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# Hunting heritage



Courtesy photo

Thirteen-year-old Chase Willis is among a growing number of young hunters who have been introduced to the activity by mentors, whether they be experienced family or friends. Above, Willis and guide GT Nunn proudly show off New Mexico's second-largest desert bighorn sheep, harvested by Willis last year in the Ladron Mountains.

## New program gives young hunters an early start

By Dan Williams

Without a hunter-education diploma, 10-year-old Mateo Nunez was looking at waiting at least another year before he could buy a license and go hunting with his stepfather. With no classes available and little time left before New Mexico's big-game hunting application deadline, the outlook was grim.

"We tried a couple times to get him into classes, but they all seem to fill up so fast," Mateo's stepfa-

ther Luke Grossetete said. "Then we learned about the Mentored-youth Program."

While visiting the Department of Game and Fish website, Grossetete read about a brand-new program that would allow Mateo to apply for, and purchase hunting licenses before he passes an approved hunter education course. The only hitch: Grossetete, as a licensed adult hunter, had to go along as a mentor.

Grossetete, a longtime hunter, had no problems with that, especially when Mateo was successful in the draws for deer and antelope. He also was able to buy a youth-encouragement cow elk license, a turkey license and a small-game license.

"This turned out to be a great thing," Grossetete

... continued on Page 11





# Department gains support in battle to give residents better shot at licenses

Three New Mexico organizations now have filed amicus briefs in U.S. District Court supporting a motion by the New Mexico Department of Game and Fish to vacate a 1977 injunction that prevents New Mexico from allocating ibex, oryx and bighorn sheep hunting licenses based on residency.

United Sportsmen for Fish and Wildlife, the New Mexico Chapter of the Wild Sheep Foundation, and, most recently, the New Mexico Wildlife Federation, filed briefs opposing the injunction issued in a 1976 lawsuit by David B. Terk, a Texas resident and hunter. Terk challenged New Mexico's license allocation regulation that gave preference to in-state residents by charging him a higher license fee and also by giving him a lower chance of drawing a license than New Mexico residents would enjoy.

"The New Mexico Game Commission is pleased and appreciative of the support shown by these organizations," said Scott Bidegain, Commission Chairman. "Vacating the injunction would allow the Commission to guarantee New Mexico hunters the full opportunity provided by state law

to hunt ibex, oryx and bighorn sheep."

Because of the injunction, nonresident hunters currently enjoy equal odds with residents in annual drawings for ibex, oryx and bighorn sheep licenses. Often, because so many nonresident hunters apply for those limited licenses, nonresidents acquire a disproportionately high number of the licenses.

The injunction applies only to those species because, at the time of the legal challenge in 1976, they were the only species of big game in New Mexico for which the State Game Commission provided an in-state preference for license allocation. Current in-state preferences for deer, elk, antelope, Barbary sheep and javelina licenses are not affected by the injunction.

The Department asks the U.S. District Court to uphold a New Mexico statute, offers facts from Director Jim Lane to support vacating the injunction, and cites a 2005 decision by the 10th Circuit Court of Appeals that upheld Wyoming's license allocation statute analogous to New Mexico's statute.

"Hunting is an area of traditional state authority for which the New Mexico Legislature can and has made law. The District Court must uphold the laws passed by the New Mexico Legislature so long as there is a rational basis for the law, which there is," Department General Counsel Allison Marks said.

Other states give preferences based on residency, as New Mexico does now for antelope, elk and deer licenses. Since 1997, New Mexico has allocated public licenses to three pools of customers – residents, nonresidents and hunters using outfitters.

Currently, residents receive 84 percent of all public licenses issued through drawings, nonresidents receive 6 percent, and hunters using outfitters – residents and nonresidents – qualify for 10 percent of public licenses.

Marks said because the plaintiff, David Terk, has passed away, his estate has filed a motion to be substituted in place of the original plaintiff. Marks has challenged the estate's standing in the matter.

# Rare wood rail turns up at Bosque del Apache

It was just another sunny July morning in New Mexico when wildlife researcher and bird-watcher Matt Daw was videoing a fairly common bird, the least bittern, at the Bosque del Apache National Wildlife Refuge south of Socorro. What happened next was something that bird enthusiasts only dream about.

As Daw was filming, another bird that never has been seen in North America emerged from the cattails. It was a rufous-necked wood rail, a species found in subtropical forests and mangrove swamps from central Mexico down to South America. Rails are marsh-dwelling birds that are not known to travel great distances. Yet there in front of him was the birding find of a lifetime.

Word quickly spread about this "mega-rarity" bird and soon hundreds of bird-watchers from around the country and Canada flocked to New Mexico to get a glimpse of it. It became an event, a national phenomenon. "CBS This Morning" had the American Birding Association president on the show to talk about the bird.



Photo: Mark Watson

## This rufous-necked wood rail surprised bird-watchers last July at Bosque del Apache National Wildlife Refuge.

The wood rail was seen from July 7-19 when it disappeared from view. How it got there and where it went likely will remain a mystery.

Bosque del Apache National Wildlife Refuge has more than 57,000 acres of wetlands, riparian woodland and Chihuahuan Desert habitat. It is well-known for wintering sandhill cranes and snow geese. It also is home of the annual Festival of the Cranes in late

November, which brings in millions of dollars to central New Mexico.

More than 90 percent of the original funding to purchase the refuge in 1939 came from duck hunters; largely through the sale of Migratory Bird Hunting and Conservation stamps, otherwise known as duck stamps. For every dollar spent on stamps, 98 cents goes toward the purchase of vital waterfowl habitat.

# Expect roadblocks statewide during hunting and fishing seasons

The Department of Game and Fish will conduct roadblocks throughout the state during hunting and fishing seasons to collect harvest data and to detect wildlife-law violations.

New Mexico hunters are in the field year-round trying for various species that are in season. Fishing is allowed year-round in New Mexico.

At roadblocks, conservation officers also will check for compliance with

provisions of the Off Highway Motor Vehicle Act and the Aquatic Invasive Species Control Act. Drivers of vehicles hauling wood products will be asked to produce documentation as required by the Forest Conservation Act.

Department officers may be assisted by other law enforcement agencies such as the U.S. Forest Service, Bureau of Land Management, New Mexico State Police or county sheriff's offices.

As a result, the public may encounter minor delays.

To report a wildlife-law violation, please contact a Department of Game and Fish area office in Santa Fe, Albuquerque, Raton, Roswell or Las Cruces, or call the toll-free Operation Game Thief hotline at (800) 432-GAME (4263). Callers can remain anonymous and earn rewards for information leading to charges being filed.



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Please visit our website,  
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Department of Game and Fish photo

Heavy equipment brought tons of rocks to divert water and improve wetland habitat along the San Juan River.

# Wetlands project improves habitat for fish, wildlife, anglers

Fisheries biologists and habitat specialists with the Department of Game and Fish recently put the finishing touches on a project along the San Juan River that will restore a wetland system and provide a diverse habitat for migrating waterfowl and other wildlife.

The \$200,000 effort by the Department and the Bureau of Land Management included removing non-native salt cedar and Russian olives and replacing them with about 50,000 willows, sedges and rushes. The restored wetland adjacent to the Munoz Day Use Area at Navajo Lake State Park will be closed to the public until Aug. 1, 2014, to allow the new seedlings to get established.

“We need to allow the plants to establish a strong root system so they can reproduce and expand,” Department Fisheries Chief Mike Sloane said. “By protecting the area now,

with time the plants can become strong enough to withstand the effects of people traversing the project area.”

The wetland project about one mile downstream of Navajo Dam is the latest in a series of river habitat projects that will improve conditions for fish, wildlife and anglers. Altogether, about \$1.2 million has been spent to create pools and improve river channels for the river’s prized trophy-sized trout, and to protect trout habitat from silt and runoff debris.

Anglers and boaters paid for most of the improvements with federal excise taxes on fishing and boating equipment through the federal Sport Fish Restoration Program. Additional funding came from a state Legislature appropriation and donations of time, equipment and money from conservation organizations and the region’s oil and gas industry.

## Department information, education efforts win national 1st-place awards

A national conservation information organization recently recognized the New Mexico Department of Game and Fish as best in the nation in three awards categories at the organization’s annual conference in Midway, Utah.

The Association for Conservation Information presented the Department’s Public Information and Outreach Division with first-place awards for Magazine, Graphics, and Education and Outreach. Entries were submitted by professionals representing state and federal agencies, and private conservation organizations from the United States and Canada.

The Department’s winning entries were:

- **Magazine:** For “New Mexico Wildlife,” a full-color quarterly tabloid featuring articles about hunting, fishing, wildlife management and conservation. The publication is inserted in newspapers statewide, with a circulation of 350,000.

- **Education and Outreach:** For the New Mexico Wildlife Conservation Education Presentation, a slide show

and accompanying text presented in classrooms and elsewhere by conservation officers and other Department staff. The presentation teaches students about wildlife, conservation, and how regulated hunting, fishing and trapping are important management tools used by government agencies. Students also learn about human impacts on wildlife habitat, and how hunters and anglers provide funding for wildlife conservation.

- **Graphics:** For a set of three 4-foot by 8-foot banners celebrating each decade of 100 years of Conservation in New Mexico, coinciding with New Mexico’s Centennial celebration in 2012. Color and black-and-white images from Department archives illustrated the agency’s many conservation success stories.

Organized in 1938, the Association for Conservation Information is a nonprofit association of professionals who play a major role in providing natural resource, environmental, wildlife and other information and education to the public through a variety of means, many of which are continental in scope.

## Get involved

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.:** A conservation organization of more than 140 members from southwestern New Mexico, with goals to improve wildlife habitat and hunting opportunities primarily for upland birds. John Moen, (575) 644-3936.

**Ducks Unlimited, New Mexico:** More than 1,500 members support the organization’s mission to restore and manage wetlands and habitats for North American waterfowl. Cindy Wolfe, [cjwolfe@gilanet.com](mailto:cjwolfe@gilanet.com), (575) 854-3365.

**New Mexico Chapter, Wild Sheep Foundation:** The organization’s goal is “putting more sheep on the mountain.” Members work with the Department of Game and Fish to increase populations of desert and Rocky Mountain bighorn sheep in New Mexico. Lanny Rominger, (505) 821-5064.

**New Mexico Trout:** Dedicated to the preservation and enhancement of trout fishing in New Mexico’s waters through protection and restoration of riparian habitats and through educating the public about trout fishing and the ecological and social value of trout habitats. [newmexicotrout@gmail.com](mailto:newmexicotrout@gmail.com), [www.newmexicotrout.org](http://www.newmexicotrout.org).

**The Nature Conservancy:** A national organization dedicated to the preservation of plants, animals and natural communities by protecting the lands and waters they need to survive. In New Mexico, it has worked to preserve 1.4 million acres of landscapes and waterways. [www.nature.org/newmexico](http://www.nature.org/newmexico).

**New Mexico Wildlife Federation:** Founded by Aldo Leopold in 1914, the organization is a strong lobbyist in the New Mexico Legislature, “dedicated to protecting New Mexico’s wildlife, habitat and outdoor way of life.” (505) 299-5404, [www.nmwildlife.org](http://www.nmwildlife.org).

**Rocky Mountain Elk Foundation:** A large national organization dedicated to ensuring the future of elk, other wildlife and their habitat. The organization actively supports efforts to protect and enhance elk country, conservation education and to restore elk herds. New Mexico information: (505) 892-1250, [www.rmef.org](http://www.rmef.org).

**Sportsmen for Fish & Wildlife:** A conservation organization organized to promote the protection and enhancement of wildlife habitat, wildlife management programs and America’s family heritage of hunting and fishing. (505) 486-4921.

**Trout Unlimited, New Mexico:** Dedicated to the restoration, protection and conservation of all coldwater fisheries, their tributaries and watersheds, and the fish that inhabit them. (505) 470-4878, [www.newmexicotu.org](http://www.newmexicotu.org).

**Audubon New Mexico:** Devoted to the protection, preservation and enjoyment of the environment, with a particular emphasis on birds. The organization has chapters statewide, with headquarters at the Randall Davey Audubon Center in Santa Fe. (505) 983-4609, <http://nm.audubon.org>.

**New Mexico Muskies, Inc.:** A group of anglers interested in fishing for tiger muskies in Bluewater and Quemado lakes formed this organization in 2008 as a chapter of Muskies, Inc. Information: Matt Pelletier, (505) 264-2999, [www.newmexicomuskiesinc.org](http://www.newmexicomuskiesinc.org).

**Friends of the Bosque del Apache National Wildlife Refuge:** An organization of about 1,000 members supporting the Bosque del Apache National Wildlife Refuge and promoting appreciation and conservation of wildlife and habitat through environmental education. (575) 878-2320, [www.friendsofthebosque.org](http://www.friendsofthebosque.org).

**Albuquerque Wildlife Federation:** A volunteer organization focused on New Mexico’s wildlife and habitat resources. It offers monthly meetings with guest speakers, in-the-field habitat restoration projects and a monthly newsletter. (505) 281-4609, <http://abq.nmwildlife.org>.

**New Mexico Council of Outfitters and Guides:** An organization of about 78 members that supports hunters and the outfitting industry, and efforts to promote wildlife conservation on private and public lands. (505) 440-5258, [www.nmoutfitters.com](http://nmoutfitters.com).

**Southwest Consolidated Sportsmen:** An organization representing at least 15 sporting and conservation groups of diverse interests. The group’s objectives are to “disseminate wildlife and habitat information, participate in habitat projects, and review proposals involving wildlife habitat.” (575) 526-5056.

**New Mexico Wild Turkey Federation:** Supports scientific wildlife management on public, private and corporate lands as well as wild turkey hunting as a traditional North American sport. (505) 869-3837, [www.nwtf.org](http://www.nwtf.org).

**Safari Club International:** Promotes wildlife conservation worldwide while protecting the hunting heritage and supporting many education and humanitarian projects. Southern New Mexico Chapter: LTC R.A. “Pancho” Maples, [pancho1@plateautel.net](mailto:pancho1@plateautel.net). Northern New Mexico Chapter: Brian Payne, [b\\_payne10@msn.com](mailto:b_payne10@msn.com).

**Southeast New Mexico Wildlife, Inc.:** A conservation organization dedicated to preserving and enhancing wildlife habitat, especially quail habitat, in southeastern New Mexico. (575) 393-2895.

**New Mexico Trappers Association:** Promotes and protects trapping and wild furbearers native to New Mexico. Works with agencies and groups to advance scientifically based management protocols, and educates trappers and the public about ethical trapping equipment and practices. (505) 897-0719, [www.newmexicotrappers.com](http://www.newmexicotrappers.com).





# Catch a game thief, earn \$\$\$

By Ross Morgan

During the 1970s, most state game and fish departments worked under the misconception that poachers were not really criminals. A majority of the public at the time still excused the game violator by continuing to believe that they only poached to “feed their family” or that the level of illegally killed game was insignificant.

With that in mind, the New Mexico Department of Game and Fish initiated a study in 1975 to determine how significant poaching really was in New Mexico. That study led to the 1977 creation of Operation Game Thief, a program that allows citizens to anonymously report wildlife crimes and earn cash rewards.

The 1975 research project estimated that about 34,000 deer were poached every year in New Mexico. Studies in other states produced similar results and indicated there were as many deer being killed illegally as there were being killed lawfully. Poachers’ success avoiding apprehension was attributed to two main reasons: game wardens’ districts were too big, and the Department wasn’t getting much help from the public.

The toll-free Operation Game Thief hotline is set up to receive information 24 hours a day, 7 days a week to encourage



people to call about wildlife crimes while the details are still fresh in their minds. All calls are confidential and the reporting individual has the option to remain anonymous. People who are unsure if they witnessed an actual violation are encouraged to call and let the Department make a determination.

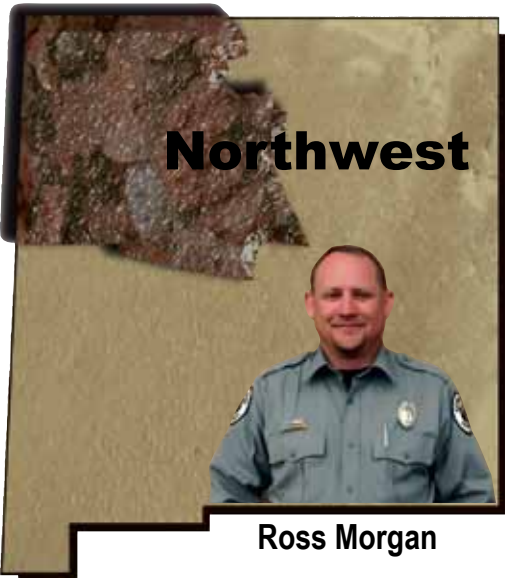
How does the system work?

- Anyone having information relating to a wildlife law violation can contact the Operation Game Thief hotline. You may do this by calling our toll-free number,

- 1-800-432-GAME (4263), or submitting an on-line report at [www.wildlife.state.nm.us](http://www.wildlife.state.nm.us). Details regarding the incident are taken and the caller is assigned a code number.
- The information is relayed to an officer who immediately initiates an investigation.
- If a poacher is arrested or issued a citation based on the information provided by the caller, a reward is authorized.
- The payment is arranged to protect the anonymity of the caller. Rewards can be paid in cash or by check or money order. In many cases callers do not expect a reward; they just want the criminals stopped.

One of the Department’s biggest Operation Game Thief cases involved Adrian Romero, a Grants outfitter. Romero was found guilty of racketeering, tax evasion, forgery, embezzlement, fraud and numerous wildlife violations. Romero was sentenced to 10 years in prison and was ordered to pay \$244,000 in restitution to the state and the 28 hunters whom he swindled in an illegal hunting and outfitting operation.

“This goes to show that wildlife crimes are not only important to the Department of Game and Fish, but they also can lead to nonwildlife-related charges,” said Chris Chadwick, Captain of the Northwest Region Field Operations and a member of the investigation team. “I would think



Ross Morgan

twice before committing a wildlife crime.”

Operation Game Thief averages 195 calls a year. From July 2008 through June 2013, there were 976 cases reported. Of those, 384 charges were brought against 187 defendants. Between 2008 and 2013, \$42,700 in rewards was paid. That averages to about \$485 per reward, although not every caller wants to receive a reward.

If you suspect a wildlife crime has occurred, please call Operation Game Thief at (800) 432-GAME (4263), or visit [www.wildlife.state.nm.us](http://www.wildlife.state.nm.us). Remember, poachers are stealing your wildlife.

*Ross Morgan is 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](mailto:ross.morgan@state.nm.us).*

# First big-game harvest always a special thrill

By Richard McDonald

Most hunters remember our first big-game harvest, whether it was a deer, elk, pronghorn or even a javelina. That first-time experience never seems to fade as we look forward each year to hitting our favorite hunting grounds.

Lack of effort had never been an issue for Lisa Sullivan Hufstedler of Las Cruces. A young wife and mother, Lisa has been around hunting all her life. Her father brought her up to appreciate the outdoors and all it has to offer. But along the way, things just didn’t work out. She became ill the day before one hunt. On another, she was pregnant with a broken tail bone. The setbacks were only temporary, however.

As the 2012 draw application deadline approached, Lisa decided to apply for an off-range oryx hunt with her husband. She knew the odds were against her getting one of the highly sought-after licenses. Approximately 600 tags are offered each year at \$189 for residents

and \$1,630 for nonresidents. But this time Lisa was in luck: She was successful drawing a license for a September oryx hunt.

Lisa’s schedule only allowed her to hunt weekends during September. Fortunately, September 2012 contained five weekends. She recalled how excited she was opening day and how she kept her eyes peeled for any movement.

During the afternoon, they made a tight turn on a rocky two-track road and an unseen rock ripped off the truck bumper. To make matters worse, a large bolt was thrust into the tire, resulting in a six-inch gash and a blowout. Oryx season, like her previous hunts, was off to a rocky start.

Lisa and her husband covered a lot of country on their third weekend of hunting. Finally, Lisa spotted a white face in the distance and determined it was an oryx. As she stepped out of the truck, her legs got tangled in the electric blanket she had been using. She struggled to get loose and brought up her rifle only to have her husband unknowingly step in front of her.

The fourth weekend was more of the same: no oryx in sight. Frustration was sinking in.

Weekend five began with clear skies and morning dew. Lisa settled in under her electric blanket and as the sun came up, her eyes were glued to the surrounding hills. As Saturday ended with no animals seen, Lisa realized she was down to the very last day.

They hunted hard Sunday but only saw a few tracks. Lisa’s hope of killing an oryx was fading with the sinking sun when suddenly her father spotted fresh tracks in the road and stopped the truck. They all got out and started tracking. One set of



Courtesy photo

**Lisa Sullivan Hufstedler worked hard for five weekends before claiming her first big-game harvest.**

tracks turned into two, then two into four. It wasn’t long before Lisa spotted a small group of oryx in the distance.

Lisa believed the oryx were about 1,000 yards away, so she needed to try to get within shooting distance. After a long walk, she crested a large sand hill and spotted the white face of an oryx. She raised her rifle, chambered a shell took aim on her retractable bi-pod. She looked through the scope and saw the oryx facing her, but was not comfortable with the shot.

Lisa took a deep breath, looked through the scope again and spotted another oryx standing broadside. She breathed in and out several times then gently squeezed the trigger.

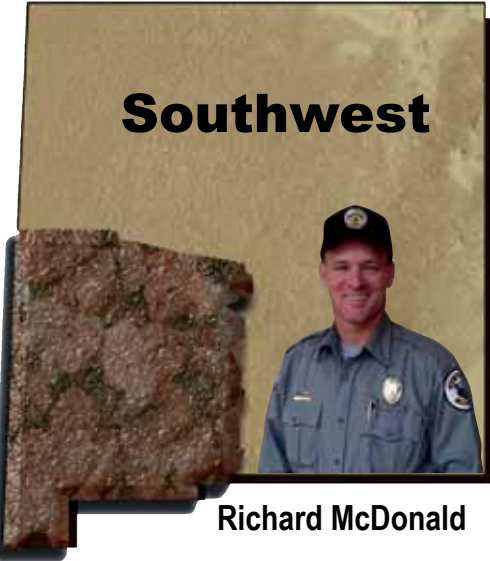
“I knew I hit the oryx and I started trembling with excitement. I knew I

was supposed to do something and my dad told me to put another round in the chamber.”

She set up again for a possible follow up shot, and after what seemed an eternity, they decided to start tracking. They soon found blood and as Lisa walked around a hill, she found the oryx dead.

“I was still shaking because I finally got my first big-game animal,” Lisa said. “After all that has happened to me over the years . . . I was so relieved that I finally did it.”

*Richard McDonald is the New Mexico Department of Game and Fish public information officer for the Southwest Area. He can be reached in Las Cruces at (575) 532-2106 or [richard.mcdonald@state.nm.us](mailto:richard.mcdonald@state.nm.us).*



Richard McDonald





# A painful lesson about rabies

By Clint Henson

I have responded to quite a few interesting calls from people who encounter wildlife. Calls about raccoons in chimneys or bears in dumpsters are pretty common, but I have learned over the past 16 years that a routine call can become a big situation.

I happened to be at lunch when I received a call about a raccoon stuck in a woman's car. I suited up and hurried to the address thinking that it should be easy enough to just open a door and let it out. But when I arrived, I found the raccoon was actually between the tire and the wheel well, and whether it was stuck or just hiding, it would not come out. The raccoon was not happy where he was and the only way I could see to free it was to take the tire off.

While I worked at finding the jack and tire tool, I talked to the woman who was lucky enough to have this critter chewing on her tire. She had seen it across the street from her house and went over to take some photographs. She said it chased her back across the street and she hid in the car.

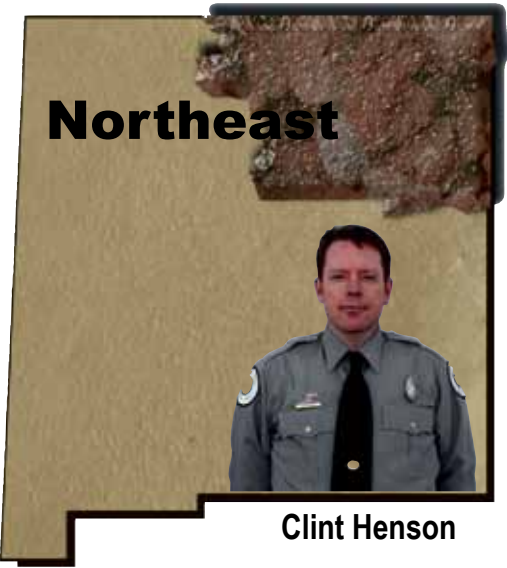
I have worked with a lot of raccoons over the years and I am always amazed at how smart they are and when they get used to humans they can become like pets. It seemed a little strange that this raccoon was out rummaging around in the middle of the day, but I had seen it before.

I put on some heavy gloves, as I always do, jacked up the car and took off the wheel. The raccoon was still just staring at me and really just wanted to be left alone. After some poking and prodding it climbed down and then came at me. I wanted to just run him off, so I sprayed him with pepper spray. The raccoon turned and walked away, but quickly shook his head and came back at me. Not only was this behavior strange, but it also did not



If you see a wild animal that is sick, dead or acting abnormally like this raccoon, stay away from it and call animal control authorities.

Photo: Clint Henson



Clint Henson

look very healthy. Its tail had lost all of its fur and it looked mangy.

I decided to catch the raccoon with my catch pole and load it in my pickup.

I have taken lots of animals to the local vet for disease testing and nothing ever has come back as sick. But this time it did. That raccoon had rabies.

I was called a couple days later by our disease specialist in Santa Fe, who gave me the news about the test and asked me if I thought I was exposed to the virus. I told him that when I got to the vet clinic I had put on rubber gloves and then removed the raccoon's head. Before that, I had skinned the head so it would not be covered in the pepper spray.

Had I been exposed? I didn't think so. But the consequence of getting rabies is death, so I decided to be safe and get the rabies vaccination.

I remembered stories of 11 injections in the stomach, but fortunately it turned out only to be one really big shot in the leg and four small shots in the shoulder.

The irony in this is I didn't have to get the shots at all. Further tests showed the initial tests indicated a "false positive." The raccoon didn't have rabies after all. I guess all I can say about that is I'm glad it was a false positive and not a false negative.

## Protect yourself against rabies

The New Mexico Department of Health gives the following guidelines for people to protect their families from the risk of rabies:

### Animal encounters

- Stay away from wild or unfamiliar animals. Do not attempt to feed, approach or touch wild animals (alive or dead). Teach this to children and keep a close eye on your kids at all times.
- If you see a sick or dead wild animal, or a wild animal acting abnormally, report it to your local animal-control authorities. Rabid animals may show no fear of people and may even seem friendly, or they may become aggressive.
- Don't leave pet food, water or filled garbage cans out overnight as this could attract wild animals to your home.
- Keep pets on a leash at all times. Pets should be up-to-date on rabies vaccinations and wearing current license tags on their collar. If your cat or dog has been bitten or scratched, call your pet's veterinarian, even if the wound is superficial.

- Horses and other valuable livestock should be considered for rabies vaccination to protect them from wild rabid animals that may attack them.

### Bitten or scratched?

- If you are bitten or scratched by a wild animal or a pet, wash all wounds and contact areas thoroughly with soap and water, and then contact a physician immediately for evaluation.
- Call the local animal-control department to report the incident. Provide authorities with an accurate description of the animal.
- Try to keep the animal confined, but don't risk further injury if the animal is dangerous.
- Keep children away from all animals involved in the incident.
- For more rabies information, visit the New Mexico Department of Health's website at <http://nmhealth.org/ERD/HealthData/rabies.shtml>.

# Little Bear Fire, runoff leave Bonito Lake barren

By Mark Madsen

Bonito Lake, a favorite destination for thousands of anglers, campers and picnickers from New Mexico and West Texas, faces a long road to recovery after the devastating Little Bear Fire.

The June 2012 fire burned more than 44,000 acres in the Lincoln National Forest, including much of the timber and vegetation on the steep hillsides surrounding the Lake. Subsequent rainfall and flash flooding washed tons of ash, silt and debris into the lake, lowering oxygen levels and killing most if not all of its fish, crayfish and aquatic invertebrates.

Early estimates indicate that 40 to 50 feet of silt has settled into the lake since the fire, and despite efforts to reseed burned hillsides, this year's rains threaten to send even more debris into the lake.

The City of Alamogordo, which owns Bonito Lake and uses it as a vital source of its municipal water supply, hopes to move quickly to restore it.

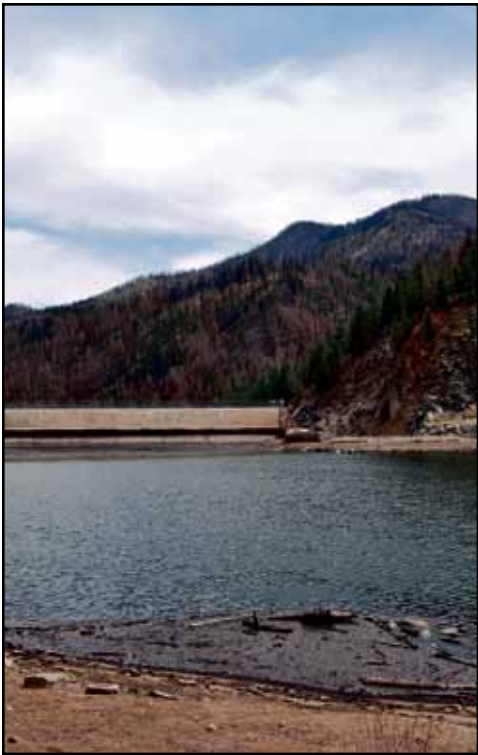


Photo: Mark Madsen

Runoff and flash floods carried an estimated 40 to 50 feet of silt into Bonito Lake following the 44,000-acre Little Bear Fire of 2012 in the Lincoln National Forest near Ruidoso.

Plans include slowly draining the lake to facilitate the removal of the accumulated silt and debris and to make necessary modifications to the dam.

David Busick, Bonito Lake area manager, said studies are ongoing to determine the best alternative for reclamation of the lake and surrounding areas. He hopes water levels will be low enough by mid-summer to start dredging the lake. One of the biggest concerns about is covering the cost of all of the work. Much of the funding for the multi-year project to restore the lake and the water supply will be provided through the Federal restoration of the lake and the water supply.

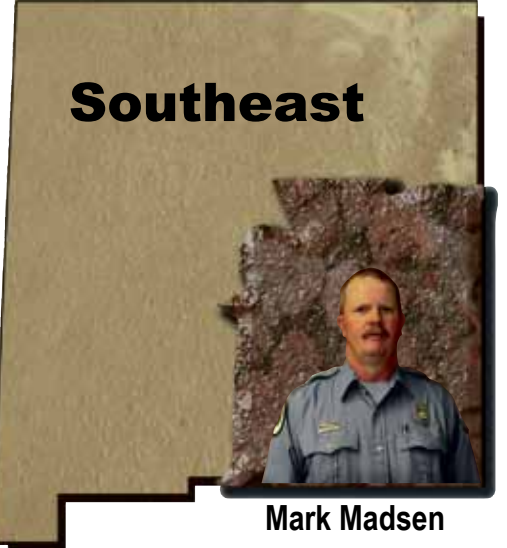
Plans for reclamation of the lake and restoring Alamogordo's water supply include funding for the multi-year project provided by the Federal Emergency Management Agency, FEMA.

For now, Bonito Lake is closed to fishing and the Department of Game and Fish has suspended stocking until the lake once again will support trout. All campgrounds remain closed at least

until lake dredging is completed and heavy equipment is removed from the area.

For more information and updates about Bonito Lake, please contact the City of Alamogordo at (575) 439-4353.

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Mark Madsen





# Early Mimbres sites revealed

## Archaeologists find rare artifacts at Lake Roberts

Story and photos  
by Dan Williams

A project to renovate a 50-year-old dam spillway in southwestern New Mexico took an unexpected but exciting turn when Department of Game and Fish staff found evidence of two Mimbres culture communities, one dating to about 700 AD.

What followed was an intensive archaeological investigation and excavation that uncovered rare examples of early Mimbres civilization from two time periods.

“This was very exciting for us because we were able to find artifacts from some of the earliest Mimbres sites and from some of the latest,” said Robin Cordero, project leader for the University of New Mexico Division of Contract Archaeology. “You can really see the changes in technology.”

Cordero and teams of UNM students began work in October 2011 under a contract with the Department of Game and Fish. Their objective was to excavate cultural resources that might be impacted by the Department’s work to renovate the dam and spillway at Lake Roberts, about 28 miles northwest of Silver City. Once removed, the cultural items were taken to UNM for further study. Eventually, some will be repatriated to tribes or pueblos; others may be taken to the Museum of New Mexico.

“When we discovered work on the dam would impact some cultural sites, we immediately started thinking about ways to mitigate the damage and preserve cultural resources and the scientific value they might provide,” said Jack Young, archaeologist for the department. “Since then, we’ve been consulting with the Western Pueblos, Lower Rio Grande Pueblos and the Apache Tribe about the excavation and potential repatriation of cultural materials.”

The department plans to spend approximately \$6 million to rebuild the existing Lake Roberts spillway, construct a new secondary spillway and raise the dam eight feet.

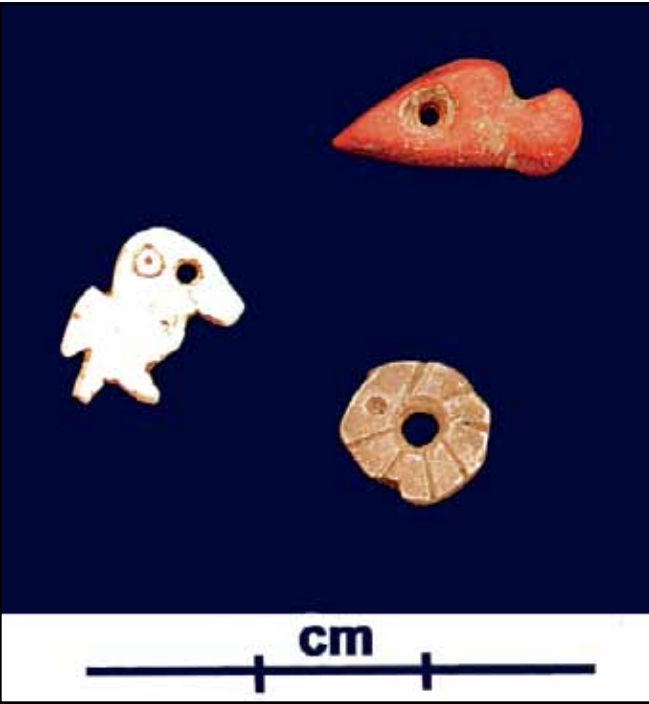


Students working with the University of New Mexico Division of Contract Archaeology excavate an ancient Mimbres pit house at a site soon to be disturbed by renovations to the 50-year-old dam at Lake Roberts.

The improvements are necessary to meet requirements set by the State Engineer’s Office to protect the dam from a major flooding event. Construction began in March and is expected to last about one year.

Discovery of prehistoric Mimbres pit houses, a rock structure and agricultural fields led to smaller finds as archaeological crews conducted their digs. They included pottery fragments, tiny arrowheads, animal bones, metates and stones carved into digging tools. Archaeologists were intrigued by the differences in artifacts found at the two sites.

“Each place was associated with different pottery styles,” Cordero said. “One was from around 700 AD, the period before the Mimbres culture really took off. Pottery was pretty



Deer bones, polychrome pottery sherds, colorful beads and pieces of spindles were among artifacts uncovered by archaeologists who excavated prehistoric Mimbres pit houses, structures and agricultural fields on State Game Commission property at Lake Roberts.






basic – utilitarian, mostly undecorated.” It also was a period when hunting and gathering provided most of the food. The other site, Cordero said, was classic Mimbres from around 1100 AD when larger family groups formed into agricultural communities. Tools were larger and pottery was artfully decorated, telling signs that people had more time to create things of beauty.

Some pottery sherds found at the newest site were from polychrome pots – white bases with black, orange and red designs – which Cordero said were some of the rarest finds in the Southwest.

“We know of only 10 complete polychrome pots in existence and there are fewer than 100 sherds in the Southwest,” Cordero said. “They were made toward the peak of the Mimbres culture, and then they just disappeared.”

Cordero said he hopes further examination of the thousands of samples taken from the site will tell researchers more about the Mimbres – and perhaps provide clues to why the culture seemed to diminish around 1150 AD.

 “There were no more Mimbres sites after 1150 AD,” Cordero said. “It was like Chaco Canyon – everything was abandoned about the same time regionwide.”

“This is just the tip of the iceberg,” Cordero said of the excavation project.

“The real fun is when we can start collecting data about the artifacts . . . and what we can glean from them.”

Archaeologists uncovered pit houses at both sites, which were conveniently close to what is now Sapillo Creek. The creek attracted deer and other wildlife, and there was evidence that the waters provided the community with fish to eat. It also provided water for crops during the culture’s agricultural phase.

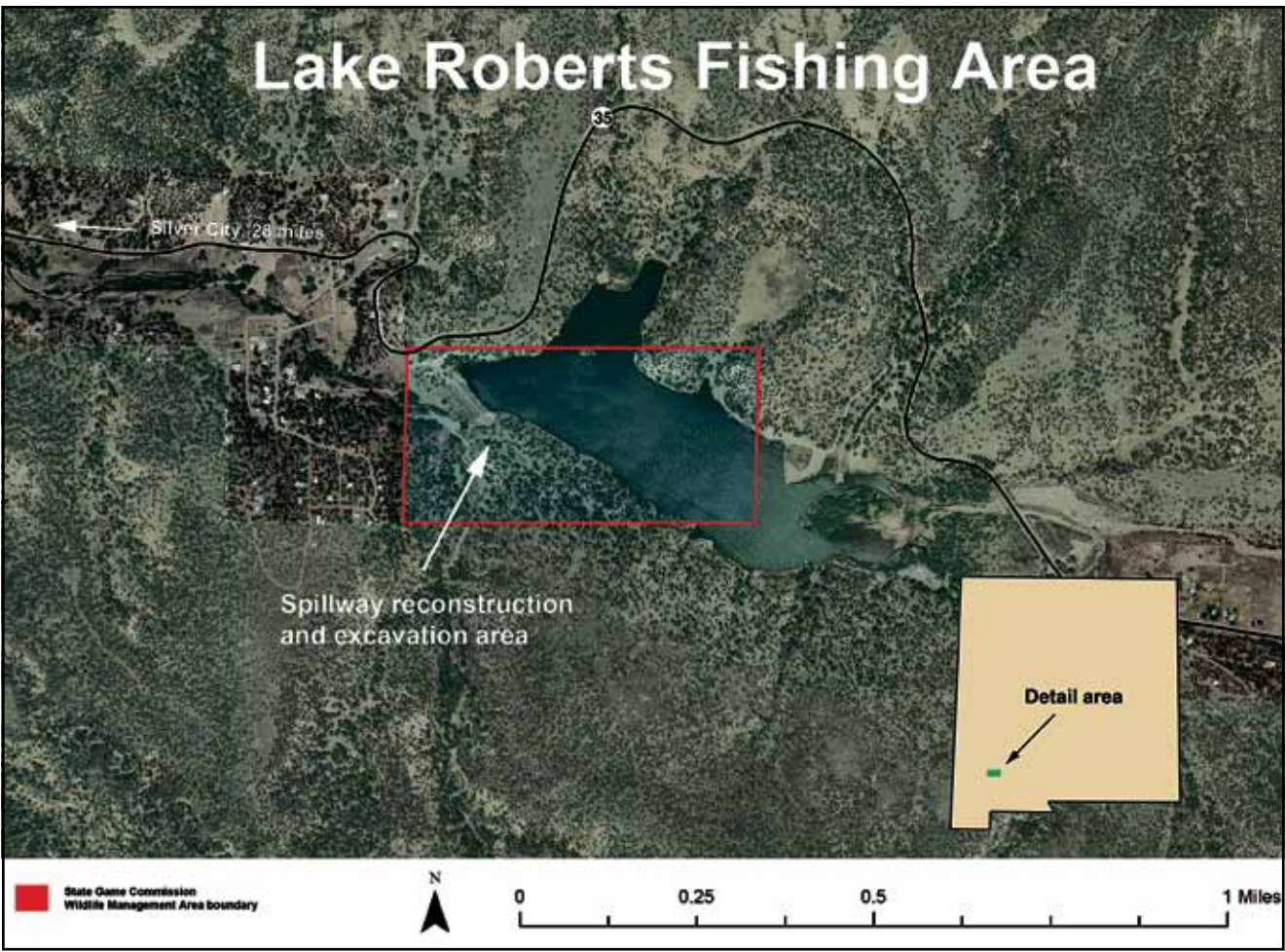
Deer apparently were abundant in the area at the time -- and still are as evidenced by the animals’ frequent visits to the sites during excavation activities.

Thomasz Wasowski, a field director at the excavation site, said one of the pit houses appeared to have housed about 10 people. Besides pottery sherds, arrowheads, metates and tools, workers found small, colorful beads, perhaps from a necklace. One resembled a parrot, another a duck.



Photo: Jack Young

An archaeologist excavates the remains of a stone structure dating back to 700 AD near Lake Roberts.



The Department of Game and Fish plans to spend \$6 million to improve and expand the dam and spillway at Lake Roberts so it will withstand extreme flooding events. Prehistoric Mimbres sites were excavated in the area to prevent them from being damaged by construction activities.

“This is one of the better sites I have worked in my life,” said Wasowski, who has worked at sites worldwide, from Europe to Brazil.

Once that the sites had been surveyed, excavated and the artifacts removed, work proceeded on making the Lake Roberts dam and spillway safe enough to withstand extreme flooding events.

Mike Gustin, assistant chief of lands for the Department of Game and Fish, said the dam could be vulnerable if a major flood were to come down Sapillo Creek. Since the dam was completed in 1963, a small town has taken roots along the tailwaters. A dam breach could be disastrous for homes and businesses there.

The plan is to replace the existing spillway, construct a secondary 70-foot-wide spillway, and raise the dam eight feet. Lake Roberts will remain open for camping and recreation during construction, but fishing opportunities could be limited because the lake level will drop about 10 feet.

The Department of Game and Fish will monitor water levels and fish health during the project to determine whether to relax fishing bag limits to avoid fish going to waste. Once the project is finished, the lake will be refilled and restocked with fish.

The dam at Lake Roberts is one of 11 dams owned and maintained by the State Game Commission and the Department of Game and Fish. The others are Eagle Nest , Bear Canyon, Jackson, McGaffey, Laguna del Campo, Fenton, Hopewell, Snow, Quemado and Clayton lakes. All are scheduled for different degrees of upgrades over the next four years.



Robin Cordero, project leader for the UNM Division of Contract Archaeology, shows metates discovered at a prehistoric Mimbres site near Lake Roberts.



# Wildlife area gets a remake

## State Land Office, Game and Fish bring back cottonwoods, willows

By Marti Niman

At first glance, the Jackson Lake Wildlife Management Area outside Farmington seems an unlikely site for wildlife habitat or even for a river.

Tucked between a stretch of warehouses, gas stations and fast food strip malls, the dirt road into the area winds through dune-like stretches of sand before veering under a small canopy of cottonwoods clustered along the sandy banks of the La Plata River. Much of the river is eroded, undercut, clogged by sediment and overgrown with invasive plant species such as salt cedar, Russian olive and kosha.

The State Land Office and the Department of Game and Fish are conducting separate but cooperative projects to restore native habitat to the La Plata River.

“These kinds of collaborative projects are the most effective way to heal the land by enhancing the health of the watershed to conserve our most cherished resource – water,” State Land Commissioner Ray Powell said. “This restores habitat for wildlife, provides a special place for those who celebrate the outdoors, and addresses many of our ecological concerns in New Mexico.”

The State Land Office leases 400 acres of trust land to the State Game Commission as part of the 1,500-acre Jackson Lake Wildlife Management Area. In 2011, the agency received a \$65,000 grant from the River Ecosystem Restoration Initiative to restore the native ecosystem along the roughly one-mile stretch of river bisecting trust land. Managed by the New Mexico Environment Department’s Surface Water Quality Bureau, the initiative is designed to rehabilitate New Mexico’s river ecosystems. The State Land Office initiated the project to amend the river’s flow and replace invasive plants with those native to the area.



Photo: Dan Williams

Gambel’s quail are among the wildlife species that will benefit from habitat improvements at Jackson Lake Wildlife Area.



Photos: Marti Niman

Conservation Biologist Clay Bowers holds a sheath of willows for pole planting at the Jackson Lake Wildlife Area. Below, Bowers drills holes for the willows as Environmental Specialist Steven Ikeda, left, and Albuerque District Resource Manager Andre Price, right, plant them.

“The La Plata is impaired by excess sediment, which impacts oxygen levels for fish and invertebrates,” said Clay Bowers, conservation biologist for the State Land Office. “We diverted a major tributary that carried sediment in a sheet flow from the uplands so it would place the sediment on the flood plain rather than in the river.”

Downstream from the trust land portion of the river lies the Game Commission property, where a similar project is in the works to enhance the floodplain access and stabilize the riverbank.

“Cottonwoods need flooding for regeneration,” said Jim Hirsch, lands specialist for the Department of Game and Fish. “Very rarely does the river access the floodplain now, so there is no new propagation. Flooding would promote the environment for cottonwood and inhibit salt cedar.”

The Game and Fish project is funded by revenue from hunting and fishing licenses.

Both agencies are contracting with Craig Sponholtz of Dryland Solutions to design their projects, because every watershed is different and he is familiar with geomorphology of the stream and how it functions, Hirsch said.

“We try to complement each other and coordinate with the State Land Office for noxious weed control and for the design. It takes a certain level of training and finesse to put in these structures; it’s a specialized project.”

Using satellite imagery, biologists discovered a 1950s-era oxbow lush with cattails and other native wetland species that thrived from the intermittent flooding. They reconnected the oxbow so



it would over-flood the banks, and reconnected another side channel.

“We created five depressions through the side channels to create open-water sources for bats,” Bowers said. “They need an area where they can swoop down and drink while flying.”

... Continued on Page 9





# New Mexican scores on desert bighorn hunt

Harvesting a desert bighorn sheep always has been an elusive goal for hunters in New Mexico. Before 2012, only two licenses were issued, one by auction and one by raffle. Unless you had lots of money – the auction license has sold for as much as \$210,000 – or were extremely lucky at \$20 a chance in the raffle, your chances of obtaining a license were almost zero. And because the raffle and auction were open to everyone, chances of a New Mexico resident getting a license were poor at best.

All that changed in 2011 when the State Game Commission took desert bighorns off the state threatened and endangered species list. As a species with growing populations in several herds statewide, the sheep could be hunted more aggressively. The Department added 15 desert bighorn licenses to the statewide drawing for the 2012-13 season, which opened more opportunities for state resident hunters.

It wasn't until the 2013-14 season, however, until a resident hunter drew a license and successfully harvested a desert bighorn.

Glenn Fuller of Farmington, one of seven resident hunters who were successful in the draw, made history Oct. 1 by becoming the first resident to harvest a desert bighorn since the species was delisted in November 2011. All six other resident hunters harvested their rams in 2013, making it a clean sweep for New Mexicans.

Fuller shot the ram, estimated to score 173 inches, in the rugged Hatchet Mountains the state's "bootheel." He was one of only 16 hunters successful in the public draw for once-in-a-lifetime licenses.

On opening day, Fuller and his hunting partners started walking before daylight to reach an area where they had seen sheep bed down the night before. It took four hours of hiking to get close enough to take a shot at 352 yards. It took an hour to reach the downed ram by traversing loose rock and steep terrain.

## Wildlife area

*Continued from Page 8 . . .*

The depressions also provide nesting habitat for waterfowl.

Post vane structures were installed to create a more fluid and softly meandering river, reducing sediment loading during high flow events. The 8- to 10-foot long juniper posts are shoved into one side of the channel to direct the river flow away from the shore before it hits the vanes.

Cottonwood and coyote willows harvested on site are two wetland species that were planted along the channels, while upland forage for deer includes New Mexico olive, golden currant, Torrey's wolfberry, antelope bitterbrush and false indigo.

The crew put down native seed forbs and shrubs to help stabilize the river bank and also provide an important part of the diet for deer, Gambel's quail and small mammals.

The area sits in a major migration corridor, primarily for deer traveling from Colorado to their wintering ground in New Mexico. The Department of Game and Fish grows millet and triticale for migratory waterfowl, depending on water availability.

Jackson Lake sits on the west side of N.M. 170 and river water is diverted into the lake for fishing. Both agency projects will help conserve that water, which flows from Snow Storm Peak in the La Plata Mountains of Colorado.

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Courtesy photo

**Glenn Fuller of Farmington harvested his desert bighorn sheep in October in New Mexico's rugged Big Hatchet Mountains.**

"The Big Hatchets are some of the meanest and most rugged country I've ever seen," Fuller said. "We had to really watch our footing every step of the way. It was one of the most adrenaline-filled hunts I've ever been on."

New Mexico made history when the species was restored by conservation efforts spearheaded by the Department and funded by hunters. The population rebounded from fewer than 70 in 1980 to approximately 750 in 2012. Restoration has been

made possible by multiple bighorn sheep transplant operations and by managing mountain lion populations. Mountain lions aggressively prey on bighorn sheep.

"This is a conservation success story," said Cal Baca, the Department's Wildlife Management Division chief. "This is what the North American Model for Wildlife Conservation was designed to do, where money from hunters is being used to fund successful desert bighorn sheep restoration."

## Department biologists honored with prestigious national awards

Three Department of Game and Fish biologists recently received the U.S. Fish and Wildlife Service's prestigious Recovery Champions awards for their work rescuing threatened and endangered species.

Charlie Painter

David Propst

Kirk Patten

Department herpetologist Charlie Painter, fisheries manager Kirk Patten and recently retired Gila Trout Recovery Coordinator David Propst were among teams honored for their conservation work with the Chiricahua leopard frog and the Gila trout.

Painter, working with teams from the Turner Endangered Species Fund, Fort Worth Zoo, Bureau of Land Management, Gila and Cibola National Forests, The Nature Conservancy and Western New Mexico University, helped change the trajectory of the Chiricahua leopard frog, projected to go extinct in New Mexico in a decade because of disease and predation. Using backyard tanks and by constructing a "ranarium," the team rescued four populations of frogs, established one new population and augmented two others. They also reintroduced the species at three locations.

Patten and Propst were part of a team that responded to the Whitewater Baldy Complex

Wildfire, the worst in New Mexico history at almost 300,000 acres. The team rushed to streams threatened by post-fire mud and ash flows and evacuated more than 600 fish out of the wilderness using backpacks, mules and a helicopter. Their efforts prevented catastrophic losses of Gila trout, spikedace, loach minnows, Gila chub and headwater chub. The team was composed of representatives of the New Mexico Department of Game and Fish, Arizona Game and Fish Department, Gila National Forest, University of New Mexico, Museum of Southwestern Biology and the U.S. Fish and Wildlife Service.

Recovery Champions awards are presented annually to two individuals or teams in each of the Fish and Wildlife Service's eight regions nationwide. For more information about the awards, please visit the USFWS Recovery Champions web page.





# Elk die-off puzzles investigators

By Dan Williams

In more than 30 years as a wildlife biologist, Kerry Mower never had seen anything like it: about 120 dead elk scattered across a few acres of ranch land. No evidence of poaching, no clear cause of death. Only questions ... and speculation.

“It was quite puzzling – and disturbing,” said Mower, wildlife disease specialist for the Department of Game and Fish. “I’ve seen die-offs before, but nothing of this magnitude.”

The first thing that came to mind also was the most worrisome: anthrax. But that was ruled out in early laboratory tests. After that, it was a crapshoot to identify the culprit that caused the elk to fall to the ground, struggle and die.

“We really didn’t have a lot to go on, so we started collecting any evidence we could find and sending it to the labs,” Mower said.

The dead elk were discovered the morning of Aug. 27 by hunting guides on the Buena Vista Ranch north of Las Vegas and east of Mora. Within hours, Mower was on the scene collecting material that later was analyzed by laboratories in New Mexico, Texas, North Carolina, Kansas and Georgia.

After anthrax was ruled out, biologists returned to the scene Aug. 28 to collect more samples of tissue from the elk, and samples of water from area livestock tanks. Biologists scoured the area for evidence of toxic plants, chemical spills or anything else that might have killed the elk. The Department airplane was dispatched to conduct a wider survey to look for possible causes and any other dead or dying animals nearby.

No telling evidence was found, but suspicions began to mount.

The early suspect was epizootic hemorrhagic disease (EHD), a fatal virus that affects deer, elk, pronghorn antelope, and rarely, cattle. It is spread by small biting insects such as midges and has been known to kill large numbers of animals in short periods of time.

But something didn’t add up about EHD, Mower said. The close proximity of the elk to one another wasn’t a fit, as animals affected by EHD usually take eight to 36 hours after exposure to die. With all the samples at various labs, all Mower could do now was wait.

“We didn’t have anything that looked really promising – until we got the results from Kansas,” he said. That lab was looking at water samples, and turned up what Mower and others now believe was the true killer of the elk.

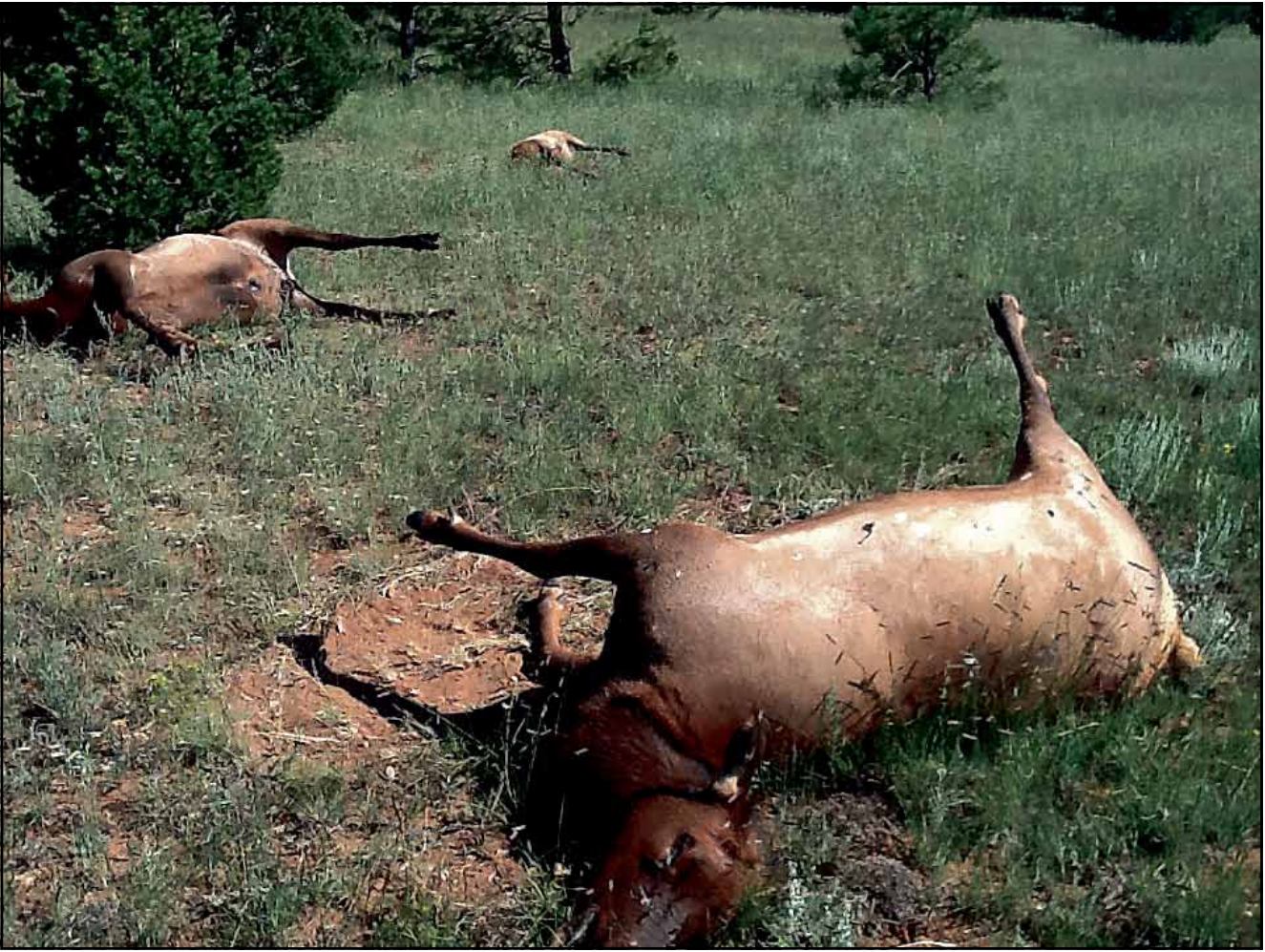
“They identified a bloom of *Anabaena*, a microscopic variety of blue-green algae, or cyanobacteria. The toxin, anatoxin-a, results in such blooms and can kill animals that ingest it within four to 12 hours.

Mower suspects the elk had been feeding and drank from a water tank containing the toxin, and then died on their way to bed-down for the day. It makes sense and the evidence adds up. The only problem with the theory is proving it.

“Right now the evidence is circumstantial,” Mower said. “The lab identified the blue-green algae bloom, but not the toxin, which can be extremely difficult to detect.”

Anatoxin-a is as unstable as it is highly toxic, which makes it nearly impossible to identify unless samples are collected in its very short lifespan. Its molecules often don’t persist after being affected by light, movement or temperature.

“The toxin could develop and be gone in hours, even minutes,” Mower said. “An elk could drink the



The carcasses of about 120 elk were discovered Aug. 27 on a ranch near Mora. After tissue and water samples were analyzed by laboratories in five states, investigators determined that the cause of the deaths most likely was a toxin produced by blue-green algae. The elk are believed to have drank from the livestock tank shown below while they were preparing to bed-down for the day. Four to 12 hours later, they were dead.

Photos: Kerry Mower



water at one moment and die, and drink out of the same tank the next day and be fine.”

experts across the country willing to study tissue samples further. Even the Environmental Protection Agency is getting involved, Mower said.

We may never know the exact cause of the elk deaths, but Mower and other biologists aren’t ready to give up. The case has attracted attention of

“They’re going to look at some tissue and see if they can isolate the anatoxin, Mower said. “We’re not done, yet.”





# Hunting heritage

*continued from Page 1 . . .*

said. “He’s pretty young and has wanted to go hunting. This will give him a chance to get started, to learn the basics and how to be safe.”

Mateo was among more than 1,600 youths younger than 18 who registered with the state’s Mentored-Youth Hunter Program in its first year. Participants only need to complete a simple online quiz to receive a program number that allows them to purchase licenses and hunt with a mentor for two years before they turn 18 or complete a regular hunter education course. Before the State Game Commission approved the new program, all hunters younger than 18 must have completed an approved course before buying a license.

“We wanted to remove any barriers that might discourage young hunters,” said Jennifer Morgan, coordinator of the Department’s Hunter Education Program. “We found that one of the biggest barriers was a lack of enough hunter education classes. We didn’t have enough volunteer and staff instructors to meet the demand.”

The concern was that potential young hunters who couldn’t get into a class would get discouraged and take up a less healthy, less safe pastimes.

“We’d much rather see kids out hunting with their parents, uncles, cousins or friends than sitting in front of a monitor playing video games,” Morgan said. “This program allows us to do that – and it’s safe.”

New Mexico’s Mentored-youth Hunting Program was modeled after Families Afield,



Department file photo

**The New Mexico Department of Game and Fish sold 1,173 big-game hunting licenses to hunters enrolled in the new Mentored-youth Hunter Program, and many more for small-game and turkey.**

a similar program used in 33 states. Established in 2004 by the U.S. Sportsmen’s Alliance, the National Shooting Sports Foundation and the National Wild Turkey Federation, the program boasts more than 782,000 apprentice and mentored hunting license sold.

The New Mexico Department of Game and Fish sold 1,173 big-game licenses to mentored-youth hunters for the 2013-14 seasons, and many more for small game and turkey.

“This is a huge first step for us,” Department Assistant Director Pat Block said.

“These kids ultimately will form the next generation of safe and responsible hunters. I am extremely excited about what this means for the future of hunting in New Mexico.”

Recent surveys have indicated that programs that encourage youth hunting have helped reverse a trend in declining numbers of hunters nationwide. Statistics also show that supervised youth hunters are among the safest in the field.

“Since Families Afield began, more than 780,000 mentored hunting licenses have been sold, yet there have been just nine hunting-related shooting incidents involving apprentice hunters,” said Evan Heusinkveld, director of state services for the U.S. Sportsmen’s Alliance. “That is a safety rate four times safer than the general hunting population.”

That statistic doesn’t surprise Grossetete. He said he’s already noticed Mateo maturing as a safe, responsible hunter, even though he’s only 10.

“Without the hunter education course, he relies on me a lot, and that’s fine,” Grossetete said. “When we’re out hunting, we’re always going over the basics and the safety aspects, and we’re doing it in a live situation instead of in a classroom. I think that will give him an edge when he does take the class.”

The Department of Game and Fish offers more than 140 standard hunter education courses each year. Last year, 535 volunteer and staff instructors taught 3,593 students.

To learn more about the Mentored-youth Hunter Program and the Hunter Education Program, please visit [www.wildlife.state.nm.us](http://www.wildlife.state.nm.us) and click on the “Education” tab. Information also is available at the Department’s Information Center, (888) 248-6866.



Department file photo

**Dolly Aragon earned a guided elk hunt on Vermejo Park Ranch with her perfect score on the Department of Game and Fish hunter education course exam.**







# Wild winter slumber parties

## Who's sleeping?

Story by Colleen Welch  
photos by Don MacCarter

Wetlands – areas around potholes, ditches, ponds and streams – offer exciting opportunities to discover wildlife year-round. Wetland habitats are rich with many different species of wild animals. Wetlands are home to tadpoles, jumping frogs, waddling ducks, dragonflies, beavers, muskrats and many other animals. Some live in the wetland area all year, some just come to visit for food, water and shelter. Some birds, like redwing blackbirds, use wetlands to nest and raise their young. During the warm season, wetlands are buzzing with life. In winter, quiet settles over the wetlands.

### Winter adventures

The weather is colder and days are shorter. The fallen leaves are buried under snow. Wetland cattail flowers that looked like hotdogs in the summer are now fuzzy and seeds are blowing about. Children seeking outdoor adventures leave their warm homes, bundling up with coats, hats and mittens. While playing outside in the snow, young adventurers notice some animals are still around. Birds flock around feeders of seed and suet. There may be rabbit tracks in the fresh snow. More investigation begins to reveal how animals survive the winter.

### Who's moving? Who's sleeping?

Some wetlands are created by beavers after they construct their dams. The woodlands become marshy as the beaver family builds its den called a



lodge. Beavers carry lots of woody material into their den so that they can snuggle in during the coldest winter days and still have food to eat. Smaller muskrats sometimes share the beaver lodge during the winter. If the outside temperature warms, the rodents will wake up and forage for food such as willow branches and pond plants.

Many birds and bats fly to warmer wintering grounds. Some animals stay and hibernate or nap in their dens or underground. Some bats hibernate during the coldest months. Mammal biologist James Stuart says, "There is growing evidence that some bats will come out and forage on mild winter nights, but we don't have a lot of information yet."



Beavers, above, right and top, build dams that form wetlands where they also build lodges to keep them warm and safe as they sleep through cold winters.



In cold weather, most animals need lots of food to get the energy needed to stay warm and active. In winter, food is hard to find, so animals adapt by napping during the cold months, saving energy as fat stored in the body. Hibernating mammals stop moving and let their body temperatures drop to just above freezing and their hearts beat very slowly. A hibernating mouse's heart that normally beats 500 times a minute will slow to about 30 a minute.

The heart rate for a black bear in its winter den may drop from 50

**Black bears spend cold winters in dens that often are covered with snow until spring.**



beats per minute down to 8 or 12, but the bear's temperature drops only slightly, allowing it to wake up. Black bear females have their cubs while denning. Black bears do not eat, drink or excrete waste while hibernating. They recycle proteins and urine while hibernating.

Hibernating rock squirrels in New Mexico can wake up if the winter weather becomes warmer. Gunnison prairie dogs also might wake up on a nice winter day, Stuart says.

"If it takes too much energy to wake and get out, animals stay in their dens," Stuart says. "In New Mexico, striped skunks do not actually hibernate, but in cold areas they remain inactive in burrow dens for much of winter." Sometimes, however, skunks – usually males – will emerge from dens to look for food during the winter, he says.

Snakes, lizards, frogs and toads slow down all their body processes almost to a stop during very cold weather. In this way, these animals use up a small amount of their stored body fat. They hide away in winter, under stones, logs, in compost heaps and old mouse burrows. Salamanders cannot dig, so they wait out winter in tunnels made by shrews, mice and chipmunks.

