



PHOTO: DAN WILLIAMS

Quail country

Four species of challenging game birds live in New Mexico.

Please see Page 10.

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Return of the aplomado



(above)

Northern aplomado falcons once ranged throughout southern New Mexico, Arizona, Texas and northern Mexico.

PHOTO: Cal Sandfort, The Peregrine Fund

(left)

Young aplomado falcons are placed in "hack boxes," where they are fed until they learn to fend for themselves.

PHOTO: Dan Williams



Native falcons released in N.M.

By Dan Williams

One of New Mexico's most beautiful and efficient aerial predators is back in part of its historic range, chasing meals of insects and small birds while aggressively defending its territory against intruders several times its size.

"They'll attack eagles, hawks and ravens," Tom Waddell said of the 11 aplomado falcons released Aug. 3 on the Armendaris Ranch east of Truth or Consequences. "I watched them put a golden eagle to the ground."

That's an impressive feat for a bird 17 inches long and weighing less than one pound. It's also something that's rarely seen in New

Mexico. Before 2001, the last nesting pair of the now federally endangered birds was spotted in 1952 near Deming.

"I learn a lot observing them," said Waddell, a retired biologist with the Arizona Game and Fish Department who manages the 350,000-acre Armendaris Ranch for owner Ted Turner. "It really is exciting to see them out here."

This summer's aplomado falcon release was the first of several planned on public and private lands in New Mexico over the next 10 years. The birds are raised in captivity in Boise, Idaho. At about 35 days old, they are placed in elevated "hack" boxes at the release sites until they are ready to come and go on their

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Build it and they will swim ...

Gov. Richardson breaks ground on warm-water fish hatchery

By Dan Williams

SANTA ROSA – New Mexico’s first warm-water fish hatchery, an \$8 million operation capable of producing 2 million fish a year for the state’s recreational waters, began taking shape this summer at groundbreaking ceremonies at the existing Rock Lake Fish Hatchery in Santa Rosa.

Governor Bill Richardson joined community leaders, state officials and hundreds of children for the July 19 celebration, which included a free fishing clinic.

“This hatchery is an example of how we can make the most of New Mexico’s water resources,” Governor Richardson said. “It will bring more dollars to the economy here in Santa Rosa and it will provide more fishing opportunities statewide. And in times of drought, our hatcheries help struggling lakes by rebuilding their fish populations.”

New Mexico Department of Game and Fish Chief of Fisheries Mike Sloane said the new hatchery will be built alongside the existing operation that produces 100,000 pounds of trout a year for mostly southern lakes and streams. Bass, catfish, walleye,



Governor Bill Richardson joined community leaders this summer in Santa Rosa, where they broke ground on the state’s first warm-water fish hatchery.

PHOTO: Dan Williams

tiger muskies and possibly some endangered species will be reared in the facility, which will include 18 one-acre ponds and four 0.1-acre ponds.

The hatchery also will include a Watershed Education and Training Center, which will include exhibits, educational materials and learning spaces to inform students, tourists and other visitors about the importance

of New Mexico’s watersheds and aquatic resources. The first phase of construction is scheduled to be completed soon. Funding sources included \$2.5 million from the state Game Protection Fund, which comes from hunting and fishing license sales; \$900,000 in federal grants; and \$300,000 from the state’s General Fund, authorized by the 2004 Legislature.

Downlisting will open fishing opportunities for Gila trout in N.M.

The Gila trout, a fish native to the clear, cold mountain streams of southern New Mexico and east-central Arizona, has been downlisted from endangered to threatened status under the U.S. Endangered Species Act. The new status will allow state fish and wildlife agencies to develop limited recreational fishing.

The fish was first declared endangered in 1966 under the predecessor to the Endangered Species Act, and came under the protection of the ESA when it was passed in 1973.



It has been more than five decades since an angler has legally caught a Gila trout.

Through recovery efforts in partnership with the U.S. Forest Service, New Mexico Department of Game and Fish, Arizona Game and Fish Department, and New Mexico State University, population numbers of Gila trout have increased from four

populations at the time of listing to 12 populations today.

The special fishing rule would allow for very limited fishing under conditions that would not deter recovery efforts. Fishing could be allowed in areas that have stable or increasing trout numbers or in waters not involved in recovery efforts. No timeframe has been established.

Gila trout are identifiable by iridescent gold sides that blend to a darker shade of copper above a white belly. The faint, salmon-pink band that runs horizontally along its side in adults becomes more pronounced during the spawning season. Spawning occurs in the spring. When adult, the fish are seven to eight inches in length.

Game Commission approves otter restoration in New Mexico

SANTA FE – The State Game Commission this fall approved proposals to move forward with plans to restore river otters in two New Mexico Rivers.

At its meeting Aug. 24 in Santa Fe, the Commission directed the Department of Game and Fish to proceed with plans to reintroduce river otters to sections of the upper Rio Grande and the upper Gila River. There have been no confirmed sightings of river otters in the state since the 1950s, but recent reports indicate some otters may have migrated to Navajo Lake from Colorado, where they were reintroduced in the 1980s.

The Commission action followed the Department’s presentation of a feasibility study that indicated otter reintroduction efforts could be successful in state waters that



River otters haven’t been seen in New Mexico since 1953.

PHOTO: Tim Daniel, Ohio Divison of Wildlife

formerly were in the otters’ historic range. The study was the result of research by and collaboration with

a diverse group of government agencies, the New Mexico River Otter Working Group and others.

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Northern N.M. hatchery, lake get new names

By Dan Williams

LOS OJOS, N.M. -- A northern New Mexico fish hatchery and its neighboring trout lake now have new names that better reflect the rich culture and history of their communities -- and their water source.

With recent approval by the New Mexico Game Commission, Los Ojos Fish Hatchery now bears the same name as the small community of Los Ojos, one of the most scenic villages in northern New Mexico. The abundant springs that gave the community its name also fill the hatchery’s trout and salmon runways and rearing ponds. It formerly was called Parkview Hatchery.

Laguna del Campo, the nearby small trout fishing lake, is now named after a military post established in Los Ojos in the mid-1800s to protect residents against Indian raids that never happened. According to research by former State Historian Robert J. Torrez, the post’s actual name was Fort Lowell, but area residents knew it simply as “el campo.” Before the name change, the lake was called Burns Canyon Lake, after a prominent area landowner.

“The community strongly backed the name changes,” said Agapito Candelaria, a Los Ojos native who helped gather historical research to present to the State Game Commission. “It gives the hatchery and the lake more identity with the community, and it gives the community more ownership.”

The hatchery originally was named “Parkview” because it was the same



Laguna del Campo is regularly stocked with rainbow trout. It is open daylight hours May 1 through Oct. 31.

PHOTO: Dan Williams

name federal mapmakers mistakenly gave to the village of Los Ojos when a post office relocated there after the true “Park View” settlement about four miles to the north was abandoned in 1880. The village was known as Parkview until 1972, when residents successfully petitioned local and federal officials to change it back to Los Ojos.

This year, Los Ojos community members presented State Game Commission member Alfredo Montoya with a similar petition to rename the hatchery and the lake. Torrez provided historical research, and when it came to a vote, the seven-member Commission unanimously approved the name changes.

“It is fitting that the hatchery and the lake have names that reflect the community and the historic villages

of the area,” Commissioner Montoya said. “As Mr. Torrez points out, the name change acknowledges that ‘the hatchery’s main source of water is, in fact, un ojo muy grande, a very large spring, a natural feature that gave Los Ojos its original name.’ ”

Los Ojos Fish Hatchery is one of six hatcheries operated by the New Mexico Department of Game and Fish. It is the state’s main rearing site for kokanee salmon, and currently is undergoing renovations to its trout rearing facilities. When it resumes full production on 2008, it will be capable of raising about 3 million rainbow trout fingerlings a year.

Laguna del Campo is a 15-acre lake near the hatchery that is open to anglers ages 14 and under and their parents or guardians; anglers age 65 and over; and handicapped anglers.

'Trophy' poachers face \$10,000 penalties

TUCUMCARI – Poachers caught taking New Mexico’s trophy wildlife now face possible civil penalties of \$2,000 to \$10,000 in addition to any criminal fines assessed. The civil penalty assessments will allow the state to recover losses of valuable trophy wildlife.

The New Mexico Game Commission was authorized by the by the 2006 State Legislature to set the new penalties based the value of a “trophy” big-game animal or fish to the state. Previous civil penalties were \$250 for a deer, \$500 for an elk.

State law allows the Department of Game and Fish to seek damages from poachers for the value of the state’s property. The newly established civil penalties will be determined according to the animal’s trophy characteristics. In the case of an illegally taken deer or elk, the value will be based upon antler width, number of points, or overall size. The new penalties also include \$150 for an illegally taken trout that measures 20 inches or longer, and \$500 for a Tom turkey with a beard 10 inches or longer or spurs 1 inch or longer.

The increased penalties of \$10,000 -- determined by Safari Club International scores -- include: deer with antlers scoring 200 or more; elk, 350 points or more, bighorn rams, 150 or more; oryx, 101 or more; and ibex, 100 or more. The maximum civil penalty for antelope is \$8,000; and for barbary sheep, \$6,000. Minimum penalties are \$2,000 for any “trophy” big-game animal and any headless big-game animal.

To report hunting and fishing violations, call Operation Game Thief, (800) 432-GAME (4263).

Big-game hunting, trapping rules approved for 2007-2009 seasons

The New Mexico Game Commission has approved new rules for the 2007-2009 big-game hunting seasons that set hunt dates, bag limits and opportunities according to the most current data on wildlife populations, distribution, habitat, and management objectives.

The new rules, adopted during the Commission meeting Sept. 29 in Tucumcari, apply to the 2007-2008 and the 2008-2009 hunting seasons. They provide for public and private land elk hunts, cougar hunting, and furbearer hunting and trapping rules based on new population and habitat assessments.

The Game Commission sets hunting and trapping rules every two years for deer, elk, antelope, oryx, bear, ibex, bighorn sheep, barbary sheep, javelina, turkey, cougar, and furbearers. The process included months of public meetings and assessments of thousands of public comments and recommendations by telephone, regular mail, and e-mail.

“This was one of our most intensive efforts to involve the public in our rule-making process,” Commission Chairman Leo Sims said. “More than 2,300 people called or e-mailed their comments, and hundreds more had their say about the rules at more than 11 public meetings around the state.”

Some highlights of the Department of Game and Fish 2007-2009 big-game

Apply by Feb. 3 for oryx, bear, turkey

Hunters who want to participate in the drawings for 2007-2008 oryx licenses, permits to hunt bear in Wildlife Management Areas, special-permit turkey licenses, and population reduction permits have until midnight Feb. 3 submit applications.

Applications submitted via the Department of Game and Fish Web site, www.wildlife.state.nm.us, must be received by midnight, MST, Feb. 3. Applicants who use the Web site are encouraged not to wait until the last minute to apply due to possible complications brought on by a high volume of Web site users.

Hunters also can use paper

applications, which may be obtained at any of more than 250 license vendors statewide and at Game Department offices in Santa Fe, Albuquerque, Raton, Las Cruces and Roswell. All paper applications must be either hand-delivered to the Santa Fe office by 5 p.m. Friday, Feb 2, or postmarked by midnight MDT Saturday, Feb. 3.

Drawing results will be available in mid-March on the Department Web site, or in person at any Department office.

More information can be found in the Big Game Rules and Information booklet, available at license vendors, Department offices, Web site www.wildlife.state.nm.us, or by calling (505) 476-8000.

hunting rules:

Elk:

--Seasons, numbers of licenses and bag limits on public and private lands were adjusted based on management goals and sustainable harvest objectives for the various elk populations in the state. These adjustments will provide significant hunting opportunities while sustaining the wildlife resource. --Overall, the number of public and private elk licenses available each season was slightly reduced while the numbers of licenses for youth and mobility impaired hunters increased.

Cougar:

--Development of a Cougar Population

Assessment and Harvest Management Matrix led to the establishment of a Total Sustainable Mortality for each cougar zone in the state. The proportion of the Total Sustainable Mortality allotted to sport harvest was increased in some zones while decreased in others.

--Hunters are now required to call a toll-free number or visit a Department of Game and Fish office or the Department Web site, www.wildlife.state.nm.us, to determine whether cougar hunting is open in the zone they plan to hunt in.

Deer:

--Overall public permit numbers

adjusted to improve the distribution of hunting opportunities based on demand and harvest objectives.

--Bag limit changed to one forked antlered deer statewide. --Added a special white-tailed deer season in northeastern New Mexico. --Added eight new youth-only hunts and six hunts for mobility-impaired hunters; and increased bow-hunting permits in Units 2A and 2B.

Bighorn sheep:

--Provides for 22 licenses, including two new licenses in the Latir Wilderness, two new licenses in the Wheeler Peak area, one new license on the Pecos Wilderness, and continued hunts in the Peloncillo Mountains and Turkey Creek. --Eliminated hunt in the San Francisco River area because of population declines due to disease.

Military hunts:

--Increased opportunities for oryx and barbary sheep hunting for Fort Bliss military personnel on McGregor Range.

--Continued special hunting opportunities for military personnel who served in Afghanistan or Iraq.

For more information and details about the 2007-2008, 2008-2009 big-game hunting rules, please visit the Department Web site, www.wildlife.state.nm.us, or check out the 2007-2008 Big Game & Trapper Rules & Information booklet, available in late December at license vendors or Department of Game and Fish offices in Santa Fe, Albuquerque, Las Cruces, Raton and Roswell.



Volunteers with the National Wild Turkey Federation helped the New Mexico Department of Game and Fish and the U.S. Bureau of Land Management release 21 wild turkeys in San Juan County.

PHOTO: Bill Papich



Wild turkeys get new home

Partners put Habitat Stamp money to good use

By Bill Papich

Wild turkeys captured near Raton are now in northern San Juan County, thanks to a cooperative effort among the U.S. Bureau of Land Management, the Department of Game and Fish and the Wild Turkey Federation.

Of the 21 turkeys taken to Bureau of Land Management land in cardboard boxes, six were hens outfitted with radio transmitters to track their movements for about a year.

“They had a lot of vigor when they came out of the boxes,” said BLM wildlife biologist John Hansen. “They just took off like rockets. They are very healthy.”

The turkey release was in a meadow near stands of pinon and juniper trees with scatterings of Ponderosa pine and scrub oak. Turkeys like roosting in tall trees for protection and in the winter eat pinon nuts, juniper berries and acorns. In the summer, meadows provide turkeys a healthy diet of grass, flowers and insects.

The goal of the turkey release is to establish “a huntable population of wild turkeys,” Hansen said.



BLM wildlife biologist John Hansen aims his receiver in the direction of wild turkeys outfitted with radio transmitters.

PHOTO: Bill Papich

“We have a population of turkeys here that have just barely been hanging on” Ryan said. “We thought we could give a little boost to the population to see if we could get them to really take off.”

Turkey Federation members Damian Lindenfelser and Howard Bradley helped open boxes, done as quickly as possible so the turkeys would

Members of the National Wild Turkey Federation supplied turkey transport boxes and helped release the birds. The New Mexico Department of Game and Fish and BLM helped trap the birds and transport them from Raton. The project was funded by the New Mexico Habitat Stamp Program, which requires hunters, anglers and trappers to pay \$5 if they use BLM or U.S. Forest Service land.

Santa Anna Pueblo also helped with the trapping, in which cages were baited with corn and rigged with a drop-door .

The turkeys are now in a Unit 2 hunting area between U.S. 550 and N.M. 511. Brad Ryan of the Department of Game and Fish said he hopes hunters who draw a Unit 2 permit to hunt turkeys this spring will avoid the area so the turkeys can get established.

New Mexico Habitat Stamp Program

What is it? Hunters and anglers who use U.S. Forest Service or Bureau of Land Management land in New Mexico must pay \$5 to have their license validated for the Habitat Stamp Program. The program, authorized by the U.S. Sikes Act, helps fund millions of dollars of wildlife habitat restoration and protection projects every year.



PHOTO: Don MacCarter

2005 funding: The program spent more than \$1.6 million on 139 projects statewide. Other government agency partners contributed \$2.3 million and sporting groups added \$223,332 for a total of \$4.2 million.

Habitat Stamp projects in 2005 included:

- 91,671 acres of vegetative treatments
- 250 acres of riparian enhancements
- 330 in-stream fish structures
- 68 wildlife watering sites
- 235 wildlife population or habitat surveys
- 1,374 hours of extra law enforcement efforts
- 8 miles of road obliterations
- 13 miles of fence modifications

Information: To contribute or volunteer for the New Mexico Habitat, please contact Dale Hall, (505) 222-4725.

stay together. Within 20 seconds, all the birds had flown away and disappeared over the trees. Lindenfelser brought his son Eric, a potential turkey hunter, and the little boy held his turkey feather souvenir left behind in a box.

“Re-establishing the turkey population is going to be fantastic for my son, for the future,” Lindenfelser said. “The turkeys belong here, and now we’ve got them back.”

A wild turkey generally lives five to seven years and can lay eight to 12 eggs in the spring. Depending upon the quality of the nesting habitat, half the nests may be lost to predators such as snakes, skunks, ravens and coyotes. Half the hatched chicks can become meals for hawks, owls, coyotes and bobcats. Hansen said if a turkey lives the first six months, it has a “pretty good chance” of surviving.

He said the BLM has spent approximately \$150,000 of mostly Habitat Stamp Act money for habitat improvement in the turkey release area, to improve habitat for deer, elk, turkeys and other wildlife.

In a separate project in southern New Mexico, the BLM, Department of Game and Fish and the Turkey Federation teamed up again to transplant 16 wild turkeys to Horse Mountain near Datil.



Hands-on hatchery



'Trout in the Classroom' program brings students closer to wildlife

Story and photos
by Clint Henson

Tiny hands wipe away the cool condensation from the glass. Eyes peer into the aquarium to get a better look at the trout eggs nestled within the rocks. Soon, the eggs will hatch, giving students in two elementary school classes in Raton another lesson about fisheries and wildlife management.

Lisa Sanchez's second-grade class and Eva Chavez's third-grade class volunteered to make room for the 55-gallon aquariums necessary for the Trout in the Classroom program. Once the aquariums were in place, the classrooms quickly became the most popular places in school.

"I have been amazed at how excited the students have been about the project", said Danny Cummings, a speech pathologist at Columbian Elementary who discovered the program while searching the Internet. "They've asked wonderful questions and are eager to understand why trout behave certain ways. I've also noticed an increase of parent involvement in the classrooms."

Trout in the Classroom programs have been popular for more than 20 years among teachers nationwide who want to include more environmental science in their classes. In New Mexico, the program also gives the Department of Game and Fish opportunities to become more involved with schools, and to teach children about water quality, fisheries and



Second-graders, from left, Vicente Esparza, Hanna Kuchan, teacher Lisa Sanchez, and Dustin Hurtado get a close-up view of the 55-gallon aquarium and the newly hatched trout.

wildlife management principles.

The program is relatively simple. A classroom hosts a chilled aquarium, and then watches as eggs turn into tiny fish. Students feed them and keep track of water temperature, pH, and make sure that all the hardware is functioning. Soon, the fish will be taken on a field trip and stocked into a nearby lake or stream.

Columbian Elementary received a grant from Public Service Company of New Mexico to purchase their own aquarium that will stay at the school. The Department of Game and Fish supported the project by supplying trout eggs and a second aquarium that will be moved

to neighboring schools so more students can experience the hatchling experiment. The trout eggs came from Lisboa Springs Hatchery in Pecos. Eric Frey, the Department's Northeast Area Fisheries Manager, provided the technical support.

"It's exciting to see the kids take so much interest and ownership in the trout program," Frey said. "Hopefully we have sparked some of them to take up fishing or instilled it in those already wetting lines. This is a great project to stress the importance of clean water

and a healthy environment."

Students learned the life cycles of the trout while counting how many eggs hatch into sac fry, and then watching them become real live fish!

"When we got the eggs they were it'sy-bitsy", said an excited third-grader, Tristan Perez. "When the eggs hatched they were sac-fry. The sac-fry had a sack of yoke on their stomach. After a while the sac-frys started to lose the sacks of yoke on their stomachs. When they started to lose the sacks we had to start feeding them, then they were called swim-ups, because when we fed them they would swim up for their food."

Chavez, the third-grade teacher, said watching the fish go from egg to alevins (sac-fry) was extraordinary. "One day the eggs were there, and the next day they were gone," she said. "This has

been a great experience for the students in my classroom."

Frey said the program was a learning experience for everyone involved. It also was a lot of work setting up all the pumps, air lines, filters and water chillers for the eggs. "But seeing the excitement of the kids and teachers was all worth it."

It didn't take long for the children in both classrooms to connect the project with real-life wildlife work and enjoy seeing the changes in the fish from day to day. Reyes Garcia, a third grader, said, "The best thing I like about the fish is that it's fun doing the pH level and feeding them. We already released some to the lake; one was a fat one."

Bring on the trout

It takes about \$900 worth of equipment for a successful Trout in the Classroom project. Eggs must be certified by the Department of Game and Fish to ensure they are disease-free and can be released into public waters. Equipment includes:

- 55-gallon aquarium
- Chiller
- Water pump
- UV filter
- Water filter
- Assorted tubing
- Thermometers
- Water quality test kits

For more information about Trout in the Classroom, contact Clint Henson, (505) 445-2311 or clint.henson@state.nm.us.



Eric Frey, Northeast Area Fisheries Manager for the Department of Game and Fish, explains the life cycle of trout to students at Columbian Elementary School in Raton.



Rocks for trout

San Juan River project will improve habitat, ease crowding

Story and photos
By Dan Williams

Marc Wethington knew for quite some time that something had to be done to improve the trout habitat in the lower reaches of the San Juan River quality waters. Silt from arroyo runoff and low river flows were degrading some very promising areas in the world-class fishery. The river needed more structure, perhaps some big rocks to better direct the flow, create more pockets, grow more insects, and attract more fish.

Wethington also knew that fixing the problem would take some dedicated partners, a substantial sum of money, and a whole lot of heavy lifting. So he went looking for some conservation-minded folks with stakes in the area economy and the river's future.

He didn't have to look far. Before he knew it, a fishing club, oil and gas companies, a guide and fly shop, and other government agencies were on board, offering money, labor and equipment to make it happen. And by the end of 2006, more than 600 tons of boulders had been strategically placed in the river, giving trout more places to hide and feed, and providing anglers with more areas to fish.

"This is one of those projects and partnerships you dream about," said Wethington, a fisheries biologist for the New Mexico Department of Game and Fish. In November, he and Bureau of Land Management biologist John Hansen were watching track hoe operator Reggie Davis gently place 2½-ton boulders in neat rows across the current.

The plan was to create "wings" to slow the flow into the bank and increase the current speed toward the center edge. The objective was to create better trout habitat around the rocks, while encouraging the current to carve deeper channels and flush out organism-choking silt. Most of the work was in the lower third of the 4-mile stretch of quality water below Navajo Dam, where storm water from connecting arroyos occasionally dumps tons of silt into the river channel.



(above and left)

Large boulders were strategically paced in the San Juan River to create more trout habitat and help prevent silt buildup from storm water and low river flows.

(lower left)

Fisheries biologists hope improving trout habitat downstream will ease overcrowding at Texas Hole on the San Juan River.



"This is a good stretch of river, but it doesn't have the fish densities as areas upstream," said Wethington, who has worked on the San Juan for the past 11 years. "What we're hoping to do is add some channel complexity, increase sediment transport and ultimately more trout habitat."

Creating more trout habitat would improve fishing in a stretch of river that already has gained world-class status for its numbers and size of trout. Biologists estimate 70,000 trout, averaging 16 ½ inches and some approaching 27 inches in length, swim in the river's "quality waters." The majority of those trout are in the upper half of the 4-mile stretch from

the dam to the ever popular Texas Hole, where a legal keeper is at least 20 inches and the bag limit is one fish per day.

Biologists estimate the quality section of the San Juan River gets 45,000 angler days of fishing pressure every year. Spread equally among 365 days, that would put 123 anglers on the river every day. Currently, most of those anglers spend the majority of their time in the upper section, a trend supporters of the habitat project would like to change.

"We're hoping that improving trout habitat downstream will spread out the fish and in turn spread out the fishermen a little more," said Gary Jantz, president of the 50-member

San Juan Fly Fishing Federation. His group contributed \$1,000 to the boulder project this year. "Right now if you go to Texas Hole or certain areas, it can be so congested with fishermen that it is impossible to fish," he said. "It's like a circus out there sometimes."

Wethington said close to \$90,000 has been spent on the boulder project through the first two phases. Much of the money was donated by area businesses that not only support conservation, but also know the value of good fishing stream to a community. According to the U.S. Fish and Wildlife Service, anglers in New Mexico spend more than \$176 million a year on trip-related expenses and equipment.

In 2005, Williams Production was the biggest habitat project contributor with \$22,000. This year, ConocoPhillips donated \$8,500 and Devon Energy Corp. chipped in \$5,000. Adobe Contractors provided the track hoe and operator. Float & Fish guide service and fly shop, and the San Juan Fly Fishing Federation contributed \$1,000 each. The Department of Game and Fish put \$12,000 into this year's project, and the Bureau of Land Management added \$5,000.

"And we're not done yet," Wethington said. "We're moving the show downriver for the next phase."



Bighorn trapping operation thrills GAIN participants

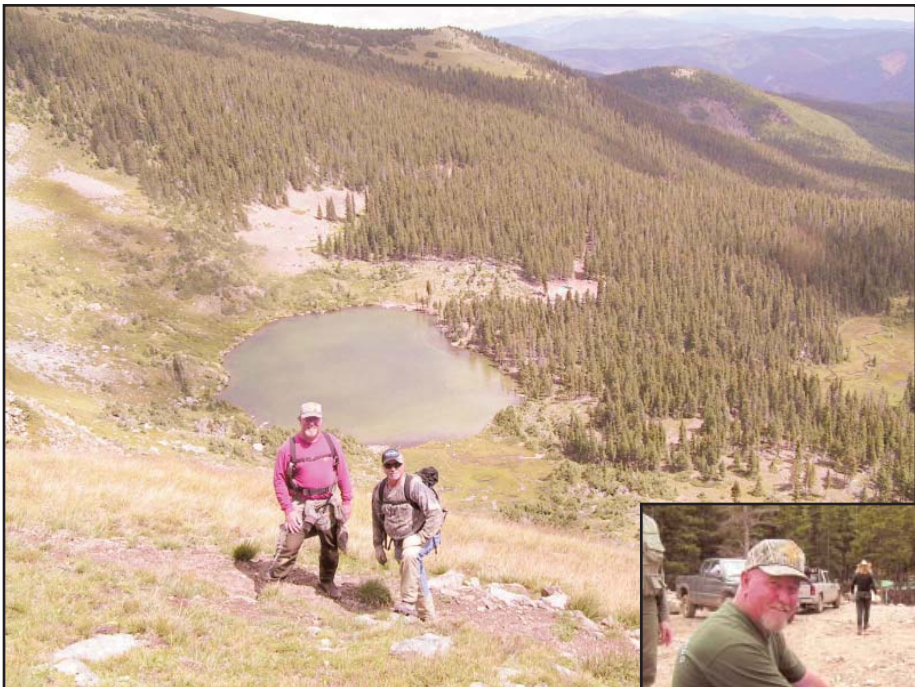
Story and photos
by Clint Henson

Carlsbad residents Larry Lunsford and Rick West didn't have to wait long for the action to begin at this year's Rocky Mountain bighorn sheep trapping operation near Wheeler Peak. As soon as they arrived at the processing site at Taos Ski Valley, sheep began arriving by helicopter.

As the lucky winners of the Department of Game and Fish Gaining Access Into Nature (GAIN) program drawing, Lunsford and West had the opportunity to watch, photograph and participate in the trapping and transplanting operation that moved 25 bighorn sheep to new homes in the Turkey Creek area of the Gila National Forest. Lunsford was especially impressed.

"This trip was so special to me because the last time I was on the mountain I had drawn the bighorn (hunting) permit ... and, unfortunately, did not get to follow through with the hunt," Lunsford said. "When I posed for a picture with that yearling ram, it might as well have been a 200-inch ram. It was that special! My friend and I will cherish those memories forever."

GAIN is a relatively new program offered by the Department of Game and Fish. Its focus is to allow more people to experience wildlife on state-owned wildlife management areas. Currently, most GAIN opportunities revolve around wildlife management activities conducted by Department biologists, such as the bighorn sheep trap and bass electrofishing surveys. Other opportunities give participants the



Larry Lunsford, left, and Rick West won Gaining Access Into Nature opportunities to watch and participate in a bighorn sheep trapping operation near Goose Lake..

chance to see and hear wildlife up close. These include elk bugling and deer viewing tours on the Sargent Wildlife Area near Chama, and springtime tours to see and hear the mating rituals of lesser prairie chickens near Milnesand.

At this summer's bighorn trapping operation, Lunsford and West got in on the action early, as 10 sheep trapped near Gold Hill arrived by helicopter and, after a quick examination, were shuffled into a trailer to await the trip to Turkey Creek. Later that afternoon, the operation moved to Goose Lake near Red River. Again, with no time to rest, a small group of sheep

converged on the camp and two more bighorns were quickly darted lifted by helicopter to waiting trailers. Early the next morning, the trap crew set off for the long climb up from Goose Lake to Gold Hill, where a net trap was set. Again, it only took minutes for 10 more sheep to come under the net. By noon, three more sheep had been caught for a total of 25 sheep.

"Including the public in such an operation gave us a very special insight to the integrity of the New Mexico Department of Game and Fish," West said afterward. "We were very impressed with their first and foremost concern for the sheep.



When working with the sheep, everyone exercised the utmost care to ensure their health and safety."

Applying for GAIN activities is the same process hunters use to apply for deer, elk or other licenses or permits distributed through drawings. GAIN applicants pay an application fee of \$6, then lucky winners will be notified and the permit can be purchased, just like a hunting license.

Be thoughtful when you apply for activities like the bighorn sheep trap. It can be tough.

Willing participants might end up hiking, camping and working at over 10,000 feet in the wilderness. Other activities, such as elk bugling and deer viewing require less strain.

Visit the New Mexico Game and Fish Web site, www.wildlife.state.nm.us, and click on "Wildlife Adventures" to find information on GAIN opportunities, dates and an application process.

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Barbary sheep challenge winter hunters

By Mark Madsen

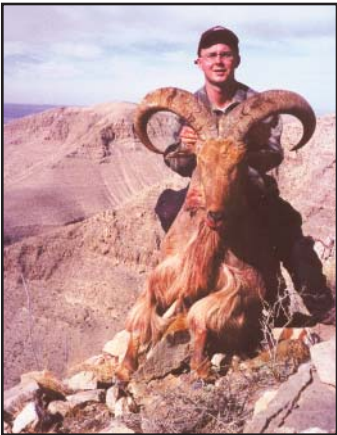
Many hunters dream to hunt some type of wild sheep at least once in their lifetime. Most will never get an opportunity to hunt bighorn sheep in New Mexico because of the limited number of licenses available and the poor odds of drawing one. However, New Mexico hunters have a unique opportunity to pursue wild sheep without having to draw a license or spend thousands of dollars to hunt elsewhere in North America. They can do so by hunting Barbary sheep.

Unlimited Barbary sheep licenses are available over-the-counter or online, and hunting is allowed year-round in some areas. For a really good chance at harvesting a Barbary sheep, check out southeastern New Mexico in February. It's a great opportunity for hunters eager to get out when most other hunting seasons have closed and it's too early for fishing.

Native to North Africa, the first Barbary sheep, or aoudads (*Ammotragus lervia*), were introduced to New Mexico in 1941 on the McKnight Ranch in the Hondo Valley west of Roswell. Initially, the sheep were kept in a high-fenced

enclosure similar to today's Class A game parks. In 1950, the Department of Game and Fish transplanted Barbary sheep into the Canadian River gorge near Roy. Barbary sheep also were released in the Canyon Largo near Farmington in 1955. Those early introductions, along with escapes from the McKnight Ranch have allowed Barbary sheep to expand throughout New Mexico. Free-ranging populations occur in many areas, but they are most prevalent in the southeast.

Barbary sheep live in rough open country. In southeastern New Mexico, most of the Barbary sheep habitat consists of the rocky open foothills and escarpments of the Sacramento and Guadalupe Mountains. The sheep also are found in some of the major canyons and drainages north of the Capitan Mountains and north of Roswell. Very rarely will you find Barbary



Mike Perry harvested this large ram in the Brokeoff Mountains.

sheep in heavy brush or areas with any type of trees. They favor steep open slopes with rock ledges and cliffs, relying heavily on their keen eyesight for protection. The sheep often bed or stand in areas with good visibility.

Large rams are very impressive with heavy curved horns and distinctive chaps that run down their neck and front legs. Rams with horns exceeding 30 inches are

considered quality trophies. Ewes tend to be smaller and have horns that reach 16 to 18 inches at maturity.

The west rim of the Guadalupe Mountains in Game Management Unit 30 is one area hunters can find Barbary sheep. Good sheep habitat can be found in the area of Woods, Little Dog and Pup Canyons north of N.M. 137 and west of Forest Service Road 67. The rim south of N.M. 137 also holds sheep. Hunters should concentrate their efforts from Devil's

Den Canyon south and east toward Gunsight Canyon. Other areas in Unit 30 to consider include the Brokeoff Mountains, Hackberry and Collins Hills west of the Guadalupe Mountains. Most of the good sheep habitat in Unit 30 is on public lands, primarily BLM. Access to these areas is limited, so be prepared to pack out a ram in pieces if you harvest one in some of the deep canyons off the rim.

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Return of the aplomado

... continued from Page 1

own. Site attendants continue to feed the young falcons for six weeks or more after the doors of the boxes are opened and the birds gradually learn to fly and fend for themselves.

Home on the 200,000-acre range

Every evening, Waddell makes a short drive from the ranch headquarters in Engle to the release site, where two hack boxes sit on platforms about 10 feet above the ground. When it gets dark enough that the birds can't see him, he places dead quail on the platforms for the birds' morning meal.

"So far, these birds are doing just fine," Waddell said in early November, three months after the hack doors were opened. "This is an interesting experiment because nobody has ever supported the birds this long after release. Normally they are left on their own after about six weeks when the attendants leave."

Waddell said the young falcons are beginning to disperse across the approximately 200,000 acres of grasslands habitat at the Armendariz Ranch. Of the original 11 birds, seven or eight occasionally return to the hack boxes. "The worse the weather, the more birds there are," he said. "When there's no wind and there's nice hunting, we don't get many birds. Usually, we get four birds coming back every evening, but it's not always the same four."

Dr. Patricia Zenone, a senior biologist with the U.S. Fish and Wildlife Service, said the newly released birds eventually will disperse around the ranch and beyond, and stop returning to the hack sites. Because the area is so large, future falcon sightings will be rare, but that should change as more birds are released. The territory for a nesting pair of aplomado falcons typically is 4,000 to 5,000 acres.

"We're anticipating to release up to 150 birds



A young aplomado falcon peers out of the door to its hack box.

PHOTO: Dan Williams



Northern aplomado falcons preferred diet consists of insects and small birds such as mourning doves and meadow larks.

PHOTO: Cal Sandfort, The Peregrine Fund

a year over the next 10 years in New Mexico," Zenone said. "That's a lot of birds. We're hoping the releases will be as successful as the ones in Texas." Future release sites have not been identified, but prospective sites include federal, state and private lands that include the falcons' habitat of Chihuahuan desert grasslands.

Big success in Texas

Angel Montoya, a biologist with The Peregrine Fund, has been working with northern aplomado falcons since 1992. He said he is optimistic the New Mexico releases will be as successful as similar efforts in South Texas and West Texas.

The South Texas project began in 1995 and now has at least 45 breeding pairs raising more than 50 young falcons a year. Releases in West Texas began in 2002 and so far 417 falcons have been released to native habitat on private lands through federal Safe Harbor agreements. Under Safe Harbor agreements, landowners agree to work with biologists to restore endangered species on their property, with the stipulation that they do not have to worry about potential liabilities associated with the Endangered Species Act. Although the falcons remain protected by the Act, the Safe Harbor Agreement allows participating landowners to continue with ongoing activities on their property.

"The Safe Harbor program worked well in Texas, where 97 percent of the land is privately owned," Montoya said. "This program wouldn't have worked in New Mexico, as 35 percent of the land is federally owned."

In New Mexico, the falcons will be considered an experimental, non-essential population. That designation allows the birds to be reintroduced to private and public lands within their historic range with more flexibility, while still ensuring protection under the Endangered Species Act. The August releases were made possible through cooperative agreements among the

Department of Game and Fish, the U.S. Fish and Wildlife Service, The Peregrine Fund, the Turner Endangered Species Fund, and others. "We at The Peregrine Fund believe that public good will is one of the most important factors in restoring the aplomado falcon," Montoya said. "It's great to finally get the falcon back into New Mexico. It's a great species to work with – a beautiful bird. The work has been special for me because the last known nesting (in 1952) was in Deming, my home town."

The northern aplomado falcon has been on the federal Endangered Species List since 1986 and on the New Mexico Endangered Species List since 1990. A few wild aplomado falcons have been sighted in Luna County and in the Otero



Young aplomado falcons stretch their wings after their release on the Armendariz Ranch in southern New Mexico.

PHOTO: Dan Williams

Mesa area in recent years, but most of those are believed to be transient birds from Mexico.

“A perfect reintroduction”

The releases on the Armendaris Ranch will be an interesting experiment, Montoya said, because the area is on the extreme northern edge of the falcons’ historic range. In the 1930s, aplomado falcons still nested in the grasslands of southern New Mexico, Arizona, Texas and northern Mexico. Biologists believe a combination of pesticide use and habitat degradation from intense overgrazing may have contributed to the birds’ population declines. Conditions have improved since then, Montoya said.

“New Mexico has a lot of good potential habitat, and so far the releases look promising,” Montoya said. “Releases are a good way to find out how well the birds do in this part of their range. We know they are susceptible to drought because it affects their prey base – the grasshoppers, sparrows, mourning doves and meadow larks.”

Zenone described the Aug. 3 release as “a perfect reintroduction,” especially promising because all 11 birds successfully fledged without any threats from predators. Newly released falcons can be easy targets for great-horned owls, coyotes and other predators as they learn to fly and hunt on their own. Zenone said the falcons are especially vulnerable at night.

Watch for falcons

Monitoring the falcons following the initial releases will be a challenge in New Mexico because of the few birds ranging across the state’s wide-open spaces.

“The birds don’t migrate, but they do get the urge to disperse,” Montoya said. “They won’t hang out at the release site forever, so we rely on reports from people who see them.”

All of the released falcons carry leg bands inscribed with letters and numbers that are sometimes readable through a spotting scope. Anyone who sees an aplomado falcon is encouraged to make note of the bird’s characteristics, its location, activity and surroundings, and then pass on the information to Montoya at (505) 523-5550, or Zenone at (505) 761-4718. Observers are asked to stay far enough away from the falcons to avoid putting stress on the birds or disturbing their normal behavior. Photos are always welcome.



m emerged from their hack box for the first time Aug.



Photo: Cal Sandfort, The Peregrine Fund

Northern aplomado falcon (*Falco femoralis septentrionalis*)

Status: Extremely rare and endangered throughout the southwestern United Staes and northern Mexico and reduced to remnant population in southern Mexico. Given Endangered Species Act protection in 1986. Since reintroduction efforts began in 1995, 1,268 birds have been released in Texas and New Mexico.

Range: Formerly ranged throughout the southwestern United States and Mexico. It has rarely been seen in the United States and northern Mexico since the 1940s.

Size: Males, about 15 inches in length, 9 ounces. Females, about 17 inches in length, 14.5 ounces. Wingspan about 36 inches.

Description: A medium-sized, steel grey falcon (aplomado is Spanish for dark grey). Usually seen in pairs, often hunting together. It is characterized by a long tail, a black cummerbund, contrasting with a white upper body. A distinguishing field characteristic of this falcon is the white dash above each eye and along the tailing edge of their secondary feathers. The sexes are similar and the first-year birds are much like adults except they have a brownish edgings on the feathers which turn black or grayish as they mature.

Habitat: Open grasslands and savannahs where tall cacti, tree yuccas and taller pines and oaks grow in open stands. Uses old stick nests of hawks and other species that share the same range and habitat.

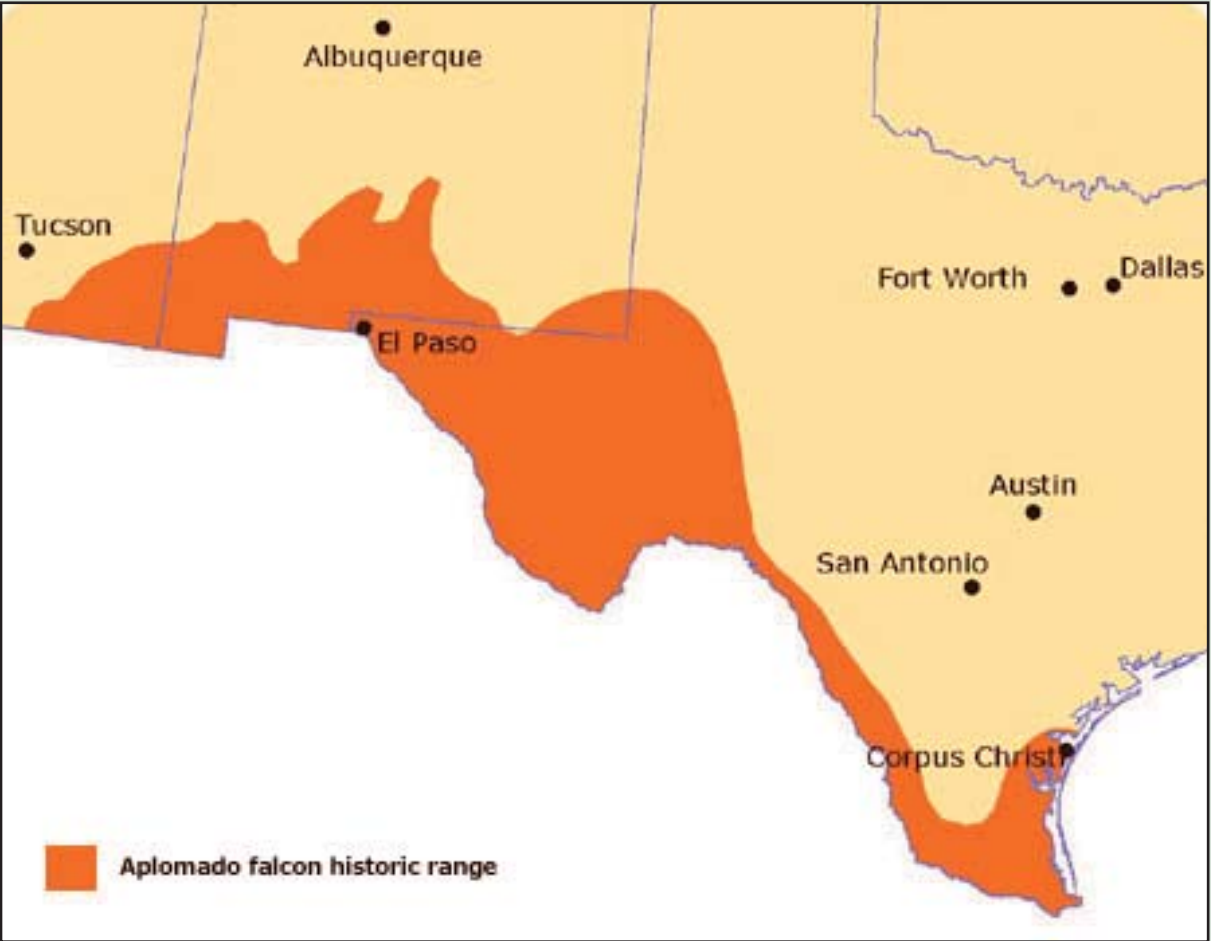
Diet: Primarily small birds and insects caught in the air.

Eggs: Two, three, and rarely four eggs. Eggs are laid at different times of year depending on locality; historically March to May in Southwest United States. Both parents incubate.

Young: Young are covered with white down feathers at hatching but have a dark gray secondary down (evident at about 10 days of age) on their back, upper wings and top of head. The remainder of the body is white including a strip above the eye. The falcons typically begin to fly at about 30 days of age.

Lifespan: 15 to 30 years.

Source: The Peregrine Fund, <http://www.peregrinefund.org>



A smorgasbord of quail



A good bird dog (or two) can make quail hunting a bit easier.

PHOTO: Mark Gruber

Four species challenge hunters in New Mexico

By Chad Nelson

I was feeling pretty good about myself after hitting more targets than usual during an afternoon of shooting sporting clays one sunny day last January. It wasn’t long, however, before I was reminded in humbling fashion that a clay pigeon is a far cry from a fast-flying quail.

My brother and I decided to take advantage of the gorgeous late afternoon weather that January day to see if we could scare up a covey or two of scaled quail in a spot he had hunted several times before. Shortly after walking into the field of low brush surrounding a small watering hole, he flushed a covey of 10 or 12 birds that proceeded to rocket past me like 100 mph fastballs. It was all I could do to get off a feeble shot at the last bird as it zipped by.

Marksmanship and quick reflexes are only part of the equation for successful quail hunting. Finding the birds to begin with can be the biggest challenge. Larry Kamees, Small Game and Turkey Biologist for New Mexico Game and Fish, recalls hunting the mesquite-covered dunes west of Las Cruces years ago.

“The first year I went out there, there were quail everywhere and hunting was incredible. But the next year and for the next eight or nine years after that, I didn’t see a single bird in the area,” Kamees says.

New Mexico offers four of the six quail species in the continental United States. Bobwhites inhabit the far eastern part of the state. Gambel’s quail range through most of south and up into north-central New Mexico. Scaled quail are found at lower elevations across most of the state. The elusive Mearn’s quail primarily inhabit scattered pockets in the extreme southern end of the state.

Tough hunting in northwest

Would-be quail hunters in Albuquerque, Santa Fe or other points north are faced with minimal quail habitat, particularly in the northwest. There are scattered pockets of sparse grasslands on the Bureau of Land Management lands that extend roughly from Guadalupe to the Farmington area, but the odds of consistently

finding quail anywhere in the region are pretty slim.

Northeast promising, mostly private

The northeast region offers plenty of grasslands, but they’re largely on private lands. The Kiowa Grasslands in the Canadian River drainage is one of the largest areas of public land in the region. Quail hunters guard

their favored locations religiously, so the best advice is to get out there and scout the country, or knock on doors to ask landowners for permission to hunt. If you’re fortunate enough to find that Northern New Mexico honey hole, you’d be wise to keep it to yourself.

Southwest coveys scattered

Reports out of the southwest have been mixed. If you know where to find them, there may be some decent quail hunting opportunities. Area Game Manager Pat Mathis, however, says the outlook isn’t particularly good this year.

“The rains came too late this year, and when they finally came we got too much,” Mathis says. The unusually heavy rains may have washed out a lot of the nests in the southwest, but there should still be a few coveys scattered throughout the region.

Southeast is best bet

Experts and experienced quail hunters will tell you that most of the best quail habitat in New Mexico is in the southern part of the state, especially the southeast region. Extensive BLM and state trust lands in the southeast offer excellent quail habitat. Quail hunting should be good this year in the southeast, but not as good as last year, says Bryan Nygren, the District Wildlife Supervisor for the southeast corner of the state.

“We had a late hatch this year and the heavy summer rains interfered with the nesting process, but we’ve still been seeing decent numbers and it should be a pretty good year,” Nygren says. “One result of all the rain is that hunters should expect to encounter more vegetation than in previous years.”

Last year was one of the best quail hunting seasons in recent memory. The heavy

Quail hunting tips

Use a bird dog: A well-trained bird dog can make all the difference in your quail hunting success. Not only can a good dog find the quail a lot easier than you can, but it will also dramatically reduce the number of lost birds. A dog can also find and flush out quail that prefer to hide or run rather than fly.

Scout the country: No matter what you hunt, it’s always a good idea to get out in the field and do some scouting. Get out there and beat the bushes or go out with your dog and work some fields. Look for fields with clumps of preferred quail cover like mesquite, skunk bush, sumac, shinnery oak, cholla, and sands age. Look for quail tracks around water sources such as cattle tanks and windmills.

Be safe: The publicity surrounding Vice President Dick Cheney’s hunting incident last year should be a reminder to quail hunters that safety always must be a priority. If you’re hunting with a partner, make sure you establish zones of fire and maintain them at all times. Quail fly fast and it’s easy to follow their flight path and swing right into your hunting buddy as Cheney did. Be sure to communicate with your hunting partners so you know where they are at all times.

Ask first: You must have written permission



Gambel's quail at water

PHOTO: Dan Williams

in your possession while hunting on private property. It’s usually a good idea to offer assistance to landowners in return for access to their property. Be sure to obtain a surface ownership map of the area you plan to hunt. It is the hunter’s responsibility to know where they are at all times.



rain and snow in the winter and early spring of 2005 produced enough food and cover to allow the quail to reproduce early. This in turn gave the newly hatched poults plenty of time to grow over the summer so they were basically full-grown by the time hunting season rolled around in November. The more time the poults have to grow, the better their chances at surviving the winter, Kamees says. The dry winter this year led to a later hatch, which means the young birds may not be full-grown by the time the season opens.

“The poults we’ve seen this year are still pretty small,” Kamees says.

Populations, habits and habitat

Quail populations can fluctuate dramatically from year to year Kamees says. Like any other species, quail need adequate food, cover, and water to survive. Lack of moisture can significantly affect quail populations by reducing the amounts of seeds and other foods, as well as available cover. Lowest numbers usually follow several years of drought. Populations can usually rebound fairly quickly in wet years, however, as evidenced by the quail explosion last year. Overgrazing can be a limiting factor for quail populations, too.

“Quail need cover, both for nesting and the poults, and for protection from the weather, and that cover just isn’t available on heavily grazed lands,” Kamees says. Cattle not only eat the essential quail cover, they also pound it down with their weight and can interfere with nesting.

What about hunting? Although the topic is still up for debate, Kamees says hunting hasn’t been proven to negatively affect quail populations.

Quail are monogamous birds, pairing up in the spring to mate. Nests will generally hatch 10 to 14 chicks. The nesting period can extend from May through September, depending on timing of precipitation. As the poults mature they usually join with other family units to form winter coveys consisting of anywhere from 10 or 20 to 200 birds or more. As winter progresses, the numbers in the covey decrease from various factors including predation, weather-related deaths, hunting and other causes. First-year mortality is normally 70 percent or more. In the spring, the coveys break up and the birds pair up to begin the reproductive process again.

What's for dinner?

Most quail species primarily eat seeds from native woody plants and forbs, as well as grasses. Quail generally feed in the early morning and late evening. Preferred seeds may include croton, bristle grass, skunk bush, sumac, mesquite, sunflower, ragweed and others. Plant shoots and insects are other important foods, providing a source of moisture. Green herbage makes up a larger portion of the diet in the winter and spring than in the summer and fall. Nutritious plant shoots help the quail prepare for the breeding season.

Insects are important, primarily in the spring and summer, as they are the primary food for the newly-hatched chicks during the first weeks of their life. Insects supply the high nutrition necessary for the growth and development of young quail, but they also are an important nutrition and water source for adult quail. After the first month, plant materials become increasingly important in the young quail’s diet.

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Quail of New Mexico



PHOTO: Don MacCarter

Scaled quail

Also called blue or cotton-top quail, scaled quail are New Mexico’s widest-ranging species. They are found throughout most of the state in desert grasslands and scrub country including mesquite, skunk bush, sumac, shinnery oak, cholla, and sand sage. Their diet consists primarily of seeds, but they also eat insects and plant shoots. Scaled quail are so named because of the intricate scaled pattern on their breasts. Pale brown/gray overall, both sexes also have a white-tipped crest on the top of the head. Scalies often prefer running to flying, which can make them an exceptionally elusive quarry. When they do fly, they usually don’t fly far, and they usually continue running after they land.

Bobwhite quail

Bobwhites are the most common species in the United States, but populations are sparse in New Mexico, where they primarily are found in far eastern part of the state, particularly south of Tucumcari. Bobwhites generally prefer farms, agricultural fields, brushy cover and the edges of woodlands. In eastern New Mexico, bobwhites largely find cover in mesquite and shinnery oak. Their diet consists primarily of seeds. Male bobwhites are intricately patterned in reddish-brown, black and white with white throats and a white band above the eyes extending down the necks. Females are similar, but duller with more buff-colored throats and eye bands. There is no plume on either sex, and both have short gray tails.



PHOTO: Texas Parks & Wildlife



PHOTO: Don MacCarter

Gambel's quail

Sometimes called desert quail because of its preferred habitat, Gambel’s are found primarily in arid or desert areas throughout southern and north-central New Mexico. They are often found in desert scrub country amid mesquite, hackberry or skunk bush thickets, or in brushy arroyos. Their diet consists mainly of seeds, grasses, legumes and cacti. Male Gambel’s have prominent black patches on cream-colored bellies, reddish-colored heads, black faces and forward-sloping black plumes on their foreheads. Females have gray heads with a thinner forward-sloping black plumes, and creamy white bellies. Gambel’s quail usually don’t run as far as scaled quail, but they tend to flush more quickly than other species, so be ready.

Mearn's quail

The rarest of New Mexico’s quail species, Mearn’s are also called Montezuma or harlequin quail. Males are distinguished by a clownish harlequin face pattern with white spots on the breast and flanks. Females are duller with brownish faces and indistinctly patterned reddish-brown breasts. The Mearn’s range is limited to scattered pockets on the southern end of the Gila National Forest, and the southern end of the Sacramento Mountains in the southeast. Often found in pairs or family groups at higher elevations than other quail species, Mearn’s generally prefer open woodland mountain slopes and open grasslands with dense brush. Their diet includes wild onions, tubers and roots.



PHOTO: Arizona Game and Fish

Roads to recovery

Good plans help vulnerable species overcome hardships

By Leland Pierce

Drive the streets of any town in any state and inevitably we find a block of decrepit buildings, rotting husks that once bustled with life. We visualize the history buried under dust and disinterest, and we remark what a shame this is.

Who isn't haunted by the ruins of Chaco Canyon in northwestern New Mexico, or Clovis man's stone tools from the state's eastern plains – and the realization that perhaps entire societies are now within the realm of memories and artifacts? Some of us who come alive in the outdoors -- through fishing, hiking, hunting or birding -- confront similar difficult moments. We realize a favorite bird or frog can no longer be heard, we're not seeing as many elk, or a favorite stream just doesn't have large trout anymore.

Sometimes, those realizations inspire in us a desire to bring something back, whether it's a community, a way of life, or a species of animal. If we're motivated, we take responsibility for our actions and stand up for the little guy. But who is motivated to take action and help imperiled, obscure critters such as the boreal toad, the Chupadera springsnail or the Zuni bluehead sucker? For this, society often turns to its government.

In 1974 the State of New Mexico passed the New Mexico Wildlife Conservation Act, an attempt to preserve the state's diverse wildlife. The law listed certain species as threatened or endangered, and directed the Department of Game and Fish to produce plans for their recovery. Thanks to the state Legislature and the public, the Department now has two coordinators for such plans, one for aquatic species, and another for terrestrial species.

What is a recovery plan?

Species listed as "endangered" are on the verge of extinction, while "threatened" species are imperiled to the degree that becoming endangered is a legitimate concern. Plans to help those species recover must address the overall health of the species. Planners ask: Are there enough healthy individuals for the species to forge through hard times and make the most of the good times, producing enough young to allow the next generation to survive?

"Perhaps recovery plans are best compared to recipes," said Dr. Howard Snell, a biologist and professor at the University of New Mexico. "The best recipe for chocolate chip cookies doesn't taste very good as a recipe. But give a skilled cook the ingredients, the time and the responsibility to follow the recipe and you'll end up with delicious cookies. Have the resources, the time, the responsibility and the authority to put a recovery plan in practice, and you'll save a species."

In theory, recovering a species should be accomplished simply by adding more healthy critters and addressing the issues troubling the population. Naturally, life isn't so simple. We may not know enough about the species to even begin forming a recovery plan. Money may not be available. The public may not see the recovery of certain species as a good thing, or may not care. How do you convince the public it should give up tax money to save the green rat snake or the southern redbelly dace? How to you get a rancher to buy into a plan that would put wolves in the same forest where his cattle graze?

Most often, raising money and support is the purview of government, and any recovery plan ultimately is a political process. At the federal level, the U.S. Fish and Wildlife Service has become quite adept at forming and implementing recovery plans. Under the auspices of the Endangered Species Act of 1973, the service has created recovery plans for such species as the New Mexico ridge-nosed rattlesnake, Gila trout, and bald eagle. In some cases, state agencies find that federal involvement can help.

David Propst, a Department of Game and Fish ichthyologist, worked closely with the U.S. Fish and Wildlife Service in a successful effort to get the Gila trout downlisted from endangered to threatened.

"For a species such as Gila trout, for which recovery can be accomplished entirely on federal lands, there are no resource conflicts and all



(above, left and below right)

Department of Game and Fish herpetologist Charlie Painter examines some rare Jemez Mountain salamanders that somehow survived after the Cerro Grande Fire destroyed much of its habitat in May of 2000.

PHOTOS: Marti Niman

involved agencies are supportive collaborators," Propst said. "It would seem a fairly simple and straightforward proposition to rapidly recover it (species). But the process and effort are considerably more complicated and time consuming than it might initially appear."

The Gila trout recovery project involved dozens of meetings among the public, government agencies, conservation and sporting groups, and individuals. Habitat had to be identified and sometimes renovated by constructing stream barriers and removing non-native fish before restoring the natives. Weather and wildfires further complicated the recovery efforts in difficult-to-reach, remote areas.

When the New Mexico Department of Game and Fish began making its own recovery plans in 2002, planners soon discovered the process to be just as complicated and time consuming as at the federal level. The Department makes every effort to inform and involve the public in the process of identifying species to be recovered and the methods of recovery. Public meetings are conducted and advisory committees are formed to explore the best



ways to approach recovery plans. Special attention is paid to the social and economic impacts recovery actions may have on communities and cultures.

“Developing recovery plans under the Wildlife Conservation Act doesn’t suddenly make millions of dollars appear, and it doesn’t provide the Department with any additional regulatory authority, so a plan is doomed from the start if we try to go it alone,” said Chuck Hayes, assistant chief of the Department’s Conservation Services Division. “It’s important that a variety of parties feel a sense of buy-in to the plan so they can provide us with vital assistance in making the plan an on-the-ground success.”

Once a recovery plan clears its preliminary hurdles, it is presented to the State Game Commission. If approved, Department biologists begin the actual recovery work.

Why they need help

Understanding why species become imperiled is the key to any recovery effort. Some reasons are very apparent, such as habitat loss. For other species, the troubles can be difficult to identify, and more challenging to address.

Species with small populations and limited habitat are especially vulnerable to extinction. At high elevations, the White-tailed Ptarmigan, a bird, and the Boreal Toad, an amphibian, face the same threats of little room and cold temperatures. Similarly, the Penasco and Oscura Mountain chipmunk and the Chupadera springsnail are at risk because their meager populations live in small areas. Some species, such as the fish, invertebrates and amphibians that rely on scant water resources in the desert, are vulnerable because they live in particularly at-risk habitats.

Other species are vulnerable simply because they are so hard to find. The habits of the Jemez Mountain salamander and the green rat snake are so secretive that the populations of the two species may never be successfully counted or estimated.

Political boundaries also play a role in recovery efforts. Species such as the southern redbelly dace, a fish, are at the edge of their geographic ranges within the borders of New Mexico. Often, their habitat is inferior compared with other parts of the range, making the populations the Department manages that much more vulnerable. Additionally, other species, such as the Chupadera springsnail, White Sands pupfish, Zuni bluehead sucker, and Sacramento Mountains salamander, occur only in New Mexico.

Us versus them

Humans, of course, have impacted these and other species. As noted in the book, “Collapse” by Jared Diamond, someone has to provide lumber, food and minerals for society, and society has increasing needs for water. These requirements create conflicts and consequences. Among them:



- The plight of the Rio Grande Silvery Minnow illustrates the growing urban and agricultural demands for river water – and how little water is left.
- Prairie dogs and prairie chickens must coexist with livestock for the habitat they need to thrive.
- The Mexican wolf was eradicated from the wild because it affected ranchers’ livelihoods.

(above and right)

Wildlife biologist Gary Swinford examines a state-endangered rock rattlesnake, threatened because it is a popular pet and prized by snake collectors.

PHOTOS: George Downer



The white-tailed ptarmigan is vulnerable to extinction in New Mexico because there are so few of the birds living in limited habitat.

PHOTO: Don MacCarter

- The bald eagle, a national symbol, was inadvertently poisoned by farmers protecting their crops from insects and disease.
- The rock rattlesnake and the gray banded kingsnake are examples of species threatened to extinction because they are popular pets and prized by collectors.

Non-native competition

Often unknowingly, but sometimes willingly, humans bring non-native predators and foreign diseases into the state. The effects can be disastrous for natives.

- Native fish, including the Gila trout, often fight losing battles against imported fish that are popular with anglers but aggressive competitors for food and habitat.
- The bullfrog and crayfish, both non-native species, have been described as aquatic barbarians because they are such voracious predators of native species. Crayfish also destroy native vegetation and greatly alter the substrate that native fish use for reproduction.
- Whirling disease, a parasite that kills trout, can be transported on an angler’s boots, or introduced into a stream or lake by a contaminated fish.

Wildfire and wildlife

Natural events such as wildfires or floods impact several species and their recovery plans. Charlie Painter, a herpetologist with the Department of Game and Fish, has seen the effects of the recent Cerro Grande and Adobe fires, which caused substantial habitat loss for a number of species, including the Jemez Mountain salamander and the New Mexico ridgenosed rattlesnake.

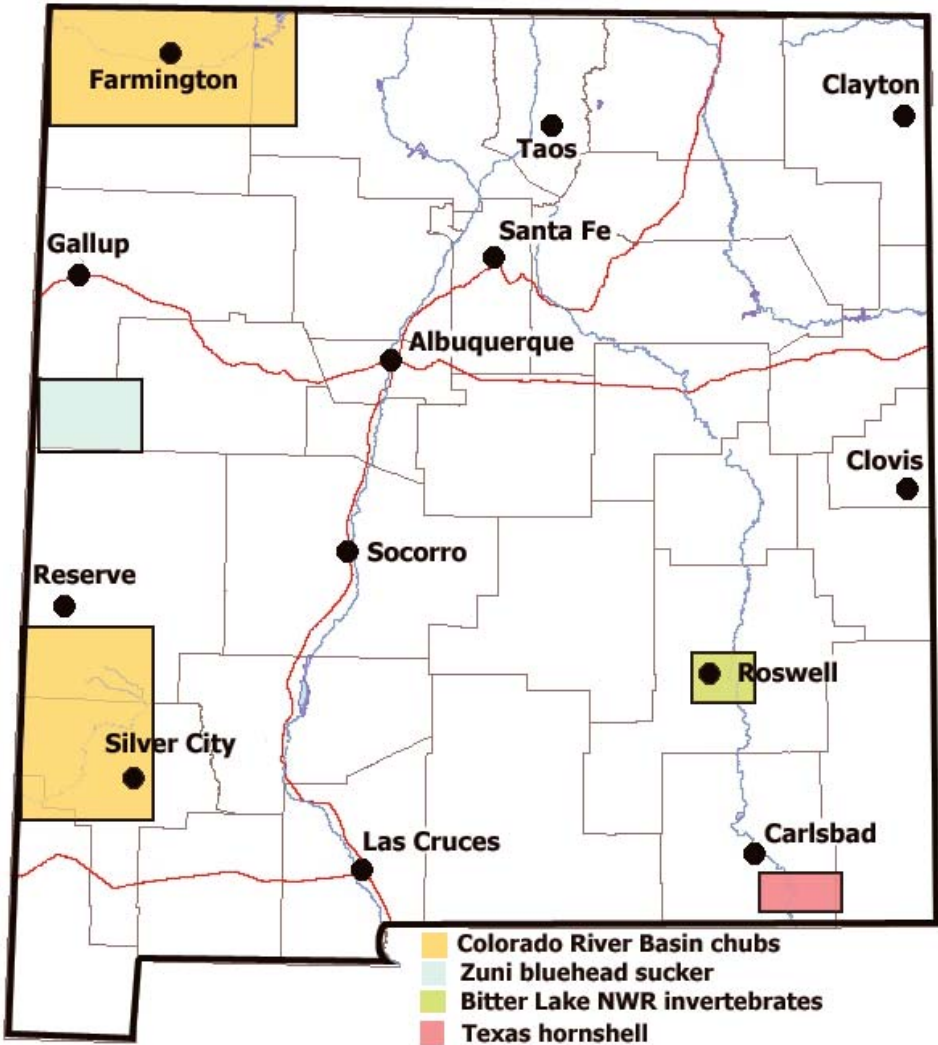
“The results of natural wildfire and management-ignited fire may be the single most important factor impacting terrestrial and aquatic species in the Southwest,” Painter said. “Many years of direct and indirect fire suppression have allowed the buildup of unnaturally high fuel loads that often results in catastrophic habitat loss following fire. Careful and thoughtful use of cool-season, prescribed fire can be a useful management tool to reduce these fuel loads.”

Partners in recovery

Even with full knowledge of the species and the roots of its woes, more must be discovered for a successful recovery plan. The organism’s culture, history and public perception must also be explored and acknowledged. If designed properly, a recovery plan will follow the paths of society and the environment. To be successful, it also must involve many partners.

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Bitter Lake NWR invertebrates

Distribution: Bitter Lake National Wildlife Refuge near Roswell.

Food: Not well studied.

Reproduction: Not well studied.

Recovery plan status: Recovery plan accepted by State Game Commission in December 2004.

Noel’s amphipod

Scientific name: Gammarus desperatus.

Description: Invertebrate, aquatic amphipod.

Habitat: Dense beds of emergent aquatic macrophytes to clear, flowing springbrooks with submerged aquatic vegetation, vegetated banks and margins, and clean substrates.

Pecos assiminea

Scientific name: Assiminea Pecos.

Description: Invertebrate. very small, nut-brown colored aquatic snail.

Habitat: Saturated soils around reeds.

Koster’s springsnail

Scientific name: Juturnia kosteri.

Description: Invertebrate, aquatic snail.

Habitat: Deep aquatic organic substrates.



Bitter Lake Wildlife Refuge
PHOTO: Brian Lang



Koster's springsnail
PHOTO: Brian Lang

Roswell springsnail

Scientific name: Pyrgulopsis roswellensis.

Description: Invertebrate, aquatic snail.

Habitat: gypsum aquatic substrates.

Colorado River Basin chubs

Common names: roundtail chub, Gila chub, headwater chub.

Scientific names: Gila robusta, G. intermedia, G. nigra.

Description: Typically roundtail chub, 10-13 inches; Gila and headwater chubs, males up to 6 inches, females up to 8 inches. Streamlined, fusiform fish. Mottled pattern, dark gray to olive above, blending to cream below for roundtail. Gila chub similar in pattern but darker. Headwater chub dark gray or brown above, often with dark longitudinal stripes on the sides.



Headwater chub habitat
PHOTO: Yvette Paroz

Texas hornshell

Scientific name: Popenaias popeii.

Description: A freshwater mussel with an olive-green to dark brown shell.

Distribution: Black River, southeastern New Mexico.

Habitat: Undercut riverbanks, crevices, shelves, and at the base of large boulders.

Food: Filter-feeder, straining suspended organic particles from water.



Black River
PHOTO: Brian Lang

Zuni bluehead sucker

Scientific name: Catostomus discobolus yarrowi.

Description: Up to eight inches. Slender, fusiform fish, with subterminal mouth and fleshy lips. Mottled pattern, dark gray-green dorsally and creamy-white ventrally.

Distribution: Historically inhabited headwater streams of the Little Colorado River in east-central Arizona and west-central New Mexico.

Habitat: Primarily in shaded pools and pool-runs, about 1 to 1.5 feet deep with water velocity less than four inches per second.

Food: Primarily composed of fine particulate organic material, filamentous algae, midge larvae and flatworms, with occasional ingestion of other aquatic invertebrates and fish scales and eggs.

Reproduction: Spawns from early



Headwater chub
PHOTO: Yvette Paroz

Distribution: Roundtail chub occasionally found in the San Juan River near the mouths of the Mancos and Animas rivers, and in the Gila drainage. Gila chub only confirmed in Turkey Creek within Gila drainage. Headwater chub found in three forks of Gila River.

Habitat: Typically found in mid-sized to larger streams in cool to warmwater mid-elevation streams, in deep pools.

Reproduction: Spring and early summer.

Status and concerns: State endangered.

Recovery plan status: Accepted by the State Game Commission in November 2006.



Texas hornshell mussel
PHOTO: Brian Lang

Reproduction: Occurs through release of larvae, which attach to various fish species to complete metamorphosis to juvenile mussels, which return to the stream.

Status and concerns: Candidate for listing as endangered by U.S. Fish & Wildlife Service. Last remaining mussel in New Mexico.

Recovery plan status: Plan announced in September 2006.

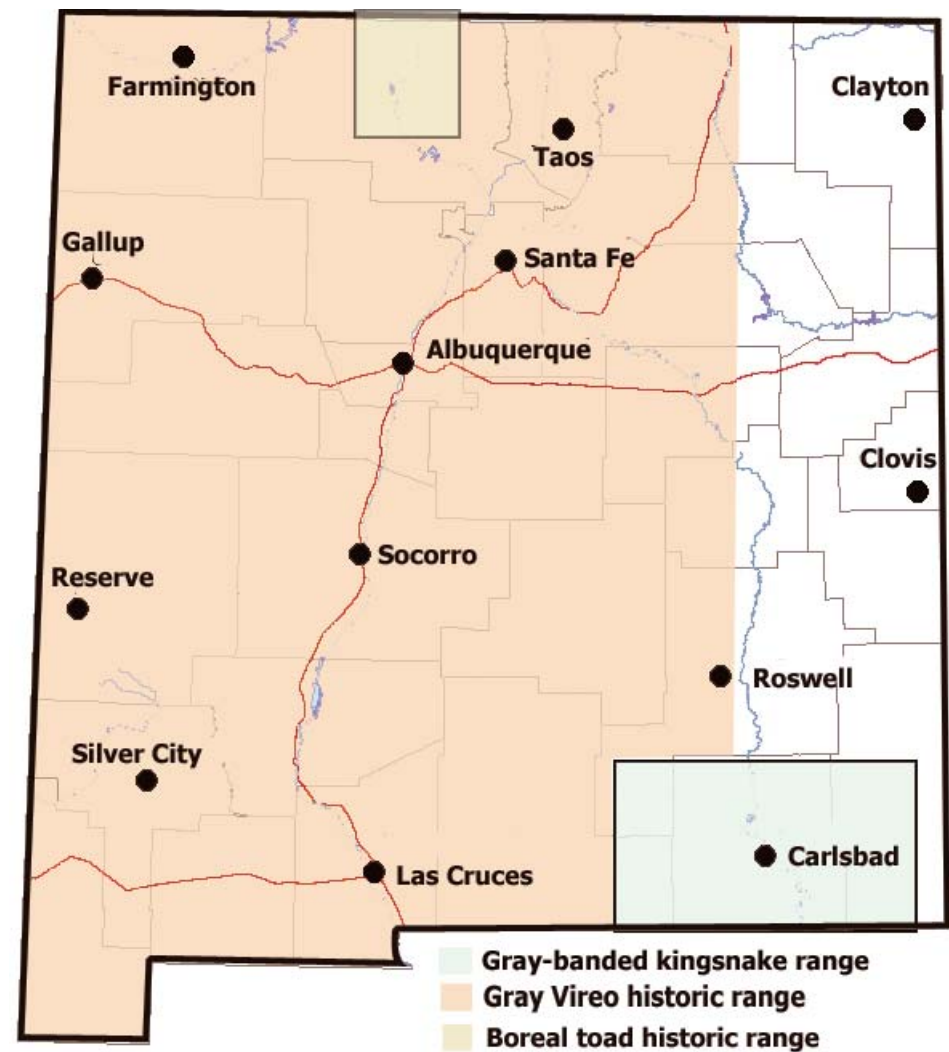


Zuni bluehead sucker
PHOTO: Bob Findling

April to early June.

Status and concerns: One of the most beautiful, unique fishes in New Mexico, and also one of the most imperiled. The Department of Game and Fish is working with the Zuni Tribe, the Nature Conservancy, U. S. Forest Service, U. S. Fish and Wildlife Service, and private landowners to protect the species and its habitat.

Recovery plan status: Plan accepted by State Game Commission in December 2004.



Gray vireo

Scientific name: Vireo vicinior.
Description: Five to six inches, uniformly gray bird, with long tail and small bill.
Distribution: Found in all counties of New Mexico west of Great Plains; distribution very patchy.
Habitat: Arid juniper woodlands.
Food: Insects, with some fruit.
Reproduction: Territorial. Builds cup nests in junipers. Egg clutch size of one to four eggs. Fledging is 13 to 14 days after hatching.
Status and concerns: Habitat alteration, including nest



PHOTO: Steve Cox
parasitism by cowbirds.
Recovery plan status: Plan announced in September 2006.

Gray-banded kingsnake

Scientific name: Lampropeltis alterna.
Description: Non venomous, gray-banded snake, two to three feet long as adult, 10 inches as neonate.
Distribution: Found in extreme southeastern New Mexico, near Carlsbad Caverns National Park.
Habitat: Desert hills and dry mountain slopes in rocky limestone areas associated with various xeric-adapted plants including sotol, lechuguilla, acacia, mesquite, ocotillo, creosote bush, and various cacti.
Food: Rodents and lizards are the primary prey, although small tree frogs may be taken.



PHOTO: Charlie Painter

Reproduction: Egg clutch size ranges from three to 13 eggs, with an average of eight.
Status and concerns: At the edge of its range in New Mexico, it is extremely difficult to find and monitor. The chief threat to the population is collection by herpetological enthusiasts.
Recovery plan status: Recovery plan accepted in 2002.

Boreal toad

Scientific name: Bufo boreas.
Description: Dark brown to black, with many large warts. Two to three inches long.
Distribution: Likely extirpated from New Mexico. Historically found in Rio Arriba County.
Habitat: Variety of aquatic habitats such as slow-moving streams, lakes, marshes, alpine meadows and beaver ponds above 8,000 feet. Generally move in the grasses from the nearby forests to breed in available aquatic habitats.
Food: Likely small invertebrates, such as spiders, worms, ants, moths, beetles, and other arthropods. Tadpoles likely feed upon filamentous algae, detritus, and perhaps carrion.



PHOTO: Charlie Painter

leaving the pond in August. Male boreal toads take four years to mature, females six years.
Status and concerns: This species hasn't been found in over a decade in New Mexico, perhaps due to a particular fungus. Biologists are searching for remnant populations, and have discussed repatriating the species from stock bred in Colorado.
Recovery plan status: Accepted by the State Game Commission in November 2006.

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Sometimes a single recovery plan includes multiple species and involves biologists from several states. Stephanie Carman, the Aquatic Species Recovery Coordinator for the Department of Game and Fish, is working with agencies from Utah, Colorado, Wyoming, Arizona and Nevada on strategies to conserve roundtail chubs and bluehead and flannelmouth suckers.

"By working across political boundaries, we are able to share information from areas where the species are doing well and apply it in places the species are imperiled," Carman said.

Cooperation among government agencies for endangered species is essential. One example is the White Sands Pupfish Cooperative Agreement, signed in 1994 and updated in 2006 by the Department of Game and Fish, U.S. Fish and Wildlife Service, Holloman Air Force Base, White Sands Missile Range, and White Sands National Monument. The agreement has provided protection for the only fish species native to the Tularosa Basin, while allowing the military bases to continue with their missions.

A guide to recovery

New Mexico's efforts to conserve and restore many wildlife species became better defined in 2005 when the Department completed its Comprehensive Wildlife Conservation Strategy. The ambitious 635-page document identified 452 "species of greatest conservation need" in the state, many of them present or future subjects of recovery plans.

"This Comprehensive Wildlife Conservation Strategy is the springboard to an important conservation future for wildlife in New Mexico and the Southwest," Department Director Bruce Thompson said. "It is a culmination of two years of efforts on the part of resource professionals, conservation organizations, commodity interests, private individuals, tribal interests, municipal governments and others to construct a better conservation overview for New Mexico."

The strategy list includes invertebrates, fish, amphibians, reptiles, birds, and mammals according to their associations with key habitats. It is considered an important tool toward defining future recovery plans for species that are declining or vulnerable, keystones of ecosystem function,

Get involved

Public involvement is a key component to any species recovery plan, and the Department of Game and Fish welcomes your participation. To get involved:

- Educate yourself** about wildlife laws.
- Learn** about animals that interest you.
- Contact** state and federal agencies and let them know recovery of a species that interests you is important.
- Volunteer** to serve on committees and participate in organized recovery efforts.

For more information about recovery plans in New Mexico, call Leland Pierce, terrestrial recovery plan coordinator, (505) 476-8094; or Stephanie Carman, aquatics recovery plan coordinator, (505) 476-8092.

and those of high recreational, economic or charismatic interest.

Making it happen

Great effort and expertise are required to design and implement a plan to recover a species from imperilment. However, as Dr. Howard Snell of the University of New Mexico states, "A plan is just a plan." It only becomes reality, he says, if it is designed to guarantee success through monitoring, adjustments and financial and institutional commitments.

Recovery plans need sufficient funding and staffing to be successful. But it takes more than government commitments to make the plans work. There also must be public education and participation similar to the positive efforts recently put forth to return the river otter to New Mexico.

As Aldo Leopold wrote in "A Sand County Almanac," 1949: "In short, a land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such."

Leland Pierce is Terrestrial Species Recovery Coordinator for the New Mexico Department of Game and Fish. He can be reached at (505) 476-8094 or leland.pierce@state.nm.us.



Wild about ponds



Sleepy-looking wetlands are teaming with life

Story by Colleen Welch
Photos by Dan Williams

A pond that you might find in a park, a meadow or in your neighbor's back yard may look quiet, maybe even boring. But look closely ... a pond can fool you.

You might see a duck or two, a bird standing tall on long, skinny legs, a turtle sunbathing or a large dragonfly jetting about. At first look, the pond may appear sleepy, but wait! The tall bird is about to use its sharp beak to spear a fish. That turtle is joined by several more, all piling on top of each other as they bask in the autumn sunshine. The dragonfly with bright wings is trying to catch other flying insects and eat them for lunch.

A pond is home to many wild animals. They are busy finding food, making homes, laying eggs, hiding from predators and moving in all kinds of ways. Birds and flying insects also help spread pollen that makes cattails, willows and other water-loving plants grow.



On the move

Let's take a closer look at the swimmers, divers, rowers, crawlers, climbers, skaters and fliers that make ponds their homes.

Many water insects and fish thrive in ponds. Trout and fathead minnows live in cool mountain ponds. Sunfish, bass and catfish swim in lower, warmer ponds. Water striders skate on the pond's surface. Below, whirligig beetles swim and dive with "superbug" strength, while "water boatmen" use their legs like paddles to row about in circles. Look closely and you may see baby dragonflies, called nymphs, crawling near cattails. When it is old enough, the nymph will climb up a cattail stalk, shed its skin and sit quietly for hours as its shiny new wings dry. Now an adult dragonfly, the big-eyed insect lifts off and zips above the pond – faster than you can peddle your bicycle.



Look and listen and you may find signs of frogs in your pond. That milky blob of eggs soon will hatch into tadpoles that will grow two legs, then four before they lose their tails and become adult frogs. Male frogs make noises like someone snoring, or a fingernail scraping the teeth of a comb. Scared frogs squawk or croak when they jump into the pond.



American coots sometimes make small ponds their year-round home.



(top and bottom right)

Dragonflies of many colors live around ponds, where they find other insects to eat.

(above)

The Leonora Curtin Wetland Preserve south of Santa Fe is a good place to see pond life.

(right)

Dip some water from a pond and you might find a dragonfly larva, right, or a diving beetle.



Visitors welcome

Do you see that small mound of plants floating in the water? It could be a muskrat house made of cattail stems. Skinny-tailed muskrats and big, flat-tailed beavers are common pond animals. Beavers often create ponds by building dams in streams. Their work also attracts visitors – wild animals big and small that come for water and food.



Deer and elk visit mountain ponds. If you sit quietly in the evening, you may see a skunk, fox, coyote or raccoon hunting for dinner. Mother ducks and geese must watch over their nests and chicks, or these predators will steal their eggs or babies.

Birds like the Belted Kingfisher keep watchful eyes from trees above the pond for fish swimming below. Kingfishers swoop straight down to spear a fish for dinner.

People like you also enjoy visiting ponds for bird watching, fishing, painting the landscape, or even for duck hunting during the right season.

Colleen Welch is co-coordinator for conservation education and Project WILD for the Department of Game and Fish. She can be contacted at (505) 476-8119 or colleen.welch@state.nm.us.

Be a pond detective

Each day can bring changes to a wild pond, so you never know what you'll see when you visit. Here is a list of simple equipment that will help you investigate a pond near you:

- Journal, pens and pencils to record your investigations
- Magnifying glass to see tiny plants and animals
- Kitchen strainer to catch tiny water insects
- Thermometer to test the water temperature
- Field guide to help you learn about pond life
- Rubber boots for wading in shallow water
- Shallow, white pan or cup to place water and tiny creatures

Read more ...

Some beginner's field guides for children:

- Pond Life, a Golden Guide. Golden Books, New York, 1995.
- First Guide, National Audubon Society: Fishes, Amphibians, Insects, Mammals. Scholastic Inc., New York, 1999.

