3.0 AFFECTED ENVIRONMENT

The existing environmental conditions for McGregor Range are presented in this chapter. The baseline year for the information presented in this section is 1996. The information is used to identify and evaluate environmental changes resulting from the proposed alternatives. The regions of influence (ROIs) vary, as dictated by the resources under consideration. The environmental resources discussed in this chapter include land use, airspace use, transportation, utilities, earth resources, air quality, water resources, biological resources, cultural resources, socioeconomics, environmental justice, noise, safety, and hazardous materials and items of special concern.

GEOGRAPHIC SETTING

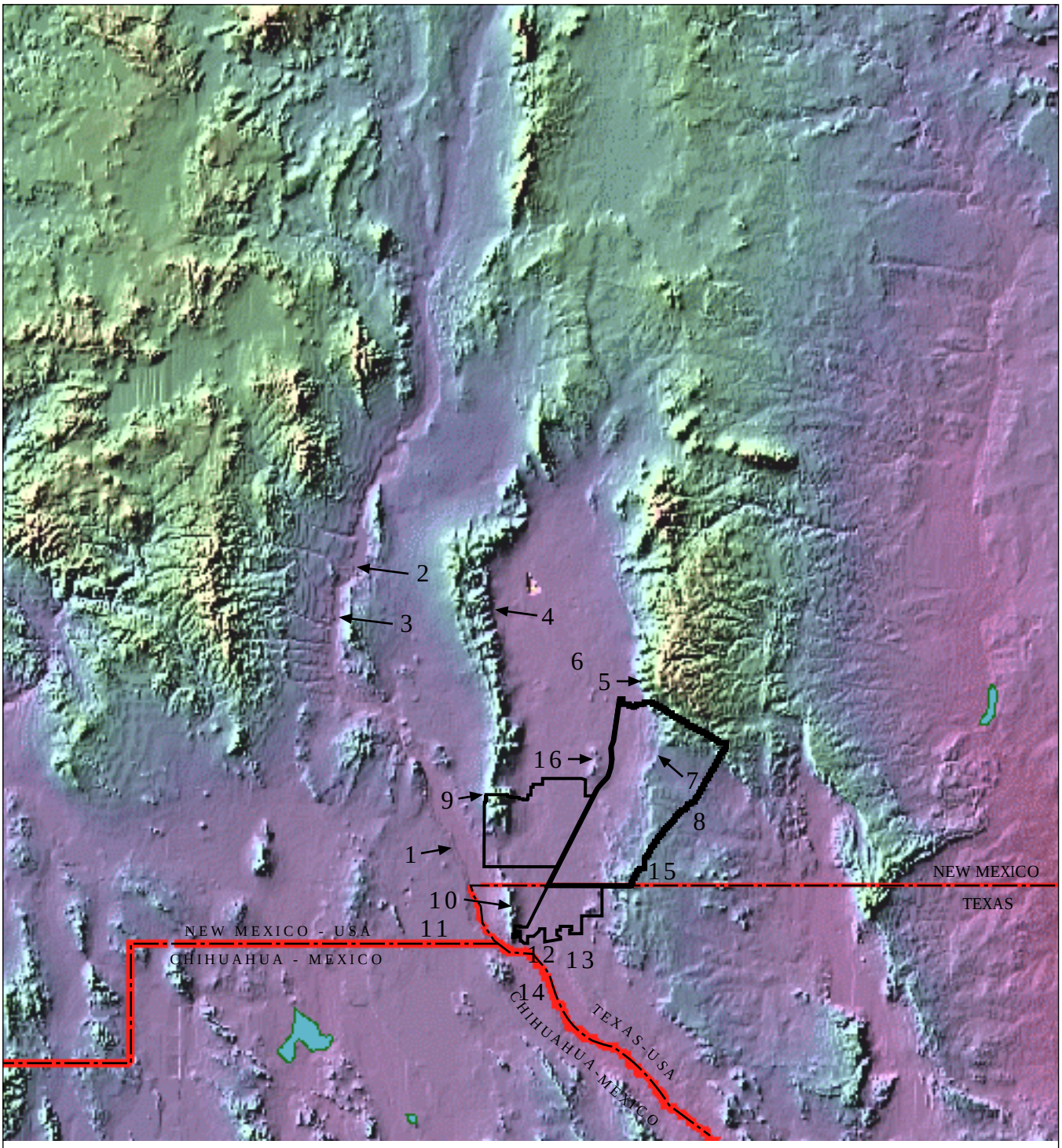
The Fort Bliss installation encompasses 1.12 million acres within portions of two states and three counties in the western-most part of Texas and in south central New Mexico, as shown in Figure 1.2-1. At its greatest extent, it is approximately 70 miles from north to south (trending north-northeast) and approximately 50 miles from east to west. McGregor Range (697,472 acres) is located in Otero County, New Mexico, and the rest of the installation is predominately located in portions of Doña Ana County, New Mexico, and El Paso County, Texas. The primary population centers in the area include Alamogordo and Las Cruces, New Mexico; El Paso, Texas; and Ciudad Juarez, Republic of Mexico. The main cantonment of Fort Bliss, where most mission support, logistic, administrative, and community functions are concentrated, is surrounded by the City of El Paso, Texas, and falls within the El Paso Standard Metropolitan Statistical Area.

McGregor Range is one of the outlying training areas of the Fort Bliss installation and is located north of the Main Cantonment Area. Other outlying training areas include the South Training Areas in El Paso County, Texas, and the Doña Ana Range–North Training Areas within Otero and Doña Ana counties, New Mexico. Areas surrounding the training areas include privately owned lands, public domain lands managed by the BLM, state-owned land, Lincoln National Forest, and WSMR.

Elevations on McGregor Range are from about 4,000 feet above mean sea level (MSL) along the western boundary to over 7,000 feet above mean sea level in the Sacramento Mountains on the northeast (U.S. Army, 1977). The terrain of McGregor Range is spread across the Hueco Mountains, Otero Mesa, the Sacramento Mountains foothills, and the Tularosa Basin. Figure 3.0-1 portrays the physiographic features of the area surrounding McGregor Range.

CLIMATE

McGregor Range and Fort Bliss are located in the northern Chihuahuan Desert and have a semi-arid to arid, subtropical desert climate characterized by low rainfall, relatively low humidity, hot summers, moderate winters, wide temperature variations, and an abundance of sunshine throughout the year. Records of the weather in the area near Oro Grande, New Mexico, have been kept since 1905 indicate that the area has an average annual precipitation of 10.2 inches (National Oceanic and Atmospheric Administration [NOAA], n.d.). Precipitation averages 8 to 10 inches at lower elevations, and increases to 16 inches or more in the mountain foothills. As a part of BLM studies of McGregor Range, 16 rain gauges were established in 1971 and are read monthly (BLM, 1980). More than one-half of the total average annual precipitation occurs during the months of July, August, and September. During these months, brief but heavy rainstorms frequently cause localized flooding. A small percentage of annual precipitation falls in the form of snow. Periods of extreme dryness lasting up to several months are not unusual.



Fort Bliss Boundary
1 Rio Grande
2 Elephant Butte Reservoir
3 Caballo Reservoir
4 San Andres Mountains
5 Sacramento Mountains
6 Tularosa Basin
7 Otero Mesa Escarpment
8 Salt Basin

McGregor Range Boundary
9 Organ Mountains
10 Franklin Mountains
11 Mesilla Bolson
12 El Paso
13 Hueco Bolson
14 Ciudad Juarez
15 Hueco Mountains
16 Jarilla Mountains

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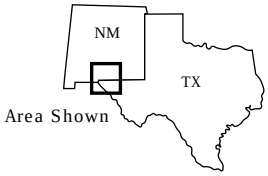

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Figure 3.0-1. Physiographic Features of the Area Surrounding McGregor Range.

Temperatures are generally warm, ranging from highs in the mid-50 degrees Fahrenheit (°F) during the winter months to highs above 90°F during the summer. The annual temperature averages 62°F at lower elevation stations and decreases about 4°F for each 1,000-foot increase in elevation (BLM, 1980).

Daytime humidity is generally low, ranging from 10 to 14 percent. Because of the mountainous terrain and the Rio Grande Valley, there are diurnal and locational fluctuations in humidity. Typical of the desert climate, rapid cooling from nighttime re-radiation causes increases in relative humidity during the night. Average daily relative humidity increases to about 40 percent at midnight and to 51 percent by 6:00 a.m.

Wind speeds in the McGregor Range area have an annual average of 8.5 miles per hour (mph) (Western Regional Climate Center, 1998). Stronger winds (up to 30 mph or more) are common, especially in the Spring when dust storms are frequent (BLM, 1980). From October through February, average wind speeds range from 8.2 to 9 mph and are predominantly from the north. The combination of moderately strong sustained winds and the low average precipitation contribute considerably to the occurrence of dust and sand storms in the area. During the summer months, average wind speeds drop to their lowest levels of the year (less than 8 mph). The predominant wind direction during the summer months is from the south-southwest. Wind speeds vary at different locations and strong gusts well above the average wind speed are known to occur at some locations.

A combination of abundant sunshine, high temperatures, low relative humidity, and continuous winds results in an evaporative rate that is more than 10 times the amount of annual precipitation. The annual evaporation, as measured by a U.S. Weather Bureau Class A evaporation pan over a 4-year period, is 108.15 inches (Knowles and Kennedy, 1956).

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