



# United States Department of the Interior

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June 26, 2001

Cons. # 2-22-01-F-373

## Memorandum

To: Field Office Manager, Las Cruces Field Office, Bureau of Land Management, Las Cruces, New Mexico

From: Field Supervisor, New Mexico Ecological Services Field Office, U.S. Fish and Wildlife Service, Albuquerque, New Mexico

Subject: Formal Section 7 Consultation for the Bennett Ranch Unit Gathering System (pipeline) in Otero County, New Mexico

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the proposed Bennett Ranch Unit Gathering System (pipeline) located in Otero County, New Mexico, and its effects on the endangered northern aplomado falcon (*Falco femoralis septentrionalis*) (falcon) in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Your February 16, 2001, request for formal consultation was received on February 20, 2001.

This biological opinion is based on information provided in the February 14, 2001, biological evaluation (BE) and other sources of information available to the Service. A complete administrative record of this consultation is on file at the New Mexico Ecological Services Field Office, Albuquerque, New Mexico.

The first section of the document contains informal conferencing for the mountain plover (*Charadrius montanus*), which was proposed for listing as threatened on February 16, 1999 (U.S. Fish and Wildlife Service 1999). The BLM has determined that the proposed pipeline is "not likely to jeopardize the continued existence" of the mountain plover for the following reasons: 1) only isolated occurrences of transient individuals have been recorded in the Otero Mesa area in recent years; 2) no recent mountain plover nesting has been reported in Otero County; 3) the 1999, 3-D Seismic Project Survey in the Bennett Ranch Unit in March 1999, and the BLM's July 2000, survey did not locate any mountain plovers; 4) adverse effects to the mountain plover and its suitable habitat would be relatively minor and short in duration; and 5) disturbed areas would become short grass habitat preferred by the mountain plover. Based on the information provided in the BE, the Service concurs with the determination that

the proposed pipeline construction is "not likely to jeopardize the continued existence" of the mountain plover.

- \* Please contact the Service to verify that the above determination and concurrence are still valid if: 1) surveys locate mountain plovers in the Bennett Ranch Unit; 2) new information reveals effects of the action to mountain plovers or their habitats to an extent not considered in the BE; or 3) the mountain plover is listed as a threatened species.

### **Consultation history**

During review of lease parcels offered in competitive sales since 1993, BLM attached stipulations to parcels occurring in suitable falcon habitat in the form of the following Lease Notice:

#### **PROTECTION OF ENDANGERED OR THREATENED OR SENSITIVE SPECIES**

Suitable habitat for aplomado falcon exists within the parcel. The lease area may contain essential habitat for the continued existence of this species.

The Federal surface management agency is responsible for assuring that the leased lands are examined prior to undertaking any surface-disturbing activities on lands covered by this lease, to determine effects upon any plant or animal species, listed or proposed for listing as endangered or threatened, or their habitats.

In accordance with Section 6 of the lease terms and in order to comply with the Act, the lessee may need to conduct an examination on the lands (including access routes to the leased area) to be affected by the proposed action to determine if threatened or endangered species are present and if such species may be affected by the proposed action. The Lessee may need to invest in this examination to expedite processing. This examination must be conducted by or under the supervision of a qualified resource specialist approved by the surface management agency. A report identifying the anticipated effects of the proposed action on endangered or threatened species and their habitat is to be submitted for approval to the surface management agency. If the examination determines that the action may detrimentally affect a species listed or proposed for listing as an endangered or threatened species, restrictions to the lessee's proposal, or even denial of any beneficial use of the lease may result. The lessee will take such measures as may be required by the authorized officer to protect such species.

On April 28, 1997, the Service issued a biological opinion (Cons. #2-22-96-F-329) on the effects of the Caballo Resource Area resource management plans on threatened and endangered species. The BLM grazing program was determined to have the greatest present impact on falcon habitat, but the possibility of extensive oil and gas leasing was also identified as a potential source of adverse effects through habitat loss, fragmentation, and possibly disturbance. The opinion concluded that actions undertaken under the plans would not jeopardize the continued existence of the falcon. Incidental take for the falcon was not anticipated, but will be indexed to habitat conditions and trends as determined through research. The reasonable and prudent measures given in the incidental take statement were to: 1) conduct research to determine the extent of suitable falcon habitat in the resource area, 2) compare the suitable habitat and livestock management practices on BLM lands to the occupied habitat and livestock management practices in Chihuahua, Mexico, and 3) within 5 years evaluate this data to determine whether management changes are needed in key habitats to facilitate the recovery of the falcon. As a general conservation recommendation, the Service proposed that BLM conduct a programmatic section 7 consultation on oil and gas leasing activities in the Resource Area. This consultation would ensure the best long-term protection of listed species dependent on grassland ecosystems and aid the BLM in its planning efforts.

The BLM determined "no effect" to listed species for the Application for Permit to Drill (APD) for the Bennett Ranch 1Y well and consultation with the Service was not conducted. This well discovered commercial quantities of natural gas and will be serviced by the pipeline gathering system that is the subject of this formal consultation.

A Unit Agreement for the development and operation of the Bennett Ranch Unit Area was signed on March 4, 1997. The Bennett Ranch Unit encompasses 8,056 acres of Federal minerals and 801 acres of State minerals in 14 tracts of which 13 are presently leased. The Bennett Ranch Unit contains the Bennett Ranch 1Y well. Unit Agreements are developed under the Mineral Leasing Act of February 25, 1920, 41 Statute 437, as amended, 30 U.S.C. Section 181 *et seq.* Unit Agreements allow Federal lessees to unite with each other to collectively adopt and operate a unit plan for the development or operation of any oil or gas pool, field, or like area, for the purpose of conserving the natural resources. Under a Unit Agreement, the lessees agree to drill one well at a time within the unit allowing no more than 6 months between the completion of one well and the beginning of drilling operations for the next well, until a well capable of producing commercial quantities of oil and gas is completed.

Within 6 months of completion of a commercial well, the Unit Operator will submit a plan of development and operation for the unit, which will constitute the further drilling and development obligations within the unit for the period specified in the plan. Subsequent plans will be submitted before the expiration of an existing plan, typically on a calendar-year basis.

In exchange for the agreement to develop a unit area under an approved plan, the lessees share the monetary proceeds from the unit in proportion to lease size, even including leases where no wells were ever drilled. Also, as long as a commercial well is producing within the unit, all leases in the unit are extended beyond their normal expiration dates, even though no wells may have been drilled on some leases.

The BLM determined that a National Environmental Policy Act (NEPA) Categorical Exclusion with no exceptions was appropriate for the Bennett Ranch Unit Area. No consultation with the Service was conducted on the unit agreement or on any subsequent unit operating plans.

An APD for four exploratory wells in the Bennett Ranch Unit underwent informal consultation on August 3, 1998 (Cons. #2-22-98-I-348). The Service concurred with the determination that the proposed action with implementation of minimization measures "may affect, but is not likely to adversely affect" the falcon. The permit to drill was issued, but it ultimately expired without any of the four wells being drilled. We stated in our concurrence letter that, "Because Otero Mesa is one of the largest expanses of contiguous desert yucca/grassland in New Mexico and because of its proximity to [falcon] breeding populations in Mexico, Otero Mesa is an essential recovery area for this species in New Mexico. The falcon has recently been documented within Otero County in 1991, 1993, and 1997. Oil and gas activities, consisting of well pads, roads, trails, pipelines, contaminants, noise, *etc.*, taken together can adversely modify the ecological function of these important biotic communities by habitat alteration, fragmentation, introduction of exotic plants/animals, and increased human presence."

A request for a 3-D seismic study on the Bennett Ranch Unit and adjacent lands underwent informal consultation on March 5, 1999 (Cons. #2-22-99-I-193). The project proponent required that a seismic project be completed before drilling the four exploratory wells discussed in the previous informal consultation. The seismic area covered 4x6 miles (14,800 acres) and involved laying receiver lines at the spacing of 8 lines per linear mile for a total of about 390 miles of vehicle driving and disturbance. The BLM required the applicant to survey the entire project area for falcons, avoid all yuccas and large shrubs during project activities, not drive on slopes greater than 2 degrees, and take various other measures to minimize soil disturbance. No falcons were found during the surveys. The Service concurred with the determination that the proposed action with implementation of mitigation measures "may affect, but is not likely to adversely affect" the falcon.

An APD for one exploratory well (Bennett Ranch Well 25-1) in the Bennett Ranch Unit underwent informal consultation on October 23, 2000 (Cons. #2-22-00-I-499). The Service concurred with the determination that the proposed action with implementation of minimization measures "may affect, but is not likely to adversely affect" the falcon. In its BE for the proposed well, the BLM stated, "...available information suggests that further production (in the Bennett Ranch Unit), beyond that found in the Bennett Ranch 1Y well, is

unlikely and the EIS significance level would not be reached. However, if commercial quantities of oil and gas are found in the proposed well, and EIS level significance is achieved, the ongoing amendment to the White Sands RMP (for oil, gas, and geothermal activities) could provide the required analysis of field development on public lands within Sierra and Otero counties. However, if the Resource Management Plan Amendment is not completed additional formal consultation on field development may be necessary." The permit was issued, but the Bennett Ranch Well 25-1 has not yet been drilled.

In November 1998, The Las Cruces BLM Field Office began the NEPA process for a RMP amendment for oil, gas, and geothermal leasing, exploration, and development in Otero and Sierra Counties. The Service responded to the initial request for information on January 5, 1999 (Cons. #2-22-99-I-109). We commented on the draft RMP Amendment and Environmental Impact Statement on March 13, 2001 (Cons. #2-22-99-I-109A). To meet its requirements under the Act, the BLM is preparing a separate Biological Assessment for the RMP amendment. To date, the BLM has made no determination of effect for listed species and requested no further consultation with the Service.

## **BIOLOGICAL OPINION**

### **I. Description of the proposed action**

The Harvey E. Yates Company (HEYCO) proposes to construct about 3.3 miles of buried 6-inch natural gas pipeline configured as a "gathering system" to connect the existing Bennett Ranch 1Y natural gas well and any future producing wells in the Bennett Ranch Unit (BRU) to a transmission pipeline for sale of natural gas. The proposed pipeline is completely on lands managed by the Las Cruces BLM Field Office. It originates at the Bennett Ranch 1Y well in T. 26 S., R.12. E., Sec. 14 and travels 3.3 miles south to the Texas/New Mexico state line in T. 26. S., R. 13. E., Sec. 36 (Figure 1). The activities associated with the pipeline construction include trenching, earth moving, and vegetation removal. All clearing, earth removal, and construction associated with this pipeline will be within a right-of-way 50 feet wide. The BLM estimates that a 6-inch pipeline, as proposed, would service 5 or 6 wells.

Interdependent to this action is the construction of a buried spur pipeline in Texas to connect the gathering system to an existing transmission pipeline owned by El Paso Natural Gas Company. This spur pipeline will be about 12 miles long. The BLM has no information on the actual location or design specifications of this pipeline on private land. Analysis is based on existing data and the assumption that the spur pipeline will be designed as a straight line intersecting the El Paso Natural Gas pipeline at the closest point of approach. According to the BE, about 93 acres of surface disturbance (20 in New Mexico and 73 in Texas) would occur from the construction of the gathering system in New Mexico and the spur pipeline in Texas.

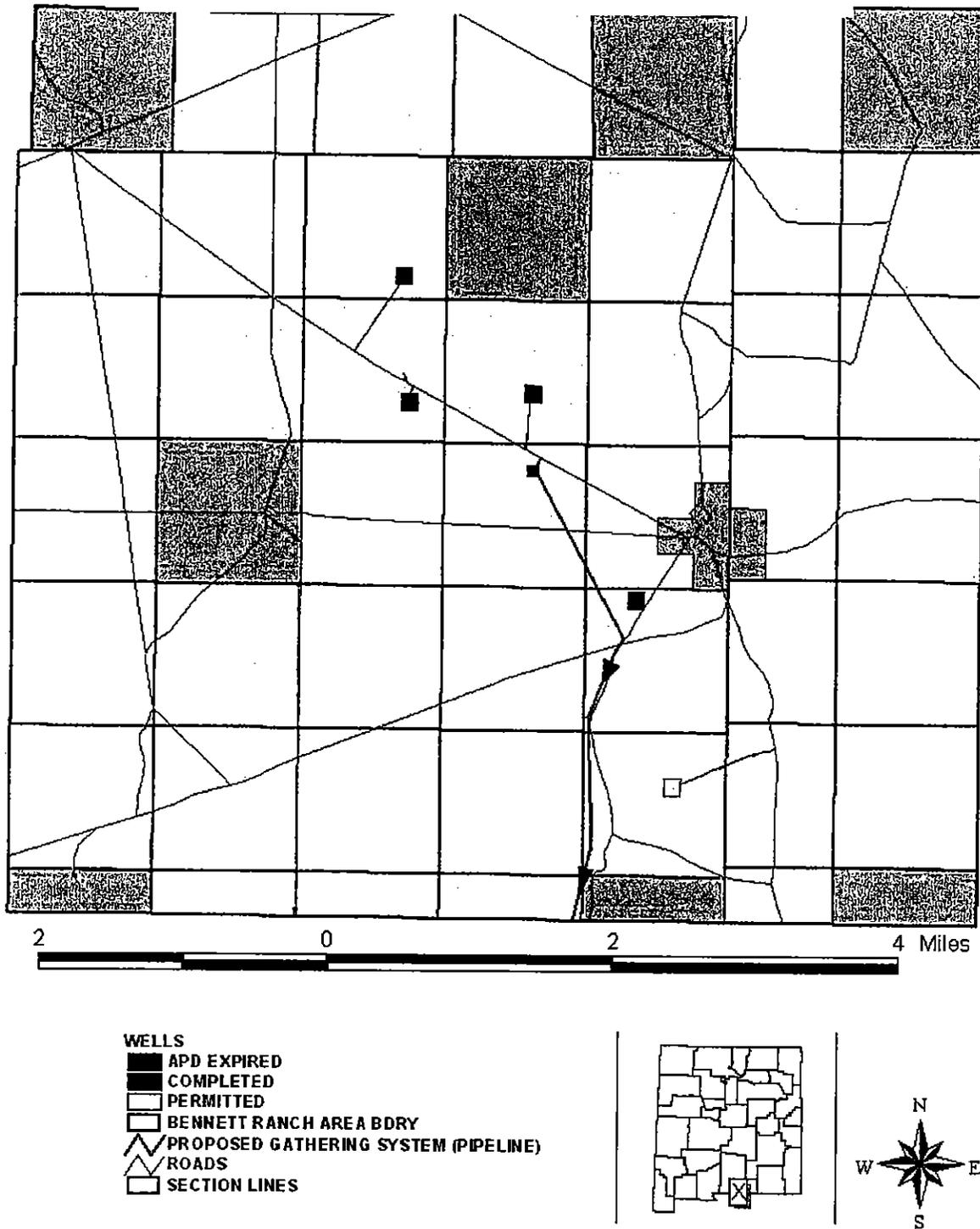


Figure 1. New Mexico action area for the Bennett Ranch Gathering System (pipeline).

Vegetation will be cleared to prepare the site. Clearing consists of removing brush while leaving grasses and forbs intact. The cleared area will not exceed the 50-foot work zone along the pipeline. Permanent roads or trails will not be established on the pipeline route. No rocks greater than 12 inches in diameter will be left on the surface following completion of pipeline construction. No construction operations will occur when soils are visibly moist or wet on the surface.

With the exception of existing roads, disturbed areas will be restored following completion of construction by drill seeding with native plant seeds and mulching. Erosion will be minimized by the construction of water diversions as needed to control surface water runoff and soil erosion. The contractor will be responsible for the prevention, monitoring, and control of noxious weeds along the pipeline.

If construction of the pipeline occurs during the nesting season for the falcon (January 1-July 31), BLM biologists will survey the area within two weeks prior to construction. In addition, BLM biologists will survey as frequently as weekly during construction. It is estimated it will take 2-3 weeks to complete construction of the 3.3 miles of pipeline on BLM land. No construction start date has been scheduled or projected.

## II. Status of the species

### A. Species description

The falcon usually occurs in seasonally warm environments characterized by an abundance of diverse small avian prey, other stick nest-building birds, and expanses of varied but open country. The historical range of the falcon includes the action area, most of which is considered to be suitable habitat.

Northern aplomado falcons are long-tailed and intermediate in size between the American kestrel (*Falco sparverius*) and prairie falcon (*F. mexicanus*) (Hector 1983). Female falcons are larger than males; both sexes combined measure about 12-16 inches long and have a wingspan of about 31 inches (Hector 1988). In the United States, northern aplomado falcons may occur sympatrically throughout the year with the American peregrine falcon (*Falco peregrinus*), prairie falcon, American kestrel, merlin (*F. columbarius*) and outside of the breeding season with the Arctic peregrine falcon (*F. p. tundrius*).

Adult northern aplomado falcons can be distinguished from other North American falcons by their long tail with alternating narrow black and white bands. The back and dorsal side of the wings are blue-gray with a pronounced white trailing edge across the entire wing. The upper breast is bleach white to creamy with variable amounts of black streaking, depending on the sex. There is a distinct broad dark or black "cummerbund" on the lower breast, which at close range may show faint white barring. The lower abdomen and undertail coverts are rufous. When viewed frontally at a distance, the falcon imparts a distinctive "tri-colored"

white-black-rufous appearance. Facial markings are striking with a blackish cap and nape that are contrasted by a bold white supraorbital (facial) stripe that forms a "V" towards the nape; at close proximity, the stripes are white towards the face and become more rufous toward the nape. Immature falcons are brownish-gray on the back and dorsal side of the wings, with the white trailing wing edges apparent. The breast and facial stripes are cinnamon-colored, with heavy blackish streaking on the breast.

Flight profiles of both adult and immature northern aplomado falcons are similar to other falcons, except for the longer tail. Flight is generally direct, though they will occasionally soar. Northern aplomado falcons pursue prey in a variety of fashions. They have been observed to pursue prey in direct linear flight (similar to a merlin), tower above prey and stoop (similar to peregrine falcons), and to "hawk" insects from a perch. Falcons have been observed to pursue prey on the ground and pairs often hunt cooperatively (Hector 1986; A. Montoya, The Peregrine Fund, pers. obs.). In addition, juvenile falcons released in South Texas have been noted to hunt cooperatively in groups (C. Perez, U.S. Fish and Wildlife Service, pers. obs.). They will occasionally follow coyotes and humans, to capture flushed prey (A. Montoya, pers. obs.) and have also been observed hunting alongside grass fires (C. Perez, pers. obs.).

## **B. Life history**

Falcons appear to be year-long residents across most of their northern range where populations currently exist in Mexico (Hector 1981). Primary nesting occurs from March to June in northern Chihuahua, with aerial courtship displays being observed as early as late January and early February (Montoya, 1995). Falcons typically use stick nests constructed by other large birds such as Swainson's hawks (*Buteo swainsoni*), Chihuahuan ravens (*Corvus cryptoleucus*), and possibly white-tailed kites (*Elanus leucurus*). Nests are usually situated in forks of yuccas, or in the tops of mesquite trees. In South Texas, an abandoned raven nest atop a 20-meter electrical tower was used by a pair of falcons in 1995, and in 1999, falcons were observed nesting in electrical towers in Chihuahua (Young *et al.* 2001). Both sexes participate in an approximate 32-day incubation (Hector 1981), with young fledging about 35 days after hatching. Fledglings may remain in the vicinity of the nest for at least a month after fledging (Hector 1981). Montoya *et al.* (1997) observed seven nests in northern Chihuahua and documented that three of the seven nests fledged at least one chick, with a total of four young fledged from the seven nests (11 eggs total). Causes for nestling mortality were inconclusive (Montoya *et al.* 1997), but starvation and predation by great horned owls (*Bubo virginianus*) and coyotes (*Canis latrans*) were suspected.

Although the range of juvenile dispersal is not well known for the falcon, a 1993-94 study of radio-tagged falcons released in South Texas revealed that from 2-6 months post-release the movements of 14 monitored falcons did not extend beyond 10 kilometers from the 18,268 hectare Laguna Atascosa National Wildlife Refuge boundary (Perez *et al.* 1996). At least six falcons with functioning transmitters were still in the general vicinity of the refuge 6 months

post-release. However, long range dispersals have been recorded for released falcons. One male falcon dispersed 136 kilometers north of the release area at an age of 70 days (Perez *et al.* 1996), and another male dispersed 22 kilometers south of the refuge near Brownsville, Texas, in 1989. Daily linear movements of up to 55 kilometers show the highly mobile behavior of young falcons (Perez *et al.* 1996). It is unknown whether dispersal by reintroduced falcons is indicative of natural dispersal. Home range estimates for individual falcons in Chihuahua, Mexico, during the breeding season ranged from 3.3-21.4 square kilometers (Montoya *et al.* 1997).

Research by Hector (1981), Jiménez (1993), and Montoya *et al.* (1997) show a wide array of birds, insects, mammals, and reptiles have been documented in the diets of falcons. In eastern Mexico, birds comprised 94 percent of individual prey items in remains examined. Of prey items seen captured, birds comprised 35 percent and insects comprised about 65 percent (Hector 1985). Hector (1981) determined that birds composed 97 percent of the prey biomass. Montoya *et al.* (1997) found a similar preference for avian prey items with meadowlarks (*Sturnella neglecta* and *S. magna*), common nighthawks (*Chordeiles minor*) and northern mockingbirds (*Mimus polyglottos*) among the most frequently taken birds in northern Chihuahua.

Falcons have been documented from a variety of open woodland, savanna, and grassland habitats (Hector 1981, U.S. Fish and Wildlife Service 1990). Within the Chihuahuan desert, falcons typically occur in open grasslands with scattered mesquite and/or soap tree yucca (*Yucca elata*) or Torrey yucca (*Y. torreyi*) (Ligon 1961, Montoya *et al.* 1997). Montoya *et al.* (1997) found woody vegetation densities in home ranges of aplomado falcons in Chihuahua, Mexico, varied from 11.2-139.5 plants/hectare with no significant difference between nesting and non-nesting territories. Ground cover ranged from 28.9-69.5 percent on falcon territories and also did not differ significantly between nesting and non-nesting territories (means equaled 49.9 versus 37.8 percent, respectively).

Existing data suggests that ecological status of Chihuahuan Desert grasslands currently occupied by falcons is late seral to PNC (potential natural community or climax) with significant basal cover of grass species. Montoya *et al.* (1997) reported occupied (nesting) habitat as having basal ground cover ranging from 29-70 percent with a mean of 46 percent. Woody plant density was 5-56 plants per acre, with a mean of 31 plants per acre. Dominant woody plant species were Mormon tea (*Ephedra* spp.), soap tree yucca, honey mesquite (*Prosopis glandulosa*), senecio (*Senecio* spp.), creosote bush (*Larrea tridentata*), and baccharis comprising 74 percent of the community.

Preliminary data collected on sites occupied by falcons in Chihuahua, Mexico, and presented by Young *et al.* (2001) showed vegetative basal cover ranging from 43-48 percent (nesting and detection areas, respectively), with tobosa (*Pleuraphis mutica*) and blue grama (*Bouteloua gracilis*) as the dominant grass species. Grass height was 8.4 inches in nesting areas and 7.8 inches in perching areas. Shrub density was 105 and 253 shrubs per acre in

nesting and detection habitat, respectively. Dominant shrubs were longleaf ephedra (*E. trifurca*), acacia (*Acacia* spp.), tarbush (*Flourensia cernua*), honey mesquite, soap tree yucca, and creosote bush. Biomass, measured after nest site selection, was 744 and 862 pounds per acre in nesting and detection areas, respectively. Grazing utilization was estimated as light, within a predominately continuous yearlong grazing regime, and with a smaller number of ranches using rotational grazing regimes.

### C. Population dynamics

Population dynamics of northern aplomado falcons are similar to those known of other North American falcons. Falcons usually have a maximum clutch size of three eggs. Chicks and fledglings are susceptible to predators such as ravens, great horned owls, and hawks (Keddy-Hector 2000). Falcons have been known to attempt to reinitiate nests after the loss of eggs or chicks, however the success of reinitiation is not well documented. There is very little information on site fidelity for individual falcons although one area in Mexico was known to have breeding falcons continuously for 10 years (Keddy-Hector 2000). Little information exists on the variability or stability of falcon populations in the wild. Falcons are generally high on the trophic scale and their absence from apparently suitable habitat may indicate prey base or habitat problems in an ecosystem. However, the falcon's prey base populations of breeding birds in the Chihuahuan Desert tend to be highly variable, but are generally declining (Sauer *et al.* 2000). This variability would naturally influence falcon occurrences in New Mexico.

Relatively little has been quantified concerning the population of falcons in Mexico. No recent population or trend information is available for eastern Mexico since Hector's research in the late 1970s and early 1980s. Based on falcon surveys conducted in northern Chihuahua in 1998 and 1999, the known falcon population in northern Chihuahua was 66 individuals (Young *et al.* 2000). Information on this population is still limited. There is no evidence to suggest the population is self-sustaining and/or growing. However, falcons observed in New Mexico and western Texas may be dispersing individuals from the Mexico population. Although falcons are listed as endangered in Mexico, legal protection mechanisms are limited.

### D. Status and distribution

Historically, the falcon occurred in Mexico and in Texas, New Mexico, and Arizona in the United States. Falcon populations declined dramatically during the 1930s and 1940s. Breeding populations of the species were considered extirpated from the United States by the 1950s. The Service listed the falcon as an endangered species under the Act on February 25, 1986 (U.S. Fish and Wildlife Service 1986). No critical habitat has been designated.

The Northern Aplomado Falcon Recovery Plan (U.S. Fish and Wildlife Service 1990) identified habitat alteration (*i.e.*, shrub encroachment associated with heavy grazing and

agricultural development) compounded by collecting pressure and later by pesticide contamination as the likely reasons for the decline of falcon populations in the United States. Current factors that may affect the recovery of the falcon include: 1) continued grazing in previously altered grasslands, which may prevent a return to grassland habitat and promote continued shrub encroachment (Humphrey 1958, Buffington and Herbel 1965, Hector 1987); 2) proliferation of weedy species such as snakeweed (A. Montoya, pers. obs.); 3) declines in prey species populations; 4) fragmentation of habitat due to urban expansion and oil and gas development; 5) removal or destruction of nesting and perching structures; 6) incidental shooting by hunters and poachers; and 7) pesticide contamination.

The most important factor contributing to the falcon's decline in the United States was probably the conversion of large mesquite and/or yucca grasslands to creosote bush or mesquite desert shrublands. The loss of these grasslands in southern New Mexico is significant. For example, it is estimated that the habitat in the Jornada del Muerto located between the San Andres Mountains and the Rio Grande went from 5 percent desert shrubs and 58 percent open grasslands in 1858, to 80 percent desert shrubs and virtually no open grasslands today (Zimmer 1995). This change is due primarily to intensive livestock grazing compounded by lower than average precipitation around the turn of the last century.

The loss of grassland habitats may partly explain the documented declines in grassland breeding birds in New Mexico, which are primary prey for falcons. According to the North American Breeding Bird Survey, the trend is negative for 46 percent of the species of grassland breeding birds in New Mexico (Sauer *et al.* 2000). Causes for these declines may be due to factors that impact migratory birds here in New Mexico, or they may be due to threats that are significant elsewhere along the migratory route or in the wintering areas of these species.

Although collecting pressure was considered a significant factor in the decline of the falcon in the early part of the 20th century, incidental shooting, poaching, and collecting are not considered significant threats at this time. But, increased access to previously inaccessible habitat may increase poaching and illegal collecting.

Pesticide contamination was recognized as a severe impact to the falcon population in eastern Mexico. The pesticide DDT did not go into use until 1948 (Hector 1983, 1987); therefore, it was not the primary cause of falcon declines. It may, however, have added adverse effects to the already reduced falcon populations. DDT was used from about 1948 to the mid-1970s before its use was eliminated in the United States. Kiff *et al.* (1980) found an average decrease (1954-1967) in eggshell thickness of 25.4 percent that was equivalent to the maximum amount of thinning reported for any peregrine falcon population. Eggshell thinning of over 20 percent is likely to result in reproductive failure due to egg breakage (Peakall *et al.* 1975). As a top avian predator in its ecosystem, the falcon is susceptible to bioaccumulation of persistent pesticides. In Mexico and in the southwestern United States,

heavy concentrations of DDT persist in potential falcon prey (White *et al.* 1983) and this may be a continuing threat to falcons.

- \* Hector (1981, 1987) gives a thorough account of historical falcon occurrence in the United States through examination of specimen collections and historical literature (Figure 2). He surmised that until the early 1930s the falcon was a regular breeding species in the coastal grassland communities of southern Texas and in the desert grassland communities of southern New Mexico, southeastern Arizona, and western Texas. Historical sightings (those prior to 1953) in New Mexico are concentrated in the southwestern corner of the state from Sierra and Doña Ana counties to the Boot-heel Region. In New Mexico, falcons were historically reported from Hidalgo, Grant, Luna, Doña Ana, Otero, Sierra, and Socorro counties (Table 1). In Arizona, the most recent documented occurrences of falcons were recorded in 1975 and 1977, though there appears to be suitable habitat throughout the southeastern portion of the state. Greenlee, Cochise, Santa Cruz and Pima counties are presumed to have historically supported falcons and the Arizona Game and Fish Department has identified these counties as potential falcon release sites.

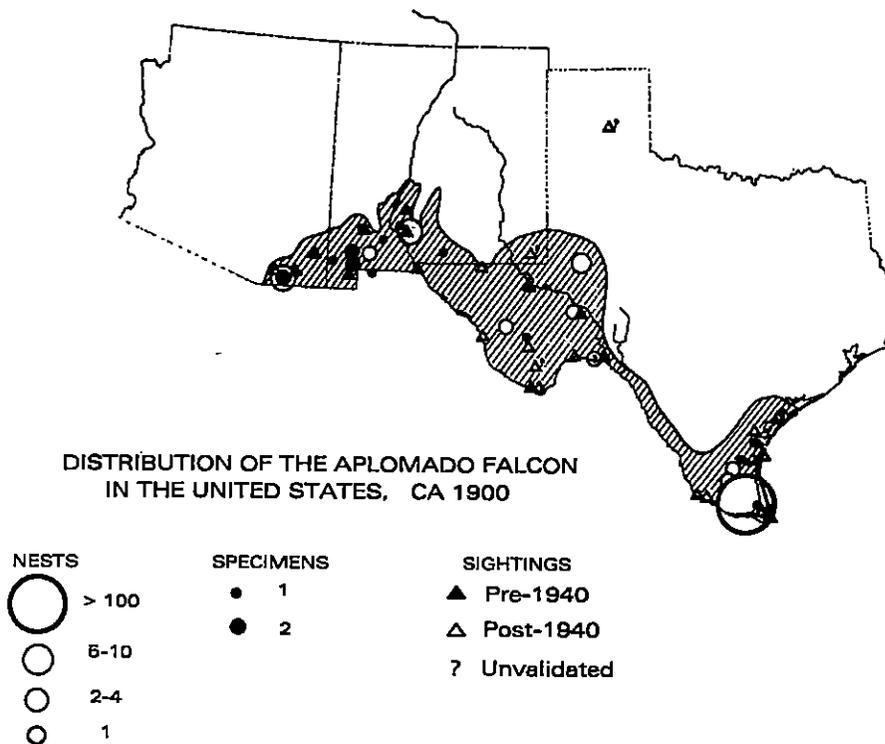


Figure 2. Historical occurrences of aplomado falcons in the United States

Table 1. Historical and recent sightings of aplomado falcons by county (Williams 1998, with updates).		
<i>County</i>	<i>Historical Sightings 1853 - 1952</i>	<i>Recent Sightings 1962-2001</i>
Es. Chihuahua, Mexico	3/1892 Palomas, 5-6/1952 nest near Berendo, Chihuahua	1998 Near Palomas (BLM Aplomado Project), 1999 Near Palomas (BLM Aplomado Project)
AZ/Hidalgo County		3/1977 4 mi S of Rodeo
Hidalgo County	8/1908 Playas Valley, 10/1939 near Animas	3/1971 Playas Valley east, 12/1978 N of Rodeo, 12/1978 N of Rodeo, 9/1982 Fitzpatrick/Cloverdale area, 11/1990 Cotton City area, 1/1991 10-25 mi S Animas (incl Fitzpatrick/Cloverdale area, 2/1994 Fitzpatrick/Cloverdale area, 1&3/1995 Fitzpatrick/Cloverdale area, 2/9/1998 Peloncillo Mtns
Grant County	8/1875 Fort Bayard, 6/1886 near Hatchita, 7/1908 Playas Valley, 6/1924 4 mi N of Separ	10/1979 City of Rocks St. Park, 3/1987 N of Hatchita, 5-6/1994 Managas Valley, 12/1996-2/1997 N of Hatchita 10/99 3.5 mi S of Hatchita
Grant/Luna	9/1918 20 mi SE Silver City, 9/1928 SE of Silver City	
Luna County	3/1853 near Deming 9/1917 near Nutt 7/1951 3 sites/obs near Hermanas 5/20/1952 -nest w 2 young SW of Deming - near Hermanas	2/1982 S of Deming 10/2000 N of Hermanas - 3 birds incl 1 possible pair 01/2001 - Nesting activity
Doña Ana County	8/1909 1 nest w young 10mi E of Rincon, 1908 & 1909 several nests Jornada, 5/1975 near Santa Teresa	7/1996 Isaacks Lake, 4/17/1998 Jornada Exp Range, 4/18/1998 Santa Theresa near the airport, 8/2/1999 Baylor Canyon Rd near Organ (unconfirmed) 9/9/1999 1 Mi E of I-10 Lazy E Exit,

<i>County</i>	<i>Historical Sightings 1853 - 1952</i>	<i>Recent Sightings 1962-2001</i>
Otero	6/1917 45 mi S of Alamogordo at 5500 ft.	5/1991 Holloman Lakes, 6-7/1991 near Tularosa, 9/1993 W of Orogrande, 6-7/1994 near Tularosa, 5/1997 Otero Mesa (unconfirmed) 8/11/1999 Mile Marker 185 Hiway 70 on WSMR 9/11/1999 McGregor Range Fenceline at Gyp Tank 9/18/1999 McGregor Range Fenceline S of Gyp Tank
Sierra	11/1918 N of Engle, 12/23/1918 10 mi NE of Engle 5/1924 Cutter, 15 mi SE of TorC (8 mi S of Engle, 15 mi SE of Cutter)	
Socorro	8/1917 25 mi N of Engle	8/1992 W of Bingham
Socorro/Valencia		1/1998 N of Bernardo
Eddy		12/1963 near Otis, 4/1988 30 mi E Carlsbad near Laguna Grande, 11/1993 Carlsbad
Lea		5/1962 San Simon Ranch
TX Culberson		1996 Hwy 90 3 mi S of Van Horn
TX Jeff Davis		1992 Hwy 90 near Valentine

Currently, coastal southern Texas supports the majority of falcons in the United States. Since 1985, falcons have been propagated and reintroduced to southern Texas around the Laguna Atascosa National Wildlife Refuge (NWR) and Matagorda Island NWR. A released pair nested and fledged one young on Port of Brownsville land in extreme southern Texas in 1995. In 1996, four territorial pairs produced three fledglings in the same vicinity (P. Jenny, The Peregrine Fund, pers. comm. 1996). These reintroduced falcons were the first known successful nestings in the United States since the nest record near Deming, New Mexico, in 1952 (Ligon 1961). As of May 2001, there were 33 pairs of falcons in the wild in Texas with further supplements to the population planned for later in 2001. Of these 33 pairs, 22 were nesting in the spring of 2001 with a total of 13 successful nests and 21 chicks banded. In addition there is a scheduled release of captive-reared falcons on the Aransas NWR in June 2001.

Until 1992, it was believed that the only remaining falcons were restricted to coastal southern Texas and eastern Mexico from southern Tamaulipas south, even though no systematic surveys had been done in northern or central Mexico. Hector (pers. comm. 1996) did cursory surveys in northern Mexico and commented on habitat suitability. No falcons were detected during those surveys. But in 1992, a population of falcons was found on private ranch land in northern Chihuahua, Mexico, about 80 miles south and 50 miles west of the United States border (Montoya and Zwank 1995). Since the confirmation of this population, nesting falcons have been found about 50 miles to the west and reliable observations have been reported from the Galeana and Gomez Frias areas of Chihuahua, about 150 miles west of the 1992 discovery site. Young *et al.* (2000) found nesting falcons about 31 miles west of the Texas border (about 74 miles south of El Paso, Texas). Young *et al.* (2000) also found a single falcon in 1998 and 1999 within 7 miles of the New Mexico border near Palomas, Chihuahua.

During the past decade, falcons have been observed sporadically throughout their historical range in the Southwest (J. Lewis, U.S. Fish and Wildlife, pers. comm.)(Table 1). Whether a remnant population is present in New Mexico, or falcons are immigrating from northern Mexico, is open to speculation. However, the presence of a breeding population in northern Chihuahua in close proximity to the United States provides a potential source for the birds seen in New Mexico and western Texas.

Montoya (pers. comm. 1996) banded 13 juvenile falcons at 9 to 12 nests in Chihuahua in 1996. To date, only one juvenile bird banded in this study has been seen in New Mexico. It was observed on Otero Mesa in 1999.

In the spring of 2001, a nesting pair of falcons was documented near Deming. This is the first documented pair of nesting falcons in New Mexico since the pair in Luna County in 1952.

The success of reintroductions in Texas, the several observations of falcons in New Mexico in recent years, and now the presence of a nesting pair, all indicate that falcon recovery is possible in New Mexico. Despite the drastic reduction of desert grasslands in southern New Mexico, there are still extensive grasslands within the historical range of the falcon totaling about 5,752,000 acres (Figure 3). The BLM and the Service (1999) have developed interim criteria for falcon habitat pending completion of an ongoing study entitled "Determination of Habitat Suitability for Aplomado Falcons on Public Lands in Southern New Mexico". The criteria broadly describe habitat as grasslands of greater than 320 acres in size, below 6,500 feet in elevation, and with adequate available nest substrates. We estimate that 70 percent of the grasslands shown on Figure 3 meet these criteria for a total of about 4,026,000 acres of suitable falcon habitat in New Mexico. Of the 4,026,000 acres of suitable falcon habitat in New Mexico, approximately 65 percent is heavily fragmented with roads, highways, rural developments, cell towers, power lines, oil and gas development, and livestock management facilities leaving 1,409,000 acres of relatively unfragmented suitable falcon habitat. The

majority of this habitat occurs on Otera Mesa, White Sands Missile Range, Hidalgo County, and the Armendaris Ranch.

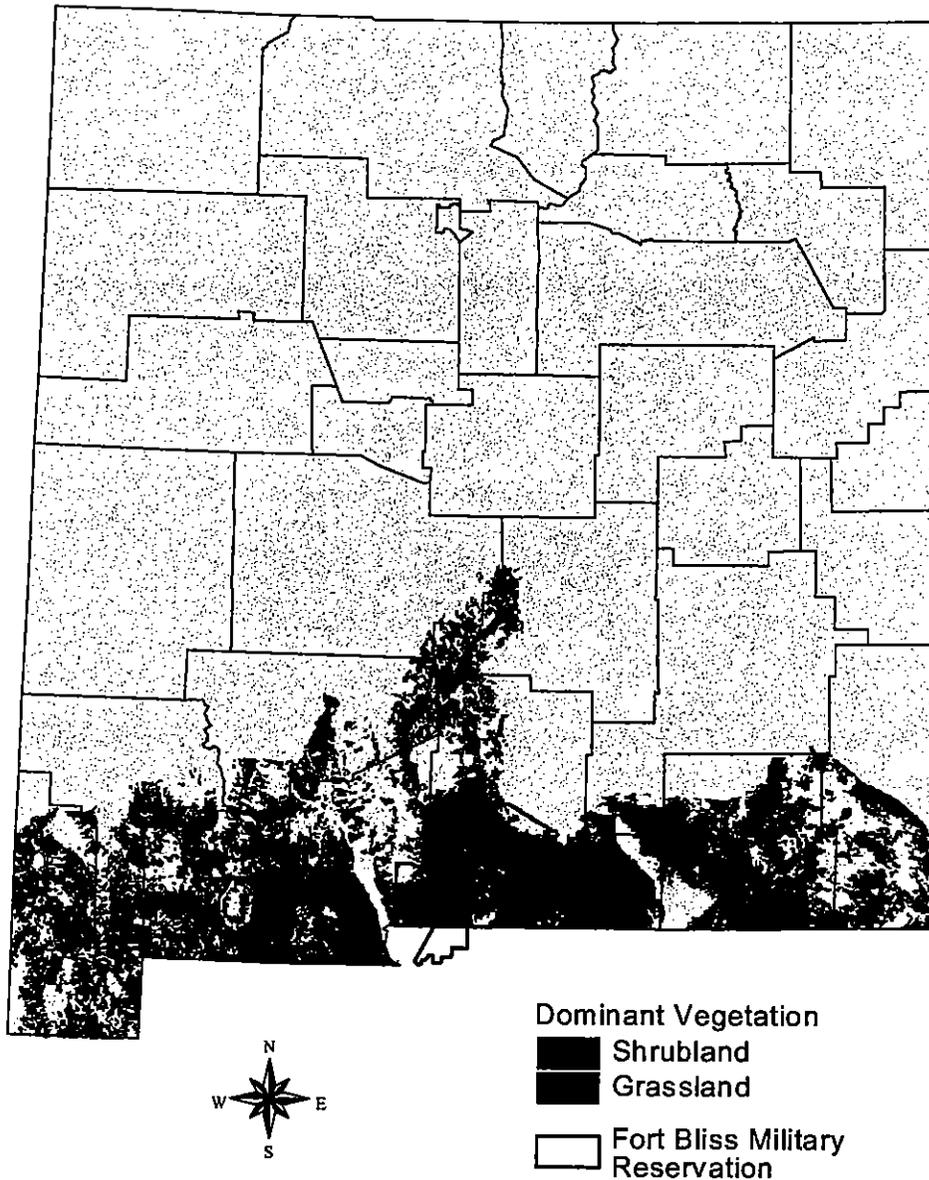


Figure 3. Distribution of grassland and desert shrubland in the predicted range of the aplomado falcon in New Mexico. Data derived from GAP (Thompson *et al.* 1996).

### III. Environmental baseline

Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone section 7 consultation, and the impacts of State and private actions that are contemporaneous with the consultation in progress. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

#### A. Status of the species in the action area

The action area for this project is defined to include the Bennett Ranch Unit plus a buffer of 0.5 to 1.5 miles (nearest section line) and the tentative location of the spur pipeline in Texas plus a buffer of 1,200 feet on each side of this pipeline (Figure 1).

The action area is located in the south-central part of Otero Mesa, which is located in south-central New Mexico and extends south into Texas. Otero Mesa is one of the few remaining unfragmented desert grasslands in New Mexico. The BLM manages the predominate land uses of grazing and oil and gas activities in the action area. Falcon surveys in the action area have included incidental surveys during area visits, site specific project surveys for oil and gas operations, and surveys for the U.S. Air Force GAF II project. No falcons were found during these surveys. The nearest falcon sightings were in 1999 on McGregor Range about 23 miles north of the action area (Meyer 1999).

The action area is Chihuahuan Desert grassland (grass-rolling upland and grass-flat standard habitat sites) containing primarily black (*B. eriopoda*) and blue grama. Soaptree yucca is scattered throughout; other dominant shrubs include mormon tea, javelina bush (*Condalia ericodes*), and small mesquite. Tables 2 and 3 give soils, range sites, and standard habitat sites for the proposed pipeline route and standard habitat sites for the action area. Soils provide effective plant rooting medium to a depth of 12-15 inches for the majority of the area, and to 24 inches in the drainages. Due to low precipitation, seeding success in these soils is considered marginal. The project area was inventoried for exotic weeds including African rue (*Peganum harmala*), malta starthistle (*Centaurea melitensis*), Russian knapweed (*Acroptilon repens*), and others. No exotic weeds were found.

Table 2. Soils, range sites, and standard habitat sites crossed by the New Mexico portion of the proposed Bennett Ranch Gathering System pipeline.					
<i>Soils</i>	<i>Soil Map Unit</i>	<i>Depth A Horizon</i>	<i>Range Site</i>	<i>Standard Habitat Site</i>	<i>% of Route</i>
Philder Very Fine Sandy Loam 0-9% Slope	PEC	<12"	Shallow Sandy SD-3	Grass Rolling Upland	72
Reyab-Armesa Assoc. Gently Sloping	RFA	<24"	Loamy	Grass Flat	4
Lozier Rock Outcrop Complex 5-20% Slope	LOD	<15"	Limestone Hills SD-3	Mixed Shrub Hill	24

Table 3. Standard habitat sites within the New Mexico portion of the action area.		
<i>Habitat Name</i>	<i>Acres</i>	<i>Percent</i>
Creosote Rolling Upland	996.9532	3.7
Grass Flat	1102.5029	4.1
Grass Hill	14.9391	0.1
Grass Rolling Upland	21394.5587	78.6
Mixed Shrub Hill	624.1610	2.3
Mixed Shrub Mtn	1115.4088	4.1
Mixed Shrub Rolling Upland	1820.0881	6.7
PJ/Grass Mtn	151.2016	0.6
<i>Totals</i>	<i>27219.8134</i>	<i>100.2</i>

The BLM has concluded that the ecological status of the action area is late seral (Table 4). However, early seral plant communities occur in a zone of moderate to heavy grazing around a dirt tank (cattle water source) about 0.1 mile from the proposed pipeline near its southern end. A rough GIS-derived estimate suggests that forage utilization is moderate to severe

(near livestock waters) for 40-45 percent of the action area and slight to light for the remainder of the area. Road density is 1.3 miles/square mile. Core areas (areas greater than 1,200 feet from existing roads) represent 10,269 acres (38 percent) of the action area. Core areas are calculated using all existing roads and previously permitted oil and gas actions including four expired APDs. The expired APDs were included because HEYCO wishes to retain them on the baseline (Leonard Carpenter, HEYCO, pers comm.). Raptor nests inventoried for the 3-D seismic project (but not the entire action area) were analyzed because they provide potential falcon nest substrates. The analysis indicates an equal likelihood that raptor nests will be either less than or greater than 1,200 feet from a road. However, the major concentration of nests is in the north-central part of the action area and appears to be associated with the largest block of core areas and with areas of slight to light grazing utilization. The area along the pipeline in New Mexico was surveyed for nesting substrates and existing raptor stick nests in 1999. Two stick nests were located near the proposed pipeline, one within 375 feet and the other within 2,600 feet.

Table 4. Ecological status within the New Mexico portion of the action area.		
<i>Status</i>	<i>Acres</i>	<i>Percent</i>
Early Seral	187.0438	0.7
Late Seral	26650.1301	97.9
Mid Seral	382.6395	1.4
<i>Totals</i>	<i>27219.8134</i>	<i>100</i>

The BLM and the Service (1999) have developed interim criteria for falcon habitat pending completion of an ongoing study entitled "Determination of Habitat Suitability for Aplomado Falcons on Public Lands in Southern New Mexico." The criteria broadly describe habitat as grasslands of greater than 320 acres in size, below 6,500 feet in elevation, and with adequate available nest substrates. The BLM biologists estimate that the western and south-central parts of the action area in New Mexico are good falcon habitat and that the north-central part with the most raptor nests, fewest roads, and lightest grazing is perhaps the best habitat. Poor habitat is concentrated in the east-central and southeast corner of the action area near areas of shrub encroachment and near limestone and igneous hills and mountains (Table 5).

Table 5. Summary of estimated aplomado falcon habitat quality.		
<i>Estimated Habitat Quality</i>	<i>Acres</i>	<i>Percent</i>
excellent	2135.3240	7.8
good	2977.2130	10.9
moderate	17384.5260	63.8
poor	4760.4400	17.5
<i>Total</i>	<i>27257.503</i>	<i>100</i>

Meyer and Tapanelli (1999) reported the Bennett Ranch area appears similar with respect to vegetation type and physiognomy to occupied habitat in Chihuahua. They noted, however, that grazing utilization in the action area appeared relatively high and may reduce prey populations.

The action area occurs within documented historical falcon habitat and contains desert yucca/grassland communities that are currently suitable falcon habitat. Large unfragmented yucca/grassland areas such as Otero Mesa are considered essential to the recovery of this species in New Mexico. Using available information collected in occupied falcon habitat, potential habitat for the falcon in the action area was modeled in a Geographic Information System (GIS). Preliminary results indicate that the pipeline would be located in moderate to poor quality habitat, based on apparent vegetation conditions and previous land uses.

The area adjacent to the spur pipeline in Texas is a southern extension of the same desert yucca/grassland communities as those in New Mexico. Field observations (from public lands in New Mexico and from rural roads leading to U.S. Highway 62-180 in Texas) suggest that vegetative (grass) cover and structure may be greater in some areas, but is otherwise generally the same as New Mexico. Spectral analysis (unsupervised and not ground truthed) of Landsat 5 Thematic Mapper data taken during the summer of 1993 consisting of a basic 25-class categorization and Normalized Difference Vegetation Index (NDVI) as 25 classes, shows that roughly the same spectral signatures occur in both areas. Therefore, it is likely the same physical and biological characteristics that occur in New Mexico also occur in Texas.

#### **B. Factors affecting the species' environment within the action area**

The action area in New Mexico has about 22,300 acres of Federal lands managed by BLM, 4,480 acres of State lands, and 240 acres of private lands. Livestock grazing is the principal traditional use for the entire action area. Livestock grazing directly impacts herbaceous ground cover, plant density, and species composition. Removal of fine fuels influences natural fire regimes. Grazing can either maintain vegetative communities or convert them to new community types depending on such factors as present vegetative community, timing

and duration of grazing, and livestock numbers. Livestock use large yuccas for rubbing and shading; they can damage plants enough to make them collapse (Young *et al.* 2001). This could detrimentally affect the availability of raptor nest substrates if the initial density of yuccas is low. Livestock improvements, particularly open-topped water storage tanks, can be a hazard to falcons. Six dead falcons were found in storage tanks in the falcon study area in northern Mexico (K. Young, New Mexico State University, pers. comm. 1999). These tanks did not have the wildlife escape ramps that are required on storage tanks and water troughs on BLM lands. Other improvements including roads, fences, and livestock handling facilities all fragment falcon habitat.

The action area is within two BLM grazing allotments, the Coody Ranch (allotment 09001) and the Hat Ranch (allotment 09018). These allotments were included in a section 7 consultation regarding BLM's proposed reissuance of 10-year term grazing permits for 25 allotments in southwestern New Mexico (Cons. #2-22-99-I-360). The Coody Ranch allotment had been managed for a maximum of 575 cattle and 5 horses (6036 Animal Unit Months (AUMs)) using a best-pasture management scheme and a variable season of use. Forage utilization in key areas was determined to be moderate and the trend for key forage species was determined to be stable. The Hat Ranch allotment had been managed for a maximum of 1245 cattle and 35 horses (9369 AUMs) using a management scheme of continuous use with a moderate stocking level and a year-long season of use. Forage utilization in key areas was determined to be light to moderate and the trend for key forage species was determined to be stable. The new 10-year permits were to be issued with no change in livestock management. The BLM determined that the proposed action "may affect, but is not likely to adversely affect" the falcon and the Service concurred with this finding on September 1, 2000.

The action area is within the flight paths for several low-level military training routes. About 163,000 acres of desert grassland vegetation on Otero Mesa are overflown by about eight flights per day with minimum flight elevations of 100 feet above ground level. The noise levels from these flights are above anything wildlife experience in nature and it is unknown how this might affect the potential for falcons to occupy the area. The Service issued a non-jeopardy biological opinion on May 8, 1998, (Cons. #2-22-96-F-334) on the proposed expansion of German Air Force operations at Holloman Air Force Base, the continued use of an Air National Guard military training route, and the reconfiguration and continued use of several other military training routes in New Mexico. The Service concluded that take of the falcon was likely due to harassment in the form of disturbance during low-level flight activities, but was unable to quantify the anticipated level of incidental take. The reasonable and prudent measure given for the falcon was to, "Conduct all proposed activities in a manner that will minimize modification and loss of Aplomado falcon habitat and reduce disturbance." Terms and conditions for other listed birds included seasonal timing restrictions and minimum elevation restrictions for training flights, but no such restrictions were given for falcon habitat due to the infrequent occurrence of falcons in New Mexico.

There was little active oil and gas exploration and development on Otero Mesa until recently. The history of that development in the action area is described in the "Consultation History" section of this document. Past oil and gas-related surface disturbances that could affect the suitability of falcon habitat in the action area include the 3-D seismic study, the completed Bennett Ranch 1Y well, and the presently permitted Bennett Ranch Well 25-1 (Figure 1). The seismic study produced only temporary disturbance. The two wells create permanent disturbance from the well pads, and access roads, and for producing wells from the production facilities and increased human activity at the well sites.

#### **IV. Effects of the action**

##### **A. Direct effects**

Construction of the proposed pipeline will occur within a 50-foot wide work area for 3.3 miles in suitable falcon habitat in New Mexico. Construction will entail the use of heavy equipment for trenching, pipe construction and laying, and back-filling. About 20 acres will be disturbed through removal of vegetation, and soil churning and compaction. Specific effects of this disturbance will include: soil churning, soil compaction, loss of topsoil (when used as pipe bedding material), loss of vegetative cover, altered surface and subsurface water flow, increased erosion, changes in plant density and species composition, loss of specific habitat features such as large shrubs, and potentially the introduction of exotic plants or animals. These changes will persist, negatively affecting falcon prey populations until the habitat in the pipeline corridor is restored to near pre-disturbance conditions, which is a slow process in this desert environment.

Construction will disturb and displace ground-dwelling animals, disturb and destroy falcon habitat structures such as shrubs with nests, cause habitat loss through erosion, and change food and cover relationships due to vegetation changes and increased erosion. The composition and density of animal species will change within and adjacent to the pipeline. This will decrease prey base populations for the falcon (Trombulak and Frissell 2000). Passerines comprise up to 97 percent of the biomass in falcon diets. A reduction in the numbers of grassland birds may be one reason for the falcon's decline in New Mexico (R. Meyer, La Tierra Consulting, pers. comm). Thus, activities that have a negative affect on grassland birds will reduce the likelihood that falcons can survive within the action area. Machinery noise and human activity will disturb and displace wildlife during the 2-3 weeks required to complete the pipeline; but, this will largely disappear after construction is completed. However, wildlife disturbance and displacement will continue long-term to a lesser degree if a road is built along the pipeline.

The intensity of edge effect disturbance will be greatest adjacent to the construction area and extend outward, dissipating with distance. The edge effect could extend a large distance (as much as 1.2 miles) from the pipeline route (Lovejoy *et al.* 1986, Wilcove *et al.* 1986, Fiedler and Jain 1992, Noss and Cooperider 1994, Forman and Deblinger 2000, Trombulak and

Frissell 2000). However, we estimate most impacts related to edge effect will occur within 1,200 feet of each side of the project area creating edge effect disturbance of about 1,000 acres along the 3.3-mile length of the pipeline. Most of the vegetation in the project area is short, and there is little surface water to transport soil and chemicals long distances. The initial edge effect will be larger (in terms of spatial extent) and will subsequently contract, but not disappear, following construction. Revegetation of disturbed sites in Chihuahuan desert grasslands is typically very slow. Use of the pipeline as a road would also perpetuate the edge effect by maintaining surface disturbance. The edge effect would result in disturbance and displacement of falcons and their prey populations.

Roads, range improvements, and past oil and gas activities have all contributed to existing habitat fragmentation in the action area. The proposed pipeline will increase this fragmentation.

### **B. Effects of interrelated and interdependent actions**

Interrelated actions are those actions that are part of the proposed action and depend on the proposed action for their justification. Interdependent actions have no independent utility apart from the action under consultation; they would not occur "but for" the proposed action.

The pipeline spur in Texas is the only interdependent/interrelated action anticipated. The effects of this pipeline will be similar to those of the proposed gathering system pipeline in New Mexico. The spur pipeline would differ in size of effects and length of construction disturbance. The BLM estimates the pipeline would be approximately 12 miles long and disturb 73 acres during construction. Edge effect disturbance will total about 3,500 acres within 1,200 feet on each side of the pipeline. Construction activity would last considerably longer than required for the gathering system in New Mexico due to the four-fold increase in pipeline length. This area is unsurveyed and comprises the larger portion of probable suitable habitat for the falcon. Over this large area of disturbance the Service expects that there will be destruction of nesting and perching structures, as well as negative affects on habitat continuity and potential prey species from the pipeline and any associated roads.

### **C. Indirect effects**

It is difficult to predict the amount of continuing development in the Bennett Ranch Unit resulting from the success of the 1Y well because this well is the first discovery of commercial quantities of oil or gas in a largely unexplored area. The BLM did a minimal Reasonable and Foreseeable Development (RFD) analysis for a previous APD in the Bennett Ranch Unit. This analysis predicted a 10 percent likelihood of future development in the Bennett Ranch Unit. According to the BLM, it is likely that additional wells will be drilled in the Bennett Ranch Unit, but it is unlikely that further wells will be added to the proposed pipeline. The recent 3-D seismic study, which is the proprietary information of HEYCO, is the best information to help predict future development. Even with this information,

HEYCO's predictions about development in the Bennett Ranch Unit remain uncertain. Nevertheless, the purpose of the proposed pipeline gathering system is to facilitate the marketing of gas from the Bennett Ranch 1Y well and five additional wells; HEYCO has an approved APD to drill one more well in the Unit; the Bennett Ranch Unit was established to facilitate the orderly development of an oil or gas pool, field, or like area; and HEYCO indicated in a meeting at the 1Y well site on May 29, 2001 that up to 17 wells might be drilled in the Bennett Ranch Unit (HEYCO, pers. comm. 2001). We will, therefore, use the figure of 17 wells in the Bennett Ranch Unit to represent the reasonably certain indirect effects of the proposed action.

In oil and gas development, there is disturbance at well pads during drilling followed by installation of permanent structures for producing wells. Permanent structures may include pumpjacks for oil wells, open pits, fluid storage tanks, meter houses, separator units, and compressors. Pumpjacks and compressor units produce almost constant noise. Spills of oil and other produced fluids are a possibility during drilling and later during storage and transport. Hydrogen sulfide and other gasses are frequently vented to the atmosphere. Producing wells require regular checking and maintenance necessitating frequent travel on what had formerly been infrequently traveled roads. The roads, pipelines, and power lines needed to service producing wells add to habitat fragmentation.

The Bennett Ranch Unit is about 8,800 acres. With the currently allowable spacing of one well per 320 acres for natural gas wells, there could be up to 27 natural gas wells in the unit. HEYCO indicates the maximum number of wells will be 17. For the six previously approved well sites, it was necessary to construct an average of about 0.3 miles of new access road per well site. This would make about 5.1 miles of access road for 17 well sites. With a width of 14 feet, this would total 8.7 acres of ground disturbance. Well pads for the six previously approved well sites have been a maximum of 600x600 feet. With 17 well sites, this would total about 149 acres of ground disturbance.

Pipelines create disturbance during construction and create long-lasting surface disturbance, but do not usually contribute noise disturbance or have the constant visitation required of well sites. The proposed pipeline gathering system will be about 3.3 miles long in a corridor 50 feet wide. This equals about 20 acres of surface disturbance. The proposed pipeline services only the Bennett Ranch 1Y well, but will have the capacity to service up to six wells through connections not yet determined. We estimate it will require two more miles of pipeline to connect up to five additional wells to this pipeline for an additional 11.2 acres of surface disturbance. We estimate it will require an additional 11 miles of pipeline to service the full field of 17 wells for additional surface disturbance of about 63 acres.

In total, we estimate indirect surface-disturbing effects may total approximately 243 acres. Because habitat reclamation is difficult in this desert environment, we will assume that this 243 acres will be lost as suitable falcon habitat.

Vehicle travel, well maintenance, compressor noise, and increased access for non-oil and gas related activities will create a disturbance edge effect that could extend as much as 1.2 miles from the well sites. However, we will use the same distance of 1,200 feet that the BLM used for calculating the extent of edge effects. We consider that the disturbance edge effects at well sites will continue as long as the wells are producing and being visited for normal oilfield activities. Each well will have an edge effect of about 40 acres for a total of 680 acres for 17 wells. We assume this 680 acres will be lost as suitable falcon habitat during the producing life of the Bennett Ranch Unit.

The effect of drilling 17 more wells will virtually eliminate those core areas (more than 1,200 feet from a road, well pad, or other development) within the Bennett Ranch Unit and result in greatly fragmented habitat. This amount of development would likely eliminate the Bennett Ranch Unit as suitable falcon habitat.

#### **V. Cumulative effects**

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Cumulative effects include livestock grazing, associated ranching activities, and oil and gas exploration and development on State and private lands. There are 4,480 acres of State lands and 240 acres of private lands in the action area, which is about 17 percent of the total acreage.

State and private lands in the action area in New Mexico are managed as part of the larger BLM grazing units. Range conditions and trends appear to be the same as for BLM lands. The private land has a ranch house and other ranch facilities that should continue the same use so long as the public lands are being used for grazing. Private land occurs along the length of the spur pipeline in Texas and the predominate use is grazing.

There are about 800 acres of State minerals in the Bennett Ranch Unit in four leases owned by HEYCO. It is presumed the other State lands in the action area are also leased for oil and gas exploration, but their ownership is unknown. Exploration and development of the State leases is related to the previously approved and future wells on Federal lands.

The cumulative effects of these actions would result in the elimination of these areas as suitable falcon habitat.

## **VI. Conclusion**

After reviewing the current status of the falcon, the environmental baseline for the action area, the effects of the proposed Bennett Ranch Unit Gathering System, and the cumulative effects, it is the Service's biological opinion that the Bennett Ranch Unit Gathering System, as proposed, is not likely to jeopardize the continued existence of the falcon. No critical habitat has been designated for this species, therefore, none will be affected.

The conclusion of no jeopardy for the falcon is based on this area being a small percentage of the total unfragmented habitat remaining for the falcon. The portion of the project area under the jurisdiction of the BLM has not been systematically surveyed for falcons since 1999. No falcons were observed at that time. Although falcons may have repopulated the area since 1999, there is a low likelihood that this species currently occupies the action area.

The proposed action will adversely impact falcon habitat necessary for recovery. When the direct, indirect, interrelated/interdependent, and cumulative effects are all considered, perhaps 12,000 acres of relatively unfragmented habitat within the action area could be reduced in habitat quality. Only a few hundred acres will be directly altered; the remaining acreage will be reduced in quality due to the edge effects of nearby development and habitat fragmentation. This represents impacts to only about 0.9 percent of our estimate of about 1,409,000 acres of relatively unfragmented suitable falcon habitat in New Mexico. It is, therefore, unlikely that these habitat impacts will jeopardize the falcon's continued existence or appreciably reduce the likelihood of its recovery.

## **INCIDENTAL TAKE STATEMENT**

Section 9 of the Act, as amended, prohibits taking (harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct) of listed species of fish and wildlife without a special exemption. Harass is further defined as an intentional or negligent act or omission that creates the likelihood of injury to wildlife by annoying it to such an extent to significantly disrupt normal behavior patterns. Normal behavior patterns include, but are not limited to, breeding, feeding, and sheltering. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the incidental take statement.

The measures described below are non-discretionary, and must be undertaken by the Federal and non-federal applicants to this consultation so that they become binding conditions of any grant or permit issued to any applicants, as appropriate, for the exemption in section 7(o)(2) to apply. The Federal agencies have a continuing duty to regulate the activity covered by this

incidental take statement. If the Federal agencies (1) fail to assume and implement the terms and conditions or (2) fail to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Federal agencies must report the progress of the action and its impact on the species to the service as specified in the incidental take statement. [50 CFR §402.14(i)(3)]

### **Amount or extent of take anticipated**

The Service anticipates that one falcon could be taken as a result of this proposed action. Almost all of the falcons sighted in New Mexico during the 1990s have been solitary birds. Therefore, it is likely that, at most, a solitary individual may have established residency in the project area subsequent to the most recent surveys or a dispersing bird could arrive in the project area either during or after the construction period. We expect any take would be in the form of harassment due to construction noise or subsequent road use, if one is established along the pipeline route.

Because private lands are not within the jurisdiction of the BLM, no take on private lands is authorized through this incidental take statement. To ensure compliance with the Act, the project proponent for the Texas portion of the pipeline should coordinate with the Service to determine if a permit is needed under section 10(a)(1)(B) of the Act.

### **Reasonable and prudent measures**

The Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the falcon:

1. Suitable precautions must be taken to minimize the effects of the pipeline and pipeline construction activities on individual falcons that may be present or may arrive in the action area.
2. The BLM shall conduct thorough surveys for the falcon in the action area two weeks prior to pipeline construction. Additionally, the BLM shall conduct surveys for the falcon at least weekly during construction. If falcons are observed in the action area, HEYCO shall cease any operations that would result in further harassment or disturbance, and the Service will be immediately notified. The surveys will use the most recent survey protocol and be conducted by qualified field personnel possessing valid U.S. Fish and Wildlife Service 10(a)(1)(A) permits.

### **Terms and conditions**

In order to be exempt from the prohibitions of section 9 of the ESA, the BLM must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary. The salvage of falcons (adults or eggs) requires a section 10(a)(1)(A) permit from the Service and such take is not covered by this incidental take statement.

1. Locate pipeline to minimize disturbance and avoid stick nest structures in suitable habitat.
2. Reclamation will be accomplished in a manner that prevents the establishment of a permanent road along the pipeline route.
3. Proper facilities to dispose of litter will be provided and used by construction and maintenance personnel in order to minimize attracting potential nest predators such as ravens to the action area.

### **CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

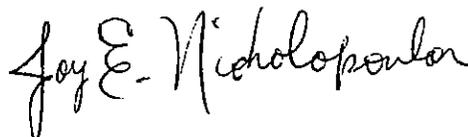
1. On-site personnel employed or associated with the project proponent should participate in worker environmental awareness program. Under this program, workers will be informed about mitigating measures and operating procedures.
2. The BLM should conduct annual surveys of suitable falcon habitat on Otero Mesa to better detect colonizing individuals.
3. The BLM should assist with future surveys and monitoring, prioritizing areas for reintroduction, and maintaining or improving the condition of desert grasslands to benefit the falcon.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

**REINITIATION - CLOSING STATEMENT**

This concludes formal consultation on the proposed action (Bennett Ranch Unit Gathering System - Pipeline) on lands administered by the BLM in Otero County, New Mexico. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required if: 1) if the amount of incidental take is exceeded; 2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; 3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or 4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

In future communications regarding this consultation, please refer to consultation #2-22-01-F-373. If you have any questions, please contact Lyle Lewis at the letterhead address or at (505) 346-2525, ext. 114.



Joy E. Nicholopoulos

cc: (w/o enc)

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