

# Final Fish and Wildlife Coordination Act Report

*for the*

*City of Hatch Flood Protection Project,  
Doña Ana County, New Mexico*



*Photo by Christina S. Linterman, USFWS*



**U.S. DEPARTMENT OF THE INTERIOR  
U.S. Fish and Wildlife Service**

**Prepared for the U.S. Army Corps of Engineers  
By the U.S. Fish and Wildlife Service  
New Mexico Ecological Services Field Office  
2105 Osuna Road NE  
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**February 2007**

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Submitted to:

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## **INTRODUCTION**

The Flood Control Act of 1948 (Public Law 80-858), Section 205, authorizes the Secretary of the Army, acting through the Chief of Engineers, to plan and construct small local flood protection projects which have not already been specifically authorized by Congress. In July 2006, the U.S. Army Corps of Engineers (USACE) requested the U.S. Fish and Wildlife Service (Service) prepare a Fish and Wildlife Coordination Act Report (CAR) for the proposed City of Hatch Flood Protection Project in Doña Ana County, New Mexico (Proposed Project). This CAR has been prepared under the authority of and in accordance with the requirements of Section 2(b) of the Fish and Wildlife Coordination Act (FWCA; 48 Stat. 401, as amended; 16 USC 661-667e). The FWCA provides for the consideration of fish and wildlife conservation measures identified in a CAR that can be incorporated into water resource development projects such as the Proposed Project. This report describes the fish and wildlife resources existing without the project, potential impacts to those fish and wildlife resources with the project, and recommendations (mitigation) to decrease adverse effects and maximize benefits to fish and wildlife resources.

## **DESCRIPTION OF THE STUDY AREA**

The Proposed Project is located in the northwest corner of Dona Ana County, New Mexico, approximately 35.0 miles [mi] (56.3 kilometers [km]) west of Las Cruces, New Mexico near the intersection of U.S. highway 85 and State highway 26 (Figure 1). The USACE project proposes the construction of an earthen flood control dam north of the Sierra de las Uvas Mountains, southwest of the Village of Hatch (Hatch). The dam would be located just south of the intersection of the Colorado Drain and the Rodey Lateral. The project site is within the 100-year floodplain of the Rio Grande, as is the entire Village of Hatch. During flooding events, water is conveyed through two sources from the southwest, through Hatch into the Rio Grande. One of these two sources of water flow is Spring Canyon, and the other is Placitas Arroyo. The downstream reach of Spring Canyon is located in the southeastern municipal limit of Hatch. For the purposes of this CAR, the Rodey Lateral ditch near the Proposed Project will be referred to as east-west in orientation with banks being on the north and south (Figure 2). The Study Area includes the Rodey Lateral ditch, including the riparian vegetation and local fish and wildlife, wherever the Proposed Project may affect these resources.

### *Climate and Hydrologic Setting*

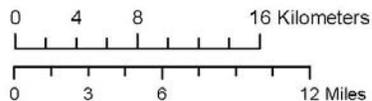
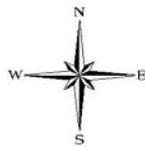
The Village of Hatch sits east of the Continental Divide within the subdivision of the Mexican Highland Section of the Basin and Range Physiological Province (USACE 2006). This area has gently sloping plains separated by rugged mountain ranges. There are north-south aligned mountain ranges on both the northern and southern ends of the Hatch area, with the Caballo Mountains being north of Hatch and the Sierra de las Uvas Mountains in the south. The Sierra de las Uvas mountains are composed of basalts and ash-flow tuffs. Materials shed from the mountains were carried downstream to be deposited as alluvial fan deposits. Spring Canyon rises in the Sierra de las Uvas Mountains and flows westward through Hatch toward the Rio Grande. Elevations range from almost 6000 feet [ft] (1829 meters [m]) in the Sierra de las Uvas

Mountains to 4030 ft (1228 m) at the confluence with the Rio Grande. Spring Canyon has a total drainage area of 7.2 square miles [ $\text{mi}^2$ ] (18.6 square kilometers [ $\text{km}^2$ ]). There is an existing upstream detention dam controlling 5.4  $\text{mi}^2$  (14.0  $\text{km}^2$ ) and detention storage areas at its downstream end.

The climate is semi-arid continental, with characteristically low annual precipitation, low humidity, high evaporation, wide temperature variations, and an abundance of clear, sunny days (USDA 2006). Much of the moisture in the eastward circulation from the Pacific Ocean is removed as the air passes over the mountains west of New Mexico (USACE 2006). In the summer, moisture-laden air from the Gulf of New Mexico enters southern New Mexico. Subsequent surface heating and the upslope of the air causes brief and often heavy showers. Precipitation in Hatch averages approximately 9.77 inches [in] (24.82 centimeters [cm]) per year. Precipitation averages range from a low of 0.25 in (.64 cm) in March to a high of 2.08 in (5.28 cm) in August (WRCC 2006). Local, high-intensity thunderstorms of short duration are responsible for most of the rainfall in the area, and contribute to the local flooding problems. Average maximum daily temperatures at Hatch reach an annual low in January of 58.9 degrees Fahrenheit [F] (14.9 degrees Celsius [C]) and an annual high of 95.2 F (35.1 C) in July (WRCC 2006). The average frost-free season is about 200 days.

# Legend

- NM Cities
- NM Rivers
- NM Highways
- NM Counties



The geographical data and files used to create this map are not the definitive source for determining area boundaries. The U.S. Fish & Wildlife Service gives no warranty, expressed or implied, as to the accuracy, reliability, or completeness of these data.

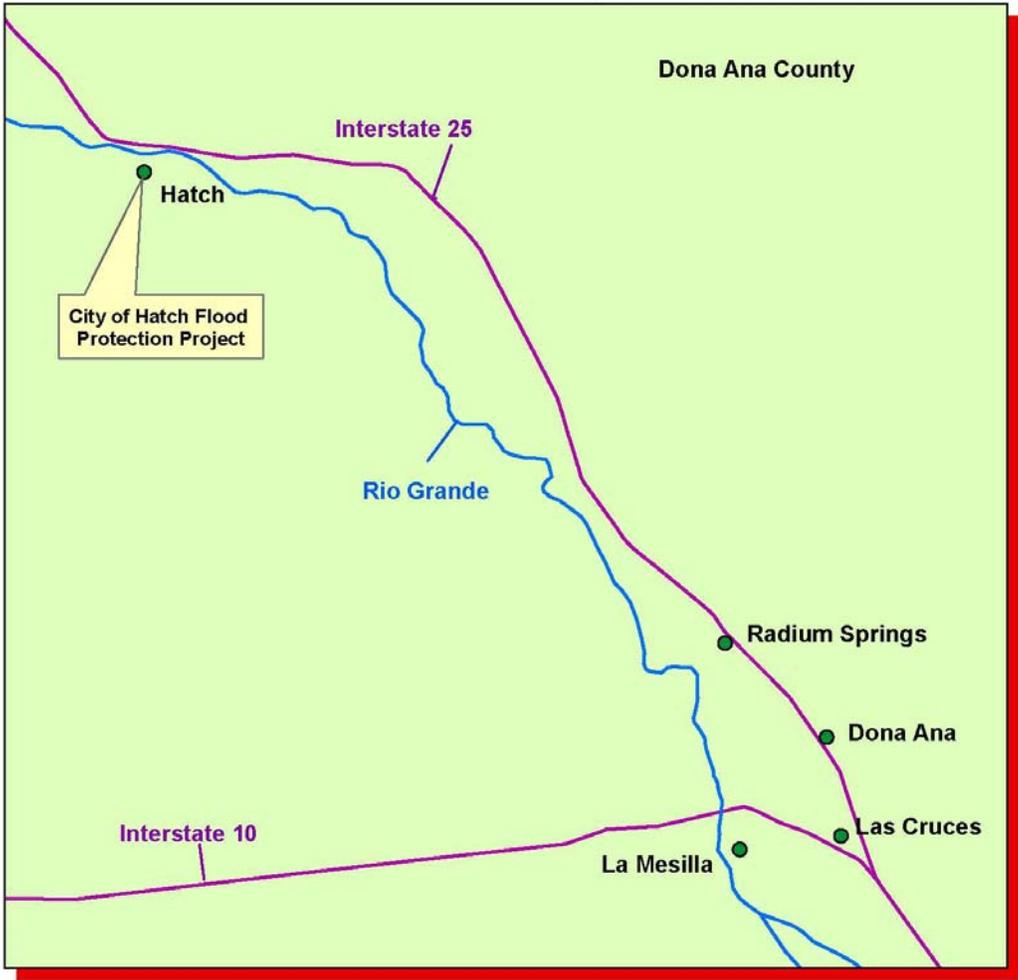
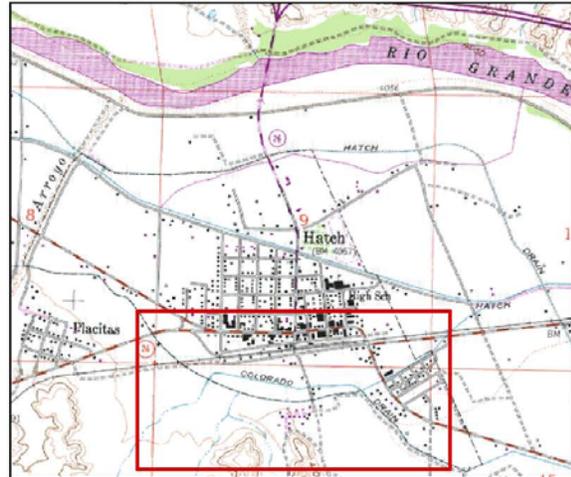
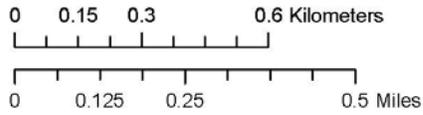


Figure 1. Location of the City of Hatch Flood Protection Project in New Mexico



This map is a graphical representation provided for illustrative purposes only. The geographical data used to create this map are not the definitive source for determining area boundaries. The US Fish & Wildlife Service gives no warranty, expressed or implied, as to the accuracy, reliability, or completeness of these data.



Locator Map (not to scale)

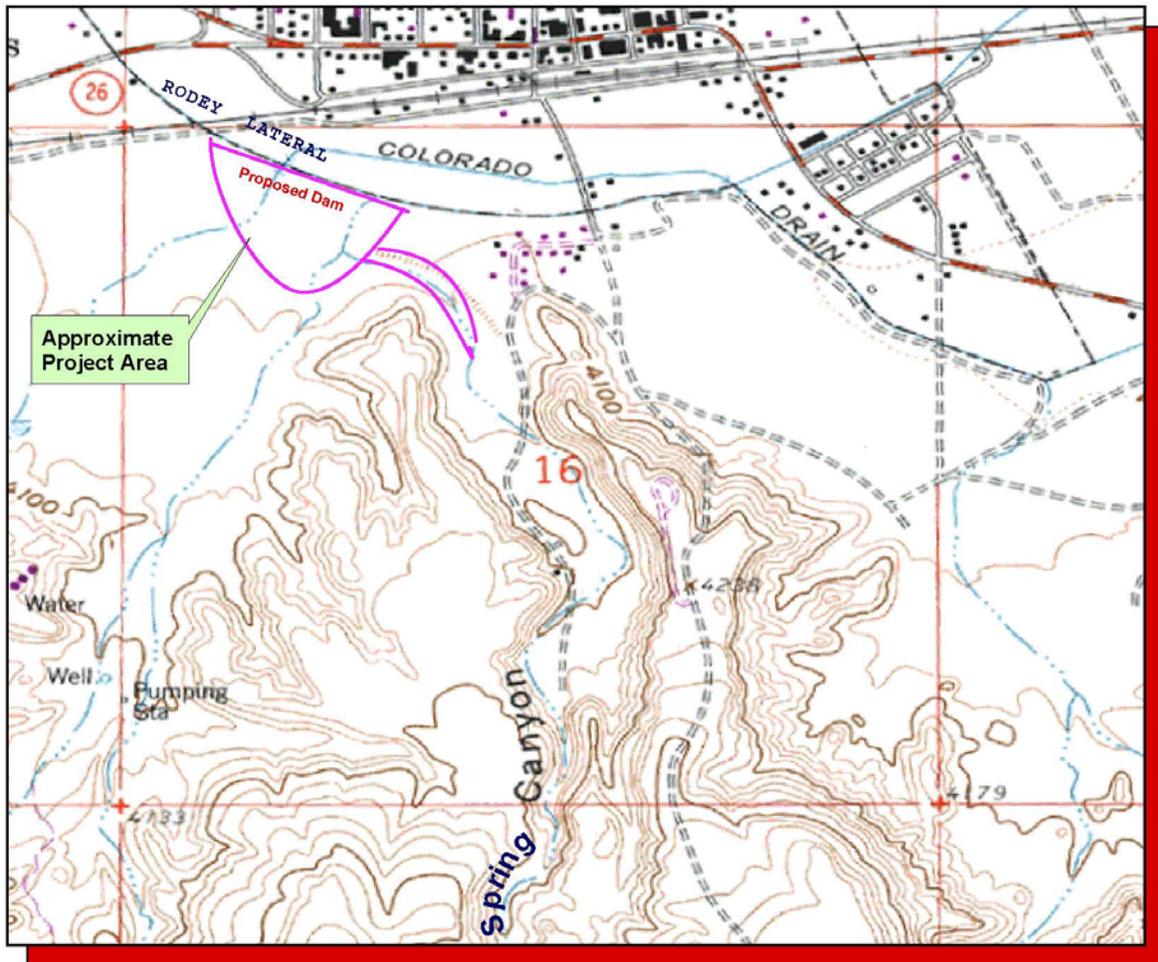


Figure 2. Location of the City of Hatch Flood Protection Project Area

## PROJECT DESCRIPTION

The USACE (2006) proposes to construct an earthen dam that will retain a storage capacity of 181 acre-feet (AF). The flood hazard in this area is extensive as the entire Village of Hatch is in the 100-year floodplain. According to USACE (2006), significant flooding occurred in 1988 and 1992 with up to three feet of water in the streets that damaged numerous homes and businesses. Combined flows exceed 2,300 cfs for the 10% annual chance event and 7,000 cfs for the 1% annual chance event. There is no single defined drainage path or river within Hatch, but there are numerous parallel flow paths that travel through the town in a northwest to southeast direction. Since the early 1950's, underground storm drainage systems have been installed in Hatch, but due to the high cost of the systems, they were only designed to handle a five-year design storm and would be of little use in a major flood event (USACE 2006).

An existing dam structure, the Spring Canyon Dam, was constructed in 1939 and was created for flood control and sediment retention (USACE 2006). Spring Canyon Dam has an existing storage capacity of 450 AF at spillway crest. It currently controls 5.4 mi<sup>2</sup> (14.0 km<sup>2</sup>) of the 7.2 mi<sup>2</sup> (18.6 km<sup>2</sup>) watershed leaving 1.8 mi<sup>2</sup> (4.7 km<sup>2</sup>) uncontrolled (USACE 2006). The uncontrolled flows enter a training dike at the mouth of Spring Canyon, where the flow is diverted into a low area behind an embankment of the Rodey Lateral, which acts as a de facto detention basin. A culvert conveys water under the Rodey Lateral into the head of the Colorado Drain, which is intended to provide ground water relief and to convey excess irrigation water to the Rio Grande. The Colorado Drain runs 3.7 mi (6.0 km) to the south where it empties into the river.

The primary objective of the Proposed Project is to provide greater levels of flood protection to flood plain communities and wildlife habitat from flood flows captured in Spring Canyon in Hatch (USACE 2006). A secondary benefit of the Proposed Project would be to provide opportunities for fish and wildlife habitat enhancement measures.

### *The Proposed Action and Alternatives*

The USACE (2006) has proposed one action alternative and a no action alternative. The no action alternative would consist of no improvements to the existing flood control facilities. The existing dam structure at Spring Canyon, flow paths through Hatch, and the Colorado Drain ditch would continue to function and be maintained as they have in the recent past. The action alternative (proposed action) would not affect the existing Spring Canyon dam.

The proposed action would involve construction of a new dam that will provide 100-year level flood protection to Hatch (USACE 2006). The storage capacity of this new dam would be 181 AF which consists of 30 AF of a sediment pool and 151 AF of water behind the new dam. The length of the new dam will be approximately 4000 ft (1219 m) in length and will have a trapezoidal channel that is approximately 1240 ft (378 m) in length that will collect flood waters from Spring Canyon and divert it behind the new dam. At its highest

point, the dam height is estimated at 20 ft (6 m). The earthen material for the construction of the new dam will come from borrow material within the reservoir area and will be trucked in as necessary. Two relocations will be performed prior to any borrow excavation. The borrow area consists of: 1) a large leach field and 2) an existing waterline that are both located within the reservoir area. In addition, an existing spoil levee, 1000 ft (305 m) in length, will be removed prior to excavation of a new trapezoidal channel. A spillway 200 ft (61 m) in length will be centered at station 30+00 along the axis of the new dam and will be constructed of riprap and concrete. An outlet works conduit that is approximately 250 ft (76 m) in length will be constructed near station 27+40 that will convey flow into the Colorado Drain. A drainage channel will be constructed over to the outlet works conduit in order to eliminate standing water outside the proposed dam area. Access roads will be built on both sides of the new dam. When the new facility is constructed, new fencing will be placed to enclose the reservoir and access points to the top of the dam.

Alternatives considered and eliminated from further study include flood-proofing, flood-zoning, channelization, and other possible locations for the dam (USACE 2006). Several different heights and configurations of the proposed dam were optimized. Alternatives were considered by USACE in 1990 included levee construction on the bank of Placitas Arroyo, detention structures on arroyos south of Hatch, and a diversion channel to collect and transport water from Spring Canyon to the Rio Grande (USFWS 1991). The alternatives considered in 1990 were found to be infeasible by USACE and were dropped from further analysis at the time.

## **EVALUATION METHODOLOGY**

Field reconnaissance of the study area was initially conducted in May and July of 1990 and feasibility investigation for the project and its alternatives were studied by USACE. The project was found to be infeasible by USACE in late 1990 and dropped from further planning at the time. On July 10, 2006, the USACE, working under a nationwide Memorandum of Agreement with the Service for Fish and Wildlife Coordination Act (FWCA) activities, sent a Scope-of-Work to the Service's New Mexico Ecological Services Field Office. The Scope-of-Work requested that the Service review the Proposed Project and prepare a draft and final Fish and Wildlife Coordination Act Report (CAR) that discussed existing fish and wildlife conditions; any institutionally designated fish and wildlife areas or resources under State, local, or Federal purview; problems, needs, and opportunities relating to fish and wildlife resources; and potential major biological effects of alternative plans. Email and telephone coordination between the USACE and the Service began on August 18, 2006. The USACE provided a preliminary Draft Feasibility Study/Environmental Assessment (FS/EA) for the Hatch Proposed Project on October 3, 2006. Service staff conducted a site visit of the Proposed Project on October 13, 2006. The Draft FS/EA (USACE 2006) was reviewed and selected text was used extensively throughout this CAR. Conversations with representatives from the New Mexico Department of Game and Fish (NMDGF), the USACE, and other area scientists were conducted in October and November 2006 to discuss this report and potential options for wildlife and wetland conservation and habitat mitigation.

## FISH AND WILDLIFE RESOURCES WITHOUT THE PROJECT

### *Aquatic, Riparian and Wetland Resources (this section should be restructured)*

Flood flows in excess of the capacity of the current diversion dike, the de facto detention basin, or the Colorado Drain flow directly into Hatch and adjacent agricultural lands. Canal embankments and raised roadways prevent the spread of flood waters so that the floods pond in Hatch until they gradually drain away. A storm with 3.25 in (8.26 cm) of rainfall, or more, in 24 hours, is estimated to occur once every 100 years on average (USACE 2006). This means it has a 1% chance of being equaled, or exceeded, each year. Table 1. shows the current and future-without project instantaneous peak discharges for selected locations (USACE 2006).

**Table 1. Without Project Peak Discharges.**

**Values are in cfs, present conditions/future-without-project-conditions.**

Location	Drainage Area (mi <sup>2</sup> ) [km <sup>2</sup> ]	10-year Flood (cfs)	50-year Flood (cfs)	100-year Flood (cfs)	500-year Flood (cfs)
Inflow to Spring Canyon Dam	5.4 [14.0]	1200	2000	2500	3500
Outflow from Spring Canyon Dam	5.4 [14.0]	190	200	210	400
Spring Canyon at Rodey Lateral	7.18 [18.6]	800	1300	1600	2200

The USACE (2006) reported that there are no perennial surface water bodies, springs, seeps, or jurisdictional wetlands within the project area. But, within the Study Area lies the Rodey Lateral ditch which has a band of riparian habitat on the south side embankment that leads into the de facto detention basin where the Proposed Project is located. Riparian ecosystems include the ribbon-like (band) mesic vegetative communities occurring between aquatic and more xeric upland sites (Knopf et al. 1988). Willson and Carothers (1972) referred to riparian vegetation as the “aorta of an ecosystem” because of its significance to the perpetuation of water, fish, wildlife, and rangeland and forest resources. It is unlikely that the Rodey Lateral supports many fully aquatic species (i.e. fish) as it is an irrigation ditch with water levels that are highly variable. The riparian band of vegetation that runs along a section of the Rodey Lateral however, may support wildlife dependent on that type of habitat. Johnson et al. (1977) reported that over 50% of all breeding bird species are completely dependent upon riparian vegetation in the southwest.

There is about 1.0 acre [ac] (.4 hectares [ha]) of riparian habitat in the Study Area, along the south side bank of the Rodey Lateral. The habitat along Rodey Lateral was characterized by the USACE (2006) as containing stands of wolfberry, Siberian elm, salt cedar, three leaf sumac, and white mulberry. (See Appendix A for a list of the common and scientific names of local plant species).

#### *Terrestrial and Wildlife Resources*

The project area is situated in the Chihuahuan Desert Scrub vegetation community as described by Brown (1982) and Dick-Peddie (1993). Vegetation is scattered throughout the project area; however due to poorly developed soils in the upland areas, the majority of vegetation consists of annual weeds (USACE 2006). Wildlife in the area is typical for New Mexico and the Chihuahuan Desert Scrub community (See Appendices A-D). Several species utilize the area.

The Proposed Project site occurs within Paleargids-Torripsamments-Paleorthids soil association (USDA 2006), 35%, 20%, 15%, respectively (USACE 2006). Soils of this association occupy nearly level to gently sloping or undulating sandy plains and alluvial fans in Doña Ana and Otero counties. Sand dunes and hummocks are prominent features of the landscape, and frequent sandstorms indicate the instability of the surface materials. Strongly calcareous layers are found in the lower part of the profiles. USACE (2006) has identified plant species occurring within the project area. Within the proposed dam area the following plants have been identified: baccharis, common fleabane, creosote bush, four-wing saltbush, honey mesquite, prostrate vervain, salt cedar, Siberian elm, skeleton plant, tansy mustand, wolfberry, and yellow aster. Vegetation within Spring Canyon has been identified as consisting of creosote bush, desert marigold, four-wing saltbush, honey mesquite, and spectacle pod. A list of common and scientific names of plant species discussed in this report is provided in Appendix A.

The USACE (2006) conducted a biological field survey of the project area on January 18, 2006 and the Service conducted a field survey on October 13, 2006. During the USACE field survey the following avian species were observed: ash-throated flycatcher, barn

swallow, black-chinned hummingbird, black phoebe, house finch, and mourning dove. Desert cottontail rabbits were also observed by USACE during the field survey. The Chihuahuan Desert Scrub community only has two avian species that are primarily restricted to this type of habitat: scaled quail and white-necked raven (Chihuahuan raven) (Brown 1982). Other avian species that frequent this type of habitat include: black-throated sparrow, cactus wren, curve-billed thrasher, lesser nighthawk, mourning dove, greater roadrunner, and Scott's oriole (Brown 1982). Many avian species use southwestern riparian areas, either all year long, in the winter only, or as a stop during migration (Rappole 2000). A list of common and scientific names of avian species found in the area is provided in Appendix B.

Representative mammal species found in the Chihuahuan Desert Scrub community near Hatch include: fringed myotis, Mexican free-tailed bat, pallid bat, spotted bat, Townsend's big-eared bat, yuma myotis, banner-tailed kangaroo rat, black-tailed jack rabbit, Botta's pocket gopher, cactus mouse, coyote, desert cottontail, desert mule deer, desert pocket gopher, desert pocket mouse, desert shrew, hog-nosed skunk, kit fox, long-tailed weasel, Merriam's kangaroo rat, northern grasshopper mouse, Ord's kangaroo rat, raccoon, rock pocket mouse, silky pocket mouse, southern grasshopper mouse, spotted ground squirrel, striped skunk, Texas antelope squirrel, western spotted skunk, white-footed mouse, and white-throated woodrat. A list of common and scientific names of mammals discussed in this report is provided in Appendix C.

Representative amphibians and reptiles found in the Chihuahuan Desert Scrub community and riparian areas near Hatch include: big bend patch nose snake, black-neck garter snake, black-tailed rattlesnake, bull frog, bull snake, canyon treefrog, checkered garter snake, checkered whiptail, Chihuahuan spotted whiptail, coachwhip, collared lizard, common garter snake, common king snake, corn snake, Couch's spadefoot, desert grassland whiptail, desert spiny lizard, glossy snake, great plains skink, great plains toad, greater earless lizard, green toad, ground snake, leopard lizard, lesser earless lizard, lined snake, little striped whiptail, long nose snake, Lyre snake, Madrean alligator lizard, massasauga, milk snake, New Mexico spadefoot, New Mexico whiptail, night snake, northern leopard frog, ornate box turtle, painted turtle, plain's spadefoot, plains black-headed snake, plains leopard frog, prairie lizard, red spotted toad, ringneck snake, rock rattlesnake, roundtail horned lizard, side-blotched lizard, spiny softshell, striped whip snake, Texas blind snake, Texas horned lizard, trans-Pecos rat snake, tree lizard, western blind snake, western diamondback, western hognose snake, western hooknose snake, western rattlesnake, western whiptail, Woodhouse's toad, and yellow mud turtle. A list of common and scientific names of amphibians and reptiles found in the area is provided in Appendix D.

### *Threatened and Endangered Species*

The quality and quantity of the fish and wildlife habitat within the Hatch area has decreased over time from habitat alteration and urban development. When flows occur, large amounts of sediment are moved down Spring Canyon, and continued soil erosion contributes to degradation of surface water quality (USACE 2006). The urban development in the upstream areas continues to increase the stream flows in the existing narrow channels and enhances the likelihood of future flooding (USACE 2006). Seven species native to Doña Ana County have been listed as Federally endangered or threatened under the Endangered Species Act (ESA). One species is listed as a candidate for Federally listing as endangered or threatened under the ESA, and several species are listed as “Species of Concern” that occur in Doña Ana County (USFWS 2006). None of the seven Federally endangered or threatened species are expected to occur in the project area. These listed species are: bald eagle, least tern, Mexican spotted owl, northern aplomado falcon, Rio Grande silvery minnow, Sneed pincushion cactus, and southwestern willow flycatcher.

#### Bald Eagle (*Haliaeetus leucocephalus*)

The project area is within the known and historic range of the bald eagle. The Service reclassified the bald eagle from endangered to threatened on July 12, 1995 (60 FR: 36000-36010). Adults of this species are easily recognized by their white heads and dark bodies. Wintering bald eagles frequent all major river systems in New Mexico from November through March. Bald eagles prefer to roost and perch in large trees near water. Bald eagle prey includes fish, waterfowl, and small mammals. No suitable habitat exists within or near the project area, therefore the Proposed Project will not affect bald eagles or their habitat (USACE 2006).

#### Least Tern (*Sterna antillarum*)

The project area is within the known and historic range of the least tern. The Service listed the least tern as endangered May 28, 1985 (50 FR: 21784-21792). Suitable habitat for this species consists of bare or sparsely vegetated sand, shell, and gravel beaches, sandbars, islands, and salt flats associated with rivers and reservoirs. No suitable habitat exists within or near the project area, therefore the Proposed Project will not affect the least tern or their habitat (USACE 2006).

#### Mexican Spotted Owl (*Strix occidentalis lucida*)

The project area is within the known and historic range of the Mexican spotted owl. The Service listed the Mexican spotted owl (MSO) as threatened on March 16, 1993 (58 FR: 14248-14271). Suitable habitat consists of caves, cliff ledges, witches’ broom, and stick nests of other species in mature and old growth forests associated with steep canyons. Suitable habitat sometimes consists of mixed conifers or pinon-juniper, pine-oak, and ponderosa pine. Designated critical habitat does not exist within or near the Proposed Project area. The USACE (2006) determined that there was no suitable habitat for the MSO in the project area, therefore the Proposed Project will not affect the MSO or its habitat.

#### Northern Aplomado Falcon (*Falco femoralis septentrionalis*)

The project area is within the known and historic range of the northern Aplomado falcon (falcon). The Service listed the northern falcon as endangered on February 25, 1986 (51 FR: 6686-6690). Suitable habitat for the falcon consists of grassy plains interspersed with mesquite, cactus, and yucca, preferably with scattered trees, low ground cover, and a good supply of nesting platforms. The USACE (2006) determined that there was no suitable habitat for the falcon in the project action area, therefore the Proposed Project will not affect the falcon or its habitat.

Rio Grande Silvery Minnow (*Hybognathus amarus*)

The project area is within the known and historic range of the Rio Grande silvery minnow (RGSM). The Service listed the RGSM as endangered July 20, 1994 (59 FR 36988-36995). Designated critical habitat does not exist within or near the project area. There is no suitable aquatic habitat within or near the project area, therefore the Proposed Project will not affect RGSM or their habitat.

Sneed Pincushion Cactus (*Coryphantha sneedii* var. *sneedii*)

The project area is within the known and historic range of the Sneed pincushion cactus. The Service listed the Sneed pincushion cactus (cactus) as endangered on November 7, 1979 (44 FR: 64741-64743). It lives in grasslands or lechuguilla-sotol shrublands on limestone outcrops and rocky slopes of mountains within the Chihuahuan Desert. This cactus blooms from April through September, producing fruit that ripens from June through November. However, the Proposed Project would not affect habitat at the locations where the cactus are known.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

The project area is within the known and historic range of the southwestern willow flycatcher. The Service listed the southwestern willow flycatcher (SWWF) as endangered on February 27, 1995 (60 FR: 10694-10715). The flycatcher is a riparian obligate bird and it nests in riparian thickets associated with streams and other wetlands where dense growths of willow, cottonwood, buttonbush, box elder, Russian olive, salt cedar and other plants grow. Available habitat and overall numbers have declined statewide in conjunction with modification of wetlands and riparian habitat (62 FR: 39129-39147). Flycatchers begin arriving in New Mexico in late April and May to nest, and the young fledge in early summer. Flycatchers nest in thickets of trees and shrubs approximately 6.5 - 23 ft (1.9 – 7.0 m) in height or taller, with a densely vegetated understory from ground or water surface level to 13 ft (4.0 m) or more in height. Surface water or saturated soil is usually present beneath or next to occupied thickets (Phillips et al. 1964, Muiznieks et al. 1994). Designated critical habitat does not exist within or near the project area. Although some of the above vegetation exists within the project area, it is not dense in growth, and therefore the USACE (2006) determined that there was no suitable habitat for the flycatcher in the project action area.

## **FISH AND WILDLIFE RESOURCES WITH THE PROJECT**

### *Impacts to Flood Plains and Wetland Habitat*

No additional development of the flood plain would result from the proposed action and there are no wetlands in the area of the Proposed Project.

### *Impacts to Riparian Habitat*

Riparian areas are among the most threatened environments in New Mexico (U.S. Environmental Protection Agency 1991) and the piecemeal losses of riparian habitats have an adverse cumulative impact on wildlife utilizing these areas. According to the USACE (2006), the proposed action will not impact the riparian vegetation that is located along the Rodey Lateral near the project area. The larger trees and shrubs in the riparian area may be adversely affected by soil compaction from equipment operation.

### *Impacts to Terrestrial Habitat and Wildlife*

Construction of the dam, inlet channels, and access roads for the proposed action would result in minor impacts to terrestrial vegetation. Staging of equipment and use of borrow material would result in temporary impacts to 5.0 ac (2.0 ha) of terrestrial habitat (USACE 2006). Permanent disturbance from the proposed action would result in 2.5 ac (1.0 ha) of impacts to this terrestrial habitat. The USACE (2006) has indicated that following the proposed construction, the excavated surfaces behind the dam would be seeded with certified weed-free native vegetation to provide wildlife habitat and to reduce wind erosion.

Short-term impacts to wildlife may occur from noise, dust, and the presence of workers and machinery during project construction. Equipment with water sprinklers would be used during construction to minimize dust (USACE 2006). Long-term adverse impacts may occur from the loss of terrestrial vegetation from construction of permanent structures, soil erosion, new access roads, staging areas, and compaction of soils. The USACE (2006) proposes to mitigate for the loss of these areas.

### *Impacts to Threatened and Endangered Species*

The USACE (2006) determined that the Proposed Project will have no effect on Federally or State listed as endangered or threatened species.

## **DISCUSSION**

Construction projects that result in adverse impacts to fish and wildlife resources require the development of mitigation plans. These plans should consider the value of fish and wildlife habitat affected. The Service has an established mitigation policy used as guidance in recommending mitigation (USFWS 1981). This policy states that the degree of mitigation should correspond to the value and scarcity of the fish and wildlife habitat at risk. Four resource categories in decreasing order of importance are identified.

Resource Category No. 1 Habitats of high value for the species being evaluated that are unique and irreplaceable on a national basis or in the ecoregion. No loss of existing habitat value should occur.

Resource Category No. 2 Habitats of high value that are relatively scarce or becoming scarce on a national basis or in an Ecoregion. No net loss of in-kind habitat value should occur.

Resource Category No. 3 Habitats of high to medium value that are relatively abundant on a national basis. No net loss of habitat value should occur and loss of in-kind habitat should be minimized.

Resource Category No. 4 Habitats of medium to low value. Loss of habitat value should be minimized.

The proposed alternative would result in a direct loss of terrestrial vegetation (2.5 ac [1.0 ha]) that provides life stage support for amphibians, reptiles, mammals and migratory birds. The riparian habitat found in the Hatch project area provides food, habitat and ecological services (e.g. water quality purification, nutrient and chemical transformation, cover) for macroinvertebrates, algae, aquatic plants, amphibians, reptiles, mammals, and migratory birds. Due to the decreasing amount of riparian habitat and the terrestrial habitat located next to it, the loss of these resources will require mitigation as it is classified as a Resource Category No. 2. While most naturally occurring riparian habitats in the southwest are often considered Resource Category No. 1, the riparian habitat quality of the Hatch project likely provides fewer services and benefits given its small size and its function as a constructed ditch and embankment. There is also some loss of aquatic resources to agricultural fields during irrigation. Therefore, while this riparian and terrestrial habitat is of high value, in its current condition and operation it is considered as a Resource Category No. 2.

The proposed action would construct a new dam and outlet works conduit to more efficiently direct flood flows and reduce flooding and damage within Hatch, however maintenance to the dam and outlet will continue to some extent into the foreseeable future. Long-term impacts should be avoided by limiting all permanent project features to the minimum area required, using existing access routes when possible, and selecting less sensitive or previously disturbed areas for any new facilities. Loss of, or disturbance to, riparian habitat should be kept to a minimum.

The following mitigation will be necessary for the loss of 2.5 ac (1.0 ha) of terrestrial habitat that is adjacent to riparian habitat. Dense planting of coyote willow or New Mexico olive whips or poles, and cottonwood poles should be established where adequate amounts of water would be available to ensure successful mitigation. Mitigation should cover the direct removal of vegetation during the construction phase of the project, as well as induced mortality that may occur in future years due to any construction or maintenance impacts. The Service recommends replacing all mature standing trees or shrubs

at a 1:1 ratio. The Service recommends planting native shrubs to create habitat for wildlife (at least 2.5 ac [1.0 ha]) in the area to mitigate for the lost habitat near the riparian area. We also recommend removal of nonnative riparian species (Russian olive, salt cedar) within or close to the riparian area or watershed and to provide mitigation trees as part of any replanting efforts within five years, so as to create more suitable habitat for the native wildlife. These plantings and removal would comply with the Service mitigation policy of Resource Category No. 2 (i.e., no net loss of in-kind habitat value should occur). The USACE shall coordinate these mitigation activities with other agencies.

## **RECOMMENDATIONS**

To prevent and reduce project impacts to fish and wildlife resources, the Service recommends the following measures:

1. If impacts are unavoidable, mitigate the loss of terrestrial and riparian habitats and monitor the project and mitigation area to evaluate growth and success of revegetated areas for a minimum of 3 years. Implement corrective actions, as necessary.
2. Work with others in the Hatch area to maximize the value of the mitigation and help restore local wetlands, riparian vegetation, terrestrial and aquatic habitat.
3. Ensure that the best management practices identified in the Draft FS/EA are implemented.
4. Scarify compacted soils or replace topsoils and re-vegetate all disturbed sites with a suitable mixture of native plants.

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For use in Appendix A-D:

<sup>a</sup> **Endangered Species Act (ESA) status** (U.S. Fish and Wildlife Service):

Federally Threatened and Endangered species are protected by the ESA.

**E**= Endangered: any species that is in danger of extinction throughout all or a significant portion of its range.

**T**= Threatened: any species that is likely to become and endangered species within the foreseeable future throughout all or a significant portion of its range.

**C**= Candidate: taxa for which the Service has on file sufficient information on biological vulnerability and threat(s) to support proposals to list them as endangered or threatened species.

**SC**= Species of Concern: taxa for which information now in the possession of the Service indicates that proposing to list as endangered or threatened is possibly appropriate, but for which sufficient data on biological vulnerability and threat are not currently available to support proposed rules.

**CH**= Critical Habitat: Critical Habitat, as Federally designated by the Service.

**P**= Proposed for listing in the identified category listed above.

<sup>b</sup> **State of New Mexico status** (New Mexico Department of Game and Fish or New Mexico Rare Plant Technical Council):

**E**= Endangered animal species whose prospects of survival or recruitment within the state are in jeopardy.

**T**= Threatened animal species whose prospects of survival or recruitment within the state are likely to become jeopardized in the foreseeable future.

**ST**= Sensitive taxa

**R**= Rare

Appendix A. Common and scientific name of plant species potentially occurring within the project area, Dona Aña County, New Mexico (Dick-Peddie 1993).

Common Name	Scientific Name	Federal Status <sup>a</sup>	State of New Mexico Status <sup>b</sup>
<b>Plants</b>			
grayish-white giant hyssop	<i>Agastache cana</i>	---	R
Castetter's milkvetch	<i>Astragalus castetteri</i>	---	R
Sandberg pincushion cactus	<i>Escobaria sandbergii</i>	---	R
Sneed pincushion cactus	<i>Escobaria sneedii</i> var. <i>sneedii</i>	E	R
Vasey's bitterweed	<i>Hymenoxys vaseyi</i>	---	R
Alamo beardtongue	<i>Penstemon alamosensis</i>	SC	R
nodding rock-daisy	<i>Perityle cernua</i>	SC	R
New Mexico rock daisy	<i>Perityle staurophylla</i> var. <i>staurophylla</i>	---	R
Mescalero milkwort	<i>Polygala rimulicola</i> var. <i>mescalorum</i>	SC	R
supreme sage	<i>Salvia summa</i>	---	R
Plank's campion	<i>Silene plankii</i>	---	R

whitethorn -----	<i>Acacia constricta</i>		
lechugilla	<i>Acacia neovernicosa</i>		
spicebush	<i>Agave lechuguilla</i>		
coldenia	<i>Aloysia wrightii</i>		
squawbush	<i>Coldenia</i> spp.		
pincushion cactus	<i>Condalia spathulata</i>		
purple ballcactus	<i>Coryphantha micormeris</i>		
	<i>Coryphanthan vivipara</i> var. <i>aggregata</i>		
feather peabush	<i>Dalea formosa</i>		
smoothleaf stool	<i>Dasyilirion leiophylla</i>		
wheeler stool	<i>Dasyilirion wheeleri</i>		
hedgheg cactus	<i>Echinocactus horizionthalonius</i>		
-----	<i>Echinocereus chloranthus</i>		
-----	<i>Echinocereus pectinatus</i>		
longleaf jointfir	<i>Ephedra trifurca</i>		
-----	<i>Epithelantha micromeris</i>		
barrel cactus	<i>Ferocactus wislizenii</i>		
tarbush	<i>Flourensia cernua</i>		
ocotillo	<i>Fouquieria splendens</i>		
broom snakeweed	<i>Gutierrezia sarothrae</i>		
-----	<i>Gutierrezia microcephala</i>		
althorn	<i>Koeberlinia spinosa</i>		
range ratany	<i>Krameria glanulosa</i>		
creosotebush	<i>Larrea tridentate</i>		
-----	<i>Mammillaria meiacantha</i>		
sacahuista	<i>Nolina microcarpa</i>		
tree cholla	<i>Opuntia imbricate</i>		
Klein cholla	<i>Opuntia kleiniae</i>		
christmas cactus	<i>Opuntia leptocaulis</i>		
purple pricklypear	<i>Opuntia macrocentra</i>		
mariola	<i>Parthenium incanum</i>		
honey mesquite	<i>Prosopis glandulosa</i>		
resinbush	<i>Viguiera stenoloba</i>		
banana yucca	<i>Yucca baccata</i>		
soaptree yucca	<i>Yucca elata</i>		
Torrey yucca	<i>Yuccatorreyi</i>		
graythorn	<i>Zizyphus obtusifolia</i>		
black grama	<i>Bouteloua eriopoda</i>		
saltgrass	<i>Distichlis stricta</i>		
fluffgrass	<i>Erioneuron pulchellum</i>		
alkali sacaton	<i>Sporobolus airoides</i>		
spike dropseed	<i>Sporobolus contractus</i>		
field bahia	<i>Bahia absinthifolia</i>		
	<i>Boerhaavia</i> spp.		

spiderling	<i>Cassia bauthunioides</i>		
twinleaf	<i>Dyssodia acerosa</i>		
dogweed	<i>Drymaria pachphylla</i>		
thickleaf drymary	<i>Pectis papposa</i>		
lemonweed	<i>Perezia nana</i>		
desert holly	<i>Elaeagus angustifolia</i>		
Russian olive	<i>Tamarix</i> spp.		
salt cedar	<i>Ulmus pumila</i>		
Siberian elm	<i>Atriplex canescens</i>		
fourwing saltbush			

Appendix B. Common and scientific name of avian species potentially occurring within the project area, Dona Aña County, New Mexico (Rappole 2000).

Common Name	Scientific Name	Federal Status <sup>a</sup>	State of New Mexico Status <sup>b</sup>
<b>Avians</b>			
acorn woodpecker	<i>Melanerpes uropygialis</i>		
American avocet	<i>Recurvirostra americana</i>		
American coot	<i>Fulica americana</i>		
American goldfinch	<i>Carduelis tristis</i>		
American kestrel	<i>Falco sparverius</i>		
American peregrine falcon	<i>Falco peregrinus anatum</i>	SC	T
American pipet	<i>Anthus rubescens</i>		
American robin	<i>Turdid migratorius</i>		
American wigeon	<i>Anas americana</i>		
Aplomado falcon	<i>Falco femoralis septentrionalis</i>	E	E
ash-throated flycatcher	<i>Myiarchus cinerascens</i>		
Baird's sparrow	<i>Ammodramus bairdii</i>	SC	T
bald eagle	<i>Haliaeetus leucocephalus</i>	T	T
barn owl	<i>Tyto alba</i>		
barn swallow	<i>Hirundo rustica</i>		
Bell's vireo	<i>Vireo bellii arizonae</i>	SC	T
belted kingfisher	<i>Ceryle alcyon</i>		
Bewick's wren	<i>Thryomanes bewickii</i>		
black crowned night heron	<i>Nycticorax nycticorax</i>		
black neck stilt	<i>Himantopus mexicanus</i>		
black phoebe	<i>Sayornis nigricans</i>		
black tailed gnatcatcher	<i>Polioptila melanura</i>		
black tern	<i>Chlidonias niger</i>	SC	---
black throated sparrow	<i>Amphispiza bilineata</i>		
black-chinned hummingbird	<i>Archilochus alexandri</i>		
black-headed grosbeak	<i>Pheucticus melanocephalus</i>		
black-throated gray warbler	<i>Dendroica nigrescens</i>		
blue grosbeak	<i>Guiraca caerulea</i>		
blue winged teal	<i>Anas discors</i>		
blue-gray gnatcatcher	<i>Polioptila caerulea</i>		

Brewer's blackbird	<i>Euphagus cyanocephalus</i>		
Brewer's sparrow	<i>Spizella breweri</i>		
broad-billed hummingbird	<i>Cyanthus latirostris</i>	---	T
broad-tailed hummingbird	<i>Selasphorus platycerus</i>		
brown-headed cowbird	<i>Molothrus ater</i>		
bufflehead	<i>Bucephala albeola</i>		
Bullock's oriole	<i>Icterus bullockii</i>		
burrowing owl	<i>Athene cunicularia</i>		
bushtit	<i>Psaltriparus minimus</i>		
cactus wren	<i>Campylorhynchus brunneicapillus</i>		
Canada goose	<i>Branta canadensis</i>		
canvasback	<i>Aythya valisineria</i>		
canyon towhee	<i>Pipilo fuscus</i>		
canyon wren	<i>Catherpes mexicanus</i>		
Cassin's finch	<i>Carpodacus cassinii</i>		
Cassin's kingbird	<i>Tyrannus vociferans</i>		
Cassin's sparrow	<i>Aimophila cassinii</i>		
cattle egret	<i>Bubulcus ibis</i>		
cedar waxwing	<i>Bombycilla cedrorum</i>		
chestnut-collared longspur	<i>Calcarius ornatus</i>		
Chihuahuan raven	<i>Corvus cryptoleucus</i>		
chipping sparrow	<i>Spizella passerina</i>		
cinnamon teal	<i>Anas cyanoptera</i>		
Clark's grebe	<i>Aechmophorus clarkia</i>		
cliff swallow	<i>Petrochelidon pyrrhonta</i>		
common black-hawk	<i>Buteogallus anthracinus anthracinus</i>	SC	T
common goldeneye	<i>Bucephala clangula</i>		
common grackle	<i>Quiscalus quiscalua</i>		
common merganser	<i>Mergus merganser</i>		
common moorhen	<i>Gallinula chloropus</i>		
common nighthawk	<i>Chordeiles minor</i>		
common poorwill	<i>Phalaenoptilus nuttallii</i>		
common raven	<i>Corvus corax</i>		
common snipe	<i>Gallinago gallinago</i>		
common yellowthroat	<i>Geothypis trichas</i>		
Cooper's hawk	<i>Accipiter cooperii</i>		
Costa's hummingbird	<i>Calypte costae</i>	---	T
crissal thrasher	<i>Toxostoma crissale</i>		
curve-billed thrasher	<i>Toxostoma curvirostre</i>		

dark eyed junco	<i>Junco hymnalis</i>		
eastern bluebird	<i>Sialia sialis</i>		
eastern meadowlark	<i>Sturnella magna</i>		
elf owl	<i>Micrathene whitneyi</i>		
European starling	<i>Sturnus vulgaris</i>		
evening grosbeak	<i>Coccothraustes vespertinus</i>		
ferruginous hawk	<i>Buteo regalis</i>		
flamulated owl	<i>Otus flammeolus</i>		
gadwall	<i>Anas strepera</i>		
Gambel's quail	<i>Callipepla gambelii</i>		
gold-crowned kinglet	<i>Regulus satrapa</i>		
golden eagle	<i>Aquila chrysaetos</i>		
Grace's warbler	<i>Dendroica graciae</i>		
gray vireo	<i>Vireo vicinior</i>	---	T
great blue heron	<i>Ardea Herodias</i>		
great egret	<i>Ardea alba</i>		
great horned owl	<i>Bubo virginianus</i>		
greater roadrunner	<i>Geococcyx californicus</i>		
greater white fronted goose	<i>Anser albifrons</i>		
greater yellowlegs	<i>Tringa melanoleuca</i>		
great-tailed grackle	<i>Quiscalus mexicanus</i>		
green heron	<i>Butorides virescens</i>		
green tailed towhee	<i>Pipilo chlorurus</i>		
green winged teal	<i>Anas crecca</i>		
hairy woodpecker	<i>Picoides villosus</i>		
Harris's sparrow	<i>Zonotrichia querula</i>		
hepatic tanager	<i>Piranga flava</i>		
hermit thrush	<i>Catharus guttatus</i>		
hooded merganser	<i>Lophodytes cucullatus</i>		
hooded oriole	<i>Icterus cucullatus</i>		
horned lark	<i>Eremophila alpestris</i>		
house finch	<i>Carpodacus mexicanus</i>		
house sparrow	<i>Passer domesticus</i>		
indigo bunting	<i>Passerine cyana</i>		
juniper titmouse	<i>Baeolophus griseus</i>		
killdeer	<i>Charadrius vociferus</i>		
ladder-backed woodpecker	<i>Picoides scalaris</i>		
lark bunting	<i>Calamospiza melanocorys</i>		

least sandpiper	<i>Calidris minutilla</i>		
least tern	<i>Sterna antillarum</i>	E	E
lesser goldfinch	<i>Carduelis psaltria</i>		
lesser nighthawk	<i>Chordeiles acutipennis</i>		
lesser scaup	<i>Anthya affinis</i>		
Lincoln's sparrow	<i>Melospiza lincolni</i>		
loggerhead shrike	<i>Lanius ludovicianus</i>		
long billed dowitcher	<i>Limnodromus scolopaceus</i>		
long eared owl	<i>Asio otus</i>		
mallard	<i>Anas platyrhynchos</i>		
marsh wren	<i>Cistothorus palustris</i>		
McCown's longspur	<i>Calcarius mccownii</i>		
merlin	<i>Falco columbarius</i>		
Mexican spotted owl	<i>Strix occidentalis lucida</i>	T/CH	ST
Mississippi kite	<i>Ictinia mississippiensis</i>		
mountain bluebird	<i>Sialia currucoides</i>		
mountain chickadee	<i>Poecile gambeli</i>		
mourning dove	<i>Zenaida macroura</i>		
neotropic cormorant	<i>Phalacrocorax brasilianus</i>	---	T
northern flicker	<i>Colaptes auratus</i>		
northern harrier	<i>Circus cyaneus</i>		
northern mockingbird	<i>Mimus polyglottos</i>		
northern pintail	<i>Anas acuta</i>		
northern pygmy owl	<i>Glaucidium gnoma</i>		
northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>		
northern shoveler	<i>Anas clypeata</i>		
phainopepla	<i>Phainopepla nitens</i>		
pine siskin	<i>Carduelis pinus</i>		
plumbeous vireo	<i>Vireo plumbeus</i>		
prairie falcon	<i>Falco mexicanus</i>		
pyrrhuloxia	<i>Cardinalis sinuatus</i>		
red breasted nuthatch	<i>Sitta canadensis</i>		
red-breasted merganser	<i>Mergus serrator</i>		
redhead	<i>Anthya americana</i>		
red-tailed hawk	<i>Buteo jamaicensis</i>		
red-winged blackbird	<i>Agelaius phoeniceus</i>		
ring billed gull	<i>Larus delawarensis</i>		
ring neck pheasant	<i>Phasianus colchicus</i>		
ring-neck duck	<i>Anthya collaris</i>		

rock dove	<i>Columba livia</i>		
rock wren	<i>Salpinctes obsoletus</i>		
rough-legged hawk	<i>Buteo lagopus</i>		
ruby-crowned kinglet	<i>Regulus calendula</i>		
ruddy duck	<i>Oxyura jamaicensis</i>		
rufous-crowned sparrow	<i>Aimophila ruficeps</i>		
sage sparrow	<i>Amphispiza belli</i>		
sage thrasher	<i>Oreoscoptes montanus</i>		
sandhill crane	<i>Grus canadensis</i>		
savannah sparrow	<i>Passerculus sandwichensis</i>		
Say's phoebe	<i>Sayornis saya</i>		
scaled quail	<i>Callipepla squamata</i>		
Scott's oriole	<i>Icterus parisorum</i>		
sharp-shinned hawk	<i>Accipiter striatus</i>		
short eared owl	<i>Asio flammeus</i>		
snow goose	<i>Chen caerulescens</i>		
snowy egret	<i>Egretta thula</i>		
song sparrow	<i>Melospiza melodia</i>		
sora	<i>Porzana carolina</i>		
southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	E/CH	E
spotted sandpiper	<i>Actitis macularia</i>		
spotted towhee	<i>Pipilo maculatus</i>		
Stellar's jay	<i>Cyanocitta stelleri</i>		
summer tanager	<i>Piranga rubra</i>		
Swainson's hawk	<i>Buteo swainsoni</i>		
swamp sparrow	<i>Melospiza georgiana</i>		
Townsend's solitaire	<i>Myadestes townsendi</i>		
turkey vulture	<i>Cathartes aura</i>		
varied bunting	<i>Passerine versicolor</i>	---	T
verdin	<i>Auriparus flaviceps</i>		
vermillion flycatcher	<i>Pyrocephalus rubinus</i>		
vesper sparrow	<i>Pooecetes gramineus</i>		
violet-crowned hummingbird	<i>Amazilia violiceps ellioti</i>	---	T
violet green swallow	<i>Tachycineta thalassina</i>		
Virginia rail	<i>Rallus limicola</i>		
Virginia's warbler	<i>Vermivora virginiae</i>		
warbling vireo	<i>Vireo gilvus</i>		
western bluebird	<i>Sialia mexicana</i>		

western burrowing owl	<i>Athene cunicularia hypugae</i>	SC	---
western grebe	<i>Aechmophorus occidentalis</i>		
western meadowlark	<i>Sturnella neglecta</i>		
western screech owl	<i>Otus kennicottii</i>		
western scrub jay	<i>Aphelocoma californica</i>		
western tanager	<i>Piranga ludoviciana</i>		
western wood pewee	<i>Contopus sordidulus</i>		
white breasted nuthatch	<i>Sitta carolinensis</i>		
white crowned sparrow	<i>Zonotrichia leucophrys</i>		
white throated swift	<i>Aeronautes saxatalis</i>		
white faced ibis	<i>Plegadis chihi</i>		
white-throated sparrow	<i>Zonotrichia albicollis</i>		
white-winged dove	<i>Zenaida asiatica</i>		
wild turkey	<i>Meleagris gallopavo</i>		
wood duck	<i>Aix sponsa</i>		
yellow breasted chat	<i>Icteria virens</i>		
yellow rumped warbler	<i>Dendroica coronata</i>		
yellow warbler	<i>Dendroica petechia</i>		
yellow-billed cuckoo	<i>Coccyzus americanus</i>	C	E
yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>		
zone tailed hawk	<i>Buteo albonotatus</i>		

Appendix C. Common and scientific name of mammal species potentially occurring within the project area, Dona Aña County, New Mexico (Findley *et al.* 1975 and Brown 1982).

Common Name	Scientific Name	Federal Status <sup>a</sup>	State of New Mexico Status <sup>b</sup>
<b>Mammals</b>			
banner-tailed kangaroo rat	<i>Dipodomys spectabilis</i>		
black-tailed jack rabbit	<i>Lepus californicus</i>		
Botta's pocket gopher	<i>Thomomys bottae</i>		
cactus mouse	<i>Peromyscus eremicus</i>		
coyote	<i>Canis latrans</i>		
desert cottontail rabbit	<i>Sylvilagus audubonii</i>		
desert mule deer	<i>Odocoileus hemionus</i>		
desert pocket gopher	<i>Geomys arenarius</i>	SC	---
desert pocket mouse	<i>Chaetodipus penicillatus</i>		
desert shrew	<i>Notiosorex crawfordi</i>		
fringed myotis	<i>Myotis thysanodes</i>	---	ST
hog-nosed skunk	<i>Conepatus mesoleucus</i>	---	ST
kit fox	<i>Vulpes macrotis</i>		
long-tailed weasel	<i>Mustela frenata</i>		
Merriam's kangaroo rat	<i>Dipodomys merriami</i>		
Mexican free-tailed bat	<i>Tadarida brasiliensis</i>		
northern grasshopper mouse	<i>Onychomys leucogaster</i>		
Ord's kangaroo rat	<i>Dipodomys ordii</i>		
pallid bat	<i>Antrozous pallidus</i>		
Pecos River muskrat	<i>Ondatra zibethicus ripensis</i>	SC	ST
raccoon	<i>Procyon lotor</i>		
rock pocket mouse	<i>Chaetodipus intermedius</i>	---	ST
silky pocket mouse	<i>Peregnathus flavus</i>		
southern grasshopper mouse	<i>Onychomys torridus</i>		
spotted bat	<i>Euderma maculatum</i>	---	T
spotted ground squirrel	<i>Spermophilus spilosoma</i>		
striped skunk	<i>Mephitis mephitis</i>		
Texas antelope squirrel	<i>Ammospermophilus interpres</i>		
Townsend's big eared bat	<i>Corynorhinus townsendii</i>	SC	ST
western red bat	<i>Lasiurus blossomvillii</i>	SC	ST
western spotted skunk	<i>Neotoma albigula</i>		ST
white-footed mouse	<i>Peromyscus leucopus</i>		
white-throated woodrat	<i>Neotoma albigula</i>		
Yuma myotis	<i>Myotis yumanensis</i>	SC	ST

Appendix D. Common and scientific name of reptile and amphibian species potentially occurring within the project area, Dona Aña County, New Mexico (Degenhardt *et al.*1996).

Common Name	Scientific Name	Federal Status <sup>a</sup>	State of New Mexico Status <sup>b</sup>
<b>Reptiles &amp; Amphibians</b> big bend patch nose snake black-neck garter snake blacktailed rattlesnake bull frog bull snake checkered garter snake canyon treefrog checkered whiptail Chihuahuan spotted whiptail coachwhip collared lizard common garter snake common king snake Couch’s spadefoot corn snake desert grassland whiptail desert spiny lizard glossy snake great plains skink greater earless lizard great plains toad green toad ground snake leopard lizard lesser earless lizard lined snake little striped whiptail long nose snake Lyre snake Madrean alligator lizard massasauga milk snake New Mexico spadefoot New Mexico whiptail night snake	<i>Salvador deserticola</i> <i>Thamnophis cyrtopsis</i> <i>Crotalus molossus</i> <i>Rana catesbiana</i> <i>Pituophis melanoleucus</i> <i>Thamnophis marcianus</i> <i>Hyla arenicolor</i> <i>Cnemidophorus grahamii</i> <i>Cnemidophorus exanguis</i> <i>Masticophis flagellum</i> <i>Crotaphytus collaris</i> <i>Thamnophis sirtalis</i> <i>Lampropeltis getula</i> <i>Scaphiopus couchii</i> <i>Elaphe guttata</i> <i>Cnemidophorus uniparens</i> <i>Sceloporus magister</i> <i>Arizona elegans</i> <i>Eumeces obsoletus</i> <i>Cophosaurus texanus</i> <i>Bufo cognatus</i> <i>Bufo debilis</i> <i>Senora semiannulata</i> <i>Gambelia wislizenii</i> <i>Holbrookia maculata</i> <i>Tripidoclonion lineatum</i> <i>Cnemidophorus inornatus</i> <i>Rhinocheilus lecontei</i> <i>Trimorphodon biscutatus</i> <i>Elgaria kingii</i> <i>Sistrurus catenatus</i> <i>Lampropeltis triangulum</i> <i>Spea multiplicata</i> <i>Cnemidophorus neomexicanus</i> <i>Hypsiglena torquata</i>		

northern leopard frog	<i>Rana pipiens</i>		
ornate box turtle	<i>Terrapene ornata</i>		
painted turtle	<i>Chrysemys picta</i>		
plain's spadefoot	<i>Spea bombifrons</i>		
plains black-headed snake	<i>Tantilla nigriceps</i>		
plains leopard frog	<i>Rana blairi</i>		
prairie lizard	<i>Sceloporus undulatus</i>		
red spotted toad	<i>Bufo Punctatus</i>		
rock rattlesnake	<i>Diadophis punctatus</i>		
ringneck snake	<i>Crotalus Lepidus</i>		
roundtail horned lizard	<i>Phrynosoma modestum</i>		
side-blotched lizard	<i>Uta stansburiana</i>		
spiny softshell	<i>Trionyx spiniferus</i>		
striped whip snake	<i>Masticophis taeniatus</i>		
Texas blind snake	<i>Leptotyphlops dulcis</i>		
Texas horned lizard	<i>Phrynosoma cornutum</i>		
trans-Pecos rat snake	<i>Bogertophis subocularis</i>		
tree lizard	<i>Urosaurus ornatus</i>		
western blind snake	<i>Leptotyphlops humilis</i>		
western diamondback	<i>Crotalus atrox</i>		
western hognose snake	<i>Heterodon nasicus</i>		
western hooknose snake	<i>Gyalopian canum</i>		
western rattlesnake	<i>Crotalus viridus</i>		
western whiptail	<i>Cnemidophorus tigris</i>		
Woodhouse's toad	<i>Bufo woodhousii</i>		
yellow mud turtle	<i>Kinosternon flavescens</i>		