Appendix G

Biological Survey Report

Biological Survey Report

Carnuel Water Facilities Improvements Project Bernalillo County, New Mexico



Biological Survey Report

Carnuel Water Facilities Improvements Project Bernalillo County, New Mexico

Prepared for Bohannan Huston, Incorporated 7500 Jefferson Street, NE Courtyard 1 Albuquerque, New Mexico 87109-4335

Prepared by
Marron and Associates, Incorporated
Paul J. Knight
Heather L. Parmeter
7511 4th Street NW
Albuquerque, New Mexico 87107

May 2009

INTRODUCTION

The Albuquerque Bernalillo County Water Utility Authority (ABCWUA) proposes to improve and expand existing water facilities located within the project planning area, which is comprised of the communities of Carnuel, Echo Canyon and Monticello within Bernalillo County, New Mexico (Figure 1). The project planning area includes several waterline route alternatives. These alternatives cross through lands managed by City of Albuquerque Open Space, private lands, and New Mexico Department of Transportation (NMDOT) right-of-way along Interstate 40 (I-40) and New Mexico Highway 333 (NM33). Under current design the proposed waterline alternatives would not cross through lands managed by the Cibola National Forest. However, if this changes, an analysis of impacts to US Forest Service Region Three resources would be recommended. Project activities would include placing waterline pipes ranging from 6 to 16 inches in diameter within trenches appropriate to the selected pipe size.

The project planning area appears on the *Tijeras, New Mexico* U.S. Geological Survey 7.5-minute quadrangle map. Development within the area includes residences and businesses located within the City of Albuquerque, and the communities of Carnuel, Monticello, and Echo Canyon in Bernalillo County, New Mexico. The area immediately adjacent to and within the project area consists primarily of disturbed roadside plant communities on NMDOT right-of-way.

The elevation of the project planning area ranges from approximately 5,650 to 6,750 feet above mean sea level.

Albuquerque, New Mexico receives approximately 8.7 inches of precipitation annually, mostly occurring from June through October. Average maximum temperatures reach approximately 70 degrees Fahrenheit (F). Average minimum low temperatures approach 43 degrees F (Western Regional Climate Center, 2005). The average annual maximum temperature at the Tijeras Ranger Station is 66.4 degrees Fahrenheit (F). The average low in January is 15.3 F and the average high in July is 88 F. Annual average precipitation is approximately 15.31 inches per year, with approximately 13.8 inches of snow contributing to the precipitation level.

Soil mapping units present within the project planning area Rock outcrop-Orthids complex, 40 to 80 percent slopes Salas complex, 20 to 80 percent slopes, and Tesajo-Millett stony sandy loams.

A recommended alternative has been identified (Bohannan Huston, Inc. 2009). This alternative proposes to combine two initial alternatives. This alternative proposes to place 9,800 linear feet of 12 inch pipe along the I-40 frontage road and NM 333 within Carnuel, 2,500 linear feet of 12 inch pipe from NM 333 to a new tank in Echo Canyon. In other locations, and estimated 9,000 feet of 6 inch pipe, 12,000 feet of 8 inch pipe, and 3,000 feet of 10 inch pipe would be placed. It is estimated that this alternative would be constructed in seven phases.

If fully constructed, this alternative would result in approximately 3.1 acres of soils disturbance from pipe placement. It is estimated that temporary surface disturbance associated with pipe placement would total approximately 30 acres. Proposed storage tanks would result in some coverage of soils with permanent facilities.

BIOLOGICAL SURVEY

Marron conducted pedestrian biological surveys of portions of the project planning area on April 1, 19, and 20 2009 (See Figure 2). The purpose of the surveys was to identify biological resources that occur in such as vegetation, wildlife, migratory birds, wetlands, noxious weeds and protected species which could be affected by the project. Lists of federal and state protected species and the New Mexico Noxious Weed List were reviewed prior to the survey. This report considers resources identified within the entire survey area.

Vegetation

The project area historically supported Montane Scrub and Coniferous and Mixed Woodland vegetation on uplands and Arroyo Riparian or Montane Riparian vegetation along drainages (Dick-Peddie 1993). Much of the project area currently supports weedy vegetation.

Dominant plant species present in disturbed areas along roadways and within portions along Tijeras Creek include the invasive tree of heaven (*Ailanthus altissima*), Siberian elm (*Ulmus pumila*), poplar (*Populus* sp.) and saltcedar (*Tamarix chinensis*).

Dominant species in less disturbed upland areas are rubber rabbitbrush (*Ericameria nauseosa*), four winged saltbush (*Atriplex canescens*), Apache plume (*Fallugia paradoxa*), black grama (*Bouteloua eriopoda*), and blue grama grass (*Bouteloua gracilis*). Gray oak (*Quercus grisea*) is also present.

Riparian areas along Tijeras Creek support native species such as box elder (Acer negundo), Rio Grande cottonwood (Populus deltoides ssp. wislizenii), coyote willow (Salix exigua), ravine fescue (Festuca sororia), dock (Rumex crispus), spiny sow-thistle (Sonchus asper), and water-cress (Nasturtium officinale) as well as non-native species.

Arroyos support rubber rabbitbrush, Apache plume, skunkbush sumac (*Rhus trilobata*), and brickellbush (*Brickellia* sp.), hoary aster (*Machaeranthera canescens*), cheet grass (*Bromus tectorum*), clammyweed (*Polanisia* sp.), annual sunflower (*Helianthus annuus*), Russian thistle (*Salsola tragus*), and cocklebur (*Xanthium strumarium*).

No rare plant communities occur within the project area. Tijeras Creek provides important vegetation and other resources.

It is estimated that trenching for buried water lines would temporarily disturb an estimated 3.1 acres of soils. Equipment use within the project area would temporarily affect approximately 30 acres. After completion of the project, Marron recommends that previously vegetated disturbed areas be replanted with certified weed-free native vegetation to reduce soil erosion and replace habitat.

Wetlands and Waterways

Probable wetlands were identified within the project planning area at three locations in association with Tijeras Creek (Coyote Road crossing at UTM Z13 E368254/N3880641; Canada de Los Alamos crossing at UTM Z13 E367969/N3880710; southward from NM 333 near horse stables crossing at UTM 13 E365497/N3880834 – UTM locations provided in NAD 83).

Wetlands are transitional areas located between terrestrial and aquatic systems that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation that is typically adapted for life in saturated soil conditions (US Army Corps of Engineers <USACE> 1987).

It is recommended that the ABCWUA consult with the USACE regarding permitting requirements for work activities within wetlands, Tijeras Creek, and arroyos, or avoid impacts by placing waterlines via boring at these locations.

Noxious Weeds

The class C New Mexico noxious weed species, Siberian Elm, saltcedar, field bindweed, and Russian olive (*Eleaeagnus angustifolia*) were observed within the project area. No action is recommended for class C weeds.

Wildlife

Many animals could occur at habitats within and surrounding the project area.

The following mammals or their sign were observed during surveys: Mule deer (Odocoileus hemionus), black bear (Ursus americanus), raccoon (Procyon lotor), striped skunk (Mephitis mephitis), coyote (Canis latrans), desert cottontail (Sylvilagus auduboni), black tailed jackrabbit (Lepus californicus), Botta's pocket gopher (Thomomys bottae), Grey fox (Urocyon cinereoargenteus), Rock squirrel (Spermophilus variegates) and Gunnison's prairie dog.

Prairie dogs occur at the western half of the project area along the north NM 333 right-of-way approximately 150 yards east of Tramway Boulevard. They are not currently protected federally or by the Stat of New Mexico. However, prairie dog burrows provide habitat for other animals, such as the protected western burrowing owl.

Birds observed within the project area were: American crow (Corvus brachyrhynchos), American robin (Turdus migratorius), sharp-shinned hawk (Accipiter striatus), canyon towhee (Pipilo fuscus), northern flicker (Colaptes auratus), American kestrel (Falco sparverius), Eurasian collared dove (Streptopelia decaocto), white-winged dove (Zenaida asiatica), mourning dove (Zenaida macroura), rock dove (Columba livia), black-chinned hummingbird (Archilochus alexandri), broad-tailed hummingbird (Selasphorus platycercus), Cassin's finch (Carpodacus cassinii), scrub jay (Aphelocoma californica), chipping sparrow (Spizella passerina), house sparrow (Passer domesticus), house finch (Carpodacus mexicanus), Say's phoebe (Sayornis saya), western kingbird (Tyrannus verticalis), barn swallow (Hirundo rustica) and Townsend's solitaire (Myadestes townsendii).

Reptiles observed were prairie lizard (Sceloporus undulatus), and eastern fence lizard (Sceloporus undulatus). No amphibians were observed.

Under the current proposed alternative, waterline installation activities would temporarily affect approximately 30 acres of habitat. It is expected to have little effect on wildlife with the implementation of avoidance measures. Marron recommends the following to reduce effects: 1) Replant disturbed areas with certified weed-free native vegetation; 2) Install and bury water lines concurrently to reduce trapping of small mammals and reptiles.

Protected and Monitored Species

No target species or their sign were observed during the biological survey of the project area. An evaluation of plants and wildlife with agency status by the U.S. Fish and Wildlife Service and the State of New Mexico in Bernalillo County indicate that 17 protected or monitored species could occur within or near to the project area. No suitable habitat for other species is present. Protected birds in Bernalillo County that may pass through or over the project area include bald eagle (Haliaeetus leucocephalus), Mexican spotted owl (Strix accidentalis lucida), Baird's sparrow (Ammodramus bairdii), northern goshawk (Accipiter gentilis), mountain plover (Charadrius montanus), white eared hummingbird (Hylocharis leucotis borealis), and black tern (Chlidonias niger). However, these species would be unlikely to remain within most of the project planning area as it does not provide suitable habitat for nesting.

TABLE 1 - Protected Species which could Occur within the Project Planning Area

Species	Federal Status	State Status	Present/Absent
Birds			
Western burrowing owl (Athene cunicularia hypugaea)	SOC, MBTA		Α
Peregrine falcon (Falco peregrinus anatum / tundris)	SOC	T	Α
Southwestern willow flycatcher (Empidonax traillii extimus)	E	E	А
Yellow-billed cuckoo (Coccyzus americanus)	С		Α
Gray vireo (Vireo vicinior)	MBTA	T	A
Bell's vireo (Vireo bellii arizonae)	MBTA	Т	Α
Mammals			
Spotted bat (Euderma maculatum)		T	
Black-footed ferret (Mustela nigripes)	E		Α
New Mexico meadow jumping mouse (Zapus hudsonius luteus)	С	Т	Α
Townsend's big-eared bat (Corynorhinus townsendii)	SOC		

A – absent, P – present, C – candidate, E – endangered, T – threatened, SOC – species of concern, MBTA – Migratory Bird Treaty Act

Birds

Peregrine falcon (Falco peregrinus anatum / Falco peregrinus tundrius) is a federal species of concern and is protected as a State of New Mexico threatened species. The peregrine falcon breeds south of the Arctic tundra region of North America, southward to Mexico. Peregrine falcons are found statewide in New Mexico and breed in mountainous areas. They are known to occur within the city of Albuquerque and the adjacent Sandia Mountains in areas which provide rocky steep cliffs, preferably near water, in habitats ranging from pinyon-juniper and ponderosa pine to mixed conifer forests. Potential suitable nesting habitat for this species occurs along the upper slopes of both the Sandia and Manzano mountains and the upper slopes of the Sandia Mountains north of Carnuel. No suitable nesting habitat was observed within the project planning area. Peregrine falcons could fly over the project planning area and hunt along Tijeras Creek, but proposed project activities are unlikely to affect this species.

Southwestern willow flycatcher (*Empidonax traillii extimus*) is protected as a federal and State of New Mexico endangered species. In New Mexico, the flycatcher is found in close association with dense groves of coyote willow, arrow weed, buttonbush, tamarisk, and Russian olive. Flycatchers nest in thickets of trees and shrubs approximately 6.5 - 23 feet in height or taller, with a densely vegetated understory from ground or water surface level to 13 feet or more in height. Portions of the riparian zone along Tijeras Creek provide migration habitat for southwestern willow flycatcher. However, proposed segments surveyed along the creek do not provide suitable habitat for this species. The project is unlikely to affect southwestern willow flycatcher.

Yellow-billed cuckoo (Coccyzus americanus), a federal candidate species, could occur within streamside habitats associated with Tijeras Creek. It occurs in lowland deciduous woodlands, willow and alder thickets, second growth woods, deserted farmlands, and orchards. Western yellow-billed cuckoos breed in large blocks of riparian habitat (particularly woodlands with cottonwoods and willows). Dense understory foliage appears to be an important factor in nest site selection, while cottonwood trees are an important foraging habitat (Federal Register, 2001). Potentially suitable habitat for this species occurs along Tijeras Creek adjacent to and within the project area. If construction is scheduled during the nesting season (March 15-August 30) surveys for this species should be completed.

Gray vireo (Vireo vicinior) is protected as a State of New Mexico threatened species and listed as a federal species of concern. It is a small, drab gray bird with a faint single wing bar and faint spectacles around the eyes. It is found through much of the western United States and northern Mexico. In New Mexico, this bird normally summers west of the eastern plains from the Santa Fe area southward to Mexico. It normally occurs in open woodland, scrubland, and dry chaparral. It found in arid lands, typically in pinyon-juniper habitat with steep slopes. The preferred breeding habitat of this species is open woodlands/shrublands with junipers as the dominant element in most areas of occurrence. In addition, oaks are part of the habitat in the southern part of the range. This vireo is an insectivore. In New Mexico, it is found during the months of April through September when insects are most abundant.

The lower Coniferous/Mixed Woodland and Juniper Savanna habitats south of Tijeras Creek provide suitable habitat for this species. Although potentially suitable habitat also occurs north of NM 333, the density of housing in these areas is likely to preclude the use of these areas by gray vireo. It is recommended that protocol surveys for this species be conducted prior to constructing within or adjacent to suitable habitat should it coincide with the migratory bird season (April 1 – September 15).

Bell's vireo (Vireo bellii) is protected as a State of New Mexico threatened species and as a migratory bird. It is rare in New Mexico and few populations summer along the lower Gila, lower and middle Rio Grande, lower Pecos valley, and occasionally in the lower San Francisco River Valley. Bell's vireo occurs in dense riparian shrublands and riparian woodlands near streams. Although this species is very rare in central New Mexico, it could occur in dense vegetation along Tijeras Creek. If construction along Tijeras Creek is scheduled during the breeding season (April 15-August 30) surveys for this species would be recommended.

Mammals

Black-footed ferret (*Mustela nigripes*) is protected as a federal endangered species, and could be found within or near the project planning area. However, due to the developing urban location of the project area and the relatively small numbers of prairie dogs present, this would not be likely.

Spotted bat (*Euderma maculatum*) is protected as a State of New Mexico threatened species. Townsend's big-eared bat (*Corynorhinus townsendii*) is a federal species of concern. Though bats could utilize bridge and culvert structures near to the proposed waterline installation routes, the project would not impact these structures under current design. These species could utilize the project area for forage or hunting activities, but would not remain there and would not be active during installation, which would occur during daylight hours.

New Mexico meadow jumping mouse (Zapus hudsonius luteus) is protected as a State of New Mexico threatened species and is listed as a federal candidate species. It occurs primarily in open, wet meadow areas and known to occur along the Rio Grande Valley in the vicinity of Isleta, Española, and south of Belen. No suitable habitat for this species was observed within the project area.

Migratory Birds

Western burrowing owl (Athene cunicularia hypugaea) is a federal species of concern and is protected under the Migratory Bird Treaty Act. This species is found throughout the mid and lower elevations of New Mexico. It usually inhabits bare ground ranging from desert to grassland-juniper habitat. It is common in the Albuquerque area and populations occur near the lower portions of Tijeras Arroyo near the Albuquerque airport. The project area supports burrowing rodents which provide nesting habitat for western burrowing owl. No owls were observed during the biological survey of the project area. However, they could occur there in the future.

In addition, trees and shrubs located within the project area, particularly those associated with Tijeras Creek and arroyos, as well as culverts and bridges provide nesting habitat for other migratory birds. One unoccupied nest was observed within the project area during surveys (location - Zone 13 E367973/N3881093 - NAD 83).

Occupied migratory bird nests cannot be removed or destroyed without a federal permit. The optimal time for removal of unoccupied nests occurs from September through mid-February. It is recommended that the ABCWUA either schedule project activities after August 30 and before March 15, or conduct a survey for owls and other protected migratory birds prior to constructing.

CONCLUSIONS

Under the current proposed alternative, the project would temporarily disturb approximately 30 acres of habitat with trenching and equipment use within the project planning area (see Photos A-C).

Marron recommends the following measures to reduce effects to natural resources:

- 1) Construct outside of the migratory bird nesting season (March 15 August 30), and grey vireo nesting season (April 1 September 15) or complete surveys prior to constructing
- 2) Avoid removing trees present within the project area
- 3) Replant disturbed soils with certified weed-free native vegetation
- 4) Install and bury pipe trenches concurrently to reduce trapping of small mammals and reptiles

- 5) Analyze impacts to US Forest Service Region Three resources if the proposed waterline route changes and crosses through lands managed by the Cibola National Forest
- 6) Re-evaluate potential impacts to natural resources if additional project segments are identified or if project segments are constructed more than two years after this evaluation

With the implementation of avoidance measures, the project is expected to have minimal effects to protected species and the natural environment.

Photos

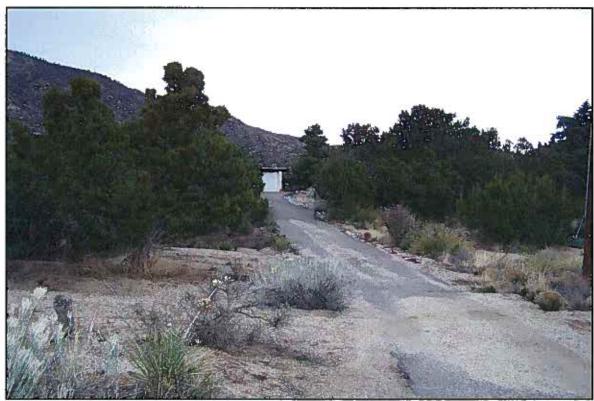


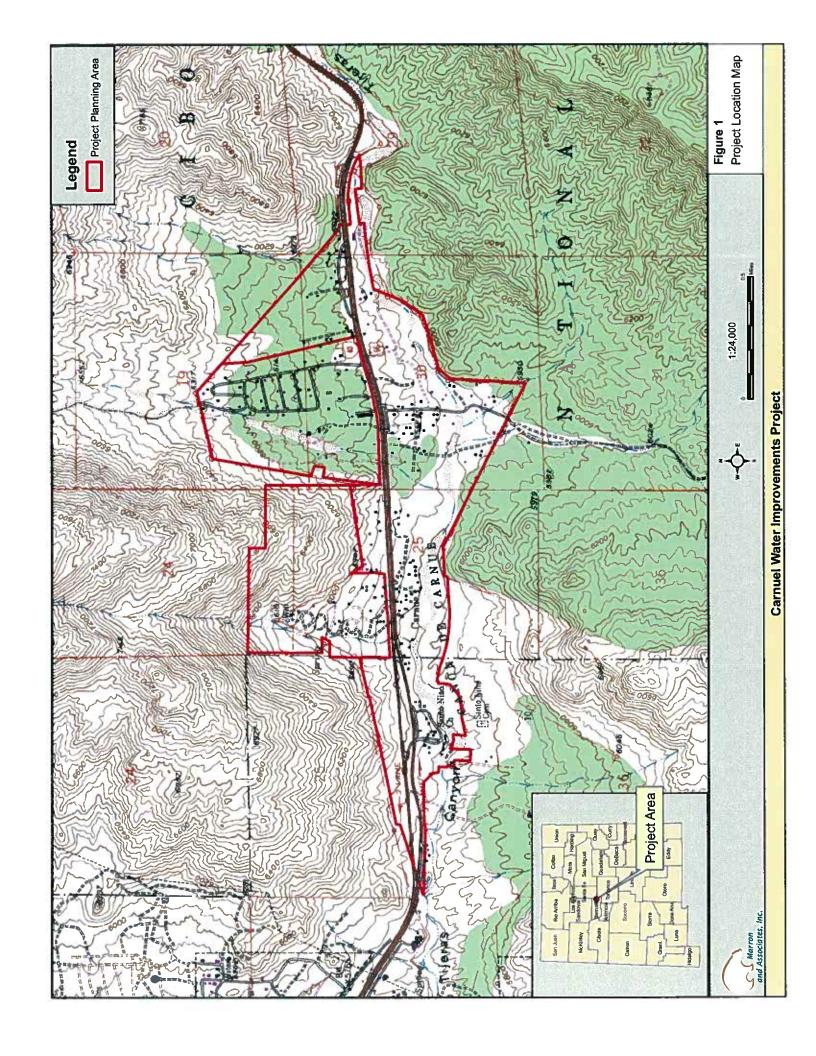
Photo A: Representative Coniferous Woodland habitat located at Monticello Road within the project planning area

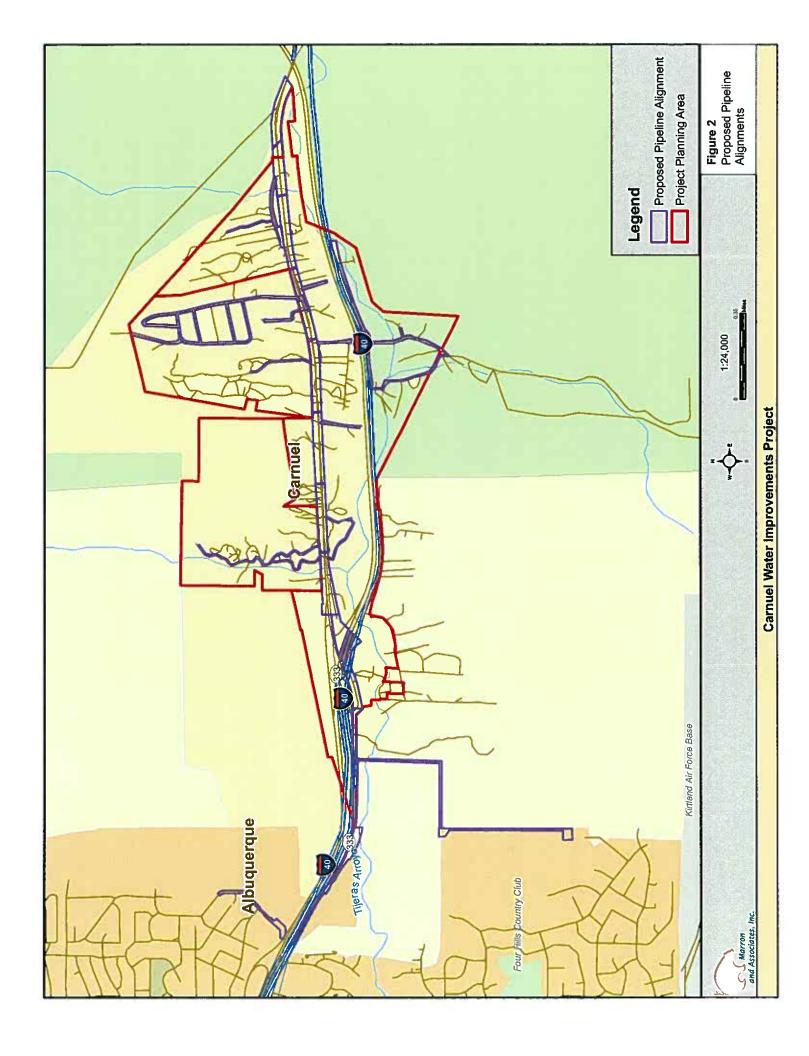


Photo B: Representative riparian habitat at Tijeras Creek within the project planning area



Photo C: Wetland which occurs within the project planning area





References

Bohannan Huston, Incorporated. 2009. Carnuel Mutual Domestic Water and Wastewater Consumers Association Water System Improvements Preliminary Engineering Report. Draft.

Dick-Peddie, W. A. (1993). New Mexico vegetation: past, present, and future. Albuquerque: University of New Mexico Press.

New Mexico Department of Game and Fish. 2009. Bison-M Database. Santa Fe, NM: NMDGF. Web site: www.cmiweb.org/states/.

New Mexico Native Plant Protection Advisory Committee. 2004. *New Mexico Rare Plants*. Website: http://nmrareplants.unm.edu.

U.S. Army Corps of Engineers. 1987. Corps of Engineers Wetlands Delineation Manual Technical Report Y-87-1. Vicksburg, MS: Department of the Army, USACE, Waterways Experiment Station.

US Fish and Wildlife Service. 1998. Threatened and Endangered Species of New Mexico 1998. Albuquerque, NM: USFWS, Ecological Services Field Office.

U.S. Fish and Wildlife Service. 2009. List of Federal Endangered, Threatened, Proposed, and Candidate Species and Species of Concern in New Mexico. Ecological Services Field Office. Albuquerque, New Mexico.

U.S. Department of Agriculture (USDA), Natural Resources Conservation Services (NRCS). New Mexico Department of Agriculture. Office of the Director/Secretary. 1998. <u>New Mexico noxious weed list</u> (20 October 2003).

USDA NRCS Web Soil Survey (2009), USDA NRCS: http://soildatamart.nrcs.usda.gov/.

Western Regional Climate Center. 2005. Western U.S. Historical Summaries (Individual Stations). Western Regional Climate Center, Reno, Nevada. Web site: www.wrcc.dri.edu/CLIMATEDATA.html.

(090027.01)



Listed and Sensitive Species in Bernalillo County

Total number of species: 16



Common Name	Scientific Name	Group	Status
Yellow-billed cuckoo	Coccyzus americanus	Bird	Candidate
New Mexican meadow jumping mouse	Zapus hudsonius luteus	Mammal	Candidate
Southwestern willow flycatcher	Empidonax traillii extimus	Bird	Endangered
Rio Grande silvery minnow Designated Critical Habitat	Hybognathus amarus	Fish	Endangered
Black-footed ferret ²	Mustela nigripes	Mammal	Endangered
Mexican spotted owl Designated Critical Habitat	Strix occidentalis lucida	Bird	Threatened

Species of Concern

Species of Concern are included for planning purposes only.

Common Name	Scientific Name	Group	Status
Millipede	Comanchelus chihuanus	Arthropod - Invertebrate	Species of Concern
American peregrine falcon	Falco peregrinus anatum	Bird	Species of Concern
Arctic peregrine falcon	Falco peregrinus tundrius	Bird	Species of Concern
Baird's sparrow	Ammodramus bairdii	Bird	Species of Concern
Black tern	Chlidonias niger	Bird	Species of Concern
Mountain plover	Charadrius montanus	Bird	Species of Concern
Northern goshawk	Accipiter gentilis	Bird	Species of Concern
Western burrowing owl	Athene cunicularia hypugaea	Bird	Species of Concern
Pecos River muskrat	Ondatra zibethicus ripensis	Mammal	Species of Concern

Townsend's big-eared bat

Endangered	Any species which is in danger of extinction throughout all or a significant portion of its range.	Threatened	Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
Candidate	Candidate Species (taxa for which the Service has sufficient information to propose that they be added to list of endangered and threatened species, but the listing action has been precluded by other higher priority listing activities).	Proposed	Any species of fish, wildlife or plant that is proposed in the Federal Register to be listed under section 4 of the Act. This could be either proposed for endangered or threatened status.
Species of Concern	Taxa for which further biological research a status OR are considered sensitive, rare, or Programs, State wildlife agencies, other Forestein Species of Concern are included	or declining on l ederal agencies	lists maintained by Natural Heritage s, or professional/academic scientific

Corynorhinus townsendii

Foot Notes:

Designated Critical Habitat.

P Proposed Critical Habitat.

Mammal

Species of Concern

Introduced population.

- 3 Extirpated in this county.
- Survey should be conducted if project involves impacts to prairie dog towns or complexes of 200-acres or more for the Gunnison's prairie dog (*Cynomys gunnisoni*) and/or 80-acres or more for any subspecies of Black-tailed prairie dog (*Cynomys ludovicianus*). A complex consists of two or more neighboring prairie dog towns within 4.3 miles (7 kilometers) of each other.

BISON-M Page 1 of 2





Providing New Mexico and its wildlife Year-round Excellent Service

Close_Window

Print Page

Disclaimer Policy

Database Query

Your search terms were as follows:

16 species returned.

Taxonomic Group# SpeciesTaxonomic Group# SpeciesFish1Mammals2Birds13

Export to Excel

Common Name 👙	Scientific Name 👶	Habitat Map ਹੁੰ	Species Photo (click photo to enlarge) 🚊	County 🚊	Status 🛱
Minnow, Silvery, Rio Grande	Hybognathus amarus	по тар	no photo	Bernalillo	State NM: Endangered
Black-Hawk, Common	Buteogallus anthracinus anthracinus (NM)	no māp	· Comment	Bernalillo	State NM: Threatened
Cormorant, Neotropic	Phalacrocorax brasilianus	no map	A	Bernalillo	State NM: Threatened
Eagle, Bald	Haliaeetus leucocephalus alascanus (NM)	no map		Bernalillo	State NM: Threatened
Falcon, Aplomado	Falco femoralis septentrionalis (NM)	no map		Bernalillo	State NM: Endangered
Falcon, Peregrine	Falco peregrinus anatum	по тар	A.	Bernalillo	State NM: Threatened
Falcon, Peregrine, Arctic	Falco peregrinus tundrius	no map	no photo	Bernalillo	State NM: Threatened
Flycatcher, Willow, SW.	Empidonax traillii extimus	no map		Bernalillo	State NM: Endangered

BISON-M Page 2 of 2

Hummingbird, Broad-billed	Cynanthus latirostris magicus (NM)	no map		Bernalillo	State NM: Threatened
Hummingbird, White-eared	Hylocharis leucotis borealis (NM)	по тар		Bernalillo	State NM: Threatened
Pelican, Brown	Pelecanus occidentalis carolinensis (NM)	no map		Bernalillo	State NM: Endangered
Sparrow, Baird's	Ammodramus bairdii	no map		Bernalillo	State NM: Threatened
Vireo, Bell's	Vireo bellii arizonae (NM,AZ);medius (NM)	no map		Bernalillo	State NM: Threatened
Vireo, Gray	Vireo vicinior	•		Bernalillo	State NM: Threatened
Bat, Spotted	Euderma maculatum	•	no photo	Bernalillo	State NM: Threatened
Mouse, Jumping, Meadow	Zapus hudsonius luteus (NM,AZ)	no map		Bernalillo	State NM: Endangered

Close Window