

**McGregor Range Land Withdrawal
Legislative Environmental Impact Statement**

3.1 LAND USE

This section presents land use information for McGregor Range and, to some extent, the Fort Bliss installation. The ROI for land use includes areas adjacent to the McGregor Range boundaries in Otero and Doña Ana counties, New Mexico, and El Paso County, Texas.

3.1.1 Land Resources and Management of McGregor Range

McGregor Range is part of the Fort Bliss installation, which is comprised of about 1.12 million acres (Table 3.1-1). Ninety-nine percent of the 1.12 million acres is used as training and impact areas supporting military training activities. Also included in the Fort Bliss Training Complex are Doña Ana Range–North Training Areas, located in Otero and Doña Ana counties, in New Mexico, and the South Training Areas in El Paso County, Texas (see Figure 1.2-1). Castner Range, also located in El Paso County, Texas, is no longer an active training range. With the exception of the impact area on Doña Ana Range–North Training Areas, all active areas used for training activities are divided into numbered training areas. These are designated numerically (e.g., TA 2A, TA 13) for the purpose of specifying geographical locations for mission activities. Surrounding areas are predominantly open, undeveloped rangeland used for cattle ranching and some dispersed recreation.

Table 3.1-1. Acreage of Fort Bliss Installation Components

<i>Area</i>	<i>Acres</i>
Main Cantonment	10,965
Doña Ana Range–North Training Areas	297,006
McGregor Range	697,472
South Training Areas	104,042
Castner Range	7,040
Castner Recreation Area	70
<i>Total</i>	<i>1,116,595</i>

As part of the land withdrawal renewal process, a *Land Use Study* (U.S. Army, 1998e) has been prepared that describes the land management framework for the current withdrawn area. The study identifies current land uses and users and assesses effects of proposed uses on existing and potential resource use. This section presents information on current land status and management, existing uses and users, special use areas, and summary of compatibility of land uses on McGregor Range with surrounding areas.

3.1.1.1 Land Status

McGregor Range is comprised of 697,472 acres owned by the U.S. Government. Of this, 71,083 acres are military acquired land owned in fee by the Army. Under the MLWA of 1986 (PL 99-606) 608,385 acres of public land were withdrawn for military use. In addition, 18,004 acres of USFS-managed land are used through cooperative agreement as a safety buffer and for ground troop maneuvers. Table 3.1-2 summarizes land status acreage for McGregor Range, and Figure 1.2-2 illustrates the general land status of McGregor Range.

The Army has annual rights to about 110,000 gallons per day (gpd) of water from the Sacramento River and Carrisa Springs for preservation of fish and wildlife (U.S. Army, 1998f). All mineral rights on withdrawn public land and Army fee-owned land are managed by the BLM, with Army concurrence regarding consistency with military missions. The Sacramento River also supplies water to the community of Oro Grande.

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Table 3.1-2. Land Status of McGregor Range

<i>Owner</i>	<i>Acres¹</i>
Withdrawn Land (PL 99-606)	608,385
Army-owned throughout withdrawn area	69,723
USFS	18,004
Army-owned within National Forest	1,360
<i>Total</i>	<i>697,472</i>

¹ Rounded to nearest whole number.

² State lands acquired by BLM in 1992.

The State of New Mexico owns a right-of-way (ROW) for New Mexico Highway 506, but Otero County maintains the highway. The public ROW was grandfathered in when the FLPMA was passed in 1976, because it adopted the authority granting public access under the older mineral law, RS2477 (Creager, 1996). In addition, a ROW for a 345 kilovolt (kV) electric power line, held by El Paso Power Company until the year 2036, traverses McGregor Range north of New Mexico Highway 506. El Paso Electric Company (EPEC) holds a natural gas pipeline ROW in the south part of the range until the year 2009.

3.1.1.2 Land Management

In 1986, BLM adopted the White Sands RMP. This plan sets the basic management framework for all lands within the resource area, including McGregor Range, which is within the resource area.

Under the MLWA, the Secretary of the Interior manages nonmilitary uses of the withdrawn lands on McGregor Range, including recreation, wildlife habitat management, and grazing, with approval from the Army. However, the Secretary of the Army has the authority to limit nonmilitary uses and public access to the range for the purpose of military operations, public safety, or national security. The BLM (Las Cruces Field Office) manages daily nonmilitary uses of McGregor Range within the parameters defined by the 1990 MOU.

In accordance with the MLWA and Section 202 of the FLPMA (PL 94-579) of 1976, the BLM prepared an amended RMP for McGregor Range and adopted the RMPA in 1990. BLM also entered into a MOU as specified by PL 99-606, between the Secretary of the Interior and the Secretary of the Army in 1990 to implement the amended plan. The RMPA includes management objectives for lands, realty, and access; mineral resources; soil, water, and air; livestock grazing; wildlife and habitat management; recreation; visual resources; wilderness; cultural resources; and fire management. Army-owned lands within the range boundary are included in the RMPA land area for overall resource planning where appropriate. For example, the planning area for wildlife or livestock management functions includes Army-owned property that is functionally indistinguishable from adjacent withdrawn land. However, planning of realty actions is confined to lands under the owning agency. A description of the BLM's overall land management planning process, and specific management objectives and planned actions for McGregor Range is provided in Chapter 3 of the *McGregor Range, New Mexico, Land Withdrawal Renewal Land Use Study* (U.S. Army, 1998e).

The USFS manages portions of Lincoln National Forest within McGregor Range under the *Lincoln National Forest Plan* (USFS, 1986). These lands fall within Management Area 2C, known as the "Grapevine" area. All resources in this area are managed at a low level, with an emphasis on preserving soil productivity.

All activities and access on McGregor Range are controlled by the Army in accordance with the *Standard Operating Procedures (SOPs) for Weapons Firing and Maneuver Area Use* (U.S. Army 1996b). The

SOP prescribes the general safety requirements and procedures for users of the training areas and ranges. All persons are required to coordinate access and use with the Range Commander (through the Range Development and Enforcement Office) to ensure safety and to avoid interference with military missions. This procedure applies to government employees, contractors, and the public at large. Current access procedures allow concurrent use of some areas for a military mission or Army and BLM maintenance and resource survey activities, with public recreational use. Members of the public must obtain annual recreation access permits from either the Army or the BLM. Approximately 1,000 to 1,700 recreation permits are issued annually for purposes such as hunting, hiking, nature conservation interests, and guided nature tours. Permit holders are responsible for complying with specific procedures for entry, use, and departing the range (Bankston, 1997).

The Army currently uses the Army ITAM program as a tool for monitoring vegetative cover impacts from different mission activities. Various elements of this program provide information about land condition trends, land rehabilitation characteristics, and training requirements using digital geographic information system (GIS), allowing selection of training locations that will require the minimum of cost for land restoration and environmental compliance. On McGregor Range, the INRMP applies to Army fee-owned land and managing impact of military missions on withdrawn public land, as specified in the BLM/Army MOU (Appendix A). The BLM retains management for public access uses on withdrawn and Army fee-owned land as enumerated in the FLPMA PL 99-606 and the McGregor Range RMPA (BLM, 1990a).

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3.1.2 Land Uses and Land Users on McGregor Range

Within McGregor Range are facilities, equipment, and infrastructure for specific military activities. Most of the land area is used for a variety of overlapping military and nonmilitary uses (including ground maneuvers, safety zones, recreation and hunting, grazing and natural resource field surveys).

3.1.2.1 Military Use

Conceptual plans for current and future military use of the McGregor Range training areas have been translated into a land use planning framework in the TADC (U.S. Army, 1998d). This process and the resultant description of current training area use are presented in Chapter 2. Ten mission and training activities, and environmental conservation and public access uses were identified and grouped into nine training area land use categories (Table 2.1-1) that reflect the layering and mix of activities and uses that occur in the training areas. Most categories share several similar uses, and are differentiated by additional mission activities. For example, most categories include use for SDZs, aircraft operations, and dismounted training, but only some areas are used for field training activities, off-road vehicle maneuvering, or weapons firing.

Figure 2.1-1 illustrates projected training area use on McGregor Range. The primary distinguishing military mission on McGregor Range is air defense missile training including live firing and systems testing, made possible by the extensive land area. The Tularosa Basin portions of McGregor Range are used extensively for firing short-range missiles, and the entire range for HIMAD missiles. These missile types impact their targets in mid-air and consequently do not have designated impact areas on the ground. Instead, they have SDZs that are used during firings within which access is temporarily restricted, and debris is deposited. Figure 2.1-2 illustrates the safety zones associated with the Patriot and its targets currently fired on McGregor Range. Consequently, most land use categories include use as a SDZ during intermittent missile firings. Most of the major support facilities for these activities are located in the south part of the range near McGregor Range Camp in TA 32, at the SHORAD Range in TA 30, and at the Orogrande complex in TA 29.

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Areas within the Tularosa Basin are used for weapons firing, and associated safety zones. Impact areas are less extensive and are directly associated with targets for specific firing locations. An exception to this use is the southwest corner of the range where no weapons firing occurs and limited off-road wheeled and tracked vehicle maneuvering is permitted. No other part of McGregor Range is used for off-road vehicle operations other than the limited movement into and within controlled access FTX sites. With the exception of controlled access FTX sites, military activities on Otero Mesa and escarpment, and north of New Mexico Highway 506 are limited to intermittent use as SDZs, for dismounted training (by foot soldiers), and on-road vehicle maneuvers. Most of these sites are located on Otero Mesa, with a few in the Tularosa Basin. Built-up areas are associated with McGregor Range Camp, and the SHORAD and Orogrande complexes. Except for impact areas and built-up areas, conservation activities occur throughout McGregor Range.

Locations of major facilities, equipment, and general infrastructure supporting military uses on McGregor Range are indicated in Figure 3.1-1. The primary military activities conducted are briefly described below.

McGregor Range Camp supports a variety of mission support functions including administrative, troop housing, training, and storage of equipment. Enlisted barracks capacity for transient and permanent personnel is 1,154. Mobilization capacity is 1,154 for enlisted personnel and 66 for officers. Range Control functions are located at Davis Dome, about 1 mile east of the range camp. A series of firing locations for HIMAD and short range air-to-ground missiles are located about 1 to 2 miles north and east of McGregor Range Camp.

Aerial gunnery missions are conducted by helicopters at Cane Cholla Aerial Gunnery Range in TA 32 (about 3 miles northwest of the range camp) and by fixed-wing aircraft at a Class C Bombing Range north of New Mexico Highway 506 in TA 11. Other air missions include paradrops at drop zones and Wilde Benton landing strip and low-altitude tactical navigation by helicopters in specified areas.

Small missiles (such as Stinger) are fired from SHORAD complex, and target drones and laser operations are conducted at Orogrande complex.

Small arms training is concentrated at Meyer Range in the southernmost part of McGregor Range. Activities at this complex can occur simultaneously with most other uses.

Ground troop maneuvers are conducted throughout McGregor Range except in TAs 28, 33, and Culp Canyon WSA which require special approval, and TA 31 where it is prohibited except at the existing controlled access FTX site. The varied terrain of the Sacramento Mountains foothills, including Culp Canyon and co-use areas within the Lincoln National Forest, offer good training environments for on-foot training.

Each year, Roving Sands FTX is conducted during spring or early summer for about 2 weeks, using most of the range for a variety of air and ground activities. Twenty-five controlled access sites, each about 0.4 square miles, are located throughout McGregor Range. These are used during exercises by air defense units. These areas have undergone environmental evaluation and clearance. Not all sites are used every year, thus allowing recovery of disturbed areas.

Overall, the highest level of military use is concentrated in the Tularosa Basin portions of McGregor Range, south of New Mexico Highway 506. This is attributable to almost daily use of facilities (Figure 3.1-1) in TAs 32, 30, and 29. The Class C Bombing Range in TA 11 is used for air-to-ground bombing practice by HAFB units. Most military use of Otero Mesa and areas north of New Mexico Highway 506

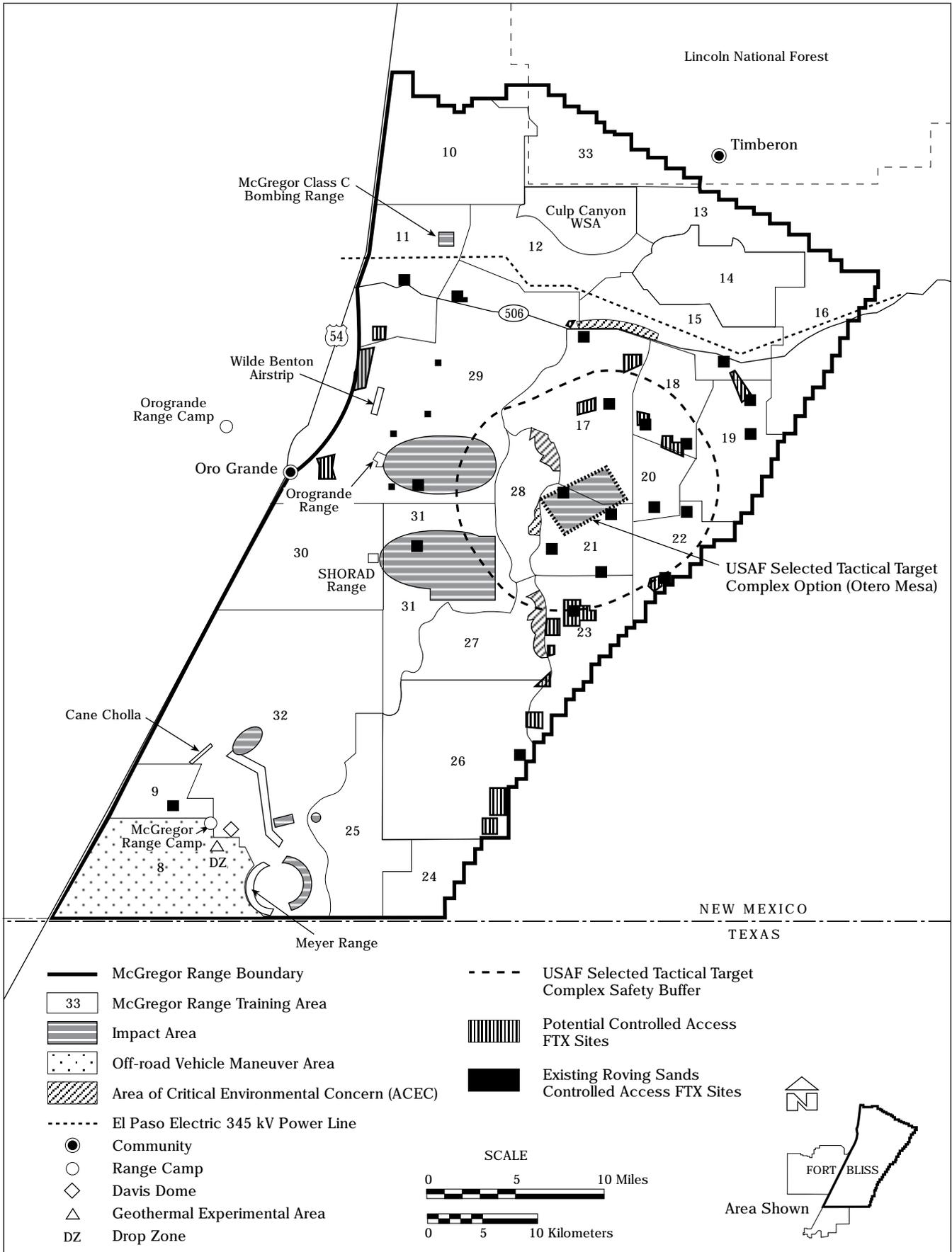


Figure 3.1-1. Location of Existing and Potential Future Major Facilities on McGregor Range.

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(TAs 12 through 23, and 33) is intermittent, during periodic HIMAD missile firing programs, and Roving Sands. This same area is heavily scheduled by the Army for training and maintenance including road repairs, and environmental management activities, such as habitat conservation and rehabilitation, and biological and archeological studies and surveys. These activities account for over half of the scheduled use of Otero Mesa and the Sacramento Mountains foothills. Under current procedures, they do not preclude concurrent use by the general public.

3.1.2.2 Nonmilitary Use

In addition to military use of McGregor Range, the withdrawal action (PL 99-606) designated the DOI as the natural resource manager as per the FLMPA, including the continuation of grazing, protection of wildlife and wildlife habitat, control of predatory animals, and recreation, to the extent that they do not conflict with the military mission. It also provided for prevention and suppression of nonmilitary-caused fires by BLM. The following paragraphs summarize nonmilitary users and uses of resources on McGregor Range.

Access and ROWs. Easements and ROWs on land within McGregor Range are used for regional and local infrastructure. New Mexico Highway 506 crosses the north end of the range, providing access from U.S. Highway 54 to small communities and ranches on the north and east side of the range. Permits are not required to use this roadway. However, the Army restricts access along the route when military operations may cause unsafe conditions. At these times, three access points are manned by Fort Bliss civilian personnel and/or military police for the duration of the closure. The highway is usually closed for portions of 2 or 3 days each week during missile firings from September through November, and for portions of each day during a 2-week period following Roving Sands. A closure schedule is distributed to local ranchers and the Fire Department in the community of Timberon every week. Road closure details for 1996 may be found in Appendix B.

EPEC has a ROW for a high voltage (345 kV) electric transmission line across the north end of McGregor Range. ROWs are not required for infrastructure constructed by the Army within McGregor Range, such as telephone or utility distribution lines. However, ROWs are needed for new telephone or utility lines originating off-range that enter onto the range. ROW applications on withdrawn land are generally processed and granted by BLM with Army concurrence (Creager, 1996).

U.S. Border Patrol holds a ROW (NM90666) for relocation of a check point the northwest entrance where New Mexico Highway 506 intersects U.S. Highway 54 and a ROW (NM90665) for drag roads in the vicinity. The *EA for the Construction of Drag Roads near the U.S. Highway 54 Border Patrol Checkpoint, Otero County, New Mexico* resulted in a Finding of No Significant Impact (FONSI). The FONSI was issued by the U.S. Border Patrol and JTF-6 in 1993. The EA analyzed the impacts of a network of drag roads to be installed around the U.S. Highway 54 checkpoint station at the intersection of New Mexico Highway 506. The FONSI states that the planned action would result in only minor or temporary impacts on vegetation, air quality, and noise levels. Based on the results of the analyses presented in the EA, the action would not have a significant effect on the human environment (U.S. Army, 1993d). A network of drag roads totaling 28 miles in length was constructed in 1994 around the Border Patrol checkpoint at the intersection of U.S. Highway 54 and New Mexico Highway 506. Existing roads and ROWs, approximately 13 miles, were regraded for use as drag roads. Where existing roads did not exist, approximately 15 miles of 15-foot-wide dirt roads were constructed. These roads are maintained by the Border Patrol. Any additional specific proposals or uses in the future, that could affect roadway access, would need to be reviewed and approved by BLM. The BLM would need Army concurrence before approving new uses that might affect military activities on withdrawn land.

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Energy and Minerals. Under PL 99-606, the withdrawn lands of McGregor Range were withdrawn from use under the mining laws, mineral leasing, and geothermal leasing laws. As such, under the RMPA, McGregor Range is closed for locatable minerals but re-evaluated periodically to see if any areas can be opened. About 100,000 acres are open for oil and gas, and geothermal leasing and 287,360 acres are open for salable materials. Any application to BLM for exploration, extraction, or production of locatable minerals (such as gold, zinc, copper), salable minerals (such as sand and gravel), and leasable minerals (such as oil, gas, and geothermal resources) on withdrawn land, would have to be approved by the Army prior to BLM's processing and granting the application.

A recent gas discovery to the east of McGregor Range has prompted oil companies to express interest to the BLM regarding future exploration on McGregor Range (Sanders, 1998), however, there has been no formal request for exploration on McGregor Range to date. Any future use for oil and gas exploration on withdrawn land would need to be approved by the Army.

A recent assessment of mineral and energy resources on McGregor Range was conducted jointly by staff of the New Mexico Bureau of Mines, New Mexico State University, and TRC Mariah Associates, Inc. (U.S. Army, 1998g). Currently the U.S. Army is exploring opportunities to use geothermal resources in the south part of McGregor Range. Additional information on mineral and energy resources and potential is provided in Section 3.5.

Water Use. Water used on McGregor Range to support military activities is primarily supplied from a public purveyor to McGregor Range Camp. Some groundwater sources are used periodically during construction projects for dust control. The Army holds a water right that entitles them to use up to 110,000 gallons per day from surface water sources. Water from this source is also used for domestic use in the small community of Oro Grande on the west side of McGregor Range. The water right is for fish and wildlife. However, the tanks filled from this supply are also used by livestock. Water is also collected in earthen tanks for use by wildlife and livestock.

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Grazing. A long history of grazing throughout the area is closely tied to early settlement of the southwest. Originally, settlers generally established a formal claim for land around a spring where a homestead would be built, and cattle would graze on surrounding unclaimed public domain areas, as was the practice in Mexico. Several presidents supported colonization and liberal sales and grants of settled areas to the land users. By the end of the nineteenth century, speculative land practices and depletion of timber and other resources prompted Congress to repeal this policy, and to set aside "national forest lands." Subsequently, in 1934, under the *Taylor Grazing Act*, the remaining unclaimed federal lands were put under the management of the DOI. During this time, livestock grazing continued on federal lands, and regulations evolved allowing these practices to continue. A permit system evolved that recognized priority in occupancy and use of rangeland; grazing permits for specific parcels of land remained with individuals (Otero County, n.d.).

The original land acquired for McGregor Range in the 1940s and 1950s was mostly comprised of public domain areas. Several ranchers in the areas owned small properties in-fee, and held grazing permits for extensive portions of public land. Through negotiations with ranchers it was decided that the Army would use the public lands for 4 days each week. Most ranchers considered 3 days as inadequate to work a ranch and favored selling their grazing permits to the Army. A few ranchers were strongly opposed to losing use of public lands and their homesteads, and condemnation of these properties ensued. In addition to acquiring fee-owned lands and grazing rights, a portion of the current McGregor Range within the Tularosa Basin was officially withdrawn for military use in 1957 under PLOs 1470 and 1547 (U.S. Army, 1997a).

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From this time until the mid 1960s, grazing was suspended on McGregor Range, but trespass grazing continued because there were no fences, and it was impossible for the Army to patrol the large area. In 1966, the Army designated a portion of the range as a co-use area, in which grazing could be permitted under supervision of the BLM. The co-use area contained 515,000 acres. The BLM divides the co-use area of McGregor Range into six distinctive natural units (BLM, 1980):

1. The Mountain Foothills unit (23.4 square miles) occurs at the north end of the range and is an upland area with a characteristic pinyon-juniper woodland.
2. The Canyonlands unit (59.4 square miles) is the rugged, rocky lands which separate the Mountain Foothills from the lower country to the south and west.
3. The Mesa (171.1 square miles) is a gently rolling grassland in the southeastern portion of the range.
4. The Rimlands unit (100.0 square miles) is the rugged, rocky area which separates the Mesa from the lower country to the west.
5. The Alluvial Fans unit (296.9 square miles) is sloping shrublands at the foot of the Canyonlands and Rimland units.
6. The Bolson, or Basin (153.1 square miles), is the lowland area on the west side of the range, characterized by the presence of stabilized sand dunes.

Grazing is allowed in fourteen pastures, containing 271,000 acres. Thirteen of the pastures were developed in the 1960s; another became available for grazing in 1981 (BLM, 1980).

In 1966, the BLM established an auction system for grazing units on McGregor Range, unlike the priority system that prevails for most public lands under the *Taylor Grazing Act*. Grazing was initiated in 1967. Pastures were defined by historical utilization. By 1970, BLM had developed the present management program, which allowed approximately 9 months of grazing each year, usually from October 1 to June 30. In the event one pasture is damaged by fire, a rested pasture may be put into service. In a typical year prior to 1970 4,500 cattle utilized the range and there had been about 40,000 animal units per month (AUMs) of livestock grazing. Income from the bidding is retained by the BLM for maintenance of, and improvements to, the grazing lands of McGregor Range (BLM, 1980). Money collected from grazing fees is placed in a fund to directly pay for the costs of running the program.

After expiration of the original withdrawal of 1957, the DoD and the DOI entered into an MOU in 1977 that allowed the Army to continue to use the land as they had since 1957. Subsequently, Congress formally withdrew about 608,385 acres of public land for military use in 1986 under the MLWA. Under terms of the withdrawal, grazing continued to be permitted on a noninterference basis with military missions. The areas that have been opened up to grazing have relatively low safety risk from prior military operations (e.g., ordnance and explosive hazards and debris). This area corresponds generally with TAs 10 through 23.

As agreed to in the 1990 MOU (Appendix A), the BLM continues to manage the grazing program and determines livestock grazing levels. Grazing units continue to be put up for public auction to the highest bidder every year. There are 14 grazing units within the co-use area, shown in Figure 3.1-2, which currently support 2,400 cattle. In 1996, about 28,900 AUMs were auctioned on 13 active units (of which 22,350 AUMs applied to the 1996/1997 grazing season). Most grazing contracts run for 9 months, from October through June of the following year. Sometimes a contract will still run for 18 months or up to 42

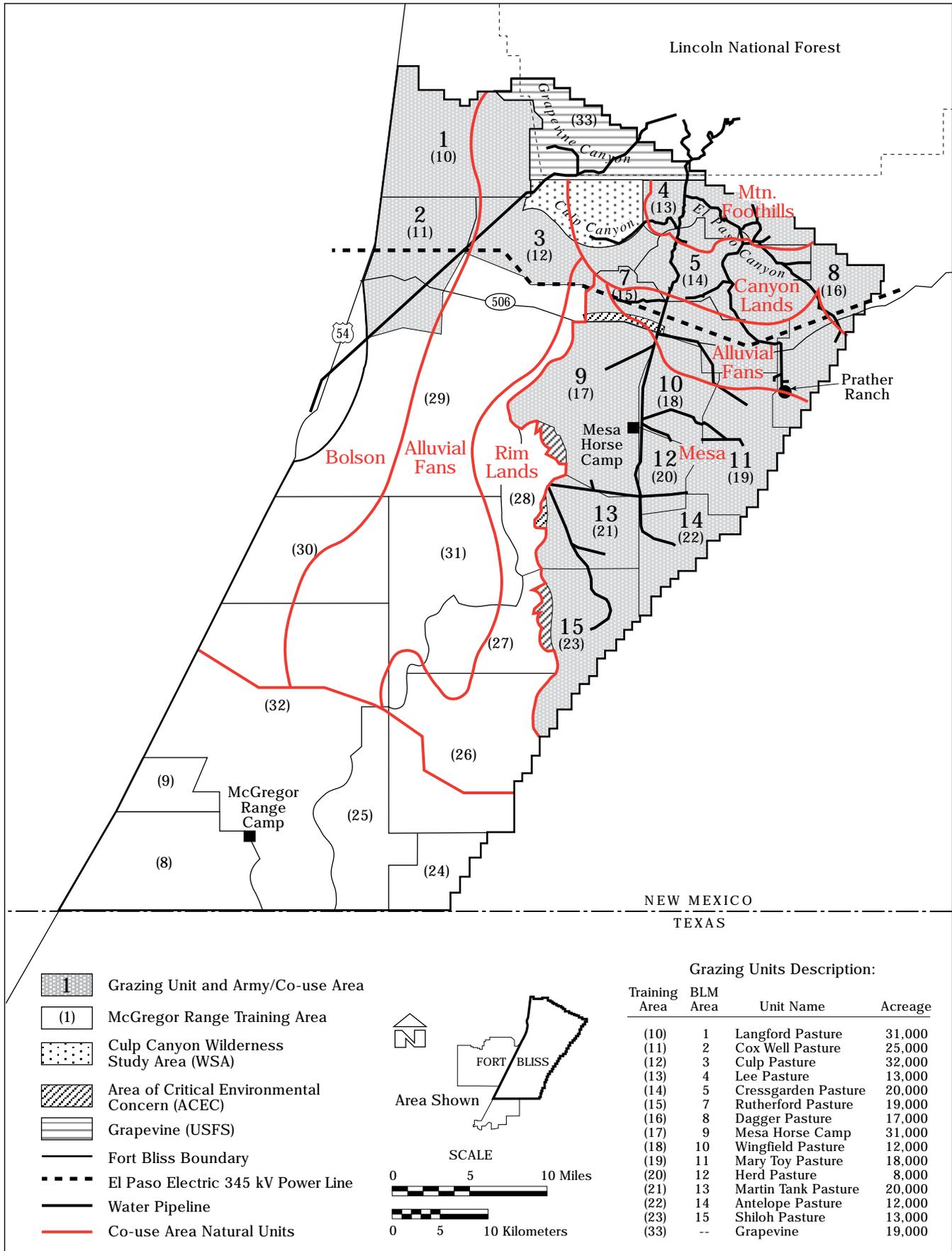


Figure 3.1-2. Nonmilitary Uses and Infrastructure on McGregor Range.

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months, depending on rangeland conditions, allowing a season of summer grazing. Table 3.1-3 summarizes the acreage and AUMs currently under contract on McGregor Range.

Table 3.1-3. Animal Unit Months for Grazing Units on McGregor Range, October 1996

<i>Grazing Unit No.</i>	<i>AUMs</i>	<i>Bid Price per AUM</i>	<i>Contract Period</i>	<i>No. of Cattle</i>	<i>Acres per Head (cattle)</i>
1	1,802	\$11.00	Oct 8, 1996, through July 8, 1997	200 C or 286 Y	155
2	1,802	\$12.75	Oct 8, 1996, through July 8, 1997	200 C or 286 Y	125
3	-	Not bid	-	-	-
4	4,480	\$16.00	Nov 15, 1995, through May 15, 1997	250 C or 358 Y	132
5	-	-	-	-	-
7	10,496	\$12.20	Oct 1, 1994, through Mar 31, 1998	250 C or 358 Y	76
8	3,597	\$12.00	Oct 1, 1995, through Mar 31, 1997	200 C or 286 Y	85
9	2,702	\$11.50	Oct 10, 1996, through July 10, 1997	300 C or 429 Y	103
10	2,252	\$14.00	Oct 6, 1996, through July 6, 1997	250 C or 358 Y	48
11	3,603	\$15.25	Oct 2, 1996, through April 2, 1998	200 C or 286 Y	90
12	901	\$13.25	Oct 4, 1996, through July 4, 1997	100 C or 143 Y	80
13	3,590	\$14.10	Oct 4, 1995, through April 2, 1997	200 C or 286 Y	100
14	2,702	\$14.75	Oct 3, 1996, through April 3, 1998	150 C or 214 Y	80
15	1,802	\$16.75	Oct 1, 1996, through April 1, 1998	100 C or 143 Y	130

C = cattle; Y = yearlings.

Source: BLM, 1996b.

A study conducted by New Mexico State University on competitive pricing for McGregor Range indicates that nonfee costs (such as maintenance, improvements, water, lost animals, etc.) are less for ranchers on McGregor Range, because some of these services are provided by BLM (for example, water). Table 3.1-4 shows total nonfee costs on private and public leased rangeland, compared to McGregor Range. Table 3.1-4 also shows that prices bid for AUMs on McGregor Range in the early 1990s were comparable to fee costs on other lands. However, recently, auctioned AUMs have been valued from \$11 up to \$16.75, compared to the standard AUM fee of \$1.35 and permit cost \$4.90 currently set for BLM lands administered under the *Taylor Grazing Act* (43 USC Section 315a-r; 43 CFR 4130.8-1) (Aguirre, 1997). Fluctuations in bid prices over time indicate that the value of AUMs (lease rates) on McGregor Range varies in an open market. External conditions, particularly low rainfall, have been correlated to dramatic increases in what ranchers have been willing to pay for good grazing conditions (Fowler et al., 1994). These increased prices have provided additional operating revenue for BLM's services in recent years. The Army provides assistance in fire suppression under the terms of the 1990 MOU (BLM, 1990b), but does not financially support grazing activities on McGregor Range.

Table 3.1-4. Average Grazing Costs (\$/AUM) on Public and Private Leased Land in New Mexico and McGregor Range

<i>Cost</i>	<i>Native Rangeland</i>		<i>McGregor Range</i>	
	<i>Private</i>	<i>BLM</i>	<i>1990</i>	<i>1992</i>
Non-Fee Costs ¹	12.80	16.16	11.22	11.90
Fee Costs ²	6.88	4.90	5.21 ³	4.88 ³
Total Cost	19.68	21.06	16.43	16.78

¹ Includes ranching operation and maintenance costs.

² Includes leases rates, grazing fees, permit costs.

³ Market driven at public auction: variable cost.

Source: Fowler, Torell, and Gallacher, 1994.

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Money collected from grazing fees on McGregor Range continues to go into a fund to directly pay for the costs of running the program. Eight of 14 units were bid with a total bid value of \$186,077.83. Payments for 4 units on 18-month contracts and 1 unit on a 42-month contract contributed an additional \$111,044.40 for a total FY 97 collection of \$297,122.23 (Aguirre, 1996).

Grazing units on McGregor Range are valuable due to extensive range improvements, high quality forage, services provided to ranchers by BLM, and availability and delivery of Army-owned water through an extensive pipeline system that was constructed and maintained by ranchers and BLM over several generations. There are about \$4.6 million of improvements in the form of water pipelines, holding tanks and troughs, corrals, wells, fences, and windmills (Christensen, 1996). The Army has annual rights to about 110,000 gpd of water from the Sacramento River and Carrisa Springs that is used for preservation of fish and wildlife. Currently, both wildlife and cattle benefit from this water, delivered via pipeline to watering tanks on McGregor Range. Additional information on the water distribution and supply system on McGregor Range is provided in Section 3.7.

Tasks performed by BLM include repairs to water pipelines, corral and fence maintenance, evaluation of rangeland condition, and assistance with moving cattle onto and off the range. Currently, a three-man Range Management team performs these functions, spending about 80 percent of their time on Otero Mesa and the Sacramento Mountains foothills grazing units. About 50 to 75 percent of this time is used to check and repair water pipelines. A phased program to replace old pipeline has been intermittent and dependent on funding. Congressional appropriation in the early 1990s allowed about half the links to be replaced, resulting in reduced upkeep for new portions. Most of the waterlines on Otero Mesa have not yet been replaced and still require considerable maintenance. These lines are checked for leaks and damage about twice each week (usually Mondays and Fridays). The minimum amount of time needed to check waterlines south of New Mexico Highway 506 is 6 to 8 hours. Two persons working simultaneously can reduce the window needed to 3 to 4 hours. Additional time is required for repairs (Christensen, 1997).

In addition to day-to-day maintenance, BLM assists ranchers with bringing cattle onto the range in October, and taking them off in March or July (depending on the period of specific grazing contracts). It takes between 1 and 7 days to move cattle onto or off of different grazing units (depending on size and location of the unit and condition of the cattle). Cattle cannot be moved to and from all the grazing units at the same time; therefore, it can take several days during these months to move cattle. Military operations are generally coordinated between the Army and BLM to allow ranchers to bring cattle onto the range or take them off. Ranchers can usually perform these tasks without conflicting with current military activities (Christensen, 1996). Several corrals are used for staging cattle during round-up times, and for housing sick cattle. Under current management, many grazing contractors perform intermittent caretaking of their cattle during most of their contract period. However, the amount of time individual ranchers spend in tending cattle varies widely.

Under the bid/auction system, grazing units do not necessarily stay with the same rancher, as they do with most BLM grazing units. In the last 5 years, most units had two or three different grazing contractors, and three units had up to four different grazing contractors. Two units (units 4 and 5) were used under contract by the same rancher, and these units were only available for 2 years, while unit 15 has been held by the same rancher for 4 years. Also, because BLM provides water and maintenance services that are not usually included in grazing contracts, grazing units on McGregor Range are operable for out-of-state ranchers as well as local ranchers. Over 50 percent of the contracts were with ranchers in New Mexico, about 25 percent with ranchers out of Texas, about 17 percent from Arizona, and the remainder from Colorado and California. Currently, 10 grazing units are held by out-of-state grazing contractors, mostly from west Texas. Three units are held by in-state grazing contractors, of which one is categorized by the BLM as an Otero County ranch operator (Christensen, 1997).

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Livestock grazing in the 18,004-acre Grapevine co-use area is managed by the USFS. Approximately 150 to 200 head of cattle graze in the co-use area. Military activities have not affected grazing operations (Goodwin, 1998).

Wildlife and Habitat Management. BLM has responsibility for wildlife and habitat resources on public lands. The primary objective is to ensure optimum populations and the natural abundance and diversity of wildlife. This is accomplished through management plans and coordination with other agencies, including Fort Bliss, U.S. Fish and Wildlife Service (USFWS), and NMDGF. Plans and actions must also protect federal and state-listed and candidate threatened and endangered species. Management plans consider the interactive effect of multiple-use resource objectives to meet a balance in deciding management priorities. They also provide standard procedures that protect wildlife. NMDGF has responsibility for game species and also manages hunting on McGregor Range. Scheduled hunts are coordinated with Fort Bliss to minimize conflicts with military missions and to ensure safety of hunters (see *Recreation*, below).

Recreation. McGregor Range offers a variety of settings that are suitable for an assortment of recreational activities. Of interest are: (1) its relative remote and isolated quality, (2) special scenic and habitat features in desert, grassland, and foothills vegetative regimes, (3) opportunities for hunting, and (4) wilderness value.

Recreational use on McGregor Range is co-managed by BLM and the Army, and is allowed by the Army on a noninterference basis with the military mission. Public access and use is controlled by the Army. Members of the public must obtain annual access permits issued by the Army. These are available from both the Army and the BLM. Between 1,000 and 1,700 permits are issued annually (Bankston, 1997). Current permit holders include members of the Audubon Society, New Mexico State University, Sierra Club, ranchers, and members of the general public (Bankston, 1997).

Permit holders are responsible for complying with specific Army and BLM procedures for entry, use, and exiting the range. When permits are issued, recipients are required to read these procedures, and to sign an agreement of compliance. All recreational permits are issued by the USACASB Range Development and Enforcement Office. To ensure safety and to avoid interference with military missions, the McGregor Range Control must be contacted each time access is requested.

Public access is only permitted in areas that are considered safe and compatible with current and past military activity (Figure 2.1-1). On a weekly basis, the Range Scheduling Office issues a roster of areas that are available for nonmilitary use. Public access to TAs 29, 30, 31, and 32 is never permitted due to potential hazards from ordnance and explosive hazards and debris in active impact areas.

Recreational opportunities on McGregor Range are mostly classified as semiprimitive, motorized (SPM) by BLM, indicating the range's potential for isolation and opportunities for interacting with the natural environment. Areas close to New Mexico Highway 506 are classified as roaded-natural (RN). Both SPM and RN opportunities exist in abundance, with similar ecological settings on BLM and USFS lands surrounding the range. An area of 6,812 acres within Culp Canyon WSA is classified as semiprimitive, nonmotorized (SPNM) offering opportunities for isolation from the sights and sounds of human activities.

The primary recreational uses of McGregor Range are hunting, hiking, and observing nature. For the 12-month period from January 1 through December 31, 1997, logs indicate that 330 persons requested access for recreational use on McGregor Range. Visitors often requested access into more than one training area on McGregor Range during the same visit. Based on areas requested, the average recreational use of any training area was 14 occasions in 1997. The most frequently requested area was TA 8 (30 occasions). The two small depressions near McGregor Range Camp were used 20 times. These locations in the south part

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of the range are easily accessible from El Paso and have good opportunities for game-bird hunting. Requests for use of training areas north of New Mexico Highway 506, including TA 33 within Lincoln National Forest, and Culp Canyon WSA in TA 12, ranged from 20 to 28 times in 1997. Less accessible areas on Otero Mesa tended to have fewer requests (about 9 to 10 occurrences), probably due to lack of game-bird hunting opportunities and because they are not as accessible because of the driving distance from population centers.

Both licensed antelope and deer hunts are conducted annually on McGregor Range. These hunts are managed by NMDGF consistent with federal laws and Army regulations. Hunting schedules are coordinated with the Army well in advance to ensure that they can occur without conflict with military missions. Since this coordination has occurred, no hunts have been canceled due to military uses. Scheduled hunts occur from late September through early November.

Otero Mesa has antelope herds of trophy quality, and antelope hunts are restricted to muzzle-loading guns. A portion of McGregor Range corresponding to the BLM's grazing areas on Otero Mesa, south of New Mexico Highway 506, is part of Antelope Management Unit 29 of NMDGF. Unit 29 extends to the east of McGregor Range and is comprised of about 536,000 acres, of which the McGregor portion is about 111,000 acres.

The number of licenses issued for both antelope and deer hunts is based on herd size. Currently, 95 licenses are being issued annually for the Unit 29 antelope hunt in September, of which 20 are assigned to the McGregor Range portion of the unit. Current numbers of licenses are typical of recent years, although prior to the drought that has persisted through the mid-1990s, about 195 licenses were typical (Madsen, 1997).

Similarly, deer hunting on McGregor Range is part of Big Game Management Unit 28, located on McGregor Range only. In 1997, 50 licenses were issued for public deer hunting in Unit 28 north of New Mexico Highway 506 (including portions of the range within Lincoln National Forest). The number of licenses available to the public and military users varies annually is determined by NMDGF and depends on herd sizes. NMDGF uses a lottery system on both McGregor Range and the Big Game Management Unit 29 to the east of McGregor Range. Licenses are issued through a drawing of names in accordance with a limit set by head size. Deer hunts are usually held in early November. Camping occurs during some scheduled hunts. At other times, requests to camp are approved by Range Control and the Security and Safety officer for McGregor Range similar to all other recreational access requests. Camping is restricted to a few sites north of New Mexico Highway 506 and on Otero Mesa.

During hunting seasons, access by about 10 persons may be recorded each week. At other times, official access to the range for public recreation is infrequent (Grossenheim, 1997). Occasionally, individuals or groups with a particular interest in observing nature or hiking will recreate on Otero Mesa or in the foothill areas. Vehicular use is restricted to roadways and established trails on McGregor Range.

Special Management Areas. The McGregor Black Grama Grassland ACEC is comprised of four separate stands of black grama grasses located along the Otero Mesa escarpment and New Mexico Highway 506. ACECs are areas where special management attention is needed to protect, and prevent irreparable damage to important cultural or natural resources, or to protect human life from natural hazards. The McGregor Black Grama Grassland ACEC is managed to protect valuable biological resources and to study the ecology of undisturbed grassland. The location of these areas is shown in Figure 3.1-1. The ACEC is within SDZs for missile firings and underlies restricted airspace used for aircraft operations. These areas are fenced to prevent cattle from grazing in the ACEC. The public are allowed access to the ACEC under the same restrictions and regulations as other publicly accessible parts of McGregor Range.

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Military training is not allowed in the ACEC. The ACEC is maintained and managed jointly through cooperative agreements between the Army, BLM, and New Mexico State University.

Culp Canyon WSA, comprised of 10,937 acres, is located north of New Mexico Highway 506 within the McGregor Range, and south of the Lincoln National Forest boundary. The area is valued for its outstanding opportunities for solitude and primitive, unconfined recreation such as hiking, hunting, horseback riding, and backpacking. Due to a high deer population, the area provides good hunting. The area has several cultural resource sites and habitat for state-listed plant species, state-listed animal species, and one federally listed endangered animal species (see Section 3.8).

The WSA is managed under the BLM's *Interim Management Policy and Guidelines for Lands Under Wilderness Review* to prevent impairment of wilderness value. In the *New Mexico Wilderness Study Report* (BLM, 1988a), BLM did not recommend Culp Canyon WSA for wilderness status. Occasionally, low-impact ground troop training and low-level helicopter training missions use NOE routes over the east part of Culp Canyon (BLM, 1988a). The area is also used as a SDZ for several types of missile firings.

Cultural Resources. BLM is responsible for managing cultural resources throughout the range for which the BLM or third parties are the proponents of an action (see MOU in Appendix A). The public has access to a wide range of cultural resources throughout the co-use portions of McGregor Range. However, low public use of the range has provided a beneficial level of protection to potentially sensitive resources. According to the RMPA, the Escondida Pueblo site will be fenced to exclude livestock and other surface disturbing activities. Also, by limiting use of motorized vehicles to established roads and trails, potential damage to cultural resources is reduced. See Section 3.9 for further discussion of cultural resources.

3.1.3 Surrounding Areas

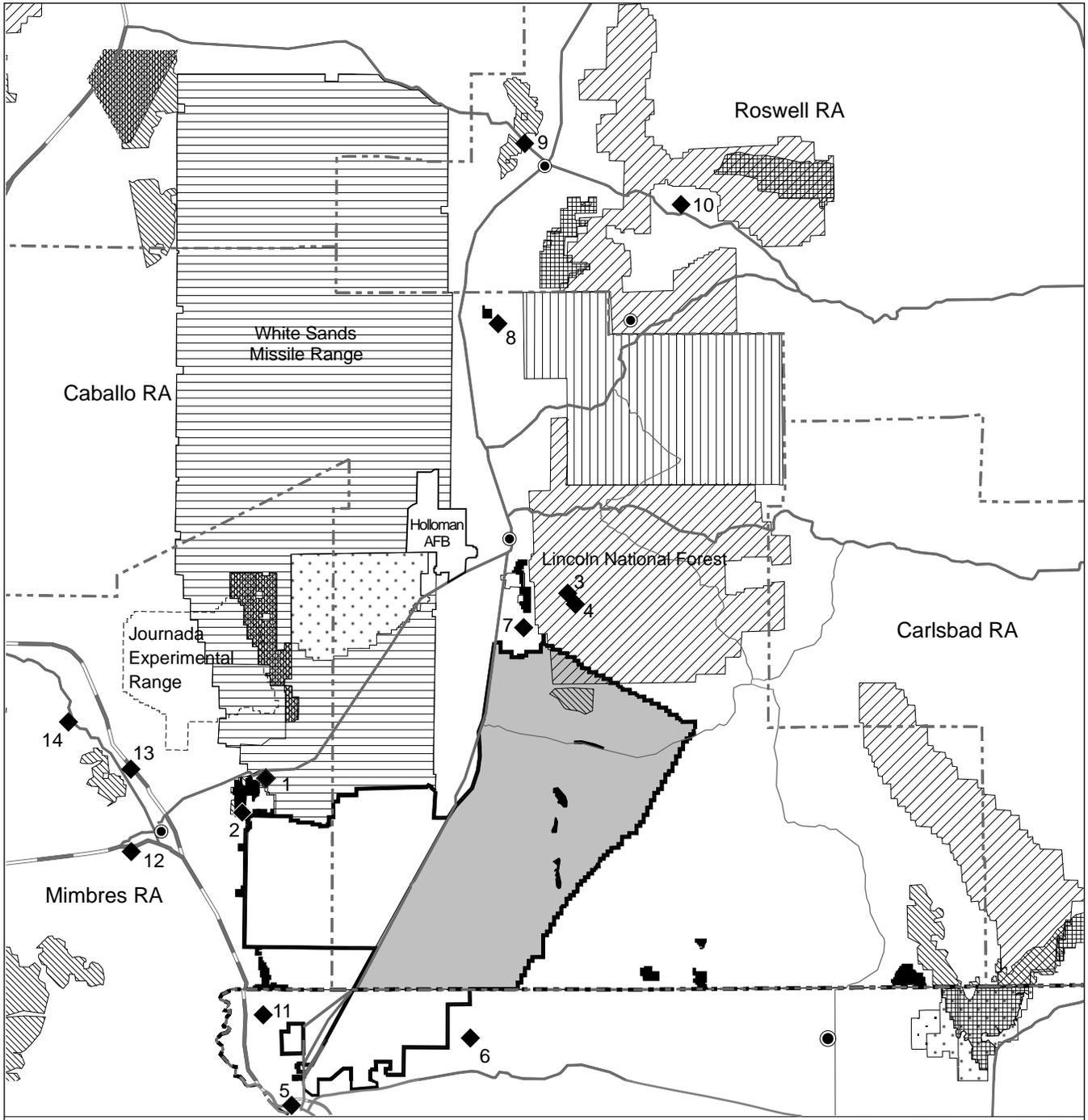
3.1.3.1 Jurisdiction and Management

Lands surrounding McGregor Range comprise a mosaic of private, city, state, and federal ownership, and are used to meet a wide variety of purposes. The federal agencies administering adjacent lands include the BLM, DoD, and USFS. Both Texas and New Mexico own adjacent lands managed by their respective State Land Offices.

Figure 3.1-3 shows that within the surrounding region are a number of areas that are designated and managed for their special resource value. The National Park Service manages White Sands National Monument located 25 miles north of Fort Bliss. The park is surrounded by WSMR on three sides, and coordinates with the Army regarding a variety of military activities. Guadalupe National Park is located in Texas along the border with New Mexico, about 75 miles from Fort Bliss. The Capitan and White Mountain wilderness areas lie 90 and 55 miles, respectively, to the north of McGregor Range, and are administered by the USFS. The Jornada Experimental Range of the Department of Agriculture and San Andres National Wildlife Refuge of USFWS are adjacent to WSMR, about 15 miles northwest of Doña Ana Range–North Training Areas. The Solar Observatory Experimental Area and Apache Point Observatory are located about 10 miles north of McGregor Range, in the Sacramento Mountains.

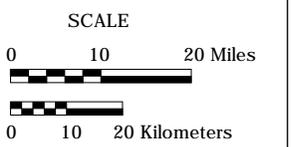
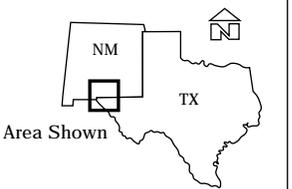
Information on additional unique, sensitive, and special-use areas including wetlands, protected flora and fauna, wildlife habitat, and cultural resources in the region is provided in Sections 3.8 and 3.9. These areas are managed to restrict incompatible uses, and therefore influence existing and potential land use.

The following paragraphs provide a brief description of federal, state, and local entities with responsibility or jurisdiction over land areas adjacent to Fort Bliss.



McGregor Range	National Park	<p>1 Aguirre Springs Recreation Area 2 Dripping Springs Recreation Area 3 Sun Spot Solar Observatory 4 Apache Point Observatory 5 Chamizal National Historic Park 6 Hueco Tanks State Park 7 Oliver Lee Memorial State Park 8 Three Rivers Recreation Area 9 Valley of Fires State Park 10 Smokey Bear Historical State Park 11 Franklin Mountains State Park 12 La Mesilla State Monument 13 Fort Seldon State Monument 14 Leesburg Dam State Park</p>
Fort Bliss Boundary	Journada Experimental Range	
White Sands Missile Range	State Boundary	
Mescalero Apache Reservation	US Highway	
Forest Service	State Highway	
Wilderness Area	Interstate Highway	
Wilderness Study Area	BLM Resource Area (RA)	
National Wildlife Refuge	Park, Monument, Recreation Area or Observatory	
Area of Critical Environmental Concern	City	

Source: BLM Land Status digital files.



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Figure 3.1-3. Specially Designated Areas in Region Surrounding McGregor Range.

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Federal Lands. Federal agencies administering surrounding lands and working cooperatively with Fort Bliss include the DoD, BLM, and USFS.

DoD facilities include HAFB and WSMR. WSMR adjoins the northern boundary of Doña Ana Range–North Training Areas, to the west of McGregor Range. WSMR is approximately 2.3 million acres of which 1.8 million are perpetually withdrawn public land under PLO 833, 380,000 are withdrawn private land, and 48,000 acres are co-use land (U.S. Army, 1998n). Their primary mission is to support a range of test and evaluation programs by the U.S. Government, as well as allied governments and private industry. Fort Bliss and WSMR cooperatively use each other's land area to expand their capabilities in support of specific missions. HAFB is located further north, near Alamogordo, in Otero County, New Mexico. Fort Bliss supports HAFB by making restricted airspace available for USAF training and use of McGregor Range for the Class C target in TA 11.

Until recently the BLM public domain lands surrounding McGregor Range have been administratively divided into two Resource Areas (RAs); Mimbres RA and Caballo RA (formerly White Sands RA), and are now both part of the Las Cruces Field Office. BLM lands are managed for multiple use and sustained yield under FLPMA. RMPs have been developed for these RAs and are the framework for management actions.

USFS properties are administered by the Lincoln National Forest, an administrative unit of the Southwestern Region of the Forest Service. These federal administrative units are also guided by long-rangeland use plans, encompassing a wide variety of complex land use issues. The Sacramento district is immediately located north of (and partially within) McGregor Range. The Guadalupe district of Lincoln National Forest is located east of the range, essentially along the eastern edge of the Otero Mesa plateau.

Dominant land use on federal lands immediately surrounding Fort Bliss includes grazing, developed and dispersed recreation, protection of sensitive resources, mineral development, and fuel wood gathering.

State Lands. Currently, neither New Mexico nor Texas has a statewide land use plan or policy. However, numerous policies, laws, and regulations of New Mexico influence activities on both state lands and McGregor Range (McGregor Range does not border state lands in Texas) in a wide variety of ways. These include, but are not limited to, compliance with laws associated with natural resources, environmental documentation, wetlands, threatened and endangered species, air and water quality, wildlife management, transportation, social, and economic issues.

Several state agencies influence how land may be managed, developed or used, either directly, through regulations and management plans, or indirectly, through policy and strategic plans and advisory committees. These agencies include the New Mexico State Game and Fish Commission; New Mexico Economic Development District; New Mexico Environmental Department (NMED); New Mexico Water Quality Control Commission (NMWQCC); NMDGF; New Mexico Department of Energy, Minerals and Natural Resources (NMDEMNR).

County Governments. Local governments within the region also influence and control land use and development to varying degrees. McGregor Range lies totally within Otero County, New Mexico. Its southern border is adjacent to Fort Bliss land in El Paso County, Texas. The *Otero County Plan* is primarily a goal statement with policy documents used to guide the future growth and development in a manner consistent with the respective communities' goals; including the physical, social, and economic environment.

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Over 65 percent of the land in Otero County is owned by the Federal Government and an additional 10 percent is in the Mescalero Apache Reservation (Bureau of Business and Economic Research [BBER] 1994). In 1993, Otero County adopted an *Interim Land Use Policy Plan* (Otero County, n.d.), and is now developing a *Comprehensive Land Use Plan*. The primary goal of the plan is to guide the use of public (federal) lands and resources in the county and to protect the rights of private landowners. Several reports and draft portions of the comprehensive plan identify historic and customary use areas of value to county residents, including use of water, agriculture, livestock grazing, timber and wood production, mineral production, cultural resources, recreation, hunting, federal and military activities, transportation and access, wilderness, wildlife, and threatened and endangered species. Specific to McGregor Range, the county supports multiple use of federal lands, maximizing livestock production, maintaining access along New Mexico Highway 506, and recreational use for hunting, hiking, and observing nature. No timber resources, except fuel wood, are present on McGregor Range. The county has also adopted Ordinance 93-04, based on NEPA, regarding desired county involvement in the federal NEPA process.

Otero County is also updating its 1974 comprehensive land use plan for nonfederal lands. It is anticipated that this plan could include elements of performance zoning. It will also adopt the procedural elements of the revised state subdivision regulations, and include an appendix with specific subdivision standards based on water and terrain.

Major categories considered in the *Doña Ana County Plan* include overall land use and zoning, agriculture, parks, recreation and open space, water resources, population and housing, and transportation. Specific plans for these major categories are called for in the future, consistent with the general framework of the county plans. Coordination with city, state, and federal agencies is emphasized, recognizing the strong interrelationship each county has with these entities. Plans give consideration to the character of the county and the suitability of areas within the county for particular uses and are expected to promote the health, safety, and welfare of county residents.

El Paso County borders the south and east boundaries of the South Training Areas. El Paso County currently has no comprehensive land use plan. Development is controlled through a building permit review process to ensure that lot sizes can accommodate required on-site wastewater storage and treatment for the structure(s) proposed.

Each county controls development through review of individual building permit applications and through subdivision regulations. Permits are approved if soil conditions and lot size accommodate septic system requirements for the proposed structure and use. Subdivision regulations generally require new areas of development to provide access and integration of new roadways with the existing network. They also regulate lot size, density, and utility infrastructure to ensure that development meets minimum standards for public health and safety.

Municipalities. No incorporated municipalities border McGregor Range or Doña Ana Range–North Training Areas in New Mexico.

Cities within the region that are indirectly influenced by Fort Bliss activities on McGregor Range include Las Cruces in Doña Ana County and Alamogordo in Otero County. Both these cities use a zoning process to control land use and development.

The City of El Paso shares a boundary with the main cantonment and South Training Areas. A comprehensive plan, *The Plan for El Paso*, was developed in 1988 (El Paso, 1988). The current zoning ordinance implements this plan.

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3.1.3.2 Existing Land Use in Surrounding Area

Figure 1.2-2 illustrates the generalized land status and Figure 3.1-4 shows the location of important special use areas in the vicinity of McGregor Range. The following paragraphs summarize the dominant existing land uses, including livestock grazing, mining, recreation, forestry, military, and residential. Some lands are specially designated or managed for protection of a particular resource or use and are also described.

Grazing. Grazing is the dominant land use throughout the area. Ranches generally consist of combinations of private, state, and federal lands. The BLM and USFS set grazing levels in accordance with management plans to meet multiple-resource sustainable yield objectives. The BLM manages most of the grazing lands in Otero County. Grazing costs are currently set at the base fee of \$1.35 per AUM under the *Taylor Grazing Act* (43 CFR Part 4130.8).

Table 3.1-5 summarizes permitted numbers of cattle on federal and state lands. In 1996/1997, a total of about 20,260 head of cattle grazed on 2,112,000 acres in Otero County, of which about 9,560 head were permitted on about 930,600 acres of BLM-administered land. An additional 5,450 cattle on 573,000 acres were permitted on USFS land in Otero County. An estimated 2,650 head grazed on State Trust land. Additional cattle graze on private land throughout the county. Private property accounts for less than 20 percent of the county land area. Assuming the same proportion of private land is used for grazing as federal land and at equivalent grazing levels, there would be an additional 4,000 head of cattle on private land in Otero County. In addition, one operator adjacent to grazing unit 8 on McGregor Range is authorized to graze 1,725 head of sheep (Phillips, 1998).

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Table 3.1-5. Summary of Grazing Permitted on Federal and State Lands in Otero County

<i>Location</i>	<i>Annual Permitted Cattle Numbers¹</i>	<i>Acreage⁴</i>
BLM	9,560	930,600
State	2,650 ²	337,280
Lincoln National Forest	5,450 ³	573,000
McGregor Range	2,400	271,000
<i>Total</i>	<i>20,060</i>	<i>2,111,880</i>

¹ Actual numbers can vary from year to year depending on grazing conditions.
² Based on estimated 5 AUMs per acre for Otero County, compared to state average of 11 AUMs per acre. Also, assume grazing on all State Trust lands.
³ Estimate includes portions of Sacramento and Guadalupe districts within Otero County.
⁴ Area grazed may vary from year to year depending on range conditions. Small percentage of state.
 Source: BLM, 1997a; Dubose, 1997; Thornhill, 1998; Newman, 1998.

Recent decisions on Amendments to Forest Plans for Arizona and New Mexico have changed standards and guidelines for threatened and endangered species. These have resulted in changes in grazing levels in some areas. The USFS is in the process of evaluating the effects of these changes on grazing in Lincoln National Forest (Hannon, 1997). Since the mid-1990s, below average rainfall has resulted in many areas being grazed at lower than permitted levels.

In recent years, financial viability of livestock operations in the region has been affected by a series of impacts including drought, reductions in beef prices, reduced availability of public lands for grazing due to environmental concerns, increased administrative and regulatory requirements of land managers, and

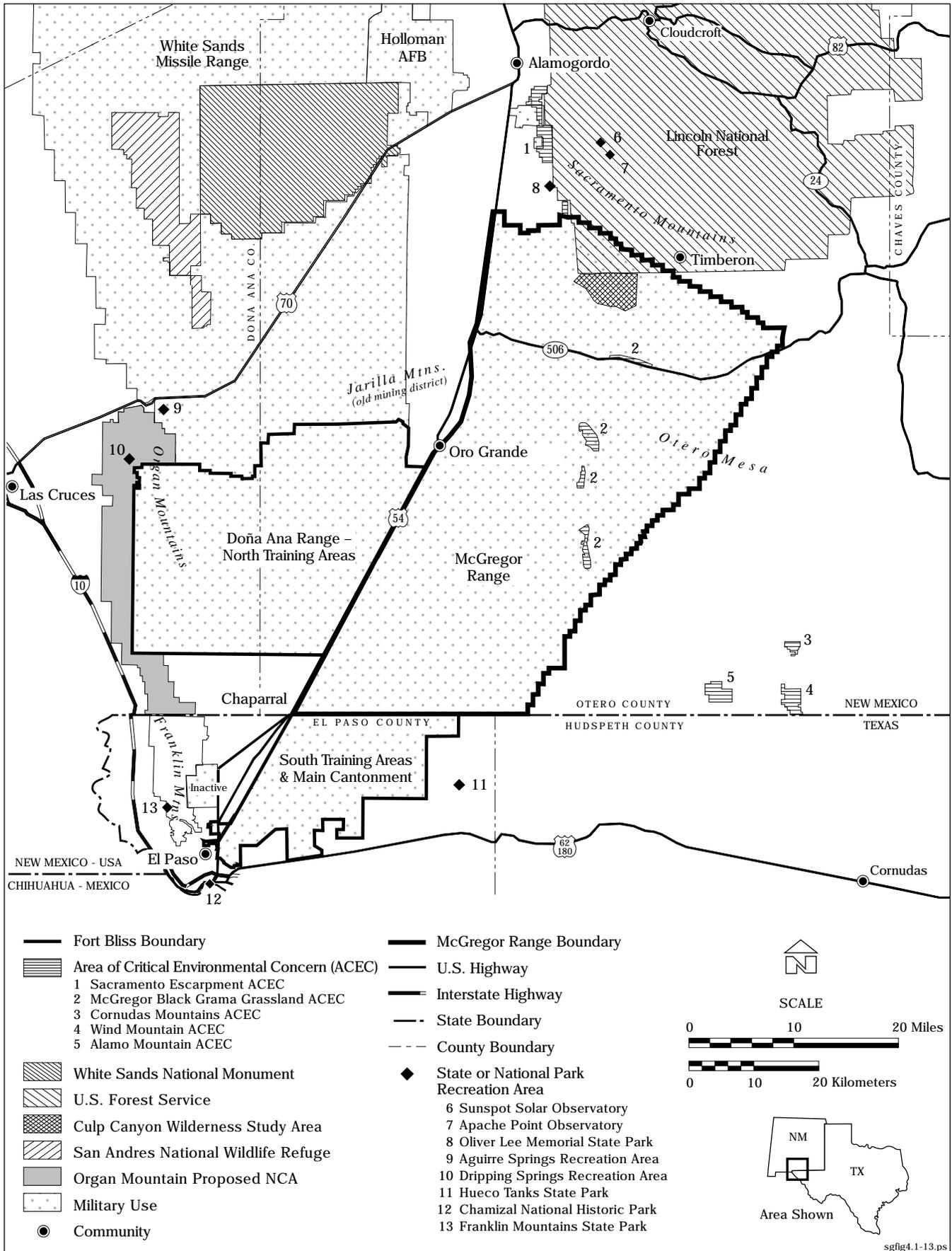


Figure 3.1-4. Special Use Areas Surrounding McGregor Range.

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grazing allotment reductions. Cumulatively, this has had the greatest impact on ranches with large debt loads. In addition, the Farm Services Administration is considering a reduction in its guarantee to lending institutions from 90 to 60 percent, further affecting the ability of ranchers to renew loans or to find new lenders (Thal, 1997a, 1997b).

An analysis of grazing data for Otero County indicated that a larger proportion of small ranching operations (generally less than 100 head of cattle) operate at below the break-even point than larger ranching operations, indicating the marginality of small-scale operations (Thal, 1997a, 1997b).

Minerals. Some oil and gas potential exists in Otero County. These reserves may become more economically viable for production, depending on market conditions. Other mineral activity, such as precious metals, particularly in the Jarilla Mountain area, also has low production potential at this time. Additional information regarding mineral and energy resources is provided in Section 3.5 and Appendix C.

Some oil and gas leases for exploration on State Trust lands between McGregor Range and the Guadalupe Mountains have been let in recent years. Recent discovery of commercial quantities of gas from a well to the east of McGregor Range has initiated interest in exploration. As much as 30,000 acres of public land have recently been nominated for exploration in this area (Sanders, 1998).

Recreation. Overall, the south central region of New Mexico provides a wide range of recreational opportunities at State and National Parks and Monuments, Wilderness Areas, and on national forests and public land (see Figures 3.1-3 and 3.1-4). Both dispersed and developed recreational opportunities are available on BLM and USFS lands adjacent to McGregor Range. Dispersed recreation occurring over large areas independent of developed facilities include; hunting, hiking, off-highway driving, sightseeing, camping, picnicking, studying nature, viewing of historic and prehistoric artifacts, and a variety of other recreational activities. Hunters come to the region from all over New Mexico, Texas, and from other states (DOI, 1993, 1986). State lands that are suitable for recreation are often designated as parks. Oliver Lee State Park, located about 2 to 3 miles to the north of McGregor Range, on the west edge of the Sacramento Mountains, is a popular recreation site with camping, hiking, and interesting historic features. This park is easily accessible by residents of Alamogordo, New Mexico.

Hueco Tanks State Park is located in El Paso County, just south of TAs 25 and 24. The park is notable for its extensive pictographs and is popular for hiking and rock climbing. About 75,000 visitors come to the park annually.

Areas to the west of U.S. Highway 54 are popular for off-road vehicle and motorcycle use. The Jarilla Mountains contain a historic mining area that is valued for its cultural attributes and recreational use such as sightseeing, hiking, prospecting, and rock hounding.

Surrounding State Trust lands have similar uses as federal lands, with less access for recreation.

Special Management Areas. The BLM has recently designated several ACECs in Otero County. To the north, the Three Rivers Petroglyphs site has unique cultural resources and the Sacramento Escarpment ACEC has exceptional scenic value. To the east, Cornudas Mountain, Wind Mountain, and Alamo Mountain ACECs all have cultural, scenic, and recreational value, and Alkali Lakes has value for particular species of flora.

About 50 to 70 miles to the east of McGregor Range is a clustering of special management areas with recreational value due to their scenery, naturalness, or unique geologic features. This area includes Brokeoff WSA, which is not recommended for wilderness designation (BLM, 1988a), Guadalupe

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Escarpment WSA, Lonesome Ridge WSA, Mudgetts WSA, Carlsbad Caverns National Park and Wilderness Area, and Guadalupe National Park and Wilderness Area.

To the west, the BLM has proposed the Organ Mountains NCA. The NCA includes an existing WSA and several ACECs with scenic, and biologic value. Proposed management actions for the NCA emphasize protection of threatened and endangered species, wildlife habitat, and cultural resources, and improvement of rangeland and recreational opportunities (DOI, 1989).

Forestry. Within south-central New Mexico, most timber resources are managed by the USFS. Lincoln National Forest, which overlaps portions of Lincoln, Chaves, Eddy, and Otero counties, has about 1.1 million acres, of which about 257,000 acres (23 percent) are tentatively suitable forestland for harvesting under variable management objectives and conditions (USFS, 1986).

Military. McGregor Range is part of a 3.2 million-acre contiguous military use land area, which includes the South Training Areas and Doña Ana Range–North Training Areas of the Fort Bliss Training Complex (1.12 million acres), WSMR (2 million acres) (BLM, 1986a), and HAFB (57,000 acres); neither of which share a common boundary with McGregor Range. These military use lands comprise about 2.2 million acres of Otero County.

Residential. Private lands in the vicinity of McGregor Range are generally used for ranching, land investment, or residential development. Several ranchers have homesteads on private holdings to the east and west of McGregor Range. These parcels are generally located at a water source. Ranchers primarily use leased federal and state lands for cattle grazing.

Adjacent and nearby unincorporated areas include Timberon and Oro Grande in Otero County, and Chaparral in Otero and Doña Ana counties. The community of Timberon partially underlies restricted airspace (R-5103B). There are about 5,200 property owners in this area, with about 350 permanent residents, and an additional 200 summer residents. Located in the Sacramento Mountains foothills, it is growing as a vacation and retirement destination (Roberts, 1996).

The community of Chaparral straddles Doña Ana and Otero counties (Vallejos, 1997). Because the land in this area is relatively inexpensive, steady growth (at about 3 to 4 percent per year) is projected for the future. It is likely that growth will result in demands for additional services, and that independent wastewater treatment services will become economical. At that point, residential lot sizes could decrease and infill development could increase intensity of residential development bordering Doña Ana Range–North Training Areas to the south (Price, 1997). BLM lands to the west of Chaparral could also become available for development through disposal transactions (Hargrove, 1997), potentially expanding residential development.

Nearby land in unincorporated El Paso County is largely undeveloped, but new residential subdivisions are starting to be built near the El Paso city limits. Low-density residential development over the next 20 years is anticipated in areas between U.S. Highway 54 and the El Paso County boundary. Although the city has no common boundary with McGregor Range, it is possible for future city development to occur in proximity to the southernmost training areas.

Private land in west Texas, bordering McGregor Range on the southeast, is located in the Hueco Mountains, and not likely to be suitable for community development.

The City of Alamogordo is located about 28 miles to the north of McGregor Range. The city has experienced growth to the south (towards McGregor Range) in recent years. The BLM identifies large blocks of land for disposal or exchange immediately north of McGregor Range, but it is unlikely that

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lands would be exchanged or sold for uses other than those of national interest in the foreseeable future (Creager, 1998). Areas to the north, close to Alamogordo would be suitable for future municipal expansion (DOI, 1986). Other areas to the northeast and east of McGregor Range have also been identified for disposal or exchange.

3.1.4 Land Use Compatibility

PL 99-606 allows the Army to exclude nonmilitary uses that may be incompatible with its mission for reasons of national security or for public safety. The Army has not permitted nonmilitary activities in current and historic impact areas in the Tularosa Basin due to safety concerns. The area identified for grazing in the White Sands RMP, as amended, and 1990 MOU is not used as a ground impact area (with the exception of a small area around the Class C Bombing Range in TA 11). Its periodic use as a SDZ during missile firings, for ground troop maneuvers, and for FTX missions does not generally generate hazardous debris. Consequently, public access for recreation and ranching has been compatible when these areas are not being used for military operations.

Current activities on McGregor Range are generally compatible with surrounding land uses, which are predominantly grazing. Use of R-5103, primarily by aircraft using the Class C Bombing Range, contributes to an average day-night noise level (L_{dn}) of about 53 decibels (dB)¹. These levels are compatible with dispersed residential areas on the south side of Timberon in the Sacramento Mountains. Isolated structures are avoided by a minimum of 500 feet, and community areas by a lateral distance of one-half mile or more, or a minimum vertical distance of 1,000 feet (in accordance with Air Force Instruction 11-206). Culp Canyon WSA also underlies R-5103 and is exposed to overflights. Noise from explosive sources has not been identified as an issue by rural residents in the area.

Safety risks occasionally preclude use of New Mexico Highway 506 (and occasionally U.S. Highway 54) during HIMAD missile firings. Closure interrupts access to residential communities in the Sacramento Mountains and to ranches on the east side of McGregor Range. All locations have alternative access, but they may not be the most direct route. While this may be inconvenient, current uses have continued, and in some areas developed, under these constraints. Because all locations have alternative access routes, many residents in the area rely on different routes even if they are not the most direct route (Roberts, 1996). Emergency services to these areas are provided from Cloudcroft, or by airlift, and therefore do not rely on New Mexico Highway 506.

3.1.5 Aesthetics and Visual Resources

Aesthetics and visual resources include the natural and man-made physical features that give a particular landscape its character and value. The feature categories that form the overall impression a viewer receives of an area include landform, vegetation, water, color, adjacent scenery, scarcity, and man-made (cultural) modifications (BLM, 1986b).

McGregor Range is located in arid high plains of southern New Mexico. The visual environment is characterized by extensive open areas and surrounding undeveloped land in western Texas and south central New Mexico. This section describes the visual environment including overall appearance and elements, management goals and guidelines, and visual resource value. The visual ROI is comprised of areas visible from McGregor Range, or locations that have unobstructed views of McGregor Range.

¹ A description of noise metrics and methodology for calculating noise exposure is provided in Section 4.10 and Appendix F (*Noise*).

3.1.5.1 McGregor Range

The natural context of McGregor Range is arid Chihuahuan Desert, characterized by vistas framed by distant mountain ranges or escarpments, dominated by the overlying blue sky. Variations in elevation and precipitation result in a range of vegetative regimes with indistinct boundaries. These create a patchwork of varying textures and patterns in the middle and distant landscape, caused by bunched or continuous grassy vegetation and areas of scattered shrubby vegetation. Broad valley floors and alluvial slopes are bisected by steep-sided but relatively shallow intermittent streams that provide visually interesting forms in the foreground, but that are less noticeable at a distance. Mixed hues of reddish brown, and gray-colored soils, rocks, and woody vegetation, are the dominant colors of the ground plane. In some areas, clumped or grassy vegetation introduce a range of pale sage and dark gray. Low-angle light at sunset and sunrise augments the color of the sky and landscape and increases the visibility of sculpted forms. However, in general, the natural landscape does not have outstanding features of visual interest such as dramatic landforms with high relief or highly contrasting variations in color or texture.

The cultural landscape is defined by both the natural setting and human modifications. Throughout the area, man-made features are evidence of current and past uses and events. These include (but are not limited to) roadways (both paved and unpaved), fences, wooden corals, isolated homesteads, powerlines, watering tanks, windmills, pipelines, antennae, and satellite dishes. Most of these are noticeable in the foreground, but are either not perceptible, or only defined by subtle lines or forms in the middle and distant landscape. While VRM objectives are generally aimed at minimizing the intrusion of man-made alterations on the landscape, these features can add interest and interpretative opportunities. In so far as the cultural landscape documents the activities of its builders and users over time, it can be endowed with meaning and importance.

Withdrawn public land on McGregor Range has been categorized under the BLM's VRM classification system. The purpose of this system is to provide an inventory of visual resources and to provide management objectives according to the visual quality and sensitivity of an area. BLM lands are classified as VRM Classes, I, II, III, IV, and unclassified (from the most valued and sensitive alteration, to the least). Areas along U.S. Highway 54 and New Mexico Highway 506 are Class III, where changes in the basic elements of the landscape may be evident but should remain subordinate. Culp Canyon WSA is rated as Class II to preserve the character of the natural landscape. The remainder of McGregor Range is rated as Class IV where the level of change to characteristic landscape can be high. This classification is applied to areas where visual sensitivity is lower due to lower viewer numbers in areas away from public access roadways. Historic and current uses for livestock operations is evident in supporting infrastructure. In the immediate vicinity of watering areas, stock corrals and the McGregor Range Camp, vegetation is limited.

The south part of the Tularosa Basin is mostly comprised of hummocky mesquite dunes. From vantage points on Otero Mesa, this terrain forms a homogenous pattern of dark shrubs against a sandy-ground plain. When passing through the mesquite dunes, visibility is restricted to the foreground because of obstruction by the surrounding dunes. Further north, the valley has low growing, generally widely spaced, pale-colored shrubs. Soil coloration, the patterns from shrubs and their shadows, and linear features such as roads and fences are the major defining elements of the foreground. On Otero Mesa, bunch grasses replace some of the low shrubs. The overall foreground is similar to the valley floor, with greater seasonal variations in vegetative color. In some areas, particularly ungrazed areas, the grasses create a distinctive even texture, and provide striking panoramic views from some middle and distant locations.

The McGregor Range Camp is visible when traveling along some roadways, but specific qualities of its built environment are not discernible, and it is unobtrusive in the overall landscape. Other constructed or mobile military structures and equipment are smaller in scale and therefore less visible to public viewers

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using roadways. Man-made modifications tend to be most visible to persons on foot or horseback due to closer viewing distances. However, relatively few people have this vantage point.

3.1.5.2 Surrounding Areas

Adjacent visible areas within Fort Bliss include Doña Ana Range–North Training Areas along the southwest border, and the South Training Areas, directly south of McGregor Range. The Organ Mountains on Doña Ana Range–North Training Areas are a prominent landscape feature in the middle and distant landscape from vantage points on McGregor Range. These mountains have outstanding scenic quality due to dramatic forms of precipitous mountains. The remaining areas on Doña Ana Range–North Training Areas and the South Training Areas in the Tularosa Basin are mostly comprised of hummocky mesquite dunes. From vantage points on Otero Mesa, this terrain forms a homogenous pattern of dark shrubs against a sandy ground plane. Northeast of the South Training Areas, the foothills of the Hueco Mountains rise from the desert floor providing moderate visual interest in the distance. The lower slopes have relatively little, mostly low-growing vegetation.

Adjacent BLM and USFS land has been classified according to its visual quality and sensitivity. The surrounding area has several locations with high scenic quality and sensitivity. An 8,947-acre portion of the Organ Mountains to the west of Doña Ana Range–North Training Areas, is designated as a scenic ACEC within the proposed Organ Mountains NCA and is managed as a VRM Class I area (where management actions should not alter the natural landscape). Views from most locations in the ACEC onto McGregor Range are obstructed by intervening terrain of the Organ Peaks. The Sacramento Escarpment ACEC, located north of McGregor Range, is also managed as VRM Class I. Distant views of the northwest corner of McGregor Range may be visible from some viewing locations in this ACEC. To the east, Wind Mountain, Alamo Mountain, and Cornudas Mountains ACECs have scenic value, but only distant views of McGregor Range. Most of the public, state, and private land to the west of U.S. Highway 54, and east of McGregor Range that include portions of Otero Mesa, generally have lower visual resource values due to lack of distinguishing landscape features, low number of viewers, and existing infrastructure.

The USFS uses visual quality objective (VQO) categories to manage visual resources. Areas are classified as Preservation (with the highest visual value and most sensitive to man-made changes, similar to VRM Class I), Retention, Partial Retention, Modification, and Maximum Modification (with diminishing visual value and sensitivity to visible alterations). Co-use and adjacent land in Lincoln National Forest, Sacramento district is primarily classified as Modification areas due to alterations (such as roads, signage, and evidence of productive uses), and relatively low visual quality. There are some Retention areas, mostly in mountainous terrain along the Sacramento escarpment, where changes within the natural landscape should not be evident. Parts of Grapevine Canyon, directly north of Culp Canyon WSA, are rated Maximum Modification, due to noticeable existing roadways and grazing infrastructure that dominate the landscape (USFS, 1998).

In general, when viewed from locations beyond the installation boundary, isolated facilities and equipment in the middle and far distance within training areas are visually subordinate to the natural landscape. Distant viewing locations on the east side of the Organ Mountains of Doña Ana Range–North Training Areas are not open to the public. Areas of higher elevation in the Sacramento Mountains and its foothills have distant views onto McGregor Range. Expansive vistas of grasslands on Otero Mesa appear relatively uninterrupted by man-made structures, except for a few roadways, stock corrals, and water improvements.