alessandro said the best thing they can do is to wet a line and target the pike.

“They’re a lot of fun to catch, it’ll help the fishery, and there’s no limit for pike at Eagle Nest,” he said.

Anyone witnessing illegal stockings is encouraged to contact the Operation Game Thief 24-hour hotline at 800-432-GAME (4263). 🐾

Baked Pike

What you’ll need:

- 3-4 pounds of fillets
- 5 tablespoons of butter
- 1 medium-size onion
- 1 medium-size green pepper
- 6-8 strips of bacon
- Lemon juice
- Salt and pepper

Directions:

Preheat the oven to 350 degrees. Melt butter and pour into a 9x13-inch cake pan. Place fillets in the butter and season with salt and pepper. Slice onions and green peppers over fillets. Sprinkle teaspoons of lemon juice over fillets. Cover the fillets with 6-8 strips of bacon.

Bake for about 25 minutes and serve.



Yellow perch have dorsal fin spines not present on salmon and trout. Although the pike do eat perch – they are the most common fish in the lake – the spines make them more difficult to consume.

Illegal introductions such as this can be costly to the department, which annually stocks about 600,000 trout and 200,000 salmon into the lake.

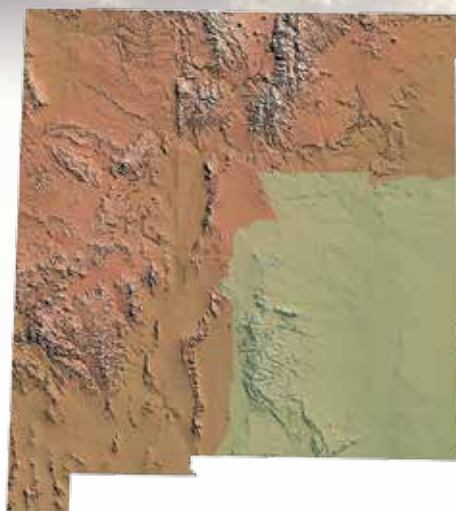
and determine whether it will be necessary to rear larger fish at a hatchery prior to stocking. This would cost the department considerably more money to maintain this fishery.

“This will give us a cost-benefit of stocking fingerlings, which are cheaper to raise than those we need to grow larger,” D’Alessandro said.

Left: Eric Frey, Department of Game and Fish sportfish program manager, holds a northern pike. The fish were illegally introduced into Eagle Nest Lake. Some believe an individual may have released the pike in an effort to control the yellow perch population, which also were illegally placed into the lake. NMDGF photo.

Trout of Southeastern New Mexico

By Mark Madsen



Top: In 2015, The New Mexico Department of Game and Fish worked with the Village of Ruidoso to open Alto Reservoir to stocking and anglers. Located about 4½ miles north of Ruidoso, Alto Lake has been stocked with channel catfish and rainbow trout. NMDGF photo by Mark Madsen.

Don't overlook southeastern waters when seeking some fabulous trout fishing.

Many southeastern New Mexico anglers limit their efforts to hook a trout to the winter months when rainbows are stocked in small urban lakes. But, for those willing to take a drive into the mountains, yearlong opportunities exist to wet a line for these coldwater fish.

Although limited, 12-month trout fishing opportunities exist at a couple locations in the cool pines of the Sacramento Mountains, where the Village of Ruidoso owns and operates a couple small reservoirs for use as municipal water supplies: Grindstone and Alto.

Located southwest of Ruidoso and west of Carrizo Canyon, Grindstone Reservoir has been stocked with rainbow trout by the New Mexico Department of Game and Fish for many years. This reservoir has remained a hot spot for trout fishing, despite water being drawn down so a liner could be placed on the dam to resolve the problem of numerous leaks.

That work was completed last fall and the reservoir's water level is rising. Trout fishing has remained good-to-excellent and the stocking of rainbow trout continues, including during

the summer months, provided water conditions remain stable and favorable for trout.

And, if rainbow trout aren't among your favorite meals for dinner, Grindstone also contains a healthy population of channel catfish, smallmouth bass and bluegills.

While Grindstone has been open to fishing for many years, Alto Reservoir has not. It wasn't until 2015 that this water welcomed anglers.

The reservoir approximately 4 ½ miles north of Ruidoso off Route 48 now is being stocked by the department. Initially stocked with channel catfish, Alto subsequently has received rainbow trout.

Alto had not been open to the public for many years, but last year the department worked with the Village of Ruidoso to open the lake and start stocking fish.

Roddy Griego, director of the Ruidoso Parks and Recreation Department said the village has big plans for Alto Reservoir. The village owns a couple of hundred acres east of the lake and plans to put in hiking trails and expand outdoor-related activities.

The latest fishing reports indicate that trout fishing at both lakes has been good and anglers continue to catch trout using typical

Southeast Region

baits: various colors of Power Bait, salmon eggs, worms and small lures, including Panther Martins and Kast Masters.

Don't overlook the opportunities to catch a pan-sized channel catfish at Grindstone, where hoop-net surveys suggest a robust population. Worms, stink bait and chicken liver should work. Anglers wanting to catch bluegills in Grindstone should try worms, wax worms and small curly-tailed grubs.

The daily bag limits are five trout, 15 catfish and 20 bluegills. Fishing at Grindstone is allowed from sunrise to 10 p.m. and nonmotorized boating is allowed from April 1 to Oct. 31. A boating permit is required and can be obtained at the Ruidoso Parks and Recreation Office. Fishing at Alto Reservoir is allowed from sunrise to sunset; no boating allowed. Fishing licenses are required for all anglers ages 12 and older.

Bonito Lake, owned by the City of Alamogordo, remains closed due to the after effects of the 2012 Little Bear Fire. Work is scheduled to start on the lake in the fall. The lake will be drained and dredged to remove ash and debris and work on the dam will also be completed.

City of Alamogordo officials hope to reopen the lake to the public sometime in 2018.

The next time you decide to head to the cool pines of Ruidoso, throw in a fishing pole or two and try some trout fishing at one of the reservoirs.

For more information about Grindstone or Alto, contact the Village of Ruidoso, 1-877-RUIDOSO (784-3676) or (575) 257-7395. 🐾

Top: Grindstone Reservoir, nestled in the cool pine forest of the Sacramento Mountains, offers anglers in the southeastern portion of the state opportunities to wet a line for rainbow trout. NMDGF photo by Mark Madsen.

Bottom: Bonito Lake, a popular trout fishing lake near Ruidoso, closed in 2012 after the Little Bear Fire. Reclamation work is scheduled to begin this fall. Photo by Karl Moffat.



Mark Madsen is the retired Department of Game and Fish public information officer and conservation officer for the Southeast Area.

Bull elk or cow elk

By Sergeant Chris Ortega

To suggest people are passionate about wildlife might be an understatement and attempts to dispel preconceived notions might be considered blasphemy.

Such was the case with a man at the New Mexico State Fair.

It was mid-September and the state fair was in full swing. I was assigned to work the Game and Fish exhibit, which provides a break from my normal duties as a game warden. While entertaining, it is not easy work. Responsibilities include having to feed the various critters, cleaning the animal exhibits,

keeping an eye on the fish pond water temperature, cleaning up at closing time and fielding questions from the public.

Those questions can be interesting, entertaining and sometimes frustrating. Occasionally, all three come into play.

A gentleman approached me and in a calm but serious voice, said: "I have a question I have been wanting to ask you." He said for some time he had been pondering whether a male elk was still considered a bull after it had dropped its antlers.

I looked him straight in the eyes and told him, "Yes."

You might think that would end the conversation, considering the question had been answered, but he looked at me with a somewhat puzzled

expression and insisted that when a bull dropped its antlers, it must be a cow.

This was going to be more difficult than I thought.

I explained to him even though the bull elk had dropped its antlers, it is still a bull elk and nothing had changed other than having no antlers.

A wildlife professional wasn't going to sway this man's long-held belief. He looked at me and insisted it was now a cow elk because it had no antlers. I continued to tell the gentleman that bull elk shed their antlers every year in the spring when their testosterone levels are at their lowest and the low testosterone levels causes the bone connected to the base of the antler to deteriorate

In the middle of one of my explanations, he stammered away in disgust.

To my amazement, he approached me a third time and said there is no way possible a bull elk could be a bull elk if it has no antlers, therefore it has to be a cow.

I was not willing to spend any more time with him discussing his magical transformation of a bull elk to a cow elk so I simply explained that I couldn't spend any more time on the subject. After all, there were critters to feed, exhibits to clean, and water temperatures to watch.

When he walked away, I'm sure he still believed that when antlers fall a bull turns into a cow. And, surprisingly, it wasn't even midnight. 🐾



Left: Bull elk grow and shed large antlers each year. Made of bone, as antlers grow they are protected by a fuzzy-like skin known as velvet, but by late summer the antlers have hardened and the velvet is rubbed off or falls off. During the spring the antlers drop and the process begins anew. Photo by Dan Williams.

Right: Cow elk do not have antlers. Photo by Zen Mocarski.

and eventually fall off.

He wasn't buying the explanation and we continued to discuss his question for the next 40 minutes or so before he walked off.

Approximately 30 minutes later, the same gentleman approached me again and using a much different tone said a bull elk, after dropping its antlers is no longer a bull elk.

So we went through the whole process again. For the next 20 minutes or so, using different terminology and explanations, I tried to help him understand why a bull elk did not go through a metamorphosis when the antlers dropped. But, he just could not believe it and was becoming quite agitated with me.



Sgt. Christopher Ortega is a conservation officer who works in the southwest area in the Las Cruces Supervisory District. He can be reached at (575) 532-2107 or by email, chris.ortega@state.nm.us

Seven

fishing

Peace

hot spots

and

off the

Quiet

beaten

path

Everyone knows the big-ticket names such as Elephant Butte or Fenton and Heron Lakes.

But what if you're looking for a bit of tranquility, a spot that takes a little effort to reach but offers the reward of a quiet angling experience and the prospect of reeling in some fish?

Fish biologists with the New Mexico Department of Game and Fish were asked to name some not-so-well-known hideaways that provide a great setting for anglers that like to get away from it all. For those looking for more of an adventure than a day at the lake, this might be for you.

Just don't forget to pack water, some food, a hat and sunscreen.

Lower Red River

This is a rugged, beautiful setting in the Rio Grande Gorge. The La Junta Trail will get you down to the Rio Grande where it meets the Red River confluence. Multiple species of trout can be caught at this location, including brown, rainbow and cutthroat.

WARNING: Hiking boots are a must for this trip and getting to this spot is not easy and only experienced hikers should consider tackling the 1.5-mile strenuous journey in-and-out of the canyon.

A fly rod in the spring or fall can be extremely productive, but early summer mornings and late evenings can also be great.

The lower Red River is a special trout water, so refer to a fishing proclamation for the current rules and regulations. A map and guide book would also be handy.

Looking for an added adventure, head to the north to the Wild Rivers Recreation Area where anglers have a chance at hauling in good size Rio Grande cutthroat trout.

Directions

From Taos, follow Route 68 north seven miles. Take Route 522 approximately 20 miles to Questa. Travel three miles past the stop-light in Questa and turn left onto Route 378 and follow the signs about 12 miles west to Wild Rivers Recreation Area.

Johnson Lake, Pecos Wilderness

The trail to Johnson Lake can be accessed at the Panchuela trailhead. It's a 12-mile moderate-to-strenuous hike with an elevation gain of roughly 2,800 feet. You'll want to bring overnight, light-weight camping gear, but be prepared for chilly nights and mornings even in summer.

The lake, usually accessible from late May until mid-September, has good fishing for cutthroat and rainbow trout. A map, plenty of food and water, and the 'know-how' are all essential to get to this beautiful, high-country lake ... but it's worth the effort.



Directions

From the town of Pecos, head north on Route 63. At Cowles, park and sign in at the Panchuela trailhead. For those who are GPS savvy, the coordinates for the lake are 35°51'16.67"N 105°44'9.28"W.

Little Creek

Individuals who just want a day away can look at Little Creek as a possibility. Don't be fooled as you access this seemingly dry creek bed at its confluence with the Gila River near the east boundary of the Heart Bar Wildlife Management Area downstream of the Gila Cliff Dwellings.

The first mile of the canyon is usually dry, but you'll find perennial water exists upstream from that point to the barricade where fishing is prohibited upstream. Good densities of brown trout and solitude make this trip worth the day hike.

Directions

From Silver City, follow Interstate 15 to the Gila Cliff Dwellings National Monument. Trail 161 has no trailhead at the road and must be hiked to via Trail 160, located at TJ Corral about one mile before the entry station to the Cliff Dwellings. It's about a 4 ¼-mile hike from the 160 trailhead to Trail 161 in Little Creek.

Opposite: Don't be fooled hiking into Little Creek. Anglers making this journey will walk along a seemingly dry creek bed but find perennial water upstream. NMDGF photo by Jill Wick.

Above: Located in the Pecos Wilderness, Johnson Lake is most accessible from May into September. Be sure to bring camping gear because getting to this lake involves a 12-mile hike. NMDGF photo.

East Fork of the Gila River

This is a trip for those wanting to spend a few days in the field. You'll definitely need to bring camping gear, food and water on this trip. The lower end of the East Fork passes through private property and access is limited. Plan on a few days of backpacking to access the best fishing.



Smallmouth bass fishing is best in the section of the East Fork below its confluence with Black Canyon, but they are present throughout the entire fork. Smallmouth up to 3 pounds are relatively common in this stream.

Directions

From Silver City, head east on U.S. Highway 180 about six miles and then turn left on Route 152. Follow Route 152 about 15 miles and turn left on Route 35. Stay on Route 35 for about 17 miles and turn right onto Forest Road (FR) 150 and 225 to trail 708 or other trails off of FR 150 (Tom Moore and Black Canyon).

Lake Roberts

While it is located along Route 35, Lake Roberts is tranquil as long as holiday weekends are avoided. Known primarily as a winter trout water, Lake Roberts is typically overlooked for its warm water species during the summer months. Largemouth bass grow fast and are in good densities and channel catfish in the 4-6-pound range are common.

About an hour drive from Silver City, the lake sits among the pines in the Upper Mimbres Valley in the Gila National Forest. This location, while not difficult to access, still provides ample wildlife viewing opportunities as deer, elk, and other mammals can be seen along the water's edge as well as amphibians, reptiles and birds.

The area provides good camping opportunities for RVs in the Mesa and Upper End Campgrounds and dispersed campsites a few miles from the lake. Available sites are on a first-come, first-served basis and there are some fees associated with camping.

Directions

Located on Route 35 approximately 21 miles northwest of Mimbres, N.M.

Clayton Lake

Clayton Lake has good walleye densities and they grow big. The state record walleye was caught here in 1989 and it still harbors some large fish. Channel catfish and largemouth bass are also present in this lake.

The lake was created by the Department of Game and Fish in 1955. Game and Fish has a joint agreement allowing New Mexico State Parks to operate a park on Game and Fish property and anyone who possesses a valid fishing license and is actively fishing is not charged an entrance fee provided they park in the free parking area at the boat ramp.

During the winter months fishing is closed and the lake serves as a resting area for waterfowl.

Directions

Head to Clayton and onto N. 1st Street. In about ½ mile, turn right onto Clayton Lake Road and continue onto Route 370N. In approximately 10 miles turn left onto Route 455 and continue to the park.

Upper Rio de las Vacas

Located within the San Pedro Parks Wilderness in the Jemez Mountains, the Upper Rio de las Vacas provides an opportunity to wet a line in a smaller river flowing through pristine meadows at elevations ranging from 9,000-10,000 feet.

Although you'll spend some time hiking, there's a lot of access to the water and the brown and Rio Grande cutthroat trout will make it a great experience. Flies can be productive in late spring through the fall in this relatively remote location.

Be sure to check with the Santa Fe National Forest for maps and any wilderness restrictions/regulations that may apply and refer to the Game and Fish fishing proclamation for current rules and regulations.

Also, be sure to pack a map, food, water and appropriate clothing, including rain gear because late afternoon thunderstorms are common during the summer months. Backpacking into the wilderness for extended stays is another option for anglers visiting this area.

Directions

From Cuba, N.M., take Forest Road (FR) 126 east about 10-12 miles. Near Clear Creek Campground take a left and go north/northeast on FR 70 for 7-10 miles until reaching the Palomas Trailhead parking area. Hike north on Palomas Trail (#50) for 1.4 miles where it crosses the Rito de las Perchas Trail (#418). From here you can head west on Damian Trail (#436) for 1.5 miles where it crosses the Rio de las Vacas or continue north on Palomas Trail for another 2.5 miles until it meets the Rio de las Vacas and turns into the Rio de las Vacas Trail (#51) continuing north along the river. 🐾

Top: Lake Roberts in the Upper Mimbres Valley in the Gila National Forest offers both winter trout and warmwater fisheries. NMDGF photo by Karl Moffat.

Bottom: Clayton Lake not only produced the state record walleye but also has a dinosaur tracks viewing area. NMDGF photo.



New legislation brings **Changes and Challenges** to OHV recreation and enforcement

By Christopher Johnson

Amendments to state off-highway vehicle laws allow local authorities to designate paved roads where OHV operation is legal under specific conditions.

Off-highway vehicle riders and officers tasked with enforcing laws are facing new challenges this year with the enactment of a state law allows OHV use on some paved roads. Previously, all public paved roads were off-limits to OHVs, except at trail crossings.

Now, local authorities such as village councils or the State Transportation Commission can designate paved roads where OHV riding is legal under specific conditions.

The law follows a trend among states to increase access and stimulate OHV tourism and outdoor recreation. Neighboring states Arizona, Colorado and Utah all allow paved-road operation in various ways and areas.

“These changes will make it important for off-highway enthusiasts to understand the rules, not just in the area they live, but also in any location they plan to visit and use such a vehicle. Understanding

the laws will help recreationists avoid potential problems,” said Craig Sanchez, assistant chief of education for the New Mexico Department of Game and Fish.

The law does not create unregulated use of the vehicles on paved roads. In fact, it adds requirements for adults that previously applied only to youths.

Now, adults operating off-highway vehicles on paved roads must wear approved helmets and eye protection and carry a permit as proof that they have received some type of OHV safety training. Paved-road OHV operators also must have a driver’s license and proof of insurance, just like car and truck drivers.


The vehicles must carry current OHV registration and be equipped with mirrors, mufflers, brakes, headlights and taillights. OHVs legally can be operated on paved roads only where permitted by local authorities such as village councils, or by the State Transportation Commission.

Off-highway motorcycles and snowmobiles are still restricted from paved-road operation except on road shoulders and trail crossings.

Some communities already are acting on the relaxed OHV rules.

The City of Farmington passed an ordinance allowing side-by-side OHVs to be operated on specific paved roads within its jurisdiction. All-terrain vehicles are not included, and the ordinance sets a maximum speed limit of 45 mph unless otherwise posted. It also cites the OHV Act speed limit of 10 mph within 200 feet of a business, animal shelter, horseback rider, bicyclist, pedestrian, livestock or occupied dwelling, unless the person operates the vehicle on a closed course or track.

The OHV Act of 2005 previously applied exclusively to off-road operation on public lands, where most enforcement was done by New Mexico Department of Game and Fish conservation officers and federal agency officers. The amended act will increase local, county and state police encounters with OHV users.

The Department of Game and Fish will provide links on its website, www.wildlife.state.nm.us, to local ordinances as they are made known to the department. 

Above: A volunteer off-highway vehicle instructor guides a your rider through a safety course. NMDGF photo by Dan Williams.



The need for modern conservation efforts

By Zen MocarSKI

In the last 100 years, development has boomed, cities have grown and the connections people have with the outdoors has been replaced by the internet, shopping malls, movie theaters and home entertainment centers.

The roadways we use, our homes, fences and our workplaces are parts of our everyday lives that also have huge impacts on wildlife -- impacts that we often overlook.

This disconnect sometimes leads to questions when someone sees or reads about a wildlife agency conducting conservation work.

"Why do you interfere with wildlife? Why not just leave the animals alone?"

"Good question," said Nicole Quintana, big-game manager for the New Mexico Department of Game and Fish. "But, let me answer the question with a question: How have humans not already interfered with wildlife?"

Habitat is composed of food, water, shelter and space. Developed areas -- whether they be a 40-acre slice of heaven, urban housing and apartments, or a work environment -- were once habitat for wildlife.

There's little humans have done that hasn't impacted wildlife.

Fragmentation

"We drive cars, which can be a threat to wildlife," Quintana said. "In the United States more than one million vertebrate animals die each day in vehicle collisions. That's a staggering number. That's about 12 vertebrates killed every second of the day.

"We drive these cars on roads that have fencing on both sides. This fencing and human activity along the roadways fragment wildlife populations."

When out driving or hiking, it's easy to look at the vast open spaces with little thought that these once uninterrupted areas are not as open as might be perceived. Roads and fencing have sliced these areas into smaller wildlife parcels.

Fragmentation is a growing problem that can impact genetic diversity, sever historic migration routes and separate the animals from one of those critical elements that constitutes habitat.

It also creates a potential issue with disease.

"When habitat is cut into smaller pieces, animals are obviously placed into tighter quarters," Quintana said. "When one animal becomes sick, the potential to spread the disease increases. Think about cold and flu season. One child gets sick at school and walks into a classroom and coughs. Because of how close together everyone is, it's easier for that child to pass the disease to others.

"When this happens, fragmentation can make it impossible for that species to naturally recover and repopulate an area."

Loss of Habitat

That leaves the biggest issue of all: loss of habitat.

Some may contend that hunting leads to a species' demise, but modern hunting practices -- a far cry from the days of market hunting -- never have led to the loss of a species. Rather, it pays for modern management efforts and supports not only those

animals that are hunted, but also those that are not.

Loss of habitat is the leading cause of population declines and wildlife extinction.

"It's a real problem for wildlife," Quintana said. "How do humans and wildlife coexist despite all the modifications made to the landscape? Modern techniques for monitoring wildlife, such as tracking collars, allow biologists to understand behavior, travel patterns and reasons for mortality, which is helping."

Passive management, or the "leave wildlife alone" approach suggests wildlife could overcome barriers with no assistance.


"Animals can no longer travel around the landscape the way they once did," Quintana said. "Sometimes the only way to restore populations to their historic range is to move animals from one area to another."

Management

The obstacles wildlife face are daunting, but biologists across the nation are working tirelessly to find solutions.

In New Mexico, Abo Canyon bighorn sheep had two-railed track running through the habitat. The Department of Game and Fish worked with Burlington-Northern Santa Fe Railroad to install 8-foot fencing directing bighorns under the tracks to reduce the odds of train-wildlife collisions.

Game and Fish habitat biologist George Farmer said pronghorns in the southeastern portion of the state are benefiting from a collaboration between Game and Fish, the Bureau of Land Management and ranchers. Because pronghorn prefer going under fences rather than over, raising the bottom strand of a fence to at least 18 inches off the ground improves connectivity.

Other Department efforts include installing fencing and providing safe passages under highways to reduce vehicle-wildlife collisions, restoration work to improve habitat statewide, wildlife relocations to restore populations and the installation of wildlife drinkers to help mitigate disturbances caused by human activities. 

Left: Fencing can impede movement of some wildlife, including pronghorns. Although capable of jumping, pronghorns ring to go under fences. Pronghorn-friendly fences include an 18-inch gap from the ground to the first strand. Fencing without such modifications impedes pronghorn movement. NMDGF photo.



Competitive juices flow at NASP State Tournament

By Zen Mocarski

About 8 a.m. March 12, youths started arriving at the Albuquerque Convention Center in anticipation of the National Archery in Schools Program New Mexico State Championship Tournament.

Arriving in waves, 829 participants representing 51 teams walked up to shooting lines for a chance to advance to nationals May 12-14 in Louisville, Ky. Although the national tournament might be icing on the cake, becoming a better archer was the primary goal for most of the participants.

Emilee Wood, a 10th-grade participant for Aztec High School, had never competed at the state level, but reached nationals two years ago as a replacement. For her, good scores represent improvement, but visualizing the perfect shot is the reason to participate in the program.

"I find it relaxing," she said. "When you draw back the bow and take a deep breath and release the air. The sound of the arrow hitting the target is satisfying."

Chris Chism, a 9th-grader at Aztec High School, goes one step further.

"Especially when you hear the arrow hit the other arrows because you know you're grouping so well," he said.

Chism, involved in archery for a year and a member of the team for over a month at the time of the championships, finished 25th out of 453 participants in the boys category and 34th overall with a total score of 261 (of a possible 300). He said he relished his five consecutive bull's-eyes from 10 meters.

"I achieved a goal I've been reaching for for the last month and a half," he said, smiling at his teammate. "I think I did good, but I was nervous. I could have done better."

"I've gotten perfect scores, but not today, unfortunately," Wood said.

The Archery in Schools Program has grabbed the attention of many youths across the nation. Reasons for getting involved are varied.

For Chism, it was watching Tim Wells' "Relentless Pursuit" on television.

"I pestered my dad for about six months and he finally broke down and got me a bow," Chism said.

For Wood, the hook came after watching the movie "Avatar."

"I thought it was pretty awesome watching it," Wood said, adding that she and teammates will put a small piece of tape on a target and see if they can hit it, which came about after watching the Hunger Games trilogy.

Sophie Walker, a fourth-grader, and Mario Roybal, a fifth-grader, both at Maggie Cordova Elementary School in Rio Rancho, had their own stories.

"The reason I started is that mom got tired of all the Nerf bows and arrows I went through," said Walker, who became competitive in the sport in 2015. "So, she got me a real one. I picked it up and I liked it and want to do it for quite a bit longer."

Roybal got started after his friends told him how fun it was. He's already got other aspirations of heading into the field.

"I like the competition with the other schools and it's fun to be shooting with another person at your side," he said. "This will make me better and when I go hunting. I want to be able to use a bow."

The stories the young archers tell of their involvement in the sport is the reason Mark Yoder, a physical education teacher at Coronado Elementary, wanted to bring archery into his program.

"It's awesome," Yoder said. "I do it during the day as part of the physical education program and then after school as well."

Yoder has 24 members on the archery team, 22 on the club, and reaches another 100 through the physical education class.

"It's one of the favorite units in my class. This program allows those outside the other sports to participate," he said. "They learn about discipline and safety, but most importantly they learn to be successful."

While Yoder defines success as being able to hit the target, his team is excelling at the sport. Coronado finished second behind Clovis Christian School by less than 100 points and the team managed 50 bull's-eyes.

"This tournament is awesome," he said. "I want them to have fun. For a lot of them, this was their first time at an organized competition like this. I'm very proud."

Chism and Wood would like to see more interest.

"I wish it was a bigger part of our school," Chism said. "I wish more were participating

in it. I have friends who I think are a little intimidated by it, but you aren't good at anything until you practice."

Increased participation would allow Aztec High School to compete as a team, which would require between 12-24 archers. From an individual perspective, however, Aztec was well represented with Cody Paris winning the overall tournament (289), Clint Valerio finishing in a tie for third, and Tyler Perry taking 27th.

No matter what place individuals finished, Roybal summed up the competition as a means to improve.

"When I'm done shooting, I like to compare what I did with another person," he said. "It makes me a better shooter."



Top: Sophie Walker, a fourth-grader at Maggie Cordova Elementary, got involved in archery when her mother got tired of buying Nerf bows and arrows and got Sophie the real thing.

Bottom: Mario Roybal, a fifth-grader at Maggie Cordova Elementary, said his goal is to become proficient enough to take his skill into the field for an archery hunt. NMDGF photos by Zen Mocarski.

AIMS, James Monroe and Clovis Christian qualify for nationals

It might be somewhat fitting that a number of the highest scores at the National Archery in Schools Program's New Mexico State Championship were turned in by those taking AIMS.

That is, attending AIMS, the Albuquerque Institute of Mathematics and Science.

Archers from the school took seven of the top 10 spots overall and the high school division team won and qualified for the national tournament in Louisville, Ky., while the middle school finished second.

Jesse Saunders, second place, Vincent Romero, third, David Westphal, fifth, Lucas Chavez, seventh, Anne Rolsma, eighth (first overall in the girls category) and Aaron Lawrence, ninth, all finished in the top 10.

Breaking the school's stranglehold on the top 10 was Cody Paris, first overall from Aztec High School, Tyler Pierce, sixth, from Albuquerque Homeschool and Tyler Lingnau, 10th, from Clovis Christian School.

James Monroe won the Middle School Division with 2,999 points. The top three middle school scores were turned in by Westphal, Chavez and Lawrence.

In the Elementary School Division, Clovis Christian School finished first with a score of 2,857, with Coronado and Seven Bar elementary schools taking second and third, respectively.

The top three elementary school scores were turned in by Kimber Barnett and Chloe Whitten, from Clovis Christian and Ben Anyanonu, from Seven Bar Elementary.

— Zen Mocarski

Keeping students engaged one goal for Game and Fish archery coordinator

The long-standing tradition of archery may provide a key to unlocking the potential of students and improve graduation rates in the process.

Brian Guzman, archery coordinator for the New Mexico Department of Game and Fish, believes getting more students involved in the National Archery in Schools Program can help.

He said it is possible participation will help keep youths enthusiastic, attentive and in school.

"Of the students that drop out of school, 88 percent indicate they were not involved in extra-curricular activities," Guzman said. "Educators have reported that the program has engaged the otherwise unengaged. It helps students achieve a higher level of self-confidence.

"For those not interested in other activities, archery provides another option to explore."

The archery program began in 2002 in Kentucky and the program quickly grew, reaching its three-year goal of 120 participating schools in its first year.

The units of study were developed to meet state and national educational standards, meaning it could be easily integrated into the curriculum.

"This program has been great for the schools and as a means to reignite a centuries-old passion," Guzman said. "We had over 800 participants in the New Mexico championship tournament this year, which is an indication of the growing interest in archery."

The program is available for inclusion for grades 4-12 and is broken down into three divisions: elementary, middle and high School. Each school participating must have a teacher or volunteer that has passed Basic Archery Instructor course.

Guzman said schools wishing to join should contact him for more information at brian.guzman@state.nm.us or call (505) 231-4375. 🌐

— Zen Mocarski



Share with Wildlife

Prairie dogs critical to many species

By Ginny Seamster

Call them what you will: varmints, rodents or pests, but there's no denying the important role prairie dogs play in the wild.

Research, partly funded by the New Mexico Department of Game and Fish Share with Wildlife program, is being led by Dr. Ana Davidson, a research assistant professor at the University of New Mexico.

Preliminary results suggest what has long been suspected: Prairie dogs are a keystone species. That means the health of the land, especially grasslands, and other species is directly tied to prairie dogs.

In 2010, Gunnison's prairie dogs were reintroduced onto the Sevilleta National Wildlife Refuge south of Albuquerque, where Davidson is using camera traps to study the impacts.

To date, Davidson and her students have reviewed approximately 500,000 images. She has found higher capture rates of animals such as burrowing owls, jackrabbits, cottontails and badgers at the reintroduction site as opposed to grassland areas that lack prairie dogs.


The small, burrowing mammal also has been directly tied to the health of the highly endangered black-footed ferret, which depends on prairie dogs as a food source. Prairie dog

burrows provide shelter for a number of bird species, including the ferruginous hawk and burrowing owl.

Past work by Davidson and other researchers has shown that the foraging practices of prairie dogs helps boost the abundance of flowering plants, which increases the number of pollinators.

Grassland herbivore species such as pronghorns and bison also benefit from the presence of prairie dogs.

"Our preliminary results suggest the reintroduction of prairie dogs at the refuge is helping to restore their functional role in the grassland ecosystem," Davidson said.

For more information, please visit the department website, wildlife.state.nm.us or email Ginny Seamster at virginia.seamster@state.nm.us. 

Right: Research has indicated that prairie dogs directly impact the number of bees and butterflies in grassland areas because prairie dogs help boost the abundance of flowering plants. NMDGF photo by Dan Williams.



Ginny Seamster is the Department of Game and Fish BISON-M/Share with Wildlife Program Coordinator based out of Santa Fe. She can be reached at (505) 476-8111 or virginia.seamster@state.nm.us



While in the field . . . Unexpected findings

By Zen MocarSKI

There are certain benefits to working for a wildlife agency, not the least of which is the opportunity to spend time outdoors enjoying what nature has to offer.

As the editor of *New Mexico Wildlife*, I'm afforded many chances to spend time in the field with a diverse group of individuals who have a boatload of knowledge about wildlife and habitat.



Among my favorite questions for these folks are: "What's this?" and "What's that?"

But, sometimes I'm alone walking a trail, hiking through the woods, or sitting by a lake. I've almost always got a camera hanging at my side hoping to capture an image and, if I'm fortunate, it's a rather unique picture. On those occasions, I wish I had one of our experts along to help get a proper identification before filing the image in a digital photo library.

I'm always hoping for something that's either rarely or never been seen in an area. Or, maybe something unexpected like having a jack-rabbit, at full speed, emerge from the brush within six feet . . . followed closely by a coyote. What a great picture that could've been if I had my camera at the ready.

On occasion, I might get lucky and end up with a picture biologists find helpful.

Most recently, in January, while photographing a turkey capture in Raton, a couple squirrels made an appearance. Never one to pass up an opportunity to continue building the photo library, I snapped away.

Identification was elusive. It looked like a fox squirrel, but my older field guides suggested it did not occur in the area. When I sent the photo to someone more knowledgeable, I received inquiries about exactly where and when the picture was taken.

Turns out it was a fox squirrel and researchers have been documenting its slow, but steady natural expansion into northeastern New Mexico.

While it might not always turn out to be something out of the ordinary, there are moments when you do see, and hopefully photograph, something just a bit unusual.

About the fox squirrel

Fox squirrels were introduced into southeastern New Mexico more than a half century ago, and today the species emergence in the northeastern portion of the state has researchers looking at the animal's expansion.

In a paper authored by Dr. Keith Geluso, formerly with the University of New Mexico Department

of Biology, humans, it is believed, are playing a role in the squirrel expanding its territory. Woodland areas along waterways have expanded for a variety of reasons, including fire suppression and altering the flow of waterways.

This has provided the necessary habitat for this tree squirrel and it is believed it has moved along the Purgatoire River in southeastern Colorado. From there it moved into northern New Mexico.

These are the largest tree squirrels native to North America, ranging from about 17 to 28 inches long with a large, bushy tail ranging from 8 to 13 inches.

While they have excellent vision, even at dusk, and a good sense of hearing and smell, these creatures are quite tolerant of humans and often are found in residential areas.

Strictly diurnal, fox squirrels have sharp claws that help them climb with ease. They're also known to jump horizontally up to 15 feet and can free fall upwards of 20 feet.

Doing as squirrels do, they will store a cache of seeds, not always remembering the location of the secret hiding place. As a result, some of the seeds will grow, promoting the growth of trees.

Hence, along with human alterations to the landscape, these squirrels potentially can expand their range by planting new trees.

Top: A fox squirrel balancing on a small tree branch. Fox squirrels are larger and heavier than gray squirrels. USFWS photo by Gary Eslinger.

Left: Photo by Zen MocarSKI.



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No need to sell wildlife short All have special tools to survive

By Zen Mocarski



Everyone has heard the saying, “defenseless animal,” but we might want to think twice before accepting that notion, especially when it comes to wildlife.

“There’s no such thing as a defenseless animal,” said Stewart Liley, chief of the Wildlife Management Division for the New Mexico Department of Game and Fish. “Every animal is equipped with the necessary tools to survive.”

Birds? Whether song bird or raptor, they all can fly. Even ground-based birds such as quail are equipped with many ways to avoid becoming a predator’s snack.

Large coveys use strength in numbers to confuse potential predators, including humans, by flying or running in many directions when threatened.

“Camouflage, for instance, works well for many animals that are both predators and prey,” Liley said. “Reptiles may be best-known as the masters of camo, but it doesn’t end there. Bighorn sheep, pronghorns, many different types of birds and even fish use camouflage as a means to survive.”

Fish? They tend to be darker on top and lighter below, making it more difficult to see them from above.

Keen senses come into play

“While javelina may have poor vision, they have a particularly acute sense of smell, not to mention a set of formidable canines,” Liley said. “Some wildlife, such as bighorn sheep, have exceptional vision and can detect potential danger from a distance.”

Even small mammals have defensive tactics

Squirrels are quick and exceptional climbers. Mice can get into spaces potential predators can’t. Pack rats build elaborate nests, a good deal of which likely will involve protective barriers of items such as cacti. At least half of a pack rat’s nest is built of edible items so they can remain barricaded for long periods of time.

Rabbits and hares may appear vulnerable, but they are adept at defending themselves.

“Sure, by most standards they’re cute and they certainly are a prey species, but they are far from defenseless,” Liley said.

Cottontails and jackrabbits (actually hares) have good senses of hearing and smell, and their nearly 360-degree sight picture makes it difficult to catch one by surprise. Jackrabbits also can hit top speeds close to 35 mph, pretty close to the top speed of a coyote. Cottontails avoid predators that hunt by sight by remaining perfectly still until danger passes.

Even mating behaviors can be considered defense for some animals. Cottontails and jackrabbits mate throughout the year and have large litters, helping the species survive.

“Fact is, most prey evolved with the predators on the landscape,” Liley said.

So why do pronghorns need to reach speeds close to 60 mph when there isn’t a North American predatory land animal capable of reaching the same speed?

That particular defense worked well against the American cheetah, which also reached those speeds but has long been extinct from the landscape.

Even newborn pronghorns, which might be considered defenseless, are born with no scent and lie low in the tall grass to avoid coyotes.

There is one species that, physically speaking, is more defenseless than most.

Take a look in the mirror.

Compared with wildlife, humans don’t run particularly fast or see very well. Our sense of smell is pretty lousy and our hearing isn’t up to snuff. We are omnivores, but our bodies are designed like a carnivore, with our eyes set straight forward.

“This means, while humans can judge distance quite well, we can’t see potential danger lurking from behind,” Liley said.

What sets humans apart are brains and the abilities to walk upright and use tools.

Defenseless? Hardly, but perhaps more than we think. 🐼



Left: While poor eyesight might suggest javelina lack the same defenses of other wildlife, they possess a good sense of hearing, a keen sense of smell, and a formidable set of tusks.

Right: While quail do serve as a prey species for many animals, they are far from defenseless. They are capable of short, quick bursts of flight and will scatter in many directions, which can confuse predators.

NMDGF photos by Dan Williams.



Cibola National Forest undergoing major facelift

By Zen Mocarski

Rows of densely-packed ponderosa pine line the sides of the road traveling deep into the Cibola National Forest in the Zuni Mountains west of Grants.

Dark shadows prevail and little can be seen beyond the first layer of trees.

There's a feeling of claustrophobia as a wall of ponderosas looks like a blur outside a car window. Some see this as a sign of forest health; others see it as a big problem. Historical documentation indicates forests in the Southwest have grown increasingly crowded with some now believed to be seven times denser than at the turn of the 20th century.

While the link between forest health and wildlife might not appear clear to some, to the Department of Game and Fish, it is a critical aspect for healthy populations. So critical that the department takes an active role in forest habitat restoration. Such is the case with the Cibola National Forest.

The Problems

Going from one forest extreme to another is rarely a productive solution, and meeting in the middle can be a difficult goal to achieve. Human activities, such as a century of fire suppression and poor timber practices led to overgrowth and unhealthy habitat for wildlife and vegetation.

As a result, the landscape often no longer is healthy for the trees, grasses or wildlife.

For animals such as deer, elk and turkey, overgrowth provides a wealth of cover for predatory animals such as cougars and bobcats. Overgrown forests become great hunting grounds. Crowded together, trees can't reach historical sizes and little sunlight reaches the forest floor, preventing the growth of grasses, forbs and shrubs, critical nourishment for deer, elk and other wildlife.

"It's all so intertwined," said Chuck Schultz, northwest regional habitat biologist for Game and Fish. "Just because a person sees a bunch of trees doesn't mean it's a healthy ecosystem. Forests throughout the country went untouched for many years and instead of healthy, well-spaced, large ponderosa pine trees, we see overcrowded and stunted forests."

As a result of overgrowth, catastrophic fires have consumed millions of acres and, during times of drought, have made some forests vulnerable to disease and insects, in particular the bark beetle, which decimated portions of forest over a decade ago.

The overgrowth in the forests is believed to be a primary factor in the number of high-intensity fires that have crippled portions of forests throughout the Southwest.

The Las Conchas fire of 2011, which burned 150,000 acres in the Santa Fe National Forest of northern New Mexico, was intense and fast-moving and the immediate result was charred countryside. And the aftermath proved as troublesome as the fire itself. Subsequent ash flows during monsoonal rains killed aquatic life in streams, and the water quality remained poor long after the rains subsided.

"Frequent low-intensity fire was the historical norm in ponderosa pine forests," said Jacob Davidson, habitat manager for Game and Fish. "Widespread high-intensity fires in these areas can have devastating effects long after the fire has been extinguished."

Well-spaced trees offer natural fire breaks. While a blaze on the forest floor will consume the low-lying vegetation and char the lower trunks of trees, it won't crest at the top, which is known as a "crown fire." Fires that reach the canopy of the forest tend to spread quickly and can result in the most devastating wildfires.

Such was the case in the Las Conchas Fire and the 2011 Wallow Fire in Arizona.

It was clear a new thought process was necessary as catastrophic fires in the southwestern United States were occurring in unprecedented frequencies.

Solutions

Initial efforts to address forest issues were not effective, as a good deal of the money intended to bolster restoration was diverted to fire suppression. Help came in 2009 with the Collaborative Forest Landscape Restoration Program, administered by the U.S. Forest Service, was established.

Working with a diverse group of agencies, businesses and organizations, including the New Mexico Department of Game and Fish, the National Wild Turkey Federation, tribes, and the Wood Industries Network, the Forest Service developed a plan to improve conditions in the Zuni Mountains.

The purpose of the program is to reduce fire risk, provide relief of fire suppression costs, create sustainable forest-based business and jobs, and protect wildlife habitat. Restoration would no longer be about Band-Aids and duct tape, but about committing to wholesale improvements to vast quantities of the landscape in a particular area.

Some of the funds distributed by the program have found their way into New Mexico to improve conditions in the Cibola National Forest.

Although the Cibola forest did undergo thinning efforts from 2003-2010, the projects were small in scope. In 2012, forest restoration efforts received a boost when a grant was awarded to help in the restoration efforts.

"Funding and collaboration with a host of agencies was a big step," Davidson said. "While any thinning can be beneficial, to have a major impact on the landscape you need funding and buy-in from the public."


"The number and severity of fires in the West has opened a lot of eyes. Conducting restoration efforts such as this can be both beneficial to local economies as well as a cost-saving measure when it comes to fire suppression."

In the Cibola National Forest, the Forest Service has worked closely with local residents and businesses in an effort to create a template to be followed in future projects.

Instead of leaving potential fuel on the forest floor, the agency has worked with Mount Taylor Manufacturing, which, from 2012-2015, harvested 40,000 cubic feet of wood products. The business employs personnel who spend money within the local economy, benefiting all.

The federal dollars only cover 50 percent of the treatment costs, which must be matched to receive funding. In the Cibola, the price Mount Taylor Manufacturing pays to haul the wood to the mill qualifies as matching dollars.

The Department of Game and Fish has committed \$15,000 in Habitat Stamp revenue for controlled burns and another \$1 million in Pittman-Robertson federal grant funds to aid in the restoration of the Cibola National Forest.

"There are many layers to a project like this," Davidson said. "Among those layers is a benefit to wildlife, and Game and Fish has a commitment to protecting the state's resources." 

Opposite inset: Scott Lerich, left, with the National Wild Turkey Federation, listens to a presentation from U.S. Forest Service personnel at one of the areas to have undergone restoration efforts in the Zuni Mountains.

Opposite: More than 40,000 cubic feet of wood has been harvested within a restoration area in the Cibola National Forest.

Greater Roadrunner

Did you know . . .

By Zen Mocariski

There's no beep, beep and they certainly can't outrun a coyote, but the bird made famous by Warner Brothers does share a few traits of its cartoon character. They often are seen running across roadways, and they're quite fleet afoot, although you won't catch them racing a car.



But the similarities end there.

A member of the cuckoo family, this bird can reach running speeds of about 20 mph. The coyote wins the race at about 35 mph and, while not a staple of their diet, coyotes certainly are capable of catching, killing and eating roadrunners.

But while the coyote might win the race, the roadrunner is no slouch.

"These birds are cunning, opportunistic predators that feed almost exclusively on meat," said Peggy Darr, avian ecologist with the New Mexico Department of Game and Fish.

This is an important component for their survival in an arid climate, obtaining most of the water they need from the prey they consume. About the only time roadrunners will consume vegetation or berries is during the winter when some prey species are scarce.

While roadrunners will take birds, small mammals, insects, scorpions and spiders, a large component of their diet is made up of

reptiles such as lizards and small snakes. Occasionally, they'll take larger snakes, including rattlesnakes.

"They'll peck repeatedly at the head of a rattler and whip the snake's head against the ground or a rock until dead," Darr said. "It will use a similar method with larger prey such as rodents and large lizards in an effort to break bones and make the meal more streamlined for consumption."

Roadrunners consume snakes whole. If the snake is too large to swallow at once, the roadrunner will continue to stroll around with part of the reptile dangling from its beak. As the first part is digested, the rest is slowly consumed.

As is the case with many wildlife species, when food is scarce, hatchling runs may be fed to the strongest chicks to improve the odds of survival.

"Life in the wild can be difficult," Darr said. "If prey species are not readily available, drastic measures are necessary to ensure the survival of the healthiest offspring."

Roadrunners are easily identified because no other bird really looks like them. They are about two feet long, including the tail, and have an oversized bill. They live virtually their entire life on the ground. Their Latin name, *Geococcyx californianus*, means "Californian earth-cuckoo."

The state bird of New Mexico, a large roadrunner weighs in at about 1 ½ pounds, and is not an overly capable flyer. Short bursts of flight are possible, but they quickly return to the ground and run, leaving a distinctive track that resembles an X.

This X has played a role in Native American culture. The X is a symbol to ward off evil, the shape disguising travel direction and preventing evil spirits from following. 🌐

Left: Greater roadrunners is a stealthy and efficient predator, feasting on reptiles during warmer months but also taking snakes, including rattlers, and small mammals. Most of the water a roadrunner requires is obtained from their prey.

Below: Greater roadrunner is a distinctive bird, given their long-legged, long-tailed shape, crested head, and heavy bill.

NMDGF photos by Dan Williams.

