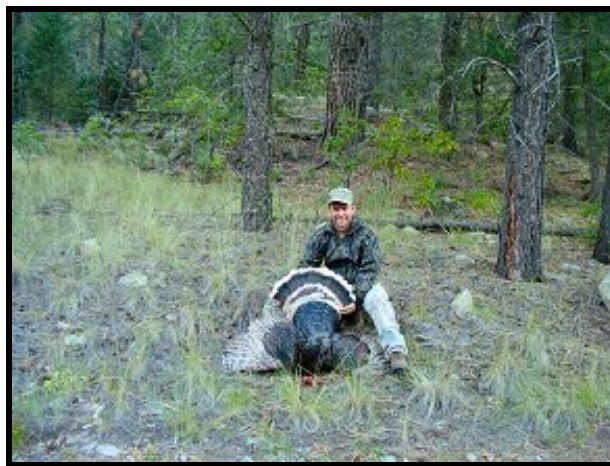


Draft Long Range Plan for the Management of Wild Turkey in New Mexico

2007-2012



New Mexico Department of Game and Fish
Santa Fe, New Mexico
2007

Draft
Long-Range Plan for the Management of
Wild Turkey in New Mexico

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Federal Aid in Wildlife Restoration Grant W-144-R-2

About the Plan

New Mexico is home to three of the five recognized North American subspecies of wild turkey (*Meleagris gallopavo*). The Merriam's turkey (*M. g. merriami*) is typically associated with areas of ponderosa pine (*Pinus ponderosa*), the Rio Grande turkey (*M. g. intermedia*) principally occupies riparian areas in the northeast, central, and south-central portions of the state, and the Gould's turkey (*M. g. mexicana*) is confined to the woodland-savanna habitat in the Peloncillo and Animas Mountains of southwest New Mexico. The Gould's turkey is a state-listed endangered species due to the vulnerability of small and localized populations to several identified threats.

Wild turkey habitat in western states has three important main components: water, roost sites, and summer/brood rearing areas. Whereas the wild turkey has been found to be resilient and highly adaptable to a variety of habitats, these features are essential for viable populations.

The current statewide turkey population estimate of 25,000 to 35,000 birds and distribution information, are based on incidental field observations from New Mexico Department of Game and Fish (Department) district personnel in the mid 1990's. The Department does not presently conduct a formal population survey for two of the three subspecies but has recently initiated gobbler surveys and winter roost surveys for Gould's turkey.

As the public becomes more aware of wild turkeys, the demand for recreational use will undoubtedly increase. The Department's goal is to meet the recreational and ecological expectations of the public, and resolve associated issues to the satisfaction of all interests. To accomplish this, the Department will focus efforts in three areas.

- (1) **Public involvement:** Drafts of the plan will be made available to members of the National Wild Turkey Federation, and other interested parties. The Department has recently conducted one, and will periodically conduct other public surveys to assess expectations, interests, and satisfaction regarding wild turkey management. Following incorporation of public comments, suggestions, and concerns, the final version of the plan will be presented to the State Game Commission for adoption.

- (2) Public education and awareness: The Department will provide information to the public through printed media, presentations, and via the internet to promote public awareness of wild turkey issues.
- (3) Establish and maintain viable, widely-distributed turkey populations in all suitable habitats: The Department will assess statewide habitats and populations, monitor harvest trends, transplant appropriate subspecies into suitable areas, identify potential threats to turkey populations, and establish productive working relationships with other land management agencies and private landowners.

The planning process involves three steps. The first is the development of this document, the long-range, strategic management plan. This document provides the background and guiding information to identify general management directions. The next step involves writing the action plan. This stage identifies the tasks, or actions, through which the Department will implement each strategy outlined in the long-range plan. The long-range plan will be presented at the New Mexico State Game Commission meeting in 2007. Finally, the operational plan delineates how the Department will allocate personnel, money, and equipment for specific projects aimed at implementing the management strategies described in the long-range plan. Also included will be the order and schedule of tasks within each project.

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Background Information

In attempting to adhere to the management plan strategy the Department currently employs I have included several of the aspects found in that format. However, I have noticed that many management plans become idle once completed. With this in mind, our attempt is to produce a “living” document with attainable goals over a five-year period. For this reason the natural history information regarding wild turkeys in New Mexico is taken directly from the previous plan, *Long Range Plan for the Management of Wild Turkey in New Mexico, 2001-2005*. This information was compiled and written primarily by Kevin Manny and is quite detailed and therefore requires no further elaboration as much of it remains unchanged. I will however, provide a brief summary of the current status for wild turkeys in New Mexico.

Natural History

Physical Characteristics.—The wild turkey (*Meleagris gallopavo*) is a sturdy and resilient member of the gallinaceous order of upland birds. It is the largest native gallinaceous game bird found in New Mexico. As the largest, many see the wild turkey as the crown jewel of upland game birds.

Like other gallinaceous birds, turkeys are characterized by having (1) strong feet and legs tailored for digging, scratching, and running, (2) short rounded wings for brief, rapid flight, (3) a short, fowl-like beak, (4) 10 primary wing feathers, (5) a large crop associated with granivorous and herbivorous feeding behavior, and (6) males and females differ in physical appearance, size, and weight. Both sexes have very few feathers on the head and upper part of the neck. In addition, the skin of this area has many small bumps called caruncles. The mature male, or gobbler, has much larger and more prominent caruncles. Gobblers can have red, white or blue colored heads, while

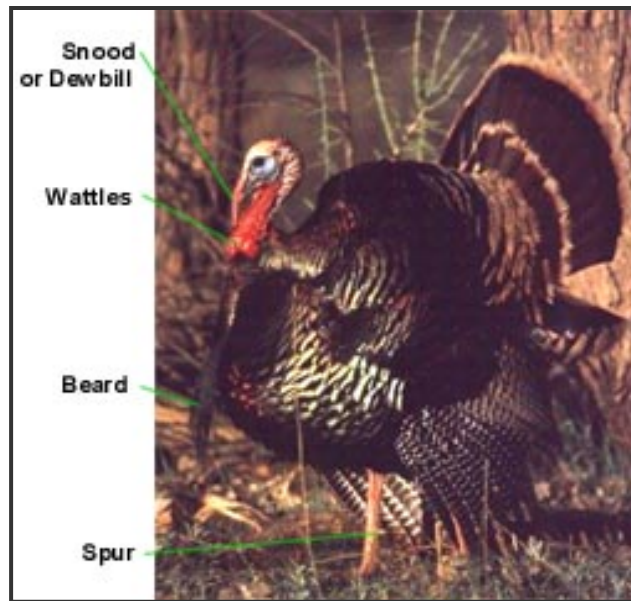


Figure 1. Wild turkey anatomy.

those of hens are typically darker and duller in color. The feathers of the breast and upper back are black tipped on gobblers, but buff colored on the outer edge for hens. Males will normally develop a bony growth, or spur, on the backside of the lower leg, while females typically will not. However, there have been instances where females have been found with a spur, and males either without or with more than one. Finally, males sprout a tuft of hair-like fibers called a beard from the upper midline of the breast (Fig. 1). Beards average between 6 to 12 inches in length. Again, while hens do not ordinarily grow beards, they have been found in close to 1/3 of hens from different populations (Lewis 1967, Williams and Austin 1988). When hens do develop beards they are shorter and thinner than those of gobblers (Pelham and Dickson 1992:37). Adult males, with their body fully erect, stand approximately 40 inches tall. Hens in the same posture are around 30 inches tall. Gobblers increase in weight faster than do hens, and they average between 17 and 21 pounds, while hens are typically between 8 and 11 pounds (Mosby and Handley 1943, Hewitt 1967).

Subspecies can be readily distinguished based upon feather coloration on the lower back and tail margins. Rio Grande turkeys have tan or buff colored rump and tail feather tips, Merriam's have lighter, ashy-white tipped feathers, and Gould's have almost pure white tail feather margins (Beasom and Wilson 1992, Kennamer et al. 1992, Schemnitz and Zeedyk 1992).

Distribution.—North America has five recognized turkey subspecies (Fig. 1) of which New Mexico is fortunate to support populations of three of these: the Merriam's turkey (*M. g. merriami*), or Mountain Wild turkey; the Rio Grande turkey (*M. g. intermedia*); and the Gould's

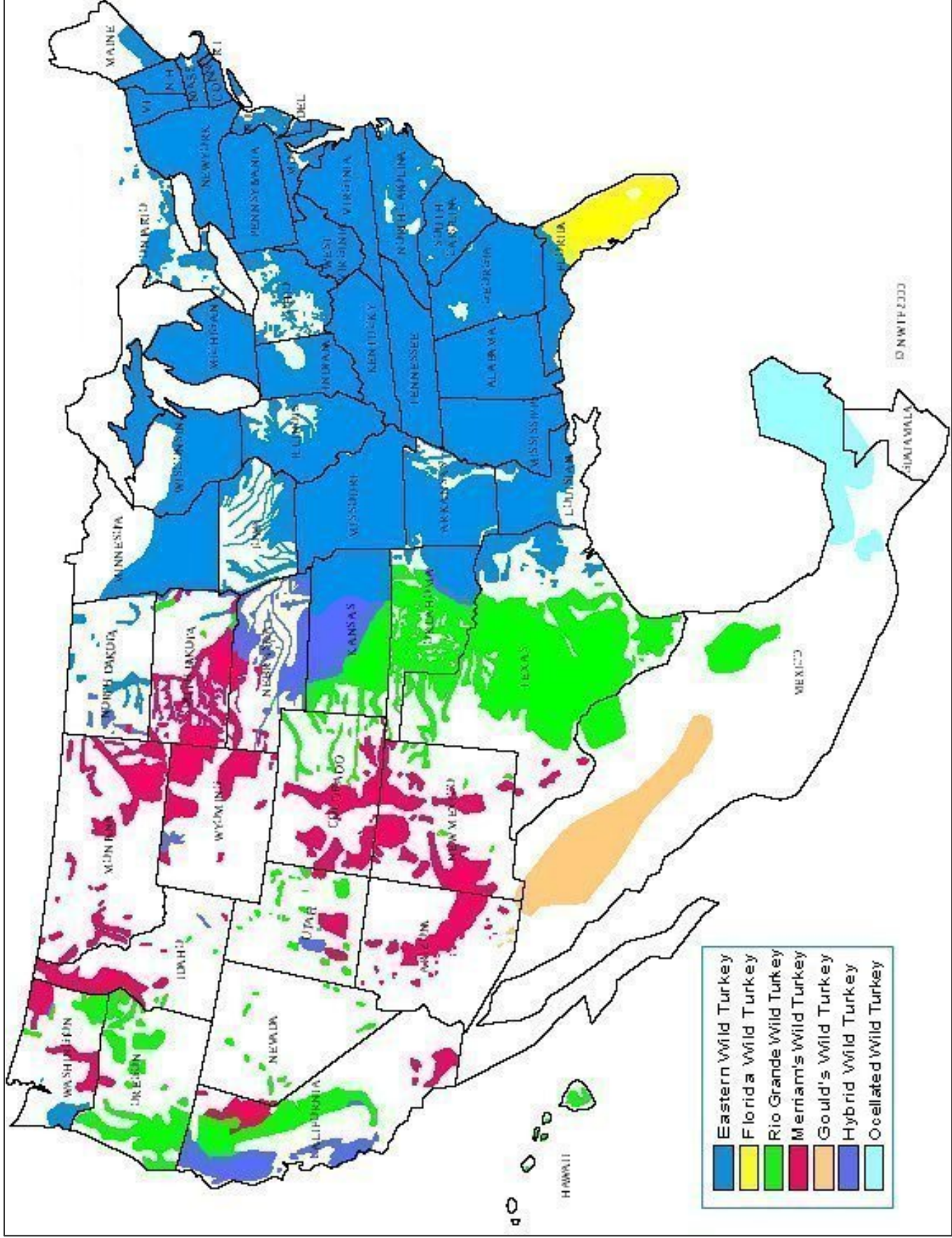


Figure 2. Distribution of North American subspecies and Ocellated turkey, 2000.

Courtesy of the National Wild Turkey Federation

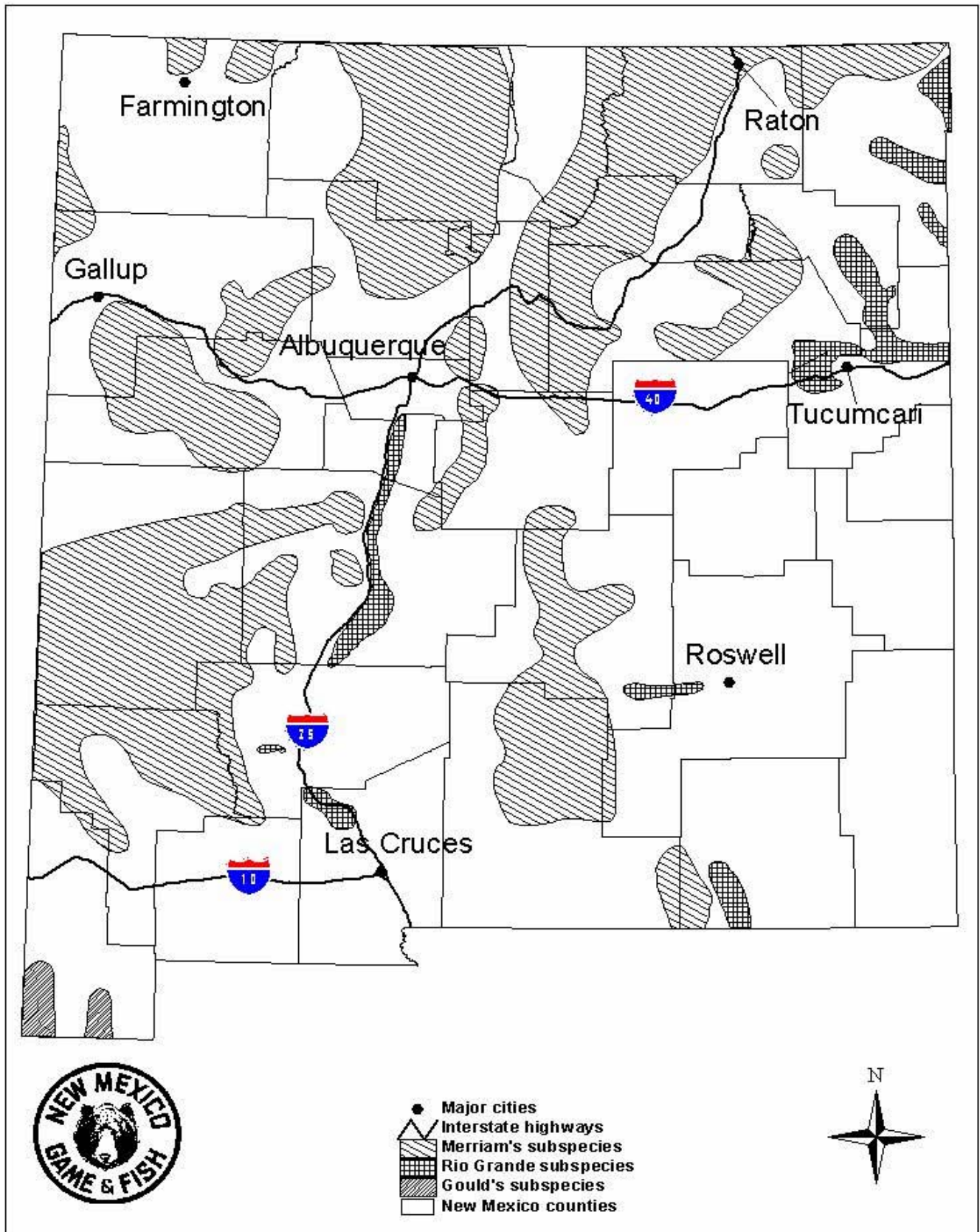


Figure 3. Distribution of wild turkey subspecies in New Mexico, 2000.

Most mountain ranges in New Mexico support healthy, self-sustaining Merriam's turkey populations (Fig. 2). The exceptions to this are the Peloncillo and Animas-San Luis Mountains of southern Hidalgo County which support relatively small but stable populations of Gould's turkeys. Rio Grande turkeys are considered native to the Canadian River basin and Dry Cimarron River of northeastern New Mexico (Ligon 1961). In addition, habitat along the Pecos River immediately north of Carlsbad, NM was identified as former Merriam's wild turkey range (Bailey 1928). However, based upon habitat type, the birds present must surely have been Rio Grande turkeys. Rio Grande turkeys have also been transplanted into habitats along the central and south-central Rio Grande. In 1983, 19 Rio Grande's were captured in Texas and released on the Bosque del Apache National Wildlife Refuge (NWR), along the Rio Grande. From this population, birds have ranged from the Isleta Indian Reservation south to Caballo Dam. This expansion resulted from transplants, as well as natural migration. Rio Grande turkeys also have migrated into the eastern plains of New Mexico from Texas, especially along the Canadian River basin. Rio Grande turkeys have also been transplanted to the Guadalupe Mountains of southeastern New Mexico. The first release in 1974 was a group of 66 birds captured near Canyon Texas. A second release of 17 birds from Bosque del Apache NWR occurred in 1993. Recent releases of Rio Grande turkeys include 35 birds to an area along the Rio Grande southeast of Hatch, NM. Additionally, birds have been documented along the Rio Hondo, west of Roswell, NM. The later transplanted birds weren't sponsored by the Department.

Habitat Requirements.—Suitable habitat must include three main components: water, roost sites, and summer/brood areas. Winter and fall habitat can be locally important. In New Mexico, free water is essential for turkey survival since vegetation may not be able to meet moisture requirements. Roost sites are comprised of tall trees with layered, widely spaced, horizontal branches. The trees also provide food, escape and resting cover, and obviously nighttime roosting. Turkeys prefer mesic (moderately moist) summer and brood habitat that is relatively open with a variety of grasses and forbs present. These provide a source of food in the form of seeds, and insects for developing poults.

In some areas that would otherwise be good quality turkey range, water is either lacking or only seasonally present, and this limits local populations. Artificial water developments may

assist population growth and range expansion. An excellent rule of thumb is to have free water available on every square mile to maximize utilization of suitable habitat (Hoffman et al. 1993).

Merriam's turkey roost sites are typically found just below ridgelines on east and north slopes. Common trees include ponderosa pine, Douglas fir (*Pseudotsuga menziesii*), white fir (*Abies concolor*), limber pine (*Pinus flexilis*), western white pine (*Pinus monticola*), cottonwoods, large oaks, and pinyon pine (*Pinus edulis*) (Hoffman et al. 1993). During periods of below freezing temperatures, roost trees are chosen that provide protection from cold air and winds. Merriam's turkeys will traditionally use the same winter roost areas because during colder months flocks tend to join together. Therefore, winter roost areas must be large (dense clumps of 8-12 trees or more) and consistent from year to year (Boeker and Scott 1969, Bill Zeedyk, U.S. Forest Service (USFS), Retired (Ret.), personal communication). In the spring, flocks break up into smaller groups for the breeding season. Smaller flocks have a higher capacity for long-range movements, and therefore less need for using the same roost sites. Summer roosts are more transitory depending upon the availability of suitable roost trees.

Roost trees for Rio Grande turkeys appear to be selected based on height [~12 meters (40 feet)] rather than species (Crockett 1973, Haucke 1975). In areas where natural roost sites are limited, Rio Grande turkeys will utilize man-made structures (power lines, power line supports, windmills, oil tanks, etc.). In fact, this behavior may be one of the key factors that allowed Rio Grande turkeys to expand their range westward into prairie habitat that would have been otherwise unsuitable.

Typical trees for Gould's turkeys include Chihuahua pine (*Pinus leiophylla* var. *chihuahuana*), Emory oak (*Quercus emoryi*), cottonwoods, and large pinyon pines. Gould's turkeys have a high fidelity to roost sites, so loss of these areas can limit



Figure 4. Gould's wild turkey.

population distribution. Some monitored sites have been used for 18 years (Bill Zeedyk, USFS (Ret.), personal communication).

Nest site locations for wild turkeys are generally chosen based on undergrowth characteristics that provide visual obstruction to conceal the nest and hen but still allow the hen to identify potential predators or other dangers (Holbrook et al. 1987). Brood rearing habitat will be nearby to allow easy and unrestricted access by poults. One side of the nest will often be positioned next to a tree, log, rock, or heavy shrub/grass thicket. The surrounding lateral cover will be such that the nest cannot be easily viewed, and averages at least 18 inches in height. Canopy cover immediately over the nest is commonly at least 60%. Merriam's turkey nests have been found in a wide variety of habitat types and seral stages, however they are found most often in ponderosa pine, aspen (*Populus* spp.)/white fir/Douglas fir, spruce (*Picea* spp.)/fir, and oak (*Quercus* spp.) forest types (Schemnitz et al. 1983, Lockwood 1987, Liedlich et al. 1991). Merriam's turkeys nests are usually constructed on slopes of greater than 30%. Rio Grande turkey nests occur in dense grasslands near riparian zones. Cover plants may include little bluestem (*Schizachyrium scoparium*), buffalograss (*Buchloe dactyloides*), grama grasses (*Bouteloua* spp.), Canada wildrye (*Elymus canadensis*), Johnsongrass (*Sorghum halepense*), sand dropseed (*Sporobolus cryptandrus*), sunflower (*Helianthus* spp.), and buffalo gourd (*Cucurbita foetidissima*) (Ransom et al. 1987). Gould's turkey habitat has been classified as Madrean Evergreen Woodland in the Peloncillo and Animas-San Luis Mountains (Brown 1982b). Nest cover species include Emory oak (*Quercus emoryi*), Arizona white oak (*Quercus arizonica*), bear-grass (*Nolina microcarpa*), side oats grama (*Bouteloua curtipendula*), and yucca (*Yucca* spp) (Garrison et al. 1977, Moir 1979, Willging 1987).

Newly-hatched poults require habitat that (1) produces insects and spiders, as broods must be able to forage efficiently for insects which provide the calcium and protein essential for poult growth; (2) permits frequent foraging throughout the day; and (3) provides enough cover to effectively hide, but still allows the hen unobstructed vision for protection from predation (Porter 1992). Tree cover should be nearby to allow additional escape avenues, as well as shade and protection from inclement weather (e.g. hail). Brood habitat comprises a relatively small area, with weekly home ranges averaging less than 30 hectares (75 acres), and total summer home ranges averaging close to 100 hectares (250 acres)(Speake et al. 1975, Porter 1980).

For Merriam's turkeys, grassy openings in mixed conifer forests, meadows, and aspen glens provide brood habitat. In addition, springs, seeps, and recovering burned areas have also been used by broods (Schemnitz et al. 1985). Turkeys are able to utilize more forest openings if shrubs or trees are interspersed through the area, or if herbaceous vegetation height is greater than 15 inches (Hoffman et al. 1993). Rio Grande turkey broods use mixed grass-shrub areas between riparian woodlands and adjacent grassland/savannas (DeArment 1959). Bunchgrasses are particularly important, especially for young poults (less than 2 weeks old) that do not yet have flight capability (Beasom and Wilson 1992). Gould's turkey broods use oak savanna habitat with large trees (Emory and Arizona white oak), grama grasses, mountain ricegrass (*Oryzopsis asperifolia*), pinyon ricegrass (*Piptochaetium fimbriatum*), and bear grass (York 1991).

Food Habits.—During the spring and summer wild turkeys feed mostly on herbaceous vegetation such as dropseed grasses (*Sporobolus* spp.), *Muhlenbergia* grasses, *Panicum* grasses, grama grasses (*Bouteloua* spp.), pine dropseed (*Blepharoneuron tricholepis*), nutsedge (*Cyperus* spp.), wild onions (*Allium* spp.), wild rye (*Elymus* spp.), wild oats (*Avena* spp.), dandelion (*Taraxacum officinale*), and beggarweed (*Desmodium purpureum*). However, insects are readily consumed by developing poults, and by adults when available. If sources of mast (acorns, nuts, fruit) are accessible, wild turkeys will also take advantage of this food source (Beasom and Wilson 1992, Hurst 1992, Ligon 1946).

Habitat use by wild turkeys varies considerably during the fall and winter as food availability fluctuates. Vegetative diversity remains a common theme for cold season habitat. Mast is the primary food during fall and winter (Porter 1992). Examples include pinyon nuts, ponderosa pine seeds, oak acorns, juniper berries, especially alligator-bark juniper (*Juniperus deppeana*) which is reasonably consistent from year to year but low in nutritional quality, skunkbush sumac (*Rhus trilobata*), clover (*Trifolium* spp.), watercress (*Nasturtium* spp.), and kinnikinnick berries (*Arctostaphylos uva-ursi*) (Hoffman et al. 1993, Schemnitz et al. 1985). Forest cover plays a more important role, compared to open areas (Speake et al. 1975, Kennamer et al. 1980, Porter 1992). Herbaceous growth still provides valuable nutrition, especially in late winter (Hoffman et al. 1993). However openings, or areas with open canopies, may be utilized to a greater extent in years of poor mast production.

In the higher elevation forest habitats occupied by Merriam's turkeys seeps can be an important source of invertebrates, mast, and succulent vegetation. Since these water sources are not as subject to freezing they can provide a microenvironment that allows foraging throughout the winter (Porter 1992).

Supplemental feeding can be an effective management tool to help reduce winter mortality and the effects of low reproduction resulting from periods of low mast production (Ligon 1946, Gardener and Arner 1968, Billingsley and Arner 1970, Pattee and Beasom 1979). The best success has come from planting and maintaining fields of corn and mast producing shrubs (Crim 1981, Healy 1981, Clark 1985, Kulowiec and Haufler 1985, Kurzejeski and Lewis 1985, Porter et al. 1980). Feeding stations are not effective in reducing winter mortality because birds may have problems finding them, concentrating birds may result in increased mortality from predation and disease, and birds may become dependent upon sites (Stoddard 1963, Hurst 1992).

General habits.—Merriam wild turkeys will use south-facing slopes of ponderosa pine and oak stands during productive mast years. In years of substantial snowfall, birds may move down to pinyon-juniper habitat. These areas consistently provide a good source of grasses, seeds, and berries (Hoffman et al. 1993). However, use is still dependent upon the presence of ponderosa pine for roosting. Merriam's turkeys commonly range from 5-20 miles between summer and winter range. However, they can move as far as 35-50 miles (Bill Zeedyk, USFS (Ret.), personal communication).

Most of the year Rio Grande turkeys exhibit gregarious and nomadic behavior. In the fall and winter they join together into larger winter flocks to utilize ripening mast in wooded riparian or shrub habitats. During this time they typically only range 1.6-3.2 kilometers (1-2 miles), compared to 24-32 kilometers (15-20 miles) when hens move out to nest following breeding season in spring (Glazener 1967, Watts 1969, Thomas et al. 1973).

Since Rio Grande turkeys occupy habitat along riparian corridors and adjacent grasslands/savannas, they may be able to utilize crops such as corn for winter food (Porter 1977, Little 1980). This can significantly reduce winter deaths because corn is higher in protein, lower in fats, and similar in carbohydrates compared to oak acorns (Crim 1981).

Like Rio Grande turkeys, Gould's turkeys also seem to range over large areas and tend to be associated with riparian habitats. Birds have been known to migrate across the border between the United States and Mexico, particularly in the Peloncillo and San Luis populations (Bill Zeedyk, USFS (Ret.), personal communication). The yearly home ranges of hens can average 4.4 km² (10,835 acres) (York 1991). In the fall and winter, small flocks may join together. Flocks of 30-50 birds are commonly observed in the Animas Mountains (Bill Zeedyk, USFS (Ret.), personal communication).

Reproduction.—The beginning of the mating season is principally determined by the change in photoperiod between late winter and early spring. Gobbling may begin in mid-February and will run through late May. Wild turkeys develop social hierarchies for males and females. As such they display polygamous breeding behavior where the dominant male will mate with most of the females.

Adult hens typically have a higher nesting rate than do juvenile hens (Vangilder 1992). Merriam's hens less than 2 years old typically do not nest, unlike the Eastern subspecies and Merriam's turkeys in South Dakota (Hoffman et al. 1993, Vangilder et al. 1987, Vander Haegen et al. 1988). Nesting hens will lay an average clutch of 9-12 eggs, and will begin incubation around mid-May (Cook 1972, Lockwood and Sutcliffe 1985). Hatch occurs after a 28-day incubation, and peaks near mid-June (Williams et al. 1971, Healy and Nenko 1985, Hoffman et al. 1993). The proportion of nests that have at least one poult hatch ranges from 30-40%. Of those nests, over 80% of the eggs hatch (Cook 1972, Lockwood and Sutcliffe 1985, Schemnitz et al. 1985, Ransom et al. 1987). When nests fail, hens re-nested up to 37% of the time, depending on when failure occurred (Schemnitz et al. 1985, Liedlich et al 1991). Rates were lower for nests lost after incubation than nests lost during laying (Williams and Austin 1988).

Turkey poults are precocial in that they hatch with a coat of downy feathers, imprint to the first living thing to provide parental care, are able to move around freely within 24 hours of hatching, and will peck at food items while following the hen (Healy 1992, Hoffman et al. 1993). Young birds exhibit most of the adult behavioral characteristics such as feeding, body maintenance and reproductive mannerisms (strut, female crouch, and threat) within the first week (Healy 1992).

Most poults are capable of flight within two weeks following hatch (learning starts 4-8 days post-hatch) (Williams 1974). Flight ability is instrumental as young birds begin to roost with hens within the first three weeks. Roosting behavior is important in the reduction of poult predation that may occur during this time (Glidden and Austin 1975, Everett et al. 1980, Speake 1980, Speake et al. 1985, Exum et al. 1987).

The critical period for survival is the first two weeks following hatch when the mortality rate is close to 70% (Williams and Austin 1988). Birds in the wild have been documented to live upwards of 9-15 years (Mosby and Handley 1943, Ligon 1946, Powell 1965, Lewis 1967, Cardoza 1995). However, Hoffman et al. (1993) suggest the most probable average life expectancy for the Merriam's subspecies is 4 years. This should be comparable in other subspecies since the birds share the same physiology, and similar responses to environmental variables.

Population Dynamics.—As with most gallinaceous birds, turkeys can experience dramatic population fluctuations between years. Annual mortality rates can average from 30% to 55%, with most mortality occurring the first year of life. Rates decline after this time and remain somewhat stable for older birds (Hoffman et al. 1993). Most juvenile or yearling mortality occurs during the winter. Hen mortality is the highest between March and June, which coincides with the peak of incubation when hens are most vulnerable. In addition, hatch rate (correlated to January to June precipitation) can vary annually and impact recruitment (Liedlich et al. 1991).

Predation can be a significant source of mortality for wild turkeys (Vangilder 1992, Roberts et al. 1995, Vangilder and Kurzejeski 1995). Mountain lions, bobcats, bears, hawks, owls, and eagles will actively pursue adult, juvenile, and newly hatched turkeys. Nest predators include coyotes, foxes, raccoons, skunks, snakes, ravens and crows. Physiological and behavioral adaptations to minimize the effects of predation include large clutch sizes, large body size, flocking behavior, and night roosting in trees (Miller and Leopold 1992:126-127). In quality habitat, turkeys can withstand predation



Figure 5. Coyote.

and even flourish. However, predation may have a significant influence on local turkey populations when (1) populations are low (especially during introductions); (2) nesting cover is poor; (3) inadequate food and/or water force turkeys into unfavorable habitat; (4) other prey species are less available; (5) birds are exposed to severe weather for prolonged periods of time; and/or (6) predator populations are abnormally high (Glazener 1967, Markley 1967, Miller and Leopold 1992). Predator control may not be effective due to reproductive compensation of predators (increased litter sizes in coyotes), and high costs (Knowlton 1972, MacDonald 1960-64, MacDonald and Jantzen 1967).

Spring hunts, if managed properly, typically do not have a long-term impact on population numbers (Vangilder 1992, Vangilder and Kurzejeski 1995). Harvest of up to 30% of adult gobblers leave enough for effective breeding and quality hunting the following season (Vangilder 1992). In the Sacramento Mountains of New Mexico, adult gobbler harvest averaged 10% of tagged birds over ten years (Bill Zeedyk, USFS (Ret.), personal communication). However, this may not be the case if there is a high level of legal and illegal harvest coinciding with several years of low reproduction (Kurzejesky and Vangilder 1992). Fall hunts can have a significant influence on local populations, and are therefore the most useful in terms of population management. Turkey population growth can be depressed due to the sensitivity of populations to the removal of adult hens, especially those that have nested successfully (Pack 1986, Healy and Powell 1999).

Illegal harvest can play an important role in turkey population viability as it relates to increased hen mortality rates. Known and suspected illegal take varies by location, but mortality can range from 2% to greater than 60% (Wright and Speake 1975, Everett et al. 1980, Williams and Austin 1988). When the spring gobbler season begins before the peak of incubation, hens are more vulnerable to illegal harvest (Kimmel and Kurzejeski 1985, Kurzejeski et al. 1987). Illegal harvest rates are not known for New Mexico.

Herbicide and pesticide applications may reduce the ability of areas to support wild turkeys. Insecticides may reduce or remove turkey insect food sources, while herbicides can diminish insect cover. In addition, herbicides can remove forbs essential for nutrition. Finally, turkeys may be poisoned thus predisposing birds to predation, reducing reproductive output, and causing direct mortality (Clawson 1958, Hoffman et al 1993, Nettles 1976).

Hybridization can and does occur in wild turkey populations since subspecies are physiologically similar and often have adjacent ranges (see Figure 1). In some states this is not an issue because management is geared more towards providing birds in the field than maintaining genetic identity. However, directly related to genetic identity is habitat adaptation and reproductive vigor. New Mexico would benefit by providing the opportunity to hunt and view three unique subspecies. The opportunity to hunt Gould's turkeys alone could generate several thousand dollars for turkey management through the auctioning of 1-2 tags. With populations around 150-200, the benefit to management would far outweigh the loss of a few birds to hunting. In areas where hybridization has occurred, birds may have to be removed in order to maintain genetic distinctiveness and population viability. As mentioned in the discussion on distribution within New Mexico, Rio Grande turkeys were transplanted along the Rio Grande (outside of what was considered historic range). As birds have expanded from these areas they have traveled closer to areas occupied by Merriam's turkeys. These areas will need to be monitored to prevent hybridization where appropriate. Merriam's turkeys were transplanted into former Gould's turkey habitat in the Animas Mountains. Fortunately the transplant failed (Bill Zeedyk, USFS (Ret.), personal communication). So far, hybridization does not appear to be a problem.

Turkeys are subject to a number of bacterial/viral infections. The three most important bacterial and viral infections are (1) avian pox caused by poxviruses in the genus *Avipoxvirus*, (2) Mycoplasmosis caused by bacteria in the genus *Mycoplasma*, and (3) Salmonellosis brought on by bacteria in the genus *Salmonella* (Davidson and Wentworth 1992). Many diseases that potentially threaten wild turkeys are associated with domestic poultry and captive gamebirds.

Wild turkeys can, and often do experience infestation of some degree by a number of endo- and ecto-parasites including flatworms (flukes), tapeworms, roundworms, acanthocephalans (thorny-headed worms), and protozoan blood parasites (*Haemoproteus*, *Leucocytozoon*, *Plasmodium*) transmitted by blood-feeding arthropods. Most parasites typically cause only a nuisance, although particularly heavy infestations may cause physical impairment or secondary infections (e.g. Histomoniasis, or blackhead disease). Infections often do not produce clinical symptoms unless the bird is stressed or otherwise ill (Davidson and Wentwork 1992).

Significant disease and parasitic infections have not been documented in New Mexico. This is likely because the dry climate is not as productive for insect vectors. Also, turkeys are naturally more spread out, so significantly large numbers of birds are not routinely in close proximity to one another. In addition, birds incapacitated by disease and/or parasites are likely removed by predators and scavengers (Davidson and Wentworth 1992, Friend and Fransom 1999).

Current Population Status

The current estimated population of wild turkey in New Mexico is 35,000 to 40,000 birds. Population surveys have not been consistent on any of the three subspecies in New Mexico. Zeedyke (199?) conducted Gould's surveys in the Peloncillo Mountains and brood surveys have not been conducted since 1987. Because turkeys are so elusive and widely distributed among a variety of different habitats, individual survey techniques are unreliable, impractical or cost prohibitive (Donohoe et al. 1983, Mosby 1967). However, they may be useful when techniques are combined and further incorporated with harvest data. To date, annual hunter harvest surveys have been relied on in New Mexico to determine population trends over time.

In May 2006, the Department began surveying for Gould's turkey (*Meleagris gallopavo mexicana*) in the Peloncillo Mountains. This was a result of legislative action authorizing the take of two (2) gobblers following efforts by the Department to determine potential impacts from this action. Table 1 provides the results of this survey. Approximately 15.62 man hours were spent observing a total of 18 birds visually or audibly over a 5-day survey period, or 1.15 birds/man-hours. The low number of birds observed during this survey effort may result from hens being less obvious. Hens may have already been bred by the initiation of this survey and therefore were less observable as a result of tending nests and not participating in the more obvious breeding activities.

Table 1. Results of Spring 2006 Gould's Turkey Gobbler Survey in Peloncillo Mountains.

Route	Number of Males Observed	Number of Females Observed	Number of Juveniles Observed (Jakes)	Number of Man-hours per route
1	0	0	0	3.44 X 2
2	3	4	0	2.38
3	1	0	0	2.24
4	2	5	2	1.26
5	0	0	0	2.16
6	1	0	0	1.14
Totals	7	9	2	15.62

Transplant Efforts

Transplants have occurred in New Mexico since 1939 (Appendix A). With the advent of better technology for capturing wild birds, transplants have successfully reestablished wild turkeys in many parts of New Mexico. The Department continues to collaborate with a wide array of federal and state agencies, tribal communities, and non-profit organizations, and private citizens to implement the trap and transplant program each year. Since the adoption of the previous plan, over 250 wild turkey have been transplanted in New Mexico (approximately 150 Rio Grande and 100 Merriam's turkey). Appendix B and C illustrate all the known capture and transplant locations that have occurred in New Mexico since 1939.

Subspecies Management

Habitats suitable for different subspecies of wild turkey exist in close proximity in many locations across the United States and hybridization occurs in some populations. The Department policy has been to manage for three subspecies in the habitats that best suit each. In some parts of the state, this goal has likely been compromised, as habitats suitable to two subspecies exist

and hybridization has potentially occurred. Maintaining New Mexico's reputation for harboring 3 sub-species of wild turkey increases the attractiveness to hunters from across the country. As a result of New Mexico's two-bird bag limit, this provides an opportunity for a hunter to harvest two (potentially three) of the five subspecies in North America in their efforts to attain a wild turkey grand slam.

Harvest Information

Legal and illegal hunting can be substantial sources of mortality. Studies in the Midwest showed that illegal hen kill (hens harvested during a tom-only spring season) was higher during years when spring gobbler season began before the peak of incubation (Kimmel and Kurzejeski 1985). However, if spring hunts are managed properly, they do not have a long-term impact on population numbers (Vangilder 1992). Fall either-sex hunts, however, can have a significant influence and are the most useful for managing population numbers. Populations are likely to decline if more than ten percent of adult hens are removed in the fall hunt, especially if they were successful nesters (Healy and Powell 1999).

According to harvest trend information from 1984 to 2003, the statewide turkey harvest has been fairly stable (mean = 2100). (Figure 6). Data is presented from 1997 to 2004 because many of the harvest surveys prior to 1997 were incomplete. Without reliable population trend data it is difficult to say.

Figure 7 illustrates the total number of licenses sold from 1989 – 2004. This data indicates the beginning of an increasing trend in the number of license sold during 2003 and 2004 (12,870 license sold). Preliminary data for 2005 indicates the same.

The number of days hunters spend in the field attempting to harvest a turkey has steadily increased in recent years. (Figure 8). This translates to an increase in dollars spent on hunting equipment, supplies, etc. with a large percentage of that money going to small local economies.

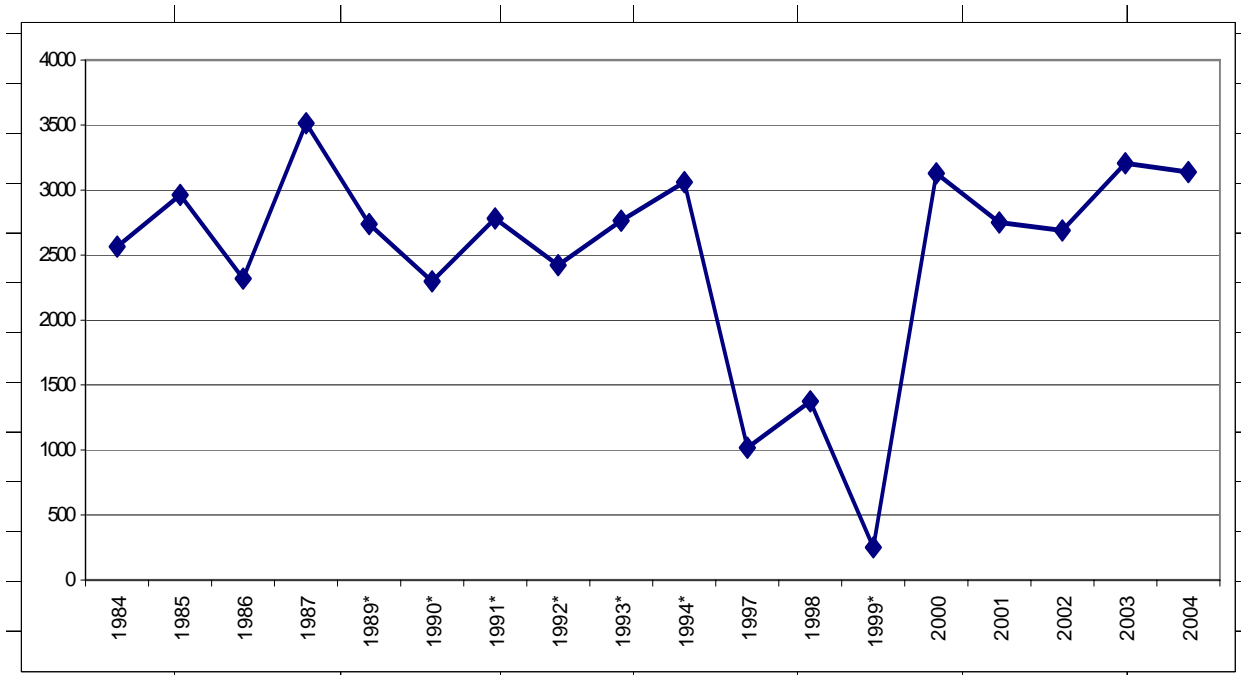


Figure 6. Estimated Total Harvest from 1984-2004. An asterisk indicates a year with incomplete data.

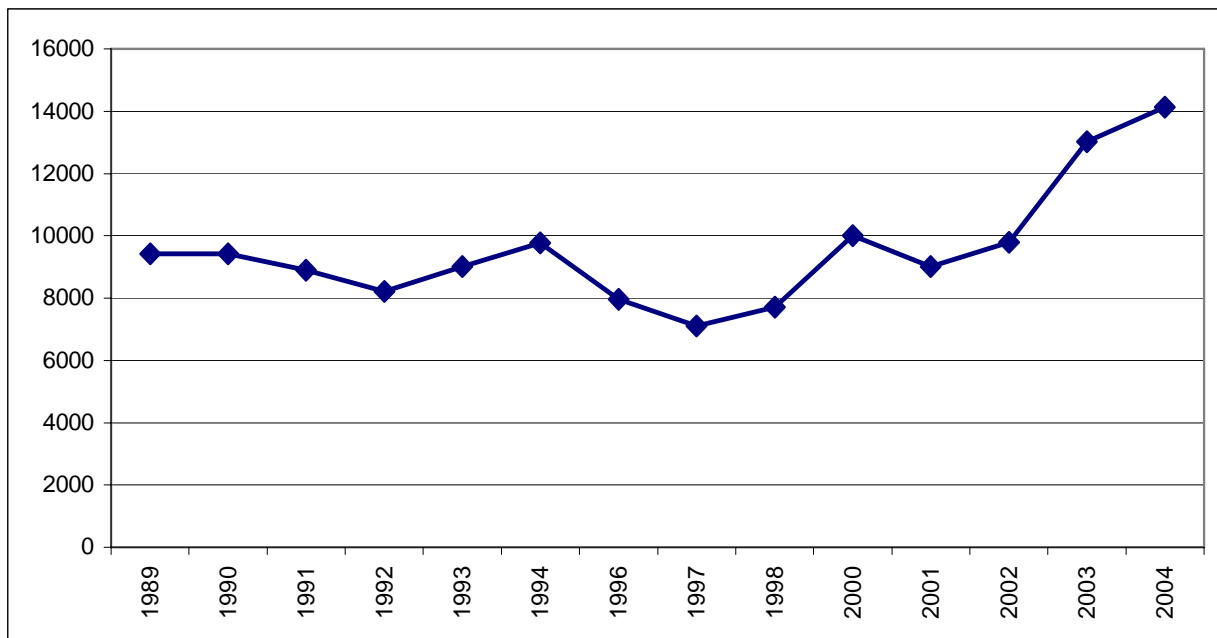


Figure 7. Total licenses sold from harvest surveys during 1989-2004.

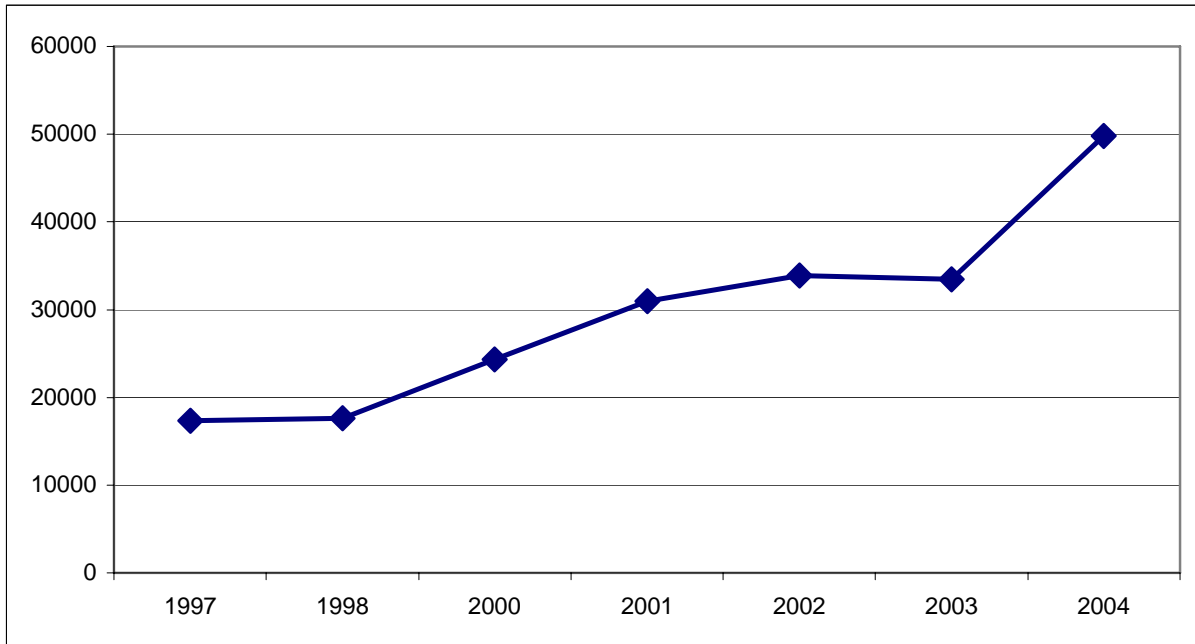


Figure 8. Estimated days spent hunting turkey.

Economic Value

In 2004, New Mexico turkey hunters numbered 12,870 and hunter numbers are expected to continue increasing. This is the highest number sold since 1982. Hunters contribute to New Mexico's economy through the purchase of guns, ammunition, clothing, food and lodging, and various other related supplies. The average expenditure each trip per big game hunter was \$666.00 (USFWS 1996). This equates to \$8,571,420 annually if we assume each big game hunter made only one trip. This is highly unlikely if you consider New Mexico's turkey season is approximately one month long, the current bag limit in most of the state is 2 birds, and turkey hunters spend approximately 3.9 days hunting turkeys each spring. Landowners do not see wild turkeys as a large "cash crop" but do realize some benefit can be gained by allowing access to hunters. Additionally, most landowners enjoy the aesthetic value of wild turkeys and understand the need for maintaining or enhancing the habitat they control. This opinion has contributed to increase of turkeys statewide by providing nesting and wintering habitat, two important aspects of turkey ecology and success.

Habitat Management

Future wild turkey habitat improvements will depend largely on six approaches:

- (1) Continued regeneration of mast-producing trees and shrubs through proper forest management practices;
- (2) Enhancement of existing habitat by incorporating favorable land management approaches for wild turkeys into commercial forestry, agriculture, mining, industrial development, and housing development;
- (4) Encouragement of programs to preserve Open Spaces through expanded use of conservation easements and acquisition;
- (5) Encourage development of brood habitat with the creation of wet meadows through the development of natural watering areas that would promote vegetative growth and insect colonization; and
- (6) Maintaining existing roost sites and encouraging management practices that promote development of future roost sites in nesting and wintering habitat.

In the Southwest, many housing and community development projects occur within riparian and forest areas favored by wild turkeys, especially in winter range. The natural response of residents often is to put out food to attract birds. This may potentially lead to birds becoming dependent upon human provided food sources, and increase vulnerability to poaching, predation by wild predator as well as pets, and disease/parasite transmission as birds become concentrated over small areas (Hurst 1992). In the Sandia Mountains urbanization has reduced available winter range for turkeys (Bill Zeedyk, USFS (Ret.), personal communication). On the other hand, Unit 34 in Lincoln County presently has one of the highest densities of turkeys even though urbanization in the mountainous areas is rapidly increasing.

With the recognition of habitat improvement/restoration (clearing, prescribed burns, thinning, planting, adjusted grazing schemes, etc.) as the key to restoring wildlife populations many land management agencies as well as the Department have began emphasizing projects such as these. The U.S. Forest Service has identified the wild turkey as a management indicator species on all applicable forestlands. With this designation, funding has become more readily

available for a wide array of habitat improvement projects such as those listed above. Non-profit organizations also provide considerable money, manpower, and support to these various land management agencies for on the ground projects aimed at enhancing habitat. Since 1985 over \$194,486 has been raised and spent by New Mexico chapters on projects within the state. These projects range from habitat enhancement and turkey restoration to educational programs and research.

Fire suppression during the past century has promoted shrub and tree encroachment into open habitats (Wright and Bailey 1982). This has led to a reduction in available brood and winter habitat by inhibiting grass and forb growth. In addition, the build-up of understory woody growth creates conditions ripe for catastrophic fires. Prescribed fire can play an important role in enhancing habitat, especially for broods, by opening up understory vegetation through the removal of thick shrub growth, while stimulating grass, forb and legume production. Prescribed burning in pine forests has the benefit of reducing mat-forming perennial herbs and woody plants (Buckner and Landers 1979, Porter 1992). In addition, food availability is increased for all birds during the first three years post-burn (Hurst 1978). It is important that these be conducted outside of the nesting season so hens and nests are not impacted (Hoffman et al. 1993).

Long Range Goal and Objective

Goal: That the Department effectively meets public recreational, ecological, and issue-management expectations regarding wild turkeys.

Objective: That all interested publics are satisfied that the Department is meeting their expectations with respect to wild turkeys through 2012.



Issues and Strategies

Issues are arranged in descending order, with those representing the most serious obstacles to achieving the plan goal and objective listed first. Strategies are arranged in accordance with their timeliness, feasibility, and potential effectiveness.

Issue 1. The Department can neither meet public expectations nor manage relevant issues of which it is unaware. Furthermore, support and acceptance of the Department's management of wild turkeys and related issues depends upon the public knowing and understanding relevant issues, actions, and outcomes.

Strategy 1. Continue conducting periodic public surveys to assess expectations, interests, and satisfaction regarding wild turkey management in New Mexico.

Strategy 2. Develop a means of open communication between the Department and interested parties to allow exchange of results, obstacles, ideas and criticism regarding turkey management.

Issue 2. Land-use decisions on private and public properties are beyond the Department's authority and can significantly impact the ability to meet public expectations for turkey management.

Strategy 3. Establish cooperative agreements with other land management agencies to protect and improve turkey habitat where needed on public lands.

Strategy 4. Evaluate, develop, and encourage outreach projects to encourage and enable private landowners to protect and improve turkey habitat where needed.

Strategy 5. Emphasize projects designed to promote and enhance moist soil and seep habitats where appropriate.

Issue 3. Additional data regarding wild turkey populations, and habitat limitations and opportunities will improve the Department's ability to meet the long-range goal.

Strategy 7. Develop a peer-review committee of professionals, well trained and knowledgeable in turkey biology and habitat management to review and interpret

available information and recommend actions on lands managed by different public and private entities.

Strategy 8. Determine interest from support groups in developing a program establishing permanent survey routes and protocol using trained volunteers to monitor general population trends in selected areas throughout the state and provide information potentially useful in developing regulations.

Strategy 9. Continue Gould's turkey population surveys at appropriate time intervals, and investigate appropriate methods to increase survey precision and accuracy.

Strategy 10. Monitor annual turkey harvest, hunter numbers, and hunter success at a level sufficient to make informed management decisions.

Strategy 11 Utilize Geographic Information Systems (GIS) technology to assess the extent and status of turkey habitat, and identify potential limitations and opportunities.

Strategy 12. Improve working relationships with all interested entities (land management agencies, tribal agencies, conservation organizations, and private landowners).

Issue 4: Recreational interests expect that turkey hunting opportunity should exist in all areas of suitable habitat, including those which cannot become occupied through natural expansion.

Strategy 13: Establish population abundance and distribution targets for all Game Management Units.

Strategy 14: Trap and relocate wild turkeys into areas not likely to become occupied naturally.

Strategy 15: Conduct trapping and transplanting operations in accordance with the following Department policies:

§ Future relocation sites will occur in suitable habitat for the historically correct sub-species and where the possibility of hybridization is minimal.

§ Relocated turkeys will be monitored (to include, but not limited to the use of radio-telemetry technology) to evaluate progress toward abundance and distribution targets.

§ All turkey transplants from outside New Mexico will be tested and certified free of pathogenic disease or parasitic infestation prior to release.

§ Release sites and stock will be selected so as to preclude potential hybridization of subspecies.

Issue 5. Inappropriate harvest strategies can compromise both ecological and recreational interests.

Strategy 16. Employ population monitoring and modeling techniques to establish population and harvest objectives by management zones to maintain viable populations while providing optimum hunting opportunity.

Issue 6. Increase the Department's effort in developing and implementing projects necessary to meet ecological and recreational expectations.

Strategy 17. Determine the feasibility of re-establishing either the turkey-stamp program or setting aside funds from each turkey license sold.

Strategy 18. Continue to employ additional sources of funding and volunteer assistance, such as the Habitat Stamp Fund, NWTf, landowner incentive programs, private organizations, and other environmental and sportsman's groups.

Strategy 19. Seek alternatives for access to private land to increase turkey hunting opportunities.

Issue 7. Ecological and recreational interests may be adversely affected by the presence of diseases, parasites, and undesirable genetic and behavioral characteristics in wild turkey populations.

Strategy 20. Educate the public of the risks to wild turkey populations from the introduction of game-farm turkeys and illegal releases.

Strategy 21. Employ the Department's regulatory authority to prohibit the importation, propagation, and release of wild and game-farm turkeys where threats to wild turkey populations exist.

Strategy 22. Verify that all birds permitted for interstate transfer have been tested for disease and parasitic infestation.

Strategy 23. Investigate all reports of turkeys that appear to be unhealthy.

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Appendix A. Transplants of Wild Turkey in New Mexico, 1939-2000.

Year	Month	Capture Location	Release location	Success Y/N/Unk	Male		Female		Unkown	Total Birds	Subspecies
					Adult	Juvenile	Adult	Juvenile			
1939		Hall Peak Game Refuge, near Ocate, NM	Animas Peak south of Lordsburg, NM	Unk						10	Merriams
1939		Hall Peak Game Refuge, near Ocate, NM	Northeast of McGaffey Ranger Station	Unk						11	Merriams
1939		Hall Peak Game Refuge, near Ocate, NM	Conchas River north of Tucumcari	Unk						9	Merriams
1947	23-Feb	Near Carlsbad, NM	Guadalupe Mt., Lincoln NF	Y	2		0	0		2	Merriams
1948	28-Feb	Private land in Sacramento Mts.	Pinyon Mt. northeast of Springer, NM	Y	0		9	0		9	Merriams
1948	21-Mar	Private land in Sacramento Mts.	Pinyon Mt. northeast of Springer, NM	Y	1		3	0		4	Merriams
1950	15-Feb	Curtis Canyon, Sacramento Mts.	Pinyon Mt. northeast of Springer, NM	Y	2		3	0		5	Merriams
1950	11-Mar	Curtis Canyon, Sacramento Mts.	Private ranch Tn 1N, Rng 20E, near head of Yeso Creek	Y	2		1	0		3	Merriams
1950	12-Mar	Curtis Canyon, Sacramento Mts.	Near Bull Canyon, southeast of Santa Rosa, NM	Y	2		2	0		4	Merriams
1951	7-Mar	Private land near Mt. Taylor	Southwest of Grants, NM, on game refuge on Mt. Sedgwick	Y	3		12	0		15	Merriams
1951	8-Mar	Private land near Mt. Taylor	Near Monica Canyon, San Mateo Mts., Cibola NF	Y	0		6	0		6	Merriams
1951	9-Mar	Private land near Mt. Taylor	Sauble Ranch, Colfax Co.	Y	1		3	0		4	Merriams
1951	9-Mar	Private land near Mt. Taylor	Near Monica Canyon, San Mateo Mts., Cibola NF	Y	1		0	0		1	Merriams
1951	28-Oct	Private land southeast of Nara Visa, NM in TX	Along Canadian River, northeast of Tucumcari, NM	Y	7		13	0		20	Rio Grandes
1951	28-Oct	Private land southeast of Nara Visa, NM in TX	Private land northeast of Conchas Dam	Y	1	1	1	0	0	3	Rio Grandes
1953	20-Feb	Coots Ranch, Quay Co.	Libby Ranch, on Ute Creek	Y	1		5	0		6	Rio Grandes
1953	17-Mar	Matador Ranch, TX	Libby Ranch, on Ute Creek	Y	2		3	0		5	Rio Grandes
1953	17-Mar	Matador Ranch, TX	Mitchell Ranch, Harding Co.	Y	3		6	0		9	Rio Grandes
1955	Feb	Mosca Springs, Mt. Taylor	Muleshoe Ranch, Magdalena Mts.	Y	4		10	0		14	Merriams

Appendix A continued. Transplants of Wild Turkey in New Mexico, 1939-2000.

	20-Feb - 10-		Near Tusas Mt., Rio Arriba								
1956	Mar	Gallinas Mts.	Co.	Y	4		4	0	8	Merriams	
1956	3-Mar	Bates Ranch, Gallinas Mts.	Tusas Mt.	Y	4		4	0	8	Merriams	
1957	8-Jan	Floyd Lee Ranch, Chokeycherry Canyon	Near Sheep Springs in Chuska Mts., San Juan Co.	Y	1		8	0	9	Merriams	
1957	14-Jan	Floyd Lee Ranch, Chokeycherry Canyon	Near Sheep Springs in Chuska Mts., San Juan Co.	Y	2		4	0	6	Merriams	
1957	25-Jan	Floyd Lee Ranch, Chokeycherry Canyon	Near Sheep Springs in Chuska Mts., San Juan Co.	Y	0	4	24	0	27	Merriams	
1957	9-Feb	Martinez Ranch, Harding Co.	Near Conchas Dam on Canadian River	Y	3		11	0	14	Rio Grandes	
1957	28-Feb	Mosca Springs, Mt. Taylor	Sheep Springs in Chuska Mts., San Juan Co.	Y	2		0	0	2	Merriams	
1960	28-Feb	Sacramento Mts.	La Queva	Y	0	2	3	1	6	Merriams	
1961	23-Feb	West Red Canyon, Point of Rocks Canyon, Pine Tank	San Mateo and Jemez Mts., Cibola NF	Y	3	1	8	1	2M,1F	16	Merriams
1961	28-Feb	Pine Tank, West Red Canyon	San Mateo Mts., Cibola NF	Y	1	0	5	3	1F	10	Merriams
1961	9-Mar	San Pablo Canyon	Jemez Mts., Cibola NF	Y	0	2	0	8	0	10	Merriams
1961	24-Mar & 14-Apr	Bear Trap Canyon	San Mateo Mts., Cibola NF	Y	3	1	3	1	0	8	Merriams
1961	26-30 Mar	Bear Springs, Borrego Canyon, La Cueva	Jemez Mts., Cibola NF	Y	6	2	0	1	0	9	Merriams
1961	29-Aug	Rivera Ranch	Jemez Mts., Cibola NF	Y	0	0	0	2	0	2	Merriams
1962	28-Mar - 19-Apr	West Red Canyon, Point of Rocks Canyon	San Mateo Mts., Cibola NF	Y	0	5	12	11	0	28	Merriams
1964	Jan	Maloya Canyon	Santa Rosa - Caprock Area	Y		5	0	0	0	5	
1964	Feb	Russian Canyon, Sacramento Mts.	Oscura Mts.	Y						25	Merriams
1964	22-Feb	Sacramento Mts.	Oscura Mts.	Y	0	4	2	3	0	9	Merriams
1964	28-Feb	Cloudcroft, Sacramento Mts.	Oscura Mts.	Y	0	4	2	3	0	9	Merriams
1964	28-Feb	Cloudcroft, Sacramento Mts.	La Queva Ranch, Mora Co.	Y	0	2	3	1	0	6	Merriams
1971	23-Jan	Penasco River, Sacramento Mts.	Rabbit Springs, Oscura Mts.	Y	4	6	11	3	0	24	Merriams
1975		Aransas, TX	Bosque del Apache NWR	Unk	2		5	0	7	Rio Grandes	
1983	Jan	Kaiser Steel		Y	0	14	76	0	90	Merriams	
1983	27-Jan	Canyon area TX Panhandle	Dark Canyon, Guadalupe Mts.	Y	8	3	20	34	1 Female	66	Rio Grandes
1983	10-Feb	Big Spring, TX	Bosque del Apache NWR	Y	4		15	0	19	Rio Grandes	
1983	28-Feb	Bosque del Apache NWR	Bernardo State Game Refuge	Y	6	5	16	5	0	32	Rio Grandes
1983	3-Mar/4-Mar	Bosque del Apache NWR	Black River Recreation Area near White City	Y	3		14	0	17	Rio Grandes	

Appendix A continued. Transplants of Wild Turkey in New Mexico, 1939-2000.

1983	3-Mar/4-Mar	Bosque del Apache NWR	Rio Grande River south of Los Lunas	Y	2		10	0	12	Rio Grandes	
1989	23-Jan	Private land west of Folsom, NM	Tres Piedras Ranger District, Carson NF	Y	5	2	25	8	0	40	Merriams
1989	23-Jan	Private land west of Folsom, NM	Tres Piedras Ranger District, Carson NF	Y	0	1	15	6	0	22	Merriams
1989	Feb	Private land near Raton, NM	Cabresto Mesa area of Jicarilla Division of Carson NF	Y	2	4	15	8	0	29	Merriams
1990	8-Feb	Private land west of Folsom, NM	Tres Piedras Ranger District, Carson NF	Y	4	0	0	0	0	4	Merriams
1990	10-Feb	Bosque del Apache NWR	Bernardo State Game Refuge	Y	6	5	14	5	0	30	Rio Grandes
1992	8-Feb	Private land west of Folsom, NM	Questa Ranger District, Carson NF	Y	7	2	14	12	0	35	Merriams
1992	Mar	Lincoln NF, Mills Canyon, and Private ranch, Sixteen Springs Canyon	Manzano Mts., Cibola NF	Y	2	0	13	2	0	17	Merriams
1992	Mar	Vermejo Park Ranch	Canadian River near Mills Canyon	Y	1	1	22	3	0	27	Merriams
1992	23-Feb	Cross L Ranch	Perico Creek, SW of Clayton, NM	Y	0	1	7	0	0	8	Merriams
1992	Mar	Vermejo Park Ranch	Mills Canyon, Cibola NF	Y	0	0	12	2	0	14	Merriams
1992	Mar	Vermejo Park Ranch	Mills Canyon, Cibola NF	Y	1	1	10	1	0	13	Merriams
1993	Jan	Kaiser Steel	SW of Armstrong Camp	Y	0	4		33	0	37	Merriams
1993	Jan	Kaiser Steel	South of Armstrong Camp	Y	0	0		8	0	8	Merriams
1993	Jan	Kaiser Steel	Head of Big Crow	Y	0	6		0	0	6	Merriams
1993	Jan	Kaiser Steel	Mid Big Crow	Y	0	4		35	0	39	Merriams
1993	27-Jan	Philmont Scout Ranch Property, Cimarron, NM	Rio Grande Nature Center in Albuquerque	Y	0	1	2	0	0	3	Merriams
1993	27-Jan	Philmont Scout Ranch Property, Cimarron, NM	Jicarilla District of Carson NF - near Gas Buggy	Y	0	8	16	9	0	33	Merriams
1993	13-Feb	Private land west of Folsom, NM	Gallinas Mts.	Y	1	1	24	3	0	29	Merriams
1993	25-26 Feb	Vermejo Park Ranch, Cimarroncita Ranch, and Private land on Ute Park	Near 4th of July Canyon, Manzano Mts.	Y	7	0	15	11	0	33	Merriams
1993	3-4 Mar	Bosque del Apache NWR	Black River Recreation Area (BLM) near White City	Y	2	1	8	6	0	17	Rio Grandes

Appendix A continued. Transplants of Wild Turkey in New Mexico, 1939-2000.

1993	3-4 Mar	Bosque del Apache NWR Private land west of Folsom, NM	Rio Grande south of Los Lunas	Y	2	0	6	4	0	12	Rio Grandes
1995	13-Feb		Gallinas Mts. Perico Creek, SW of Clayton, NM	Y	2	7	6	2	0	17	Merriams
1995	23-Feb	Private land near Folsom, NM	Jicarilla District of Carson NF	Y	0	1	6	0	0	7	Merriams
1995		Crow Canyon, Vermejo Park Ranch	Near 4th of July Canyon, Manzano Mts.	Y	0	0	15	14	0	29	Merriams
1996	27-Jan	Cimarroncita Ranch, Ute Park	Near 4th of July Canyon, Manzano Mts.	Y	2	0	0	0	0	2	Merriams
1996	27-Jan	Ute Park	Near 4th of July Canyon, Manzano Mts.	Y	6	0	0	0		6	Merriams
1996	23-Jan & 8- Feb	Private land west of Folsom, NM	Tres Piedras and Questa Ranger Districts, Carson NF	Y	16	5	52	25	0	98	Merriams
1996	25-Feb		Manzano Mts.	Y							Merriams
1999	5-Feb	Near Cheyenne, OK	Southwest of Hatch, NM	Unk	6	4	16	9	0	35	Rio Grandes
2000	Feb - Mar	Vermejo Park Ranch	Pelona Mt.	Unk	0	17	5	6	0	28	Merriams

Appendix B. Map Of Capture Locations For Wild Turkey Transplants In New Mexico.



Appendix C. Map Of Release Locations For Wild Turkey Transplants In New Mexico.



Appendix D. Public Involvement.