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VANISHING WILDLIFE OF NEW MEXICO — A LEGACY OF NEGLECT

James A. Bailey, January 2003



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Our Wildlife Legacy

Early New Mexicans inherited one of the richest wildlife faunas of what would become the United States. Among the 50 states, New Mexico ranks 2nd for its original number of native bird species (492) and 3rd for its original numbers of native mammals (151) and reptiles (98). With an additional 69 fish species and 25 amphibians, **pristine New Mexico once harbored 835 vertebrate species!**



Our rich wildlife resource is due largely to the variety of habitats in this topographically diverse state. A New Mexico State University study identified 33 terrestrial habitat types, from cottonwood forests and Chihuahuan desert grasslands at about 3000 feet above sea level to alpine tundra in the Sangre de Cristo Mountains above 12,000 feet. Each habitat type supports a different mix of wildlife.

Wildlife of New Mexico are one of the state's most valuable resources. Wild animals enrich our lives in many ways, providing commercial, recreational, ecological, scientific, aesthetic and cultural values. In addition, healthy wildlife populations assure us that the habitats on which they depend have persisted intact. Healthy wildlife represent healthy rivers, deserts, grasslands, and forests of New Mexico. They represent the quality of our environment, the stage upon which we live our lives.

Conserving this rich legacy is the obligation of each generation of New Mexicans. We pass our wildlife resource on, intact or degraded, to our children and to our grandchildren. Unfortunately, our record of wildlife conservation in New Mexico has been lacking.

Vanishing Wildlife of New Mexico

Twenty-one species of native fish, amphibians, birds and mammals no longer occur in New Mexico. That's 2.5% on the native fauna. Most notable missing species are the grizzly bear, northern gray wolf, river otter, mink, black-footed ferret, lynx, sage grouse and sharp-tailed grouse. In addition, the boreal toad, lowland leopard frog and hot springs cotton rat are gone. Among the native fishes, ten species (14.5%) are missing today.

Loss of wildlife continues. Ninety-one wild vertebrates are listed as threatened or endangered



by the state. In addition, the razorback sucker, Chiricahua leopard frog, Mexican spotted owl and jaguar are federally listed, whereas our state fails to recognize their imperiled status. Among these threatened and endangered species are the desert bighorn sheep, pine marten, aplomado falcon, peregrine falcon, ptarmigan, Gila monster, Rio Grande silvery minnow, Gila trout and Colorado pikeminnow. Altogether, 24 fishes, 7 amphibians, 15 reptiles, 33 birds and 16 mammals — 11% of New Mexico's native vertebrates — are threatened or endangered. Each county in the state has at least 2 threatened or endangered species; most have at least 10; and species-rich Hidalgo County has 50. Another 27 species of invertebrates — snails, clams and crustaceans — are also listed as threatened or endangered in New Mexico.

Worse yet, another 50 or so native species are of concern and need study for possible listing as threatened or endangered in New Mexico. These include the blue catfish, Rio Grande sucker, black swift, lesser prairie-chicken, and hooded and hog-nosed skunks.

Species are not lost without impacts upon other members of New Mexico's flora and fauna. Decline of prairie dogs has impacted black-footed ferrets, burrowing owls, ferruginous hawks, golden eagles, mountain plovers, rattlesnakes and salamanders that frequent prairie dog towns. Declining minnows may seem unimportant, but they are the prey that game fish depend upon. Long-nosed bats are important pollinators of night-blooming plants. In fact, most interactions of our native plants and animals are unknown or little understood. The gradual loss of species results in a slow unraveling of native biotic communities. As these communities become degraded and simplified, their abilities to withstand and recover from perturbations such as drought, forest fires or insect attacks are impaired. The ability of the native communities of plants and animals to grow products and to provide services and recreation for mankind is reduced, and the aesthetic landscape of New Mexico is diminished.

Disappearing and Degraded Habitats in New Mexico

Biologists at New Mexico State University have classified broad wildlife habitat types of New Mexico into 33 vegetation associations, or "ecosystems", such as short-grass prairie, mixed conifer and ponderosa pine forests, and pinyon/juniper woodlands. Each of these ecosystems supports a unique combination of plants, animals and microorganisms. Also, each has both young and mature stages of development such as regenerating and old growth forests, with differing combinations of wildlife. To maintain its wildlife diversity, an area must be large enough to include these natural variations.



Within and among ecosystems, species interact with each other and their physical

environments. Species are thus tied to each other and to their environment in an immensely complex web of relationships that have evolved over great time. These relationships begin to unravel when environments are impacted and changed by human activities. As a result, about 85% of our threatened and endangered species are imperiled because of habitat loss or degradation.

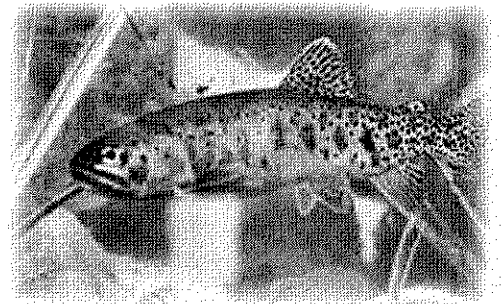
The large numbers of wildlife that have disappeared from New Mexico, or are currently threatened or endangered, are evidence that habitats for many species, game and nongame, have been degraded in our state. Among game species, mule deer, desert bighorn, ptarmigan and prairie-chickens are at or near all-time lows, while sage grouse and sharp-tailed grouse are gone.

Areas such as National Parks and wilderness have been set aside to maintain native wildlife. About 7% of New Mexico is reserved for this purpose. However, several ecosystems are absent or scarce in these reserves. These include Madrean pine forests, tall grass prairie and shinoak sand-scrub. Other ecosystems are large, but have less than 5% of their areas in reserves. These include short- and mid-grass prairies and oak /manzanita chaparral. These ecosystems, and free-flowing rivers, are endangered ecosystems in New Mexico.

The decline of wildlife in New Mexico cannot be stopped without programs to maintain and enhance the ecosystems upon which wildlife depend. On 34% of New Mexico that is federal land, several laws mandate care for wildlife habitat, but effectiveness of federal wildlife programs has been mixed and state consultations on uses of the federal lands have been limited. Moreover, on 56% of New Mexico that is private, or state land managed privately, the few programs encouraging maintenance of wildlife habitat are inadequate for our needs.

Genetic Diversity of New Mexico Wildlife — A Big Unknown

Small or isolated populations of wildlife suffer from two related genetic problems: inbreeding and loss of genetic diversity. Inbred animals are homozygous at many gene locations, allowing expression of normally recessive, deleterious genes. Common results of inbreeding are infertility, low survival rates and little resistance to disease. In a decreasing population, inbreeding may accelerate a decline toward extinction. Populations of hundreds of animals are necessary to forestall inbreeding.



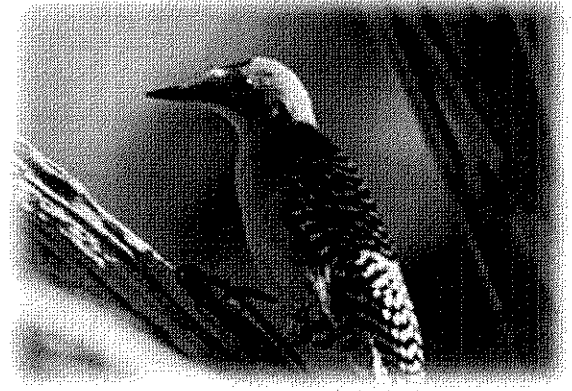
However populations of thousands of animals are needed to avoid significant loss of genetic variation. Genetic diversity is necessary for continued evolution and adaptation of species to changing environments.

It is likely that small populations of some species of New Mexico wildlife already suffer from inbreeding depression of reproduction and survival. Even more certain, unique genes have been lost from very many species that have

experienced substantial declines with losses of local populations. Unfortunately, there have been few genetic studies of New Mexico wildlife, including threatened and endangered species.

Wildlife Values in Jeopardy

Gradual and mostly unnoticed loss of New Mexico wildlife, large and small, jeopardizes important recreational, commercial, social, aesthetic and cultural values. A total of 884,000 people (residents and nonresidents) participated in hunting, fishing, observing, feeding and photographing New Mexico wildlife in 2001. Among New Mexicans, 19% hunted, 35% fished, and 45% observed, fed or photographed wildlife. These



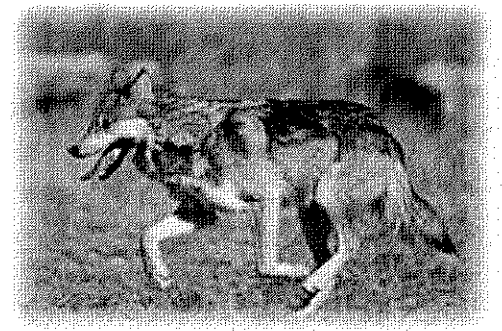
wholesome and healthy activities are socially valuable, distracting from antisocial behaviors that are costly to the state.

The commercial value of New Mexico wildlife is substantial. Expenditures for wildlife related activities in New Mexico in 2001 exceeded a billion dollars. Expenditures for wildlife watching exceeded those for hunting and angling. Nonresidents enjoying wildlife spent much more than 60 million dollars in our state in 2001!

Beyond recreational and commercial values, wildlife are celebrated and enjoyed in art, literature, music and religion in New Mexico. Wildlife contribute to the functioning and productivities of deserts, grasslands, woodlands and forests. If we value these ecosystems, we must value their components, including their wildlife.

The Endangered Species Act in New Mexico

Twenty-five New Mexico wildlife species are listed as threatened or endangered under the federal Endangered Species Act (ESA), and 4 species are candidates for federal listing.



The killing or possession of federally listed species is restricted. In addition, the ESA requires U.S. Fish and Wildlife Service coordination whenever federal resources (funds, land, permits) are used in ways that may further jeopardize listed species. Federal listing certainly

complicates the management of federal resources in New Mexico, including water management by federal facilities, activities on federal lands and federal grants used on private lands. There could also be restrictions on private activities in key habitats on private lands, although this is unlikely and such federal action has never been taken in New Mexico.

Aside from federal laws protecting migratory birds, New Mexico has the primary right and responsibility to manage and conserve its wildlife — unless a species becomes listed as threatened or endangered under the ESA. Each federally listed species represents a failure of the state's wildlife program. It behooves New Mexico to care for its wildlife resources and avoid complications that result from federal listing under the ESA.

New Mexico's Wildlife Conservation Act

In the Wildlife Conservation Act (WCA) of 1974, the New Mexico legislature declared that native wildlife found to be threatened or endangered should be managed to maintain and, to the extent possible, enhance their numbers. Responsibility was given to the Department of Game and Fish. However, success of the WCA has been limited. Currently, 91 vertebrate species and 27 invertebrate species are listed under the WCA. However, 76 taxa have been extirpated from one or more counties, including 21 vertebrates that no longer occur anywhere in our state.



You may not indiscriminately kill or possess state-listed endangered species; but for 68 state-listed threatened species (54 vertebrates) the WCA provides no protection (although some species are protected under other laws).

However, loss of habitat, not direct take of animals, is the most serious threat to New Mexico's wildlife. Under the WCA, the Department of Game and Fish may acquire land or aquatic habitat interests for conservation of imperiled species. However, the Department has not been funded for this purpose. Consequently, since 1974, only one small property and some minor water rights have been purchased to maintain habitat for threatened or endangered species. No habitat has been leased for this purpose.

The Endangered Species Program in the Department of Game and Fish is not adequately staffed or funded for reviewing the status of rare species or for dealing with the complex process of listing species. As a result, the list of New Mexico threatened and endangered species is outdated and becoming more inaccurate each year. Rare species that are not listed do not achieve the public awareness and attention necessary to prevent their continued decline.

The Department of Game and Fish is not adequately funded to provide important public information on its Endangered Species Program. Its short-lived publication,

New Mexico Partners Conserving Endangered Species, once supported by a general fund appropriation from the state legislature, has been discontinued and replaced by a general natural-history description of one species in each of the Department's quarterly tabloids. As a result, the New Mexico Wildlife Conservation Act is misunderstood, even feared, by many of our citizens. Many do not distinguish it from the federal Endangered Species Act.

Funding for New Mexico Wildlife Programs is Inadequate

License fees of hunters and anglers fund programs for 98 game, sport fish and furbearer species in New Mexico. Management and conservation of the remaining 737 species is lacking because each New Mexican contributes less than 7 cents per year for nongame management. General fund appropriations for the Conservation Services and Endangered Species programs have declined by 79% in the past 8 years. Inflation has taken an additional toll from these programs.

In recent years, state funding for the New Mexico Endangered Species Program has not been sufficient for the salaries and benefits of the small staff. Consequently, the program has been dependent upon federal matching funds and efforts have centered on federal endangered species issues. Species that are imperiled only in New Mexico, and species that are not yet federally listed, have necessarily been neglected in the state's program.

New Mexico's Wildlife Conservation Needs

In this century, the most important wildlife conservation need is habitat enhancement and protection. If we do not solve the problem of habitat loss, we will accomplish very little, in the long run. The Department of Game and Fish should be staffed and funded to use all effective tools for this purpose. These include: identify critical habitats, acquire or lease habitat, and develop and maintain habitat through management, public education and technical guidance. In addition, the Department should take the lead in coordinating land uses that already occur in several state agencies, so that opportunities to maintain habitat are not forgone. (For example, the Interstate Stream Commission plans to buy land with water rights to solve problems of over-allocation of the Pecos River. The Department of Game and Fish should be consulted and involved in the future management of these new state lands.)

The Department of Game and Fish needs landowner-habitat specialists to find interested landowners and help them to develop their wildlife habitats and to utilize federal programs that subsidize habitat maintenance. The Department should have its own program of leasing important habitat. Additional staff are needed to maximize habitat benefits on the Department's own wildlife management areas.

Additional biologists are needed to investigate the status of imperiled species and to develop strategies for their recovery. Recovery plan coordinators are needed to organize efforts involving government agencies and landowners.

Wildlife education efforts, including school programs, publications and field demonstrations, should be expanded to develop a broader understanding of

wildlife values and needs. The Department of Game and Fish should promote broader public understanding of the Wildlife Conservation Act including its goals and processes for species recovery.

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