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**MOHAVE GROUND SQUIRREL**

**STUDY AT THE NEW OB/OD SITE,**

**EDWARDS AIR FORCE BASE, CALIFORNIA**

**FINAL**

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# MOHAVE GROUND SQUIRREL STUDY AT THE NEW OB/OD SITE, EDWARDS AIR FORCE BASE, CALIFORNIA

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*Abstract:* Surveys for Mohave ground squirrels (*Spermophilus mohavensis*) were conducted in May 2000 at the new OB/OD site on the Precision Impact Range Area of Edwards Air Force Base, California. Four adult Mohave ground squirrels were captured just north of the site. Three of the captured animals were pregnant females indicating that a healthy breeding population of Mohave ground is present near the site.

## INTRODUCTION

The purpose of this document is to present data from a Mohave ground squirrel (*Spermophilus mohavensis*) presence/absence trapping survey in a 1000 foot buffer area of the new OB/OD site in the Precision Impact Range Area of Edwards Air Force Base, California. This report will be used as support documentation the RCRA Part B application being prepared for submission to the California Department of Toxic Substances Control.

Mojave ground squirrels are approximately 8.5 - 9 inches in length and can be found in Joshua tree woodland, atriplex and creosote scrub habitats. Activity periods for this species vary and little is known about their reproduction (Ingles 1979). Their diet consists of seeds, vegetative parts of desert plants including fruits of the Joshua tree. Due to the aridity and high temperatures of its environment they are a diurnal species spending up to seven months underground.

The Mojave ground squirrel was delisted as a threatened by California Department of Fish and Game Commission (CDFGC). However, the delistment action was challenged and the Court ruled that environmental documentation considered by the CDFGC prior to delisting was inadequate and that an Environmental Impact Report must be completed before the CDFGC action can be considered valid.

## **Studies Required**

I conducted visual and live-trapping surveys for Mohave ground squirrels using methodologies recommended by California Department of Fish and Game (CDFG 1991). The surveys were completed 1-5 May 2000.

## **STUDY AREA**

The new OB/OD site (Figure 1) is surrounded by Joshua tree (*Yucca brevifolia*) woodland habitat with an understory of creosote bush (*Larrea tridentata*) winter fat (*Krascheninnikovia lanata*), burrobrush (*Hymenoclea salsola*), and native/non-native forbs and grasses. Human disturbance near the site include: scattered remains of spent ordinance and dirt roads. The elevation of the site is 2,400 feet above sea level.

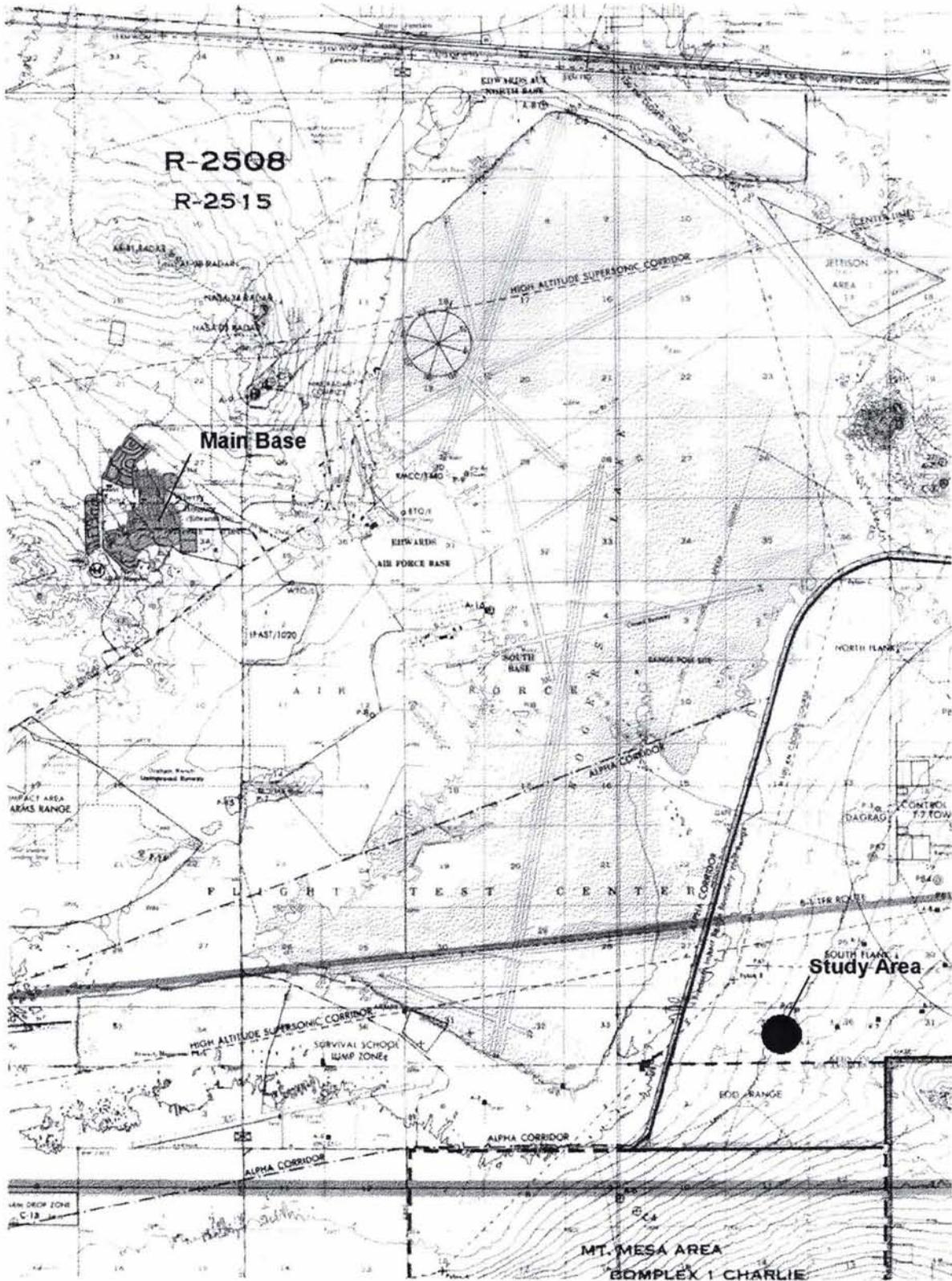


Figure 1. Study area location, Edwards Air Force Base, California.

## SURVEY METHODS

Visual surveys to determine Mohave ground squirrel activity and habitat quality were undertaken on 1 and 2 of May 2000. During this period, a trapping grid was established just north of the new OB/OD site (Figure 2) and trapping stations were pre-baited in anticipation of the need to conduct a live-trapping survey (CDFG 1991).

The sampling grid consisted of 100 Sherman live-traps arranged in a rectangular pattern, four traps wide by 25 traps long, with traps spaced 25 meters apart. Each trap was covered with a cardboard A-frame shelter to provide shade. Traps and shelters were oriented on a north-south axis. The traps were baited with bird seed mixed with a peanut butter/rolled oats powder. Traps were opened by 07:30 and closed at 16:30 and checked at least once every four hours to minimize heat stress to captured animals. Reproductive condition, sex, and weight were determined before each captured animal was individually marked on the ventral surface with an indelible ink marker to provide recapture information.

## RESULTS

No Mohave ground squirrels were detected during visual surveys although habitat in the entire study area was determined to be excellent. The trapping survey was initiated on 3 May 2000 and a pregnant female mohave ground squirrel was captured during the first trap check. I continued the trapping survey to determine the number of Mohave ground squirrels in the grid area, two more pregnant females and one male Mohave ground squirrels were captured. Five white-tailed antelope squirrels (*Ammospermophilus leucurus*) were captured. The details of the trapping survey are contained in Table 1. Locations of Mohave ground squirrel captures are shown on Figure 2

**Table 1.** Live-trapping results of surveys conducted near the new OB/OD site at Edwards Air Force Base, California

Date mo./day/year	Time Military	Station	Weight in grams	Sex/Reproductive Condition	Species
5/3/00	11:45	A-2	169	female/pregnant	MGS
	12:40	B-25	104	female/pregnant	AGS
	12:45	B-23		Escaped	AGS
	12:52	B-20	111	male	AGS
	14:10	B-1	159	female/pregnant	MGS
5/4/00	10:27	B-6	163	female/pregnant	MGS
	10:55	C-23	98	female/pregnant	AGS
	11:06	A-20	111	female/pregnant	AGS
	15:05	B-7		Recapture	MGS
	16:05	A-13	153	male/nonscrotal	MGS
5/5/00	11:05	C-18		Recapture	AGS
	13:40	D-23		Recapture	AGS
	13:55	C-16		Recapture	AGS

## DISCUSSION

The results of this survey indicate that there is an actively breeding population of Mohave ground squirrels very near the new OB/OD site at Edwards Air Force Base. Litter size for Mohave ground squirrels is usually about six (CDFG 1990). Assuming that the three females captured successfully rear six juvenile Mohave ground squirrels, the population on the grid by June 2000 could be approximately 22 animals. The sampling grid represents 21% of the total area of the 1000 foot buffer zone around the new OB/OD site. The approximate population of Mohave ground squirrels in the buffer zone could be as many as 104 individuals.

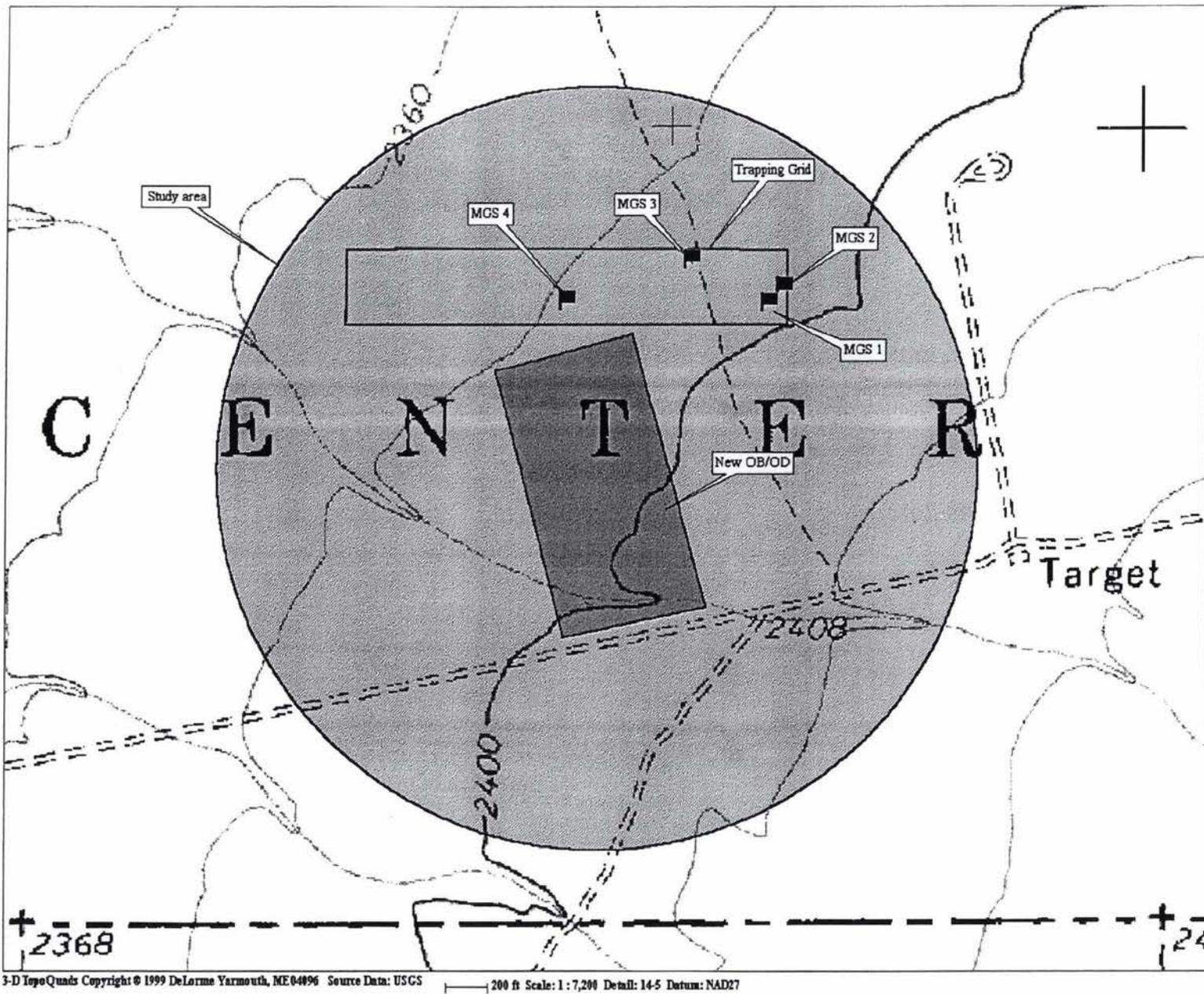


Figure 2. Study area with grid and Mohave ground squirrel capture locations. (NW 1/4, SE 1/4 Sec. 35; T 9N, R 9W; Rogers Lake South Quadrangle)

## LITERATURE CITED

California Department of Fish and Game. 1990. California's Wildlife, Vol. III, Mammals. 407 pp.

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Ingles, Lloyd G. 1979. Mammals of the Pacific States. Stanford University Press, Stanford, CA. 506pp.