# *APPENDIX A*
# *DESERT TORTOISE TRANSLOCATION PROGRAM*

# HYUNDAI MOTOR AMERICA
# MOJAVE TEST TRACK SITE

## *DESERT TORTOISE TRANSLOCATION PROGRAM*

*Prepared For:*
Hyundai Motor America
81 Bunsen
Irvine, California 92618

*Prepared By:*
Alice E. Karl, Ph.D.
P.O. Box 74006
Davis, California 95617

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# DESERT TORTOISE TRANSLOCATION PROGRAM

## BACKGROUND

There are few well-executed translocation studies on desert tortoises. As such, little is known about the success of desert tortoise translocation. Generally, the studies have been short-distance removal studies, where tortoises are moved immediately off a fenced site but very likely within their home range (e.g., Stewart and Baxter 1987, TRW 1998, Corn, pers. comm. to A. Karl). Furthermore, the studies are not easily accessible as are primarily found in unpublished gray literature reports (e.g., Berry 1975), non-peer reviewed symposium proceedings (e.g., Stewart 1993, Mullen and Ross 1997), or university archives (e.g., Cook 1983) or are not yet fully analyzed [Phil Medica, U.S. Fish and Wildlife Service (USFWS), pers. comm.). Finally, none has included a control group (i.e., a group of tortoises unaffected by translocation) in the study, with the exception of a recent translocation study south of the Las Vegas Valley (Phil Medica, pers. comm., and Saethre *et al.* 2003). Several of the studies have included observations of host, or resident, tortoises but such tortoises were affected by an influx of translocated tortoises, so did not really constitute a valid control group. As such, the conclusions of these translocation efforts have been suggestive, but somewhat limited relative to identifying translocation effects.

While studies have generally had limited utility regarding translocation, their results strongly suggest that translocation, if conducted appropriately and during periods of adequate forage, can result in high survivorship of translocated animals. Stewart (1993) observed that survival rates and average distances moved did not differ between translocated tortoises and resident animals during variable periods of time not exceeding 18 months. Other short-distance translocation studies have resulted in high survival of translocatees for 9-24 months (Stewart and Baxter 1987, TRW 1998). Cook (1983) released 51 tortoises over a two-year period and observed only eight deaths (although monitoring was very limited on more than half of the animals). Not unexpectedly, the season of release had a substantial impact on mortality. Six of the eight known deaths occurred in tortoises released during the summer; these tortoises died of apparent exposure within one day to two weeks of release. The Las Vegas Valley study found that mortality within one year of release was strongly correlated with drought [Phil Medica, U.S. Fish and Wildlife Service (USFWS), pers. comm. and Saethre *et al.* 2003]. Mullen and Ross (1997) observed that there was no difference in survival between resident and translocated tortoises except for tortoises released in a drought year, which also included late spring releases after ambient temperatures exceeded lethal levels daily.

Given the federal and state "threatened" status of this species, translocation should strongly be considered as a tool for saving individual tortoises where their

safety is definitely compromised by localized habitat destruction and/or other factors. A carefully implemented translocation program can not only substantially decrease project impacts to desert tortoises, but also has the potential to provide useful data for application to other analyses and future translocation projects. The Hyundai tortoise translocation study is an opportunity to provide answers to specific questions about translocation. Most of these questions were not previously answered by the Las Vegas study and have never been answered in the western Mojave Desert. The results would provide important management tools for future translocation efforts.

Finally, tortoise populations in the western Mojave Desert have been decimated by a 15-year drought cycle. The translocation program associated with this project will keep the tortoises at the Hyundai site in the population and also assist in replenishing a nearby area.

## PROJECT GOALS

The primary goals of translocating tortoises from the Hyundai site are to prevent the mortality of tortoises that reside on the site, to maintain the integrity of the population as much as possible, and to maintain breeding individuals in the population. Secondarily, but importantly, the program will facilitate the repopulation of a site that has experienced tortoise density declines not directly related to habitat loss. The primary goal of the translocation study will be to answer questions about the effects of translocation.

This study intends to address four primary (1º) questions and several secondary (2º) questions. The latter include variables to be analyzed for the primary questions and many of the other secondary questions. Repeated measures analysis, analysis of variance, and analysis of covariance are the basic statistical tests that will be employed for analysis.

1º Question #1 – What is the effect of translocation on survival?

1º Question #2 – What is the effect of translocation on health status, especially (a) exposure to *M. agassizii* and other pathogens, (b) disease expression, and (c) condition indices?

1º Question #3 – Is fencing a translocation site a reasonable procedure for site repatriation of areas that are depauperate due to stochastic climatic events or other factors that have not reduced the habitat quality at the translocation site?

1º Question #4 – How are activity levels affected by translocation?

2º Question #1 – Are there gender effects?

2º Question #2 – Are there size or age effects?

2º Question #3 – Are there effects from forage level variation?

2º Question #4 – Are there effects from precipitation events (i.e. rehydration opportunities)?

2º Question #5 – Could activity level patterns partially explain survival rates and/or health patterns?

2º Question #6 – What is the temporal pattern of the above effects following translocation?

Other factors that are generally considered to be measures of successful translocation, such as reproductive output and age-related recruitment, will not be incorporated into the study because of low anticipated sample size that would result in invalid statistics and meaningless results.

**Special Aspects of This Translocation Study not Investigated in Other Translocation Efforts**

No study has knowingly translocated tortoises that potentially carried *Mycoplasma agassizii*; nor has any study, with the exception of the Las Vegas study, examined health issues, other than survival. The Las Vegas study specifically did not translocate tortoises that had tested positive for exposure to *M. agassizii* or that had clinical signs of disease. The Hyundai translocation project will incorporate the translocation of seropositive tortoises, animals that have withstood infection by *M. agassizii* and recovered. This will permit the strong physiological and physical attributes that enabled these tortoises to withstand infection to remain in the gene pool. Furthermore, we will not be introducing mycoplasmosis into a "clean" population, as seropositive tortoises or tortoises with clinical signs of infection with *M. agassizii* have been found at the Desert Tortoise Research Natural Area (DTRNA) north of the Hyundai site and at many sites throughout the Mojave desert (Lederle *et al.*, 1997, Homer *et al.*, 1998, Christopher *et al.*, 2002).

The translocation site will be fenced with tortoise-proof fencing for part of the study (see *Translocation Site Fencing*, below). Fencing the translocation site will provide the following benefits:

- Fencing will help contain disease spread. We do not know if seropositive tortoises that host *Mycoplasma* spp. will be under sufficient stress following translocation to enter an acute phase of the infection (i.e., clinical signs). Since tortoises are believed to be contagious when clinically ill (Brown *et al*. 2003), fencing will prevent potential infection of tortoises outside the translocation site.

- Forcing translocated tortoises to remain at the translocation site will result in their becoming accustomed to the site and, thus, maximize the likelihood of their ultimate repopulation of that area, when the fence is

removed. Repatriation of target areas could be an important tool for species recovery.

- Fencing will keep translocated tortoises safe from anthropogenic impacts outside the translocation area (e.g., roads, off-highway vehicles, sheep), which are often considerable in the west Mojave, especially near the DTRNA, the general area targeted for the translocation site.

- While fencing precludes studying long-distance movements, it is already well known from other translocation efforts that a percentage of translocated tortoises move moderate to great distances immediately following release. Fencing will allow us instead to assess fencing as a tool for future translocations to areas of a scale that would accommodate fencing. Other variables that might be studied in an unfenced site can still be studied in a fenced site.

- While fence walking may occur with some translocatees, it is fully possible that the actual hours of fence-walking activity would not exceed the hours of walking away from an unfenced translocation site.

## STUDY DESIGN

### Translocation and Control Sites

A translocation site must be chosen that will meet the following criteria, a discussion of which follows this list:

- The habitat must be of sufficiently high quality to support both translocated and resident tortoises. Secondarily, acclimation by translocatees would probably be facilitated if habitat elements were sufficiently similar to those at the original capture site.

- The site must be of sufficient size to accommodate an influx of translocated tortoises.

- The site should be within the same population as the Hyundai site, to maintain genetic, morphological and behavioral integrity and facilitate acclimation by translocatees.

- There should be adequate assurance of long-term translocation site protection from development or severe anthropogenic threats. These may be included as part of per-acre dollar amounts for habitat compensation, which include land purchase funds and perpetual management funds.

- Hyundai requires that the translocation site be suitable for compensation lands. As such, the translocation site should be in an area that can add to blocks of land that are already protected for wildlife values or targeted for protection and enhancement.

Carrying capacity at the translocation site is a primary consideration in any translocation effort. During a climatic cycle of average to high rainfall producing abundant forage for many years (e.g., most of the 1970's and 80's), with resultant high tortoise survival and low mortality rates, tortoise densities at carrying capacity for the habitat would be expected. During such a period, areas well below carrying capacity would probably be confined to sites experiencing severe anthropogenic impacts, such as land adjacent to highways. Currently, however, and as a result of the recent ~15-year drought cycle[1], concomitant increases in mycoplasmosis and potentially other diseases, and anthropogenic impacts, tortoise populations are severely depressed throughout the Mojave Desert[2]. While studies are almost entirely unpublished, they are consistent: relatively few live tortoises are found compared to historic or expected counts and mortality rates (based on carcass counts) are high. In the west Mojave alone, for example, Berry (2003) reported that 1996-2002 tortoise densities on the DTRNA were 13-39 tortoises/mi$^2$, compared to 1979-1982 densities of >175 tortoises/mi$^2$; Fremont Valley had 2001 densities of 13 tortoises/mi$^2$, compared to1981 densities of 109 tortoises/mi$^2$. Karl (2002a, b) observed adult mortality rates of 10.8–46.5% for adults for the preceding two to four years alone (50 % of which were drought years of negligible or highly diminished forage); there were 1.4 times as many dead adult females as adult males. In conclusion, then, it is unlikely that any potential translocation site is currently at, or even near, the average, long-term carrying capacity for the location. As such, exceeding carrying capacity is a consideration for this project that is not critical.

It is likely that only one translocation site, of approximately two square miles in size, will be needed, based on the limited number of tortoises anticipated to be translocated (approximately 30-40 adults based on October 2003 surveys) and the fact that the host population is likely to be depressed well below average carrying capacity. However, the translocation area may be divided into two sites, depending on habitat quality, management potential and availability.

Prior to finalizing the choice of translocation sites, surveys of potentially suitable sites [i.e., approved by the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) and available for purchase at a reasonable price] will be conducted to ensure that these are appropriate sites for

[1] Seven of the last 15 years have been drought conditions in the western Mojave Desert (United States Department of Commerce, National Oceanic and Atmospheric Administration. 1981-2002)

[2] Drought is both a proximate and ultimate cause of tortoise declines. Proximally, drought results in death and reduced reproduction. Ultimately, dehydration and starvation may engender disease increases due to compromised immune systems. For a review, see Chapter 4 of U.S. Army National Training Center (2003)

translocation. Survey methods will assess tortoise abundance, habitat features, existing anthropogenic influences, and anticipated future impacts. They will generally follow those used by Karl (2002a, b) at the nearby Fort Irwin military reservation because they provide such analyses. The survey will also include a qualitative assessment of the habitat quality for tortoises, based on the expertise of a tortoise biologist extremely experienced with assessing tortoise habitat quality.

Appropriate areas for a control site will be assessed simultaneously, using the same survey methods. The control site will be near (within a couple of miles of) the translocation site, and of similar or identical habitat. If the control site is on the DTRNA or CDFG lands, then data collection associated with the study will provide the Desert Tortoise Preserve Committee (DTPC) or CDFG with a large and useful data set on native tortoises there.

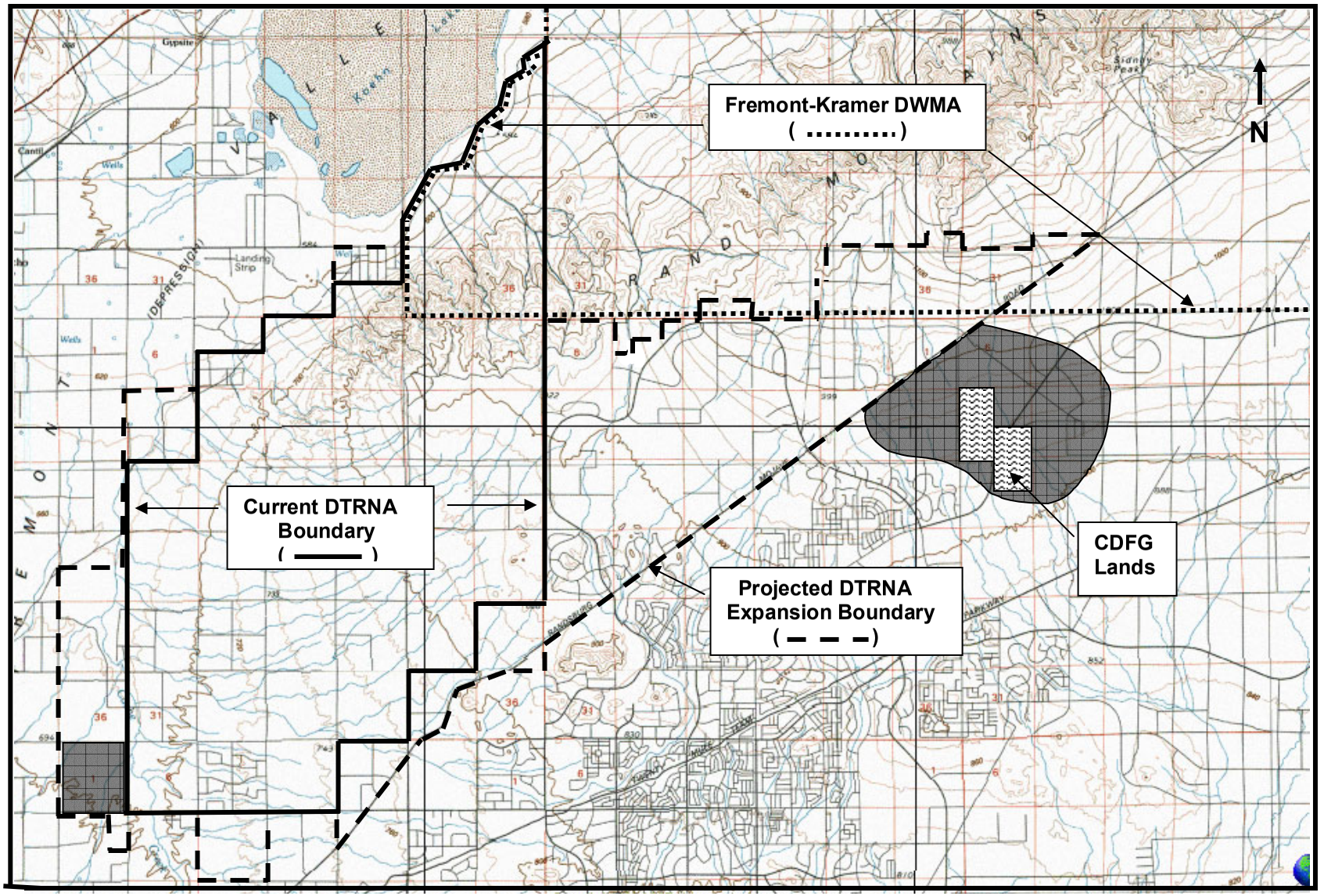
No translocation site has yet been chosen, although this will need to be accomplished in sufficient time to enable the site to be fenced prior to translocating tortoises in April 2004 (Table 1). Two areas currently are under consideration: (1) Section 1 in Township 32S and Range 37E; and (2) around the CDFG-owned lands in Township 32S Range 40E (Figure 1). The first site is adjacent to the DTRNA and within the area identified by the Draft Environmental Assessment/Habitat Conservation Plan (Draft EA/HCP) (Sapphos Environmental, Inc., 2003) as proposed mitigation lands (Figure 4.2.1-1 of the Draft EA/HCP). As land ownership will ultimately be transferred to CDFG, this action would be consistent with Objective No. 1 of the DTRNA Management Plan's *Goals and Objectives* (Appendix E of the Draft EA/HCP), which promotes protection, conservation, and enhancement of habitat in and around the DTRNA. Additionally, translocation of tortoises immediately adjacent to the DTRNA is not inconsistent with the DTRNA Management Plan. Objective No. 3 of *Goals and Objectives* promotes recovery of desert tortoise populations in and around the DTRNA, including a potential head-starting program.

The second potential translocation area would ultimately provide a larger block of protected, state-owned lands in an area targeted as a CDFG ecological reserve. Furthermore, the area is adjacent to both the Fremont-Kramer Desert Wildlife Management Area (DWMA) and the targeted expansion area of the DTRNA, adding to a large block of protected tortoise habitat.

**Translocation Site Fencing**

The translocation site will be fenced along the perimeter with temporary tortoise-proof fencing. To deter trespass by recreationists or sheep, at least two strands of barbed wire should be strung above the tortoise-proof fencing. The tortoise-proof

Figure 1. Potential translocation areas ( ▒▒▒ ) for Hyundai desert tortoise translocation program.



portion of the fencing will be removed during approximately Year 2 of the study (or when animals seem to have settled into the area – i.e., ceased fence-walking and have behaviors similar to the control group and host tortoises) to assess site repatriation and permit tortoises to become elements of the population (i.e., rather than segregated from the population). Site repatriation will be assessed by monitoring subsequent tortoise movements and comparing them to those of control tortoises.

**Health Considerations**

The transmission of *M. agassizii* is believed to be via direct contact with an infected tortoise (Brown *et al.* 2003). *M. agassizii* can only live outside the tortoise briefly (seconds) (McLaughlin pers. comm. to A. Karl) and a limited experimental study with gopher tortoises (*G. polyphemus*) suggested that it is unlikely to persist on objects or in burrows (McLaughlin 1997 *in* Brown *et al.* 2003). Desert tortoises are believed to be contagious during periods of acute phases, when they have clinical signs (Brown *et al.* 2003). Such signs include a mucous nasal discharge, palpebral edema, wheezing, moist nares or eyes, conjunctivitis, and lethargy. Schumacher *et al.* (1997) observed that positive clinical signs had a high statistical correlation with positive serology (i.e., exposure to *M. agassizii*). A mucous nasal discharge was the clinical sign that was the most reliable predictor (93% of tortoises with a mucous nasal discharge were seropositive), although it could be caused by other pathogens. Other clinical signs were far more subjective, were potentially present for other reasons, and reduced the statistical predictability of positive serology. Positive serology [i.e., a sufficient level of *M. agassizii*-specific antibodies to be detectable by an enzyme-linked immunosorbent assay (ELISA)] indicates that a desert tortoise has been exposed to *M. agassizii* (Schumacher *et al*. 1993). It does not, however, indicate whether the tortoise currently hosts the organism. Evidence of an active infection by *M. agassizii* is currently diagnosed by cultures and polymerase chain reaction (PCR).

For the Hyundai site, only tortoises that are free of definitive clinical signs of disease will be translocated. A mucous nasal discharge will be the threshold criterion to determine clinical illness, although should other signs with extreme severity be present, the tortoise may be considered to be clinically ill. Clinically ill tortoises that test positive for exposure to *M. agassizii* will be placed in the several-hundred acre area in the northwestern portion of the Hyundai site, north of the test track. This area will be fenced with tortoise-proof fencing prior to April 2004 so that clinically healthy tortoises can be translocated from this area to the translocation site prior to ill tortoises being introduced into the enclosure. The fencing will ensure that the sick tortoises cannot escape and will be safe from activities associated with the test track.

All clinically ill tortoises will have ELISA tests for exposure to *M. agassizii* prior to moving them to the disease control area (see Appendix 1- Chart 2). Clinically ill tortoises that are not seropositive for *M. agassizii* will be treated as are clinically healthy tortoises, rather than moving them to the disease control area and potentially exposing them to *M. agassizii*.

The sick tortoises placed in this area will be transmittered and monitored identically to the translocated tortoises (see *Schedule of Clearance and Data Collection*, below). The exception will be adult females. These will be appropriately radiographed for egg production (Karl 1998), confined to a small area when they are nearing oviposition, and their nests collected and moved to the translocation site at the time of oviposition. There appears to be a low probability that infected females can transmit *M. agassizii* to their embryos (Brown *et al.* 2003, Rostal and Lance 2003).

All clinically ill tortoises transported to the disease control area will remain in the enclosure until they exhibit a lack of clinical disease signs over two consecutive weighing/measuring occasions (March, July, and October), in order to reduce transmission of *M. agassizii*. When free of clinical signs, tortoises will be translocated to the translocation site to become part of the study cohort. It is anticipated that few tortoises will exhibit clinical signs because (a) there are few tortoises at the Hyundai site and (b) none exhibited clinical signs during October 2003 surveys. Most tortoises at the Hyundai site will be found by Spring 2004, so it is likely that any with clinical signs at this stage of the study will clear of signs during the study or, possibly, worsen and die. Any that do not clear of signs by the study's end, or are found with clinical signs during Hyundai project operation, after the study is completed, will be used for research or adopted (see Appendix 1-Chart 5).

**Study Cohorts and Basic Study Design**

Because a major investigation of this study is to examine disease patterns, three cohorts - translocatees, hosts (i.e., tortoises receiving the translocatees), and control tortoises - will be studied. The target size for each cohort will be 15 adult females and 15 adult males (i.e., 30 translocated tortoises, 30 host tortoises, and 30 control tortoises). This number will allow for statistical validity in light of attrition due to lost signals from malfunctioning transmitters and mortality. Study tortoises will be of reproductive size [≥180 mm in median carapace length (MCL)] because it is anticipated that there will be too few smaller tortoises for statistical validity. The exception to this will occur during initial translocation in April 2004, when immature tortoises (at least approximately 428 g, due transmitter size[3]) will also be transmittered to observe early movements following

[3] The smaller transmitters currently in use for the project weigh 25-30 g with epoxy and antenna sheathing. If the units comprise no more than 7 % of a tortoise's mass, the minimum tortoise mass accommodating these transmitters is 428 g.

translocation[4]. Transmitters on the latter tortoises will be removed by Summer 2004.

At the time of capture, all tortoises, including study animals (translocatees, host, and control tortoises) and all other tortoises that will subsequently be removed from the Hyundai site, will be weighed, measured, photographed, sexed, and described. All tortoises will be permanently marked with a unique number, using two of three systems (notching, epoxy numbers, P.I.T. tags) for future identification.

Survival and general health will be monitored through body condition indices (mass to volume ratios), clinical signs, serology and cultures. All tortoises will be examined for clinical signs of disease at the time of capture. Blood samples will be taken to test for the presence of antibodies to *Mycoplasma agassizii*; ELISA for other pathogens will be run as the tests become valid for desert tortoises. Nasal samples will be taken for culturing to detect the presence of *M. agassizii* and other pathogens (e.g., herpesvirus, *M. cheloniae*, iridovirus, *Pasturella testudinis*). The schedule of sampling is discussed below (see *Schedule of Clearance and Data Collection*).

All study individuals will wear appropriately sized transmitters, fitted to insure safety to the individual and lack of interference with growth and behaviors. Transmitters are scheduled to last 18 months and will be changed at appropriate intervals (approximately 16-17 months), or sooner if they exhibit symptoms of malfunctioning.

Activity patterns (i.e. increased aboveground activity levels), which may affect body temperatures and body condition and ultimately health and survival, will be monitored by temperature data loggers (HOBO TidBits), which continuously collect data. These will be mounted on all males in the study cohorts and in sample burrows. (Only males can carry the data loggers without interference with righting or other behaviors.) Data will be downloaded at sufficient intervals to avoid any data loss and identify malfunctioning units. Data loggers have batteries sufficient to last the entire study, without replacement.

The study will last four years, including the translocation year.

**Consistency with the Desert Tortoise Recovery Plan**

While the choice of translocation sites and the program protocols are largely based on ecological considerations, plus land availability, consistency with the Desert Tortoise Recovery Plan (USFWS 1994) is desirable. The recovery plan offers a brief set of suggestions for translocations that provided some ecological

[4] This part of the study may be re-evaluated since the translocation site will now be fenced, eliminating any long-distance movements of immature animals.

concepts to consider while remaining consistent with the rest of the recovery plan directives (Appendix B of the recovery plan). The Hyundai translocation plan is consistent with these guidelines, with the exception of the first part of Point 7, which reads, "the recipient population should be monitored for at least 2 years prior to the introduction. Necessary data should include the density and age structure of the recipient population, home ranges of resident tortoises and general ecological conditions of the habitat." Home ranges and age structure of the host population are not critical factors for the Hyundai translocation study. (It is assumed that the two-year suggested period of study is for estimating these factors, although the rationale for a two-year study is neither explained nor does it include references). However, the density of the host population and general ecological conditions of the translocation site will be known prior to translocation (see *Translocation and Control Sites*, above). In addition, a control population will be similarly studied to validate study results.

**Schedule of Clearance and Data Collection**

Based on the current project permitting date of January 2004 and an estimated translocation date of approximately April 7, 2004, the following schedule of activities is offered. The period from October 2003 to October 2004 is shown in Table 1. In addition, decision matrices for various aspects of the entire project period are presented in Appendix 1.

Pre-Translocation, Pre-Permitting and Pre-Construction - October 2003

A survey of the entire Hyundai project site was completed in October 2003 using tortoise searchers spaced at five-meter intervals. The purpose was to conduct blood and nasal sampling for determining current health profiles of tortoises at the Hyundai site. A positive ancillary outcome was that many tortoises were found and transmittered while they were still active. This will permit tortoises to be found more easily during hibernation should construction begin in Winter 2004, hopefully resulting in fewer mortality takes. Tortoises were allowed to enter hibernation naturally.

Pre-Translocation Monitoring During Construction – Through Approximately April 7, 2004

The first priority of monitoring is to avoid killing or injuring tortoises during construction or other project activities. Within this context, the translocation study will be preserved by avoiding disturbance of natural tortoise activities, where possible, and avoiding double-translocation (e.g., moving tortoises to a new area on the site prior to translocating them to the translocation site).

Table 1. Estimated schedule for tortoise translocation program at the Hyundai Mojave Test Track Project - Year 1[1]

| Task \ Month | Oct 2003 | Nov 2003 - early Mar 2004 | Mid-late Mar | Apr | May | Jun | Jul | Aug | Sep | Oct |
|---|---|---|---|---|---|---|---|---|---|---|
| Search Hyundai site to find and transmitter as many tortoises as possible for purposes of conducting blood and nasal analyses for disease | | | | | | | | | | |
| Survey potential translocation sites and choose final translocation and control sites | | | | | | | | | | |
| Fence translocation site with tortoise-proof fencing | | | | | | | | | | |
| Construction of Hyundai project, beginning with fencing, using monitors and fencing as necessary to avoid tortoise losses | | | | | | | | | | |
| Fence Hyundai site with tortoise-proof fencing, including construction and traffic areas, northwest disease control area, and perimeter | | | | | | | | | | |
| Find control tortoises and transmitter | | | | | | | | | | |
| Find host tortoises and transmitter; blood and nasal analyses on all study tortoises and other tortoises | | | | | | | | | | |
| Second and third passes (minimally) to find all tortoises on Hyundai site, completing northwest disease control area first | | | | | | | | | | |
| Initial translocation of most tortoises from Hyundai site to translocation site, or to disease control area if clinically ill | | | | | | | | | | |

| Task \ Month | Oct 2003 | Nov 2003 - early Mar 2004 | Mid-late Mar | Apr | May | Jun | Jul | Aug | Sep | Oct |
|---|---|---|---|---|---|---|---|---|---|---|
| Continued translocation from Hyundai site - Spring 2004 | | | | | | | | | | |
| Continuous protection of tortoises remaining on Hyundai site during construction (no translocation) | | | | | | | | | | |
| Translocation of remaining Hyundai tortoises to translocation site, or to disease control area if clinically ill | | | | | | | | | | |
| Primary production biomass analyses on host and control plots | | | | | | | | | | |
| Locations of all tortoises 2 times a week[2] | | | | | | | | | | |
| Locations of all tortoises 2 times a month | | | | | | | | | | |
| Weigh, measure all tortoises | | | | | | | | | | |
| Annual blood and nasal sampling of all study tortoises | | | | | | | | | | |
| Locations of all tortoises 1 time a month | | | | | | | | | | |

1. Assumes permits are issued in January 2004.
2. Data loggers will be downloaded periodically, during this and successive locations of tortoises. Transmitters will be changed as necessary.

The activities presented below assume that (a) a permanent tortoise-proof fence will be installed around the perimeter of the Hyundai site, (b) all areas where construction or construction-related travel will occur will be temporarily fenced with tortoise-proof fencing, and (c) translocation will occur in early April (approximately April 7). Fencing of construction zones will be the first construction activity. Permanent tortoise-proof fencing will be ½-inch mesh hardware cloth, as specified by the U.S. Fish and Wildlife Service (Judy Hohman, USFWS, pers. comm. to A. Karl). Vertical burial will be 12-18 inches with an 18-24 inch aboveground extension. Supporting stakes will be sufficiently spaced to maintain fence integrity. Temporary tortoise-proof fencing may be silt fencing or other temporary fencing, buried 12-18 inches with an 18-24 inch aboveground extension. As with permanent fencing, supporting stakes will be sufficiently spaced to maintain fence integrity. Temporary fencing will be in place until it has been determined that all tortoises have been cleared from the project site (see Final EA/HCP). All fence construction will be accompanied by adequate monitoring by qualified tortoise monitors to insure that no tortoises are harmed. All fencing will be monitored on an adequate schedule to ensure fencing integrity (e.g., monthly for permanent fencing, weekly for temporary fencing, and after all storm events that are accompanied by surface water flow).

During construction activities in the winter, all fenced construction and high-traffic zones will be searched for tortoises. The searches will include all burrows that could potentially host a tortoise. These will be excavated with hand tools in the method prescribed by the Desert Tortoise Council (1994). (Note: Any nests found after October are probably infertile and will be examined but not moved.) All tortoises (transmittered or not) will be moved immediately off the construction areas to artificial burrows that provide safe thermal refugia. Artificial burrows will mimic the capture burrows[5]. It is understood that a tortoise generally will not use an artificial burrow readily, so surface soil and scat from the capture burrow will be placed in the artificial burrow to assist with acclimation. The tortoise will also be blocked into the burrow for one-several weeks to promote familiarity, and monitored to insure their safety.

Prior to moving them, untransmittered tortoises will be transmittered, even if the study size cohort is exceeded, to facilitate finding these tortoises again. A combination of monitoring, burrow-blocking, and/or tortoise-proof penning around the artificial burrows will prevent tortoises from re-entering construction or traffic zones until temporary tortoise-proof fences are erected around those zones. All blocks and penning will be removed once construction and high-traffic zones have been fenced.

[5] It is highly unlikely that any tortoises will be found in winter without an association to a burrow. If no burrow is evident, artificial burrows will be a minimum of 1.5 m long and 0.5 m belowground at their interior terminus to insure adequate thermal buffering; the direction will either face north or east to minimize sunlight entering the burrow.

Because small tortoises are difficult to find and are also subject to depredation by a variety of nocturnal and diurnal predators, any juveniles found prior to the estimated translocation date of approximately April 7 that cannot be transmittered (i.e., smaller than approximately 428 g), will be sequestered in a holding pen that is both predator-proof, escape-proof and with sufficient shrub vegetation for ample shade and sun. The size of the pen will depend on the number of tortoises found, but will start at 20 feet in diameter and be extended to approximately 50 feet if more than three tortoises are contained. Artificial burrows will be constructed and tortoises initially blocked into these burrows. This pen will be monitored during construction in Winter 2004 to insure its integrity and tortoise safety; it is assumed that ongoing site construction will deter vandalism. Alternatively, very small transmitters may be obtained for use on these juveniles and monitoring will proceed as for larger animals.

While not all monitors will be permitted to handle or transmitter tortoises, all will be adequately trained to ensure thorough monitoring. A sufficient number of biologists permitted to handle and/or transmitter tortoises will be onsite during fence construction and clearance surveys to move animals efficiently. A lead biologist will always be present to ensure that monitoring runs smoothly and to solve problems.

Tortoises will be handled smoothly, quickly, and with clean techniques, following techniques outlined by the Desert Tortoise Council (1994), and incorporating newer research (e.g., Brown 2003).

Clearance and Translocation - Year 1

The fenced construction areas will have beencleared of tortoises during Winter 2004. Although tortoises will have been moved only very short distances, probably still within their home ranges, some tortoises may be observed pacing a long fence (e.g., the test track) excessively, as the weather warms. These tortoises may be moved, as appropriate, to a site immediately outside the opposite fence and monitored.

During the last week in March (or slightly earlier if ambient temperatures are sufficiently warm) and first week in April, control site tortoises will be found and transmittered. Host tortoises will be located and transmittered on the translocation site during the first and second weeks in April.

Fencing of all phases of the project site (construction and traffic zones, northwest disease control area, and perimeter) and the translocation site will have been completed by the time clearance surveys begin on the Hyundai site and tortoises are translocated to the translocation site. Remaining searches for tortoises on the Hyundai site will start approximately April 1, beginning with clearance of the disease control area. Clearance will include aboveground searches as well as

burrow searches and will require at least two more clearance passes[6]. At least two consecutive passes with no tortoises will be required for a segment of the site to be considered cleared (see final EA/ HCP). All burrows that could potentially host a tortoise will either be (a) excavated with hand tools in the method prescribed by the Desert Tortoise Council (1994), if in an area where the burrow would ultimately be destroyed by construction activities, or (b) visually examined with fiberoptics tools for tortoise presence.

Until translocation at the end of approximately the first week in April, new tortoises will be transmittered as they are found, including tortoises that are in excess of the study cohort size (for ease of re-locating). Smaller tortoises will be sequestered as explained above. All tortoises found and transmittered will remain on the site to forage, protected from construction activities by tortoise-proof fencing and/or monitoring until translocation. Translocation in early April will permit translocatees to locate new burrows on the translocation site prior to ambient temperatures becoming lethal. Concurrently, most or all of the host tortoises and, hopefully, all of the control study tortoises will have been found by this time. All non-clinically ill tortoises, including juvenile tortoises that are too small for transmitters (see above), will be translocated.

Clinically ill tortoises that are seropositive for *M. agassizii* will be translocated to the disease control area after all non-clinically ill tortoises there have been translocated to the translocation site. Clinically ill tortoises that are not seropositive will be transported to the translocation site, rather than moving them to the disease control area and potentially exposing them to *M. agassizii*.

Tortoises will be transported to the translocation site in individual, sterilized tubs with taped plywood lids. Transportation will occur inside a vehicle offering shade (e.g., camper, sports utility vehicle or van). The tubs will be cushioned, shaded, cool, and not placed over the catalytic converter; vehicle speeds will be minimized on dirt roads to prevent jarring. Tortoises will be released at several locations throughout the translocation site that have been identified prior to tortoise transport. Because releases will only proceed under suitable ambient temperatures, no artificial burrows will be constructed. All tortoises will be offered free water prior to transport to aid in minimizing stresses associated with translocation.

Juvenile tortoises are not only more subject to depredation than are adults, but a juvenile tortoise's large surface area to volume ratio results in its heating faster than its larger counterparts. Because unfamiliarity with the translocation site could exacerbate these factors, juvenile tortoises will be provided with extended artificial protection from canid and avian predators and ambient conditions by use of a predator-proof enclosure erected at the translocation site. The size of the enclosure will depend on the number of tortoises found, but will start at 20 feet in diameter and will be extended to approximately 50 feet if more than three

[6] The October 2003 survey will be considered the first pass.

tortoises are contained. [Morafka *et al*. 1997 successfully penned juvenile tortoises at the rate of 152-305 animals per hectare (62-123 tortoises per acre).] The current plan for subsequently releasing juveniles includes opening escape holes in the lower edge of the enclosure after tortoises have become familiar with the site's odors and landmarks for at least one-two weeks (Morafka *et al* . 1997). This plan may be mitigated depending on predator interest in the enclosure and/or juvenile tortoise behavior in the enclosure.

Nests found during burrow excavation or during other searches after April 15 will be moved to as identical a microsite as possible (e.g., cover, plant species, soil type, substrate, aspect) on the translocation site, using standard techniques (Desert Tortoise Council 1994). Translocated nests will be fenced with open-mesh fencing (e.g. 2-inch) and have open-mesh fencing or avian netting on the roof to prevent depredation by canids that might be attracted to the new nests by human scent, while still permitting allow passage by hatchlings. Nests will be monitored from a 30-foot distance once a month until November, at which time they will be excavated for examination. (Hatching should be complete by October.) If possible, hatchlings will be weighed, measured, photographed, described and marked.

Blood and nasal samples will be taken on host and control tortoises during the first and second weeks of April. [Since translocatees do not have definitive clinical signs, they will be unlikely to infect host tortoises immediately upon translocation. Clinical signs in host tortoises, following infection, would not occur until at least two weeks post infection and it can take up to eight weeks for antibody levels to build sufficiently for reliable detection (Brown *et al.* 2003).] Translocated tortoises, including tortoises in the study as well as those of sufficient size to extract blood, will be re-sampled at this time for temporal comparability to control and host tortoises. Transmitters on adult tortoises that are in excess of the study cohort size will be removed.

All tortoises will be located twice weekly in April following the initial large release, to help insure their safety, identify potential problems, and monitor behavior. They will be located approximately weekly in May, and once a month thereafter, until hibernation. No locations will occur during winter. During each location, tortoises will be examined for clinical disease signs to assess whether the stress of translocation or direct contact with a diseased host tortoise has resulted in illness.

It may take most of April or even more time to find all of the tortoises on the Hyundai site. As such, tortoises may be found after aboveground, ambient temperatures regularly exceed lethal thresholds most days (generally late April). The temperature limits for translocation will follow those that have been set by USFWS for handling - 35°C (95° F) at 5 cm above the ground surface (http://ventura.fws.gov/SurveyProt/de_tortoise_prtstatement.htm) - or

43° C (109° F) ground surface temperature, whichever is lower, to ensure tortoise safety. (Karl 1992 and Zimmerman *et al.* 1994 observed that 43° C was the approximate surface temperature at which tortoises go underground to escape heat.) During Year 1, tortoises found on the Hyundai project site after ambient temperatures exceed this threshold will be processed, transmittered, released at their capture sites, and monitored until October, when temperatures cool sufficiently to permit further translocation. The exception to this procedure will be for juvenile tortoises, which will be sequestered on the Hyundai site in a predator-proof pen (see description above). All tortoises will have blood and nasal samples analyzed prior to translocation and seropositive, clinically ill tortoises will be handled as explained above.

Study tortoises will be weighed and measured to determine condition indices, identify clinical signs, and monitor transmitter condition in July (following the nesting period) and mid-October. Blood and nasal samples will also be taken in mid-October. In general, handling will be minimized to minimize stress to the animals.

Primary productivity of annual plants will be measured on biomass plots on the translocation and control sites during the third week (approximately) of April, when maximum biomass of current-year production has been reached. Precipitation will be monitored using rain gauges on the translocation and control sites; daily temperature maxima and minima and relative humidity will be collected with data logger stations on each site and/or from stations at Edward Air Force Base, Mojave Airport, or another nearby weather station.

Translocation Study - Years 2-4 (March 15, 2005 to April 1, 2008)

Translocated tortoises will be located on a sufficiently intense schedule to collect the necessary health data, download data loggers, change transmitters, and identify faulty transmitters and other equipment. Unless circumstances arise, this will probably be limited to weighing and measuring for monitoring condition indices at exiting from hibernation (late March), following the spring activity period and after nesting (July) and immediately prior to hibernation (late October). Transmitters will be changed and data loggers downloaded as necessary. Blood and nasal samples will be taken and analyzed annually, in October. Sampling frequency and techniques for disease analysis will be updated as necessary during the study, based on the newest disease information from this and other studies. This may include tests for other pathogens (e.g. *Mycoplasma.* spp., herpesvirus, iridovirus) as their importance and evaluation techniques become known. Any time a tortoise is handled, it will be examined for clinical signs of disease.

Primary productivity will be measured on biomass plots at the same phenological stage each spring. Precipitation will be monitored as for Year 1 (see above).

The tortoise-proof portion of the translocation site fence will be removed during approximately Year 2, between October and March, to assess site repatriation. This point in the study has been chosen based on data from earlier studies that suggests that translocatees settle into a new area within two years of translocation (Stewart 1993, Phil Medica and S. Corn, pers. comm. to A. Karl). This "settling" will be determined based on behavior and movements of translocatees compared to control tortoises. The timing within the year is in consideration of activity patterns and ambient temperatures. Locating tortoises will need to be increased slightly (e.g., additional locations once a month during the activity seasons) to monitor movements and examine whether tortoises remain on the translocation site.

Transmitters and data loggers will be removed at the conclusion of the study, in March-April 2008.

In the event that a tortoise appears on the Hyundai project site after clearance surveys have been completed but prior to the removal of interior tortoise-proof fences in Year 5, a protocol has been established to remove the tortoise from the site (see Appendix 1-Chart 5). The protocol requires that there be an onsite, Hyundai Environmental Compliance Officer (ECO), educated in basic tortoise handling procedures, who would contact the translocation study principal investigator or other team member (during the translocation study period) or one of several designated biologists (after the translocation study is completed) who can come to the site within 24 hours to attend to the tortoise. In the meantime, the ECO would safely hold the tortoise, either by fencing or blocking it into its burrow if it's inactive (winter) or putting it in a sterilized tub with a taped, plywood lid which would then be stored in a cool, dark site overnight at air temperatures between 25° and 33° C (77° and 91° F) (spring through fall). (These temperatures simulate preferred burrow temperatures in late spring and summer [Karl 1992].) Disposition of the tortoise the next day (e.g., translocated, adopted, or used for headstarting or research) would depend upon timing (i.e., ambient temperatures), clinical signs and if the tortoise can temporarily be left on the Hyundai site safely. Translocation of non-clinically ill tortoises to the translocation site would occur if the tortoise were found between October 1 and approximately April 25. The tortoise would be processed and numbered, and blood and nasal samples would be taken, but the tortoise would not be transmittered. If the tortoise were found on the Hyundai site between April 25 and October 1, and it could temporarily remain on the site, it would be transmittered and left at the release site or moved immediately off any high-traffic area until either (a) it could be translocated to the translocation site at the appropriate time of the year for translocation (i.e., October 1 to April 25) or (b) if the tortoise had clinical signs of disease, ELISA test results had returned. Any clinically ill, seropositive tortoise would be would be transferred to the disease control area at the appropriate time of year. (Protocols for juvenile tortoises would follow those outlined for the 2004 construction year.) Clinically ill,

seronegative tortoises would be translocated to translocation site at the appropriate time of the year for translocation. Any tortoise translocated to the translocation site during this period would have their transmitters removed, with the exception of clinically ill tortoises in the disease control area that cleared of disease signs (see *Health Considerations*, above). As with other aspects of the project, approaches may be changed based upon new information from this and other studies.

By the end of the translocation study, all clinically ill tortoises still in the disease control area that had not cleared of clinical signs would be adopted or used for research.

In the event that a tortoise appears on the Hyundai project site after interior tortoise-proof fences are removed (Year 5), it would be assumed that the tortoise must be immediately removed from the site. The protocol would be similar to that above, with the following exceptions:

- Between October 1 and approximately April 25, the tortoise would only be processed and numbered prior to translocation

- Any clinically ill tortoise would be adopted or used for research.

**Injuries and Mortalities for Tortoises Associated with the Translocation Study or Hyundai Mojave Test Track Project**

All study tortoises that are injured as a direct result of the study or Hyundai Mojave Test Track Project construction or operation will be transported to a qualified veterinarian for medical care.

All study tortoises that die during the study or as a result of project construction or operation will be submitted for necropsy to the Mycoplasma research laboratory at the University of Florida to assist in ongoing evaluations of western Mojave tortoise health conditions, if the tissues are in condition to be analyzed by the lab.

**Unforeseen Circumstances**

If unforeseen circumstances arise, they will be addressed through discussions with experts, CDFG, and USFWS.

### Reporting

An annual report will be prepared for federal and state permit requirements. This report will include an analysis of data collected that year, annual and cumulative results and conclusions, and recommendations. Following the final year, a comprehensive report will be written to encompass the entire study.

Study results will be submitted to a peer-reviewed journal for publication.

## FUNDING

Adequate funds will be available to complete the study as described. This will include all field work, data analysis, publication of results, and transmitter removal at the conclusion of the study. Hyundai will be financially responsible for the translocation program. The funds will be separate from compensation habitat enhancement and endowment fees.

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## APPENDIX 1. Decision Matrix for Implementation of the Hyundai Desert Tortoise Translocation Program

**Chart 1. 2004 Construction Year: Tortoise found on Hyundai Site**

**Chart 2. 2004 Construction Year: Tortoise < 428 g Found on Hyundai Site**

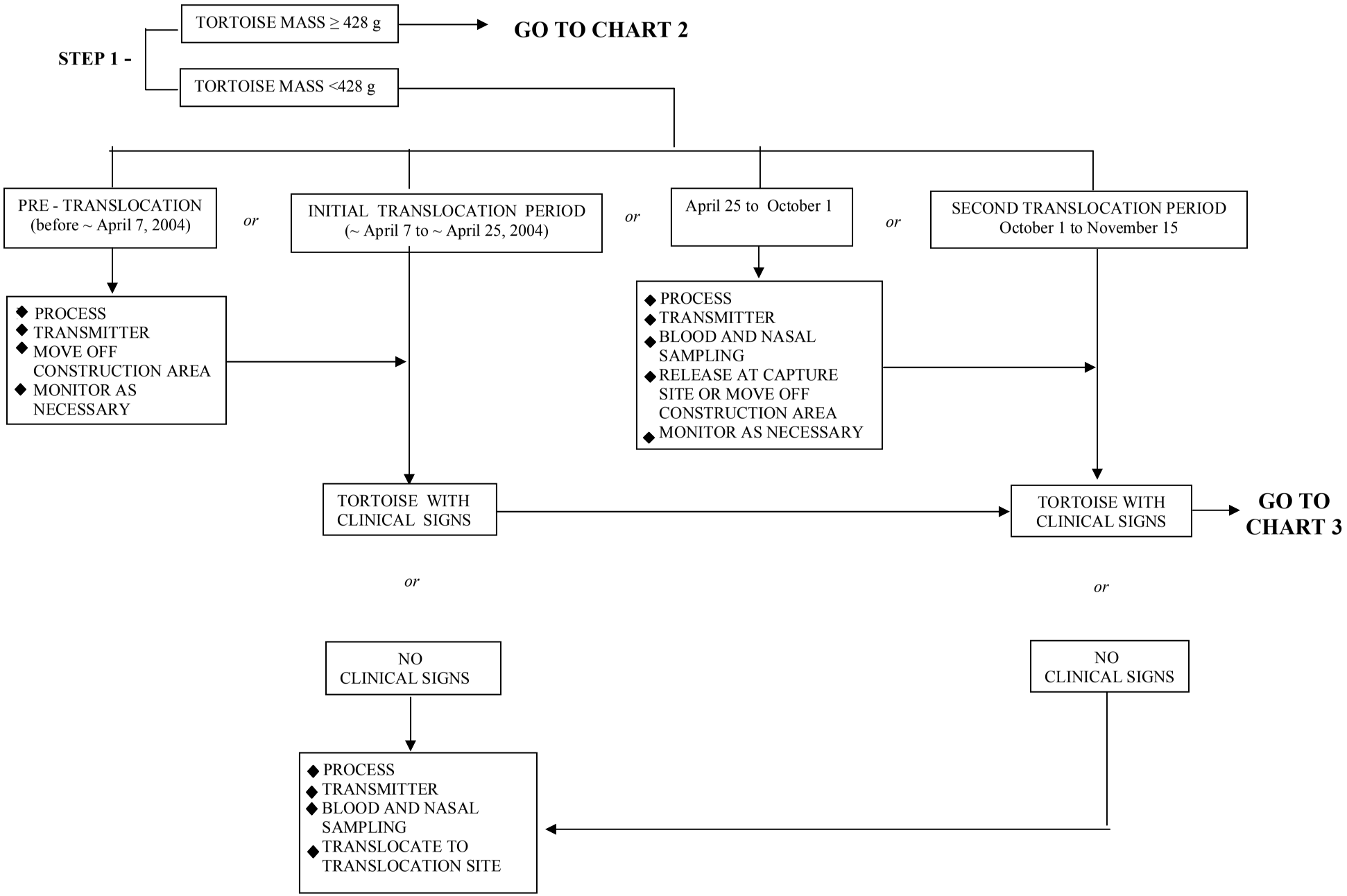
**Chart 3. 2004 Construction Year Through End of Translocation Study (April 2008): Tortoises with Clinical Signs**

**Chart 4. Post Construction, Through Year 5 (January 2009): Tortoise found on Hyundai Site**

**Chart 5. Project Operation, Following Year 5 (January 2009): Tortoise Found on Hyundai Site**

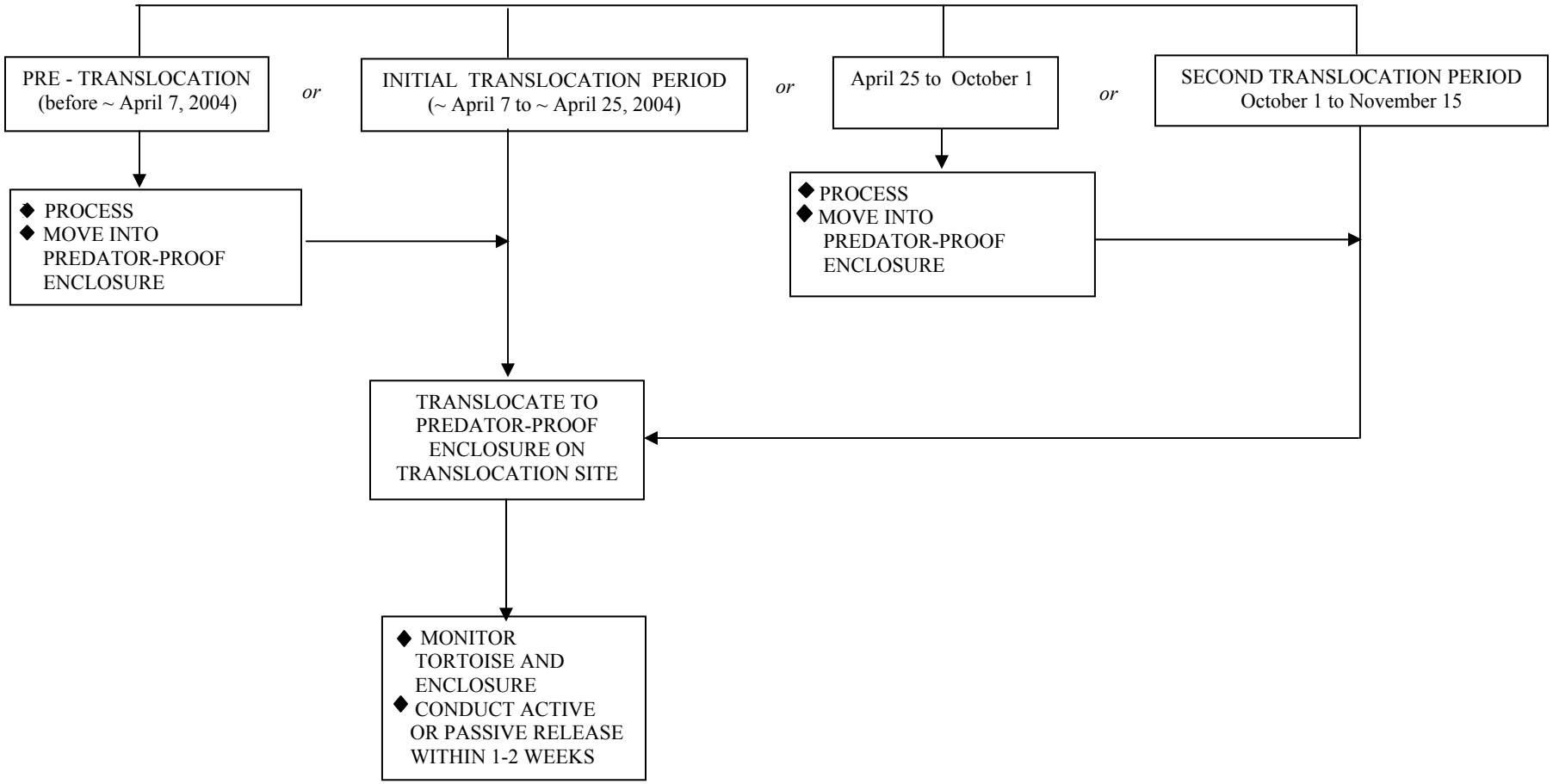
# CHART 1

**PROJECT PERIOD** – **2004 CONSTRUCTION YEAR**
**SITUATION** - **UNTRANSMITTERED TORTOISE FOUND ON HYUNDAI SITE**



# CHART 2

**PROJECT PERIOD** – **2004 CONSTRUCTION YEAR**
**SITUATION** - **TORTOISE <428 G FOUND ON HYUNDAI SITE**



# CHART 3

**PROJECT PERIOD** – **2004 CONSTRUCTION YEAR THROUGH END OF TRANSLOCATION STUDY (APRIL 2008)**
**SITUATION** - **TORTOISE WITH CLINICAL SIGNS**

**STEP 1 -**

- PROCESS
- TRANSMITTER
- BLOOD AND NASAL SAMPLES
- RELEASE AT CAPTURE SITE

**STEP 2 -**

TORTOISE SERONEGATIVE

TRANSLOCATE TO TRANSLOCATION SITE AT APPROPRIATE TRANSLOCATION PERIOD (SEE CHART 1)

*or*

TORTOISE SEROPOSITIVE

MOVE TO DISEASE CONTROL AREA AT APPROPRIATE TRANSLOCATION PERIOD (SEE CHART 1)

WEIGH AND MEASURE AT INTERVALS IN TRANSLOCATION PROGRAM

*and*

RADIOGRAPH ADULT FEMALES MAY 1 TO JULY 15

TRANSLOCATE NESTS TO TRANSLOCATION SITE

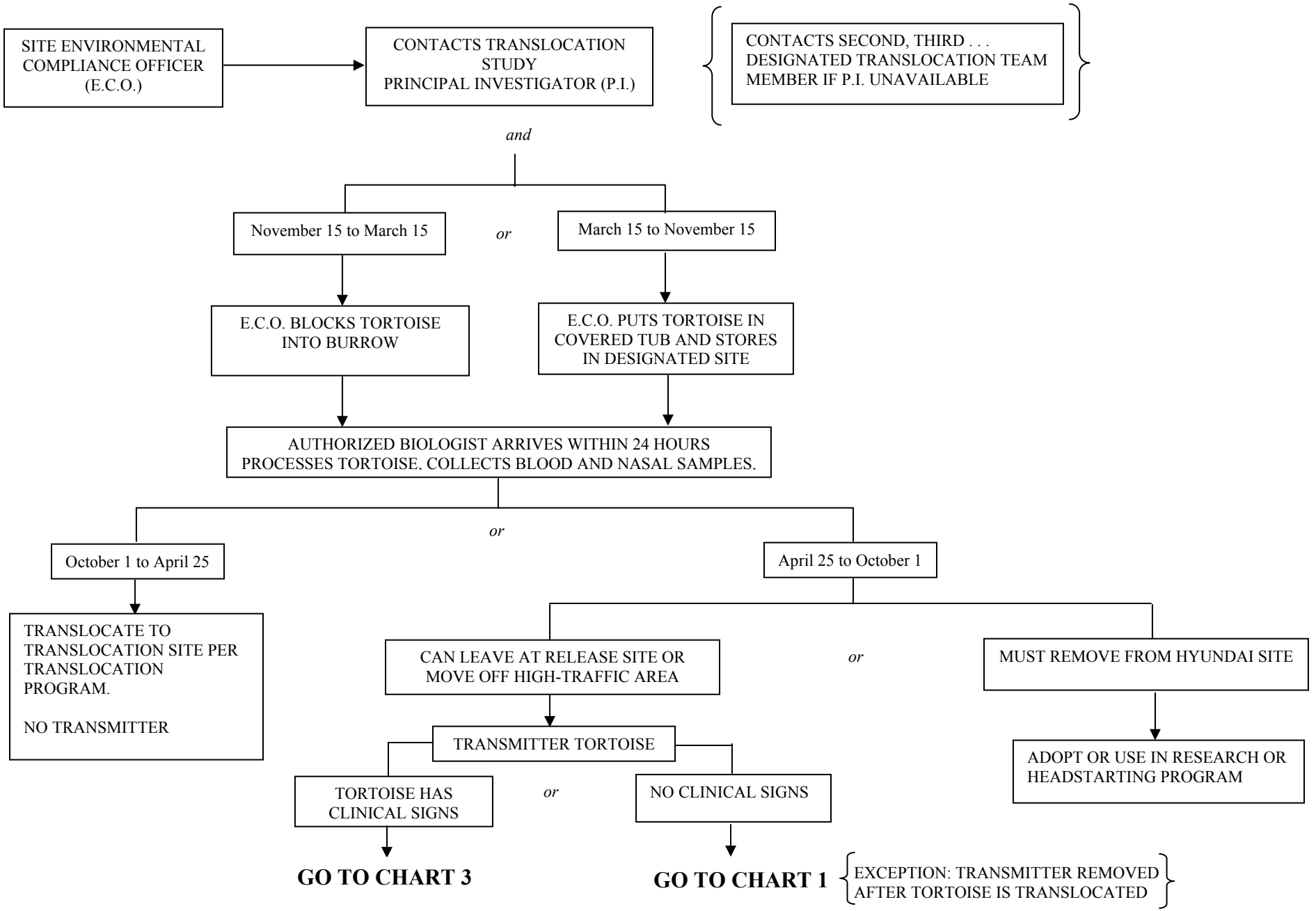
CLEAR OF CLINICAL SIGNS FOR TWO CONSECUTIVE WEIGH/MEASURE SAMPLINGS

DON'T CLEAR OF CLINICAL SIGNS FOR TWO CONSECUTIVE WEIGH/MEASURE SAMPLINGS

KEEP IN DISEASE CONTROL AREA

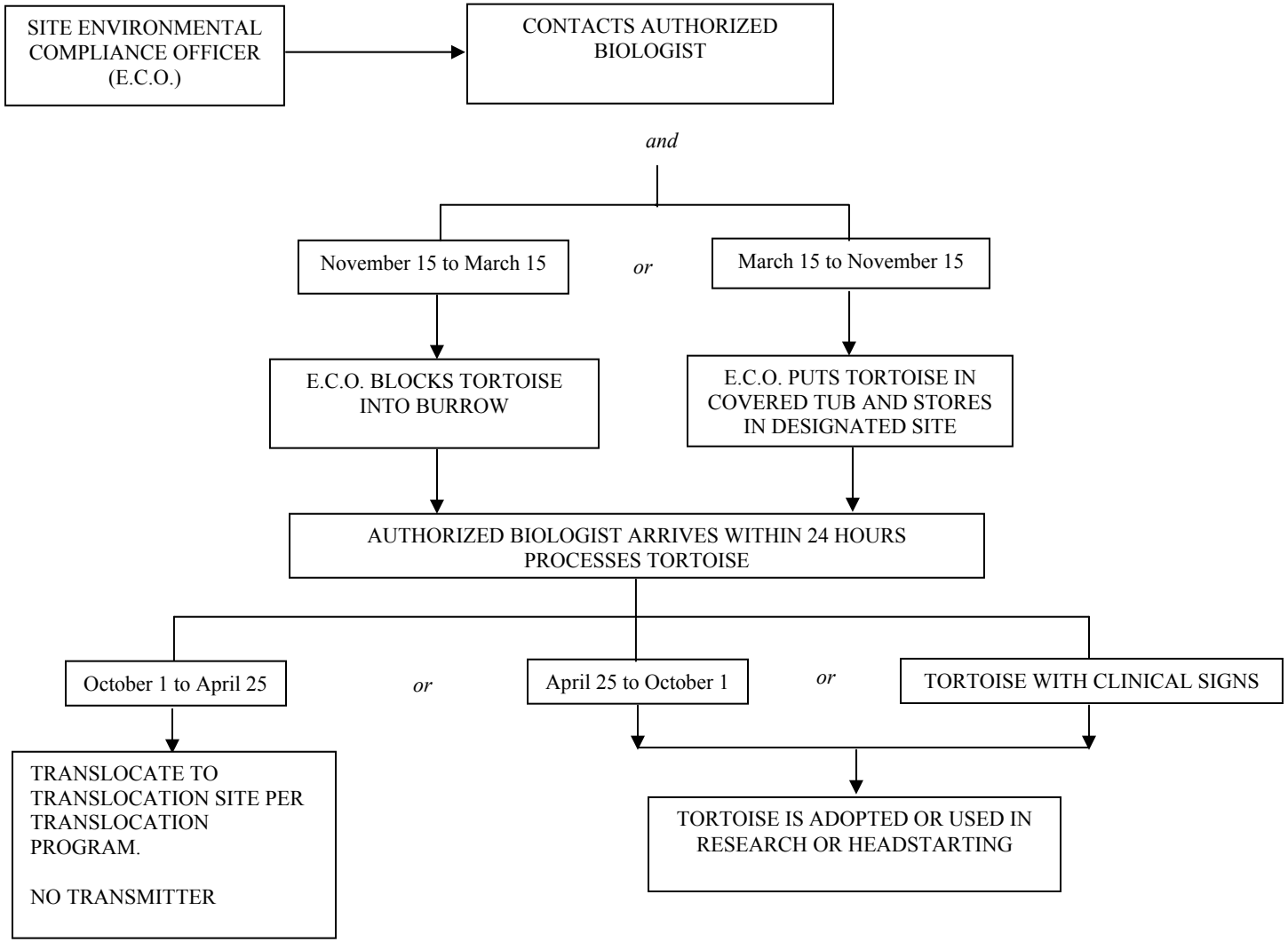
# CHART 4

**PROJECT PERIOD** – **POST CONSTRUCTION, THROUGH YEAR 5 (JANUARY 2009)**
**SITUATION** - **UNTRANSMITTERED TORTOISE FOUND ON HYUNDAI SITE**



# CHART 5

**PROJECT PERIOD** – **PROJECT OPERATION, FOLLOWING YEAR 5 (JANUARY 2009)**
**SITUATION** - **TORTOISE FOUND ON HYUNDAI SITE**



***APPENDIX B***
***2003 DESERT TORTOISE SURVEY REPORT***

# Tortoise Survey Results

Hyundai Test Track Area
Mojave, Ca

Tables and Figures

**Principle:**

William J. Vanherweg
Certified Wildlife Biologist
bvan@sbcglobal.net

*May 18, 2003*

**Analysis and Cartography:**

Curtis Bjurlin
curtis_bjurlin@hotmail.org

**Survey Crew Leader:**

Stephen Boland
spboland@aol.com

**Surveyors:**

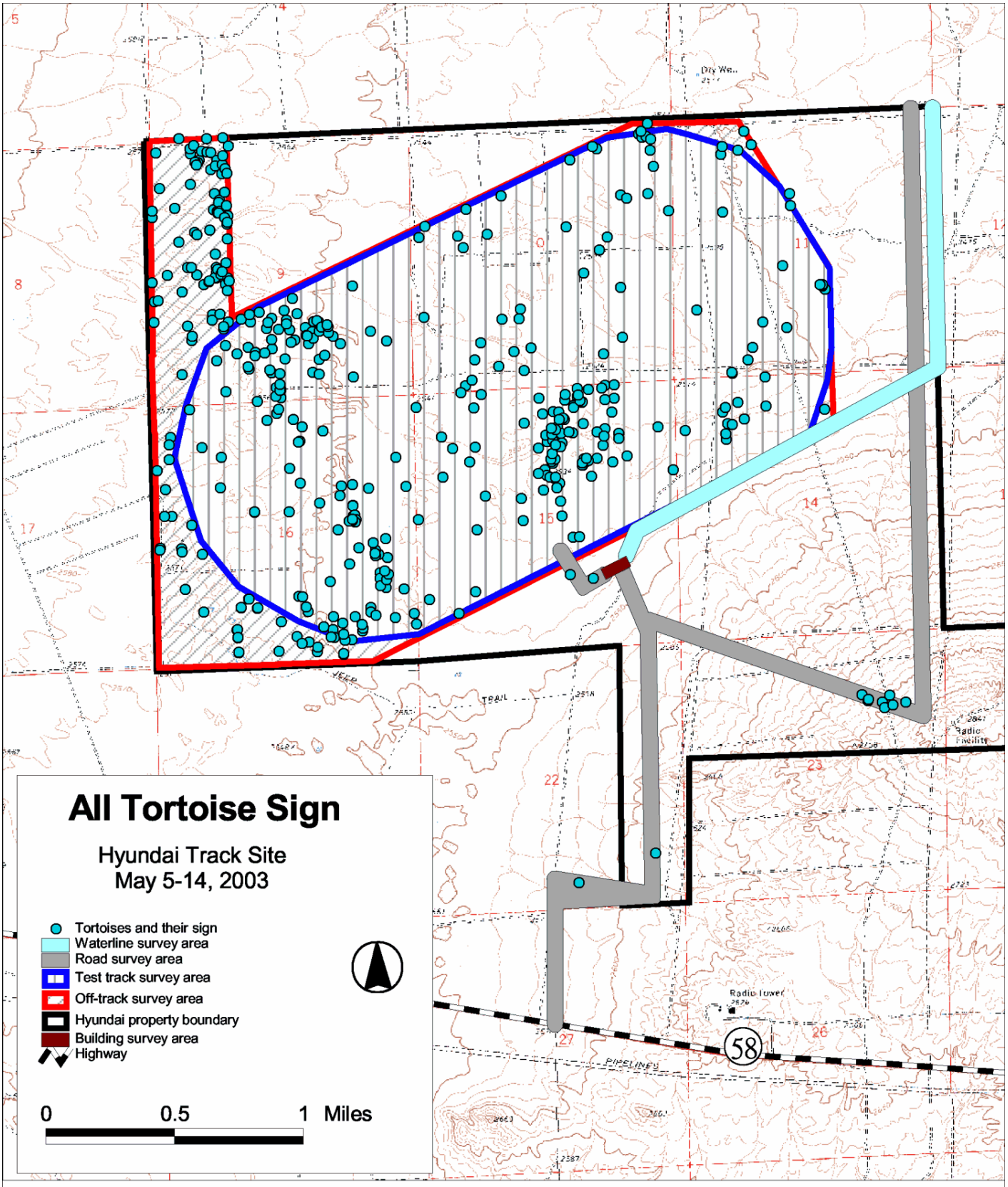
| | | | | |
|---|---|---|---|---|
| Curtis Bjurlin | June Dockins | Rick Eisenbart | Gilbert Goodlett | Glenn Goodlett |
| Chris Halley | Jim Jennings | Ed LaRue | Mike Luhrs | Mike McGovern |
| Ted Rado | Mercy Vaughn | John Weir | Peggy Wood | Bill Vanherweg |

**Table 1.** Total tortoise sign count by land use and category at Hyundai survey area, May 5-14, 2003.

| | | Land use | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Track | Off-track | Road | Waterline | Building | Subtotal | Total |
| Tortoise | Female | 2 | | | | | 2 | 8 |
| | Male | 5 | | | | | 5 | |
| | Unknown | | 1 | | | | 1 | |
| Carcass | < 1 yr. since death | 3 | 3 | | | | 6 | 43 |
| | 1-2 yrs. | 3 | | | | | 3 | |
| | > 2 yrs. | 26 | 5 | 3 | | | 34 | |
| Burrow | Active | 15 | 3 | | | | 18 | 160 |
| | Good inactive | 31 | 24 | 2 | | | 57 | |
| | Fair inactive | 40 | 14 | | | | 54 | |
| | Poor inactive | 9 | 17 | 2 | | | 28 | |
| | Pallet | 2 | 1 | | | | 3 | |
| Scat | This year | 225 | 41 | 6 | | | 272 | 461 |
| | Not this year | 97 | 73 | 6 | | | 176 | |
| | Unknown | 11 | 2 | | | | 13 | |
| | Total sign count | 469 | 184 | 19 | | | | **672** |

**Table 2.** Adjusted tortoise sign count by land use and category at Hyundai survey area, May 5-14, 2003. Sign of similar quality and spatial proximity aggregated.

| | | Land use | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Track | Off-track | Road | Waterline | Building | Subtotal | Total |
| Tortoise | Female | 2 | | | | | 2 | 8 |
| | Male | 5 | | | | | 5 | |
| | Unknown | | 1 | | | | 1 | |
| Carcass | < 1 yr. since death | 3 | 3 | | | | 6 | 43 |
| | 1-2 yrs. | 3 | | | | | 3 | |
| | > 2 yrs. | 26 | 5 | 3 | | | 34 | |
| Burrow | Active | 15 | 2 | | | | 17 | 154 |
| | Good inactive | 31 | 24 | 2 | | | 57 | |
| | Fair inactive | 37 | 13 | | | | 50 | |
| | Poor inactive | 9 | 16 | 2 | | | 27 | |
| | Pallet | 2 | 1 | | | | 3 | |
| Scat | This year | 106 | 20 | 3 | | | 129 | 262 |
| | Not this year | 75 | 49 | 4 | | | 128 | |
| | Unknown | 3 | 2 | | | | 5 | |
| | Adjusted sign count | 317 | 136 | 14 | | | | **467** |



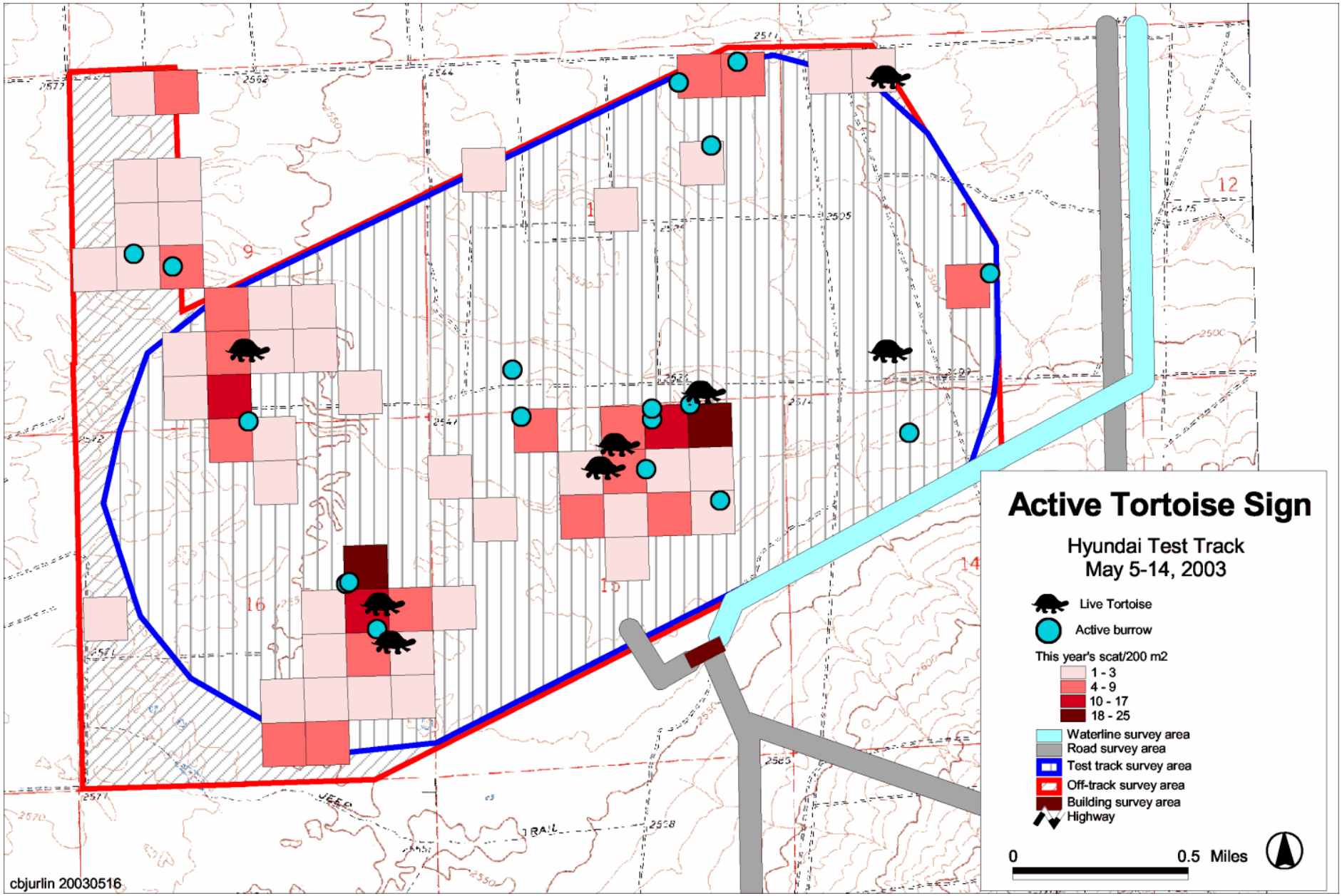

## Survey Protocol

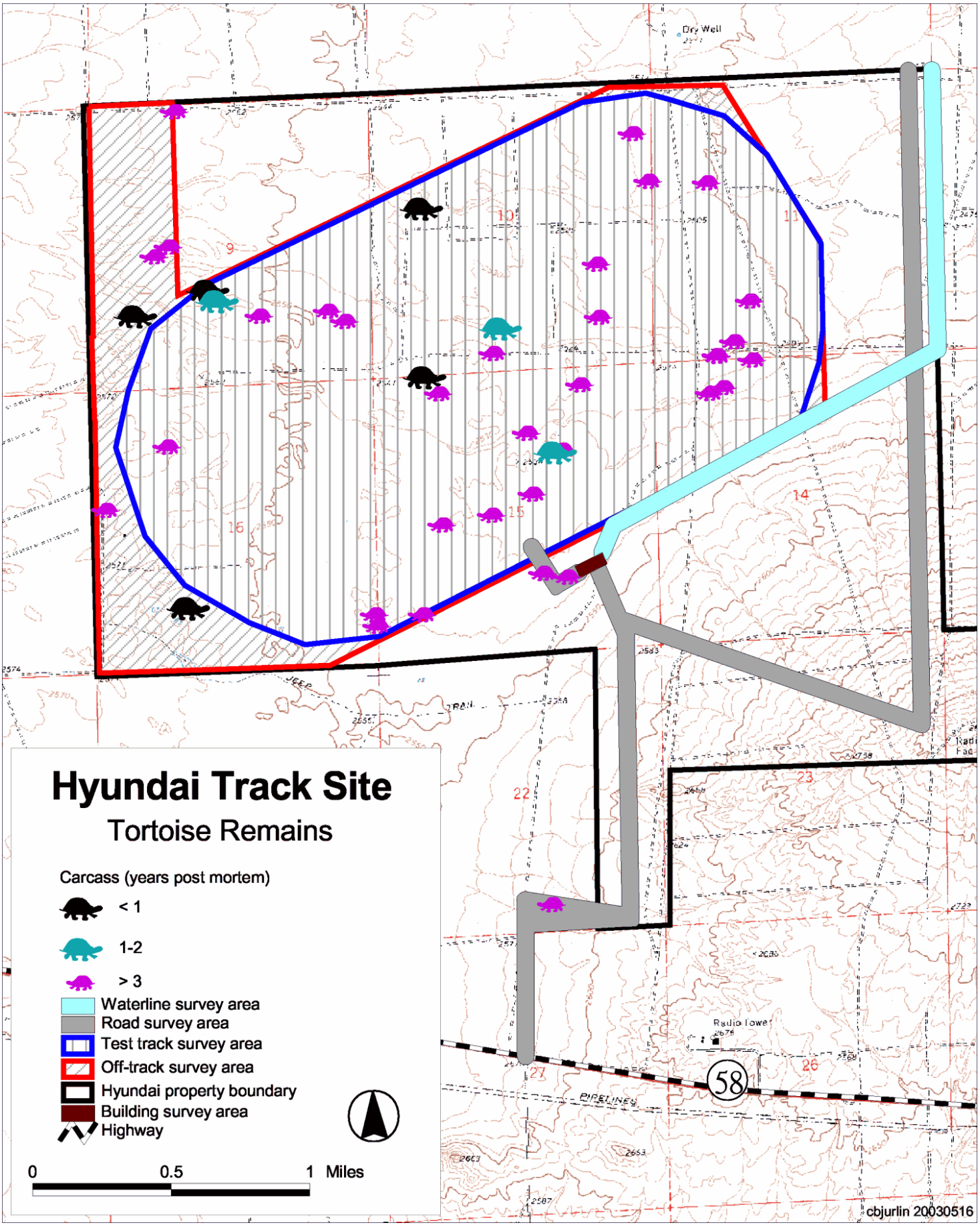
- Ten meter transect interval

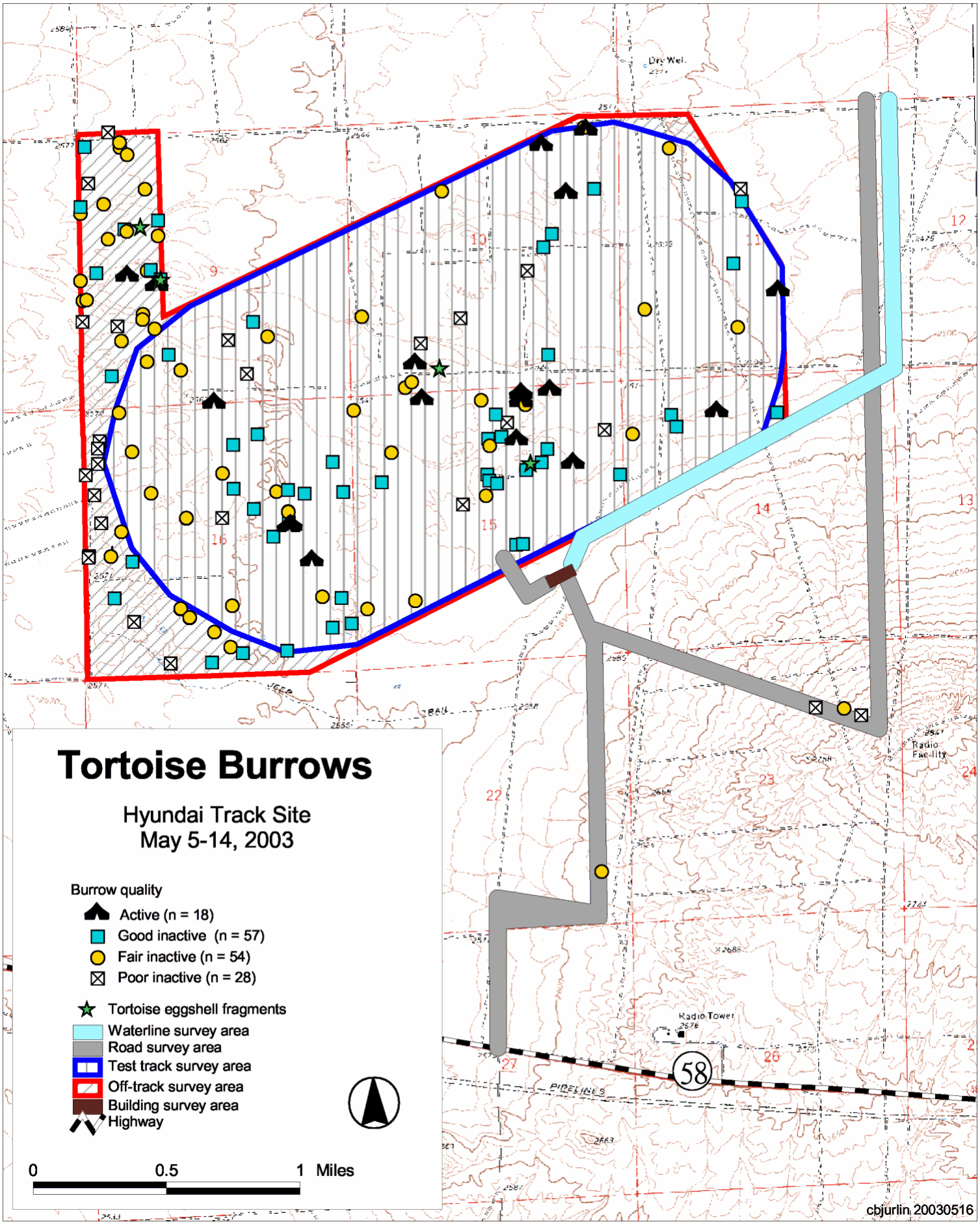
## Summary Statistics

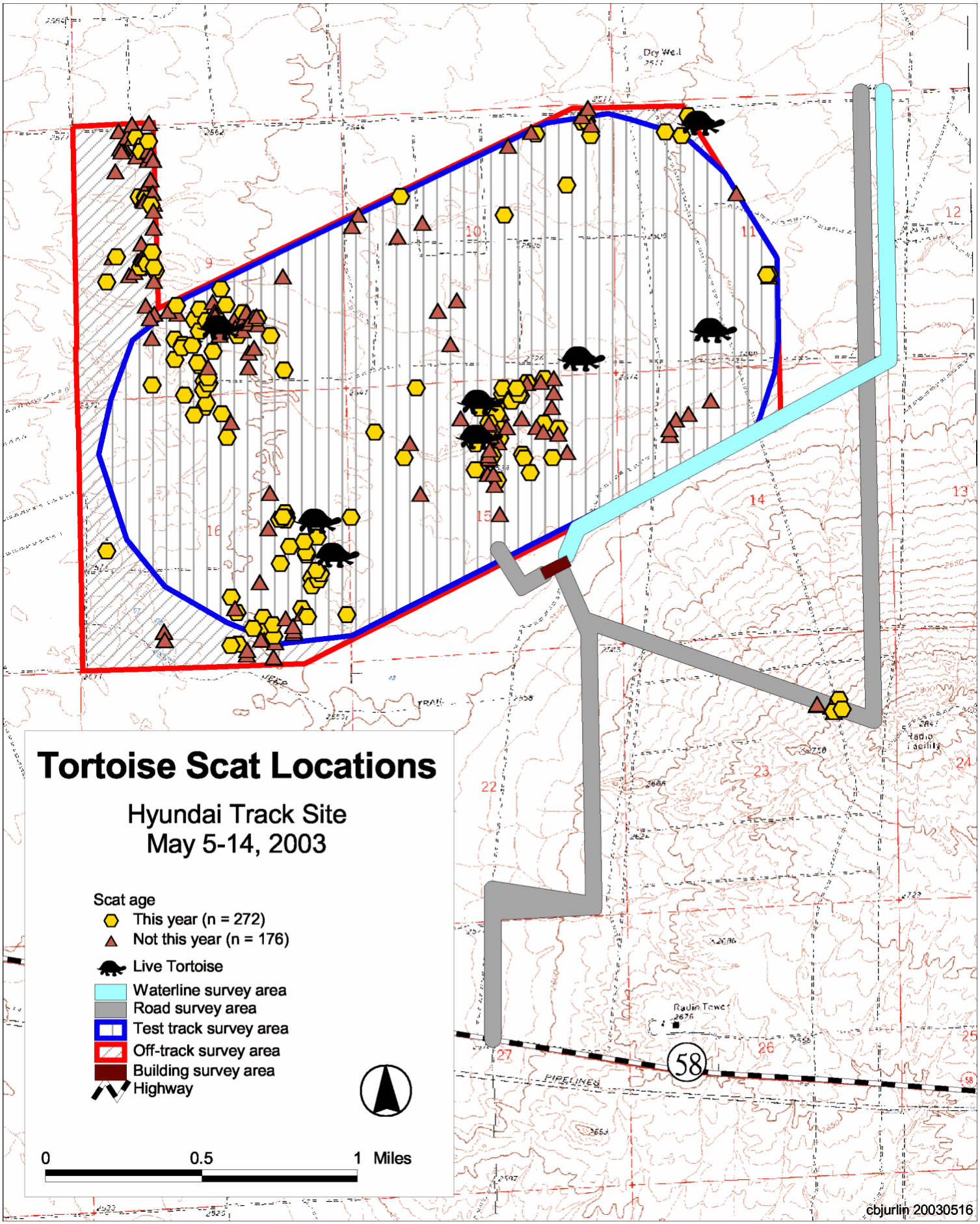
| | Miles of Transect | Survey Acreage |
|---|---|---|
| Track | 1076.8 | 2125.0 |
| Off-track | 228.6 | 423.2 |
| Waterline | 24.4 | 98.5 |
| Road | 60.0 | 248.8 |
| Building | N/A | 3.2 |
| Total | 1389.8 | 2898.7 |

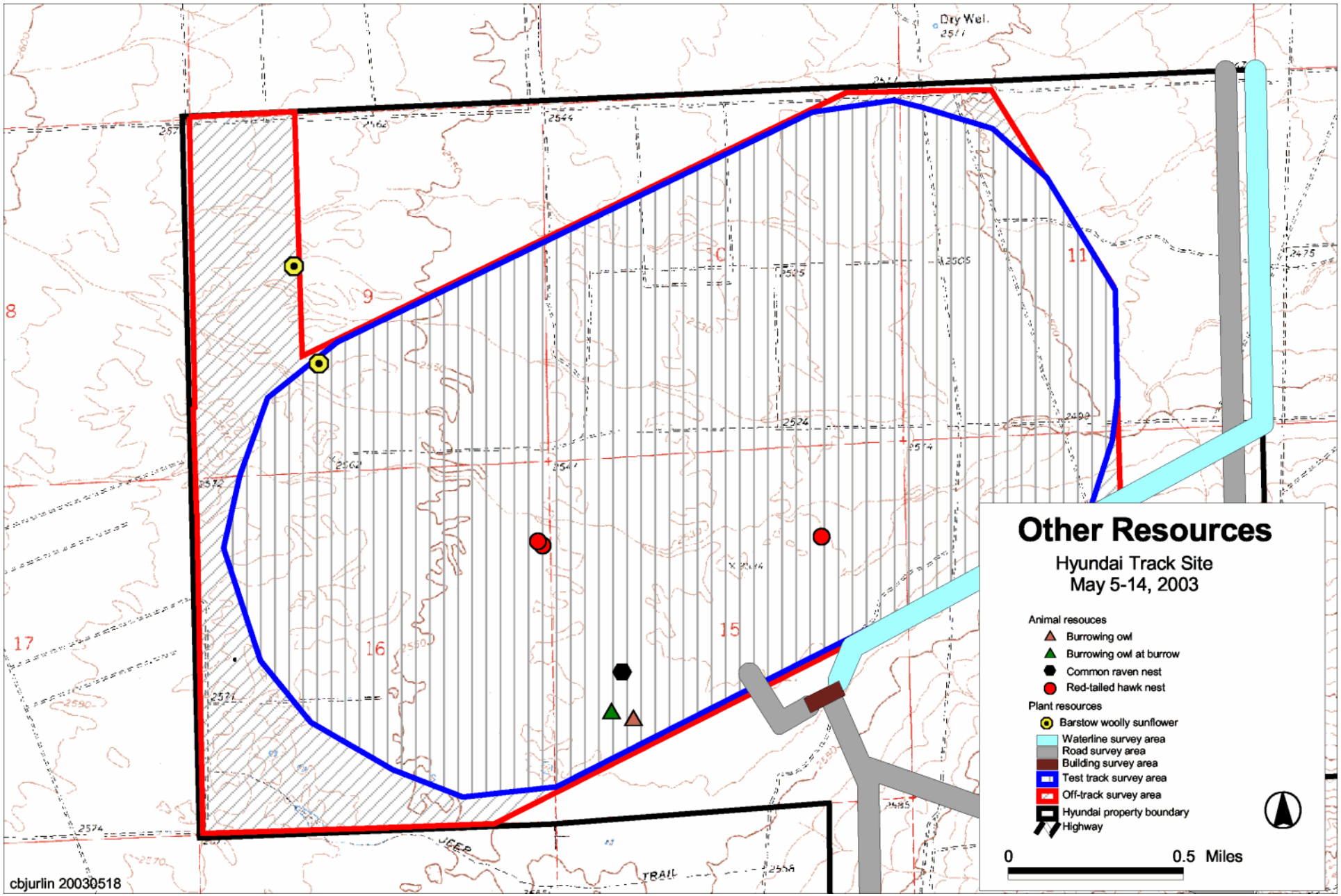
cbjurlin 20030516


Active Tortoise Sign
Hyundai Test Track
May 5-14, 2003
Live Tortoise
Active burrow
This year's scat/200 m2
1 - 3
4 - 9
10 - 17
18 - 25
Waterline survey area
Road survey area
Test track survey area
Off-track survey area
Building survey area
Highway
0
0.5 Miles
cbjurlin 20030516


Hyundai Track Site
Tortoise Remains
Carcass (years post mortem)
< 1
1-2
> 3
Waterline survey area
Road survey area
Test track survey area
Off-track survey area
Hyundai property boundary
Building survey area
Highway
0
0.5
1 Miles
Dry Well
Radio Tower
PIPELINES
58
cbjurlin 20030516


Tortoise Burrows
Hyundai Track Site
May 5-14, 2003
Burrow quality
Active (n = 18)
Good inactive (n = 57)
Fair inactive (n = 54)
Poor inactive (n = 28)
Tortoise eggshell fragments
Waterline survey area
Road survey area
Test track survey area
Off-track survey area
Building survey area
Highway
0
0.5
1 Miles
Radio Tower
Radio Facility
PIPELINES
58
cbjurlin 20030516


Tortoise Scat Locations
Hyundai Track Site
May 5-14, 2003
Scat age
This year (n = 272)
Not this year (n = 176)
Live Tortoise
Waterline survey area
Road survey area
Test track survey area
Off-track survey area
Building survey area
Highway
0
0.5
1 Miles
Dry Well
Radio Tower
PIPELINES
58
cbjurlin 20030516


Other Resources
Hyundai Track Site
May 5-14, 2003
Animal resouces
Burrowing owl
Burrowing owl at burrow
Common raven nest
Red-tailed hawk nest
Plant resources
Barstow woolly sunflower
Waterline survey area
Road survey area
Building survey area
Test track survey area
Off-track survey area
Hyundai property boundary
Highway
0
0.5 Miles
cbjurlin 20030518
Dry Wel.
JEEP
TRAIL

**Legend**

active = recently used or tortoise inside
good = tortoise burrow
fair = tortoise burrow
poor = tortoise burrow
juvenile = potential juvenile tortoise burrow
pallet = shallow tortoise burrow or scrape

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| RY | 86 | tortoise | adult | 35.04248679 | -118.0201578 |
| RY | 155 | tortoise | adult | 35.03925205 | -118.0092252 |
| RY | 182 | tortoise | adult | 35.04326463 | -118.0501235 |
| RY | 255 | tortoise | adult | 35.04634917 | -118.0438311 |
| RY | 410 | tortoise | adult | 35.05524338 | -118.0301947 |
| RY | 421 | tortoise | adult | 35.06797314 | -118.027947 |
| MAH | 125 | tortoise | H14 | 35.05165995 | -118.0380911 |
| MAH | 145 | tortoise | H15 | 35.06678761 | -118.0343307 |
| MAH | 150 | tortoise | adult | 35.05374671 | -118.0342449 |
| EB | 173 | tortoise | adult | 35.05038322 | -118.0388314 |
| EB | 198 | tortoise | adult | 35.06589711 | -118.0360688 |
| EB | 260 | tortoise | adult | 35.05695999 | -118.029272 |
| EB | 303 | tortoise | adult | 35.07012964 | -118.0273516 |
| EB | 307 | tortoise | adult | 35.05783976 | -118.0273248 |
| EB | 390 | tortoise | adult | 35.0667286 | -118.0097187 |
| EB | 443 | tortoise | juvenile | 35.03803969 | -118.0058778 |
| EB | TORT | tortoise | adult | 35.05976558 | -118.0512125 |
| RY | 31 | shell remains | adult | 35.06841302 | -118.0113817 |
| RY | 37 | shell remains | 1/2 plastron | 35.04573763 | -118.0114944 |
| RY | 58 | shell remains | 1 piece | 35.06030202 | -118.0094022 |
| RY | 84 | shell remains | adult male | 35.06065608 | -118.0576552 |
| RY | 93 | shell remains | scattered pieces | 35.04262627 | -118.0025572 |
| RY | 96 | shell remains | 2 pieces | 35.0677532 | -118.0557508 |
| RY | 103 | shell remains | 1 scute | 35.04210055 | -118.0147828 |
| RY | 109 | shell remains | adult | 35.04178942 | -118.014713 |
| RY | 153 | shell remains | scattered pieces | 35.03932179 | -118.0135865 |
| RY | 231 | shell remains | juvenile | 35.04726112 | -118.0463631 |
| RY | 249 | shell remains | scute | 35.05801678 | -118.0441959 |
| RY | 257 | shell remains | 20 pieces | 35.04476131 | -118.042785 |
| RY | 264 | shell remains | scattered pieces | 35.07059634 | -118.0428869 |
| RY | 288 | shell remains | adult male | 35.06595076 | -118.0393035 |
| RY | 303 | shell remains | 4 pieces | 35.04943371 | -118.0382038 |
| RY | 315 | shell remains | 1/2 plastron | 35.07154048 | -118.0370022 |
| RY | 343 | shell remains | 8 pieces | 35.05826891 | -118.0348564 |
| RY | 351 | shell remains | 1 piece | 35.04840374 | -118.0349476 |
| RY | 373 | shell remains | 1 piece | 35.06742597 | -118.0335475 |
| RY | 380 | shell remains | adult male | 35.05858541 | -118.0326087 |
| RY | 393 | shell remains | 1/2 plastron | 35.05425632 | -118.0312515 |
| RY | 412 | shell remains | adult | 35.04721284 | -118.030243 |
| RY | 415 | shell remains | 15 pieces | 35.05191744 | -118.0292506 |
| RY | 416 | shell remains | 5 pieces | 35.05231977 | -118.0292345 |
| RY | 419 | shell remains | adult | 35.07067681 | -118.0291487 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| RY | 427 | shell remains | 2 scutes | 35.06267846 | -118.0282367 |
| RY | 437 | shell remains | 1 scute | 35.07214129 | -118.025635 |
| RY | 442 | shell remains | 3 pieces | 35.05841911 | -118.0261446 |
| RY | 479 | shell remains | 80% present | 35.05794168 | -118.020689 |
| RY | 484 | shell remains | 2 pieces | 35.05868733 | -118.0196161 |
| RY | 491 | shell remains | 3 pieces | 35.04485786 | -118.0183072 |
| MAH | 53 | shell remains | pieces | 35.06296278 | -118.0544848 |
| MAH | 59 | shell remains | 1 piece | 35.06774247 | -118.0524732 |
| MAH | 66 | shell remains | 1/2 plastron | 35.06283939 | -118.0521513 |
| MAH | 68 | shell remains | 1/2 plastron | 35.07125617 | -118.0523872 |
| MAH | 69 | shell remains | adult | 35.06978095 | -118.0506063 |
| MAH | 70 | shell remains | pieces | 35.06953955 | -118.0507244 |
| MAH | 71 | shell remains | carapace | 35.06577373 | -118.0505044 |
| MAH | 74 | shell remains | carapace | 35.06184161 | -118.050483 |
| MAH | 120 | shell remains | bone fragments | 35.04305006 | -118.0401296 |
| MAH | 124 | shell remains | adult | 35.0571102 | -118.0392981 |
| MAH | 148 | shell remains | incomplete | 35.05957783 | -118.0344165 |
| MAH | 168 | shell remains | incomplete | 35.04672468 | -118.0320723 |
| MAH | 169 | shell remains | carapace | 35.0530386 | -118.0310584 |
| MAH | 189 | shell remains | bone fragments | 35.05800069 | -118.026681 |
| MAH | 196 | shell remains | bone fragments | 35.0696522 | -118.025753 |
| MAH | 204 | shell remains | bone fragments | 35.06710411 | -118.0248035 |
| MAH | 215 | shell remains | bone fragments | 35.04395664 | -118.0215902 |
| MAH | 229 | shell remains |  | 35.04707337 | -118.0189241 |
| MAH | 241 | shell remains | bone fragments | 35.04900992 | -118.0152334 |
| MAH | 247 | shell remains | carapace | 35.06703437 | -118.0142302 |
| MAH | 255 | shell remains | bone fragments | 35.04574299 | -118.0114514 |
| MAH | 256 | shell remains | bone fragments | 35.05021155 | -118.0116928 |
| MAH | 289 | shell remains | bone fragments | 35.03802896 | -118.0154479 |
| MAH | 290 | shell remains |  | 35.03798068 | -118.0139136 |
| EB | 66 | shell remains |  | 35.06371916 | -118.0563516 |
| EB | 67 | shell remains | scute pieces | 35.06356895 | -118.0562551 |
| EB | 74 | shell remains | bone fragments | 35.06774784 | -118.0557508 |
| EB | 94 | shell remains | bone fragments | 35.06688417 | -118.0537606 |
| EB | 95 | shell remains | scute pieces | 35.06837011 | -118.0516685 |
| EB | 98 | shell remains | fragments | 35.06399811 | -118.0516202 |
| EB | 99 | shell remains | adult | 35.06389618 | -118.0516685 |
| EB | 103 | shell remains | scute pieces | 35.06825746 | -118.0513198 |
| EB | 115 | shell remains | plastron pieces | 35.06738306 | -118.049909 |
| EB | 123 | shell remains | plastron pieces | 35.05340338 | -118.0479831 |
| EB | 140 | shell remains | adult | 35.06079555 | -118.0465616 |
| EB | 142 | shell remains | bone fragments | 35.06856859 | -118.0454458 |
| EB | 145 | shell remains | plastron pieces | 35.06065608 | -118.0453814 |
| EB | 154 | shell remains | scute pieces | 35.05793632 | -118.0444587 |
| EB | 155 | shell remains | bone fragments | 35.06046296 | -118.0444694 |
| EB | 164 | shell remains | plastron pieces | 35.06723822 | -118.0420125 |
| EB | 165 | shell remains | carapace | 35.06737233 | -118.0419857 |
| EB | 184 | shell remains | bone fragments | 35.04938543 | -118.0385042 |
| EB | 192 | shell remains | bone fragments | 35.05649865 | -118.0375923 |
| EB | 195 | shell remains | bone fragments | 35.07159412 | -118.0372972 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| EB | 205 | shell remains | bone fragments | 35.0499326 | -118.0351783 |
| EB | 224 | shell remains | adult | 35.05091966 | -118.0326302 |
| EB | 228 | shell remains | adult | 35.05412758 | -118.032893 |
| EB | 232 | shell remains | adult | 35.06490469 | -118.0326409 |
| EB | 233 | shell remains | shell fragments | 35.06612242 | -118.0328394 |
| EB | 235 | shell remains | carapace | 35.06631017 | -118.0328662 |
| EB | 246 | shell remains | plastron pieces | 35.04658521 | -118.0318792 |
| EB | 248 | shell remains | scattered pieces | 35.0465262 | -118.0305541 |
| EB | 261 | shell remains | bone fragments | 35.05664349 | -118.0295993 |
| EB | 314 | shell remains | bone fragments | 35.05804897 | -118.0264557 |
| EB | 349 | shell remains | adult | 35.04743815 | -118.0212093 |
| EB | 352 | shell remains | bone fragments | 35.05771637 | -118.0184681 |
| EB | 378 | shell remains | adult | 35.05131662 | -118.0129374 |
| EB | 392 | shell remains | scute/bone fragments | 35.06990433 | -118.0090214 |
| EB | 394 | shell remains | bone fragments | 35.06089211 | -118.0089033 |
| EB | 421 | shell remains | bone fragments | 35.0365752 | -118.0166925 |
| EB | 431 | shell remains | adult | 35.03733159 | -118.0132485 |
| EB | 439 | shell remains | adult | 35.0372994 | -118.0147345 |
| EB | 444 | shell remains | bone fragments | 35.03792167 | -118.0140586 |
| EB | 445 | shell remains | adult | 35.03811479 | -118.0181516 |
| EB | 446 | shell remains | subadult | 35.03967584 | -118.0219603 |
| EB | 450 | shell remains | plastron pieces | 35.03941834 | -118.0135328 |
| RY | 32 | egg shells | tortoise | 35.06236733 | -118.0113978 |
| RY | 102 | egg shells | tortoise | 35.06446481 | -118.0558366 |
| RY | 158 | egg shells | tortoise | 35.06190062 | -118.0529667 |
| RY | 223 | egg shells | tortoise | 35.06952346 | -118.0463524 |
| RY | 394 | egg shells | tortoise | 35.05574227 | -118.0313749 |
| RY | 400 | egg shells | tortoise | 35.06858469 | -118.0312193 |
| RY | 402 | egg shells | tortoise | 35.07020474 | -118.0304737 |
| EB | 216 | egg shells | tortoise | 35.05891264 | -118.0339981 |
| EB | 243 | egg shells | tortoise | 35.0548625 | -118.0317719 |
| RY | 24 | pallet | active | 35.06011427 | -118.0600799 |
| RY | 33 | pallet | good | 35.06066144 | -118.0111081 |
| RY | 224 | pallet | good | 35.06817699 | -118.0464811 |
| RY | 278 | pallet | good | 35.05016864 | -118.0405534 |
| RY | 330 | pallet | good | 35.05964757 | -118.0357791 |
| RY | 335 | pallet | good | 35.06875635 | -118.0347384 |
| RY | 346 | pallet | good | 35.05518973 | -118.0346096 |
| RY | 377 | pallet | good | 35.06729186 | -118.0324961 |
| RY | 441 | pallet | good | 35.06478668 | -118.0260212 |
| MAH | 55 | pallet | good | 35.06441653 | -118.0542166 |
| MAH | 64 | pallet | good | 35.04424096 | -118.0526448 |
| MAH | 79 | pallet | good | 35.05161703 | -118.0507941 |
| MAH | 86 | pallet | good | 35.06390155 | -118.0494691 |
| MAH | 157 | pallet | good | 35.0528884 | -118.0333436 |
| MAH | 158 | pallet | good | 35.05492151 | -118.0332739 |
| MAH | 170 | pallet | good | 35.05340875 | -118.0311335 |
| MAH | 175 | pallet | good | 35.05757154 | -118.0289341 |
| MAH | 176 | pallet | good | 35.05896628 | -118.0288107 |
| MAH | 282 | pallet | good | 35.04118324 | -118.0106253 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| RY | 3 | pallet | fair | 35.06995261 | -118.0601282 |
| RY | 4 | pallet | fair | 35.06990433 | -118.0601604 |
| RY | 55 | pallet | fair | 35.07119179 | -118.0095632 |
| RY | 147 | pallet | fair | 35.03940225 | -118.012004 |
| RY | 154 | pallet | fair | 35.03915549 | -118.0127765 |
| RY | 156 | pallet | fair | 35.05899311 | -118.0529238 |
| RY | 173 | pallet | fair | 35.06412149 | -118.0511481 |
| RY | 234 | pallet | fair | 35.04440189 | -118.0452848 |
| RY | 253 | pallet | fair | 35.04794777 | -118.0441905 |
| RY | 268 | pallet | fair | 35.04792631 | -118.0415351 |
| MAH | 1 | pallet | fair | 35.07059634 | -118.059286 |
| MAH | 4 | pallet | fair | 35.06920696 | -118.0594791 |
| MAH | 5 | pallet | fair | 35.06817699 | -118.0595435 |
| MAH | 16 | pallet | fair | 35.05634845 | -118.0595917 |
| MAH | 20 | pallet | fair | 35.04607559 | -118.0595005 |
| MAH | 22 | pallet | fair | 35.04641891 | -118.0589373 |
| MAH | 65 | pallet | fair | 35.04320562 | -118.0528969 |
| MAH | 80 | pallet | fair | 35.04622579 | -118.0507834 |
| MAH | 102 | pallet | fair | 35.05671323 | -118.0458588 |
| MAH | 143 | pallet | fair | 35.06898165 | -118.0342073 |
| MAH | 146 | pallet | fair | 35.06380499 | -118.0342556 |
| MAH | 149 | pallet | fair | 35.05647183 | -118.0343682 |
| MAH | 294 | pallet | fair | 35.0382489 | -118.0039842 |
| RY | 6 | pallet | poor | 35.06924987 | -118.0601604 |
| RY | 7 | pallet | poor | 35.06872416 | -118.0602247 |
| RY | 10 | pallet | poor | 35.06753862 | -118.0602355 |
| RY | 20 | pallet | poor | 35.06290377 | -118.0602086 |
| RY | 201 | pallet | poor | 35.06132126 | -118.0487663 |
| RY | 290 | pallet | poor | 35.06242633 | -118.0395181 |
| RY | 12 | burrow | active | 35.06679297 | -118.0602033 |
| RY | 86 | burrow | active | 35.04248679 | -118.0201578 |
| RY | 155 | burrow | active | 35.03925205 | -118.0092252 |
| RY | 182 | burrow | active | 35.04326463 | -118.0501235 |
| RY | 255 | burrow | active | 35.04634917 | -118.0438311 |
| RY | 325 | burrow | active | 35.04451454 | -118.0361439 |
| RY | 372 | burrow | active | 35.06568254 | -118.0336011 |
| RY | 410 | burrow | active | 35.05524338 | -118.0301947 |
| RY | 421 | burrow | active | 35.06797314 | -118.027947 |
| RY | 429 | burrow | active | 35.05337656 | -118.0279738 |
| MAH | 78 | burrow | active | 35.05462111 | -118.05044 |
| MAH | 150 | burrow | active | 35.05374671 | -118.0342449 |
| EB | 100 | burrow | active | 35.06127835 | -118.0516309 |
| EB | 126 | burrow | active | 35.04957855 | -118.0478919 |
| EB | 130 | burrow | active | 35.05031348 | -118.0468298 |
| EB | 131 | burrow | active | 35.05036712 | -118.046803 |
| EB | 133 | burrow | active | 35.05092502 | -118.0469371 |
| EB | 134 | burrow | active | 35.05102695 | -118.0468244 |
| EB | 135 | burrow | active | 35.05152047 | -118.0468405 |
| EB | 136 | burrow | active | 35.05218566 | -118.0468673 |
| EB | 149 | burrow | active | 35.04724503 | -118.0457998 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| EB | 172 | burrow | active | 35.05027056 | -118.0397273 |
| EB | 173 | burrow | active | 35.05038322 | -118.0388314 |
| EB | 188 | burrow | active | 35.04406393 | -118.0375172 |
| EB | 241 | burrow | active | 35.05536676 | -118.0316002 |
| EB | 260 | burrow | active | 35.05695999 | -118.029272 |
| EB | 265 | burrow | active | 35.05728722 | -118.0284191 |
| EB | 303 | burrow | active | 35.07012964 | -118.0273516 |
| EB | 307 | burrow | active | 35.05783976 | -118.0273248 |
| EB | 365 | burrow | active | 35.06150902 | -118.0157001 |
| EB | 369 | burrow | active | 35.06256044 | -118.0146862 |
| EB | 370 | burrow | active | 35.06367088 | -118.01489 |
| EB | 371 | burrow | active | 35.06191671 | -118.0140532 |
| EB | 372 | burrow | active | 35.06154657 | -118.0141658 |
| EB | 373 | burrow | active | 35.06136418 | -118.0139191 |
| EB | 377 | burrow | active | 35.06375134 | -118.0129481 |
| EB | 380 | burrow | active | 35.06062389 | -118.0107004 |
| EB | 388 | burrow | active | 35.06451309 | -118.0097831 |
| EB | 390 | burrow | active | 35.0667286 | -118.0097187 |
| EB | 391 | burrow | active | 35.06725431 | -118.0095417 |
| EB | 407 | burrow | active | 35.03590465 | -118.0236394 |
| EB | 411 | burrow | active | 35.03636063 | -118.0028684 |
| EB | 414 | burrow | active | 35.03640891 | -118.0045796 |
| RY | 1 | burrow | good | 35.06694317 | -118.0169017 |
| RY | 3 | burrow | good | 35.06206692 | -118.0168212 |
| RY | 17 | burrow | good | 35.05160094 | -118.0157913 |
| RY | 20 | burrow | good | 35.06106914 | -118.0157108 |
| RY | 21 | burrow | good | 35.06269455 | -118.0598653 |
| RY | 21 | burrow | good | 35.0664121 | -118.0156572 |
| RY | 22 | burrow | good | 35.0689441 | -118.0158717 |
| RY | 43 | burrow | good | 35.05925596 | -118.059919 |
| RY | 44 | burrow | good | 35.05101622 | -118.0104751 |
| RY | 51 | burrow | good | 35.06899238 | -118.0596132 |
| RY | 51 | burrow | good | 35.0679195 | -118.0103088 |
| RY | 52 | burrow | good | 35.06785512 | -118.0097831 |
| RY | 53 | burrow | good | 35.07094503 | -118.0598546 |
| RY | 53 | burrow | good | 35.06868125 | -118.0100191 |
| RY | 60 | burrow | good | 35.06823063 | -118.0579663 |
| RY | 62 | burrow | good | 35.06640137 | -118.0577142 |
| RY | 63 | burrow | good | 35.06604195 | -118.0578268 |
| RY | 65 | burrow | good | 35.0672865 | -118.0083347 |
| RY | 66 | burrow | good | 35.06841839 | -118.008501 |
| RY | 71 | burrow | good | 35.05677224 | -118.0578858 |
| RY | 78 | burrow | good | 35.05008817 | -118.0575533 |
| RY | 79 | burrow | good | 35.05028129 | -118.0575211 |
| RY | 80 | burrow | good | 35.05033494 | -118.0575425 |
| RY | 81 | burrow | good | 35.05094111 | -118.0571456 |
| RY | 84 | burrow | good | 35.04244924 | -118.0186934 |
| RY | 85 | burrow | good | 35.0425458 | -118.0190314 |
| RY | 87 | burrow | good | 35.07092357 | -118.0575103 |
| RY | 88 | burrow | good | 35.07115961 | -118.0575318 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| RY | 92 | burrow | good | 35.06996871 | -118.0554719 |
| RY | 95 | burrow | good | 35.06859005 | -118.0558957 |
| RY | 104 | burrow | good | 35.04200399 | -118.0163974 |
| RY | 105 | burrow | good | 35.06401957 | -118.0553968 |
| RY | 105 | burrow | good | 35.0419879 | -118.0184574 |
| RY | 106 | burrow | good | 35.06334365 | -118.0556382 |
| RY | 115 | burrow | good | 35.04255653 | -118.0557079 |
| RY | 118 | burrow | good | 35.04932106 | -118.0551607 |
| RY | 122 | burrow | good | 35.06352604 | -118.0552841 |
| RY | 124 | burrow | good | 35.06598294 | -118.0551715 |
| RY | 133 | burrow | good | 35.06662667 | -118.0532456 |
| RY | 137 | burrow | good | 35.05407393 | -118.0532564 |
| RY | 140 | burrow | good | 35.04898847 | -118.0532993 |
| RY | 148 | burrow | good | 35.03952563 | -118.0176527 |
| RY | 153 | burrow | good | 35.05766273 | -118.0530632 |
| RY | 154 | burrow | good | 35.05803824 | -118.0530525 |
| RY | 164 | burrow | good | 35.06431461 | -118.052972 |
| RY | 165 | burrow | good | 35.06830037 | -118.0531115 |
| RY | 183 | burrow | good | 35.0455767 | -118.0497373 |
| RY | 188 | burrow | good | 35.06286085 | -118.0496086 |
| RY | 195 | burrow | good | 35.06519437 | -118.0497427 |
| RY | 210 | burrow | good | 35.04675687 | -118.0475486 |
| RY | 212 | burrow | good | 35.05207837 | -118.0475862 |
| RY | 214 | burrow | good | 35.05811334 | -118.0473287 |
| RY | 216 | burrow | good | 35.05871952 | -118.0474628 |
| RY | 219 | burrow | good | 35.06649793 | -118.0474252 |
| RY | 246 | burrow | good | 35.06555379 | -118.0450542 |
| RY | 256 | burrow | good | 35.04428387 | -118.0441959 |
| RY | 261 | burrow | good | 35.05426705 | -118.0429567 |
| RY | 265 | burrow | good | 35.07126689 | -118.0426776 |
| RY | 270 | burrow | good | 35.04681588 | -118.0418301 |
| RY | 273 | burrow | good | 35.04395128 | -118.0418248 |
| RY | 274 | burrow | good | 35.04331828 | -118.0417926 |
| RY | 276 | burrow | good | 35.04713774 | -118.0405641 |
| RY | 277 | burrow | good | 35.04771174 | -118.0406714 |
| RY | 297 | burrow | good | 35.05248607 | -118.0393357 |
| RY | 306 | burrow | good | 35.05481959 | -118.0383969 |
| RY | 310 | burrow | good | 35.05991579 | -118.0380536 |
| RY | 312 | burrow | good | 35.0633812 | -118.0384237 |
| RY | 313 | burrow | good | 35.06651938 | -118.0381609 |
| RY | 318 | burrow | good | 35.06110132 | -118.0370826 |
| RY | 319 | burrow | good | 35.05708337 | -118.0369968 |
| RY | 320 | burrow | good | 35.04460037 | -118.037029 |
| RY | 321 | burrow | good | 35.04324317 | -118.037147 |
| RY | 324 | burrow | good | 35.04387618 | -118.0358703 |
| RY | 326 | burrow | good | 35.0516063 | -118.0358435 |
| RY | 327 | burrow | good | 35.05183161 | -118.0360419 |
| RY | 328 | burrow | good | 35.05658448 | -118.035822 |
| RY | 329 | burrow | good | 35.0574267 | -118.0359507 |
| RY | 333 | burrow | good | 35.07114888 | -118.0359507 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| RY | 334 | burrow | good | 35.07210911 | -118.0345882 |
| RY | 336 | burrow | good | 35.06822527 | -118.0347277 |
| RY | 337 | burrow | good | 35.06559134 | -118.0349315 |
| RY | 338 | burrow | good | 35.06524265 | -118.0347545 |
| RY | 340 | burrow | good | 35.06165922 | -118.0347008 |
| RY | 345 | burrow | good | 35.05541504 | -118.0347974 |
| RY | 347 | burrow | good | 35.05383254 | -118.0346418 |
| RY | 352 | burrow | good | 35.04763663 | -118.0347759 |
| RY | 353 | burrow | good | 35.04553915 | -118.0348779 |
| RY | 355 | burrow | good | 35.04445553 | -118.0346418 |
| RY | 356 | burrow | good | 35.043903 | -118.033687 |
| RY | 357 | burrow | good | 35.04409612 | -118.0337352 |
| RY | 360 | burrow | good | 35.04528702 | -118.0337352 |
| RY | 364 | burrow | good | 35.05275965 | -118.0336977 |
| RY | 366 | burrow | good | 35.05440116 | -118.0336601 |
| RY | 375 | burrow | good | 35.0695932 | -118.0325175 |
| RY | 376 | burrow | good | 35.06913186 | -118.0324852 |
| RY | 378 | burrow | good | 35.06658912 | -118.0325282 |
| RY | 383 | burrow | good | 35.05528093 | -118.0325604 |
| RY | 384 | burrow | good | 35.05311907 | -118.032539 |
| RY | 389 | burrow | good | 35.04656911 | -118.0312676 |
| RY | 395 | burrow | good | 35.0565362 | -118.031332 |
| RY | 396 | burrow | good | 35.05727113 | -118.0312944 |
| RY | 403 | burrow | good | 35.06947518 | -118.0303717 |
| RY | 406 | burrow | good | 35.06621361 | -118.0303127 |
| RY | 409 | burrow | good | 35.05591929 | -118.0304039 |
| RY | 418 | burrow | good | 35.06571472 | -118.0290038 |
| RY | 420 | burrow | good | 35.06802679 | -118.0280865 |
| RY | 428 | burrow | good | 35.0579685 | -118.028167 |
| RY | 430 | burrow | good | 35.05307615 | -118.0280919 |
| RY | 438 | burrow | good | 35.06808043 | -118.0261553 |
| RY | 453 | burrow | good | 35.06920159 | -118.0250342 |
| RY | 459 | burrow | good | 35.04592538 | -118.0242134 |
| RY | 461 | burrow | good | 35.04510999 | -118.0241651 |
| RY | 462 | burrow | good | 35.04491687 | -118.0231459 |
| RY | 463 | burrow | good | 35.04695535 | -118.0231244 |
| RY | 464 | burrow | good | 35.06406248 | -118.0217672 |
| MAH | 10 | burrow | good | 35.06508172 | -118.0594254 |
| MAH | 15 | burrow | good | 35.06041468 | -118.059345 |
| MAH | 17 | burrow | good | 35.05513073 | -118.0596025 |
| MAH | 25 | burrow | good | 35.05976022 | -118.0591197 |
| MAH | 26 | burrow | good | 35.06051124 | -118.0587924 |
| MAH | 31 | burrow | good | 35.06955028 | -118.0571295 |
| MAH | 36 | burrow | good | 35.06409467 | -118.0571724 |
| MAH | 48 | burrow | good | 35.04887045 | -118.0548979 |
| MAH | 58 | burrow | good | 35.0686276 | -118.0523605 |
| MAH | 61 | burrow | good | 35.06448091 | -118.0524732 |
| MAH | 62 | burrow | good | 35.06423951 | -118.0528165 |
| MAH | 67 | burrow | good | 35.06655694 | -118.0520655 |
| MAH | 77 | burrow | good | 35.06047369 | -118.0506545 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| MAH | 81 | burrow | good | 35.04615605 | -118.0505098 |
| MAH | 83 | burrow | good | 35.04554987 | -118.0497319 |
| MAH | 84 | burrow | good | 35.05284548 | -118.0494744 |
| MAH | 94 | burrow | good | 35.05098395 | -118.0482943 |
| MAH | 96 | burrow | good | 35.05211592 | -118.0472536 |
| MAH | 97 | burrow | good | 35.0540793 | -118.0472482 |
| MAH | 100 | burrow | good | 35.06869734 | -118.0457408 |
| MAH | 101 | burrow | good | 35.06838084 | -118.0457462 |
| MAH | 106 | burrow | good | 35.04663885 | -118.045022 |
| MAH | 107 | burrow | good | 35.04739523 | -118.0447377 |
| MAH | 108 | burrow | good | 35.04797459 | -118.0446517 |
| MAH | 109 | burrow | good | 35.04912794 | -118.0448931 |
| MAH | 111 | burrow | good | 35.06658912 | -118.0434556 |
| MAH | 113 | burrow | good | 35.04825891 | -118.0436433 |
| MAH | 121 | burrow | good | 35.05014182 | -118.0402207 |
| MAH | 126 | burrow | good | 35.0570672 | -118.0379463 |
| MAH | 130 | burrow | good | 35.06420196 | -118.0366642 |
| MAH | 134 | burrow | good | 35.04442871 | -118.0370075 |
| MAH | 135 | burrow | good | 35.04291058 | -118.036793 |
| MAH | 140 | burrow | good | 35.05955637 | -118.0356396 |
| MAH | 141 | burrow | good | 35.06556988 | -118.0356503 |
| MAH | 142 | burrow | good | 35.06972194 | -118.0356182 |
| MAH | 151 | burrow | good | 35.05219102 | -118.0344004 |
| MAH | 152 | burrow | good | 35.05116106 | -118.0345131 |
| MAH | 159 | burrow | good | 35.05522728 | -118.0333973 |
| MAH | 160 | burrow | good | 35.05565644 | -118.0334992 |
| MAH | 166 | burrow | good | 35.05544723 | -118.0319703 |
| MAH | 167 | burrow | good | 35.04810334 | -118.031965 |
| MAH | 181 | burrow | good | 35.05417049 | -118.0278827 |
| MAH | 185 | burrow | good | 35.04608095 | -118.0278183 |
| MAH | 194 | burrow | good | 35.06857396 | -118.0267239 |
| MAH | 195 | burrow | good | 35.07210911 | -118.0256779 |
| MAH | 209 | burrow | good | 35.06477595 | -118.0214185 |
| MAH | 211 | burrow | good | 35.0516063 | -118.0215419 |
| MAH | 216 | burrow | good | 35.04398346 | -118.0202491 |
| MAH | 219 | burrow | good | 35.0561446 | -118.0203135 |
| MAH | 222 | burrow | good | 35.07081628 | -118.0191226 |
| MAH | 232 | burrow | good | 35.0442195 | -118.0188007 |
| MAH | 236 | burrow | good | 35.06508709 | -118.0175132 |
| MAH | 238 | burrow | good | 35.06878853 | -118.0167461 |
| MAH | 243 | burrow | good | 35.06266237 | -118.0151261 |
| MAH | 250 | burrow | good | 35.05577982 | -118.0144019 |
| MAH | 251 | burrow | good | 35.06443799 | -118.0134738 |
| MAH | 253 | burrow | good | 35.06082774 | -118.0124439 |
| MAH | 258 | burrow | good | 35.06955565 | -118.0117304 |
| MAH | 259 | burrow | good | 35.06824673 | -118.0089355 |
| MAH | 260 | burrow | good | 35.06142855 | -118.0091233 |
| MAH | 264 | burrow | good | 35.04232049 | -118.0289019 |
| MAH | 270 | burrow | good | 35.03548623 | -118.0272389 |
| MAH | 274 | burrow | good | 35.03950954 | -118.0252809 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| MAH | 277 | burrow | good | 35.04075408 | -118.0195946 |
| MAH | 293 | burrow | good | 35.03831864 | -118.0083776 |
| MAH | 303 | burrow | good | 35.0388068 | -118.0115051 |
| MAH | 309 | burrow | good | 35.03854394 | -118.0122883 |
| EB | 28 | burrow | good | 35.05942226 | -118.0585081 |
| EB | 72 | burrow | good | 35.05682052 | -118.0559708 |
| EB | 78 | burrow | good | 35.06017864 | -118.0542005 |
| EB | 92 | burrow | good | 35.06497443 | -118.0538411 |
| EB | 93 | burrow | good | 35.06530703 | -118.053707 |
| EB | 107 | burrow | good | 35.05960465 | -118.0504079 |
| EB | 117 | burrow | good | 35.06365479 | -118.047672 |
| EB | 139 | burrow | good | 35.06063462 | -118.046406 |
| EB | 144 | burrow | good | 35.06233514 | -118.0455155 |
| EB | 162 | burrow | good | 35.04265309 | -118.0422378 |
| EB | 171 | burrow | good | 35.0442946 | -118.0398185 |
| EB | 200 | burrow | good | 35.06212593 | -118.036278 |
| EB | 209 | burrow | good | 35.06512455 | -118.0352265 |
| EB | 220 | burrow | good | 35.05257726 | -118.0339015 |
| EB | 227 | burrow | good | 35.05377889 | -118.0329306 |
| EB | 237 | burrow | good | 35.06970048 | -118.0316378 |
| EB | 242 | burrow | good | 35.05507708 | -118.0317719 |
| EB | 251 | burrow | good | 35.05036176 | -118.030758 |
| EB | 257 | burrow | good | 35.07070363 | -118.0296207 |
| EB | 264 | burrow | good | 35.05523801 | -118.0283816 |
| EB | 304 | burrow | good | 35.06702364 | -118.0272067 |
| EB | 306 | burrow | good | 35.0581348 | -118.0274267 |
| EB | 318 | burrow | good | 35.06804824 | -118.0263002 |
| EB | 347 | burrow | good | 35.05515755 | -118.0210377 |
| EB | 362 | burrow | good | 35.06619207 | -118.0171324 |
| EB | 366 | burrow | good | 35.05219639 | -118.016097 |
| EB | 381 | burrow | good | 35.05939544 | -118.0106039 |
| EB | 389 | burrow | good | 35.06662667 | -118.0098958 |
| EB | 403 | burrow | good | 35.04367233 | -118.0064733 |
| EB | 452 | burrow | good | 35.0387317 | -118.0232424 |
| RY | 4 | burrow | fair | 35.06044686 | -118.0168534 |
| RY | 8 | burrow | fair | 35.06824136 | -118.0603696 |
| RY | 9 | burrow | fair | 35.04547477 | -118.0167998 |
| RY | 10 | burrow | fair | 35.04423023 | -118.0168266 |
| RY | 11 | burrow | fair | 35.0673616 | -118.0601818 |
| RY | 16 | burrow | fair | 35.04854858 | -118.0157752 |
| RY | 18 | burrow | fair | 35.06374598 | -118.0602623 |
| RY | 19 | burrow | fair | 35.05883217 | -118.0158127 |
| RY | 23 | burrow | fair | 35.06748498 | -118.0147935 |
| RY | 24 | burrow | fair | 35.06726504 | -118.0146701 |
| RY | 34 | burrow | fair | 35.05897165 | -118.0113871 |
| RY | 35 | burrow | fair | 35.05171359 | -118.0113978 |
| RY | 37 | burrow | fair | 35.04429997 | -118.0603535 |
| RY | 38 | burrow | fair | 35.04486323 | -118.0114944 |
| RY | 41 | burrow | fair | 35.04965902 | -118.0102713 |
| RY | 42 | burrow | fair | 35.05803288 | -118.0598331 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| RY | 42 | burrow | fair | 35.05075336 | -118.0101801 |
| RY | 45 | burrow | fair | 35.05104304 | -118.010459 |
| RY | 46 | burrow | fair | 35.05322636 | -118.0105234 |
| RY | 47 | burrow | fair | 35.05373598 | -118.0105717 |
| RY | 48 | burrow | fair | 35.06254435 | -118.0104698 |
| RY | 49 | burrow | fair | 35.06271065 | -118.0598492 |
| RY | 49 | burrow | fair | 35.06510318 | -118.0101801 |
| RY | 52 | burrow | fair | 35.06869197 | -118.0595488 |
| RY | 54 | burrow | fair | 35.07234514 | -118.0090053 |
| RY | 59 | burrow | fair | 35.06870807 | -118.0579127 |
| RY | 59 | burrow | fair | 35.05516291 | -118.0094559 |
| RY | 63 | burrow | fair | 35.06096185 | -118.00856 |
| RY | 64 | burrow | fair | 35.06577909 | -118.0577732 |
| RY | 67 | burrow | fair | 35.0639391 | -118.0578322 |
| RY | 68 | burrow | fair | 35.06274283 | -118.0581648 |
| RY | 72 | burrow | fair | 35.05654157 | -118.0579019 |
| RY | 73 | burrow | fair | 35.05525947 | -118.0579717 |
| RY | 74 | burrow | fair | 35.05498589 | -118.0578644 |
| RY | 75 | burrow | fair | 35.04346312 | -118.0001486 |
| RY | 76 | burrow | fair | 35.042696 | -118.0030079 |
| RY | 77 | burrow | fair | 35.04272819 | -118.0033244 |
| RY | 82 | burrow | fair | 35.05917013 | -118.0575425 |
| RY | 83 | burrow | fair | 35.06042541 | -118.0576981 |
| RY | 83 | burrow | fair | 35.04250289 | -118.0178458 |
| RY | 86 | burrow | fair | 35.06643892 | -118.0573333 |
| RY | 87 | burrow | fair | 35.04250825 | -118.0209196 |
| RY | 95 | burrow | fair | 35.04258335 | -117.9987324 |
| RY | 99 | burrow | fair | 35.0423526 | -118.0019135 |
| RY | 100 | burrow | fair | 35.0650549 | -118.0558581 |
| RY | 100 | burrow | fair | 35.04214347 | -118.0095632 |
| RY | 114 | burrow | fair | 35.04337729 | -118.0558635 |
| RY | 122 | burrow | fair | 35.04121542 | -118.0213273 |
| RY | 123 | burrow | fair | 35.06373525 | -118.0550855 |
| RY | 125 | burrow | fair | 35.04139245 | -118.0132807 |
| RY | 126 | burrow | fair | 35.06830037 | -118.0552144 |
| RY | 131 | burrow | fair | 35.06948054 | -118.0534173 |
| RY | 134 | burrow | fair | 35.06310761 | -118.0533905 |
| RY | 136 | burrow | fair | 35.05645574 | -118.053487 |
| RY | 138 | burrow | fair | 35.05066753 | -118.053605 |
| RY | 141 | burrow | fair | 35.04528165 | -118.0535675 |
| RY | 146 | burrow | fair | 35.04627407 | -118.0530901 |
| RY | 149 | burrow | fair | 35.05298496 | -118.0530364 |
| RY | 149 | burrow | fair | 35.03969193 | -118.020233 |
| RY | 150 | burrow | fair | 35.0541544 | -118.052913 |
| RY | 151 | burrow | fair | 35.03882289 | -118.0152012 |
| RY | 152 | burrow | fair | 35.05577982 | -118.0530632 |
| RY | 152 | burrow | fair | 35.03918767 | -118.013962 |
| RY | 157 | burrow | fair | 35.06105304 | -118.0531759 |
| RY | 161 | burrow | fair | 35.06265164 | -118.0531491 |
| RY | 163 | burrow | fair | 35.06368697 | -118.0530579 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| RY | 167 | burrow | fair | 35.0687027 | -118.0529989 |
| RY | 169 | burrow | fair | 35.07049978 | -118.0509872 |
| RY | 185 | burrow | fair | 35.05743206 | -118.0497748 |
| RY | 187 | burrow | fair | 35.06281794 | -118.0498017 |
| RY | 192 | burrow | fair | 35.06401957 | -118.0495925 |
| RY | 194 | burrow | fair | 35.06456137 | -118.0499894 |
| RY | 197 | burrow | fair | 35.06826282 | -118.0487234 |
| RY | 199 | burrow | fair | 35.06161094 | -118.0486591 |
| RY | 204 | burrow | fair | 35.05651474 | -118.0485947 |
| RY | 205 | burrow | fair | 35.05609096 | -118.0485679 |
| RY | 206 | burrow | fair | 35.05557061 | -118.0486644 |
| RY | 208 | burrow | fair | 35.04469693 | -118.0488307 |
| RY | 215 | burrow | fair | 35.05812407 | -118.0472643 |
| RY | 218 | burrow | fair | 35.06295205 | -118.0473984 |
| RY | 221 | burrow | fair | 35.06900847 | -118.0475379 |
| RY | 225 | burrow | fair | 35.06776929 | -118.0463792 |
| RY | 226 | burrow | fair | 35.06699682 | -118.046524 |
| RY | 227 | burrow | fair | 35.06303251 | -118.0462987 |
| RY | 229 | burrow | fair | 35.05067826 | -118.0462129 |
| RY | 244 | burrow | fair | 35.05609096 | -118.0452687 |
| RY | 247 | burrow | fair | 35.07080555 | -118.043756 |
| RY | 248 | burrow | fair | 35.06993652 | -118.0441529 |
| RY | 251 | burrow | fair | 35.05181551 | -118.04411 |
| RY | 252 | burrow | fair | 35.04947663 | -118.0440886 |
| RY | 260 | burrow | fair | 35.05302251 | -118.0427367 |
| RY | 262 | burrow | fair | 35.05770565 | -118.0429138 |
| RY | 263 | burrow | fair | 35.06759227 | -118.0428172 |
| RY | 266 | burrow | fair | 35.06837547 | -118.0416209 |
| RY | 267 | burrow | fair | 35.06558061 | -118.0415405 |
| RY | 275 | burrow | fair | 35.04402638 | -118.0405266 |
| RY | 280 | burrow | fair | 35.05761982 | -118.0405695 |
| RY | 282 | burrow | fair | 35.06592393 | -118.0405641 |
| RY | 284 | burrow | fair | 35.06896556 | -118.0406446 |
| RY | 286 | burrow | fair | 35.0691855 | -118.0394054 |
| RY | 292 | burrow | fair | 35.05952955 | -118.039266 |
| RY | 294 | burrow | fair | 35.05662203 | -118.0394913 |
| RY | 296 | burrow | fair | 35.05271674 | -118.0392713 |
| RY | 300 | burrow | fair | 35.0466764 | -118.0383379 |
| RY | 304 | burrow | fair | 35.05094648 | -118.0383808 |
| RY | 305 | burrow | fair | 35.05247534 | -118.0380482 |
| RY | 311 | burrow | fair | 35.06080628 | -118.0380965 |
| RY | 314 | burrow | fair | 35.06854713 | -118.0381448 |
| RY | 323 | burrow | fair | 35.04344166 | -118.0360311 |
| RY | 332 | burrow | fair | 35.06893337 | -118.03594 |
| RY | 339 | burrow | fair | 35.06288231 | -118.034792 |
| RY | 342 | burrow | fair | 35.06062925 | -118.0348671 |
| RY | 344 | burrow | fair | 35.05744815 | -118.0347867 |
| RY | 354 | burrow | fair | 35.04501343 | -118.034674 |
| RY | 363 | burrow | fair | 35.05157412 | -118.0337835 |
| RY | 365 | burrow | fair | 35.05434752 | -118.0334938 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| RY | 368 | burrow | fair | 35.05802751 | -118.0337245 |
| RY | 369 | burrow | fair | 35.06248534 | -118.0336655 |
| RY | 370 | burrow | fair | 35.06359041 | -118.0337621 |
| RY | 381 | burrow | fair | 35.0565362 | -118.0325014 |
| RY | 382 | burrow | fair | 35.05580664 | -118.0324961 |
| RY | 386 | burrow | fair | 35.04589856 | -118.0324478 |
| RY | 388 | burrow | fair | 35.04506708 | -118.0314393 |
| RY | 392 | burrow | fair | 35.05127371 | -118.0314446 |
| RY | 397 | burrow | fair | 35.06457747 | -118.0311067 |
| RY | 405 | burrow | fair | 35.06664277 | -118.0301947 |
| RY | 407 | burrow | fair | 35.06502808 | -118.0304307 |
| RY | 411 | burrow | fair | 35.05229831 | -118.0299641 |
| RY | 425 | burrow | fair | 35.06523192 | -118.0279363 |
| RY | 426 | burrow | fair | 35.06365479 | -118.0282528 |
| RY | 431 | burrow | fair | 35.04935325 | -118.028167 |
| RY | 433 | burrow | fair | 35.04445553 | -118.0281347 |
| RY | 440 | burrow | fair | 35.06490469 | -118.0260266 |
| RY | 443 | burrow | fair | 35.05690635 | -118.0264504 |
| RY | 444 | burrow | fair | 35.05500198 | -118.0258442 |
| RY | 445 | burrow | fair | 35.05408466 | -118.0258227 |
| RY | 446 | burrow | fair | 35.04864514 | -118.0259246 |
| RY | 449 | burrow | fair | 35.04342556 | -118.0259354 |
| RY | 450 | burrow | fair | 35.0634563 | -118.0249591 |
| RY | 451 | burrow | fair | 35.06360651 | -118.0249483 |
| RY | 452 | burrow | fair | 35.06636382 | -118.0248732 |
| RY | 455 | burrow | fair | 35.06905675 | -118.024106 |
| RY | 460 | burrow | fair | 35.04512072 | -118.0241705 |
| RY | 465 | burrow | fair | 35.06335974 | -118.0219496 |
| RY | 467 | burrow | fair | 35.05608559 | -118.0219979 |
| RY | 474 | burrow | fair | 35.0443858 | -118.0205119 |
| RY | 475 | burrow | fair | 35.0489831 | -118.0207587 |
| RY | 478 | burrow | fair | 35.05539895 | -118.0208767 |
| RY | 481 | burrow | fair | 35.06611705 | -118.0207587 |
| RY | 482 | burrow | fair | 35.06944299 | -118.0205978 |
| RY | 489 | burrow | fair | 35.04307688 | -118.018157 |
| MAH | 2 | burrow | fair | 35.06999553 | -118.059522 |
| MAH | 3 | burrow | fair | 35.06968439 | -118.0593181 |
| MAH | 11 | burrow | fair | 35.06491006 | -118.0591358 |
| MAH | 13 | burrow | fair | 35.0641805 | -118.0592913 |
| MAH | 14 | burrow | fair | 35.06278575 | -118.0596668 |
| MAH | 18 | burrow | fair | 35.05282939 | -118.0593396 |
| MAH | 21 | burrow | fair | 35.04536748 | -118.0590768 |
| MAH | 23 | burrow | fair | 35.05014718 | -118.0591089 |
| MAH | 27 | burrow | fair | 35.06874017 | -118.0590499 |
| MAH | 30 | burrow | fair | 35.07047833 | -118.0570812 |
| MAH | 37 | burrow | fair | 35.0524968 | -118.0572475 |
| MAH | 39 | burrow | fair | 35.04840911 | -118.0572314 |
| MAH | 41 | burrow | fair | 35.05346239 | -118.0566949 |
| MAH | 44 | burrow | fair | 35.06956101 | -118.0566949 |
| MAH | 46 | burrow | fair | 35.05825282 | -118.054694 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| MAH | 49 | burrow | fair | 35.04493833 | -118.0547423 |
| MAH | 50 | burrow | fair | 35.04278183 | -118.054855 |
| MAH | 51 | burrow | fair | 35.05199791 | -118.0545706 |
| MAH | 54 | burrow | fair | 35.06311298 | -118.0544794 |
| MAH | 56 | burrow | fair | 35.07036567 | -118.0526019 |
| MAH | 57 | burrow | fair | 35.07036567 | -118.0526019 |
| MAH | 60 | burrow | fair | 35.06753862 | -118.0525912 |
| MAH | 75 | burrow | fair | 35.06178797 | -118.0505044 |
| MAH | 82 | burrow | fair | 35.04364014 | -118.0508906 |
| MAH | 85 | burrow | fair | 35.05317808 | -118.0496139 |
| MAH | 90 | burrow | fair | 35.06127835 | -118.0485947 |
| MAH | 91 | burrow | fair | 35.05541504 | -118.0482084 |
| MAH | 92 | burrow | fair | 35.05294204 | -118.0484016 |
| MAH | 93 | burrow | fair | 35.05091429 | -118.0485035 |
| MAH | 98 | burrow | fair | 35.05533994 | -118.0472589 |
| MAH | 99 | burrow | fair | 35.0666374 | -118.0470336 |
| MAH | 105 | burrow | fair | 35.04623652 | -118.0447001 |
| MAH | 112 | burrow | fair | 35.04971803 | -118.0438418 |
| MAH | 114 | burrow | fair | 35.04670322 | -118.0435682 |
| MAH | 115 | burrow | fair | 35.06090284 | -118.04249 |
| MAH | 116 | burrow | fair | 35.06500662 | -118.0424578 |
| MAH | 117 | burrow | fair | 35.06795168 | -118.0424362 |
| MAH | 118 | burrow | fair | 35.07102013 | -118.0425275 |
| MAH | 119 | burrow | fair | 35.05080164 | -118.041224 |
| MAH | 122 | burrow | fair | 35.0545621 | -118.0400974 |
| MAH | 123 | burrow | fair | 35.06477595 | -118.039105 |
| MAH | 127 | burrow | fair | 35.05989969 | -118.0378658 |
| MAH | 128 | burrow | fair | 35.06626726 | -118.0365891 |
| MAH | 132 | burrow | fair | 35.04829109 | -118.0366159 |
| MAH | 137 | burrow | fair | 35.04649401 | -118.0356289 |
| MAH | 138 | burrow | fair | 35.04811407 | -118.0357093 |
| MAH | 144 | burrow | fair | 35.0679195 | -118.0343307 |
| MAH | 162 | burrow | fair | 35.07146538 | -118.0330808 |
| MAH | 165 | burrow | fair | 35.06340266 | -118.0322654 |
| MAH | 171 | burrow | fair | 35.07077873 | -118.0302269 |
| MAH | 177 | burrow | fair | 35.06148756 | -118.028918 |
| MAH | 179 | burrow | fair | 35.06662131 | -118.0274911 |
| MAH | 180 | burrow | fair | 35.06359041 | -118.027829 |
| MAH | 182 | burrow | fair | 35.05346776 | -118.0277968 |
| MAH | 184 | burrow | fair | 35.04814089 | -118.0277593 |
| MAH | 187 | burrow | fair | 35.0508982 | -118.0267347 |
| MAH | 197 | burrow | fair | 35.06495297 | -118.0257315 |
| MAH | 198 | burrow | fair | 35.05831183 | -118.0256993 |
| MAH | 199 | burrow | fair | 35.04956782 | -118.025812 |
| MAH | 200 | burrow | fair | 35.04368306 | -118.0257154 |
| MAH | 201 | burrow | fair | 35.04450918 | -118.0248893 |
| MAH | 203 | burrow | fair | 35.05339265 | -118.0245138 |
| MAH | 214 | burrow | fair | 35.04560888 | -118.0216277 |
| MAH | 217 | burrow | fair | 35.04591465 | -118.0204368 |
| MAH | 220 | burrow | fair | 35.06374062 | -118.0205066 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| MAH | 221 | burrow | fair | 35.06419123 | -118.0205441 |
| MAH | 223 | burrow | fair | 35.0659293 | -118.018967 |
| MAH | 224 | burrow | fair | 35.06276429 | -118.0188704 |
| MAH | 225 | burrow | fair | 35.05949736 | -118.0189241 |
| MAH | 226 | burrow | fair | 35.05669714 | -118.0191333 |
| MAH | 230 | burrow | fair | 35.04681588 | -118.0186451 |
| MAH | 231 | burrow | fair | 35.04447163 | -118.0190421 |
| MAH | 239 | burrow | fair | 35.05434216 | -118.0165476 |
| MAH | 244 | burrow | fair | 35.0658542 | -118.01511 |
| MAH | 245 | burrow | fair | 35.0692337 | -118.0143429 |
| MAH | 246 | burrow | fair | 35.06718457 | -118.0142249 |
| MAH | 248 | burrow | fair | 35.06660522 | -118.014316 |
| MAH | 257 | burrow | fair | 35.0681609 | -118.0118001 |
| MAH | 271 | burrow | fair | 35.03946662 | -118.0256457 |
| MAH | 276 | burrow | fair | 35.04065216 | -118.0206943 |
| MAH | 279 | burrow | fair | 35.04127443 | -118.0126638 |
| MAH | 283 | burrow | fair | 35.04044295 | -118.008957 |
| MAH | 285 | burrow | fair | 35.04024983 | -118.016317 |
| MAH | 287 | burrow | fair | 35.03800214 | -118.0218209 |
| MAH | 292 | burrow | fair | 35.03819526 | -118.0099816 |
| MAH | 296 | burrow | fair | 35.03789485 | -118.0152173 |
| MAH | 297 | burrow | fair | 35.03799677 | -118.0195732 |
| MAH | 298 | burrow | fair | 35.03795922 | -118.0206246 |
| MAH | 307 | burrow | fair | 35.03853858 | -118.0076052 |
| EB | 3 | burrow | fair | 35.06875098 | -118.0587871 |
| EB | 4 | burrow | fair | 35.06860614 | -118.0587281 |
| EB | 6 | burrow | fair | 35.06622971 | -118.0585349 |
| EB | 7 | burrow | fair | 35.06605268 | -118.058653 |
| EB | 8 | burrow | fair | 35.06604732 | -118.0586744 |
| EB | 9 | burrow | fair | 35.06602586 | -118.058653 |
| EB | 10 | burrow | fair | 35.06588102 | -118.0587334 |
| EB | 11 | burrow | fair | 35.06547332 | -118.0587066 |
| EB | 12 | burrow | fair | 35.06510318 | -118.058594 |
| EB | 13 | burrow | fair | 35.06359041 | -118.0586047 |
| EB | 14 | burrow | fair | 35.06339193 | -118.0585564 |
| EB | 15 | burrow | fair | 35.0631398 | -118.0587442 |
| EB | 16 | burrow | fair | 35.06312907 | -118.0588193 |
| EB | 17 | burrow | fair | 35.06275893 | -118.0586369 |
| EB | 18 | burrow | fair | 35.06230832 | -118.0586637 |
| EB | 19 | burrow | fair | 35.06223858 | -118.0585832 |
| EB | 20 | burrow | fair | 35.06219566 | -118.0587066 |
| EB | 22 | burrow | fair | 35.06142319 | -118.0585886 |
| EB | 23 | burrow | fair | 35.06119788 | -118.0587871 |
| EB | 25 | burrow | fair | 35.06108523 | -118.0588246 |
| EB | 27 | burrow | fair | 35.06040395 | -118.058653 |
| EB | 30 | burrow | fair | 35.05913258 | -118.0589105 |
| EB | 31 | burrow | fair | 35.05906821 | -118.0588836 |
| EB | 32 | burrow | fair | 35.05867124 | -118.0587495 |
| EB | 33 | burrow | fair | 35.05612851 | -118.0589105 |
| EB | 34 | burrow | fair | 35.055753 | -118.0589319 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| EB | 35 | burrow | fair | 35.05396128 | -118.0585028 |
| EB | 37 | burrow | fair | 35.05323172 | -118.0588032 |
| EB | 39 | burrow | fair | 35.05308152 | -118.058948 |
| EB | 40 | burrow | fair | 35.05218566 | -118.0585779 |
| EB | 45 | burrow | fair | 35.04824818 | -118.0587281 |
| EB | 46 | burrow | fair | 35.04820526 | -118.0588139 |
| EB | 51 | burrow | fair | 35.05769492 | -118.0584813 |
| EB | 52 | burrow | fair | 35.05853713 | -118.0583847 |
| EB | 54 | burrow | fair | 35.06322027 | -118.0580361 |
| EB | 55 | burrow | fair | 35.06356359 | -118.0581755 |
| EB | 56 | burrow | fair | 35.06367088 | -118.0581272 |
| EB | 57 | burrow | fair | 35.06489397 | -118.0581916 |
| EB | 58 | burrow | fair | 35.06624043 | -118.0581272 |
| EB | 59 | burrow | fair | 35.06901384 | -118.0564643 |
| EB | 64 | burrow | fair | 35.06673933 | -118.0562819 |
| EB | 65 | burrow | fair | 35.06511391 | -118.0565179 |
| EB | 68 | burrow | fair | 35.06317735 | -118.0568666 |
| EB | 71 | burrow | fair | 35.05214274 | -118.0559493 |
| EB | 75 | burrow | fair | 35.06934107 | -118.0540396 |
| EB | 77 | burrow | fair | 35.06515146 | -118.0541522 |
| EB | 80 | burrow | fair | 35.04575372 | -118.0541576 |
| EB | 84 | burrow | fair | 35.04483104 | -118.053766 |
| EB | 88 | burrow | fair | 35.05812407 | -118.0539537 |
| EB | 97 | burrow | fair | 35.06420196 | -118.0518723 |
| EB | 101 | burrow | fair | 35.05832792 | -118.0519796 |
| EB | 104 | burrow | fair | 35.06887973 | -118.0502952 |
| EB | 105 | burrow | fair | 35.06363869 | -118.0503542 |
| EB | 106 | burrow | fair | 35.06254435 | -118.0499787 |
| EB | 108 | burrow | fair | 35.05187989 | -118.0502362 |
| EB | 110 | burrow | fair | 35.05524874 | -118.0499572 |
| EB | 111 | burrow | fair | 35.06109059 | -118.0500806 |
| EB | 112 | burrow | fair | 35.06234587 | -118.0498768 |
| EB | 116 | burrow | fair | 35.0665623 | -118.0475808 |
| EB | 122 | burrow | fair | 35.05648256 | -118.0475701 |
| EB | 129 | burrow | fair | 35.0502652 | -118.0467386 |
| EB | 132 | burrow | fair | 35.05079091 | -118.0467708 |
| EB | 143 | burrow | fair | 35.06635845 | -118.0455745 |
| EB | 156 | burrow | fair | 35.06148756 | -118.0433966 |
| EB | 158 | burrow | fair | 35.04950345 | -118.043477 |
| EB | 161 | burrow | fair | 35.04259408 | -118.0431069 |
| EB | 163 | burrow | fair | 35.0648135 | -118.0418033 |
| EB | 166 | burrow | fair | 35.06753862 | -118.0420286 |
| EB | 168 | burrow | fair | 35.05521656 | -118.0407787 |
| EB | 170 | burrow | fair | 35.05294204 | -118.0407734 |
| EB | 174 | burrow | fair | 35.05567253 | -118.0396576 |
| EB | 177 | burrow | fair | 35.06920696 | -118.0387349 |
| EB | 178 | burrow | fair | 35.06875635 | -118.039899 |
| EB | 179 | burrow | fair | 35.07104695 | -118.0398239 |
| EB | 185 | burrow | fair | 35.04860759 | -118.0385847 |
| EB | 191 | burrow | fair | 35.05377353 | -118.0374635 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| EB | 194 | burrow | fair | 35.0639391 | -118.0375654 |
| EB | 196 | burrow | fair | 35.06875635 | -118.0363906 |
| EB | 197 | burrow | fair | 35.06787658 | -118.036396 |
| EB | 210 | burrow | fair | 35.06652475 | -118.0352212 |
| EB | 215 | burrow | fair | 35.06052733 | -118.0337352 |
| EB | 217 | burrow | fair | 35.05673469 | -118.033923 |
| EB | 221 | burrow | fair | 35.05105913 | -118.0337406 |
| EB | 225 | burrow | fair | 35.05299032 | -118.0329842 |
| EB | 226 | burrow | fair | 35.05307079 | -118.0330271 |
| EB | 229 | burrow | fair | 35.0547123 | -118.0326838 |
| EB | 230 | burrow | fair | 35.06140709 | -118.0329467 |
| EB | 231 | burrow | fair | 35.06449163 | -118.0330164 |
| EB | 236 | burrow | fair | 35.07031739 | -118.0317075 |
| EB | 238 | burrow | fair | 35.06611705 | -118.0315305 |
| EB | 244 | burrow | fair | 35.0547874 | -118.0317129 |
| EB | 245 | burrow | fair | 35.05214811 | -118.0315251 |
| EB | 250 | burrow | fair | 35.04962147 | -118.0304522 |
| EB | 262 | burrow | fair | 35.05557061 | -118.0294598 |
| EB | 308 | burrow | fair | 35.0513059 | -118.0272818 |
| EB | 312 | burrow | fair | 35.05256117 | -118.0262251 |
| EB | 319 | burrow | fair | 35.07121325 | -118.0262787 |
| EB | 320 | burrow | fair | 35.0713259 | -118.0253936 |
| EB | 323 | burrow | fair | 35.0548786 | -118.0242456 |
| EB | 328 | burrow | fair | 35.06913722 | -118.023162 |
| EB | 334 | burrow | fair | 35.051381 | -118.0231191 |
| EB | 335 | burrow | fair | 35.04673005 | -118.0233122 |
| EB | 337 | burrow | fair | 35.05227685 | -118.0221481 |
| EB | 344 | burrow | fair | 35.07126153 | -118.0210806 |
| EB | 345 | burrow | fair | 35.07026375 | -118.021145 |
| EB | 350 | burrow | fair | 35.04785121 | -118.0200184 |
| EB | 354 | burrow | fair | 35.05045832 | -118.018511 |
| EB | 355 | burrow | fair | 35.04534603 | -118.017524 |
| EB | 357 | burrow | fair | 35.04715384 | -118.0174703 |
| EB | 358 | burrow | fair | 35.05277038 | -118.0171377 |
| EB | 361 | burrow | fair | 35.06457747 | -118.0173094 |
| EB | 364 | burrow | fair | 35.0689441 | -118.0158503 |
| EB | 367 | burrow | fair | 35.0467676 | -118.0149866 |
| EB | 379 | burrow | fair | 35.06688417 | -118.0121381 |
| EB | 386 | burrow | fair | 35.05270601 | -118.0102981 |
| EB | 387 | burrow | fair | 35.05405248 | -118.0098636 |
| EB | 393 | burrow | fair | 35.06797851 | -118.0088819 |
| EB | 395 | burrow | fair | 35.05942762 | -118.00856 |
| EB | 417 | burrow | fair | 35.03608168 | -118.0240525 |
| EB | 434 | burrow | fair | 35.03749252 | -118.0007923 |
| EB | 437 | burrow | fair | 35.03771782 | -118.0025411 |
| EB | 442 | burrow | fair | 35.03799141 | -118.0009372 |
| EB | 448 | burrow | fair | 35.03987432 | -118.0062426 |
| RY | 1 | burrow | poor | 35.0701511 | -118.0600423 |
| RY | 2 | burrow | poor | 35.07002235 | -118.0600209 |
| RY | 5 | burrow | poor | 35.06950737 | -118.0600584 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| RY | 5 | burrow | poor | 35.04886508 | -118.0170036 |
| RY | 7 | burrow | poor | 35.04795313 | -118.0169607 |
| RY | 9 | burrow | poor | 35.06794632 | -118.060096 |
| RY | 12 | burrow | poor | 35.04394055 | -118.0168802 |
| RY | 13 | burrow | poor | 35.04344166 | -118.0166549 |
| RY | 16 | burrow | poor | 35.06483496 | -118.0602247 |
| RY | 23 | burrow | poor | 35.06069363 | -118.0602462 |
| RY | 25 | burrow | poor | 35.06400884 | -118.0145843 |
| RY | 27 | burrow | poor | 35.05903602 | -118.0602677 |
| RY | 28 | burrow | poor | 35.04748643 | -118.0145199 |
| RY | 32 | burrow | poor | 35.053913 | -118.0603267 |
| RY | 33 | burrow | poor | 35.05302787 | -118.0601872 |
| RY | 36 | burrow | poor | 35.05143464 | -118.0108721 |
| RY | 38 | burrow | poor | 35.0442195 | -118.0597151 |
| RY | 39 | burrow | poor | 35.05388082 | -118.0597205 |
| RY | 39 | burrow | poor | 35.04329682 | -118.0110277 |
| RY | 40 | burrow | poor | 35.04518509 | -118.0105288 |
| RY | 41 | burrow | poor | 35.05766273 | -118.0597795 |
| RY | 44 | burrow | poor | 35.06068826 | -118.0598546 |
| RY | 45 | burrow | poor | 35.06205082 | -118.0598278 |
| RY | 50 | burrow | poor | 35.06576837 | -118.0598492 |
| RY | 54 | burrow | poor | 35.07055343 | -118.0577196 |
| RY | 55 | burrow | poor | 35.07002235 | -118.0576981 |
| RY | 56 | burrow | poor | 35.06270528 | -118.0095578 |
| RY | 57 | burrow | poor | 35.06963075 | -118.0579073 |
| RY | 57 | burrow | poor | 35.06157339 | -118.0095149 |
| RY | 60 | burrow | poor | 35.04650474 | -118.0093647 |
| RY | 64 | burrow | poor | 35.06657839 | -118.0082596 |
| RY | 73 | burrow | poor | 35.0431037 | -118.0086888 |
| RY | 74 | burrow | poor | 35.04313589 | -118.003614 |
| RY | 85 | burrow | poor | 35.06178797 | -118.057108 |
| RY | 89 | burrow | poor | 35.07113815 | -118.055488 |
| RY | 90 | burrow | poor | 35.07106305 | -118.055606 |
| RY | 93 | burrow | poor | 35.06964684 | -118.0557133 |
| RY | 98 | burrow | poor | 35.06593466 | -118.0562122 |
| RY | 99 | burrow | poor | 35.06587565 | -118.0560619 |
| RY | 102 | burrow | poor | 35.04214347 | -118.0129374 |
| RY | 104 | burrow | poor | 35.06418586 | -118.0556435 |
| RY | 106 | burrow | poor | 35.04183233 | -118.0240203 |
| RY | 107 | burrow | poor | 35.06096721 | -118.0554343 |
| RY | 108 | burrow | poor | 35.06069363 | -118.0557991 |
| RY | 110 | burrow | poor | 35.04182697 | -118.014198 |
| RY | 111 | burrow | poor | 35.04166604 | -118.0131573 |
| RY | 119 | burrow | poor | 35.05345158 | -118.0553002 |
| RY | 121 | burrow | poor | 35.0629896 | -118.0552519 |
| RY | 127 | burrow | poor | 35.06876708 | -118.0550964 |
| RY | 135 | burrow | poor | 35.06018937 | -118.0534978 |
| RY | 140 | burrow | poor | 35.04017473 | -118.0051322 |
| RY | 143 | burrow | poor | 35.04447699 | -118.0536265 |
| RY | 143 | burrow | poor | 35.03979385 | -118.00304 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| RY | 144 | burrow | poor | 35.0434953 | -118.0532617 |
| RY | 145 | burrow | poor | 35.04369915 | -118.0532349 |
| RY | 145 | burrow | poor | 35.03974021 | -118.008265 |
| RY | 147 | burrow | poor | 35.04694999 | -118.0529399 |
| RY | 148 | burrow | poor | 35.05230368 | -118.0531491 |
| RY | 151 | burrow | poor | 35.05539895 | -118.0528487 |
| RY | 155 | burrow | poor | 35.05839229 | -118.0531598 |
| RY | 159 | burrow | poor | 35.06213129 | -118.0529291 |
| RY | 160 | burrow | poor | 35.06261409 | -118.0528433 |
| RY | 162 | burrow | poor | 35.06283403 | -118.0532295 |
| RY | 168 | burrow | poor | 35.0687778 | -118.0530847 |
| RY | 170 | burrow | poor | 35.06781757 | -118.0511213 |
| RY | 172 | burrow | poor | 35.06667495 | -118.0509979 |
| RY | 176 | burrow | poor | 35.06291986 | -118.051014 |
| RY | 180 | burrow | poor | 35.05841911 | -118.0511481 |
| RY | 181 | burrow | poor | 35.0522554 | -118.0510516 |
| RY | 189 | burrow | poor | 35.06338656 | -118.0498178 |
| RY | 190 | burrow | poor | 35.06336511 | -118.0499036 |
| RY | 191 | burrow | poor | 35.06357968 | -118.0498285 |
| RY | 193 | burrow | poor | 35.06405175 | -118.0496246 |
| RY | 196 | burrow | poor | 35.06997407 | -118.0498178 |
| RY | 198 | burrow | poor | 35.0624317 | -118.0485679 |
| RY | 200 | burrow | poor | 35.06136418 | -118.0488629 |
| RY | 207 | burrow | poor | 35.05396665 | -118.048879 |
| RY | 209 | burrow | poor | 35.04404784 | -118.0476774 |
| RY | 211 | burrow | poor | 35.0485915 | -118.0476398 |
| RY | 217 | burrow | poor | 35.05879462 | -118.0474306 |
| RY | 220 | burrow | poor | 35.06832719 | -118.0475969 |
| RY | 222 | burrow | poor | 35.07008136 | -118.0475969 |
| RY | 233 | burrow | poor | 35.04323781 | -118.0464221 |
| RY | 235 | burrow | poor | 35.04573226 | -118.0452258 |
| RY | 237 | burrow | poor | 35.04993797 | -118.0453546 |
| RY | 242 | burrow | poor | 35.05423487 | -118.0452526 |
| RY | 271 | burrow | poor | 35.04552305 | -118.0417175 |
| RY | 283 | burrow | poor | 35.06675542 | -118.0403227 |
| RY | 295 | burrow | poor | 35.05405784 | -118.0395181 |
| RY | 302 | burrow | poor | 35.04801214 | -118.0383755 |
| RY | 316 | burrow | poor | 35.06773711 | -118.0372811 |
| RY | 322 | burrow | poor | 35.04315198 | -118.0369753 |
| RY | 331 | burrow | poor | 35.06070972 | -118.0360956 |
| RY | 349 | burrow | poor | 35.05155802 | -118.0348081 |
| RY | 350 | burrow | poor | 35.04958392 | -118.0348832 |
| RY | 358 | burrow | poor | 35.04426778 | -118.0337245 |
| RY | 359 | burrow | poor | 35.04497052 | -118.0337728 |
| RY | 361 | burrow | poor | 35.04588247 | -118.0336333 |
| RY | 362 | burrow | poor | 35.04719675 | -118.0338211 |
| RY | 367 | burrow | poor | 35.05664349 | -118.0337835 |
| RY | 371 | burrow | poor | 35.06536067 | -118.0334831 |
| RY | 379 | burrow | poor | 35.06368697 | -118.0326194 |
| RY | 385 | burrow | poor | 35.04852176 | -118.0325657 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| RY | 387 | burrow | poor | 35.04314125 | -118.0313373 |
| RY | 398 | burrow | poor | 35.06649793 | -118.0312032 |
| RY | 399 | burrow | poor | 35.06665886 | -118.0313642 |
| RY | 404 | burrow | poor | 35.06820381 | -118.0302162 |
| RY | 413 | burrow | poor | 35.04542113 | -118.0291808 |
| RY | 414 | burrow | poor | 35.04550159 | -118.0291379 |
| RY | 417 | burrow | poor | 35.05323172 | -118.029272 |
| RY | 448 | burrow | poor | 35.04517973 | -118.026107 |
| RY | 456 | burrow | poor | 35.06244779 | -118.0241115 |
| RY | 457 | burrow | poor | 35.06078482 | -118.0239559 |
| RY | 458 | burrow | poor | 35.04709483 | -118.0242134 |
| RY | 468 | burrow | poor | 35.0552702 | -118.0217029 |
| RY | 471 | burrow | poor | 35.04470766 | -118.0218101 |
| RY | 472 | burrow | poor | 35.04373134 | -118.0218799 |
| RY | 473 | burrow | poor | 35.04407466 | -118.0206085 |
| RY | 480 | burrow | poor | 35.0611657 | -118.02063 |
| RY | 483 | burrow | poor | 35.06644428 | -118.0192781 |
| RY | 486 | burrow | poor | 35.05529702 | -118.0194552 |
| RY | 487 | burrow | poor | 35.05328 | -118.0194981 |
| RY | 488 | burrow | poor | 35.05019546 | -118.0194713 |
| RY | 490 | burrow | poor | 35.04477203 | -118.0182267 |
| RY | 494 | burrow | poor | 35.05977095 | -118.0181999 |
| MAH | 33 | burrow | poor | 35.06497443 | -118.0569256 |
| MAH | 34 | burrow | poor | 35.06493688 | -118.0569471 |
| MAH | 72 | burrow | poor | 35.06522656 | -118.0504025 |
| MAH | 131 | burrow | poor | 35.05830646 | -118.0367715 |
| MAH | 154 | burrow | poor | 35.04392446 | -118.0333651 |
| MAH | 164 | burrow | poor | 35.06670714 | -118.0320937 |
| MAH | 186 | burrow | poor | 35.04831791 | -118.0264665 |
| MAH | 188 | burrow | poor | 35.05600513 | -118.0268581 |
| MAH | 190 | burrow | poor | 35.06338656 | -118.0267883 |
| MAH | 191 | burrow | poor | 35.06339193 | -118.026783 |
| MAH | 192 | burrow | poor | 35.06612778 | -118.0267937 |
| MAH | 193 | burrow | poor | 35.06690562 | -118.02674 |
| MAH | 206 | burrow | poor | 35.07074655 | -118.0238701 |
| MAH | 207 | burrow | poor | 35.06591857 | -118.0237842 |
| MAH | 208 | burrow | poor | 35.04336656 | -118.0226255 |
| MAH | 210 | burrow | poor | 35.05576373 | -118.0213542 |
| MAH | 233 | burrow | poor | 35.0442195 | -118.0176688 |
| MAH | 234 | burrow | poor | 35.04421413 | -118.0177654 |
| MAH | 235 | burrow | poor | 35.04646719 | -118.017937 |
| MAH | 249 | burrow | poor | 35.06257645 | -118.0142195 |
| MAH | 267 | burrow | poor | 35.03955782 | -118.0281241 |
| MAH | 278 | burrow | poor | 35.04093111 | -118.0133612 |
| MAH | 306 | burrow | poor | 35.03848494 | -118.0024768 |
| EB | 321 | burrow | poor | 35.06923914 | -118.0250771 |
| EB | 322 | burrow | poor | 35.04504562 | -118.0251629 |
| EB | 338 | burrow | poor | 35.05601049 | -118.0221964 |
| EB | 359 | burrow | poor | 35.05459965 | -118.0170251 |
| EB | 408 | burrow | poor | 35.03587783 | -118.0221374 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| RY | 19 | burrow | juvenile | 35.06307006 | -118.0602194 |
| RY | 25 | burrow | juvenile | 35.05971194 | -118.0602677 |
| RY | 28 | burrow | juvenile | 35.05839766 | -118.060214 |
| RY | 29 | burrow | juvenile | 35.05819381 | -118.0601979 |
| RY | 31 | burrow | juvenile | 35.05411685 | -118.060214 |
| RY | 35 | burrow | juvenile | 35.0494659 | -118.0603964 |
| RY | 40 | burrow | juvenile | 35.05490006 | -118.0599082 |
| RY | 56 | burrow | juvenile | 35.06962538 | -118.0577303 |
| RY | 94 | burrow | juvenile | 35.0691855 | -118.0556543 |
| RY | 179 | burrow | juvenile | 35.05874098 | -118.0509497 |
| RY | 230 | burrow | juvenile | 35.05027593 | -118.0462397 |
| RY | 279 | burrow | juvenile | 35.05586029 | -118.0407358 |
| RY | 287 | burrow | juvenile | 35.06722749 | -118.039282 |
| RY | 401 | burrow | juvenile | 35.06942153 | -118.0313856 |
| MAH | 19 | burrow | juvenile | 35.04807652 | -118.0595756 |
| MAH | 88 | burrow | juvenile | 35.07014573 | -118.0482621 |
| MAH | 183 | burrow | juvenile | 35.05076409 | -118.0279685 |
| MAH | 212 | burrow | juvenile | 35.04906893 | -118.0215526 |
| MAH | 237 | burrow | juvenile | 35.07009209 | -118.0177332 |
| MAH | 288 | burrow | juvenile | 35.03802896 | -118.0179799 |
| MAH | 299 | burrow | juvenile | 35.03851176 | -118.0203886 |
| MAH | 301 | burrow | juvenile | 35.03861368 | -118.0168266 |
| MAH | 304 | burrow | juvenile | 35.03910184 | -117.9999823 |
| MAH | 305 | burrow | juvenile | 35.03866196 | -117.9990757 |
| MAH | 308 | burrow | juvenile | 35.03850103 | -118.0078412 |
| MAH | 310 | burrow | juvenile | 35.03847957 | -118.0231512 |
| EB | 82 | burrow | juvenile | 35.04535139 | -118.0540503 |
| EB | 121 | burrow | juvenile | 35.05846739 | -118.047967 |
| EB | 141 | burrow | juvenile | 35.06900311 | -118.045478 |
| EB | 201 | burrow | juvenile | 35.05725503 | -118.0363209 |
| EB | 234 | burrow | juvenile | 35.06620825 | -118.0328287 |
| EB | 455 | burrow | juvenile | 35.03869951 | -118.013683 |
| EB | 456 | burrow | juvenile | 35.03893555 | -118.0117733 |
| EB | 457 | burrow | juvenile | 35.03949345 | -117.9985071 |
| EB | 458 | burrow | juvenile | 35.03930569 | -117.9980887 |
| RY | 2 | burrow | mammal | 35.06304861 | -118.0171163 |
| RY | 6 | burrow | mammal | 35.04886508 | -118.0169071 |
| RY | 8 | burrow | mammal | 35.04564107 | -118.0167032 |
| RY | 11 | burrow | mammal | 35.04425169 | -118.0168963 |
| RY | 13 | burrow | mammal | 35.06591857 | -118.0603428 |
| RY | 14 | burrow | mammal | 35.06558598 | -118.0601657 |
| RY | 14 | burrow | mammal | 35.04411221 | -118.0158288 |
| RY | 15 | burrow | mammal | 35.0656128 | -118.0600048 |
| RY | 15 | burrow | mammal | 35.0450188 | -118.0157752 |
| RY | 17 | burrow | mammal | 35.06482423 | -118.0600048 |
| RY | 18 | burrow | mammal | 35.05420268 | -118.0159415 |
| RY | 22 | burrow | mammal | 35.06149292 | -118.0602247 |
| RY | 26 | burrow | mammal | 35.05936325 | -118.0603481 |
| RY | 26 | burrow | mammal | 35.05690098 | -118.0145199 |
| RY | 27 | burrow | mammal | 35.05151511 | -118.0145306 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| RY | 29 | burrow | mammal | 35.04609705 | -118.0146111 |
| RY | 30 | burrow | mammal | 35.05410612 | -118.0601657 |
| RY | 30 | burrow | mammal | 35.04406393 | -118.0146325 |
| RY | 34 | burrow | mammal | 35.05146683 | -118.0603428 |
| RY | 36 | burrow | mammal | 35.04855395 | -118.0603857 |
| RY | 43 | burrow | mammal | 35.05078018 | -118.0101479 |
| RY | 46 | burrow | mammal | 35.06239415 | -118.0598814 |
| RY | 47 | burrow | mammal | 35.06256581 | -118.0597473 |
| RY | 48 | burrow | mammal | 35.0625819 | -118.0596776 |
| RY | 50 | burrow | mammal | 35.06689489 | -118.0104537 |
| RY | 58 | burrow | mammal | 35.06942153 | -118.0579019 |
| RY | 61 | burrow | mammal | 35.06651938 | -118.057741 |
| RY | 61 | burrow | mammal | 35.04433215 | -118.0084313 |
| RY | 62 | burrow | mammal | 35.04553915 | -118.0081577 |
| RY | 65 | burrow | mammal | 35.06584347 | -118.0576713 |
| RY | 66 | burrow | mammal | 35.06513536 | -118.0577196 |
| RY | 67 | burrow | mammal | 35.0430125 | -118.0236233 |
| RY | 68 | burrow | mammal | 35.04296423 | -118.0158234 |
| RY | 69 | burrow | mammal | 35.06274283 | -118.0581702 |
| RY | 69 | burrow | mammal | 35.04310906 | -118.0137581 |
| RY | 70 | burrow | mammal | 35.06118715 | -118.0580307 |
| RY | 70 | burrow | mammal | 35.04301787 | -118.0127604 |
| RY | 71 | burrow | mammal | 35.04323781 | -118.0117626 |
| RY | 72 | burrow | mammal | 35.04300178 | -118.0107004 |
| RY | 75 | burrow | mammal | 35.05003453 | -118.0578537 |
| RY | 76 | burrow | mammal | 35.04867733 | -118.0579663 |
| RY | 77 | burrow | mammal | 35.04517973 | -118.0579019 |
| RY | 78 | burrow | mammal | 35.04285694 | -118.0093969 |
| RY | 79 | burrow | mammal | 35.04266918 | -118.0114139 |
| RY | 80 | burrow | mammal | 35.04267991 | -118.0165476 |
| RY | 81 | burrow | mammal | 35.04272819 | -118.0165101 |
| RY | 82 | burrow | mammal | 35.04266918 | -118.0166335 |
| RY | 88 | burrow | mammal | 35.04248679 | -118.0244441 |
| RY | 89 | burrow | mammal | 35.04223466 | -118.021161 |
| RY | 90 | burrow | mammal | 35.04229904 | -118.01592 |
| RY | 91 | burrow | mammal | 35.07101477 | -118.0555148 |
| RY | 91 | burrow | mammal | 35.04243851 | -118.0096115 |
| RY | 92 | burrow | mammal | 35.04250825 | -118.0060924 |
| RY | 94 | burrow | mammal | 35.0424707 | -117.9987968 |
| RY | 96 | burrow | mammal | 35.04242242 | -117.9998589 |
| RY | 97 | burrow | mammal | 35.06699145 | -118.0554933 |
| RY | 97 | burrow | mammal | 35.04224003 | -118.0004919 |
| RY | 98 | burrow | mammal | 35.04239023 | -118.0005349 |
| RY | 101 | burrow | mammal | 35.06489397 | -118.055445 |
| RY | 101 | burrow | mammal | 35.04202009 | -118.0102337 |
| RY | 103 | burrow | mammal | 35.06426096 | -118.0557401 |
| RY | 107 | burrow | mammal | 35.04164994 | -118.0245299 |
| RY | 108 | burrow | mammal | 35.04163385 | -118.0214239 |
| RY | 109 | burrow | mammal | 35.05683125 | -118.0559547 |
| RY | 110 | burrow | mammal | 35.05338192 | -118.0559225 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| RY | 111 | burrow | mammal | 35.05262554 | -118.0557347 |
| RY | 112 | burrow | mammal | 35.04824281 | -118.0554933 |
| RY | 112 | burrow | mammal | 35.04179478 | -118.0115534 |
| RY | 113 | burrow | mammal | 35.04800141 | -118.0555631 |
| RY | 113 | burrow | mammal | 35.04206837 | -118.0105288 |
| RY | 114 | burrow | mammal | 35.04210055 | -118.0042095 |
| RY | 115 | burrow | mammal | 35.04224003 | -118.0002613 |
| RY | 116 | burrow | mammal | 35.04232586 | -118.055665 |
| RY | 116 | burrow | mammal | 35.04194499 | -117.9987968 |
| RY | 117 | burrow | mammal | 35.04582346 | -118.0552895 |
| RY | 117 | burrow | mammal | 35.04178942 | -118.0012269 |
| RY | 118 | burrow | mammal | 35.0418216 | -118.0018813 |
| RY | 119 | burrow | mammal | 35.04168749 | -118.0088282 |
| RY | 120 | burrow | mammal | 35.05643964 | -118.0553324 |
| RY | 120 | burrow | mammal | 35.04141391 | -118.0155606 |
| RY | 121 | burrow | mammal | 35.04165531 | -118.0213166 |
| RY | 123 | burrow | mammal | 35.04115642 | -118.0181032 |
| RY | 124 | burrow | mammal | 35.04121542 | -118.0150241 |
| RY | 125 | burrow | mammal | 35.06667495 | -118.0554719 |
| RY | 126 | burrow | mammal | 35.04124761 | -118.0110438 |
| RY | 127 | burrow | mammal | 35.0411886 | -118.006484 |
| RY | 128 | burrow | mammal | 35.06896019 | -118.0551554 |
| RY | 128 | burrow | mammal | 35.04139781 | -118.0030186 |
| RY | 129 | burrow | mammal | 35.07007599 | -118.0549998 |
| RY | 129 | burrow | mammal | 35.04148901 | -118.0029274 |
| RY | 130 | burrow | mammal | 35.07143319 | -118.0549354 |
| RY | 130 | burrow | mammal | 35.04152656 | -118.0024231 |
| RY | 131 | burrow | mammal | 35.040797 | -118.0127657 |
| RY | 132 | burrow | mammal | 35.0679946 | -118.0533583 |
| RY | 132 | burrow | mammal | 35.04059315 | -118.0145574 |
| RY | 133 | burrow | mammal | 35.04045904 | -118.0170358 |
| RY | 134 | burrow | mammal | 35.04048586 | -118.0181731 |
| RY | 135 | burrow | mammal | 35.0403893 | -118.0226202 |
| RY | 136 | burrow | mammal | 35.04053951 | -118.0231244 |
| RY | 137 | burrow | mammal | 35.03991187 | -118.0171967 |
| RY | 138 | burrow | mammal | 35.0400889 | -118.0140049 |
| RY | 139 | burrow | mammal | 35.04981459 | -118.053369 |
| RY | 139 | burrow | mammal | 35.03983677 | -118.0124761 |
| RY | 141 | burrow | mammal | 35.04004598 | -118.0044294 |
| RY | 142 | burrow | mammal | 35.04497588 | -118.0535085 |
| RY | 142 | burrow | mammal | 35.04001916 | -118.0044616 |
| RY | 144 | burrow | mammal | 35.03976167 | -118.0048747 |
| RY | 146 | burrow | mammal | 35.03949881 | -118.0113603 |
| RY | 150 | burrow | mammal | 35.03891409 | -118.0226255 |
| RY | 166 | burrow | mammal | 35.06868125 | -118.053074 |
| RY | 171 | burrow | mammal | 35.06749034 | -118.0508585 |
| RY | 174 | burrow | mammal | 35.06367088 | -118.0509389 |
| RY | 175 | burrow | mammal | 35.06311834 | -118.0511052 |
| RY | 177 | burrow | mammal | 35.06104231 | -118.0509658 |
| RY | 178 | burrow | mammal | 35.06053269 | -118.0510248 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| RY | 184 | burrow | mammal | 35.04749179 | -118.0498339 |
| RY | 186 | burrow | mammal | 35.05806506 | -118.0500323 |
| RY | 202 | burrow | mammal | 35.0606078 | -118.0487342 |
| RY | 203 | burrow | mammal | 35.05989433 | -118.0487717 |
| RY | 213 | burrow | mammal | 35.05333901 | -118.0473072 |
| RY | 228 | burrow | mammal | 35.05601585 | -118.0463363 |
| RY | 232 | burrow | mammal | 35.04692853 | -118.0465723 |
| RY | 236 | burrow | mammal | 35.0458181 | -118.0453546 |
| RY | 238 | burrow | mammal | 35.05118788 | -118.0451883 |
| RY | 239 | burrow | mammal | 35.05157412 | -118.0449844 |
| RY | 240 | burrow | mammal | 35.05198181 | -118.0451132 |
| RY | 241 | burrow | mammal | 35.05355895 | -118.04514 |
| RY | 243 | burrow | mammal | 35.05460501 | -118.0453277 |
| RY | 245 | burrow | mammal | 35.06325245 | -118.0451132 |
| RY | 250 | burrow | mammal | 35.05528629 | -118.0440296 |
| RY | 254 | burrow | mammal | 35.04682661 | -118.0439974 |
| RY | 258 | burrow | mammal | 35.0462848 | -118.0428548 |
| RY | 259 | burrow | mammal | 35.04753471 | -118.0429942 |
| RY | 269 | burrow | mammal | 35.0471592 | -118.0416531 |
| RY | 272 | burrow | mammal | 35.04399419 | -118.0417175 |
| RY | 281 | burrow | mammal | 35.06318272 | -118.0406607 |
| RY | 285 | burrow | mammal | 35.06905675 | -118.0404569 |
| RY | 289 | burrow | mammal | 35.0636977 | -118.0393411 |
| RY | 291 | burrow | mammal | 35.06206692 | -118.0395771 |
| RY | 293 | burrow | mammal | 35.05864442 | -118.039561 |
| RY | 298 | burrow | mammal | 35.05015791 | -118.0396093 |
| RY | 299 | burrow | mammal | 35.0448525 | -118.0382466 |
| RY | 301 | burrow | mammal | 35.04713774 | -118.0381448 |
| RY | 307 | burrow | mammal | 35.05611778 | -118.0382628 |
| RY | 308 | burrow | mammal | 35.05656302 | -118.0383647 |
| RY | 309 | burrow | mammal | 35.05666495 | -118.0381072 |
| RY | 317 | burrow | mammal | 35.06213666 | -118.0371202 |
| RY | 341 | burrow | mammal | 35.06079555 | -118.0346794 |
| RY | 348 | burrow | mammal | 35.05164922 | -118.0348296 |
| RY | 374 | burrow | mammal | 35.07114888 | -118.0336601 |
| RY | 390 | burrow | mammal | 35.04686952 | -118.031391 |
| RY | 391 | burrow | mammal | 35.05072117 | -118.0314285 |
| RY | 408 | burrow | mammal | 35.06146074 | -118.0301625 |
| RY | 422 | burrow | mammal | 35.06725431 | -118.0283708 |
| RY | 423 | burrow | mammal | 35.06646574 | -118.0280329 |
| RY | 424 | burrow | mammal | 35.06514073 | -118.0280221 |
| RY | 432 | burrow | mammal | 35.04546941 | -118.027947 |
| RY | 434 | burrow | mammal | 35.04717529 | -118.0268849 |
| RY | 435 | burrow | mammal | 35.05557061 | -118.0269224 |
| RY | 436 | burrow | mammal | 35.06192208 | -118.0270887 |
| RY | 439 | burrow | mammal | 35.06534994 | -118.0258656 |
| RY | 447 | burrow | mammal | 35.04670859 | -118.0261553 |
| RY | 454 | burrow | mammal | 35.07196427 | -118.0255491 |
| RY | 466 | burrow | mammal | 35.06227077 | -118.0219818 |
| RY | 469 | burrow | mammal | 35.052014 | -118.021971 |

| GPS unit | ID | Resource | Condition | Latitude | Longitude |
|---|---|---|---|---|---|
| RY | 470 | burrow | mammal | 35.04847885 | -118.0217726 |
| RY | 476 | burrow | mammal | 35.05112887 | -118.0205656 |
| RY | 477 | burrow | mammal | 35.05450309 | -118.0207694 |
| RY | 485 | burrow | mammal | 35.05719603 | -118.0192245 |
| RY | 492 | burrow | mammal | 35.05499125 | -118.0183876 |
| RY | 493 | burrow | mammal | 35.05806506 | -118.0182535 |
| MAH | 6 | burrow | mammal | 35.06592393 | -118.0594737 |
| MAH | 7 | burrow | mammal | 35.06540359 | -118.0594523 |
| MAH | 8 | burrow | mammal | 35.06541968 | -118.0593021 |
| MAH | 9 | burrow | mammal | 35.06534458 | -118.0596883 |
| MAH | 12 | burrow | mammal | 35.06447018 | -118.0595971 |
| MAH | 24 | burrow | mammal | 35.05270064 | -118.0591465 |
| MAH | 32 | burrow | mammal | 35.06622971 | -118.0569792 |
| MAH | 35 | burrow | mammal | 35.06491542 | -118.0569363 |
| MAH | 38 | burrow | mammal | 35.05094648 | -118.0571295 |
| MAH | 40 | burrow | mammal | 35.05138636 | -118.0569524 |
| MAH | 42 | burrow | mammal | 35.05621434 | -118.0569095 |
| MAH | 43 | burrow | mammal | 35.05829573 | -118.0568291 |
| MAH | 45 | burrow | mammal | 35.06358505 | -118.0546779 |
| MAH | 47 | burrow | mammal | 35.05345158 | -118.0548818 |
| MAH | 52 | burrow | mammal | 35.06061316 | -118.0544634 |
| MAH | 63 | burrow | mammal | 35.04480958 | -118.0527199 |
| MAH | 73 | burrow | mammal | 35.0644058 | -118.0507941 |
| MAH | 76 | burrow | mammal | 35.06125153 | -118.0506332 |
| MAH | 87 | burrow | mammal | 35.07047296 | -118.0494315 |
| MAH | 95 | burrow | mammal | 35.04493833 | -118.0473072 |
| MAH | 103 | burrow | mammal | 35.05006135 | -118.0458642 |
| MAH | 129 | burrow | mammal | 35.06497443 | -118.036793 |
| MAH | 133 | burrow | mammal | 35.04704118 | -118.0368573 |
| MAH | 136 | burrow | mammal | 35.04308761 | -118.0355913 |
| MAH | 139 | burrow | mammal | 35.05613924 | -118.0354733 |
| MAH | 147 | burrow | mammal | 35.06363869 | -118.0344433 |
| MAH | 153 | burrow | mammal | 35.04483104 | -118.034218 |
| MAH | 155 | burrow | mammal | 35.04482023 | -118.0334456 |
| MAH | 156 | burrow | mammal | 35.04727185 | -118.0330861 |
| MAH | 161 | burrow | mammal | 35.06400347 | -118.0331934 |
| MAH | 163 | burrow | mammal | 35.06767265 | -118.0320454 |
| MAH | 172 | burrow | mammal | 35.06234587 | -118.0298621 |
| MAH | 174 | burrow | mammal | 35.04777611 | -118.0300392 |
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*APPENDIX C*
*RESULTS OF DIRECTED SURVEYS FOR DESERT TORTOISE*

September 6, 2002
Job Number: 1254-001
**Desert Tortoise Survey Results**

**MEMORANDUM FOR THE RECORD**
2.6 1254-001.M06

TO: Distribution List

FROM: Sapphos Environmental, Inc.
(Mr. David Bise)

SUBJECT: Results of Directed Surveys for Desert Tortoise

ATTACHMENTS:
1. Regional Vicinity Map
2. Local Vicinity Map
3. Topographic Map
4. Desert Tortoise Survey Area Map
5. Plant Communities Map
6. Results of Desert Tortoise Surveys Map
7. Desert Tortoise Survey Forms

This Memorandum for the Record (MFR) transmits the results of directed surveys for desert tortoise (*Gopherus agasizii*), a federally and state-listed threatened species, in support of an Environmental Impact Report (EIR) under preparation for the Redevelopment Area Expansion, Detachment, Annexation, and Automotive Test Course, Project, California City, Kern County, California (EIR).

At the direction of Wateridge Capital Group, LLC, (Mr. David Nybo), a habitat assessment and subsequent directed surveys were undertaken to assess the presence and level of utilization of the Proposed Automotive Test Course Project Site (project study area) by desert tortoise. Directed surveys for desert tortoise were undertaken by Sapphos Environmental, Inc., (Dr. Brad Blood, Mr. Blair Baker, Ms. Melisa Helton, Ms. Melissa Ross, Ms. Carol Watson, Mr. David Bise, Mr. Michael McGovern, and Mr. William Vanherweg) between March 18 and April 4, 2002. Additional surveys for Mohave ground squirrel (*Spermophilus mohavensis*), sensitive wildlife species, and locally important plants species were also performed concurrently with desert tortoise surveys. The results of those surveys are reported separately.

Only the project study area is proposed for development under this Draft EIR. There are seven project components within the project study area: oval test track, winding track, vehicle dynamic area (VDA), bridge, entry road, hill-up road, and building and parking lot. All other project elements included in the draft EIR are analyzed at a programmatic level, which would entail surveys for biological resources prior to future development.

Listed species are those species provided special legal protection under the Federal Endangered Species Act, the State Endangered Species Act, or both.

## PROJECT LOCATION

The proposed project site is located in the southeastern portion of Kern County, *(*Attachment 1*, Regional Vicinity Map)* approximately 60 miles southeast of downtown Bakersfield. The proposed project study area is composed of approximately seven sections (4,300 acres) located approximately 0.5 mile north of State Highway 58 *(*Attachment 2*, Local Vicinity Map)*. This location is depicted on the Sanborn USGS 7.5-minute series topographic quadrangle (Township 11 North, Range 11 West, Sections 9, 10, 11, 14, 15, 16 and portions of Sections 22, 23 and 24, Attachment 3*, Topographic Map*). The proposed project study area is accessible from State Highway 58. Entrance to the site can be gained from an unsigned street that exits north off State Highway 58 approximately 9 miles east of the town of Mojave adjacent to an AT&T radio tower. Several existing dirt roads provide access to the interior and exterior boundaries of the site.

## METHODS

Prior to field surveys, Sapphos Environmental, Inc. reviewed previously prepared reports concerning the project study area[1,2] and reviewed the most recent version of the California Natural Diversity Data Base (CNDDB)[3] to identify records of occurrence of desert tortoise and of other listed or sensitive species that had been reported within the vicinity of the proposed project study area. The CNDDB was searched for the USGS 7.5-minute series topographic quadrangles for the de-annexation and redevelopment areas (California City North, Galileo Hill, Johannesburg , Mojave Northeast, North Edwards, Sanborn and Saltdale Southeast), for the annexation area (California City South), and for the Automotive Test Course (Sanborn). All adjacent 7.5 minute topographic quadrangles were also reviewed (Bissell, Boron, Boron Northwest, Cache Peak, Cantil, Cinco, Cross Mountain, Edwards, Leuhman Ridge, Mojave, Rogers Lake North, and Soledad Mountain).

The above reviews resulted in the identification of numerous recorded occurrences of desert tortoise within the vicinity of the proposed project study area, all presumed extant. Subsequently, a habitat assessment of the proposed project study area was performed by Sapphos Environmental, Inc. (Dr. Brad Blood and Mr. William Vanherweg) in late January 2002. The purpose of the assessment was to determine the presence of potentially suitable habitat on site, and to determine the location of the survey area.

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[1]AMEC Earth & Environmental, Inc., November 2001. *Baseline Biological Resources Review for a Project Near California City, California.* Prepared for Wateridge Capital Group, LLC., 221 Town Center West, Suite 106, Santa Maria, California 93458; Prepared by AMEC Earth & Environmental, Inc., 1 East Anapamu Street, Santa Barbara, CA 93101.

[2]U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office, 10 September 1998. (Memorandum. Subject: Biological Opinion for Western Mojave Land Tenure Adjustment Project (6844440 (CA-063.50)) (1-8-98-F-60R).) Prepared for District Manager, California Desert District, Bureau of Land Management, Riverside, California. Prepared by U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office, 2493 Portola Road, Suite B, Ventura, CA 93003.

[3]California Department of Fish and Game (CDFG), 2002. *California Natural Diversity Data Base State and Federally Listed Endangered and Threatened Animals of California List.* Sacramento, CA.

The habitat assessment determined that the proposed project study area supported potentially suitable habitat for desert tortoise and consequently a survey area was defined (Attachment 4, *Desert Tortoise Survey Area Map).*

Directed surveys for desert tortoise were performed using a modification of the published United States Fish and Wildlife Service (USFWS) protocol.[4] Areas of potential impact for the proposed project study area were walked at 100-foot transects across the proposed oval track area and extending each transect out 0.25 mile on all sides or up to the proposed project boundary. For the remaining project components, surveys were conducted at 30-foot transect intervals. All desert tortoise sign (live tortoises, shells, scutes, limbs, scat, burrows, pallets, tracks, egg shell fragments, courtship rings, drinking sites, and mineral licks) were flagged and mapped using handheld global positioning systems (GPS), Scout model. Any burrows or desert tortoises observed were flagged.

## SPECIES CONSIDERED

### *Desert Tortoise*

### Distribution

The desert tortoise (*Gopherus agassizii*) is federally and state-listed as threatened under the federal and state Endangered Species Acts. It inhabits the Mojave, Colorado, and Sonoran Deserts in the southwestern United States and adjacent Mexico. The Mojave population occupies those portions of the Mojave and Colorado Deserts north and west of the Colorado River in southwestern Utah, northwestern Arizona, southern Nevada, and California. The desert tortoise is the only naturally occurring tortoise in the Mojave Desert. A query of the CNDDB returned no records for desert tortoise in the Sanford quadrangle, in which the proposed project occurs; however, the CNDDB lists 29 occurrences of this species within the State of California, all of which are presumed extant.[5] CNDDB occurrences of this taxon are distributed among the following counties: Inyo, Kern, San Bernardino, Los Angeles, Riverside, and Imperial. The three nearest known occurrences that site desert tortoise densities to the proposed project include the south end of Lucerne Valley north of the Lava Mountains in 1986 (Spangler Hills East and West, Black Hills, West of Black Hills, Klinker Mountian, and Christmas Canyon quadrangles), which is approximately 48 miles northeast of the proposed project; and in Fremont Valley south to the vicinity of Adelanto and Highway 15 east to Calico Mountains, in 1987 (74 quadrangles, centered on the Barstow area), which is approximately 70 miles southeast of the proposed project.

### Description

The desert tortoise is distinguished from other species of tortoise by a combination of characteristics. Desert tortoise adults can measure up to 15 inches in shell length and have a wedge-shaped head with a high-domed carapace. Desert tortoises weigh approximately 8 to 15 pounds. The desert tortoise

[4]USFWS, 1998.
[5]CDFG, 2002.

possesses an interhumeral seam longer than the integular seam, a single triangular axillary scale, and distance from base of first claw to fourth claw is equal to the forefoot and hindfoot.

**Habitat Associations**

The desert tortoise can be found primarily within creosote bush scrub vegetation, but also in succulent scrub, cheesebush scrub, blackbush scrub, hopsage scrub, shadscale scrub, microphyll woodland, and Mojave saltbush-allscale scrub. Desert tortoises survive and reproduce in these vegetation types where their basic habitat requirements are met. These environmental extremes are suitable substrates for burrowing and nesting and adequate areas for movement and dispersal. Desert tortoises occur most commonly on gently sloping terrain with soils ranging from sand to sandy-gravel and with scattered shrubs, and where there is abundant inter-shrub space for growth and herbaceous plants.

**Space Use**

Desert tortoises spend much of their lives in burrows. During late winter and early spring, they typically emerge to mate and feed. They remain active during the spring and sometimes emerge from their burrows after summer storms.

**Reproduction**

Desert tortoises experience delayed sexual maturity and long life, otherwise known as K-strategists. They reach sexual maturity at approximately 7 to 8 years of life. Mating typically occurs from August through October. They lay approximately 4 to 8 eggs and incubations last for 90 to 120 days. Birth intervals range from 2 to 3 times per year.[6]

**Food Habits**

During periods of activity, desert tortoises eat a variety of herbaceous vegetation primarily consisting of grasses and flowers of annual plants. In periods of harsh or unusually dry conditions, desert tortoises can retreat to burrows where they lower their metabolism and loss of water and consume very little food.

**RESULTS**

**Plant Communities Providing Potentially Suitable Habitat**

The proposed project study area supports the four plant communities listed below (Attachment 5, *Plant Communities Map*):

- 2013.84 acres of Mojave Creosote Bush Scrub (Element Code 34100)

[6]B. Burge, and A. R. Royo, "The Desert Tortoise." 9 April 2002. Available at: http://www.desertusa.com/june96/du_tort.html.

- 341.98 acres of Joshua Tree Woodland (Element Code 73000)
- 2061.05 acres of Desert Saltbush Scrub (Element Code 36110)
- 63.05 acres of Development

**Mojave Creosote Bush Scrub** (Element Code 34100), a state-designated sensitive plant community, consists of shrubs usually 0.5 to 3 meters in height and widely spaced with bare ground between plants. It occurs in areas of well-drained secondary soils on slopes, fans, and valleys. Mojave Creosote Scrub corresponds to the Creosote Bush Series as described by Sawyer and Keeler-Wolf, referenced above. Mojave Creosote Bush Scrub is the dominant plant community in the survey area. Plant species identified on site that are representative of the Mojave Creosote Bush Scrub community include creosote, burro-weed, burrobrush, golden cholla (*Opuntia echinocarpa*), hopsage, Mormon tea, saltbush, horsebrush (*Tetradymia*), and boxthorn (*Lycium cooperi*).

**Desert Saltbush Scrub** (Element Code 36110) is a community of usually low, grayish, and microphyllous shrubs 0.3 to 1 meter in height, with some succulent species. Plants are widely spaced with bare ground between and stands are typically dominated by a single species of saltbush *(Atriplex* sp.)[7]. Desert Saltbush Scrub corresponds to the Allscale Series and in part to the Fourwing Saltbush Series and the mixed Saltbush Series as described by Sawyer and Keeler-Wolf. Plants species identified on site that are representative of the Desert Saltbush Scrub plant community include saltbush (*Atriplex polycarpa*, *A. canescens*), hopsage, burrobush, California buckwheat (*Erigonum fasciculatum*), Mormon tea, and saltgrass (*Distichlis spicata*).

**Joshua Tree Woodland** (Element Code 73000) is a community of open woodland with numerous shrub species between 1 and 4 meters in height. During most of the year, little or no understory is present. Stands are dominated by numerous species including sclerophyllous evergreen trees and shrubs *(Yucca* sp.*)*, microphyllous evergreen shrubs *(Juniperus* sp.*)*, semideciduous shrubs *(Eriogonum* sp.*, Tetradymia* sp.*)*, semisucculents *(Lycium* sp.*)*, and succulents *(Opuntia sp.)*. Joshua Tree Woodland corresponds to the Joshua Tree series as described by Sawyer and Keeler-Wolf. Joshua Tree Woodland occurs scattered over the proposed Annexation study area. Plant species identified on site that are representative of the Joshua Tree Woodland plant community include: Joshua tree, Mormon tea, California buckwheat, creosote, spiny boxthorn, rabbit bush (*Chrysothamnus nauseous*), and horsebrush.

**Developed** is not a plant community as defined by Holland. The developed areas within the proposed Automotive Test Course site consists of unimproved dirt and gravel roadways. These roads appear to have occasional use and allow access to the perimeter and interior of the site.

**Desert Tortoise**

Two live desert tortoises were observed during directed surveys. Additionally, a third observation of a live desert tortoise was made on April 4, 2002, during the performance of Mohave ground squirrel

[7]R.F. Holland, 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Non-Game Heritage Program. Sacramento, CA: California Department of Fish and Game.

surveys (results of Mohave ground squirrel surveys are reported separately). All observed tortoises seemed healthy. Two Class 1, eight Class 2, 10 Class 3, 86 Class 4, and 84 Class 5 burrows were observed and mapped during directed surveys (Table A-1, *Summary of Desert Tortoise Observations*; Attachment 6, *Results of Desert Tortoise Surveys Map)*. Eleven carcasses of dead tortoises were also observed during directed surveys. The age of remains could not be determined, and all remains were left where found. Desert tortoise scat was also observed.

**TABLE A-1**
**SUMMARY OF DESERT TORTOISE OBSERVATIONS**

| OBSERVATION TYPE | TOTAL NUMBER OF OBSERVATIONS | OBSERVATION CLASS |
|---|---|---|
| Individuals | 2 | N/A |
| Burrows | 190 | Class 1[a] - 2<br>Class 2[b] - 8<br>Class 3[c] - 10<br>Class 4[d] - 86<br>Class 5[e] - 84<br>**Total - 190** |
| Carcasses/Scutes | 11 | Class 1[f] - 1<br>Class 4[g] - 4<br>Class 5[h] - 6 |
| Scat | 3 (some burrow observations have scat as well) | Class 3[i] - 3 |

a. currently active, with tortoise or recent tortoise sign
b. good condition, definitely tortoise; evidence of recent use
c. deteriorated condition; definitely tortoise
d. deteriorated condition; possibly tortoise
e. good condition; possibly tortoise
f. fresh or putrid
g. shell bone falling apart; growth rings on scutes are peeling
h. disarticulated and scattered
i. dried; no glaze or odor; dark brown

**Habitat**

Portions of the proposed project study area have been heavily impacted by past grazing by domestic sheep, other portions have sustained lesser or no impacts from grazing. However, signs of grazing are

evident to a greater or lesser extent throughout the site, and include scat and evidence of over-grazed vegetation. The site also demonstrates signs of disturbance by humans. Signs include approximately 60 acres of existing unimproved roads, scattered shot gun shells and bullet casings, trash, abandoned camp sites, and abandoned automobiles. Additionally, signs of historical military uses are found throughout the site, including ammunition casings, some unexploded ordinance, and at least one air craft crash site.

The study area is currently classified as Category III, desert habitat by the BLM.[8] Category III desert tortoise habitat is defined as habitat areas that are not essential to maintenance of viable populations, contain low to medium densities and are not contiguous with medium or high density areas, and in which the population is stable or decreasing.[9]

Should you have any questions concerning the information contained in this MFR, please contact Mr. David Bise or Dr. Brad Blood at (626)683-3547.

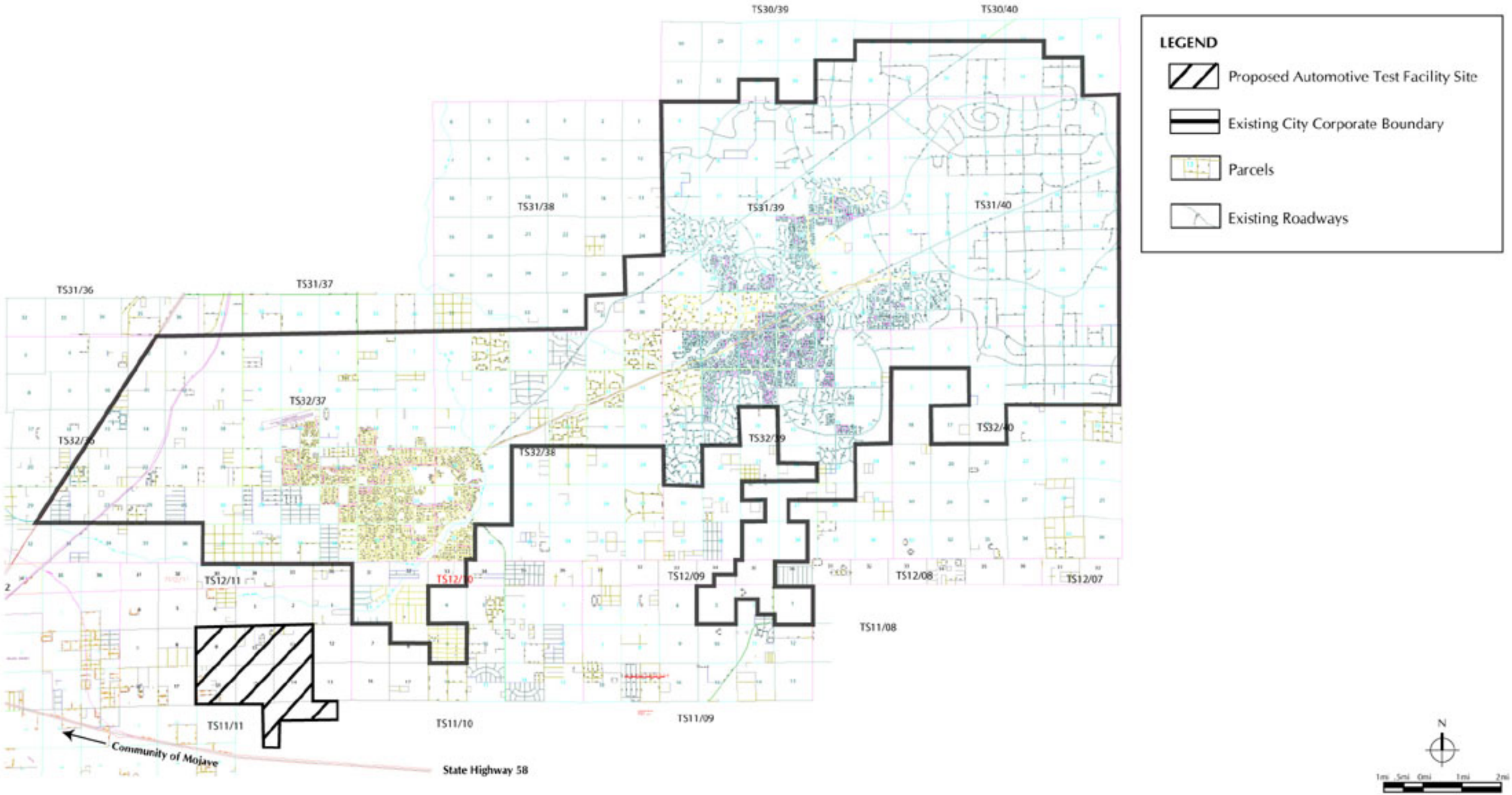
[8]Bureau of Land Management, 1989. *Map of Categories of Habitat for the Desert Tortoise*. Bureau of Land Management, Riverside, CA.
[9]Bureau of Land Management, 1992. *California Statewide Desert Tortoise Management Policy*. Bureau of Land Management, Barstow, CA and California Department of Fish and Game, Region 4 and 5.


**LEGEND**

Project Location

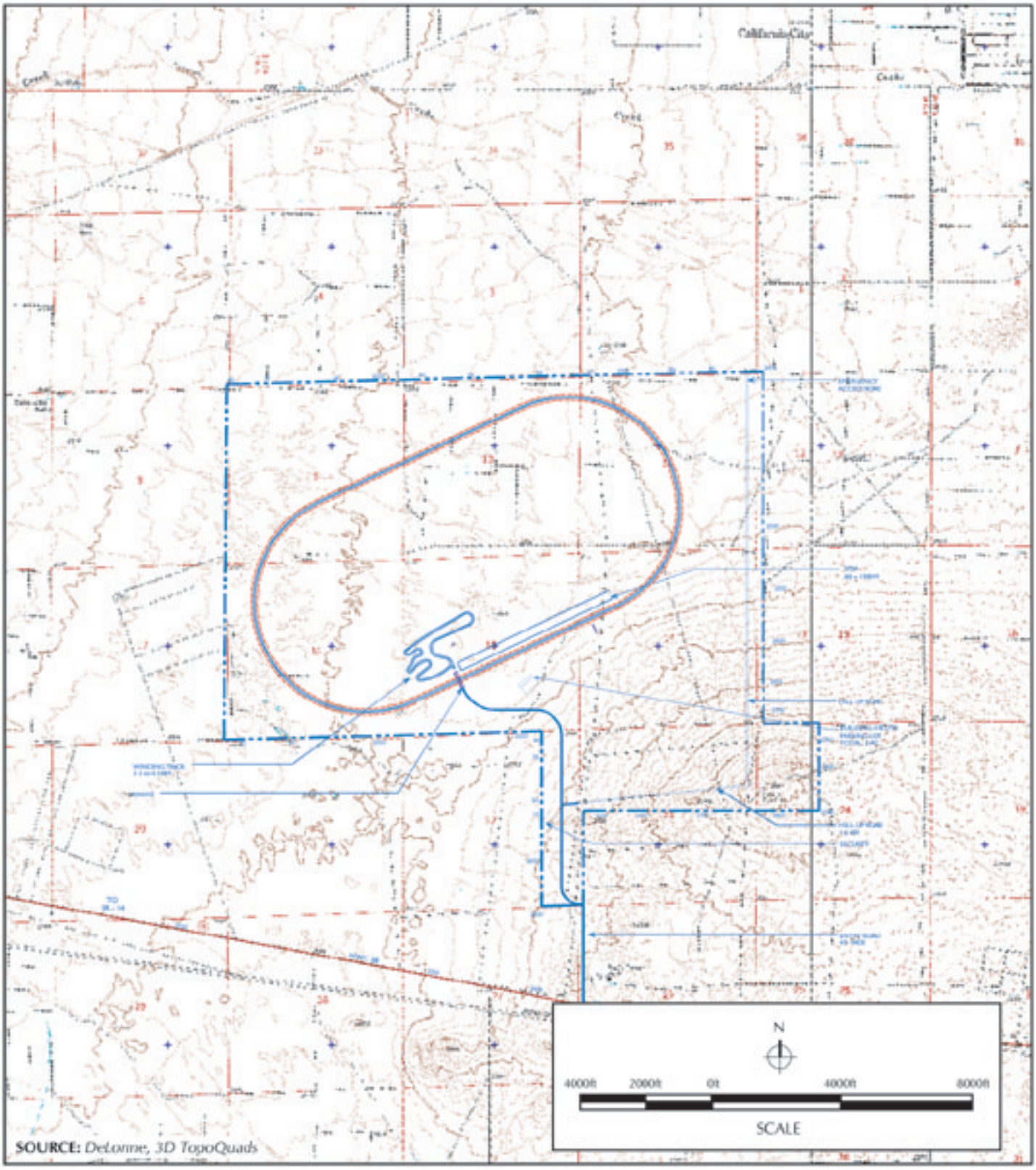
County Boundary

**ATTACHMENT 1**
Regional Vicinity Map




**SOURCE:** *Rosenow Spevacek Group, Inc.*

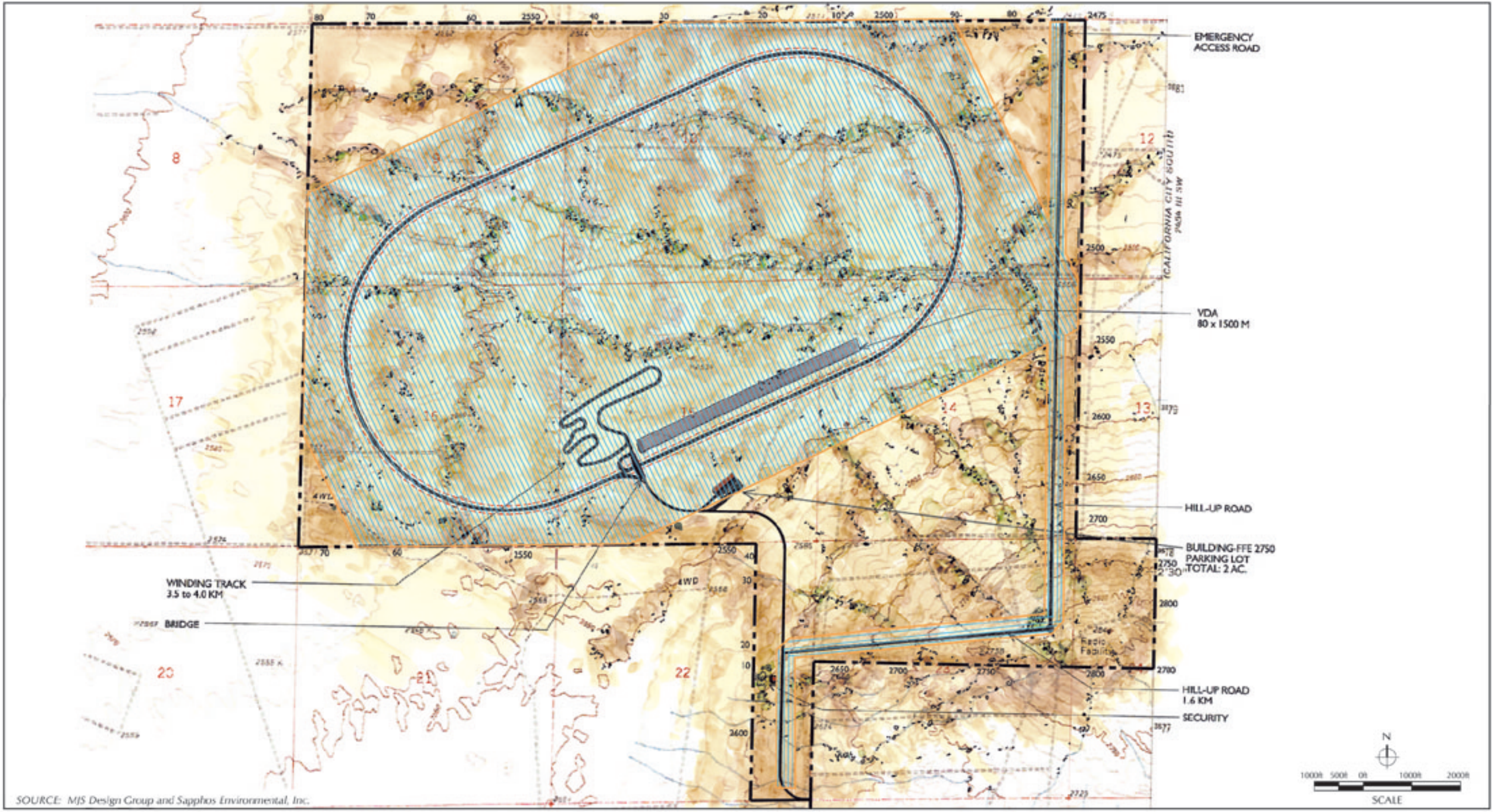
**ATTACHMENT 2**
Local Vicinity Map




**LEGEND**

Proposed Project Boundary

**ATTACHMENT 3**
Topographic Map



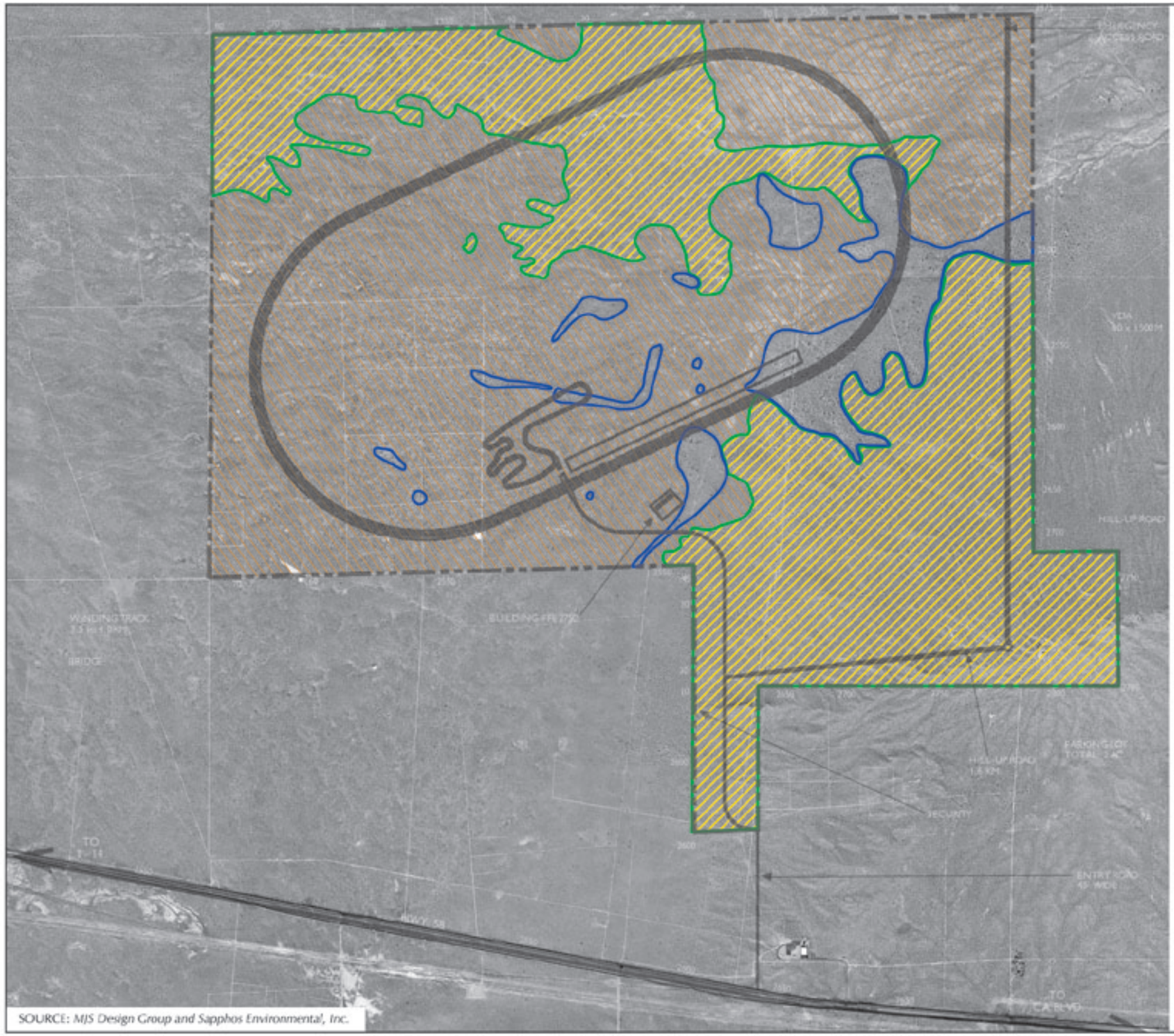

SOURCE: MJS Design Group and Sapphos Environmental, Inc.

**LEGEND**

Transect Lines (increments = 100')

Survey Area Boundary

**ATTACHMENT 4**
Desert Tortoise Survey Area




**LEGEND**

- Mohave Creosote Bush Scrub
- Joshua Tree Woodland
- Desert Salt Bush Scrub
- Project Boundary

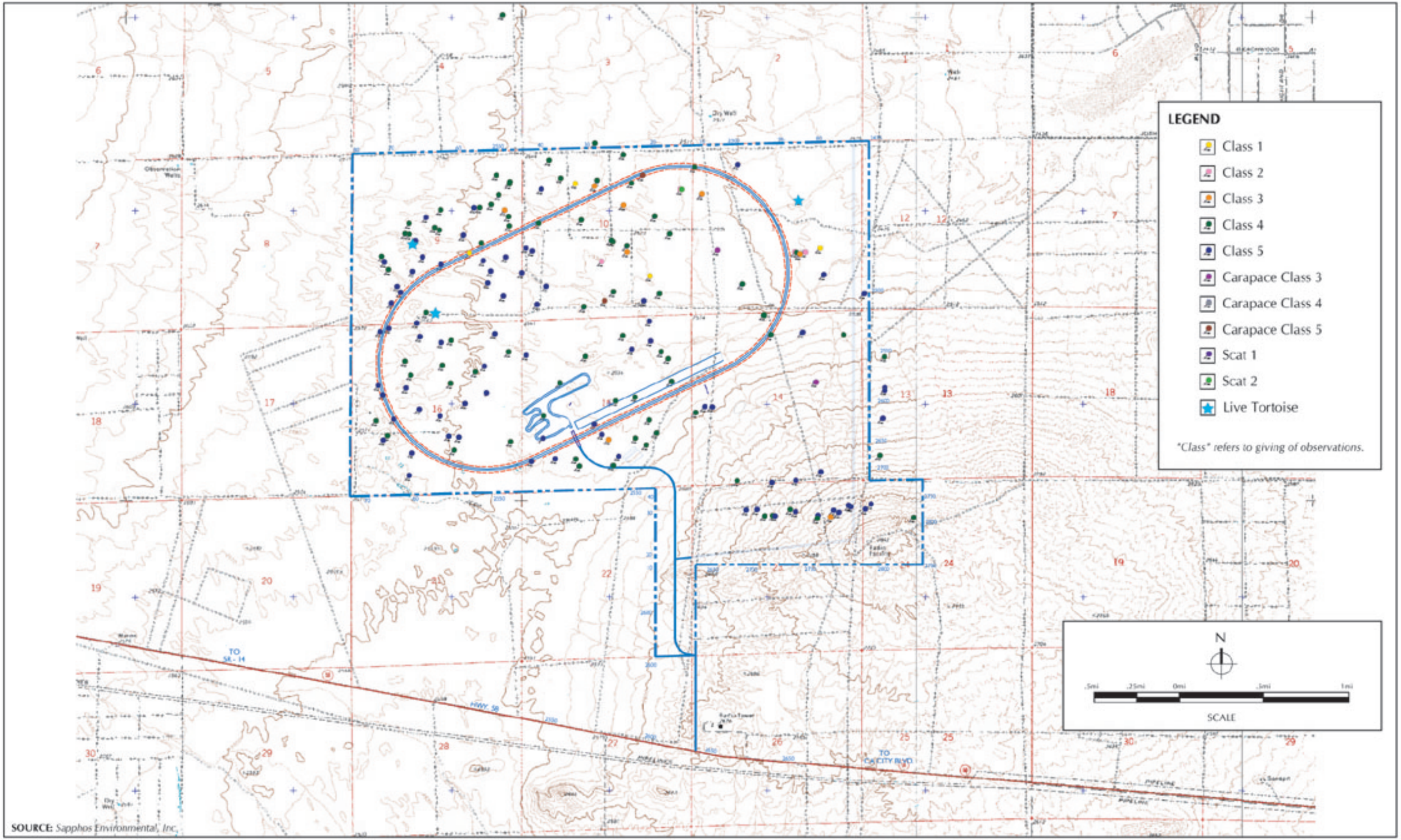
N

.5mi .25mi 0mi .5mi 1mi

SCALE

SOURCE: *MJS Design Group and Sapphos Environmental, Inc.*

**ATTACHMENT 5**
Plant Community Map




**SOURCE:** *Sapphos Environmental, Inc.*

**ATTACHMENT 6**
Results of Desert Tortoise Survey Map

ATTACHMENT 7
*DESERT TORTOISE SURVEY FORMS*

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Address
Project Name Auto Track
Type of Project

Quad Name Sanborn
Scale 1:24000
Site Name
T 11 N R 11 W Sec 24
¼ Sec NW ¼¼ Sec
UTM Zone
Northing
Easting
Parcel No.

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |✓| Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm ____ °C Surface ____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) bajada
% Slope: high ____ low 5 Aspect ____ Elevation 2800 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, mormon tea
dominant annuals no annuals in bloom during surveys
Adjacent Land Use: up to 1 mi Open desert, AT&T Radio Tower adjacent to s. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 2 Burrows<br>2 Inactive | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | Neotoma Middens :w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| 3 sets | no | no | yes | no | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad, Blood
Project Name Auto Track
Parcel No.

INFORMATION ON SHELTER SITES
(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 216 | 5 | 35°02.458N 118°00.369W | 8 | 24 | |
| 222 | 4 | 35°02.387N 118°00.102W | 6 | 12 | |

Condition of Shelter Site[1]/Comments

216 - good condition, possible tortoise, no definite sign of presence
222 - Heteriorated condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Anto Track
Type of Project _____

Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11N R 11W Sec 23
¼ Sec NE ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site ✓ | Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) bajada
% Slope: high _____ low 5 Aspect _____ Elevation 2710 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, mormon tea
dominant annuals no annuals in bloom during surveys
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 11 Burrows<br>11 Inactive | A= J= Unk= 2<br>M= 1 F= Unk= 1 | |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | :w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Auto Track
Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 208 | 4 | 35°02.398 N 118°00.984 W | 10 | 12 | |
| 211 | 5 | 35°02.397 N 118°00.706 W | 9 | 26 | |
| 213 | 5 | 35°02.427 N 118°00.667 W | 7 | 27 | |
| 214 | 5 | 35°02.413 N 118°00.577 W | 8 | 24 | |
| 215 | 5 | 35°02.431 N 118°00.407 W | 12 | 24 | |

Condition of Shelter Site[1]/Comments

208 - deteriorated condition, possibly tortoise, no definite sign of presence
211 - good condition, possibly tortoise, no definite sign of presence
213 - same as above
214 - same as above
215 - same as above

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

210 - class 4; shell bone is falling apart, growth rings on scutes peeling; scattered
212 - class 3; male, scutes peeling off bone

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name AutoTrack
_____
Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|---|
| 217 | 5 | 35°02.444 N | 118°00.497 W | 7 | 24 | |
| 218 | 5 | 35°02.449 N | 118°00.508 W | 6 | 24 | |
| 219 | 5 | 35°02.418 N | 118°00.846 W | 5 | 12 | |
| 220 | 5 | 35°02.397 N | 118°00.977 W | 12 | 24 | |
| 225 | 5 | 35°02.581 N | 118°00.845 W | 6 | 12 | |

Condition of Shelter Site[1]/Comments

217 - good condition, possible tortoise, no definite sign of presence
218 - same as above
219 - same as above
220 - same as above
225 - same as above

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordnance from early air flights over property

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Auto Track
Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 226 | 5 | 35°02.570 N 118°00.996 W | 9 | 24 | |

Condition of Shelter Site[1]/Comments

226 - good condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Track
Type of Project _____

Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11N R 11W Sec 23
¼ Sec NW ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |V| Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) bajada
% Slope: high _____ low 5 Aspect _____ Elevation 2650 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, mormon tea
dominant annuals no annuals in bloom during surveys
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to s. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 4 Burrows<br>4 Inactive | | A= J= Unk=<br>M= F= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign : w/o sign |
|---|---|---|---|---|---|
| | | | | | : |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordnance |

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Auto Track

Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 206 | 5 | 35°02.427 N 118°01.159 W | 9 | 36 | |
| 207 (&2) | 5 | 35°02.428 N 118°01.092 W | 7 | 24 | 2 burrows |
| 221 | 4 | 35°02.396 N 118°01.044 W | 6 | 10 | |

Condition of Shelter Site[1]/Comments

206 - good condition possible tortoise, no definite sign of presence
207 - same as above
221 - deteriorated condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

209 - shell bone is falling apart, growth rings on scutes are peeling, Male

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

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If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. ____
State California
County Kern
City ____
Recorder Brad Blood
Address ____
Project Name Auto Track
Type of Project ____

Quad Name Sanborn
Scale 1:24000
Site Name ____
T 11N R 11W Sec 13
¼ Sec SW ¼¼ Sec ____
UTM Zone ____
Northing ____
Easting ____
Parcel No. ____

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |V| Zone of Influence | | ____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time ____
Weather: Airtemp at: 5 cm ____ °C Surface ____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) bajada
% Slope: high ____ low 4 Aspect ____ Elevation 2650 ft
Soils Sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, mormon tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 2 Burrows<br>2 Inactive | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | :w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| 1 set | yes | no | yes | no | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Auto Track

Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 203 | S | 35°02.902N 118°00.297W | 9 | 24 | |
| 204 | S | 35°02.710N 118°00.314W | 8 | 12 | |

Condition of Shelter Site[1]/Comments

203 - good condition, possible tortoise, no definite sign of presence
204 - deteriorated condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from earlier air flights common

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

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M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Address
Project Name Auto Tracic
Type of Project

Quad Name Sanborn
Scale 1:24000
Site Name
T 11N R 11W Sec 13
¼ Sec NW ¼¼ Sec
UTM Zone
Northing
Easting
Parcel No.

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |✓| Zone of Influence | | _____ft from Project Site
Transect Length: 10560ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm____°C Surface____°C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) bajada
% Slope: high____ low 4 Aspect____ Elevation 2530 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, morman tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi open desert, ATFT Radio Tower adjacent to S. aspect of project site
Soils Sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 3 Burrows<br>3 Inactive | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign : w/o sign |
|---|---|---|---|---|---|
| | | | | | : |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | no | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name AutoTrack
Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 201 | 5 | 35°03.064 N 118°00.276 W | 8 | 13 | |
| 202 | 5 | 35°03.051 N 118°00.280 W | 6 | 24 | |
| 200 | 4 | 35°03.223 N 118°00.281 W | 8 | 12 | |

Condition of Shelter Site[1]/Comments

201 - good condition, possible tortoise, no definite sign of presence
202 - same as above
200 - deteriorated condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing roads, trash, unexploded ordinance left over by early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Track
Type of Project _____

Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11N R 11W Sec 14
¼ Sec SE ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

## DESERT TORTOISE HANDBOOK 1992:
## FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site [✓] Zone of Influence [ ] _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) bajada
% Slope: high _____ low 4 Aspect _____ Elevation 2650 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, ramon tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to s. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | TOTAL NUMBER OF: Live Tortoises Adult/Juv. | Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | | A= J= Unk= M= F= Unk= | |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | Neotoma Middens w/o sign |
|---|---|---|---|---|---|---|
| | | | | | | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name AntoTrack

Parcel No.

==========

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| none | | | | | |

Condition of Shelter Site[1]/Comments

==========

CONDITION OF SCATS[2] - COMMENTS (See below)

none

==========

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

224 - Shells remains were broken and scattered, bleached sex and age undetermined

==========

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Track
Type of Project _____

Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11 N R 11 W Sec 14
¼ Sec SW ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

## DESERT TORTOISE HANDBOOK 1992:
## FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |V| Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) bajada
% Slope: high _____ low 4 Aspect _____ Elevation 2600 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, mormon tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi Open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy and gravelly
Vegetation creosote bush, saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 5 Burrows<br>5 Inactive | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | Neotoma Middens w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Auto Track

Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 34 | 4 | 35°02.970N 118°01.200W | 7 | 18 | |
| 69 | 5 | 35°02.962N 118°01.422W | 12 | 24 | |
| 70 | 5 | 35°02.962N 118°01.375W | 10 | 36 | |
| 87 | 4 | 35°02.934N 118°01.481W | 7 | | |
| 223 | 4 | 35°02.578N 118°01.216W | 9 | 12 | |

Condition of Shelter Site[1]/Comments

34 - deteriorated condition, possible tortoise, no definite sign of presence
69 - good condition, possible tortoise, no definite sign of presence
70 - same as above
87 - deteriorated condition, possible tortoise, no definite sign of presence
223 - same as above

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Address
Project Name Auto Track
Type of Project

Quad Name Sanborn
Scale 1:24000
Site Name
T 11N R 11W Sec 14
¼ Sec NE ¼¼ Sec
UTM Zone
Northing
Easting
Parcel No.

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site ✓ | Zone of Influence | | _____ ft from Project Site
Transect Length: 10520 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) bajada
% Slope: high _____ low 2 Aspect _____ Elevation _____ ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, Mormon tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| TOTAL NUMBER OF | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Corrected Sign | Live Tortoises Adult/Juv. | | Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | | Scats [2] | Shell Remains [3] | | |
| | A= | J= | 2 Burrows<br>2 Inactive | | M= | A= F= | J= Unk= | Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | :w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Auto Track

Parcel No.

==========

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 10 | 4 | 35°03.334 N 118°00.544 W | 2 | 18 | |
| 18 | 5 | 35°03.347 N 118°00.864 W | 8 | 18 | |

Condition of Shelter Site[1]/Comments

10 - deteriorated condition, possible tortoise, no definite sign of presence
18 - good condition, possible tortoise, no definite sign of presence

==========

CONDITION OF SCATS[2] - COMMENTS (See below)

none

==========

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

==========

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

Date (M/D/Y) 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Track
Type of Project _____

Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11N R 11W Sec 14
¼ Sec NW ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

## DESERT TORTOISE HANDBOOK 1992:
## FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |V| Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) bajada
% Slope: high _____ low 2 Aspect _____ Elevation 2520 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbrush, mormon tea
dominant annuals no annuals in bloom during surveys
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbrush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 2 Burrows<br>2 Inactive | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | :w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Anto Track

Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 39 | 4 | 35°03.334 N 118°01.004 W | 5 | undetermined | |
| 40 | 4 | 35°03.436 N 118°01.047 W | 4 | undetermined | |

Condition of Shelter Site[1]/Comments

39 - deteriorated condition, possible tortoise, no definite sign of presence
40 - same as above

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Tracic
Type of Project _____

Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11N R 11W Sec 15
¼ Sec SE ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

## DESERT TORTOISE HANDBOOK 1992:
## FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |✓| Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm ____ °C Surface ____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high ____ low 2 Aspect ____ Elevation 2530 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, mormon tea
dominant annuals no annuals in bloom during surveys
Adjacent Land Use: up to 1 mi open desert, ATT Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 7 Burrows<br>7 Inactive | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | :w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Anto Tract
Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 71 | 4 | 35°02.895N 118°01.778W | 10 | 36 | |
| 95 | 4 | 35°02.825N 118°01.731W | 8 | 12 | |
| 97 | 4 | 35°02.992N 118°01.986W | 6 | 30 | |
| 105 | 4 | 35°02.763N 118°01.795W | | | |

Condition of Shelter Site[1]/Comments

71 - deteriorated condition, possible tortoise, no definite sign of presence
95 - same as above
97 - same as above
105 - same as above

CONDITION OF SCATS[2] - COMMENTS (See below)

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

86 - scattered carapace fragments, bleached, sex and age undetermined

SIGNS OF HUMAN DISTURBANCE-COMMENTS

pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name Anto Track
_____
Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 106 | 3 | 35°02.792 N 118°02.031 W | 5 | 36 | |
| 117 | 4 | 35°02.658 N 118°02.005 W | 7 | undetermined | |
| 240 | 5 | 35°02.706 N 118°01.969 W | 10 | undetermined | |

Condition of Shelter Site[1]/Comments

106 - deteriorated condition, definitely tortoise
117 - deteriorated condition, possible tortoise, no definite sign of presence
240 - good condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Track
Type of Project _____

Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11N R 11W Sec 15
¼ Sec SW ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

## DESERT TORTOISE HANDBOOK 1992:
## FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |X| Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high _____ low 2 Aspect _____ Elevation 2540 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, Mormon tea
dominant annuals no annuals in bloom during surveys
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 7 Burrows<br>7 Inactive | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | Neotoma Middens w/o sign |
|---|---|---|---|---|---|---|
| | | | | | | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name Auto Track

Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 101 | 4 | 35°02.695 N 118°02.219 W | 3 | 10 | |
| 118 | 5 | 35°02.818 N 118°02.076 W | 14 | 9 | |
| 144 | 4 | 35°02.915 N 118°02.440 W | 6 | 24 | |
| 145 | 4 | 35°02.692 N 118°02.240 W | 7 | 24 | |
| 147 | 5 | 35°02.799 N 118°02.446 W | 7 | 18 | |

Condition of Shelter Site[1]/Comments

101 - deteriorated condition, possible tortoise, no definite sign of presence
118 - good condition, possible tortoise, no definite sign of presence
144 - deteriorated condition, possible tortoise, no definite sign of presence
145 - same as above
147 - good condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name Anto Track
_____
Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 164 | 5 | 35°02.629 N 118°02.578 W | 8 | 24 | |
| 242 | 5 | 35°02.870 N 118°02.123 W | 10 | 12 | |

Condition of Shelter Site[1]/Comments

164 - good condition, possible tortoise, no definite sign of presence
242 - same as above

CONDITION OF SCATS[2] - COMMENTS (See below)

None

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

None

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Track
Type of Project _____

Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11N R 11W Sec 15
¼ Sec NE ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

## DESERT TORTOISE HANDBOOK 1992:
## FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site ☑ | Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high _____ low 2 Aspect _____ Elevation 2520 ft
Soils Sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, mormon tea
dominant annuals no annuals in bloom during surveys
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 8 Burrows 8 inactive | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | Neotoma Middens w/o sign |
|---|---|---|---|---|---|---|
| | | | | | | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Anto Track
Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 64 | 4 | 35°03.211 N 118°01.653 W | 6 | 12 | |
| 68 | 5 | 35°03.405 N 118°01.772 W | 12 | 24 | |
| 72 | 4 | 35°03.013 N 118°01.864 W | 8 | 18 | |
| 88 | 4 | 35°03.093 N 118°01.633 W | 7 | undetermined | |

Condition of Shelter Site[1]/Comments

64 - deteriorated condition, possible tortoise, no definite sign of presence
68 - good condition, possible tortoise, no definite sign of presence
72 - deteriorated condition, possible tortoise, no definite sign of presence
88 - same as above

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name Auto Track
_____
Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 89 | 5 | 35°03.301 N 118°01.763 W | 8 | 18 | |
| 93 | 4 | 35°03.330 N 118°01.941 W | 6 | 8 | |
| 94 | 5 | 35°03.259 N 118°01.885 W | 8 | 12 | |
| 134 | 4 | 35°03.246 N 118°01.698 W | 12 | 30 | |

Condition of Shelter Site[1]/Comments

89 - good condition, possible tortoise, no definite sign of presence
93 - deteriorated condition, possible tortoise, no definite sign of presence
94 - good condition, possible tortoise, no definite sign of presence
134 - deteriorated condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over project area

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Track
Type of Project _____

Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11N R 11W Sec 15
¼ Sec NW ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

## DESERT TORTOISE HANDBOOK 1992:
## FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |V| Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high _____ low 2 Aspect _____ Elevation 2540 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, mormon tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and salt bush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 3 Burrows<br>3 Inactive | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | :w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name AutoTrack

Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 84 | 4 | 35°03.222 N 118°02.180 W | 5 | 12 | |
| 116 | 4 | 35°03.085 N 118°02.339 W | 7 | undetermined | |
| 229 | 5 | 35°03.230 N 118°02.552 W | 7 | 36 | |

Condition of Shelter Site[1]/Comments

84 - deteriorated condition, possible tortoise, no definite sign of presence
116 - same as above
229 - good condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Track
Type of Project _____

Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11N R 11W Sec 16
¼ Sec SE ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |✓| Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high _____ low 2 Aspect _____ Elevation 2550 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, mormon tea
dominant annuals no annuals in bloom during surveys
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 5 Burrows<br>5 Inactive | | A= J= Unk=<br>M= F= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | :w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Anto Track

Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 165 | 4 | 35°02.281N 118°02.650W | 12 | 24 | |
| 180 | 5 | 35°02.804N 118°02.977W | 9 | 24 | |
| 183,184 | 4 | 35°02.738N 118°03.011W | 8 x 24, 9 x 10 | | 2 burrows next to each other |
| 186 | 5 | 35°02.810N 118°03.043W | 8 | 12 | |

Condition of Shelter Site[1]/Comments

165 - deteriorated condition, possible tortoise, no definite sign of presence
180 - good condition, possible tortoise, no definite sign of presence
183,184 - deteriorated condition, possible tortoise, no definite sign of presence
186 - good condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Track
Type of Project _____
_____
Quad Name Sanborn
Scale 1", 24000
Site Name _____
T 11N R 11W Sec 16
¼ Sec SW ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |✓| Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high _____ low 2 Aspect _____ Elevation 2570 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, Mormon tea
dominant annuals no annuals in bloom during surveys
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 9 Burrows<br>9 Inactive | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | Neotoma Middens w/o sign |
|---|---|---|---|---|---|---|
| | | | | | | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded Ordinance |

January 1992

H/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name AntoTrack
Parcel No.

INFORMATION ON SHELTER SITES
(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 172 | 5 | 35°02.912N 118°03.096W | 9 | 24 | |
| 175 | 5 | 35°02.949N 118°03.231W | 8 | 36 | |
| 185 | 5 | 35°02.723N 118°03.277W | 10 | 24 | |
| 187 | 5 | 35°02.897 118°03.391W | 10 | 24 | |

Condition of Shelter Site[1]/Comments

172 - good condition, possible tortoise, no definite sign of presence
175 - same as above
185 - same as above
187 - same as above

CONDITION OF SCATS[2] - COMMENTS (See below)

None

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing roads (dirt), trash, unexploded ordinance from early flights over property

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Auto Track

Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 194 | 4 | 35°02.812 N 118°03.430 W | 5 | 16 | |
| 195(x2) | 5 | 35°02.605 N 118°03.293 W | 9 | 32 | 2 burrows |
| 196 | 5 | 35°02.788 N 118°03.455 W | 7 | 24 | |
| 197 | 4 | 35°02.888 N 118°03.504 W | 9 | 12 | |

Condition of Shelter Site[1]/Comments

194 - deteriorated condition, possible tortoise, no definite sign of presence
195(x2) - good condition, possible tortoise, no sign of presence (definite)
196 - same as above
197 - deteriorated condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. ____
State California
County Kern
City ____
Recorder Brad Blood
Address ____
Project Name Info Track
Type of Project ____

Quad Name Sanborn
Scale 1:24000
Site Name ____
T 11N R 11W Sec 16
¼ Sec NE ¼¼ Sec ____
UTM Zone ____
Northing ____
Easting ____
Parcel No. ____

## DESERT TORTOISE HANDBOOK 1992:
## FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |✓| Zone of Influence | | ____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time ____
Weather: Airtemp at: 5 cm ____ °C Surface ____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high ____ low 2 Aspect ____ Elevation 2550 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, Mormon tea
dominant annuals no annuals in bloom during surveys
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 10 Burrows All Inactive | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign : w/o sign |
|---|---|---|---|---|---|
| | | | | | : |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name Auto Track
_____
Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 143 | 5 | 35°03.041 N 118°02.785 W | 7 | 36 | |
| 141 | 5 | 35°03.339 N 118°02.752 W | 6 | 12 | |
| 142 | 4 | 35°03.245 N 118°02.662 W | 6 | 18 | |
| 159 | 4 | 35°03.174 N 118°03.083 W | 2 | 13 | |

Condition of Shelter Site[1]/Comments

13 - good condition, possible tortoise, no definite sign of presence
141 - same as above
142 - deteriorated condition, possible tortoise, no definite sign of presence
159 - same as above

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Anto Track

Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 160 | 5 | 35°03.172 N 118°02.817 W | 3 | 10 | |
| 161 | 4 | 35°03.083 N 118°03.030 W | 8 | 12 | |
| 162 | 5 | 35°02.976 N 118°02.940 W | 7 | 30 | |
| 167 | 4 | 35°03.141 N 118°02.873 W | 6 | 12 | |

Condition of Shelter Site[1]/Comments

160 - good condition, possible tortoise, no definite sign of presence
161 - deteriorated condition, possible tortoise, no definite sign of presence
162 - same as 160
167 - same as 161

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

Date (M/D/Y) 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name Auto Track
_____
Parcel No. _____

INFORMATION ON SHELTER SITES
(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 168 | 4 | 35°03.307 N 118°03.027 W | 5 | 8 | |
| 170 | 5 | 35°03.293 N 118°03.089 W | 8 | 36 | |

Condition of Shelter Site[1]/Comments

168 - deteriorated condition, possible tortoise, no definite sign of presence
170 - good condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Address
Project Name Auto Track
Type of Project
Quad Name Sanborn
Scale 1:24000
Site Name
T 11N R 11W Sec 16
¼ Sec NW ¼¼ Sec
UTM Zone
Northing
Easting
Parcel No.

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |✓| Zone of Influence | | _____ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm ____ °C Surface ____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high ____ low 2 Aspect ____ Elevation 2570 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, Mormon tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 9 Burrows<br>9 Inactive | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | :w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name Auto Track

Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 157 | 5 | 35°03.375 N 118°03.245 W | 10 | 36 | |
| 158 | 5 | 35°03.323 N 118°03.226 W | 10 | 24 | |
| 188 | 4 | 35°03.126 N 118°03.284 W | 10 | 24 | |
| 189 | 5 | 35°03.023 N 118°03.458 W | 7 | 15 | |
| 176 | 5 | 35°03.350 W 118°03.479 W | 8 | 13 | |

Condition of Shelter Site[1]/Comments

157 - good condition, possible tortoise, no definite sign of presence
158 - same as above
188 - deteriorated condition, possible tortoise, no definite sign of presence
189 - same as 157
176 - same as 157

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early flights over property

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Auto Track
Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 190 | 4 | 35°03.198 N 118°03.318 W | 8 | 10 | |
| 191 | 5 | 35°03.072 N 118°03.487 W | 8 | 12 | |
| 192 | 5 | 35°03.368 N 118°03.422 W | 10 | 24 | |
| 193 | 5 | 35°03.058 N 118°03.312 W | 8 | 24 | |

Condition of Shelter Site[1]/Comments

190 - deteriorated condition, possible tortoise, no definite sign of presence
191 - good condition, possible tortoise, no definite sign of presence
192 - same as above
193 - same as above

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Track
Type of Project _____
_____
Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11N R 11W Sec 11
¼ Sec SE ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site ✓ | Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high _____ low 2% Aspect _____ Elevation 2490 ft
Soils Sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush scrub, norman tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi open desert, AT+T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 7 Burrows | A= J= Unk= | M= F= Unk= |
| | | 1 Active, 6 Inactive | | |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | :w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Bloud
Project Name Auto Track
_____
Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 1 | 5 | 35°03.645 N 118°00.670 W | undetermined | | |
| 2 | 1 | 35°03.782 N 118°00.691 W | 13 | 3 | tortoise in burrow |
| 6 | 2 | 35°03.763 N 118°00.820 W | undetermined | | |
| 7 | 3 | 35°03.751 N 118°00.821 W | 12 | 36 | |

Condition of Shelter Site[1]/Comments

1 - good condition, possible tortoise, no definite sign of presence
2 - currently active, with tortoise in burrow
6 - good condition, definitely tortoise, no evidence of recent use
7 - deteriorated condition, definitely tortoise

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Auto Tracic
Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 8 | 2 | 35°03.743 N 118°00.850 W | 12 | 36 | |
| 9 | 4 | 35°03.743 N 118°00.850 W | 10 | 24 | |
| 199 | 5 | 35°03.948 N 118°00.413 W | 10 | 18 | |

Condition of Shelter Site[1]/Comments

8 = good condition, definitely tortoise, no evidence of recent use
9 = deteriorated condition, possible tortoise, no definite sign of presence
199 = good condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Track
Type of Project _____

Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11N R 11W Sec 11
¼ Sec SW ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |✓| Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high _____ low 2 Aspect _____ Elevation 2500 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, mormon tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush, saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 2 Burrows<br>2 Inactive | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | :w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Auto Track

Parcel No.

INFORMATION ON SHELTER SITES
(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 13 | 2 | 35°03.740 N 118°01.026 W | 14 | 24 | |
| 41 | 4 | 35°03.596 N 118°01.184 W | 7 | undetermined | |

Condition of Shelter Site[1]/Comments

13- good condition, definitely tortoise but no evidence of recent use
41- deteriorated condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

30- carapace remains

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Track
Type of Project _____

Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11 N R 11 W Sec 11
¼ Sec NE ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |✓| Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high _____ low 2 Aspect _____ Elevation 2490 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, morman tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 1 Burrow<br>1 Inactive | A= J= Unk=<br>M= F= Unk= | |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | Neotoma Middens w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

H/D/Y
Date 4/25/02
Transect No. _____
State California
County Icen
City _____
Recorder Brad Blood
Project Name Auto Tracic
_____
Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 4 | 3 | 35°04.031 N 118°00.820 W | undetermined | | |

Condition of Shelter Site[1]/Comments

4- deteriorated condition, definitely tortoise

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Track
Type of Project _____

Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11 N R 11 W Sec 11
¼ Sec NW ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |V| Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high _____ low 2% Aspect _____ Elevation 2500 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, mormon tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 3 Burrows<br>3 Inactive | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | Neotoma Middens w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name Auto Track

Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 5 | 4 | 35°04.216 N 118°01.214 W | undetermined | | |
| 14 | 3 | 35°04.062 N 118°01.442 W | 9 | 24 | |
| 28 | 4 | 35°04.202 N 118°01.489 W | 9 | 22 | |

Condition of Shelter Site[1]/Comments

5 - deteriorated condition, possible tortoise, no definite sign of presence
14 - deteriorated condition, definitely tortoise
28 - same as 5

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Track
Type of Project _____

Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11N R 11W Sec 10
¼ Sec SE ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |✓| Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high _____ low 2% Aspect _____ Elevation 2520 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, mormon tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi Open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 9 Burrows<br>8 Inactive, 1 Active | A= J= Unk=<br>M= F= Unk= | |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | Neotoma Middens :w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | yes | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Into Track
Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 37 | 4 | 35°03.856N 118°01.644W | | undetermined | |
| 53 | 1 | 35°03.637N 118°01.769W | 3 | 27 | |
| 55 | 4 | 35°03.817N 118°02.003W | 8 | undetermined | |
| 59 | 4 | 35°03.824N 118°02.014W | 10 | undetermined | |
| 60 | 3 | 35°03.743N 118°01.914W | 9 | 24 | |

Condition of Shelter Site[1]/Comments

37 - deteriorated condition, possible tortoise, no definite sign of presence
53 - currently active
55 - same as # 37
59 - same as above
60 - deteriorated condition, definitely tortoise

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from previous air flights over property

January 1992

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name Auto Track

Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 62 | 5 | 35°03.509 N 118°01.808 W | 8 | 24 | |
| 98 | 4 | 35°03.556 N 118°02.000 W | 7 | 12 | |
| 131 | 4 | 35°03.592 N 118°01.711 W | 10 | 12 | |
| 132 | 4 | 35°03.794 N 118°01.914 W | 12 | 24 | |

Condition of Shelter Site[1]/Comments

62 - good condition, possible tortoise, no definite sign of presence
98 - deteriorated condition, possible tortoise, no definite sign of presence
131 - same as above
132 - same as above

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Address
Project Name Auto Track
Type of Project

Quad Name Sanborn
Scale 1:24000
Site Name
T 11N R 11W Sec 10
¼ Sec SW ¼¼ Sec
UTM Zone
Northing
Easting
Parcel No.

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |✓| Zone of Influence | | _____ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm ____ °C Surface ____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high ____ low 2% Aspect ____ Elevation 2530 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, mormon tea
dominant annuals no annuals in bloom during surveys
Adjacent Land Use: up to 1 mi open desert, AT+T Radio Tower adjacent to S aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 5 Burrows<br>5 Inactive | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | :w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name Auto Track

Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 82 | 4 | 35°03.768N 118°02.513W | 8 | 18 | |
| 96 | 4 | 35°03.478N 118°02.189W | 7 | 18 | |
| 99 | 2 | 35°03.714N 118°02.074W | 8 | 24 | |
| 112 | 5 | 35°03.491N 118°02.483W | 7 | undetermined | |

Condition of Shelter Site[1]/Comments

82 - deteriorated condition, possible tortoise, no definite sign of presence
96 - same as above
99 - good condition, definite tortoise, no evidence of recent use
112 - good condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flight over property

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Anto Track
Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 137 | 5 | 35°03.584 N 118°02.425 W | 5 | 18 | |

Condition of Shelter Site[1]/Comments

137- good condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

136 - plastron only, disarticulated and scattered

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

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M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Track
Type of Project _____

Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11N R 11W Sec 10
¼ Sec NE ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |✓| Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high _____ low 2 % Aspect _____ Elevation 2530 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, salt bush, mormon tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to S aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and salt bush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 5 Burrows 5 Inactives | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign : w/o sign |
|---|---|---|---|---|---|
| | | | | | : |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Auto Track

Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 35 | 4 | 35°04.267 N 118°01.937 W | 8 | undetermined | |
| 29 | 4 | 35°0 118°01.888 W | 10 | 15 | |
| 36 | 4 | 35°03.946 N 118°01.740 W | 8 | undetermined | |
| 42 | 2 | 35°04.087 N 118°01.572 W | 14 | undetermined | type 2 scat |
| 45 | 4 | 35°04.005 N 118°01.932 W | 11 | undetermined | |

Condition of Shelter Site[1]/Comments

35 - deteriorated condition, possible tortoise, no definite sign of presence
29 - same as above
34 - same as above
42 - good condition, definite tortoise, no evidence of recent use
45 - same as 35

CONDITION OF SCATS[2] - COMMENTS (See below)

42 - type 2 scat, dried with glaze, some odor, dark brown

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

130 - class 5, disarticulated and scattered

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

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M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Track
Type of Project _____

Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11 N R 11 W Sec 10
¼ Sec NW ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |✓| Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high _____ low 2% Aspect _____ Elevation 2530 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, mormon tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub, saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 9 Burrows 8 InActive, 1 Active | | A= J= Unk= M= F= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign : w/o sign |
|---|---|---|---|---|---|
| | | | | | : |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Auto Track

Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 32 | 4 | 35°04.325 N 118°02.115 W | 10 | 24 | |
| 33 | 3 | 35°04.132 N 118°02.103 W | 9 | 15 | |
| 58 | 1 | 35°04.118 N 118°02.241 W | 16 | 36 | |
| 74 | 4 | 35°03.912 N 118°02.476 W | 3 | 10 | |
| 90 | 4 | 35°04.146 N 118°02.333 W | 7 | undetermined | |

Condition of Shelter Site[1]/Comments

32 - deteriorated condition, possible tortoise, no definite sign of presence
33 - deteriorated condition, definitely tortoise
58 - currently active,
74 - same as 32
90 - same as 32

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Anto Track

Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 91 | 4 | 35°04.238 N 118°02.406 W | 7 | undetermined | |
| 92 | 5 | 35°04.088 N 118°02.457 W | 7 | undetermined | |
| 100 | 4 | 35°03.929 N 118°02.204 W | 6 | 12 | |
| 135 | 3 | 35°04.105 N 118°02.118 W | 6 | 12 | |

Condition of Shelter Site[1]/Comments

91 - deteriorated condition, possible tortoise, no definite sign of presence
92 - good condition, possible tortoise, no definite sign of presence
100 - same as 91
135 - deteriorated condition, definitely tortoise

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Tract
Type of Project _____

Quad Name Sanbarn
Scale 1:24000
Site Name _____
T 11N R 11W Sec 9
¼ Sec SE ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |✓| Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high _____ low 2% Aspect _____ Elevation 2550 ft
Soils Sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, mormon tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi Open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= 1 J= 8 inches wide 12 inches long | 9 Burrows 8 Inactive, 1 Active | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | Neotoma Middens w/o sign |
|---|---|---|---|---|---|---|
| | | | | | | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

Date (M/D/Y) 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name Anto Track
Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|---|
| 113 | 5 | 35°03.736 N | 118°02.681 W | 9 | undetermined | |
| 115 | 4 | 35°03.808 N | 118°02.835 W | 7 | 8 | |
| 120 | 5 | 35°03.717 N | 118°02.825 W | 7 | undetermined | |
| 121 | 5 | 35°03.533 N | 118°02.694 W | 6 | 24 | |
| 124 | 5 | 35°03.602 N | 118°02.795 W | 8 | 24 | |

Condition of Shelter Site[1]/Comments

113 - good condition, possibly tortoise, no definite sign of presence
115 - deteriorated condition, possibly tortoise, no definite sign of presence
120 - same as 113
121 - same as above
124 - same as above

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Auto Track
Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 125 | 5 | 35°03.848 N 118°02.951 W | 12 | 24 | |
| 151 | 5 | 35°03.697 N 118°03.091 W | 6 | 12 | |
| 230 | 1 | 35°03.757 N 118°02.912 W | 10 | undetermined | tortoise sitting in entrance of burrow |
| 241 | | 35°03.663 N 118°02.776 W | 10 | undetermined | |

Condition of Shelter Site[1]/Comments

125 - good condition, possible tortoise, no definite sign of presence
151 - same as above
230 - currently active, tortoise present (sitting in entrance of burrow)
241 - same as 125

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Address
Project Name Auto Tracic
Type of Project

Quad Name Sanborn
Scale 1:24000
Site Name
T 11 N R 11 W Sec 9
¼ Sec SW ¼¼ Sec
UTM Zone
Northing
Easting
Parcel No.

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |✓| Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high _____ low 2% Aspect _____ Elevation 2550 ft
Soils sandy to gravelly
Vegetation: dominant perennials creosote bush, saltbush, mormon tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi open desert, AT&T Radio Tower adjacent to S. aspect of project site
Soils sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 14 Burrows 14 Inactive | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | Neotoma Middens w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | Unexploded ordinance |

January 1992

H/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name Anto Track
_____
Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|---|
| 150 | 4 | 35°03.447 N | 118°03.184 W | 6 | 36 | |
| 153 | 4 | 35°03.739 N | 118°03.464 W | 7 | 14 | |
| 154 | 5 | 35°03.710 N | 118°03.448 W | 7 | 12 | |
| 155 | 4 | 35°03.672 N | 118°03.423 W | 6 | 40 | |
| 156 | 5 | 35°03.553 N | 118°03.345 W | 5 | 24 | |

Condition of Shelter Site[1]/Comments

150 - deteriorated condition, possible tortoise, no definite sign of presence
153 - same as above
154 - good condition, possible tortoise, no definite sign of presence
155 - same as 150
156 - same as 154

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name Auto Track

Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 177 | 5 | 35°03.583 N 118°03.347 W | 8 | 24 | |
| 178 | 5 | 35°03.498 N 118°03.407 W | 8 | 8 | adjacent to 179 |
| 179 | 5 | 35°03.498 N 118°03.407 W | 8 | 12 | adjacent to 178 |
| 231(x2) | 5 | 35°03.735 N 118°03.208 W | 8 | 16 | 2 burrows next to each other |
| 232(x2) | 4 | 35°03.811 N 118°03.262 W | 12 | 48, 11 x 16 | 2 burrows next to each other |

Condition of Shelter Site[1]/Comments

177 - good condition, possible tortoise, no definite sign of presence
178 - same as above
179 - same as above
231 - both same as above
232 - both good condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

H/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Anti Track

Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 233 | S | 35°03.822 N 118°03.250W | 9 | 24 | |
| 238 | S | 35°03.661 N 118°03.271 W | 8 | 24 | |

Condition of Shelter Site[1]/Comments

233 - good condition, possible tortoise, no definite sign of presence
238 - same as above

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Address _____
Project Name Auto Track
Type of Project _____

Quad Name Sanborn
Scale 1:24000
Site Name _____
T 11N R 11W Sec 9
¼ Sec NE ¼¼ Sec _____
UTM Zone _____
Northing _____
Easting _____
Parcel No. _____

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site ✓ Zone of Influence | | _____ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time _____
Weather: Airtemp at: 5 cm _____ °C Surface _____ °C Cloud cover 0 %
Rainfall 0 in Wind speed 5 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high _____ low 2% Aspect _____ Elevation 2550 ft
Soils Sandy to gravelly
Vegetation: dominant perennials Creosote bush, saltbush, Mormon tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi open desert, AT+T Radio Tower adjacent to S. aspect of project site
Soils Sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 13 Burrows All Inactive | M= F= Unk= | A= J= Unk= |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign | Neotoma Middens w/o sign |
|---|---|---|---|---|---|---|
| | | | | | : | |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | Unexploded ordinance |

January 1992

M/D/Y

Date _____
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name Auto Track
_____
Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 75 | 4 | 35°04.124 N 118°02.656 W | 8 | 8 | |
| 76 | 4 | 35°04.007 N 118°02.773 W | 8 | 14 | |
| 78 | 3 | 35°03.979 N 118°02.690 W | 8 | 6 | |
| 80 | 4 | 35°03.946 N 118°02.664 W | 6 | 24 | |
| 102 | 5 | 35°03.654 N 118°02.579 W | 12 | 24 | |

Condition of Shelter Site[1]/Comments

75 - deteriorated condition, possible tortoise, no definite sign of presence
76 - same as above
78 - deteriorated condition, definitely tortoise
80 - same as 75
102 - good condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[1] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[1] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Anto Track
Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 103 | 4 | 35°04.160 N 118°02.742 | 10 | 12 | |
| 104 | 4 | 35°03.898 N 118°02.659 | 10 | 12 | |
| 107 | 5 | 35°03.991 N 118°02.879 | 7 | 36 | |
| 114 | 5 | 35°03.992 N 118°02.847 | 8 | undetermined | |
| 129 | 4 | 35°04.057 N 118°02.726 | 5 | 24 | |

Condition of Shelter Site[1]/Comments

103 - deteriorated condition, possible tortoise, no definite sign of presence
104 - same as above
107 - good condition, possible tortoise, no definite sign of presence
114 - same as above
129 same as 103

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordnance from early air flights over property

January 1992

Date (M/D/Y) 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name Anto Track
_____
Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 234 | 4 | 35°03.980 N 118°03.095 W | 3 | 10 | |
| 79 | 4 | 35°03.979 N 118°02.690 W | 8 | 6 | |
| 81 | 4 | 35°03.946 N 118°02.664 W | 8 | 12 | |

Condition of Shelter Site[1]/Comments

234 - deteriorated condition, possible torture, no definite sign of presence
79 - same as above
81 - same as above

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights

January 1992

(place a 4 X 6 photograph showing the area where the transect was conducted)

This form should be completed for those transects that contain one or more desert tortoise sign. After the project site and Zone of Influence have been surveyed for tortoise sign, the results from the transect forms should be compiled on a summary form.

If no tortoise sign occurs on the project site or Zone of Influence, the summary form should be completed. Please fill in all sections on the top 2/3 of the page of the summary form.

M/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Address
Project Name Auto Track
Type of Project
Quad Name Sanborn
Scale 1:24000
Site Name
T 11N R 11W Sec 9
¼ Sec NW ¼¼ Sec
UTM Zone
Northing
Easting
Parcel No.

DESERT TORTOISE HANDBOOK 1992:
FORM FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS

Project Site |√| Zone of Influence | | ½ ft from Project Site
Transect Length: 10560 ft Width: 30 ft Other 100 ft Time
Weather: Airtemp at: 5 cm °C Surface °C Cloud cover 0 %
Rainfall 0 in Wind speed 2 Rainfall in last 30 days 0 in
Land Form (e.g., mesa, bajada, wash) desert floor
% Slope: high low 2% Aspect Elevation 2550 ft
Soils Sandy to gravelly
Vegetation: dominant perennials Creosote bush, saltbush, mormon tea
dominant annuals no annuals in bloom during survey
Adjacent Land Use: up to 1 mi Open desert, AT&T Radio Tower adjacent to s. aspect of project site
Soils Sandy to gravelly
Vegetation creosote bush scrub and saltbush scrub

| Corrected Sign | Live Tortoises Adult/Juv. | TOTAL NUMBER OF Shelter Sites Pallet/Burrow/Den Active/Inactive [1] | Scats [2] | Shell Remains [3] |
|---|---|---|---|---|
| | A= J= | 7 Burrows All Inactive | A= J= Unk= M= F= Unk= | |

| Tracks | Eggshell Fragments | Drinking Sites | Courtship Rings | Other | Neotoma Middens w/sign : w/o sign |
|---|---|---|---|---|---|
| | | | | | : |

SIGNS OF HUMAN DISTURBANCE - NUMBER AND TYPES SEEN

| Tire Tracks | Human Footprints | Dog Sign | Trash | Dump Sites | Shotgun/ Rifle Shells | Blading | Ravens | Other |
|---|---|---|---|---|---|---|---|---|
| yes | yes | no | yes | yes | yes | yes | yes | unexploded ordinance |

January 1992

M/D/Y
Date 4/25/02
Transect No. _____
State California
County Kern
City _____
Recorder Brad Blood
Project Name Auto Track
_____
Parcel No. _____

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 108 | 4 | 35°03.876 N 118°03.101 W | 6 | 12 | |
| 126 | 4 | 35°03.889 N 118°03.133 W | 10 | 12 | |
| 152(x2) | 4 | 35°03.911 N 118°03.293 W | 3 x 12 , 5 x 18 | 2 | burrows |
| 235 | 4 | 35°03.856 N 118°03.317 W | 6 | 18 | |

Condition of Shelter Site[1]/Comments

108 - deteriorated condition, possible tortoise, no definite sign of presence
126 - same as above
152 - same as above
235 - same as above

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordinance from early air flights over property

January 1992

H/D/Y
Date 4/25/02
Transect No.
State California
County Kern
City
Recorder Brad Blood
Project Name Auto Track
Parcel No.

INFORMATION ON SHELTER SITES

(Please indicate why you believe a shelter site is active or inactive[1])

| Sign No. | Type | Location | Width | Estimated Length | Other Sign |
|---|---|---|---|---|---|
| 236 | 4 | 35°03.855 N 118°03.291 | 8 | 8 | |
| 237 | 5 | 35°03.941 N 118°03.185 | undetermined | | |

Condition of Shelter Site[1]/Comments

236 - deteriorated condition, possible tortoise, no definite sign of presence
237 - good condition, possible tortoise, no definite sign of presence

CONDITION OF SCATS[2] - COMMENTS (See below)

none

CONDITION OF SHELL REMAINS[3] - COMMENTS (See below)

none

SIGNS OF HUMAN DISTURBANCE-COMMENTS

Pre-existing dirt roads, trash, unexploded ordnance from early air flights over property

# *APPENDIX D*
# *SPECIES ACCOUNTS FOR HOOVER'S WOOLLY-STAR AND DESERT TORTOISE*

# SPECIES ACCOUNT

**Hoover's woolly-star (*Eriastrum hooveri*)**

Information on the distribution, taxonomy, ecology, and reproductive biology of Hoover's woolly-star was gathered from the U.S. Fish and Wildlife Service (USFWS), U.S. Department of Agriculture Forest Service, California Department of Fish and Game (CDFG), Bureau of Land Management (BLM), California Native Plant Society (CNPS), peer-reviewed and gray literature, herbarium records from Rancho Santa Ana Botanic Gardens (RSABG), Claremont, CA, and consultation with botanists at USFWS, Sacramento, CA, BLM, Bakersfield, CA, and RSABG, Claremont, CA.

**Status**

Hoover's woolly-star was listed July 19, 1990 as a threatened species under the Endangered Species Act of 1973.[1] On March 6, 2001 the U.S. Fish and Wildlife Service submitted a proposal to delist Hoover's woolly-star.[2] The current action status remains as a proposed rule.[3] CDFG ranks Hoover's woolly-star as a S3.2, threatened having 3,000 -10,000 individuals.[4] The CNPS describes Hoover's woolly-star as a List 4 (plants of limited distribution) species with R-E-D Code 1-2-3.[5] According to the most recent published literature by CDFG[6] and CNPS[7], Hoover's woolly-star is: (1) rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time, (2) endangered in a portion of its range, and (3) endemic to California. Occurrences of Hoover's woolly-star are no longer included in the CNDDB (as of July 1999) because this database does not publish records for CNPS List 4 species.[8]

**Habitat Requirements**

Hoover's woolly-star is an annual herb that inhabits a wide variety of plant communities including alkali sinks and washes, annual grasslands, Suaeda scrub, valley saltbush scrub, interior coast range

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[1]United States Fish and Wildlife Service (USFWS), 19 July 1990. *Federal Register*, Part 17, Sections 29361-29370: "Endangered and Threatened Wildlife and Plants; Determination of the Endangered or Threatened Status for Five Plants from the Southern San Joaquin Valley." Washington, D.C.: Office of the Federal Register National Archives and records Administration.

[2]USFWS, 6 March 2001. *Federal Register*, Part 17, Sections 13474-13480: "Endangered and Threatened Wildlife and Plants; Proposal to Delist *Eriastrum hooveri* (Hoover's Woolly-Star)." Washington, D.C.: Office of the Federal Register National Archives and records Administration.

[3]Elizabeth Warne, *Personal Communication*, 23 September 2002.USFWS.

[4]California Department of Fish and Game (CDFG), June 2002. Natural Diversity Database. Special Vascular Plants, Bryophytes, and Lichens List. Biannual publication, Mimeo. 141 pp.

[5]California Native Plant Society (CNPS), 23 September 2002. "CNPS 6th Inventory of Rare Plants- online edition." Available at: www.northcoast.com/~cnps/cgi-bin/cnps/sensinv.cgi. (Last updated 20 December 2001).

[6]CDFG, June 2002.

[7]CNPS, 23 September 2002.

[8]Amy Kasameyer, *Personal Communication*. 23 September 2002. CDFG.

saltbush scrub, and Juniper woodland.[9] Companion plants include common saltbush (*Atriplex polycarpa*), matchweed (*Gutierrezia bracteata*), desert tea (*Ephedra californica*), cheesebush (*Hymenoclea salsola*), and Kellog's tarweed (*Hemizonia kelloggi*),[10] but shrub cover in occupied habitat is typically less than 20%.[11] Hoover's woolly-star generally favors stabilized silty to sandy soils having noticeably higher quartz content, a low cover of competing herbaceous vegetation, and the presence of crytogamic crusts.[12] Clay or shaly soils appear not to be preferred.[13] Reported elevations for Hoover's woolly-star range from 315 to 2,960 feet.[14] Populations occur on slopes, ridgetops, alluvial fans, and previously disturbed surfaces such as dirt roads, powerline corridors, and old firebreaks.[15] Hoover's woolly star seedlings emerge from January until mid-April and flower between March and June. Seeds are primarily dispersed by wind. Dead stems may persist until the next growing season,[16] or until sufficient rains cause disarticulation.[17]

**Distribution**

Hoover's woolly-star is endemic to the southern San Joaquin Valley and southern inner Coast Ranges of Fresno, Kings, Kern, Santa Barbara, San Benito, San Luis Obispo, and Tulare counties.[18] Historically, prior to 1986, Hoover's woolly-star was known from 19 sites in San Luis Obispo, Kern, Fresno, and Santa Barabara Counties.[19] Most of these sites occurred on the San Joaquin and Cuyama Valley floors or on land known as the Naval Petroleum Reserve, administered by the U.S. Department of Energy. Between 1986 and the time of listing in 1990, 118 populations existed, but were considered threatened by various human activities. Since 1990, surveys have shown Hoover's woolly-star to be more abundant and widespread than originally reported. The Bureau of Land Management estimates 1,056 occupied sites approximating 2,426 acres from the upper Cuyama Valley near Ventucopa, Santa

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[9]United States Department of Agriculture Forest Service, 18 September 2002. "Hoovers Eriastrum." Available at: www.r5.fs.fed.us/sccs/species/hoovers-eriastrum.htm.

[10]Russ Lewis. 1992. "*Eriastrum hooveri* field inventory." U.S. Bureau of Land Management (BLM), Bakersfield, CA, Unpubl. Rep., 116 pp. + maps.

[11]T.M. Sandoval and E.A. Cypher, 21 September 2002. "Hoover's woolly-star (*Eriastrum hooveri*)."Available at: arnica.csustan.edu/esrpp/hoovers.htm. (Last Updated 18 April 1997).

[12]Russ Lewis, 1994. "*Eriastrum hooveri* field inventory." BLM, Bakersfield, CA, Unpubl. Rep., 120 pp.

[13]Ibid

[14]Ibid

[15]Ibid

[16]T.M. Sandoval and E.A. Cypher, 21 September 2002.

[17]Russ Lewis, 18 September 2002. *Personal Communication*. BLM.

[18]Steve Boyd and J. Mark Porter,1999. Noteworthy Collections. California, *Eriastrum hooveri* (Jepson) H. Mason (POLEMONIACEAE). Madroño, 46(4): 215-216.

[19]USFWS, 6 March 2001.

Barbara County, northward to the Panoche Hills in San Benito County.[20,21,22] Within this range, Hoover's woolly-star occurs in 42 U.S. Geological Survey quadrangles within Kings, Kern, San Louis Obispo, Santa Barbara, San Benito, and Fresno Counties.[23] A recent documented occurrence of Hoover's woolly-star in Los Angeles County marks the first record for this county and for the Mojave Desert.[24] The Los Angeles County (Antelope Valley) populations are located along the southwestern portion of the Rosamond Dry Lake basin, especially within the floodplain of Amargosa Creek and other drainages originating north of the Liebre Mountains. The Antelope Valley populations are approximately 87 miles (140 km) southeast of the nearest populations in Kern County and may likely represent another distinct population system.[25] Currently, the population structure of Hoover's woolly-star is characterized as comprising four metapopulations: (1) Kettleman Hills in Fresno and Kings counties; (2) Carrizo Plain-Elkhorn Plain-Temblor Range-Caliente Mountains-Cuyama Valley-Sierra Madre Mountains in San Luis Obispo, Santa Barbara and exteme western Kern counties; (3) Lokern-Elk Hills-Buena Vista Hills-Coles Levee-Taft-Maricopa areas of Kern County; and (4) Antelope Plain-Lost Hills-Semitropic Ridge region of Kern County.[26]

Hoover's woolly-star is now known to be "locally common" in the eastern Antelope Valley[27], and has been recently reported in Rosamond[28], 13 miles from the project site. The Antelope Valley populations are approximately 20 miles (32 km) southwest from the proposed project site and are geographically separated by the Rosamond Hills to the north and northeast. Even within its known occupied range, under ideal soil conditions, and with the presence of associated plant species, Hoover's woolly-star may not be present in areas where it is predicted to occur.[29]

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[20]Ibid

[21]Russ Lewis, 1994.

[22]Russ Lewis, 1992.

[23]USFWS, 6 March 2001.

[24]Steve Boyd and J. Mark Porter, 1999.

[25]Ibid

[26]T.M. Sandoval and E.A. Cypher, 18 April1997.

[27]Steve Boyd and J. Mark Porter, 1999.

[28]H.T. Harvey and Associates. April 2003. Addendum to Negative Declaration. Prepared for California Army Air National Guard, San Jose, California.

[29]"Ibid

**Desert Tortoise**
*Gopherus agassizii*

**Author:** William I. Boarman
U.S. Geological Survey
Western Ecological Research Center
5745 Kearny Villa Road, Suite M
San Diego, California 92123

**Legal Status:** Federal - Threatened
State - Threatened

**General Distribution:** The desert tortoise is widely distributed throughout major portions of the Mojave and Sonoran deserts of California, Nevada, Utah, Arizona, Sonora, and Sinaloa. Genetic, morphological, ecological, and behavioral features suggest an evolutionary divergence between the tortoises found south and east of the Colorado River ("Sonoran population"), and those found north and west of the river ("Mojave population;" Lamb et al. 1989). The latter is the population Federally and State-listed as threatened. This population will be referred to in the remainder of this account. The majority of animals in the Mojave population occur at variable densities in six distinct population segments (i.e., evolutionarily significant units), each identified in the Recovery Plan for desert tortoises as separate Recovery Units (USFWS 1994).

**Distribution in the WMPA:** One major segment of the Mojave population of the desert tortoise occurs almost entirely within the WMPA and is called the West Mojave Recovery Unit (USFWS 1994). Tortoises in the West Mojave Desert are divided into four not entirely separate subpopulations: Ord-Rodman, Superior-Cronese, Fremont-Kramer, Joshua Tree (see USFWS 1994 for detailed descriptions). Population densities within these areas are variable and patchy varying from 0-250/mi2 (0-155/km2; Berry and Nicholson 1984). Within each subsegment, tortoise density is highly heterogeneous with clusters of high densities (perhaps several hundred hectares in size) surrounded by areas of rather low densities in seemingly suitable habitat. Tortoises occur outside of these four subsegments, but at very low densities (i.e., 0-20/mi2 (0–12/km2; Berry and Nicholson 1984).

**Natural History:** The desert tortoise is a medium-sized, terrestrial turtle in the family Testudinidae. The shell is light brown to very dark brown with brown to orange or yellow in the centers of scutes, particularly in young animals. The skin is dry and scaly with thick, stumpy, elephantine hind legs. A strong projection, the gular horn, located at the anterior end of the plastron, is most pronounced in adult males. Adult males also have shorter claws, longer, thicker tails, a concave plastron, and pronounced chin glands. They weigh 0.04-10+ lbs (20-5000+ g) and range in size from about 1.4 inches (35 mm; carapace length) at hatching to 11-16 inches (280-400 mm; carapace length) as adults. No other terrestrial turtle occurs within the range of the desert tortoise.

Desert tortoises are long lived with delayed sexual maturity. Some individuals begin reproducing when 7.4 inches (180 mm) long (median carapace length, MCL), which they attain when about 12-15 years old. The majority do not begin reproducing until they reach 8.2 inches (208 mm; approximately 12-20 years old; Turner and Berry 1984, Turner et al. 1986). Maximum longevity in the wild is likely to be about 50 to 70 years, the norm being 25 to 35 years (Germano 1992, 1994). The average clutch size is 4.5 eggs (range 1-8), with 0-3 clutches deposited per year (Turner et al. 1986). Clutch size and number probably depend on female size,

water, and annual productivity of forage plants in the current and previous year (Turner et al. 1984, 1986; Henen 1997). The ability to alter reproductive output in response to resource availability may allow individuals more options to ensure higher lifetime reproductive success. The interaction of longevity, late maturation, and relatively low annual reproductive output causes tortoise populations to recover slowly from natural or anthropogenic decreases in density. To ensure population stability or increase, these factors also require relatively high juvenile survivorship (75-98% per year), particularly when adult mortality is elevated (Congdon et al. 1993).

Most eggs are laid in spring (Apr -Jun) and occasionally in fall (Sept-Oct). Eggs are laid in sandy or friable soil, often at the mouths of burrows. Hatching occurs 90-120 days later, mostly in late summer and fall (mid Aug-Oct). Eggs and young are untended by the parents. Tortoise sex determination is environmentally controlled during incubation (Spotila et al. 1994). Hatchlings develop into females when the incubation (i.e., soil) temperature is greater than 89.3° F (31.8° C) and males when the temperature is below that (Spotila et al. 1994). Mortality is higher when incubation temperatures are greater than 95.5° F (35.3° C) or less than 78.8° F (26.0° C). The sensitivity of embryonic tortoises to incubation temperature may make populations vulnerable to unusual changes in soil temperature (e.g., from changes in vegetation cover), but there are no data available from the field that can be used to test this hypothesis.

Tortoise activity patterns are primarily controlled by ambient temperature and precipitation (Nagy and Medica 1986, Zimmerman et al. 1994). In the East Mojave and Colorado Deserts, annual precipitation occurs in both summer and winter, providing food and water to tortoises throughout much of the summer and fall. Most precipitation occurs in winter in the West Mojave Desert resulting in an abundance of annual spring vegetation, which dries up by late May or June. Tortoises in this region are primarily active between May and June, with a secondary activity period from September through October. Tortoises may also be active during periods of mild or rainy weather in summer and winter. During inactive periods, tortoises hibernate, aestivate, or rest in subterranean burrows or caliche caves, and spend approximately 98% of the time in these cover sites (Marlow 1979, Nagy and Medica 1986). During active periods, they usually spend nights and the hotter part of the day in their burrow; they may also rest under shrubs or in shallow burrows (called pallets). Tortoises use an average of 7-12 burrows at any given time (Barrett 1990, Bulova 1994, TRW Environmental Safety Systems Inc. 1997); some burrows may be used for relatively short periods of time and then are replaced by other burrows. Tortoises sometimes share a burrow with several other tortoises (Bulova 1994).

Tortoises eat primarily annual forbs, but also perennials (e.g., cacti and grasses). Forage species selected by tortoises in the west Mojave Desert include: *Astragalus didymocarpus*. *Astragalus layneae*, *Camissonia boothii*, *Euphorbia albomarginatus*, *Lotus humistratus*, and *Mirabilis bigelovii* (Jennings 1993). In the east Mojave Desert, tortoises showed a preference for *Camissonia boothii*, *Cryptantha angustifolia*, *Malacothrix glabrata*, *Opuntia basilaris*, *Rafinesquia neomexicana*, *Schismus barbata*, *Stephanomeria exigua* and other species (Avery 1998). On rare occasions they have been observed eating other items such as caterpillars, lizards, and cow dung, but these make up a very small proportion of their diets (Jennings 1993, Esque 1994, Avery 1998). Although they will eat exotic plants, tortoises generally prefer native forbs when available (Jennings 1993, Avery 1998, cf. Esque 1994). The dietary preference may place them at a nitrogen and water deficit. Droughts frequently occur in the desert, resulting in extended periods of low water availability. Periods of extended drought place tortoises at even greater water and nitrogen deficit than during moderate or high rainfall years (Peterson 1996, Henen 1997). During a drought, more nitrogen than normal is required to excrete nitrogenous

wastes, thus more rapidly depleting nitrogen stored in body tissues. Plants also play important roles in stabilizing soil and providing cover for protection from predators and heat.

The tortoise mating system is probably polygynous, and may be polyandrous, although DNA fingerprinting to analyze patterns of paternity has not been conducted. Choice of mate is mediated by aggressive male-male interactions and possibly by female choice (Niblick et al. 1994). Recent findings indicate that tortoises in the West Mojave Desert may exhibit prebreeding dispersal movements, typical of other vertebrates, ranging from 1 to 10 miles (0.6-16km) away in a single season (Sazaki et al. 1995). The advantage of pre-breeding dispersal may be to find a more favorable environment (physical, biotic, social) in which to reproduce. However, the risk is increased mortality from predation, exposure, starvation, or anthropogenic factors (e.g., motor vehicle mortality).

Tortoise activities are concentrated in core areas, known as home ranges. These home ranges overlap; because tortoises do not defend a specific, exclusive area, they do not maintain territories. Home range sizes have been measured at 10-450 acres (4-180 hectares) and vary with sex, age, season, and density or availability of resources (USFWS 1994). Whereas home range sizes may vary from year to year, it is not known at what rate tortoises change their home range location and size over the course of their life. Over their entire life span, an individual tortoise may require considerably larger areas than that used in individual years.

There are many natural causes of mortality, but their extents are difficult to evaluate and vary from location to location. Several native predators are known to prey on tortoise eggs, hatchlings, juveniles, and adults including: coyote (*Canis latrans*), kit fox (*Vulpes macrotis*),badger (*Taxidea taxus*), skunks (*Spilogale putorius*), common ravens (*Corvus corax*), golden eagles (*Aquila chrysaetos*), and Gila monsters (*Heloderma suspectum*). Additional natural sources of mortality to eggs, juvenile, and adults may include desiccation, starvation, being crushed (including in burrows), internal parasites, disease, and being turned over onto their backs during fights or courtship (Luckenbach 1982, Turner et al. 1987, pers. obs.). There are little data available to evaluate the relative contributions any of these factors make to natural mortality in undisturbed tortoise populations. Population models indicate that for a stable population to maintain its stability, on average, no more than 25% of the juveniles and 2% of the adults can die each year (Congdon et al. 1993, USFWS 1994). However, adult mortality at one site in the West Mojave was 90% over a 13-year period (Berry 1997). Morafka et al. (1997) reported 32% mortality over five years among free-ranging and semi-captive hatchling and juvenile tortoises (up to 5 years old) in the West Mojave. When the 26 that were known to have been preyed on by ravens were removed from the analysis, mortality dropped to 24%. Turner et al. (1987) reported an average annual mortality rate of 19 - 22% among juveniles over a nine year period in the East Mojave.

**Habitat Requirements:** Vegetation and topography in tortoise habitat within the WMPA are variable. The greatest population densities in the WMPA are found in creosote bush scrub with lower densities occurring in Joshua tree woodland and Mojave-saltbush-allscale scrub. Major topographical features used by tortoises include flats, valleys, bajadas, and rolling hills generally from 2000-3300 ft (600-1000 m) in elevation and occasionally above 4100 ft (1250 m; Weinstein 1989). Tortoises typically avoid plateaus, playas, sand dunes, steep slopes (>20%) and areas with many obstacles to free movement. They prefer surfaces covered with sand and fine gravel versus course gravel, pebbles, and desert pavement (Weinstein 1989). Friable soil is important for digging burrows, but when friability (e.g., diggability) is similar, productivity of plants is more important (Wilson and Stager 1992).

In an attempt to quantify the relationship between tortoise abundance and habitat characteristics, Weinstein (Weinstein et al. 1987, Weinstein 1989) found habitat to be difficult and complex to characterize with any accuracy. Food availability, soil diggability, longitude (higher densities in West Mojave Desert), and degree of stream-washing were the habitat characteristics that were most useful in discriminating between areas with high densities of tortoises and those with no tortoises. However, the model was quite poor at classifying into correct density categories data that were not used in developing the model.

**Population Status:** It is commonly claimed that tortoise populations have suffered drastic declines throughout much of the species' range, but a thorough presentation of these data has never been published (Bury and Corn 1995). Nonetheless, the cursory published accounts of tortoise populations in the West Mojave Desert do show significant reductions, at least in that region (Corn 1994, Berry and Medica 1995). At one site in the Desert Tortoise Natural Area, north of California City, a loss of approximately 76% was estimated to occur between 1979 and 1992 followed by no apparent change in 1996 (Berry 1997, Brown et al. 1999). A complete analysis of the existing data is needed. Most of the deaths were thought to be caused by a respiratory disease (see below).

**Threats Analysis:** Direct threats to desert tortoise populations are those that immediately affect survival and reproduction and are much easier to document. Indirect threats are those that may affect individuals in some less immediate way, such as by reducing food or altering the soil temperature, which then may affect tortoise reproduction or survival. Indirect threats are often very difficult to substantiate. Examples of direct threats include: collisions with motorized vehicles, illegal collecting, and disease. Indirect threats likely affecting tortoise populations include: habitat loss from construction and agricultural development; habitat alterations from livestock grazing, recreational activities, atmospheric pollution, global warming, and invasions of exotic plants.

Two general phenomena are particularly critical to understanding trends in tortoise populations. Their life history characteristics (e.g., delayed maturation, longevity, low average annual reproductive output, and highly variable nest success) make them susceptible to increased mortality and long delays in recovering from catastrophic losses. Additionally, as populations become increasingly fragmented, the probability of population persistence becomes more tenuous. When population size is low, inbreeding becomes a potential problem. Smaller populations also are at an increased risk of extinction from catastrophes (e.g., fires and disease) and random variation in population parameters, like sex ratio, age class structure, fecundity, and mortality. Populations can reach non-recoverable levels through fragmentation into smaller populations (e.g., from highways, utility corridors, and development) and exacerbated mortality within these fragmented populations.

The relative importance of different threat factors is difficult to rate. First, the cause of death of animals and how much decline is really attributable to the various indirect causes of mortality (e.g., habitat alteration) is difficult to determine. Second, too little is known about several potential threats to evaluate their absolute or relative impacts. Third, determining which factors cause mortality is very site specific. The following evaluation of the relative importance of each factor in terms of threat to tortoise population viability in the West Mojave Desert is based on the available scientific evidence, which is often incomplete. More complete discussions can be found in Lovich and Bainbridge (1999) and Boarman (2002).

The greatest threats to tortoise populations in the WMPA are probably: disease; the

cummulative effects of habitat loss, degradation, and fragmentation from construction, urbanization, and development; and a high level of human access to tortoise habitat. Disease, specifically Upper Respiratory Tract Disease (URTD), may have caused dramatic declines in some populations (Berry 1997). The causative agent of URTD is the bacterium *Mycoplasma agassizii*, which causes lesions in the respiratory tract (Jacobson 1994). Clinical signs of the disease (e.g., swollen eye lids, nasal discharge, wheezy breath, and in extreme cases, lethargy) have been found in many animals within populations experiencing high mortality rates and has been found in some animals prior to death. The introduction, or at least the spread of the disease in some populations, has been attributed to the release of infected captive animals. Little is known about the epidemiology of the disease. It is also unclear if the disease is actually lethal and some apparent recovery has been observed (Brown et al. 1994a,b). Other than preventing the spread by proper handling of animals by trained workers, nothing is known about how to reduce the effects of the disease in wild populations. A shell disease, cutaneous dyskeratosis, has also been identified within tortoise populations. Cutaneous dyskeratosis has been associated with high mortalities in the Chuckwalla Bench area of the Colorado Desert and may be caused by a vitamin or mineral deficiency or contact with a natural or anthropogenic toxicant in the environment (Jacobson et al. 1994, Homer et al. 1998). Little is known about the cause, epidemiology, or treatment of this shell disease, and its incidence appears to be low in the West Mojave Desert.

Habitat loss, degradation, and fragmentation are major problems in the WMPA because of the high level of human activity. The West Mojave Desert is a growing suburban area, with an increase in housing, industry, and commercial development in major municipal areas, rural areas, and along major transportation corridors. The loss of habitat, mortality from increased traffic, reduced quality of habitat altered by human presence and activity, fragmentation of populations, and the cumulative effects of other problems associated with humans (e.g., dogs,recreation, utility corridors, etc.) pose a significant and increasing problem for the viability of tortoise populations within the WMPA.

Many of the individual threats discussed below relate to the level of access to tortoise habitat afforded to people. For instance, illegal collecting of tortoises for food or cultural ceremonies has been documented on a few occasions by law enforcement officials (USFWS1994). There is ample evidence that driving off of roads compacts soil and damages vegetation (see "ORV" section, below). The possibility also exists that tortoises or their burrows may be crushed. Even though off-road rehicle (ORV) activity on roads may pose little such direct impact to tortoises or their habitat, the presence of a road poses potential harm to tortoises and their habitat, and the more roads there are the greater is the proportion of the tortoise population that is under the threat of harmful off-road activity. Other potentially harmful activities that likely occur in greater numbers near roads include: mineral exploration, illegal dumping of garbage and toxic wastes, release of ill tortoises, anthropogenic fire, handling and harassing of tortoises, spread of invasive weeds, and trailing of sheep (Berry and Nicholson 1984). The threat posed to tortoise populations by each of these activities likely increases with increased access afforded by the proliferation of roads, even very lightly traveled ones. Furthermore, some of these individual threats may be relatively low, but their cumulative impact may be great.

Several activities may be considered "moderate threats" to tortoise populations in the WMPA because they cause less direct mortality, are less widespread, are not likely to increase, probably pose a relatively low to moderate level of risk to tortoises or tortoise populations, or little is known about their impacts. The importance of each threat varies from place to place. Also, individually, these threats may be of moderate importance, but their overall cumulative

effects are probably of extreme importance.

**Agriculture**. The effect of agriculture on tortoise populations is primarily through the loss of habitat. When tortoise habitat is converted to agricultural use, it becomes largely unsuitable to tortoises. Other impacts include the introduction of invasive weeds, facilitation of increases in raven population, lowering of the water table, production of dust, and possible introduction of toxic chemicals.

**Fire**. Fire is an ever increasing threat to tortoises and their habitat in the WMPA. Fire was previously rare in the Mojave Desert, but has increased with the proliferation of introduced plants, particularly the grass red brome (*Bromus rubens*), which provide fuel for fires. Red brome helps to spread fire because it is common, tends to grow in large relatively dense mats, and fills the intershrub spaces, which are largely devoid of much native vegetation (Brooks1998). Fires can cause direct mortality when tortoises are burned, which can happen both inside and out of burrows. There are a few documented examples of tortoises being burned by fires (Homer et al. 1988, Esque et al. in press). Other indirect impacts fires may have on tortoise populations include: 1) short-term effect of removing dry and some living forage plants (but this effect is likely short-term); 2) long-term effects of facilitating proliferation of non-native plants, which are of lower nutrient value to tortoises (Avery 1995), and may be avoided by them; 3) short-term fragmentation of tortoise habitat by creating patches of unsuitable habitat, at least on the short term; 4) alteration of temperature profile from removal shade; 5) loss of shrubs used as daytime or night time cover sites; and 6) decreased soil stability and increased erosion.

**Landfills.** In the West Mojave Desert, there are 13 county-run solid-waste landfills and an unknown number of unauthorized dumpsites. The potential impacts of landfills on tortoise populations include: loss of habitat, spread of garbage, introduction of toxic chemicals, increased road mortality, and proliferation of predatory species. The loss of habitat from landfill presence and expansion is relatively minor except when viewed in the context of habitat degradation and fragmentation caused by the myriad human developments that are proliferating in the desert. The greatest potential impact from landfills is their probable role in facilitating the increase in populations of predators such as common ravens, and perhaps coyotes. Ravens make extensive use of landfills for food (Boarman 1993). The food eaten probably supports raven populations through the summer and winter, when natural resources are in low abundance. As a result, large numbers of ravens are present at the beginning of the breeding season (Feb-Jun). Some then move into tortoise habitat, and then nest, raise young, and potentially feed on tortoises. Predation by ravens is probably relatively low within the immediate vicinity of landfills because of the low density of tortoises in the vicinity, but predation may increase as ravens disperse to nest farther from the landfills (Kristan 2001).

**Grazing**. Grazing by cattle and sheep has several potential direct and indirect effects on tortoise populations. These include: mortality from crushing of animals or their burrows, destruction of vegetation, alteration of soil, augmentation of forage (e.g., presence of livestock droppings, and stimulation of vegetative growth or nutritive value of forage plants), and competition for food. There is weak evidence for declines in tortoise density directly associated with grazing, but its evaluation is complicated by the presence of multiple factors affecting tortoises at most sites and the difficulty of being able to measure accurately tortoise densities to assay direct effects (Luke et al. 1991, Oldemeyer 1994). There are observations of sheep or cattle stepping on tortoises or their burrows (Berry 1978, Nicholson and Humphreys 1981, Avery 1998). Cattle may out compete tortoises for some seasonally important forage species (i.e., desert dandelions, *Malacothrix glabrata;* Avery 1998), but the few studies testing for it do not

show strong effects of competition (Tracy 1996). Past studies have shown dietary overlap, a condition necessary, but not sufficient, to show competition (Avery 1998). There are only two studies showing sheep and tortoises eat some of the same food items (Hansen et al. 1976, Nicholson and Humphreys 1981). However, there are no studies that tested if sheep compete with tortoises for food. If livestock significantly affect tortoise populations, it is most likely through habitat alteration. Sheep and cattle are known to compact soil, trample vegetation, and cause observable changes in the composition and structure of the plant and animal communities (Nicholson and Humphreys 1981, Webb and Stielstra 1979, Berry 1978, Brooks 1995, Avery et al. in prep.). No evidence is available to indicate that sheep or cattle benefit tortoises by providing food or improving habitat condition in the Mojave Desert (cf. Bostick 1990).

**Military**. There are five military bases located within the WMPA. Impacts of military activities on tortoises vary from base to base, but generally fall into four categories. Four of the five facilities have large internal support communities, while all five have large operations areas. Both of these factors result in loss, degradation, and fragmentation of habitat. Each one of the bases also support local communities (e.g., Barstow, Ridgecrest, Twenty-nine Palms), which also destroy, degrade, and fragment habitat. Four of the five bases conduct substantial field maneuvers (e.g., tank operations, detonation of air and ground based explosives) that can result in direct mortality for tortoises and destruction and degradation of tortoise habitat. The proposed expansion of Fort Irwin southward will degrade a portion of tortoise habitat used by the Superior-Cronese population; this proposed expansion may pose the greatest single threat to the West Mojave tortoise population. An additional, but unexplored, possible impact of military activity is contamination by toxic chemicals.

By virtue of the restrictive, secret, or hazardous nature of much of their activities, military bases sometimes offer a great level of protection to tortoise populations. For example, restrictions on access to the Precision Impact Range Area at Edwards Air Force Base reduces the amount of human traffic in the area, which is designated critical habitat. All bases, to some extent, prohibit public access, which likely results in less ORV activity, shooting, dumping, etc., than on adjacent private lands. The 44 square miles (71 km2) of NASA's Goldstone Deep Space installation on Fort Irwin is a good example of relatively protected habitat where dog tracks, shotgun shells, sheep scat, etc. are scarce (LaRue pers. comm.). Furthermore, each of the bases is required to develop a Natural Resource Plan, which must comply with the Endangered Species Act.

**Off-road Vehicles**. Off-road vehicle (ORV) activities have caused a substantial loss of tortoise habitat and a reduction in its quality. Competitive events and free play activities cause destruction and degradation of vegetation, compaction of soil, a reduction in tortoise densities, and likely crush tortoises and burrows (Davidson and Fox 1974, Vollmer et al. 1976, Adams et al. 1982, Webb 1983, Bury and Luckenback 1986, Berry 1990 as amended). Some designated Open (free-play) Areas are in formerly high tortoise density areas, so current ORV activities may prevent recolonization of former tortoise habitat. Little data are available to evaluate the effects of light OHV activity on tortoise populations or their habitat, but the direct effects are likely to be minor if vehicles use designated routes of travel and stay on the roads. Indirect impacts, which may be substantial, probably occur wherever vehicle access is allowed in tortoise habitat. These impacts potentially include: soil compaction, vegetation destruction, significant disturbance of biotic soil crusts (i.e. cryptogams), increased soil destabilization and erosion, proliferation of non-native weeds, crushing of tortoise and burrows when vehicle leave the road, shooting and vandalism of tortoises, harming of tortoises or their burrows by dogs, deposition of garbage, providing food for ravens, and the handling, collecting, or disturbance of tortoises. Data necessary to evaluate the extent of these effects are not available, although each of these

impacts is to some degree more prevalent in areas with roads than in roadless areas. Berry et al. (1994) found a negative correlation between off-road vehicle trails and tortoise sign (an index of tortoise density), although that may be because tortoise sign were obliterated by vehicles or covered by dust.

**Predation**. Predation is a naturally-occurring phenomenon. Predation by common ravens has become a major problem for some tortoise populations. Raven populations are increasing at a precipitous rate because of resource subsidies (food, water, nesting substrate) that are provided by increasing human populations (Boarman 1993). Ravens prey on juvenile tortoise (mean size = 2.7 inches [68.4 mm; range = 1.3-4.9 inches; 33-124 mm]). The remains of juveniles killed by ravens have been found throughout the WMPA (Berry 1985, Boarman unpubl. data). Between 1968 and 1992, raven populations in the Mojave Desert have increased by over 1000% (Boarman and Berry 1995), with the highest increases probably occurring in the West Mojave Desert. This means that every year there are more ravens present in tortoise habitat, thus increasing the predation pressure on tortoise populations. Predation by domestic dogs (*Canis familiaris*) and coyotes are likely depleting some tortoise populations (Berry 1990, as amended, Bjurlin and Bissonette 2001). Few data are available to evaluate the nature of the problem caused by these two species, which also benefit from human-based resource subsidies.

**Road Mortality**. Roads and highways have several impacts on desert tortoise populations and their habitat (Boarman and Sazaki 1996). Direct impacts include mortality through road kills and destruction of habitat (including burrows). On a series of annual surveys, Boarman and Sazaki (1996) found an average of one dead tortoise (mostly adults and subadults) per year for every two miles of highway. This was a conservative estimate of the incidence of road kill along California State Highway 395. Indirect effects include degradation of habitat because the roads serve as corridors for dispersal of invasive weeds, predators, development, recreation, and other anthropogenic sources of impact. They also fragment the habitat and populations and alter the sheet flow dynamics of rain water runoff. Tortoise and other animal road kills are also an important source of food for ravens, probably facilitating raven survival and population increases, and as such, roads are another indirect source of mortality to tortoises.

**Utility Corridors**. Corridors formed by utility and energy rights-of-way cause linear impacts to tortoise populations and may have far reaching impacts well beyond those of many point sources of impacts (e.g., developments). Far more tortoise home ranges are traversed by a narrow linear corridor than by a more condensed non-linear project of similar acreage. Further, Olson (1996) reported that the construction of a natural gas pipeline had the greatest impact on tortoises and habitat, construction of a transmission line had intermediate impacts, and a fiber optic line was the most benign. Of 53 tortoises reported accidentally killed during implementation of 171 biological opinions in California and Nevada between 1989 and 1995, 41 of them (77%) were found dead on two linear projects, including the Mojave-Kern Pipeline and Meade-Adelanto Transmission Line (Circle Mountain Biological Consultants. 1996). Considerable habitat destruction or alteration occurs when pipelines and power lines are constructed, and the impacts are repeated as maintenance operations, new pipelines, or new power lines are placed along existing corridors. Pits left open for pipe installation or maintenance may serve as traps for tortoises and other animals (Olson et al. 1993). The habitat conversions during early stages of post-construction succession not only preclude use by tortoises, but may function to inhibit or reduce dispersal across the corridor, thus effectively fragmenting a previously intact population. Furthermore, the presence of utility towers in areas otherwise devoid of other raven nesting substrates (e.g., joshua trees, palo verdes, cliffs), may introduce heavy predation to an area previously largely immune to this activity.

**Low-level Impacts**. Several additional anthropogenic activities also impact tortoise populations, but may be of lesser concern because the amount of area (hence, number of tortoises) impacted is small, total effect or probability of effect on impacted animals is low, our knowledge of the potential effects is low, or our ability to control them is largely non-existent. These include: illegal collecting, energy and mineral development, uncontained refuse, handling and manipulating tortoises, noise, non-motorized recreation, and vandalism. Although many tortoises probably die from it (Peterson 1994, 1996) drought is also considered a low level of threat because, although it may confound the effects of anthropogenic factors, it is a natural phenomenon and there is virtually nothing that can be done directly to minimize its effects.

**Biological Standards:** Based on a series of Population Viability Analyses (PVA), the recovery plan for the desert tortoise (USFWS 1994) recommended that several areas of approximately 1000 mi2 (1610 km2) of tortoise habitat be conserved and managed for tortoise recovery. A PVA is a process that uses information on the special genetic and demographic traits of small populations to predict the probability of extinction over a given period of time. It is wise to set recovery goals (target number of individuals) that have relatively low probabilities of extinction. These analyses resulted in a series of conditions for the viability of populations for a period of 500 years (20 tortoise generations), and were based on several conditional assumptions.

**Condition 1. A genetically viable population of desert tortoises must be composed of at least 5000 adults.** This condition is based on two major assumptions: 1) 500 individuals (adults) of any species must actively and successfully reproduce and pass genes onto the next generation to maintain sufficient genetic heterogeneity (Franklin 1980, USFWS 1994; cf. Dawson et al. 1986, Lande and Barrowclough 1987) and 2) only 10% of the adult population actually contributes to future generations (Ryman et al. 1981, Shull and Tipton 1987, USFWS 1994).

**Condition 2. A demographically viable population of desert tortoises must be composed of at least 50,000 adults to cushion it against environmental stochasticity (variation in population growth rates).** This condition is based on several assumptions (USFWS 1994): 1) the average growth rate for tortoise populations is 0.985 (which actually represents an overall decline and is based on data collected between 1979 and 1989 from 13 tortoise populations throughout the Mojave Desert), 2) standard deviation in annual growth rate is 0.096 (20% higher than measured between 1979 and 1989 to account for greater observed and hypothesized variation than existed during those ten years), 3) environmental and population conditions (other than variance in population growth rates) between 1979 and 1989 are applicable for the next 500 years. It should be noted that catastrophes (e.g., disease, drought, major habitat destruction) were not included, the 20% increase in variation in population growth rate resulted in 250% increase in the minimum viable population size estimated, and two of the PVAs indicated that increasing population growth rates (by reducing mortality or increasing reproduction) to near 1.0 are very important for raising the probability of population persistence.

**Condition 3. A viable population of desert tortoises must maintain an average minimum density of 10 adults per mi2 (6 per km2).** This minimum number ensures that adults have ample opportunity to encounter likely mates. This condition assumes that 1) space requirements for finding a mate can be based on years of greatest home range sizes (years with low forage production) and is approximately 125 acres (50 hectares), 2) male home ranges show little overlap with neighboring males, and 3) adult male to adult female ratio is 1:1. If these assumptions are met, every female is likely to encounter a male at least

in years of low forage production.

**Condition 4. Each reserve should contain a minimum of 1000 mi2 (1610km2) of tortoise habitat.** This condition assumes that 1) 5000 adult tortoises are required to maintain a genetically viable population (Condition 1, above), 2) adult tortoises must exist at an average density of 10/mi2 (6/km2; Condition 3, above), and 3) tortoise habitat and presence are patchy, thus some areas would contain lower densities of tortoises. This space requirement is inadequate to ensure viability based on demographic considerations (Condition 2, above), which requires 5000 - 10,000 mi2 (8050-16,100 km2) of tortoise habitat and as such is optimistic and makes recovery dependent on Condition 5, below.

**Condition 5. Modern principles of preserve design should be employed when developing reserves.** This condition assumes that populations are at a lower risk of extinction when: 1) reserves have low perimeter relative to area (i.e., approaching circular shape), 2) there is low fragmentation of reserves (hence, populations), 3) dispersal occurs among multiple reserves, and 4) there are two or more reserves for the species. The Recovery Plan recommends that there be three reserves (Desert Wildlife Management Areas, DWMAs) in the West Mojave Desert, each containing approximately 1000 mi2 (1610 km2) of tortoise habitat and that areas of suitable habitat be maintained between the three DWMAs to facilitate dispersal, thereby reducing the probability of extinction of any one population. If 1000 mi2 (1610 km2) of contiguous tortoise habitat cannot be included in a single reserve, then smaller segments, the sum of each should total at least 1000 mi2 (1610 km2), should be connected by corridors of usable tortoise habitat. Reserves that adhere less to these principles should be more strictly managed to reduce mortality and increase reproduction.

**Condition 6. Population growth rates of 1.0 (stable population) should be achieved and maintained by reducing levels of mortality.** This is particularly important in reserves where total population sizes are less than 10,000 - 20,000 animals. This condition assumes that: 1) starting populations are sufficiently large (e.g., much larger than 2,000 and probably closer to 20,000 adults), 2) variation in population growth rates does not increase greatly, and 3) no catastrophes occur. The more mortality is reduced through strict management, the greater will be the population growth rate and will be the required space of reserves. The converse is also true, the less mortality is reduced, the larger the reserves have to be to maintain the same probability of persistence. However, if population growth rates are 0.975 or less, it becomes highly unlikely that the population will persist for more than 400 years.

The assumptions made above concerning number of tortoises or amount of space are estimates based on the best available data. Actual numbers and areas necessary to establish and maintain viability are unknown, but the PVAs provide the only realistic means available for determining quantifiable targets for management areas.

Mortality can be reduced and reproduction increased through maintenance and implementation of several measures designed to reduce the effects of the threats listed above. Following is a list of actions recommended in the Recovery Plan (USFWS 1994). Most actions are oriented towards reserve-level management within DWMAs, but some apply to activities outside of the DWMAs. Activities that should be prohibited within DWMAs include: vehicles driving off of designated routes, competitive and organized ORV activities, habitat-destructive military maneuvers, clearing for agriculture, clearing for new landfills, surface disturbances that diminish habitat, livestock grazing (but perhaps allow experimental grazing in some non-core areas), feral burros and horses, vegetation harvest (w/o permit), collecting of biological

specimens (w/o permit), dumping and littering, deposition of captive or displaced tortoise & other animals (w/o permit), uncontrolled dogs, discharge of firearms (except for hunting between Sept. and Feb.). Some of these activities could possibly be reintroduced once scientific research provides hard evidence that specific activities, when properly managed, have minimal impact on tortoise population viability.

The following additional actions should be implemented: erect barrier fences and passageways along selected roads and highways, sign and in some cases fence boundaries near communities and Open Areas, reduce raven predation on juvenile tortoises, implement translocations from adjacent areas, designate Ord-Rodman DWMA as an Ecological Reserve and Research Natural Area, establish drop-off site in Barstow for adopting captive tortoises, remove of feral dog packs, initiate semi-wild breeding program once it has been shown with scientific evidence that captive release can be successful and is necessary, establish visitor and resident education center and programs.

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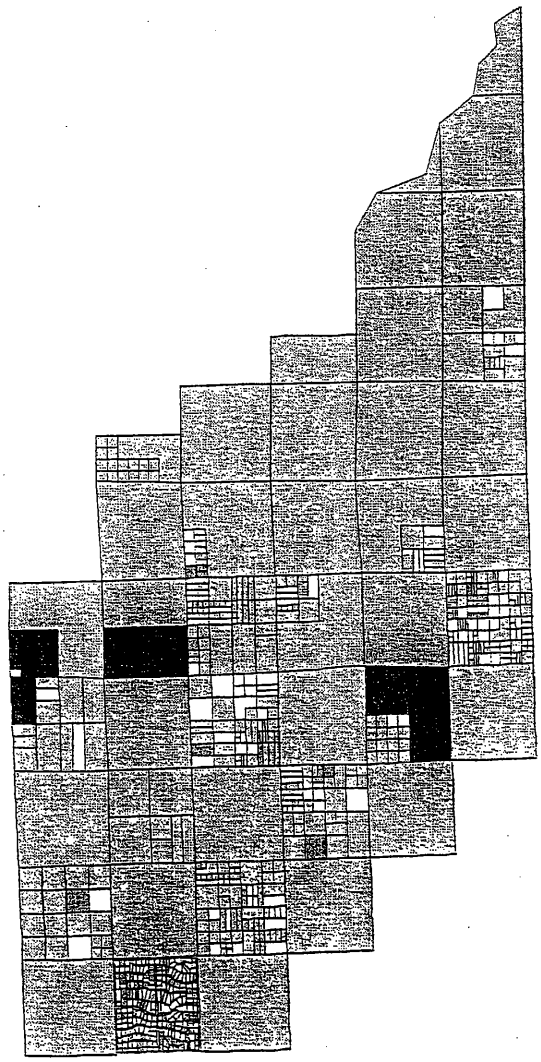
*APPENDIX E*

*2003 DESERT TORTOISE PRESERVE COMMITTEE MANAGEMENT PLAN, DESERT TORTOISE NATURAL AREA & ADJACENT LANDS*

# Desert Tortoise Preserve Committee
# Management Plan
# Desert Tortoise Natural Area & Adjacent Lands



Prepared by Michael J. Connor, Ph.D.
Desert Tortoise Preserve Committee
2002

Desert Tortoise Preserve Committee
Management Plan
Desert Tortoise Natural Area & Adjacent Lands

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Desert Tortoise Preserve Committee

Founded 1974

## MISSION

The Desert Tortoise Preserve Committee was founded in 1974 to (a) promote the welfare of the California State Reptile, the Desert Tortoise (*Gopherus agassizii*) in its native wild state in the southwestern United States; (b) establish and/or assist in establishment of Preserves for the Desert Tortoise in locations within the southwestern United States where there are habitats and ecosystems which support it; (c) provide information, education and research regarding ecosystems critical to the Desert Tortoise and to associated animal and plant species that may be included in these ecosystems; (d) develop and implement management programs for preserves, including other land associated with any preserve, to protect the Desert Tortoise and the biodiversity of the ecosystems in which it lives; and (e) foster and to publicize the uses for these preserves for selected forms of recreation, for education, for conservation and for research.

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# 1. INTRODUCTION AND PURPOSE

## A. Introduction

The Desert Tortoise Preserve Committee (DTPC) was founded in 1974 to promote the welfare of the desert tortoise (*Gopherus agassizii*) in its native wild state by establishing preserves for the tortoise and associated animal and plant species in desert tortoise critical habitat, by developing and implementing management programs for tortoise preserves and adjacent land, by providing information, education and research, and by fostering the use of preserve lands for selected forms of recreation, for education, and for research.

Since its inception, the Committee has centered its activities on the Desert Tortoise Research Natural Area (DTNA). Located in southeastern Kern County, California (figure 1) this 39.5 square mile preserve historically included the highest density tortoise population in the United States. Initially, the Committee worked to fence the DTNA boundary and then to ensure the acquisition of the 16 square miles of private inholdings that were extent when the preserve was designated. The Committee has been extremely successful in this endeavor, and over 88% of the private inholdings have been acquired (see figure 2). The Committee's current focus is shifting towards expanding the DTNA to better achieve the precepts of tortoise reserve design laid down in the U.S. Fish and Wildlife Service's 1994 *Desert Tortoise (Mojave Population) Recovery Plan*. An expanded DTNA will play an increasingly significant role in desert tortoise and Mohave ground squirrel conservation.

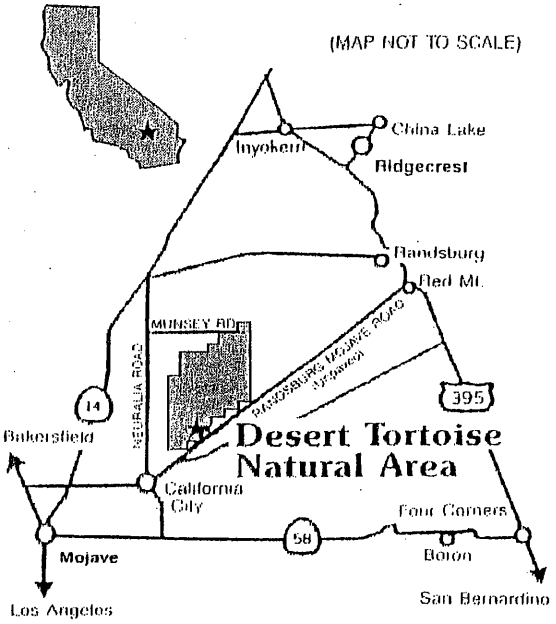
The DTNA is managed under the 1988 *Sikes Act Management Plan for the Desert Tortoise Research Natural Area and Area of Critical Environmental Concern*. The Bureau of Land Management and the DTPC are responsible for most of the on the ground management. Coordination meetings have been held annually for the last decade during which management is candidly reviewed and assessed, and management modified as required.

## B. Purpose

The Committee seeks to manage the land in and around the DTNA to enhance the recovery of the desert tortoise and the Mohave ground squirrel in furtherance of its mission. The Committee has entered into mitigation agreements with various agencies to facilitate funding for such management.

The purpose of this plan is to provide a management framework for the DTPC as it works with other agencies to conserve habitat for the desert tortoise and Mohave ground squirrel, and to enhance the recovery of these and other threatened and sensitive species. Developed from concepts of rational reserve design strategy and management guidelines laid down in the USFWS 1994 *Desert Tortoise (Mojave Population) Recovery Plan*, this management plan describes the preserve location, area and design, and proposes interim and long-term management actions designed to enhance and maintain the habitat for the benefit of its desert tortoise population and other inhabitants of this western Mojave ecosystem particularly the Mohave ground squirrel.

**Figure 1. Location of the Desert Tortoise Natural Area and Schematic Map Showing Sections**



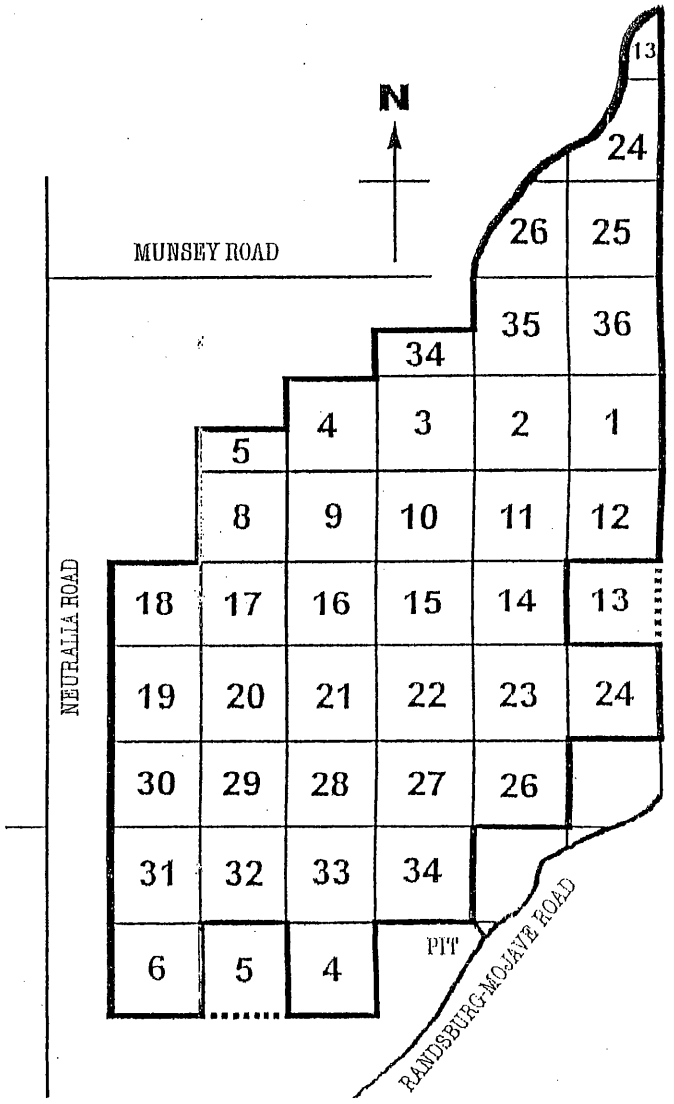
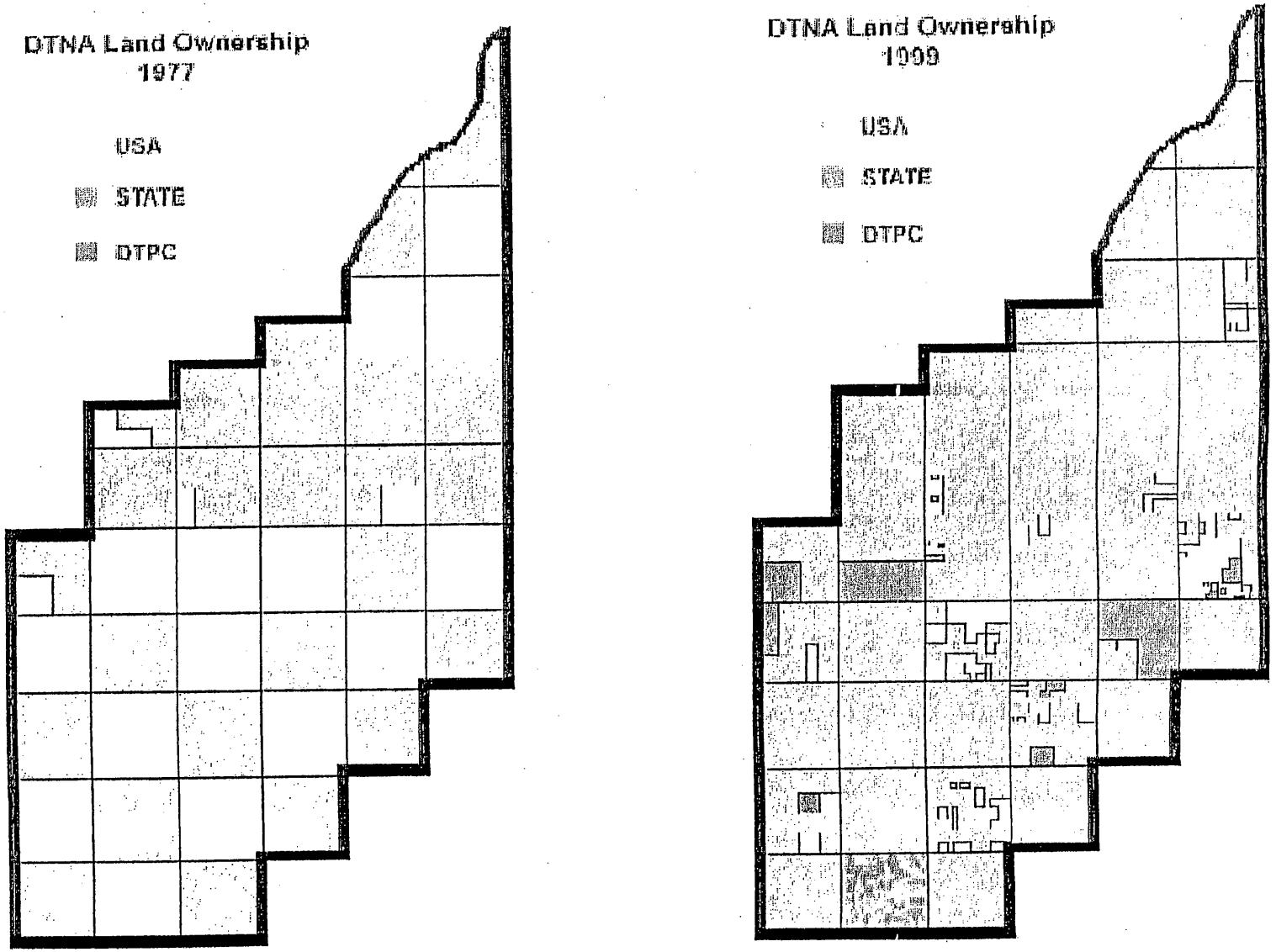



**Figure 2.** **Progress In Land Acquisition At the Desert Tortoise Natural Area, 1977-2002**



## 2. BACKGROUND

### A. Desert Tortoise Natural Area

Useful summaries of the history of the formation of the DTNA can be found in Forgey, 1976 and in the 1988 Sykes' Act Management Plan (Bureau of Land Management and California Department of Fish & Game, 1988). The following brief summary was compiled from these sources and from DTPC files.

Strong public support to establish a sanctuary or preserve for the desert tortoise in the area north of California City and south of Koehn Dry Lake lead the Bureau of Land Management to establish a "Desert Tortoise Preserve" in the November, 1973 Interim Critical Management Plan for recreation vehicle use in the California Desert (Bureau of Land Management, 1973). The plan designated a vehicle closure for the "Desert Tortoise Preserve" and called for vehicle closure signs to be installed around the perimeter. Public support coalesced over the need for a larger preserve that would be protected with a boundary fence, and on April 2, 1974, the Desert Tortoise Preserve Committee was formed with these goals in mind. In 1975, the Bureau filed an application to with the Secretary of the Interior to withdraw 12,000 acres of public land from mineral entry to establish the Desert Tortoise Natural Area. In 1976 the Bureau set the Natural Area at its present size of 39.5 square miles (25,290 acres) (Bureau of Land Management, 1976). Of that, 8,860 acres were in private ownership.

### B. History of Land Acquisition in the Desert Tortoise Natural Area

In 1978, the DTPC associated as a project committee with The Nature Conservancy (TNC) to join forces in land acquisition. The DTPC took the lead in raising funds for land acquisition, and the TNC in turn provided their expertise in negotiation and purchase of the properties from the landowners and in holding the properties. As the Desert Tortoise Preserve Committee began to develop its own in-house acquisition expertise it took on more of the negotiation and acquisition activities. By 1991, both the TNC and DTPC agreed that the partnership was no longer needed and the TNC ended its role at the DTNA.

The initial strategy employed by the two non-profit entities was to acquire properties and then sell or exchange them to a public agency, such as BLM. The money raised in the sale would then be used to purchase additional private lands in the Natural Area (Monsko, 1989). Table 1 summarizes the history of acquisition of private inholdings in the Natural Area. In 1980, the BLM acquired 1580 acres in Sections 15, 17 and 29 through a land exchange. In 1986, the DTPC joined with TNC and the Department of Fish and Game Wildlife Conservation Board to buy 948 acres in Sections 17, 18 and 23, the largest holding in single ownership. In 1987 a coalition of conservation organizations, including the Defenders Of Wildlife, petitioned Congress for a Land and Water Conservation Fund appropriation for the BLM in fiscal year (FY) 1988. The efforts paid off when Congress appropriated $600,000, of which $500,000 was earmarked for the DTNA and the remainder went to the Chuckwalla Bench Area of Critical Environmental Concern. In FY89 through all the conservationists' efforts, Congress appropriated

## Table 1: History of Land Acquisitions at the DTNA

| | Acres | | | | |
|---|---|---|---|---|---|
| Year | DTPC/TNC* | BLM | CDFG | Private Lands Acquired | Comments |
| 1977 | 160 | | | 160 | |
| 1978 | 1280 | | | 1280 | |
| 1980 | | 1580 | | 1580 | Land exchange |
| 1981 | 40 | | | 40 | |
| 1984 | 68 | | | 68 | |
| 1985 | 10 | | | 10 | |
| 1986 | 30 | | 948 | 978 | |
| 1987 | 20 | | | 20 | **Congress petitioned for Land and Water Conservation funds |
| 1988 | 271 | [1560], 260 | | 534 | 1560 acres was acquired from TNC/DTPC using Land and Water Conservation funds. |
| 1989 | 305 | 117 | | 462 | |
| 1990 | 68 | [604], 519 | 2.5 | 589.5 | 604 acres acquired from TNC/DTPC; 2.5 acres transferred to CDFG by DTPC |
| 1991 | 7 | 113.5 | | 120 | |
| 1992 | 91 | 52.5 | | 143 | |
| 1993 | 7 | | | 7 | |
| 1994 | 7 | | | 7 | |
| 1995 | 36 | | | 36 | |
| 1996 | 46 | | | 46 | |
| 1997 | 19 | | | 19 | |
| 1999 | 2.4 | | | 2.4 | |
| 2001 | 65 | [30] | | 65 | BLM acquired a 30 acre parcel from DTPC that had been acquired in 1996 to facilitate clearing a clouded title by agreement with BLM. |
| 2002 | 25 | | | 25 | |
| TOTAL | | | | 6189.4 | |
| As of spring 2002,1657 acres is left in private ownership within the DTNA boundary | | | | | |

*Between 1976 and 1991, the DTPC was a project committee of The Nature Conservancy. The DTPC raised funds for land acquisition at the DTNA and The Nature Conservancy provided its real estate and management expertise. This relationship ended in 1991 once the DTPC had developed its own land acquisition and management capacity.

**In 1987 a coalition of conservation organizations lead by Defenders Of Wildlife, petitioned Congress for a Land and Water Conservation Fund appropriation for the BLM in fiscal year 1988. Congress earmarked $500,000 for land acquisition at the DTNA.

another $2.3 million for the two. To carry out their program the BLM added realty experts to two offices and formed a coordinating group consisting of representatives from the Kern County Planning Department, California Department of Fish and Game, DTPC and TNC with the intent of avoiding duplication of efforts and to present a consistent picture to the landowners.

DTPC became active in tortoise mitigation and compensation for development projects in the desert in early 1988. DTPC received funds from LUZ Engineering Corporation as part of the required compensation for a solar electric generating plant at Kramer Junction 160 acres were purchased in Section 36 and subsequently sold to the BLM. The Committee also received compensation funds from Kerr-McGee Corporation for a cogeneration plant in Searles Valley and purchased 40 acres in Section 27. This experience allowed the DTPC to act as the mitigation agent in the Yucca Valley Churches HCP and acquire 5 acres of replacement habitat in section 27 at the DTNA. This was the federal 10(a)(1)(b) permit issued in California for the lawful take of desert tortoises (La Rue, 1994). A list of similar agreements governing land in and around the DTNA can be found in Appendix A.

DTPC also uses grant funding to buy habitat at the DTNA, including a $100,000 grant from the Wildlife Conservation Board in 1989.

### C. Desert Tortoise Natural Area Expansion Proposals and Land Acquisition

In its discussion of tortoise reserve design, the *Desert Tortoise (Mojave Population) Recovery Plan* (section II 5) specifies the importance of minimizing the perimeter to area ratio, that interconnected blocks of habitat are better than isolated blocks, and that linkages function better when the habitat within them is represented by protected, preferred habitat for the target species. An additional relevant criterion is the ability to use readily defensible boundaries such as roads where it is more practical to build fences and other barriers without degrading additional habitat.

In 1987, the Committee submitted a proposal to the Bureau of Land Management for a major expansion of the Natural Area to include tortoise habitat in the adjacent Western Rand Mountains ACEC and approximately 20 square miles of private land holdings east, west and north of the DTNA. This included expansion of the southeast boundary to meet the Randsburg Mojave Road with the eventual goal of constructing a fence along that road "to keep in the tortoise and keep out sheep, ORV's, dogs etc. Development and recreation pressures will mandate a secure barrier in then future." [Proposal submitted to Ed Hastey, Director California State Office, Bureau of Land Management, September 1987]. This proposed enlargement was not fully endorsed by the Bureau at the time because of the "logistical nightmare" of the acquisition effort and the need to more fully meet acquisition goals in the DTNA; endorsement would be reconsidered when the DTNA acquisition goals have been more fully met and when "the efforts of a third party" have reduced the number of parcels in need of acquisition. (letter to the DTPC from BLM State Director Ed Hastey, reference 6840 CA-063.14, December 1, 1987).

In 1992, the Committee received a gift of 188 acres of habitat in the proposed expansion area just south of the DTRNA boundary. This opportunity lead the Committee to launch its own

southeastern "DTNA buffer zone" program which targeted sections 25, 35, and 36 to the immediate south east of the boundary. The DTPC currently manages 660 acres of land in sections 25 and 35. The DTPC has recently acquired over 2,000 acres in the DTNA expansion areas to the east and west of the current boundaries. The Bureau's West Mojave Planning effort has included the "buffer zone" and "eastern expansion" areas within the boundary of the proposed Fremont-Kramer Desert Wildlife Management Area.

### D. Stewardship

In December 1986, the DTPC signed a Cooperative Management Agreement with the BLM for the management of the Natural Area. This formalized the working arrangements that had been ongoing for many years for perimeter fence repair, signage, managing visitation, updating the Habitat Management Plan, etc. The DTPC organizes regular work parties to remove trash, and to maintain trails, the interpretive center, fencing and other infrastructure. Since 1989, the DTPC has staffed a Naturalist at the Interpretive Center each spring to provide security and monitoring of visitors. DTPC staff and volunteers make regular fence patrols and coordinate these with the BLM Ranger where possible. Stewardship activities are recorded on the *Desert Tortoise Natural Area Report* form (Appendix B) and the reports are kept on file in the DTPC's Riverside Office.

### E. Research

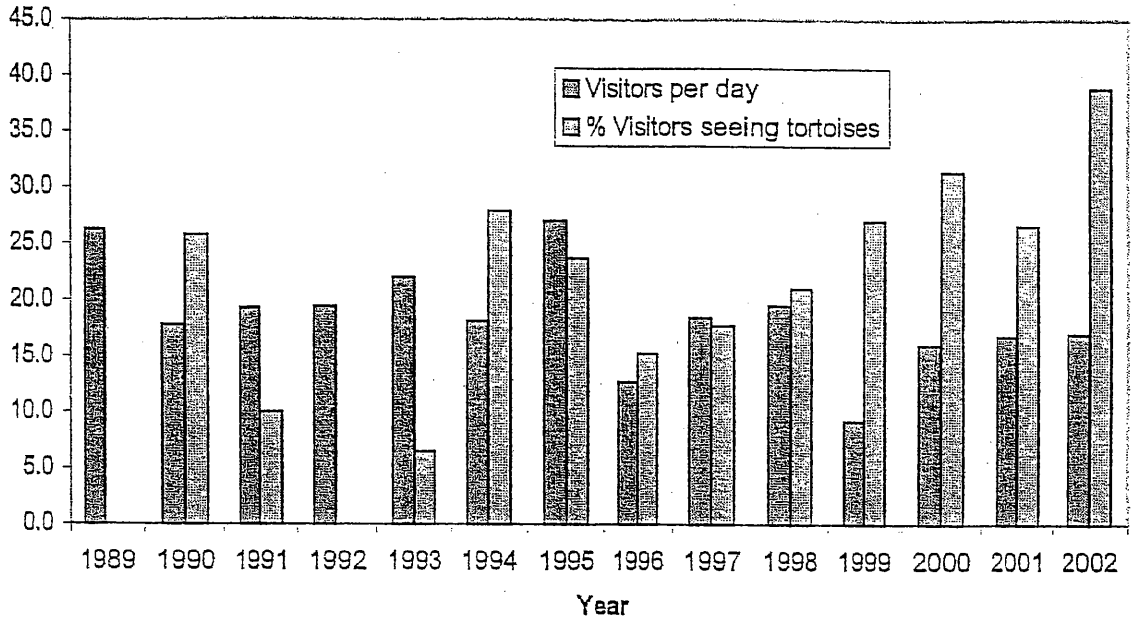
The DTNA has provided critical information for understanding desert tortoise (*Gopherus agassizii*) ecology, physiology, health, and behavior (Connor & Berry, 2000). Since 1973, research projects conducted at the DTNA have played an important role in identifying major issues for the desert tortoise such as: tracking population dynamics and the catastrophic declines; discovery of upper respiratory tract disease; quantifying physiological and reproductive adaptations to drought and abundant precipitation; establishing plasma and biochemical reference ranges; developing protocols for field handling techniques; identifying forage patterns and preferences; documenting the impacts of raven predation on juvenile tortoises; and describing the protective effects of preserve fencing in regards to livestock grazing and off-road vehicles. For the past 26 years, the approach has been for integrative scientific research with each project drawing on the others. The DTNA has provided biologists and land managers with valuable lessons for design and management of reserves for the recovery of tortoise populations in the Mojave and Colorado deserts. Management issues such as disease, raven predation, invasion and establishment of alien plant species and encroaching urban interfaces are at a landscape scale.

The DTPC has initiated and funded various research projects at the DTNA and has been instrumental in securing funding to ensure that tortoise surveys are conducted on the DTNA's two permanent study plots. The Committee has also been successful in raising funds for essential research on the state-listed Mohave ground squirrel.

## F. Education & Visitation

The Committee designed the educational materials portrayed on the kiosk panels at the DTNA Interpretive Center, and designed the layout of trails. The Interpretive Center has become the central point for visitors to the Natural Area. This ensures that visitors and their potential impacts are more easily managed. The DTPC has staffed a naturalist at the Interpretive Center each spring since 1989. The naturalists monitor visitation, and provide educational and interpretive services. The presence of a naturalist who can provide useful information on the tortoises and other wildlife provides an additional incentive for visitors to begin their visit at the Interpretive Center. Figure 3 shows spring visitation and sightings of tortoises by visitors between 1989 and 2002 (from Connor, 2002).

**Figure 3. Spring Visitation at the DTNA, 1989-2002**



# 3. EXISTING SITUATION

## A. RESOURCES

### 1. Biological Resources

The 1988 ACEC Plan provides a detailed account of the resources within the DTNA (Bureau of Land Management 1988), and the *Desert Tortoise (Mojave Population) Recovery Plan* (FWS, 1994) provides a useful synopsis of tortoise biology.

Tortoise density estimates on the Interior and Interpretive Center study plots performed since 1988 (most recently in spring 2002) indicate that numbers of adult tortoises have continued to decline, but the number of tortoises inside the fence-line is significantly higher than outside the fence-line (Berry, data in preparation). A significant number of juvenile and young tortoises were found on the Interpretive Center plot, indicating that recruitment is occurring. However, the continued loss of adults remains a serious problem.

In 1990, section 8 in the DTNA adjacent to the Honda Test Track was subdivided into 4 quadrants with tortoise fencing for an experimental relocation study (Weinstein, 1991). The section 8 site was resurveyed in 1998 by CDFG and DTPC personnel. The survey team located 30 live and 33 dead tortoises (Hoover, Memorandum to K. Berry dated August 13, 1998) indicating that a die-off had occurred in this location since the completion of the relocation study in 1991. The 1979 Desert Tortoise Natural Area Habitat Management Plan identified section 19 and 31 on the western boundary of the DTNA as "Land comprising the best known tortoise habitat". Section 30 which lies on the western boundary between section 19 and 31 was the site for study of energetics in the desert tortoise (Marlow 1979). Surveys by BLM filed investigators located 161 tortoises on the section 30 in 1979, and 151 in 1980 (Bureau of Land Management, 1988). Additional tortoise surveys have been conducted at the DTNA in recent years as part of the preparations for the West Mojave Plan and in the FWS range-wide line-distance sampling survey but quantitative data has not been made available.

DTPC is working to develop a head-starting protocol that could potentially be used to accelerate recovery of the tortoise at the DTNA. Head-starting chelonians is controversial, and there is little data available that demonstrates that such a program could usefully augment desert tortoise recovery (see Morafka et al., 1997). A suitable site for head-starting research would in the Honda relocation site at section 8. This is relatively remote (vandalism is potentially a very serious issue for any long-term project), has already been the site of previous manipulations, and has been fenced into 4 quadrants that may be valuable for controlled studies.

Recent surveys (2000) supported by the DTPC and sightings by the naturalists indicate the continued presence of Mohave ground squirrels (*Spermophilus mohavensis*) at the Natural Area (Leitner, 2001; Connor, 2000). Other notable species observed in recent years by the DTPC naturalists, volunteers and BLM biologists include the westernmost sighting of a Sonoran metalmark butterfly (*Apodemia mejicanus*), burrowing owls (*Athene cunicularia*), Bendire's

Thrasher (*Toxostoma bendirei*), Loggerhead shrikes, *Lanius ludovicianus*, Le Conte's thrasher, *Toxostoma lecontei*, and ospreys (*Pandion haliaetus*).

Although impoverished in some areas because of human activity, the DTNA buffer zone and expansion areas have similar biological assemblages to that found in the DTNA. The DTNA perimeter fence was designed to allow unimpeded transit of small animals, and tortoises regularly move in and out of the designated ACEC area. Tortoises may be encountered throughout the buffer area even in the heavily denuded, high OHV activity area located by the Randsburg Mojave Road in section 3.

An inventory of vertebrate species anticipated to occur in the DTNA and in the proposed expansion areas is provided in Appendix C.

## 2. Land base

The land ownership pattern within the existing DTNA boundary is shown in figure 4 and summarized in tables 2 and 3 below. Federal and California state agencies hold approximately 23,059 acres. The DTPC owns 389 acres. About 1,657 acres remain in private hands.

**Table 2. DTNA Land Ownership as of Spring 2002**

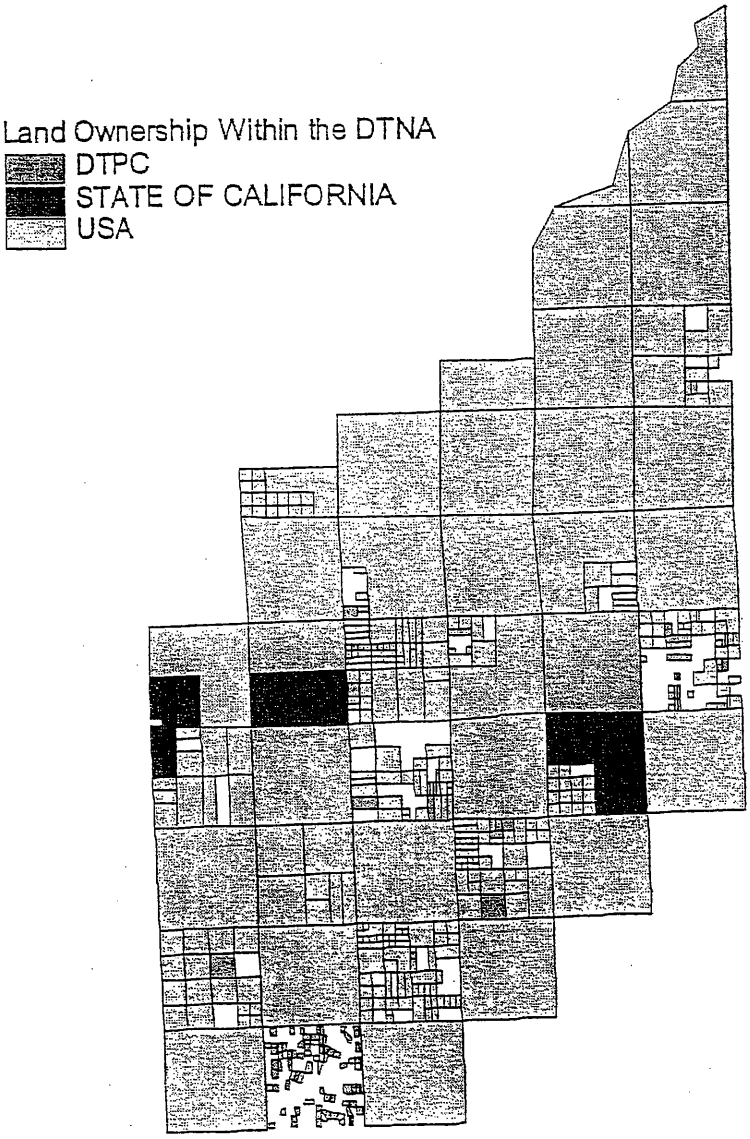
| Entity | Acres |
|---|---|
| USA (BLM) | 22,034 |
| State of California | 1,025 |
| DTPC | 389 |
| Private | 1,657 |
| Total | 25,105 |

The 1,657 acres of private land is divided among 295 parcels. The bulk of these parcels are in section 5 and section 13 (Table 3).

**Table 3. Distribution of Private Landholdings Within the DTNA as of Spring 2002.**

| Township | Section | Acres | Number of Parcels |
|---|---|---|---|
| T30S R38E | 36 | 100 | 7 |
| T31S R38E | 9 | 50 | 7 |
| | 11 | 50 | 4 |
| | 13 | 334 | 64 |
| | 15 | 55 | 6 |
| | 16 | 27 | 5 |
| | 18 | 5 | 1 |
| | 19 | 60 | 2 |
| | 21 | 263 | 22 |
| | 23 | 20 | 2 |
| | 27 | 98 | 8 |
| | 31 | 81 | 2 |
| | 33 | 147 | 18 |
| T32S R38E | 5 | 365 | 147 |

Figure 4. Land Ownership Within the Desert Tortoise Natural Area



The DTPC has been working with the State of California, local governments, public agencies, private companies and other nonprofit organizations to conserve additional habitat outside the existing perimeter of the DTNA. Figure 5 shows the distribution of these acquisitions around the DTNA. The DTPC holds 555 acres (31 parcels) west of the DTNA, protecting the high value habitat in sections 19, 30, and 31; it holds or manages 818 acres (13 parcels) southwest of the DTNA in the crucial buffer zone between the DTNA and the Randsburg-Mojave Road; and it holds 1119 acres (23 parcels) on the eastern side of the DTNA that protects the western boundary and forms a significant link towards the rest of the tortoise population in the Fremont-Kramer critical habitat unit. A list of agreements and associated acreage can be found in Appendix A.

## B. THREATS TO THE TORTOISE AND ITS HABITAT

The Desert Tortoise Recovery Plan lists and discusses 19 types of threat to the desert tortoise (FWS, 1994 Appendix D). This section reviews those threats relevant to the tortoise and its habitat at the DTNA and surrounding area. While these threats are categorized for convenience, they are often interrelated, are cumulative and deserve consideration as such.

### 1. Deliberate Tortoise Removal, Release And Translocation

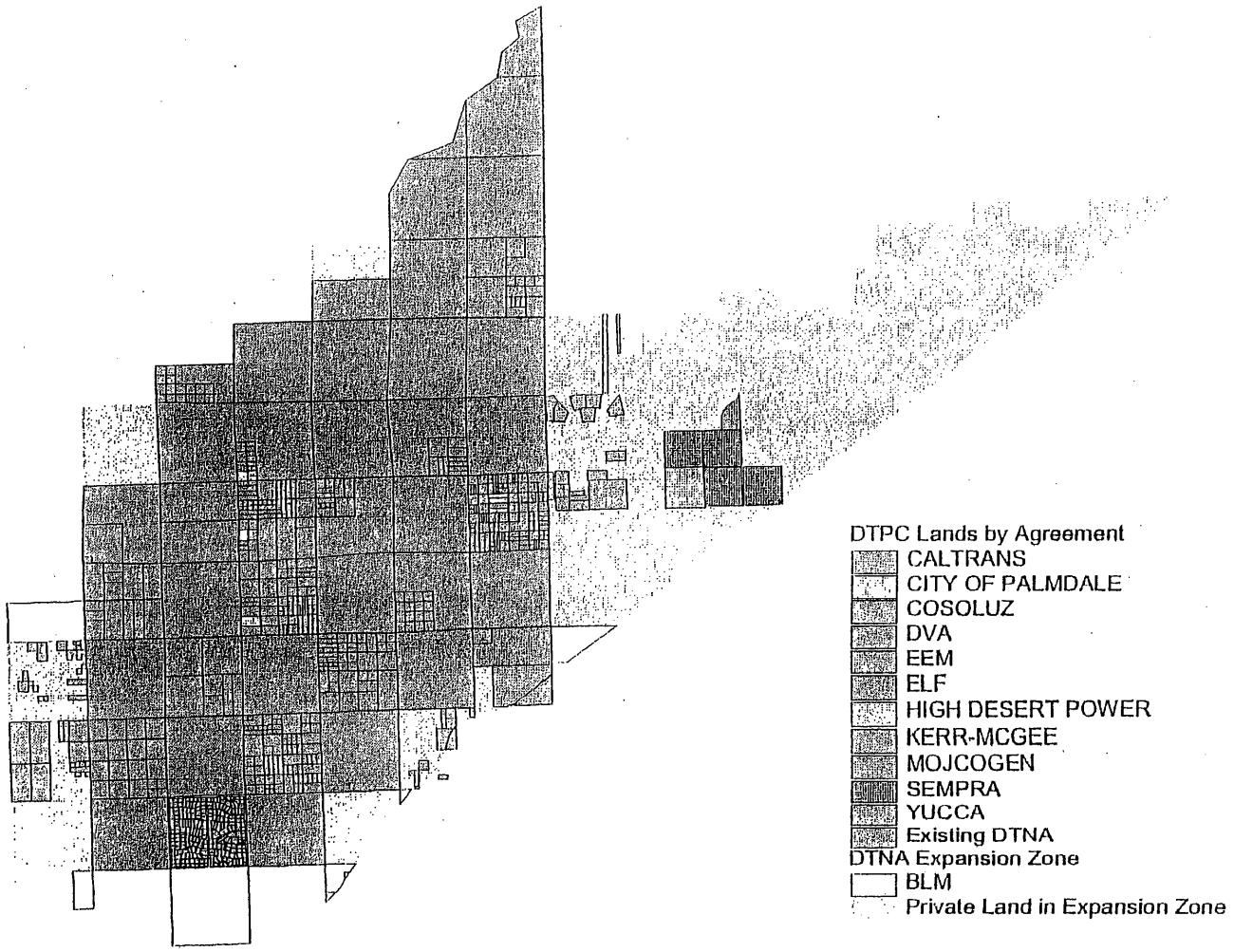
As the Recovery Plan documents, prior to the 1960s, large scale, deliberate removal of tortoises for the pet trade occurred in the region. Sporadic episodes of tortoise removal either for pets or as food items have been reported, including interceptions by DTPC personnel stationed at the DTNA. There have been no documented removals of live animals from the DTNA in recent years but the naturalists have intercepted the removal of carcasses. While this of little direct threat to the population potentially valuable information relating to life history and causes of death may be lost.

Release of tortoises at the Natural Area is an issue. Desert Tortoise Preserve Committee Naturalists at the DTNA have intercepted people in the process of releasing captives and discovered recently released captives (Howland 1989, Ginn 1990, and Jennings 1991). Howland (1989) reported illegal releases and an attempted release of five desert tortoises, three of which showed signs of URTD. Jennings (1991) recorded two such instances. In recent years, the naturalists have prevented the release of tortoises found on distant roads by off-highway vehicle enthusiasts who believe that the tortoises either belong in the DTNA or would be better off there. Connor 2002 reported the interception of the release of a red-eared slider (*Trachemys scripta elegans*) that was driven to the DTNA after being found at the side of a freeway near Barstow.

### 2. Vandalism, Trash And Balloons

Shooting and vandalism play a major role in losses of desert tortoises in many areas, particularly where human visitor-use is high (FWS, 1994). Target shooting is not allowed in the DTNA but does occur on land around the DTNA and signs along the boundary are frequently riddled with bullet holes.

**Figure 5. DTPC Land Holdings In the DTNA Expansion Area, 2002**



The Recovery Plan documents the impacts that trash, balloons and other foreign objects can have on the tortoise including death and injury through ingestion and entanglement (FWS, 1994). Balloons are frequently found on the DTNA.

### 3. Roads And Off-Highway Vehicle Recreation

The negative impacts of roads on desert tortoise populations are well documented in California, and busy roads can deplete tortoise numbers for several kilometers on either side (FWS, 1994). The Recovery Plan list of impacts from ORV use is extensive, including: mortality of desert tortoises on the surface and below ground; collapsing of desert tortoise burrows; damage or destruction of plants used for food, water, and thermoregulation; damage or destruction of the mosaic of cover provided by vegetation; adverse effects to the general well-being of desert tortoises through water balance, thermoregulation, and energy requirements; noise pollution; impact, damage or destruction of soil crusts; soil erosion; proliferation of weeds; and increases in numbers and locations of wild fires (FWS, 1994).

The area around the DTNA has long been a focus of OHV use (BLM, 1993) and abuse (Goodlett and Goodlett, 1991). The Rand Mountains region is popular with OHV enthusiasts and the private lands to the south as used as camping and staging areas. Camp "C", one of the more popular staging areas, is located in the eastern expansion area. Some illegal OHV use occurs on the DTNA as documented by DTPC fence patrols. Completed *Desert Tortoise Preserve Committee -- Desert Tortoise Natural Area Activity Report* forms (see Appendix B) frequently reference deliberate cuts and breaks in the fence line with clearly visible vehicle (usually motorcycle) tracks leading into the DTNA.

### 4. Mining

The Recovery Plan documents a variety of impacts, including: (1) cross-country travel by vehicles during the exploration phase; (2) construction of roads; (3) disturbance of the soil surface and vegetation for access to the mineral resources (shafts, mill sites, open pits, placer diggings, tailings, leach pits, etc.); (4) production of toxic products or byproducts; (5) development of small towns and settlements to support large mines; and (6) temporary (short- or long-term oil and gas leases) or permanent transfer of title of public lands to the private sector, and (7) refuse. The Federal lands within the Natural Area are withdrawn from mineral entry (see above) however this withdrawal does not protect the surrounding lands and active mining occurs in the Randsburg area to the northwest. Mining activities could be a source of wind or water borne contaminants. Elevated levels of metal toxicants have been found in livers and kidneys of some tortoises from the DTNA and other areas of California (Homer et al., 1996).

### 5. Grazing

Impacts from livestock grazing include trampling of animals, nests and habitat, competition for food, changes in soil and vegetation, and loss of cover (FWS, 1994). Livestock grazing was prohibited at the DTNA in 1978. However, even though livestock grazing is prohibited within the California City limits, bands of sheep are often herded down the

Randsburg-Mojave Road and may trespass on unfenced sections of the DTNA and the surrounding habitat.

## 6. Alien Plants

The number of alien plant species is increasing and some now dominate and negatively affect or threaten to affect ecosystem integrity in wildland areas of the Mojave desert (Brooks, in review). The most widespread and abundant species are the annuals *Schismus* spp., and *Erodium cicutarium* (Brooks and Berry 1999). Russian thistle is a problem at the DTNA (Bureau of Land Management, 1988) particularly on the western side along Cache Creek.

Established alien plant seedlings can inhibit the germination of desert annuals (Inouye, 1980; Inouye, 1991), and densely packed alien germinants may reduce subsequent germination of natives in the Mojave Desert. Reduced abundance and diversity of native annual plants can deprive desert tortoises of important forage. Effects may include reduced availability of preferred food plants, loss or reduction of available nutrients and trace elements, and change in seasonal availability of plant foods (Nagy et al., 1998; Brooks and Berry, 1999). Desert tortoises selectively graze native annual and herbaceous perennial plants, and in some cases they will eat exotic plants. At the DTNA, native plants comprised 95% of the desert tortoise diet (Jennings, 1993a, 1993b, 1997). The Mojave ground squirrel is often less abundant in areas dominated by alien annual plants compared to areas dominated by native species (Phil Leitner, personal communication). Alien annual grasses alter the fuel structure in the Mojave and Colorado deserts, making them more susceptible to frequent fires.

Invasions of new species often occur along roads and washes in the deserts of California (Brooks, 1998; Kemp and Brooks, 1999), so efforts to monitor the arrival of new species and eradicate them should be focused in these areas. *Brassica tournefortii*, a recently introduced mustard, is spreading along and outward from roads in the California deserts. This species fuels fire in coastal southern California and its capacity to produce large amounts of combustible biomass will likely do the same in the desert. Other disturbances such as livestock grazing and off-highway vehicle use also promote the dominance of alien annuals; protecting desert tortoise habitat from these and other forms of anthropogenic disturbances can minimize the biomass of alien annual plants (Brooks, 1998).

## 7. Fire

Fires appear to be historically uncommon in the Mojave Desert, but records from the Bureau of Land Management's California Desert District and Joshua Tree National Park indicate that the frequency of fire has increased since the 1970's. The increase in fire frequency is due partly to increased numbers of fires from human activity (FWS, 1994). Fires can kill animals directly by incineration, elevated body temperature, poisoning by smoke, or asphyxiation (Whelan, 1995). Fires that occur when desert tortoises are above ground and active are likely to affect populations the most, because individuals are most susceptible to mortality during this time. Fires can have enduring effects on desert tortoise populations, especially when they reduce the cover of perennial plants and abundance of native food plants. Perennial plants, especially woody shrubs, provide protection for desert tortoises from mortality due to predators or

overheating from the sun (Woodbury and Hardy, 1948; Burge, 1978). Although single fires may not produce long-term reductions in the cover of perennial plants or biomass of native annual plants (O'Leary and Minnich, 1981), recurrent fire typically converts native desertscrub to alien annual grassland (Brown and Minnich, 1986). This new habitat is much more prone to burning again, and recurrent burning will likely prevent the re-establishment of the native desertscrub that it replaces. Areas of recurrent fire therefore render habitat inhospitable for the desert tortoise.

## 8. Subsidized Predation

While many species of predators prey on desert tortoises, one of the most important predators at this time is the common raven (FWS, 1994). Ravens have been observed killing juvenile tortoises; large numbers of young tortoise remains show signs consistent with raven predation, such as puncture wounds and other openings in the shell; and large numbers of young tortoise remains are found in and at the base of raven nests, as well as near perches. Large numbers of ravens have been observed in the west Mojave and raven predation, which can threaten long-term persistence of tortoise populations, in that area is significantly higher than other areas. Populations there and elsewhere apparently are increasing. Ravens are common at the DTNA. The DTPC spring 2002 naturalist observed at least one raven on 86% of the days he was on duty (Connor, 2002). The *Recovery Plan* recognizes predation on adult tortoises by coyote (p. D32). Coyote are present at the DTNA. Both the raven and the coyote utilize human developments for water and food and can be categorized as "subsidized" predators.

Adult tortoises are at risk from attack by domestic or feral dogs, and most of the tortoises (live or dead) observed in the 2001 survey of the Fremont Valley permanent study plot bore signs of gnawing by canids (Berry, data in preparation). Feral or vicious domestic dogs have challenged DTPC personnel and other volunteers near the western boundary of the DTNA.

## 9. Disease

Berry, 1997 has reviewed the early occurrence of disease at the DTNA and subsequent developments. Disease was documented as a major cause of mortality in desert tortoise populations at the DTNA in 1988, when ill tortoises with upper respiratory disease were observed by field-workers at the DTNA Interior permanent study plot (Berry, 1990; Jacobson et al., 1991). Further research in 1989 and 1990 (e.g., Knowles, 1989; Berry, 1990) confirmed that many tortoises at the DTNA were ill, dying, or had recently died. The signs of disease (nasal discharge, lassitude, cachexia) were similar to signs that have been commonly observed in captive desert tortoises (in Berry, 1997). Research scientists at the University of Florida described the disease as an upper respiratory tract disease (URTD) associated with a new and undescribed *Mycoplasma* (Jacobson et al., 1991). A transmission study demonstrated that the mycoplasma, *M. agassizii*, is a highly infectious pathogen and causes URTD (Brown et al., 1994). An enzyme-linked immunosorbent assay (ELISA) test for *M. agassizii* was developed (Schumacher et al., 1993) and was used to determine whether wild desert tortoises carried antibodies to the pathogen (Brown et al., 1994b; Jacobson et al., 1995).

Transmission studies by Mary Brown and her colleagues have shown that generalized stress clearly increases the susceptibility of tortoises to *Mycoplasma* infection (Brown et al.,

1994b; Brown et al., 1999). Additionally, there is evidence that animals may remain ELISA positive without showing overt disease, a clinical pattern consistent with the chronic nature of most mycoplasmal infections, and that the clinical expression of disease may be cyclical (Brown et al., 1999). Evidence now indicates that additional species of *Mycoplasma* are present in the population at the DTNA (Berry, data in preparation).

As part of an ongoing investigation to assess tortoise health and disease, the bodies of 24 ill or dead wild tortoises were necropsied to determine possible causes of death (Homer et al, 1998). Diseases observed included cutaneous dyskeratosis (n=7), shell necrosis (n=2), respiratory diseases (n=7), urolithiasis (n=3), and trauma (n=5).

Within weeks of the time that ill tortoises were discovered at the DTNA in 1988, tortoises at the Chuckwalla Bench in the eastern Colorado Desert of Riverside County, were discovered to have a cutaneous dyskeratosis characterized by shell lesions (Berry, 1990). An abnormally high number of tortoises, many of which were previously marked, were discovered dead. Research on the pathogenesis of the shell lesions was initiated by. The lesion has been characterized as a loss of normal integrity of the cornified layer of the affected scutes (Jacobson et al., 1994). This disease has not been observed in tortoises at the DTNA.

**10. Human Visitation**

The DTNA has become a major tourist attraction in the western Mojave Desert. The DTNA Interpretive Center has received 1,000-2,000 visitors each spring over the last 12 years, and the average visitor stays about 90 minutes (Connor, 2002). Visitors may have impacts on the tortoise over and above the threats documented above of deliberate tortoise removal, release and translocation, vandalism, trash and balloons, impacts of off-highway vehicle recreation, fire, and domestic dogs. Direct impacts include unintentional harassment of tortoises by excited visitors and elicitation of inappropriate behaviors such as causing a tortoise to withdraw into its shell for lengthy periods in direct sun. Indirect impacts include damage to burrows, trampling of habitat, and dispersal of seeds of exotics plants. Most visitors remain on the trails close to the Interpretive Center. Current practice is to ensure that when "short cuts" become evident on the ground, existing trails are modified to incorporate these where possible.

**11. Reserve Size and Habitat Fragmentation**

In its discussion of tortoise reserve design, the *Desert Tortoise (Mojave Population) Recovery Plan* (section II 5) specifies the importance of minimizing the perimeter to area ratio, that interconnected blocks of habitat are better than isolated blocks, and that linkages function better when the habitat within them is represented by protected, preferred habitat for the target species (FWS, 1994). An additional relevant criterion is the ability to use readily defensible boundaries such as roads where it is more practical to build fences and other barriers without degrading additional habitat.

Because the DTNA is well below the minimum size recommended in the Recovery Plan for a viable self-contained reserve, linkage and continuity with adjacent tortoise populations is an important consideration. The DTNA is connected to designated critical habitat only in its

extreme northeast corner where it abuts the Western Rand Mountains ACEC. Recent assessments by the Bureau show that the Western Rand Mountains ACEC has been severely impacted by off highway vehicle activity.

### 12. Urbanization & Development

The success of the land acquisition program within the DTNA has minimized but not entirely eliminated risks of developments occurring within the DTNA boundary. In 1983, two DTNA landowners mounted a legal challenge to the fencing and designation of the preserve, and a summary judgment was granted in favor of the United States (e.g. Mount v. United States, Ct. Cl., No. 709-81 L). The presence of private inholdings along the boundary of sections 13 and section 5 has to precluded placing protective fencing around the entire perimeter.

Increasing urbanization and development within California City is threat to the DTNA that need to be carefully monitored. The local authority in California City is attempting to attract new business and development to the city, and a major redrawing of City boundaries is underway. There are plans to pave the last stretch of 20 Mule Team Parkway between California City and Highway 395 that could accelerate housing development to the southeast.

## C. LAND ACQUISITION PRIORITIES

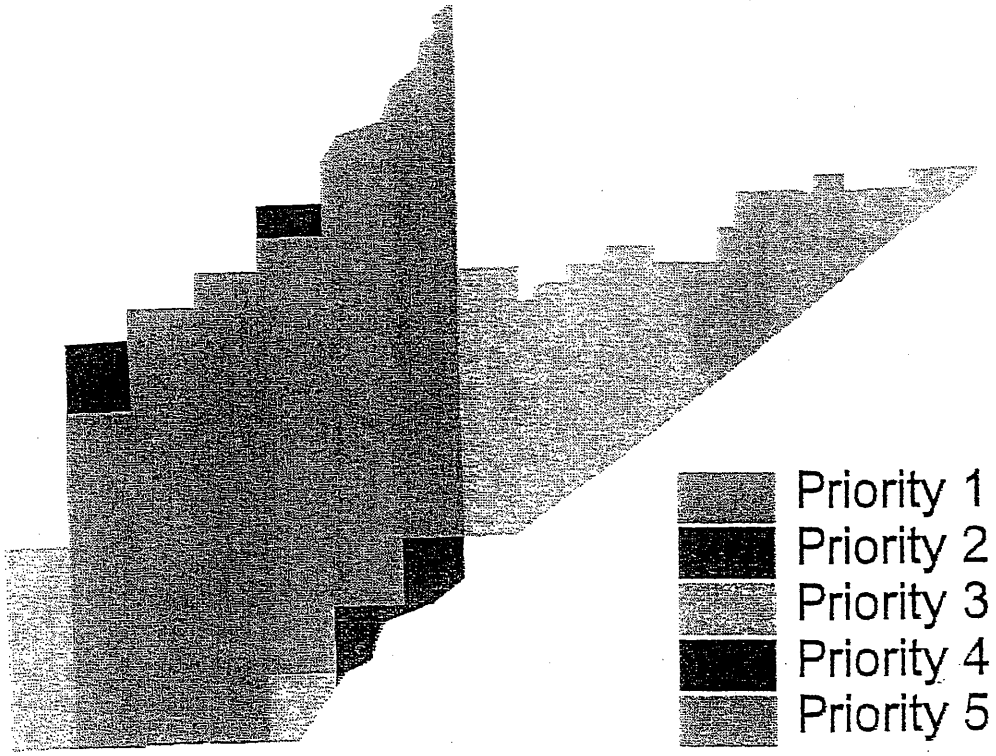
The DTPC has been acquiring land at the DTNA since 1976. Over the years, acquisition priorities have developed and been revisited as acquisition goals have been reached and new opportunities and conditions have arisen. The DTPC has developed an effective land banking and mitigation program for the desert tortoise, Mohave ground squirrel and other species that share their habitat. At the present time, the DTPC is actively acquiring land in the DTNA and surrounding area.

Land acquisition priorities have been established based on consideration of the following factors: (a) consolidation of existing preserve areas; (b) habitat quality; (c) linkage to critical habitat; (d) degree of parcel fragmentation; (e) reduction of edge effects; (f) contribution to a defensible boundary; (g) presence of existing developments or disturbance; (h) ease of acquisition. For convenience, 5 broad land acquisition zones are recognized prioritized from 1 (highest) to 5 (lowest). These zones are identified in table 4 and are mapped in figure 6.

**Table 4. DTPC Acquisition Priorities At the DTNA and Surrounding Area**

| PRIORITY | DESCRIPTION | FACTORS |
|---|---|---|
| 1 | DTNA | (a) (b) (f) |
| 2 | Randsburg-Mojave Road Buffer Zone | (a) (b) (e) (f) |
| 3 | East/west expansion | (b) (c) (d) (e) (f) |
| 4 | Northwest expansion | (d) (f) (g) |
| 5 | Far east expansion | (b) (c) |

Figure 6. Prioritized Land Acquisition Zones Around the DTNA



## 4. GOALS & OBJECTIVES

In furtherance of its mission to conserve and recover the desert tortoise and to conserve other rare and sensitive species, the Committee's goals at the DTNA are to:

(a) consolidate, enhance and enlarge the Desert Tortoise Natural Area.
(b) implement the recommendations of the *Desert Tortoise (Mojave Population) Recovery Plan* to at the DTNA and adjacent habitat;
(c) implement the goals and actions outlined in the DTNA ACEC Plan;
(d) provide research and education opportunities;
(e) modify management as needed to reflect advances in conservation science and changing conditions.

These goals will be achieved through the following objectives:

Objective 1: Protect, conserve, and enhance habitat in and around the DTNA for the benefit of the tortoise and other native species by eliminating sources of deterioration and loss through unauthorized grazing of sheep, unauthorized vehicle access, road kill, and the growing threat of urbanization & development. [Goals (a), (b), (c)]

Actions:

(a) Prioritize acquisition of private lands within delineated expansion boundaries to consolidate preserve areas and reduce fragmentation.
(b) Prioritize acquisition of private lands and/or fence easements along delineated boundaries.
(c) Sign all preserve lands.
(d) Fence large blocks of land (1 square mile) with stock-proof fencing to facilitate habitat recovery. Use metal fence posts to obviate the need to use raven wire.
(e) Fence preserve lands along defensible boundaries such as the Randsburg Mojave Road where appropriate.

Objective 2: Protect and enhance desert tortoise populations in the DTNA and surrounding areas and thus help reverse population declines within the DTNA by reducing tortoise handling & manipulation, tortoise collection, release of pet turtles and tortoises, and vandalism. [Goals (a), (b), (c), (d)]

Actions:

(a) Install and maintain informative and warning signs.
(b) Increase DTPC naturalist presence during high visitation periods.
(c) Discourage tortoise predators such as ravens by installing small mesh fencing along sections of road to reduce roadkill.

Objective 3: Recover desert tortoise populations in the DTNA and surrounding areas by reducing loss of adult tortoises and enhancing hatchling survival and recruitment. [Goals (b), (c), (d) (e)]

Actions:

(a) Evaluate and develop controlled tortoise "head starting" protocols.
(b) Install tortoise-proof fencing along Randsburg-Mojave Road.
(c) Evaluate the need and efficacy of dog fencing on the DTNA western boundary.

Objective 4: Restore areas of degraded habitat to a more natural state. [Goals (b), (c), (d)]

Actions:

(a) Remove trash and debris from preserve lands to reduce fire risk.
(b) Identify degraded habitat areas suitable for experimental revegetation or seeding.
(c) Implement revegetation/seeding projects

Objective 5: Encourage use of reserve lands for research into desert restoration and habitat conservation. [Goals (a), (c)]

Actions:

(a) Establish a grant program to encourage students to develop and implement research projects on restoration of degraded habitat in DTNA expansion area lands.

Objective 6: Maintain and develop monitoring programs to determine effectiveness of management actions, status of habitat, and status of desert tortoise population, Mohave ground squirrel population and other species of concern. [Goals (b), (c), (d), (e)]

Actions:

(a) Perform twice-yearly inspections of target land parcels for signs of sheep and ORV egress, trash and build up of noxious weeds that could pose a fire risk.
(b) Perform fence patrols at least once a month.
(c) Monitor tortoise population density and demographics by securing funding to survey the permanent study plots every four years.
(d) Perform biotic surveys for listed species and species of concern on acquisition lands.

Objective 7: Develop a Memorandum of Understanding with the Bureau of Land Management and California Department of Fish & Game. [Goals (a), (c)]

Actions:

(a) Develop a Memorandum of Understanding with the Bureau of Land Management and California Department of Fish & Game to support the concept of an enlarged DTNA.

Objective 8: Provide annual reports detailing management activity. [Goals (a), (e)]

Actions:

(a) Prepare a list of special reporting requirements for parcels tied to specific mitigation agreements where such reports are required.
(b) Generate an annual report that summarizes management actions, survey results, and provides a property analysis report and fulfills any special reporting requirements specified in (a) for each parcel in the management zone.

Objective 9: Work to implement goals of the 1986 DTNA ACEC Plan. [Goals (c)]

1. Protect, conserve, and enhance desert tortoise populations. Allow populations to fluctuate naturally. Reverse population declines.

Actions:

Reduce collections of desert tortoises by installing and maintaining signs and increasing presence of law enforcement personnel and visitor services specialists.

Reduce releases of desert tortoises and non-native turtles and tortoises by installing signs and increasing presence of law enforcement and visitor services personnel.

Reduce vandalism to desert tortoises by signing boundaries and increasing presence of law enforcement personnel.

Reduce losses of desert tortoises from vehicle kills by installing and maintaining signs and increasing presence of law enforcement and visitor services personnel.

Reduce harassment of desert tortoise by visitors through increasing the presence of law enforcement and visitor services personnel during the spring season.

Reduce incidence of raven predation on juvenile tortoises to natural levels. Eliminate losses of desert tortoises from firearms use by closing the area to all firearm use.

2. Protect, conserve, and enhance habitat in the DTNA for native species; eliminate sources of deterioration and loss.

Actions:

Eliminate unauthorized ingress of sheep onto public lands on the Natural Area; eliminate sheep grazing on private lands within the DTNA.

Eliminate unauthorized vehicle access through vandalized portions of fence and through naturally damaged parts of fence.

Acquire private lands within Natural Area boundaries.

Protect habitat in the vicinity of the Interpretive Center from undue degradation and impact.

Protect DTNA from fires, natural and man-caused.

4. Promote contemplative recreation and educational activities (e.g., sightseeing, nature walks, photography, hiking, etc.). maintain recreational, scenic, and aesthetic values. Protect safety of visitors.

Actions:

Maintain nature trails and trail guides. Provide brochures for Interpretive Center.

5. Foster appropriate research and study at the DTNA while at the same time protecting natural values.

6. Maintain an active monitoring program to determine effectiveness of management actions, status of desert tortoise populations and other species of concern, status of habitat, and the integrity of the DTNA and its boundaries.

Actions:

Continue to monitor the tortoise population on permanent study plots and expand monitoring efforts to include the western portion of the DTNA.

7. Maintain continuity with desert tortoise and other animal populations in the DTNA with animal populations in other parts of the Fremont-Kramer Critical Habitat.

8. Protect the DTNA from impacts that would result from development of leasable minerals and mineral material sales.

Actions:

Eliminate all sources of impact to the DTNA due to potential mineral development through a management decision.

Objective 10: Coordinate fully with the BLM and other agencies. [Goals (b), (c), (e)]

Actions:

(a) Work with BLM to fully revise and update the 1988 DTNA ACEC Plan to incorporate *Recovery Plan* recommendations, and to expand the existing boundaries.
(b) Work with the BLM and other agencies to implement *Recovery Plan* recommendations rangewide to tackle landscape level issues such as raven and disease management.

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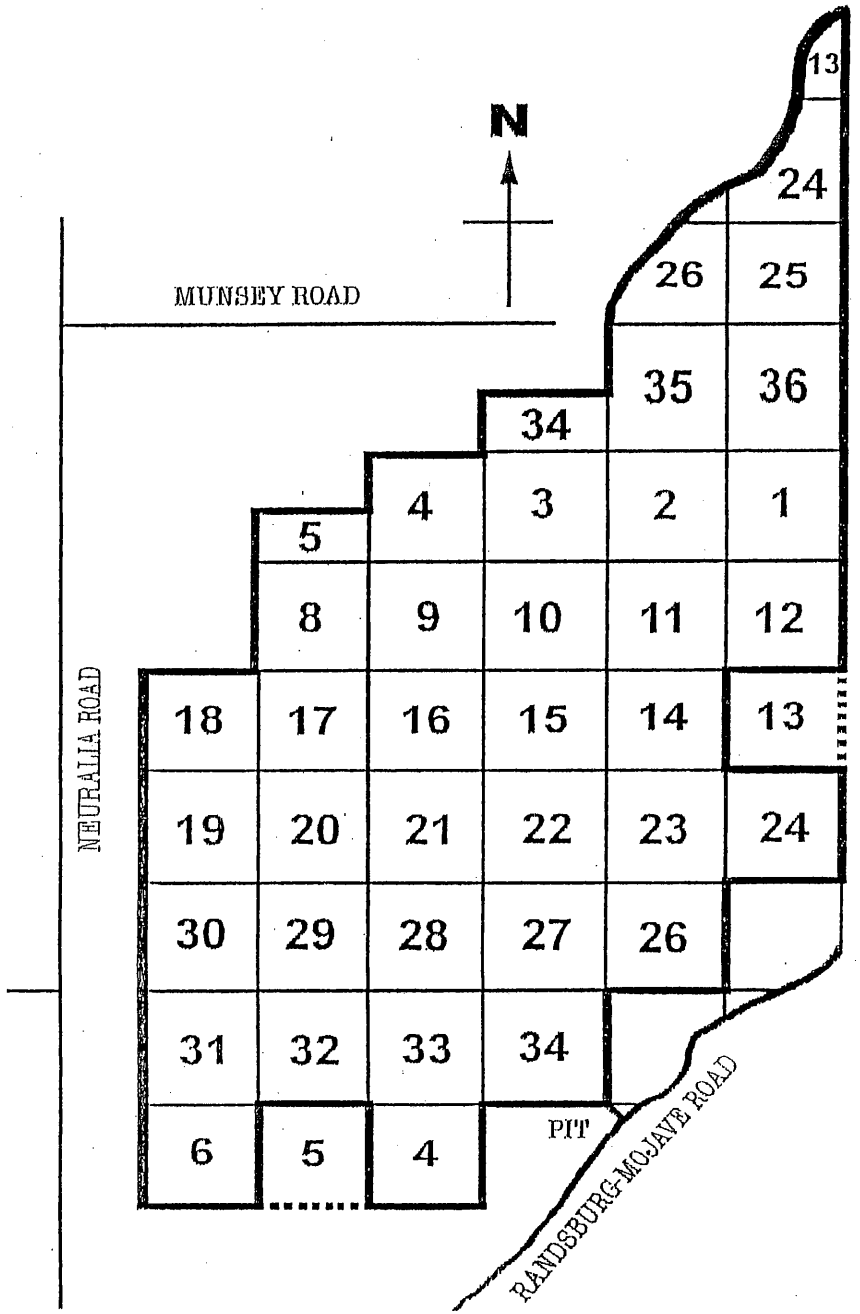
# Appendix A

## AGREEMENTS UNDER WHICH THE DESERT TORTOISE PRESERVE COMMITTEE HAS ACQUIRED LAND AT THE DTNA AND SURROUNDING AREA

| Name | Year | Acres |
|---|---|---|
| Environmental Enhancement & Mitigation Grant | 1988 | 647 |
| Kerr-McGee | 1988 | 40 |
| Mojave Cogeneration | 1989 | 38 |
| Environmental License Plate Fund | 1989 | 100 |
| Yucca Valley Churches | 1993 | 5 |
| Barstow Veterans Home | 1995 | 58 |
| Coso/Luz Transmission | 1998 | 110 |
| Mojave Water Agency | 1998 | 320 |
| City of Palmdale | 2000 | 90 |
| High Desert Power | 2001 | 182 |
| California Department of Transportation | 2002 | 1820 |
| Sempra / High Desert Pipeline | 2002 | 671 |

## DESERT TORTOISE PRESERVE COMMITTEE — DESERT TORTOISE NATURAL AREA ACTIVITY REPORT




| DATE: | START TIME: | |
|---|---|---|
| WORKER(S): | STOP TIME: | |
| | TOTAL TIME: | |

**LOCATION(S):**

SECTION # _____ BORDER CORNER INTERIOR

N S E W VISITOR CENTER OFF SITE

**MAINTENANCE TASK:**

| | |
|---|---|
| FENCE LINE CHECK | SIGN |
| FENCE REPAIR | TRAIL |
| RAVEN WIRE | VISITOR CENTER |
| ROAD WORK | OTHER MAINTENANCE |
| TRASH CLEAN-UP | BLM RIDE ALONG |

**MAINTENANCE TASK DETAIL:** **COST:**

**COMMENTS/SUGGESTIONS/MAINTENANCE NEEDS:**

Appendix C

# DESERT TORTOISE NATURAL AREA
# INVENTORY OF VERTEBRATE SPECIES

This inventory of the reptiles, mammals and birds of the Desert Tortoise Research Natural Area is based on lists prepared by Dr. Kristin H. Berry (Berry, 1978) with the additional observations made by DTPC naturalists stationed at the Natural Area and by others. Names of reptiles are based on Collins and Taggart (2002).

## Reptiles

ORDER TESTUDINES - Turtles and Tortoises

Family Testudinidae

- Desert tortoise, *Gopherus agassizii* (Cooper, 1863)

ORDER SQUAMATA SUBORDER LACERTILIA - Lizards

- Zebra-tailed lizard, *Calisaurus draconoides* Blainville, 1835
- Western whiptail lizard, *Cnemidophorus tigris tigris* Baird & Girard, 1852
- Banded gecko, *Coleonix variegatus variegatus* (Baird, 1858)
- Collared lizard, *Crotaphytus bicinctores* Smith & Tanner, 1972
- Desert iguana, *Dipsosaurus dorsalis* (Baird & Girard, 1852)
- Long-nosed leopard lizard, *Gambelia wislizenii* (Baird & Girard, 1852)
- Desert horned lizard, *Phrynosoma platyrhinos calidiarum* (Cope, 1896)
- Desert spiny lizard, *Sceloporus magister uniformis* Phelan & Brattstrom, 1955
- Chuckwalla, *Sauromalus obesus* Dumeril, 1856
- Side-blotched lizard, *Uta stansburiana* Baird & Girard, 1852
- Desert night lizard, *Xanthusia vigilis vigilis* Baird, 1858

ORDER SQUAMATA SUBORDER SERPENTES - Snakes

- Glossy snake, *Arizona elegans* Kennicott, 1859
- Rosy boa, *Charina trivirgata* Cope, 1861
- Mojave shovel-nosed snake, *Chionactis occipitalis occipitalis* (Hallowell, 1864)
- Mojave desert sidewinder, *Crotalus cerastes cerastes* Hallowell, 1854
- Mojave rattlesnake, *Crotalus scutulatus scutulatus* (Kennicott, 1861)
- Panamint rattlesnake, *Crotalus mitchelli stephensi* Klauber, 1930
- Desert night snake, *Hypsiglena torquata* (Gunther, 1860)
- King snake, *Lampropeltis getula californiae* (Blainville, 1835)
- Western blind snake, *Leptotyphlops humilis* (Baird & Girard, 1853)
- Red racer or coachwhip, *Masticophis flagellum piceus* (Cope, 1892)
- Spotted leaf-nosed snake, *Phyllorhynchus decurtatus* (Cope, 1868)
- Gopher snake, *Pituophis catenifer deserticola* Stejneger, 1893
- Long-nosed snake, *Rhinocheilus lecontei lecontei* Baird & Girard, 1853
- Mojave patch-nosed snake, *Salvadora hexalepis mojavensis* Bogert, 1945
- Western ground snake, *Sonora semiannulata* Baird & Girard, 1853
- Black-headed snake, *Tantilla hobartsmithi* Taylor, 1936

## Mammals

Order Carnivora

Family Canidae

- Desert kit fox, *Vulpes macrotis arsipus*
- Grey fox, *Urocyon cinereoargenteus* (Schreber, 1775)
- Coyote, *Canis latrans mearnsi*

Family Felidae

- Bobcat, *Lynx rufus baileyi*

Family Mustelidae

- American badger, *Taxidea taxus berlandieri*
- Striped skunk, *Mephitis mephitis*
- Spotted skunk, *Spilogale putorius*

Family Procyonidae

- Ringtail cat, *Bassariscus astutus willetti*

Order Chiroptera

Family Vespertilionidae

- Western pipistrelle, *Pipistrellus hesperus hesperus*

Order Insectivora

Family Soricidae

- Crawford's desert shrew, *Notiosorex crawfordi crawfordi*

Order Lagomorpha

Family Leporidae

- Black-tailed hare, *Lepus californicus*
- Audubon cottontail, *Sylvilagus auduboni arizonae*

Order Rodentia

Family Sciuridae

- Antelope Ground Squirrel, *Ammospermophilus leucurus leucurus*
- Mohave ground squirrel, *Spermophilus mohavensis*

Family Geomyidae

- Botta pocket gopher, *Thomomys bottae mohavensis*

Family Heteromyidae

- Little pocket mouse, *Perognathus longimembris longimembris*
- Long-tailed pocket mouse, *Perognathus formosus mohavensis*
- Merriam's Kangaroo Rat, *Dipodomys merriami* Mearns, 1890
- Panamint Kangaroo rat, *Dipodomys panamintinus* (Merriam, 1894)

Family Cricetidae

- Canyon mouse, *Peromyscus crinitus stephensi*
- Deer mouse, *Peromyscus maniculatus sonoriensis*
- Desert woodrat, *Neotoma lepida lepida*
- Grasshopper mouse, *Onychomys torridus pulcher*

**Birds** Species that breed at the Natural Area are indicated in **bold.**

Order Apodiformes

Family Trochilidae
- Anna's hummingbird, *Calypte anna*
- Black-chinned hummingbird, *Archilochus alexandri*
- Costa's hummingbird, *Calypte costae*

Order Caprimulgiformes
Family Caprimulgidae
- Lesser nighthawk, *Chordeiles acutipennis*
- Poor-will, *Phalaenoptilus nutallii*

Order Columbiformes
Family Colubidae
- Mourning dove, *Zenaida macroura*
- Rock dove (domestic pigeon), *Columba livia*

Order Cuculiformes
Family Cuculidae
- Greater roadrunner, *Geococcyx californianus*

Order Falconiformes
Family Accipitridae
- Golden eagle, *Aquila chrysaetos*
- Northern harrier, *Circus cyaneus*
- Red-tailed hawk, *Buteo jamaicensis*
- Rough-legged hawk, *Buteo lagopus*
- Swainson's hawk, *Buteo swainsoni*

Family Cathartidae
- Turkey vulture, *Cathartes aura*

Family Falconidae
- Prairie falcon, *Falco mexicanus*

Order Galliformes
Family Phasianidae
- Chukar, *Alectoris chukar*
- Gambel's quail, *Lophortyx gambelii*

Order Passeriformes
Family Alaudidae
- Horned lark, *Eremophila alpestris*

Family Corvidae
- Common raven, *Corvus corax*

Family Fringillidae
- Black-headed grosbeak, *Pheucticus ludovicianus*
- Black-throated sparrow, *Amphispiza bilineata*
- Brewer's sparrow, *Spizella breweri*
- Chipping sparrow, *Spizella passerina*
- Dark-eyed Junco, *Junco hyemalis*
- House finch, *Carpodacus mexicanus*
- Lark sparrow, *Chondestes grammacus*
- Lazuli bunting, *Passerina amoena*
- Lesser goldfinch, *Carduelis psaltria*

- Sage sparrow, *Amphispiza belli*
- White-crowned sparrow, *Zonotrichia leucophrys*

Family Hirundinidae
- Barn swallow, *Hirundo rustica*
- Cliff swallow, *Petrochelidon pyrrhonota*
- Rough-winged swallow, *Stelgidopteryx ruficollis*
- Tree swallow, *Iridoprocne bicolor*
- Violet green swallow, *Tachycineta thalassina*

Family Icterinae
- Brewer's blackbird, *Euphagus cyanocephalus*
- Bullock's oriole, *Icterus galbula*
- Scott's oriole, *Icterus parisorum*
- Western meadowlark, *Sturnella neglecta*

Family Laniidae
- Loggerhead shrike, *Lanius ludovicianus*

Family Mimidae
- LeConte's thrasher, *Toxostoma lecontei*
- Mocking bird, *Mimus polyglottus*
- Sage thrasher, *Oreoscoptes montanus*

Family Muscicapidae
- Ruby-crowned kinglet, Regulus calendula

Family Paridae
- Verdin, *Auriparus flaviceps*

Family Parulinae
- Audubon's warbler, *Dendroica coronata*
- Black-throated gray warbler, *Dendroica nigrescens*
- Townsend's warbler, *Dendroica townsendi*
- Wilson's warbler, *Wilsonia pusilla*

Family Ptilogonatidae
- Phainopepla, *Phainopepla nitens*

Family Sturnidae
- European starling, *Sturnus vulgaris*

Family Thraupidae
- Western tanager, *Piranga ludoviciana*

Family Troglodytidae
- Cactus wren, *Campylorhynchus brunneicapillus*
- Rock wren, *Salpinctes obsoletus*
- Winter wren, *Troglodytes troglodytes*

Family Turdidae
- Hermit thrush, *Catharus guttatus*
- Mountain bluebird, *Sialia currucoides*

Family Tyrannidae
- Ash-throated flycatcher, *Myiarchus cinerascens*
- Black phoebe, *Sayornis nigricans*
- Say's phoebe, *Sayornis saya*
- Western kingbird, *Tyrannus verticalis*

- Western wood pewee, *Contopus sordidulus*

Family Vireonidae

- Bell's vireo, *Vireo bellii*
- Gray vireo, *Vireo vicinior*

Order Piciformes

Family Picidae

- Common (red-shafted) flicker, *Colaptes auratus*
- Ladderback woodpecker, *Picoides scalaris*

Order Strigiformes

Family Strigidae

- Short-eared owl, *Asio flammeus*
- Burrowing owl, *Athene cunicularia*

***APPENDIX F***

***DESERT TORTOISE PRESERVE COMMITTEE PROPERTY ANALYSIS RECORD***

# PAR

## Habitat Planning In Perpetuity

The Property Analysis Record

| | |
|---|---|
| Title | SoCal Gas 269-170-06,-09,-10,-11,180-11 |
| Dataset | CA004 |
| ID | SC030703 |
| Prepared by | Michael J. Connor |
| Date | 02/24/1903 |

## Section 1 - Project Information

Property Title: SoCal Sas 269-170-06,-09,-10,-11,180-11 Dataset: CA004 PAR ID: SC030703 03/07/2003

U.S.G.S.Quad 1: U.S.G.S.Quad 2:

U.S.G.S.Quad 3: U.S.G.S.Quad 4:

| | |
|---|---|
| Management type: | Ownership |
| Prepared by | Michael J. Connor |
| Date | 02/24/1903 |
| Address | 4067 Mission Inn Ave |
| City, State, Zip | Riverside, CA 92501 |
| Phone | (909) 683-3872 |
| Location/Jurisdiction | DTNA Expansion Area |
| County | Kern County |
| Acres | 673.92 |

| Project Status | Start Date | Completion | Status/Notes |
|---|---|---|---|
| Construction | / / | / / | |
| Restoration | / / | / / | |
| Stewardship | / / | / / | |

| | Owner | Proponent |
|---|---|---|
| Name | DTPC | |
| Organization | DTPC | |
| Address | 4067 Mission Inn Ave | |
| City State, Zip | Riverside, CA 92501 | |
| Phone | 909 683 3872 | |
| Fax | 909 683 6949 | |
| E-Mail address | dtpc@pacbell.net | |

| | Consultant #1 | Consultant #2 |
|---|---|---|
| Name | Jun Lee | |
| Organization | Nonprofit Counsel | |
| Address | | |
| City, State, Zip | | |
| Phone | | |
| Fax | | |
| E-Mail address | | |
| Specialty | | |

## Section 1 - Project Information

Property Title: SoCal Gas 269-170-06,-09,-10,-11,180-11 Dataset: CA004 PAR ID: SC030703 03/07/2003

| | | |
|---|---|---|
| Cost Year | 0 | |
| Date of site visit: | / / | |
| Development Project | | |
| Name | | |
| Acres | 0 | |
| Stage of planning | | |
| Conserved acres | 0 | |
| Mitigation Bank | | |
| Log | No | MBCR: 0 |
| Credit basis | | |
| Stage of planning | | |

Notes

The following 5 parcels of land are covered under this agreement:

| APN | Acres | Date Acquired | DTPC ID |
|---|---|---|---|
| 269-170-06 | 156.3 | 9/20/02 | 152 |
| 269-170-09 | 47.04 | 9/20/02 | 153 |
| 269-170-10 | 159.18 | 9/20/02 | 154 |
| 269-170-11 | 154.41 | 9/20/02 | 155 |
| 269-180-11 | 156.99 | 11/12/02 | 206 |

## Section 3 - Purposes for Preservation

Property Title: SoCal Gas 269-170-06,-09,-10,-11,180-11 Dataset: CA004 PAR ID: SC030703 03/07/2003

| Purposes for Preservation | Goals and Objectives |
|---|---|
| Endangered Species | Mohave ground squirrel<br>Desert tortoise |

## Section 3 - Purposes for Preservation

Property Title: SoCal Gas 269-170-06,-09,-10,-11,180-11 Dataset: CA004 PAR ID: SC030703 03/07/2003

| Purposes for Preservation | Goals and Objectives |
|---|---|
| Endangered Species | Mohave ground squirrel |
| | Desert tortoise |

## Section 6 - Site Conditions

Property Title: SoCal Gas 269-170-06,-09,-10,-11,180-11 Dataset: CA004 PAR ID: SC030703 03/07/2003

| Property Uses Item | Permitted/ Legal | Problem | Notes |
|---|---|---|---|
| Livestock Grazing | | Medium | Illegal herding of bands of sheep through California City |
| Other | | High | Unauthorized OHV trespass |

| Animal Survey Species Name | | | | Notes (Location condition & Rec.) |
|---|---|---|---|---|
| - CA LISTED REPTILES | | | | |
| Tortoise, Desert (Xerobates (=Gopherus) agassizi) Status: | State: ST | Federal: FT | Global: | Found on site during 1999 WMP surveys |
| - CA LISTED BIRDS | | | | |
| Owl, Burrowing (Speotyto (=Athene) cunicularia) Status: | State: CSC | Federal: | Global: | Present in area; |
| Shrike, Loggerhead (Lanius ludovicianus) Status: | State: CSC | Federal: | Global: | Common visitor, possible resident |
| Thrasher, Bendire's (Toxostoma bendirei) Status: | State: CSC | Federal: | Global: | Observed locally in spring 2001 |
| Thrasher, Le Conte's (Toxostoma lecontei) Status: | State: CSC | Federal: | Global: | Common visitor, possible resident |
| - CA LISTED MAMMALS | | | | |
| Squirrel, Mohave Ground (Spermophilus mohavensis) Status: | State: ST | Federal: | Global: | Known from adjacent sites |

**Section 8 - Initial & Capital Tasks and Costs**
**Property Title: SoCalGas (269-170-06,-09,-10,-11,180-11)** March 7, 2003
**Budget: PAR (Page 1 of 2)**

| Task List | Specification | Unit | # of Units | Cost/Unit | Annual Cost | Times Years | Total Cost |
|---|---|---|---|---|---|---|---|
| ACQUISITION | | | | | | | |
| Land Purchase | Acquisition cost 269-170-06 | Dollars | 1 | $125,040.00 | $125,040.00 | 1 | $125,040.00 |
| Land Purchase | Acquisition cost 269-170-09 | Dollars | 1 | $37,632.00 | $37,632.00 | 1 | $37,632.00 |
| Land Purchase | Acquisition cost 269-170-10 | Dollars | 1 | $127,344.00 | $127,344.00 | 1 | $127,344.00 |
| Land Purchase | Acquisition cost 269-170-11 | Dollars | 1 | $123,528.00 | $123,528.00 | 1 | $123,528.00 |
| Land Purchase | Acquisition cost 269-180-11 | Dollars | 1 | $125,592.00 | $125,592.00 | 1 | $125,592.00 |
| Escrow | Fee 269-180-11 | Dollars | 1 | $1,409.40 | $1,409.40 | 1 | $1,409.40 |
| Escrow | Fee 269-170-06 | Dollars | 1 | $851.57 | $851.57 | 1 | $851.57 |
| Escrow | Fee 269-170-09 | Dollars | 1 | $256.29 | $256.29 | 1 | $256.29 |
| Escrow | Fee 269-170-10 | Dollars | 1 | $867.26 | $867.26 | 1 | $867.26 |
| Escrow | Fee 269-170-11 | Dollars | 1 | $841.28 | $841.28 | 1 | $841.28 |
| Acquisition Fee | 9% Acquisition Fee | Dollars | 1 | $42,266.70 | $42,266.70 | 1 | $42,266.70 |
| Sub-Total | | | | | | | $595,626.50 |
| SITE CONSTRUCTION/MAINT. | | | | | | | |
| Inspection | Property Inspection | L Hours | 4 | $45.00 | $180.00 | 1 | $180.00 |
| Project Management | Supervise/coordinate | L Hours | 10 | $45.00 | $450.00 | 1 | $450.00 |
| Boundary Survey | Survey/Staking | Item | 1 | $4,000.00 | $4,000.00 | 1 | $4,000.00 |
| Fence - Installed | Pig Wire 5' | Lin Ft | 30500 | $1.50 | $45,750.00 | 1 | $45,750.00 |
| Sub-Total | | | | | | | $50,380.00 |
| BIOTIC SURVEYS | | | | | | | |
| Herpetologist | Field Svy & Reports | Acres | 673.92 | $25.00 | $16,848.00 | 1 | $16,848.00 |
| Mammalogist | Field Svy & Reports | Acres | 673.92 | $25.00 | $16,848.00 | 1 | $16,848.00 |
| Sub-Total | | | | | | | $33,696.00 |
| HABITAT RESTORATION | | | | | | | |
| Exotic Plant Control | Hand Removal, Labor | L Hours | 40 | $15.00 | $600.00 | 1 | $600.00 |
| Sub-Total | | | | | | | $600.00 |
| PUBLIC SERVICES | | | | | | | |
| Sign, Aluminum | Aluminum 12"x12" | Item | 53 | $15.00 | $795.00 | 1 | $795.00 |
| CRMP Coordination | Joint Management | L Hours | 673.92 | $1.00 | $673.92 | 1 | $673.92 |
| Naturalist | Interpretive Services | L Hours | 5 | $28.00 | $140.00 | 1 | $140.00 |
| Sub-Total | | | | | | | $1,608.92 |
| REPORTING | | | | | | | |
| Database Managemen | Data Input | L Hours | 8 | $45.00 | $360.00 | 1 | $360.00 |
| Annual Reports | Summary | L Hours | 8 | $45.00 | $360.00 | 1 | $360.00 |
| Monitoring Reports | Monitoring Documentation | L Hours | 8 | $45.00 | $360.00 | 1 | $360.00 |
| Sub-Total | | | | | | | $1,080.00 |
| ***Sub-Total with Acquisition*** | | | | | | | ***$672,993.42*** |
| ***Sub-Total without Acquisition*** | | | | | | | ***$87,364.92*** |

**Section 8 - Initial & Capital Tasks and Costs**
**Property Title: SoCalGas (289-170-06,-09,-10,-11,180-11)** March 7, 2003
**Budget: PAR (Page 2 of 2**

| Task List | Specification | Unit | # of Units | Cost/Unit | Annual Cost | Times Years | Total Cost |
|---|---|---|---|---|---|---|---|
| OFFICE MAINTENANCE | | | | | | | |
| Computer, PC Color | Laptop, Pentium | Parcel | 2 | $5.00 | $10.00 | 1 | $10.00 |
| GIS ARC/INFO | GIS, PC based | Parcel | 2 | $5.00 | $10.00 | 1 | $10.00 |
| USGS 7.5 Topo Maps | Topographic Map | Item | 2 | $4.50 | $9.00 | 1 | $9.00 |
| Sub-Total | | | | | | | $29.00 |
| FIELD EQUIPMENT | | | | | | | |
| GPS | GPS field unit | Parcel | 5 | $1.00 | $5.00 | 1 | $5.00 |
| Vehicle | Mileage | Miles | 500 | $0.32 | $160.00 | 1 | $160.00 |
| Cell Phone | Usage | Acres | 673.92 | $0.33 | $222.39 | 1 | $222.39 |
| Sub-Total | | | | | | | $387.39 |
| OPERATIONS | | | | | | | |
| Insurance | Liability/Fee | Parcel | 5 | $10.00 | $50.00 | 1 | $50.00 |
| Project Accounting | Set up and maintain | L Hours | 12 | $30.00 | $360.00 | 1 | $360.00 |
| Sub-Total | | | | | | | $410.00 |
| ***Sub-Total*** | | | | | | | ***$826.39*** |
| CONTINGENCY & ADMINISTRATION | | | | | | | |
| Contingency | 10% Factor | | | | | | $8,819.13 |
| Administration | 9% Factor | | | | | | $7,937.22 |
| **Short-Term Enhancement Total** | | | | | | | **$194,767.68** |
| ***(Without Acquisition)*** | | | | | | | |

**Section 9 - Ongoing Tasks and Costs**
**Property Title: SoCalGas 269-170-06,-09,-10,-11,180-11)** March 7, 2003
**Budget: PAR (Page 1 of 1**

| Task List | Specification | Unit | # of Units | Cost/Unit | Annual Cost | Divide Years | Total Cost |
|---|---|---|---|---|---|---|---|
| SITE OVERSIGHT | | | | | | | |
| Project Management | Supervise/coordinate | L Hours | 10 | $45.00 | $450.00 | 1 | $450.00 |
| Subtotal | | | | | | | $450.00 |
| BIOTIC SURVEYS | | | | | | | |
| Herpetologist | Field survey & reports | Acres | 673.92 | $25.00 | $16,848.00 | 4 | $4,212.00 |
| Mammalogist | Field survey & reports | Acres | 673.92 | $25.00 | $16,848.00 | 4 | $4,212.00 |
| Subtotal | | | | | | | $8,424.00 |
| HABITAT RESTORATION | | | | | | | |
| Exotic Plant Control | Hand Removal, labor | L Hours | 40 | $15.00 | $600.00 | 1 | $600.00 |
| Subtotal | | | | | | | $600.00 |
| PUBLIC SERVICES | | | | | | | |
| Sign, Aluminum | Aluminum 12"x12" | Item | 53 | $15.00 | $795.00 | 5 | $159.00 |
| CRMP Coordination | Join: Management | L Hours | 673.92 | $1.00 | $673.92 | 1 | $673.92 |
| Naturalist | Interpretive services | L Hours | 5 | $28.00 | $140.00 | 1 | $140.00 |
| Subtotal | | | | | | | $972.92 |
| REPORTING | | | | | | | |
| Database Management | Data Input | L Hours | 8 | $45.00 | $360.00 | 1 | $360.00 |
| Annual Reports | Summary of Reports | L Hours | 8 | $45.00 | $360.00 | 1 | $360.00 |
| Monitoring Reports | Monitoring Documentation | L Hours | 8 | $45.00 | $360.00 | 1 | $360.00 |
| Subtotal | | | | | | | $1,080.00 |
| OFFICE MAINTENANCE | | | | | | | |
| Computer, PC Color | Laptop, Pentium | Parcel | 2 | $5.00 | $10.00 | 4 | $2.50 |
| GIS ARC/INFO | GIS PC based | Parcel | 5 | $5.00 | $25.00 | 5 | $5.00 |
| USGS 7.5 Topo Maps | Topographic Map | Item | 2 | $4.50 | $9.00 | 5 | $1.80 |
| Subtotal | | | | | | | $9.30 |
| FIELD EQUIPMENT | | | | | | | |
| GPS Unit | GPS Unit | Parcel | 5 | $1.00 | $5.00 | 5 | $1.00 |
| Vehicle | Mileage | Miles | 500 | $0.32 | $160.00 | 1 | $160.00 |
| Cellular Phone | Usage | Acres | 673.92 | $0.33 | $222.39 | 5 | $44.48 |
| Subtotal | | | | | | | $205.48 |
| OPERATIONS | | | | | | | |
| Insurance | Liability/Fee | Parcel | 5 | $10.00 | $50.00 | 1 | $50.00 |
| Project Accounting | Set up and maintain | L Hours | 12 | $30.00 | $360.00 | 1 | $360.00 |
| Subtotal | | | | | | | $410.00 |
| Sub-Total | | | | | | | $11,178.78 |
| CONTINGENCY & ADMINISTRATION | | | | | | | |
| Contingency | 10% Factor | | | | | | $1,117.88 |
| Administration | 9% Factor | | | | | | $1,006.09 |
| **Annual Ongoing Tasks and Costs Total** | | | | | | | **$13,302.75** |

Section 10 - Financial Summary
Property Title: SoCalGas (269-170-06,-09,-10,-11,180-11)
Budget: PAR (Page 1 of 1)

March 7, 2003

| | Cost | Per Acre |
|---|---|---|
| **INITIAL FINANCIAL REQUIREMENTS** | | |
| Acquisition Costs | $585,628.50 | $868.99 |
| Short-Term Enhancement | $104,767.66 | $155.46 |
| Subtotal - Initial Requirements | $690,396.16 | $1,024.45 |
| **ANNUAL ONGOING FINANCIAL REQUIREMENTS** | | |
| Ongoing Costs | $11,178.78 | $16.59 |
| Ongoing Contingency | $1,117.88 | $1.66 |
| Ongoing Administration | $1,006.09 | $1.49 |
| Subtotal - Ongoing Costs | $13,302.75 | $19.74 |
| **ENDOWMENT REQUIREMENTS FOR ONGOING STEWARDSHIP** | | |
| Endowment @ 5% Interest | $266,055.00 | $394.79 |
| **TOTAL CONTRIBUTION** | $969,753.91 | $1,438.97 |

*APPENDIX G*
*DRAFT IMPLEMENTING AGREEMENT*

# IMPLEMENTING AGREEMENT

for

HYUNDAI MOTOR AMERICA AND
THE CITY OF CALIFORNIA CITY

for

HYUNDAI AUTOMOTIVE TEST TRACK FACILITY

JANUARY 9, 2004

**CONTENTS**

**14.6 Availability of funds**

**14.6.1 Federal**

**14.6.2 State**

**14.7 Duplicate originals**

**14.8 No third-party beneficiaries**

**14.9 Relationship to the ESA and other authorities**

**14.10 References to regulations**

**14.11 Applicable laws**

**14.12 Successors and assigns**

## 1.0 PARTIES

The parties to this Implementing Agreement are Hyundai Motor America, the City of California City ("Permittees"), the United States Fish and Wildlife Service (Service) and the California Department of Fish and Game (CDFG).

## 2.0 RECITALS AND PURPOSES

**2.1 Recitals.** The parties have entered into this agreement in consideration of the following facts:

(a) The Hyundai Automotive Test Track Facility site [Facility site] has been determined to provide, or potentially provide, habitat for the following listed species: desert tortoise *(Gopherus agassizii)*; and

(b) Permittees have developed a series of measures, described in the habitat conservation plan (HCP), to minimize and mitigate to the maximum extent practicable the effects of take of covered species incidental to Permittees' covered activities.

**2.2 Purposes.** The purposes of this agreement are:

(a) To ensure implementation of each of the terms of the HCP;

(b) To describe remedies and recourse should any party fail to perform its obligations as set forth in this agreement; and,

(c) To provide assurances to Permittees that, pursuant to the "No Surprises" regulations, as long as the terms of the HCP, the permit, and this agreement are performed, no additional mitigation will be required of Permittees, with respect to covered species, except as provided for in this agreement or required by law.

## 3.0 DEFINITIONS

The following terms as used in this agreement will have the meanings set forth below:

**3.1 Terms defined in Endangered Species Act.** Terms used in this agreement and specifically defined in the Endangered Species Act (ESA) or in regulations adopted by the Service under the ESA have the same meaning as in the ESA and those implementing regulations, unless this agreement expressly provides otherwise.

**3.2 "Changed circumstances"** means changes in circumstances affecting a species or the geographic area covered by the HCP that can reasonably be anticipated by the parties to the HCP and that can reasonably be planned for in the HCP (e.g. the listing of a new species, or a fire or other natural catastrophic event in areas prone to such event.) Changed circumstances and the planned responses to those circumstances are described in Chapter 9 of the HCP. Changed

circumstances are not Unforeseen Circumstances.

**3.3 "Covered activities"** means certain activities carried out by Permittee on covered lands that may result in incidental take of covered species. Covered activities means the following activities as described in Chapters 2 and 7 of the HCP: all activities related to development and operation of the proposed Hyundai automotive test track facility on the proposed project site; all activities related to construction and operation of the proposed access road from State Highway 58 to the project site; and all activities related to construction and operation of the proposed water line and expansion of Joshua Tree Boulevard to serve the proposed project.

**3.4 "Covered lands"** means the lands upon which the permit authorizes incidental take of covered species and the lands to which the HCP's conservation and mitigation measures apply. These lands are described in Chapter 4 of the HCP.

**3.5 "Covered species"** means the desert tortoise, which the HCP addresses in a manner sufficient to meet all of the criteria for issuing an incidental take permit under ESA Section 10(a)(1)(B).

**3.6 "HCP"** means the habitat conservation plan prepared by Permittees for the Facility site.

**3.7 "Permit"** means the incidental take permit issued by the Service to Permittees pursuant to Section 10(a)(1)(B) of the ESA for take incidental to covered activities on the Facility site, as it may be amended from time to time.

**3.8 "Permittees"** means Hyundai Motor America and the City of California City.

**3.9 "Unforeseen circumstances"** means changes in circumstances affecting a species or geographic area covered by the HCP that could not reasonably have been anticipated by plan developers and the Service at the time of the HCP's negotiation and development, and that result in a substantial and adverse change in the status of the covered species.

## 4.0 OBLIGATIONS OF THE PARTIES

**4.1 Obligations of Permittees.** Permittees will fully and faithfully perform all obligations assigned to them under this agreement, the permit, and the HCP.

**4.2 Obligations of the Service.** Upon execution of this agreement by all parties, and satisfaction of all other applicable legal requirements, the Service will issue Permittees a permit under Section 10(a)(1)(B) of the ESA, authorizing incidental take by Permittees of each listed covered species resulting from covered activities on covered lands.

**4.2.1 Permit coverage.** The permit identifies all covered species and will take effect for covered species at the time the permit is issued.

**4.2.2 "No Surprises" assurances.** Provided that Permittees have complied with their obligations under the HCP, this agreement, and the permit, the Service can require Permittees to provide mitigation beyond that provided for in the HCP only under unforeseen circumstances, in accordance with the "No Surprises" regulations at 50 C.F.R. Sections 17.22(b)(5), 17.32(b)(5), and Section 14.1 herein.

**4.3 Obligations of CDFG.** Upon execution of this agreement by all parties, and satisfaction of all other applicable legal requirements, CDFG will issue Permittees a consistency determination pursuant to Section 2080.1 of the California Endangered Species Act (CESA), authorizing incidental take by Permittees of desert tortoise resulting from covered activities on covered lands. Upon satisfaction of all other applicable legal requirements, CDFG also will issue Permittees an incidental take permit pursuant to Section 2081 of CESA, authorizing incidental take by Permittees of Mohave ground squirrel resulting from covered activities on covered lands.

**4.3.1 Conservation and management of compensation habitat.** CDFG shall conserve and manage the 3,386.5 acres of compensation habitat for the desert tortoise and Mohave ground squirrel in perpetuity and in accordance with the HCP. On a case-by-case basis, a third party approved by the Service and CDFG may conserve and manage the 3,386.5 acres of compensation habitat for the desert tortoise and Mohave ground squirrel, provided the third party agrees to conserve and manage the compensation habitat in perpetuity and in accordance with the HCP.

**4.3.2 Reporting.** With respect to any habitat acquired under this Agreement, CDFG will use its best efforts to issue an annual report to the Service by January 31 of each year describing CDFG's management activities for the compensation habitat, the condition of the compensation habitat, and a financial report concerning the Long Term Management Fund.

**4.4 Interim obligations upon a finding of unforeseen circumstances.** If the Service makes a finding of unforeseen circumstances, during the period necessary to determine the nature and location of additional or modified mitigation, Permittees will avoid contributing to appreciably reducing the likelihood of the survival and recovery of the affected species.

## 5.0 INCORPORATION OF HCP

The HCP and each of its provisions and appendices are intended to be, and by this reference are, incorporated herein. In the event of any direct contradiction between the terms of this agreement and the HCP, the terms of this agreement will control. In all other cases, the terms of this agreement and the terms of the HCP will be interpreted to be supplementary to each other.

## 6.0 ACQUISITION AND MANAGEMENT OF COMPENSATION HABITAT

**6.1 Permittee escrow accounts.** Permittees shall establish an Escrow Account in order to adequately fund the habitat acquisition, initial enhancement, and long term

management activities under the EA/HCP. Prior to the establishment of the Escrow Account, Permittees shall provide the Service and CDFG with the escrow instructions for each agency's review and approval. At the direction of Permittees, CDFG and the Service, monies will be paid out of such Escrow Account or to a Purchase Escrow Account under certain conditions cited below. If CDFG and/or the Service determine that one or both Permittees are in breach of their habitat acquisition, initial enhancement, or long term management obligations under the permit or this agreement, CDFG and/or the Service may, with the concurrence of the other wildlife agency, direct monies to be paid out of the Escrow Account to ensure proper implementation of the HCP.

**6.1.1 Direct acquisition costs.** Permittees will direct that Escrow Account monies in the amount of $870/acre be paid from the Escrow Account into a Purchase Escrow Account to pay for the purchase price, outstanding taxes and other liens and encumbrances, escrow fees, title fees, Phase I Environmental Report, and documentary and recording fees (collectively "Direct Acquisition Costs") of compensation habitat identified by and approved by the Permittees, the Service and CDFG. Hyundai shall, prior to requesting a release of funds from the Escrow Account to the Purchase Escrow, submit to the Service and CDFG for approval all documents identified in the Habitat Management Lands Acquisition Checklist (collectively "Escrow Documents") attached as Exhibit "A," including a "Proposed Lands for Acquisition Form" ("PLFAF") as described in Exhibit "A," an Estimated Closing Statement, a Preliminary Title Report, and, if appropriate a Conservation Easement Deed substantially in the form of Exhibit "B." Once the Service and CDFG provide written approval of such Escrow Documents, monies held in the Escrow Account shall be transferred to a Purchase Escrow Account to finalize acquisition of approved compensation habitat.

**6.1.2 Excess funds.** In the event that excess funds remain in the Escrow Account after the requisite acres of compensation habitat have been acquired, the initial enhancement completed, and the Long-term Management Fund fully endowed ("Surplus Funds"), such Surplus Funds shall remain the property of Permittees.

**6.1.3 Additional direct acquisition funding.** Notwithstanding anything to the contrary, if the funding budgeted by Permittees for Direct Acquisition Costs is not sufficient to accomplish the acquisition and initial enhancement of 3,386.5 acres of compensation habitat, Permittees shall be responsible for providing additional funding necessary to complete their compensation habitat acquisition and initial enhancement requirements.

**6.1.4 Long Term Management Fund.** Permittees will pay $500/acre to provide capital to establish a non-wasting endowment for use in performing activities for the long term management of 3,386.5 acres of compensation habitat acquired. Monies from the Escrow Account shall be released to CDFG on a pro-rated basis upon acquisition of a percentage of the total required compensation habitat. The amount required for the Long Term Management Fund is subject to change based on an independent analysis agreed to by all the Parties.

**6.1.5 Initial enhancement of compensation habitat.** Enhancement activities for compensation habitat will be determined and agreed to by all the Parties on a parcel by parcel

basis prior to the close of escrow and will be performed by Hyundai and the City within nine (9) months of close of escrow.

**6.2 Letter of credit.** In the alternative, Permittees may establish letters of credit in favor of CDFG or other entity approved by the Service and CDFG, in the amounts described above, to provide financial assurance for the acquisition, initial enhancement and long-term management of 3,386.5 acres of compensationhabitat. The form of the letters of credit will be subject to the approval of Permittees, the Service and CDFG.

**6.3 Hyundai land acquisition obligations.**

(a) Hyundai shall, within Three Hundred and Sixty-five (365) days from the effective date of this Agreement, acquire fee title to the compensation habitat required pursuant to the HCP.

(b) Upon completion of the initial enhancement activities for each parcel acquired, Hyundai shall convey to the State of California fee title for the compensation habitat acquired in a form acceptable to CDFG. On a case-by-case basis, a third party approved by Hyundai, the City, the Service, and CDFG may hold title to compensation lands. If a third party holds title, a conservation easement substantially in the form of Exhibit "B", and approved by the Department's Office of the General Counsel, will be transferred to CDFG. The documents conveying such interests in lands and the conditions of title are subject to approval by the Department of General Services and the Fish and Game Commission prior to CDFG's acceptance.

(c) Until all of the compensation habitat is acquired, Hyundai shall provide a monthly report to the Service and CDFG that accounts for any expenditures of the funds and any activities taken by Hyundai under this Agreement.

## 7.0 TERM

**7.1 Initial term.** This agreement and the HCP will become effective on the date that the Service issues the permit. This agreement, the HCP, and the permit will remain in effect for a period of 30 years from issuance of the original permit, except as provided below.

**7.2 Permit suspension or revocation.** The Service may suspend or revoke the permit for cause in accordance with the laws and regulations in force at the time of such suspension or revocation. Such suspension or revocation may apply to the entire permit, or only to specified covered lands or covered activities. In the event of suspension or revocation, Permittees' obligations under this agreement and the HCP will continue until the Service determines that all take of covered species that occurred under the permit has been fully mitigated in accordance with the HCP.

**7.3 Extension of the permit.** Upon agreement of the parties and compliance with all applicable laws, the permit may be extended beyond its initial term under regulations of the

Service in force on the date of such extension. If Permittees desire to extend the permit, they will so notify the Service and CDFG at least 180 days before the then-current term is scheduled to expire. If Permittees request an extension of the permit they will also request an extension of their State consistency determination from CDFG. Extension of the permit constitutes extension of the HCP and this agreement for the same amount of time, subject to any modifications that the Service may require at the time of extension.

**7.4 Conservation and management in perpetuity.** Notwithstanding the stated term as herein set forth, the Parties agree and recognize that once the covered species has been taken and its habitat modified within the Facility site, the take and habitat modification will be permanent. The Parties, therefore, agree that the acquisition and maintenance of the compensation habitat, including funding provisions, shall likewise, to the extent permitted by law, be permanent and extend beyond the terms of this Agreement.

## 8.0 FUNDING

Permittees shall fund their obligations under the HCP, the permit, and this agreement as described in Chapter 8 of the HCP and this agreement. Permittees warrant that they have, and will expend, such funds as may be necessary to fulfill their obligations under the HCP, including implementation of all mitigation measures and the Translocation Program. Permittees will promptly notify the Service and CDFG of any material change in Permittees' financial ability to fulfill their respective obligations. In addition to providing any such notice, Permittees will provide the Service and CDFG with a copy of their respective annual report(s) each year of the permit, or with such other reasonably available financial information that the parties agree will provide adequate evidence of Permittees' ability to fulfill their respective obligations.

## 9.0 MONITORING AND REPORTING

**9.1 Planned periodic reports.** As described in the HCP, Permittees will submit periodic reports describing their activities and results of the monitoring program provided for in the HCP. Those reports required on an annual basis will be submitted by January 31 of each year.

**9.2 Other reports.** Permittees will provide, within 30 days of being requested by the Service, any additional information in their possession or control related to implementation of the HCP that is requested by the Service for the purpose of assessing whether the terms and conditions of the permit and the HCP, including the HCP's adaptive management plan, are being fully implemented.

**9.3 Certification of reports.** All reports will include the following certification from a responsible company official who supervised or directed preparation of the report:

> I certify that, to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of this report, the information submitted is true, accurate, and complete.

**9.4 Monitoring by Service**. The Service may conduct inspections and monitoring in connection with the permit in accordance with its regulations. (*See* 50 C.F.R. Section 13.47)

## 10.0 CHANGED CIRCUMSTANCES

**10.1 Permittee-initiated response to changed circumstances.** Permittees will give notice to the Service within seven days after learning that any of the changed circumstances listed in Chapter 9 of the HCP has occurred. As soon as practicable thereafter, but no later than 30 days after learning of the changed circumstances, Permittees will modify their activities in the manner described in Chapter 9 of the HCP, to the extent necessary to mitigate the effects of the changed circumstances on covered species, and will report to the Service on their actions. Permittees will make such modifications without awaiting notice from the Service.

**10.2 Service-initiated response to changed circumstances.** If the Service determines that changed circumstances have occurred and that Permittees have not responded in accordance with Chapter 9 of the HCP, the Service will so notify Permittees and will direct Permittees to make the required changes. Within 30 days after receiving such notice, Permittees will make the required changes and report to the Service on their actions. Such changes are provided for in the HCP, and hence do not constitute unforeseen circumstances or require amendment of the permit or HCP.

**10.3 Responses to changed circumstances on compensation habitat.** If any of the changed circumstances identified in Chapter 9 of the HCP occurs on the compensation habitat, CDFG, or other land manager approved by the Service and CDFG, will respond as provided in Section 9.3 of the HCP and the specific management plan approved by the Service and CDFG for the compensation habitat.

**10.4 Listing of species that are not covered species.** In the event that a non-covered species that may be affected by covered activities becomes listed under the ESA, Permittees will implement the "no take/no jeopardy/no adverse modification" measures identified by the Service until the permit is amended to include such species, or until the Service notifies Permittees that such measures are no longer needed to avoid jeopardy to, take of, or adverse modification of the critical habitat of, the non-covered species. In the event that a non-covered species that may be affected by covered activities becomes listed under the CESA, Permittees shall consult with CDFG to determine the appropriate action.

## 11.0 LAND TRANSACTIONS

Nothing in this agreement, the HCP, or the permit limits Permittees' rights to acquire additional lands. Any additional lands that may be acquired will not be covered by the permit except upon amendment of the permit as provided in Section 12.2 of this agreement.

## 12.0 MODIFICATIONS AND AMENDMENTS

### 12.1 Minor modifications.

(a) Any party may propose minor modifications to the HCP or this agreement by providing notice to all other parties. Such notice shall include a statement of the reason for the proposed modification and an analysis of its environmental effects, including its effects on operations under the HCP and on covered species. The parties will use reasonable efforts to respond to proposed modifications within 60 days of receipt of such notice. Proposed modifications will become effective upon all other parties' written approval. If, for any reason, a receiving party objects to a proposed modification, it must be processed as an amendment of the permit in accordance with subsection 12.2 of this section. The Service will not propose or approve minor modifications to the HCP or this agreement if the Service determines that such modifications would result in operations under the HCP that are significantly different from those analyzed in connection with the original HCP, adverse effects on the environment that are new or significantly different from those analyzed in connection with the original HCP, or additional take not analyzed in connection with the original HCP.

(b) Minor modifications to the HCP and IA processed pursuant to this subsection may include but are not limited to the following:

(1) corrections of typographic, grammatical, and similar editing errors that do not change the intended meaning;

(2) correction of any maps or exhibits to correct minor errors in mapping or to reflect previously approved changes in the permit or HCP; and

(3) minor changes to survey, monitoring or reporting protocols.

(c) Any other modifications to the HCP or IA will be processed as amendments of the permit in accordance with subsection 12.2 of this section.

**12.2 Amendment of the Permit.** The permit may be amended in accordance with all applicable legal requirements, including but not limited to the ESA, the National Environmental Policy Act, and the Service's permit regulations. The party proposing the amendment shall provide a statement of the reasons for the amendment and an analysis of its environmental effects, including its effects on operations under the HCP and on covered species. If a permit amendment is requested, Permittees shall consult with CDFG to determine if the State consistency determination will also need to be amended.

## 13.0 REMEDIES, ENFORCEMENT, AND DISPUTE RESOLUTION

**13.1 In general.** Except as set forth below, each party shall have all remedies

otherwise available to enforce the terms of this agreement, the permit, and the HCP.

**13.2 No monetary damages.** No party shall be liable in damages to any other party or other person for any breach of this agreement, any performance or failure to perform a mandatory or discretionary obligation imposed by this agreement or any other cause of action arising from this agreement.

**13.3 Injunctive and temporary relief.** The parties acknowledge that the covered species is unique and its loss as a species would result in irreparable damage to the environment, and that therefore injunctive and temporary relief may be appropriate to ensure compliance with the terms of this agreement.

**13.4 Enforcement authority of the United States.** Nothing contained in this agreement is intended to limit the authority of the United States government to seek civil or criminal penalties or otherwise fulfill its enforcement responsibilities under the ESA or other applicable law.

**13.5 Dispute resolution.** The parties recognize that disputes concerning implementation of, compliance with, or termination of this agreement, the HCP, and the permit may arise from time to time. The parties agree to work together in good faith to resolve such disputes, using the informal dispute resolution procedures set forth in this section, or such other procedures upon which the parties may later agree. However, if at any time any party determines that circumstances so warrant, it may seek any available remedy without waiting to complete informal dispute resolution.

**13.5.1 Informal dispute resolution process.** Unless the parties agree upon another dispute resolution process, or unless an aggrieved party has initiated administrative proceedings or suit in federal court as provided in this section, the parties may use the following process to attempt to resolve disputes:

(a) The aggrieved party will notify the other parties of the provision that may have been violated, the basis for contending that a violation has occurred, and the remedies it proposes to correct the alleged violation.

(b) The party alleged to be in violation will have 30 days, or such other time as may be agreed, to respond. During this time it may seek clarification of the information provided in the initial notice. The aggrieved party will use reasonable efforts to provide any information then available to it that may be responsive to such inquiries.

(c) Within 30 days after such response was provided or was due, representatives of the parties having authority to resolve the dispute will meet and negotiate in good faith toward a solution satisfactory to all parties, or will establish a specific process and timetable to seek such a solution.

(d) If any issues cannot be resolved through such negotiations, the parties will

consider non-binding mediation and other alternative dispute resolution processes and, if a dispute resolution process is agreed upon, will make good faith efforts to resolve all remaining issues through that process.

**13.6 CDFG as owner of compensation habitat.** Prior to transferring the compensation habitat to CDFG, Hyundai shall provide CDFG all documents identified in the Habitat Management Lands Acquisition Checklist as stated in Section 6.1.1 above. CDFG shall perform an independent assessment for hazardous materials and other hazards affecting the property, based upon information provided by Hyundai. The Parties to this Agreement reserve the right to enjoin or otherwise involve CDFG as a party in any actions arising out of CDFG's ownership and control of the compensation habitat.

## 14.0 MISCELLANEOUS PROVISIONS

**14.1 No Surprises rule.** In the event that any judicial decision or determination, including without limitation the decision from the District Court for the District of Columbia in *Spirit of the Sage, et al. v. Norton, et al.,* 98 CV-1873 (D.D.C. 2003), may hold that the Department of Interior's "No Surprises" assurances rule (or similar successive rule) is vacated, unenforceable or enjoined for any reason or to any extent, Paragraph 4.2.2 shall be enforceable only to the degree allowed by any such decision or determination provided that the remainder of this agreement shall remain in full force and effect to the maximum extent permitted by law. In the event that the "No Surprises" assurances rule may be vacated, unenforceable or enjoined by such decision or determination but is later reinstated, Paragraph 4.2.2 shall likewise be automatically reinstated and apply to the entire term of this agreement. If, in response to any such judicial decision or determination, the "No Surprises" assurances rule is revised, Paragraph 4.2.2 shall be automatically amended in a manner consistent with the revised rule so as to afford the maximum protection to the Permittees consistent with the revised rule.

**14.2 No partnership.** Neither this agreement nor the HCP shall make or be deemed to make any party to this agreement the agent for or the partner of any other party.

**14.3 Notices.** Any notice permitted or required by this agreement shall be in writing, delivered personally, or by overnight mail, to the persons listed below, or shall be deemed given five (5) days after deposit in the United States mail, certified and postage prepaid, return receipt requested and addressed as follows, or at such other address as any party may from time to time specify to the other parties in writing. Notices may be delivered by facsimile or other electronic means, provided that they are also delivered personally or by overnight or certified mail. Notices shall be transmitted so that they are received within the specified deadlines.

Deputy Manager
United States Fish and Wildlife Service
California/Nevada Operations Office
2800 Cottage Way, Room W-2606
Sacramento, California 95825
Telephone: (916) 414 6464

Field Supervisor
United States Fish and Wildlife Service
Ventura Fish and Wildlife Office
2493 Portola Rd., Suite B
Ventura, CA 93003
Telephone: (916) 644 1766

Hyundai Motor America
President and Chief Executive Officer
10550 Talbert Ave.
Fountain Valley, California 92708
Telephone: (714) 965 3000

City of California City
City Manager
21000 Hacienda Blvd.
California City, CA 93505
Telephone: (760) 373 7170

California Department of Fish and Game
Director
1416 Ninth St., 12th Floor
Sacramento, CA 95814
Telephone: (916) 653 7664

California Department of Fish and Game
Attn: Regional Manager
1234 East Shaw Ave.
Fresno, CA 93710
Telephone: (559) 243 4005

**14.4 Entire agreement.** This agreement, together with the HCP and the permit, constitutes the entire agreement among the parties. It supersedes any and all other agreements, either oral or in writing, among the parties with respect to the subject matter hereof and contains all of the covenants and agreements among them with respect to said matters, and each party acknowledges that no representation, inducement, promise or agreement, oral or otherwise, has been made by any other party or anyone acting on behalf of any other party that is not embodied herein.

**14.5 Elected officials not to benefit.** No member of or delegate to Congress shall be entitled to any share or part of this agreement, or to any benefit that may arise from it.

**14.6 Availability of funds.**

**14.6.1 Federal.** Implementation of this agreement and the HCP by the Service is subject to the requirements of the Anti-Deficiency Act and the availability of appropriated funds. Nothing in this agreement will be construed by the parties to require the obligation, appropriation, or expenditure of any money from the U.S. Treasury. The parties acknowledge that the Service will not be required under this agreement to expend any federal agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures as evidenced in writing.

**14.6.2 State.** Implementation of this agreement and the HCP by CDFG is subject to the availability of appropriated funds. Nothing in this agreement shall be construed by the Parties to require the obligation, appropriation, or expenditure of any money from the Treasury of the State of California. The Parties acknowledge and agree that CDFG shall not be required under this agreement to expend any State agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit such expenditure as evidenced in writing.

**14.7 Duplicate originals.** This agreement may be executed in any number of duplicate originals. A complete original of this agreement shall be maintained in the official records of each of the parties hereto.

**14.8 No third-party beneficiaries.** Without limiting the applicability of rights granted to the public pursuant to the ESA or other federal law, this agreement shall not create any right or interest in the public, or any member thereof, as a third-party beneficiary hereof, nor shall it authorize anyone not a party to this agreement to maintain a suit for personal injuries or damages pursuant to the provisions of this agreement. The duties, obligations, and responsibilities of the parties to this agreement with respect to third parties shall remain as imposed under existing law.

**14.9 Relationship to the ESA and other authorities.** The terms of this agreement shall be governed by and construed in accordance with the ESA and applicable federal law. In particular, nothing in this agreement is intended to limit the authority of the Service to seek penalties or otherwise fulfill their responsibilities under the ESA. Moreover, nothing in this agreement is intended to limit or diminish the legal obligations and responsibilities of the Service as an agency of the federal government. Nothing in this agreement will limit the right or obligation of any federal agency to engage in consultation required under Section 7 of the ESA or other federal law; however, it is intended that the rights and obligations of Permittees under the HCP and this agreement will be considered in any consultation affecting Permittees' use of the covered lands.

**14.10 References to regulations.** Any reference in this agreement, the HCP, or the permit to any regulation or rule of the Service shall be deemed to be a reference to such regulation or rule in existence at the time an action is taken.

**14.11 Applicable laws.** All activities undertaken pursuant to this agreement, the HCP, or the permit must be in compliance with all applicable state and federal laws and regulations.

**14.12 Successors and assigns.** This agreement and each of its covenants and conditions shall be binding on and shall inure to the benefit of the parties and their respective successors and assigns. Assignment or other transfer of the permit shall be governed by the Service's regulations in force at the time.

IN WITNESS WHEREOF, THE PARTIES HERETO have executed this Implementing Agreement to be in effect as of the date that the Service issues the permit.

BY_____ Date _____

Deputy Manager
United States Fish and Wildlife Service
California/Nevada Operations Office

BY_____ Date _____

Hyundai Motor America

BY_____ Date _____

Mr. Jack Stewart
City of California City

BY_____ Date _____

Mr. Ronald D. Rempel
Deputy Director
California Department of Fish and Game

# HABITAT MANAGEMENT LANDS ACQUISITION CHECKLIST

**The following checklist is provided for your convenience and to expedite Department processing of your Habitat Management Lands acquisition proposal. This list indicates the appropriate real estate documents which must be provided to the Department of Fish and Game so that review and formal acceptance can be accomplished. Any land acquisition processing requests which are incomplete when received, will be returned.**

- **Proposed Lands for Acquisition Form (PLFAF)**
  **(Forward to Region for approval, Region will send to Real Estate Services Coordinator.)**

- **Hazardous Materials Site Assessment Report**
  **(An existing report may be used, but it must be less than two years old.)**

- **Preliminary Title Report(s) for subject property**
  **(An existing title policy is not acceptable). For some transactions, additional documents may be required, such as, documents to support title exceptions, or to explain title encumbrances. These additional documents may be requested by the Real Estate Services Coordinator during his review.**

- **Grant Deed or Easement Deed**
  **(Deed must be an original, signed and acknowledge, or a certified copy thereof.)**

- **County Assessor Parcel Map(s) for subject property**

- **Site Location Map**
  **(Site location with property boundaries outlined on a USGS 1:24, 000 scale Topographic Quadrangle Map.)**

**The Region will forward the PLFAF to the Lands and Facilities Branch (LFB) Real Estate Services Coordinator and request that LFB process the land acquisition for formal acceptance. With the exception of the PLFAF, all documents listed above should be submitted directly to the Real Estate Services Coordinator at the following address:**

**Mr. Richard Jackson**
**Department of Fish and Game**
**Lands and Facilities Branch**
**1416 - 9th Street**
**Sacramento, CA 95814**

❍ **Please note that the Project Applicant is responsible for all land acquisition costs including: title document costs, escrow fees, recording fees, title insurance premiums and any other escrow-related fees or costs.**

**PROPOSED LANDS FOR ACQUISITION FORM ("PLAF")**

Date:

TO: California Department of Fish and Game
U.S. Fish and Wildlife Service

FR: "Applicant"

"Acquisition Agent"

---

**Applicant proposes that the following parcel of land be considered for approval as suitable for purposes of mitigation of the adverse environmental impacts of the Project:**

Desert tortoise and Mohave ground squirrel habitat identified in the Land Acquisition Implementation Plan as submitted by _____.

**Current Legal Owner:**

_____ currently is in negotiations to acquire fee simple title with willing-sellers of habitat located within the areas identified by its Land Acquisition Implementation Plan.

**Please Check One:**

[ ] This parcel is located within the Desert Tortoise Research & Natural Area
[ ] This parcel is NOT located within the Desert Tortoise Natural Area

**Explanation:**

The Proposed Replacement Habitat is located within the areas more particularly described in the Land Acquisition Plan.

Prior to closing of each Purchase Escrow, _____ shall submit to CDFG a Proposed Lands for Acquisition Form, a Preliminary Title Report, and site survey data for a parcel-by-parcel approval.

---

**FOR CDFG & USFWS USE ONLY**

APPROVED: [ ] By:_____Date:_____

REJECTED: [ ] By:_____Date:_____

**Explanation:**

RECORDING REQUESTED BY AND )
WHEN RECORDED MAIL TO: )
)
State of California )
Wildlife Conservation Board )
1807 13th Street, Suite 103 )
Sacramento, CA 95814 )
)

_____

Space Above Line for Recorder's Use Only

CONSERVATION EASEMENT DEED

THIS CONSERVATION EASEMENT DEED is made this ____ day of _____, 20____, by _____ ("Grantor"), in favor of THE STATE OF CALIFORNIA ("Grantee"), acting by and through its Department of Fish and Game, a subdivision of the California Resources Agency, with reference to the following facts:

R E C I T A L S

A. Grantor is the sole owner in fee simple of certain real property in the County of _____, State of California, designated Assessor's Parcel Number _____ and more particularly described in Exhibit "A" attached hereto and incorporated herein by this reference (the "Property");

B. The Property possesses wildlife and habitat values (collectively, "conservation values") of great importance to Grantee, the people of the State of California and the people of the United States;

C. The Property provides high quality habitat for [*list plant and/or animal species*] and contains [*list habitats; native and/or non-native*];

D. The Department of Fish and Game ("DFG") has jurisdiction, pursuant to California Fish and Game Code section 1802, over the conservation, protection, and management of fish, wildlife, native plants and the habitat necessary for biologically sustainable populations of those species, and the Department of Fish and Game is authorized to hold easements for these purposes pursuant to Civil Code section 815.3, Fish and Game Code section 1348, and other provisions of California law;

E. The United States Fish & Wildlife Service ("USFWS") has jurisdiction over the conservation, protection, restoration, enhancement, and management of fish, wildlife, native plants and habitat necessary for biologically sustainable populations of those species to the extent set forth in the Federal Endangered Species Act, 16 U.S.C. § § 1531, *et seq.* ("FESA"), and other federal laws; and

F. This Conservation Easement provides mitigation for certain impacts of [*describe*

*project*] located in the City of [ ], County of [ ], State of California, pursuant to [*California Endangered Species Act Incidental Take Permit No. [ ] by and between [ ] and the Department of Fish and Game, dated [ ]/the Agreement Regarding Proposed Stream or Lake Alteration [Notification No. [ ] ("Section 1603 Agreement") executed by [ ] and the Department of Fish and Game dated [ ]/ the [document prepared pursuant to CEQA] certified by the [ ] for [project] [SCH No. [ ] dated [ ], and the Mitigation Plan created thereunder]*, Permit #_____ dated [ ], issued by USFWS pursuant to Section 10(a) of the FESA ("Section 10(a) Permit"), the corresponding Implementing Agreement dated [ ], and the *[name of HCP]* dated [ ].

COVENANTS, TERMS, CONDITIONS AND RESTRICTIONS

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and pursuant to California law, including Civil Code sections 815, et seq., Grantor hereby voluntarily grants and conveys to Grantee a conservation easement in perpetuity over the Property.

1. Purpose. The purpose of this Conservation Easement is to ensure the Property will be retained forever in a natural condition and to prevent any use of the Property that will impair or interfere with the conservation values of the Property. Grantor intends that this Conservation Easement will confine the use of the Property to such activities, including, without limitation, those involving the preservation and enhancement of native species and their habitat in a manner consistent with the habitat conservation purposes of this Conservation Easement.

2. Grantee's Rights. To accomplish the purposes of this Conservation Easement, Grantor hereby grants and conveys the following rights to Grantee, and to USFWS as a third party beneficiary hereof, or their designee:

(a) To preserve and protect the conservation values of the Property;

(b) To enter upon the Property at reasonable times in order to monitor Grantor's compliance with and to otherwise enforce the terms of this Conservation Easement, and for scientific research and interpretive purposes by Grantee or its designees, provided that Grantee shall not unreasonably interfere with Grantor's authorized use and quiet enjoyment of the Property;

(c) To prevent any activity on or use of the Property that is inconsistent with the purposes of this Conservation Easement and to require the restoration of such areas or features of the Property that may be damaged by any act, failure to act, or any use that is inconsistent with the purposes of this Conservation Easement;

(d) All mineral, air and water rights necessary to protect and to sustain the biological resources of the Property; and

(e) All present and future development rights.

3. Prohibited Uses. Any activity on or use of the Property inconsistent with the purposes of this Conservation Easement is prohibited. Without limiting the generality of the

foregoing, the following uses by Grantor, Grantor's agents, and third parties, are expressly prohibited:

(a) Unseasonal watering; use of fertilizers, pesticides, biocides, herbicides or other agricultural chemicals; weed abatement activities; incompatible fire protection activities; and any and all other activities and uses which may adversely affect the purposes of this Conservation Easement;

(b) Use of off-road vehicles and use of any other motorized vehicles except on existing roadways;

(c) Grazing or other agricultural activity of any kind;

(d) Recreational activities including, but not limited to, horseback riding, biking, hunting or fishing, except as may be specifically permitted under this Conservation Easement;

(e) Commercial or industrial uses;

(f) Any legal or de facto division, subdivision or partitioning of the Property;

(g) Construction, reconstruction or placement of any building, billboard or sign, or any other structure or improvement of any kind;

(h) Depositing or accumulation of soil, trash, ashes, refuse, waste, biosolids or any other materials;

(i) Planting, introduction or dispersal of non-native or exotic plant or animal species;

(j) Filling, dumping, excavating, draining, dredging, mining, drilling, removing or exploring for or extraction of minerals, loam, soil, sands, gravel, rocks or other material on or below the surface of the Property;

(k) Altering the surface or general topography of the Property, including building of roads;

(l) Removing, destroying, or cutting of trees, shrubs or other vegetation, except as required by law for: fire breaks; maintenance of existing foot trails or roads; prevention or treatment of disease; or control of non-native or exotic plants; and

(m) Manipulating, impounding or altering any natural water course, body of water or water circulation on the Property, and activities or uses detrimental to water quality, including but not limited to degradation or pollution of any surface or sub-surface waters.

4. Grantor's Duties. Grantor shall undertake all reasonable actions to prevent the unlawful entry and trespass by persons whose activities may degrade or harm the conservation values of the Property. In addition, Grantor shall undertake all necessary actions to perfect Grantee's rights under Section 2 of this Conservation Easement, including but not limited to, Grantee's water rights.

5. Reserved Rights. Grantor reserves to itself, and to its personal representatives, heirs, successors, and assigns, all rights accruing from its ownership of the Property, including the right to engage in or to permit or invite others to engage in all uses of the Property that are consistent with the purposes of this Conservation Easement.

6. Grantee's Remedies. If Grantee determines that Grantor is in violation of the terms of this Conservation Easement or that a violation is threatened, Grantee shall give written notice to Grantor of such violation and demand in writing the cure of such violation. If Grantor fails to cure the violation within fifteen (15) days after receipt of written notice and demand from Grantee, or if the cure reasonably requires more than fifteen (15) days to complete and Grantor fails to begin the cure within the 15-day period or fails to continue diligently to complete the cure, Grantee may bring an action at law or in equity in a court of competent jurisdiction to enforce compliance by Grantor with the terms of this Conservation Easement, to recover any damages to which Grantee may be entitled for violation by Grantor of the terms of this Conservation Easement or for any injury to the conservation values of the Property, to enjoin the violation, *ex parte* as necessary, by temporary or permanent injunction without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies, or for other equitable relief, including, but not limited to, the restoration of the Property to the condition in which it existed prior to any such violation or injury. Prior to implementation of any remedial or restorative actions, Grantor shall consult with the USFWS and DFG. Without limiting Grantor's liability therefore, Grantee may apply any damages recovered to the cost of undertaking any corrective action on the Property.

If Grantee, in its sole discretion, determines that circumstances require immediate action to prevent or mitigate damage to the conservation values of the Property, Grantee may pursue its remedies under this Section 6 without prior notice to Grantor or without waiting for the period provided for cure to expire. Grantee's rights under this section apply equally to actual or threatened violations of the terms of this Conservation Easement. Grantor agrees that Grantee's remedies at law for any violation of the terms of this Conservation Easement are inadequate and that Grantee shall be entitled to the injunctive relief described in this section, both prohibitive and mandatory, in addition to such other relief to which Grantee may be entitled, including specific performance of the terms of this Conservation Easement, without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies. Grantee's remedies described in this section shall be cumulative and shall be in addition to all remedies now or hereafter existing at law or in equity, including but not limited to, the remedies set forth in Civil Code sections 815, et seq., inclusive. The failure of Grantee to discover a violation or to take immediate legal action shall not bar Grantee from taking such action at a later time.

If at any time in the future Grantor, Grantee, or any successor in interest uses or threatens to use the Property for purposes inconsistent with this Conservation Easement, or

Grantee or any successor in interest releases or abandons this Conservation Easement in whole or in part, then, notwithstanding Civil Code section 815.7, the California Attorney General, USFWS, or any entity or individual with a justiciable interest in the preservation of this Conservation Easement has standing as interested parties in any proceeding affecting this Conservation Easement.

6.1. Costs of Enforcement. Any costs incurred by Grantee, where Grantee is the prevailing party, in enforcing the terms of this Conservation Easement against Grantor, including, but not limited to, costs of suit and attorneys' and experts' fees, and any costs of restoration necessitated by Grantor's negligence or breach of this Conservation Easement shall be borne by Grantor.

6.2. Grantee's Discretion. Enforcement of the terms of this Conservation Easement by Grantee shall be at the discretion of Grantee, and any forbearance by Grantee to exercise its rights under this Conservation Easement in the event of any breach of any term of this Conservation Easement by Grantor shall not be deemed or construed to be a waiver by Grantee of such term or of any subsequent breach of the same or any other term of this Conservation Easement or of any of Grantee's rights under this Conservation Easement. No delay or omission by Grantee in the exercise of any right or remedy upon any breach by Grantor shall impair such right or remedy or be construed as a waiver.

6.3. Acts Beyond Grantor's Control. Nothing contained in this Conservation Easement shall be construed to entitle Grantee to bring any action against Grantor for any injury to or change in the Property resulting from: (i) any natural cause beyond Grantor's control, including, without limitation, fire not caused by Grantor, flood, storm, and earth movement, or any prudent action taken by Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Property resulting from such causes; or (ii) acts by Grantee or its employees.

6.4. Department of Fish and Game and USFWS Right of Enforcement. All rights and remedies conveyed to Grantee under this Conservation Easement Deed shall extend to and are enforceable by the Department of Fish and Game and USFWS. These rights are in addition to, and do not limit, the rights of enforcement under [*insert title of permits/Agreement described in Recital F, above*].

7. Fence Installation and Maintenance. Grantor shall install and maintain a fence reasonably satisfactory to Grantee and USFWS around the Conservation Easement area to protect the conservation values of the Property, including but not limited to wildlife corridors.

8. Access. This Conservation Easement does not convey a general right of access to the public.

9. Costs and Liabilities. Grantor retains all responsibilities and shall bear all costs and liabilities of any kind related to the ownership, operation, upkeep, and maintenance of the Property. Grantor agrees that Grantee shall have no duty or responsibility for the operation or maintenance of the Property, the monitoring of hazardous conditions thereon, or the protection of Grantor, the public or any third parties from risks relating to conditions on the Property. Grantor

remains solely responsible for obtaining any applicable governmental permits and approvals for any activity or use permitted by this Conservation Easement Deed, and any activity or use shall be undertaken in accordance with all applicable federal, state, local and administrative agency statutes, ordinances, rules, regulations, orders and requirements.

9.1. Taxes; No Liens. Grantor shall pay before delinquency all taxes, assessments, fees, and charges of whatever description levied on or assessed against the Property by competent authority (collectively "taxes"), including any taxes imposed upon, or incurred as a result of, this Conservation Easement, and shall furnish Grantee with satisfactory evidence of payment upon request. Grantor shall keep Grantee's interest in the Property free from any liens, including those arising out of any obligations incurred by Grantor or any labor or materials furnished or alleged to have been furnished to or for Grantor at or for use on the Property.

9.2. Hold Harmless. Grantor shall hold harmless, protect and indemnify Grantee and its directors, officers, employees, agents, contractors, and representatives and the heirs, personal representatives, successors and assigns of each of them (each an "Indemnified Party" and, collectively, "Indemnified Parties") from and against any and all liabilities, penalties, costs, losses, damages, expenses (including, without limitation, reasonable attorneys' fees and experts' fees), causes of action, claims, demands, orders, liens or judgments (each a "Claim" and, collectively, "Claims"), arising from or in any way connected with: (1) injury to or the death of any person, or physical damage to any property, resulting from any act, omission, condition, or other matter related to or occurring on or about the Property, regardless of cause, unless due solely to the negligence of Grantee or any of its employees; (2) the obligations specified in Sections 4, 9, and 9.1; and (3) the existence or administration of this Conservation Easement. If any action or proceeding is brought against any of the Indemnified Parties by reason of any such Claim, Grantor shall, at the election of and upon written notice from Grantee, defend such action or proceeding by counsel reasonably acceptable to the Indemnified Party or reimburse Grantee for all charges incurred for services of the Attorney General in defending the action or proceeding.

9.3. Condemnation. The purposes of the Conservation Easement are presumed to be the best and most necessary public use as defined at Code of Civil Procedure section 1240.680 notwithstanding Code of Civil Procedure sections 1240.690 and 1240.700.

10. Assignment. This Conservation Easement is transferable, but Grantee or any successor in interest shall give Grantor, USFWS, and DFG, if applicable, at least thirty (30) days prior written notice of the transfer. Grantee or any successor in interest may assign its rights and obligations under this Conservation Easement only in a form reasonably approved in writing by both DFG and USFWS in favor of an entity or organization authorized to acquire and hold conservation easements pursuant to Civil Code section 815.3. Grantee or any successor in interest shall require the assignee to agree in writing that the conservation purposes that this grant is intended to advance shall continue to be fulfilled by such assignee in accordance with the [*insert title of permits/Agreement described in Recital F, above*] and shall require the assignee to record the assignment in the county where the Property is located.

11. Release or Abandonment. Grantee or any successor in interest shall not release, modify, relinquish or abandon its rights and obligations under this Conservation Easement

without the prior written consent of USFWS and DFG.

12. Subsequent Transfers. Grantor agrees to incorporate the terms of this Conservation Easement in any deed or other legal instrument by which Grantor divests itself of any interest in all or any portion of the Property, including, without limitation, a leasehold interest. Grantor further agrees to give written notice to Grantee and USFWS of the intent to transfer any interest at least thirty (30) days prior to the date of such transfer. Grantee shall have the right to prevent subsequent transfers in which prospective subsequent claimants or transferees are not given notice of the covenants, terms, conditions and restrictions of this Conservation Easement. The failure of Grantor or Grantee to perform any act provided in this section shall not impair the validity of this Conservation Easement or limit its enforceability in any way.

13. Notices. Any notice, demand, request, consent, approval, or communication that either party desires or is required to give to the other shall be in writing and be served personally or sent by recognized overnight courier that guarantees next-day delivery or by first class mail, postage fully prepaid, addressed as follows:

| | |
|---|---|
| To Grantor: | Hyundai Motor America<br>10550 Talbert Ave.<br>Fountain Valley, California 92708<br>Attn: Vice President-Administrative Services |
| To Grantee: | Department of Fish and Game<br>1234 East Shaw Avenue<br>Fresno, California 93710<br>Attn: Regional Manager |
| With a copy to: | Department of Fish and Game<br>Office of the General Counsel<br>1416 Ninth Street, 12th Floor<br>Sacramento, California 95814-2090<br>Attn: General Counsel |
| To USFWS: | U.S. Fish and Wildlife Office<br>Attn: Field Supervisor<br>2493 Portola Rd., Suite B<br>Ventura, California 93003 |

or to such other address as either party shall designate by written notice to the other. Notice shall be deemed effective upon delivery in the case of personal delivery or delivery by overnight courier or, in the case of delivery by first class mail, five (5) days after deposit into the United States mail.

14. Amendment. This Conservation Easement may be amended by Grantor and Grantee only by mutual written agreement. Any such amendment shall be consistent with the purposes of this Conservation Easement and shall not affect its perpetual duration. Any such

amendment shall be recorded in the official records of Riverside County, State of California.

15. General Provisions.

(a) Controlling Law. The interpretation and performance of this Conservation Easement shall be governed by the laws of the State of California, disregarding the conflicts of law principles of such state.

(b) Liberal Construction. Any general rule of construction to the contrary notwithstanding, this Conservation Easement shall be liberally construed to effect the purposes of this Conservation Easement and the policy and purpose of Civil Code sections 815, et seq. If any provision in this instrument is found to be ambiguous, an interpretation consistent with the purposes of this Conservation Easement that would render the provision valid shall be favored over any interpretation that would render it invalid.

(c) Severability. If a court of competent jurisdiction voids or invalidates on its face any provision of this Conservation Easement Deed, such action shall not affect the remainder of this Conservation Easement Deed. If a court of competent jurisdiction voids or invalidates the application of any provision of this Conservation Easement Deed to a person or circumstance, such action shall not affect the application of the provision to other persons or circumstances.

(d) Entire Agreement. This instrument sets forth the entire agreement of the parties with respect to the Conservation Easement and supersedes all prior discussions, negotiations, understandings, or agreements relating to the Conservation Easement. No alteration or variation of this instrument shall be valid or binding unless contained in an amendment in accordance with Section ~~13~~ 14.

(e) No Forfeiture. Nothing contained herein will result in a forfeiture or reversion of Grantor's title in any respect.

(f) Successors. The covenants, terms, conditions, and restrictions of this Conservation Easement Deed shall be binding upon, and inure to the benefit of, the parties hereto and their respective personal representatives, heirs, successors, and assigns and shall constitute a servitude running in perpetuity with the Property.

(g) Termination of Rights and Obligations. A party's rights and obligations under this Conservation Easement terminate upon transfer of the party's interest in the Conservation Easement or Property, except that liability for acts or omissions occurring prior to transfer shall survive transfer.

(h) Captions. The captions in this instrument have been inserted solely for convenience of reference and are not a part of this instrument and shall have no effect upon its construction or interpretation.

(i) No Hazardous Materials Liability. Grantor represents and warrants that it has no knowledge of any release or threatened release of Hazardous Materials (defined below)

in, on, under, about or affecting the Property. Without limiting the obligations of Grantor under Section 9.2, Grantor agrees to indemnify, protect and hold harmless the Indemnified Parties (defined in Section 9.2) against any and all Claims (defined in Section 9.2) arising from or connected with any Hazardous Materials present, alleged to be present, or otherwise associated with the Property at any time, except any Hazardous Materials placed, disposed or released by Grantee, its employees or agents. If any action or proceeding is brought against any of the Indemnified Parties by reason of any such Claim, Grantor shall, at the election of and upon written notice from Grantee, defend such action or proceeding by counsel reasonably acceptable to the Indemnified Party or reimburse Grantee for all charges incurred for services of the Attorney General in defending the action or proceeding.

Despite any contrary provision of this Conservation Easement Deed, the parties do not intend this Conservation Easement to be, and this Conservation Easement shall not be, construed such that it creates in or gives to Grantee any of the following:

(1) The obligations or liabilities of an "owner" or "operator," as those terms are defined and used in Environmental Laws (defined below), including, without limitation, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. sections 9601 et seq.; hereinafter, "CERCLA"); or

(2) The obligations or liabilities of a person described in 42 U.S.C. section 9607(a)(3) or (4); or

(3) The obligations of a responsible person under any applicable Environmental Laws; or

(4) The right to investigate and remediate any Hazardous Materials associated with the Property; or

(5) Any control over Grantor's ability to investigate, remove, remediate or otherwise clean up any Hazardous Materials associated with the Property.

The term "Hazardous Materials" includes, without limitation, (a) material that is flammable, explosive or radioactive; (b) petroleum products, including by-products and fractions thereof; and (c) hazardous materials, hazardous wastes, hazardous or toxic substances, or related materials defined in CERCLA, the Hazardous Materials Transportation Act (49 U.S.C. sections 6901 et seq.); the Hazardous Waste Control Law (California Health & Safety Code sections 25100 et seq.); the Hazardous Substance Account Act (California Health & Safety Code Section 25300 et seq.), and in the regulations adopted and publications promulgated pursuant to them, or any other applicable federal, state or local laws, ordinances, rules, regulations or orders now in effect or enacted after the date of this Conservation Easement Deed.

The term "Environmental Laws" includes, without limitation, any federal, state, local or administrative agency statute, ordinance, rule, regulation, order or requirement relating to pollution, protection of human health or safety, the environment or Hazardous Materials. Grantor represents, warrants and covenants to Grantee that Grantor's activities upon and use of the Property will comply with all Environmental Laws.

(j) Warranty. Grantor represents and warrants that there are no outstanding mortgages, liens, encumbrances or other interests in the Property which have not been expressly subordinated to this Conservation Easement Deed, and that the Property is not subject to any other conservation easement.

(k) Additional Easements. Grantor shall not grant any additional easements, rights of way or other interests in the Property (other than a security interest that is subordinate to this Conservation Easement Deed), or grant or otherwise abandon or relinquish any water agreement relating to the Property, without first obtaining the written consent of Grantee. Grantee may withhold such consent if it determines that the proposed interest or transfer is inconsistent with the purposes of this Conservation Easement or will impair or interfere with the conservation values of the Property. This Section 14(k) shall not prohibit transfer of a fee or leasehold interest in the Property that is subject to this Conservation Easement Deed and complies with Section 11.

(l) Counterparts. The parties may execute this instrument in two or more counterparts, which shall, in the aggregate, be signed by both parties; each counterpart shall be deemed an original instrument as against any party who has signed it. In the event of any disparity between the counterparts produced, the recorded counterpart shall be controlling.

IN WITNESS WHEREOF Grantor has executed this Conservation Easement Deed the day and year first above written.

GRANTOR:

BY: _____

NAME: _____

TITLE: _____

DATE: _____

Approved as to form:

General Counsel
State of California
Department of Fish and Game

BY: _____

CERTIFICATE OF ACCEPTANCE

This is to certify that the interest in real property conveyed by the Conservation Easement Deed by _____, dated _____, to the State of California, grantee, acting by and through its Department of Fish and Game (the "Department"), a governmental agency (under Government Code section 27281), is hereby accepted by the undersigned officer on behalf of the Department, pursuant to authority conferred by resolution of the California Fish and Game Commission on _____.

GRANTEE:

STATE OF CALIFORNIA, by and through its
DEPARTMENT OF FISH AND GAME

By: _____

Title: _____
Authorized Representative

Date: _____

*APPENDIX H*
*DRAFT LAND ACQUISITION PLAN*

# DRAFT LAND ACQUISITION PLAN

For Review Only by

Hyundai Motor America
City of California City
U.S. Fish and Wildlife Service
California Department of Fish and Game

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## I. Introduction

Hyundai Motor America (Hyundai) is planning to develop an automotive test track in the City of California City, Kern County, California. Hyundai's proposed development site consists of approximately 4,498 acres of private lands, and includes a two-mile extension of a water line by the City of California City (City) and an access road from Highway 58 to service the project. Hyundai and the City collectively are the Project Applicants. The Project Applicants' environmental studies have shown that the site includes populations and habitat of the federal and state -listed, threatened, desert tortoise and the state-listed, threatened, Mohave ground squirrel. The Project Applicants therefore are submitting to the U.S. Fish and Wildlife Service (USFWS) an application for an incidental take permit, under Section 10(a) of the federal Endangered Species Act, for impacts to the desert tortoise, Hyundai and the City also are submitting to the California Department of Fish and Game (CDFG) a request for concurrence with the Section 10(a) permit for impacts to desert tortoise, pursuant to Section 2080.1 of the California Endangered Species Act (CESA), and an application for an incidental take permit pursuant to Section 2081 of the CESA for impacts to the Mohave ground squirrel

As part of the proposed compensation for incidental take of the listed species, the Project Applicants are proposing to acquire 3,386.5 acres of offsite lands suitable for desert tortoise and Mohave ground squirrel, and are proposing to provide funding to CDFG for CDFG to implement enhancement activities for habitat acquired, and perform long-term management of the acquired habitat in perpetuity for the desert tortoise and Mohave ground squirrel.

This Land Acquisition Plan addresses the off-site habitat compensation requirements related to incidental take of desert tortoise and Mohave ground squirrel habitat associated with this project. Those requirements are set forth in the following permits and are as follows:

- Under the proposed Habitat Conservation Plan, USFWS Section 10(a) permit, and CDFG Section 2080.1 concurrence, Project Applicants shall acquire, within twelve months of surface disturbance at the proposed project site, a total of 3,386.5 acres of desert tortoise habitat that is also Mohave ground squirrel habitat;

- Under the proposed CDFG Section 2081 permit, Project Applicants shall acquire within twelve months of surface disturbance at the proposed project site, any additional acreage required by CDFG for Mohave ground squirrel habitat;

- Project Applicants shall provide for enhancement of habitat acquired off-site for the conservation of the desert tortoise and Mohave ground squirrel; and

- Project Applicants shall provide for management of habitat acquired off-site in perpetuity for the conservation of the desert tortoise and Mohave ground squirrel, with interest income generated from a non-wasting, long-term endowment fund.

This Land Acquisition Plan outlines Project Applicants' duties to:

- Identify the process by which Project Applicants will acquire and permanently protect acquired habitat;

- Identify viable habitat acquisition areas to benefit the desert tortoise and Mohave ground squirrel; and

- Provide for a feasible schedule of activities, including acquisition and enhancement, to be completed within 12 months from initiation of habitat disturbing activities.

Hyundai will act on behalf of the Project Applicants to acquire the compensation lands and provide the capital to fund the endowment for long-term management of the compensation lands.

## II. Land Acquisition Process

### A. Project Site Identification

Hyundai and the City, in conjunction with USFWS and CDFG, shall identify habitat within and around existing protected preserve areas in order to enlarge areas of protected habitat. Site visits to all project sites will be performed by Hyundai, the City, CDFG and USFWS prior to acquisition, if feasible and if requested by CDFG and USFWS.

### B. Direct Contact and Negotiation with Landowners

Hyundai will evaluate title farm reports, tax records, and other public and private databases to establish a contact database of landowners within a given area. Negotiations with landowners will be conducted via email, fax, telephone, and in-person meetings.

### C. Due Diligence for Title and Environmental Characteristics of Habitat

Hyundai will examine preliminary title reports to evaluate the existence and impact of any recorded liens, encumbrances, easements, covenants, contingent liabilities, environmental contamination indicators, and other "clouds-on-title". These due diligence actions will be performed prior to formal submission to the USFWS and CDFG of a request for approval to acquire the land. In the event that title defects are found and are deemed to be remediable during the escrow process, Hyundai will present its findings and recommendations to USFWS and CDFG and request approval to acquire the land contingent on clearing title defects.

### D. Escrow and Transfer of Conservation Easement to State of California

Hyundai will enter into a Purchase Agreement, typically with a 90-day escrow, upon obtaining approval from USFWS and CDFG of the suitability of the land as compensation. Within the escrow process, title defects are cured, final title reports are approved and title insurance is purchased. Finally, a Conservation Easement Deed in favor of the State of California will be recorded, with CDFG's concurrence.

### E. Periodic Reporting to Agency Partners

Hyundai will issue a report on its acquisition activities every two (2) months or more frequently upon request by USFWS and CDFG for the first 12 months following surface disturbance at the project site. All survey, title, and other acquisition documentation will be included as reference attachments.

## III. Proposed Acquisition Areas

### A. The Desert Tortoise Research & Natural Area (DTRNA)

The DTRNA is located in southeastern Kern County, California and was designated by Congress as an Area of Critical Environmental Concern (ACEC), Attachment 1, Hyundai Proving Grounds Proposed Compensation Land, and Attachment 2, Proximity of Development Site to The Desert Tortoise Research and Natural Area. Since 1974, the Desert Tortoise Preserve Committee (DTPC), in conjunction with The Nature Conservancy, the Bureau of Land Management (BLM) and CDFG, has focused on acquiring fourteen (14) square miles of private in-holdings among the 39.5 square mile preserve established by Congress. Currently, less than two (2) square miles of habitat within the DTRNA is held by private ownership. In 1987, the DTPC received guidance from Ed Hastey, the then Director of the California State Office of the BLM, to commence habitat acquisition and management activities in "buffer zone" areas outside of the DTRNA boundaries located west, south and east of the DTRNA. Subsequent coordination with BLM resulted in increasing acquisition priorities at the northwestern and northern expansion areas. Collectively, the acquisition map illustrating the DTPC's priorities for habitat acquisition is commonly referred to as the DTRNA Buffer Zone.

To date, the DTPC has acquired 1,501.16 acres of habitat within the DTRNA Buffer Zone. Currently there exists approximately 10,000 acres of habitat within the DTRNA Buffer Zone to be acquired. There are also areas immediately adjacent to the DTRNA Buffer Zone that, if acquired, would add to the large, contiguous block of desert tortoise habitat proposed for protection by the BLM and DTRNA. Within the DTRNA Buffer Zone, DTPC's acquisition priorities are as follows:

1. **Priority 1 Acquisition Targets** include Section 7 at the northwestern corner of the DTRNA, the northern half of Section 34 at the northern boundary of the DTRNA, habitat located south of the DTRNA between the DTRNA perimeter fencing and the Mojave-Randsburg Road within Sections 25 and 35, and the boundary parcels abutting the northern boundary of the Mohave-Randsburg Road in Sections 19, 20, 16, 10, 11, and 1. Acquisition of Priority 1 habitat will permit extension of the existing DTRNA perimeter fencing and minimization of unauthorized trespass into the DTRNA currently generated by vehicular access from Munsey Road and Neuralia Road.

2. **Priority 2 Acquisition Targets** are focused on a one-mile buffer area abutting the eastern perimeter fence of the DTRNA consisting of Sections 6, 17, 18, and 19. Acquisition of Priority 2 habitat will permit extension of the existing DTRNA perimeter fencing, intensive management of vehicular traffic on Bucknell Road, and minimization of unauthorized trespass into the DTRNA, currently generated by Off Highway Vehicle users of Park "C".

**3. Priority 3 Acquisition Targets** are focused on all interior parcels between the existing eastern perimeter fencing of the DTRNA and the Mohave-Randsburg Road consisting of portions of Sections 5, 4, 3, 2, 8, and 9.

### B. Other Priority Areas

The area between Mohave-Randsburg Road and Twenty Mule Team Parkway, northeast of areas that have been and currently are heavily trafficked by recreational vehicles, is another targeted area for acquisition of desert tortoise habitat. A preferred area in this block is near the state-owned lands in Sections 7 and 18 in Township 31 S and Range 40 E. This second potential acquisition area ultimately would provide a larger block of protected, state-owned lands inan area targeted as a CDFG ecological reserve. Furthermore, the area is adjacent to both the Fremont-Kramer Desert Wildlife Management Area (DWMA) and the targeted expansion area of the DTRNA, adding to a large, contiguous block of protected tortoise habitat.

HYUNDAI/KIA PROVING GROUND
California City Area Compensation Land Availability

| No. | APN | Acres | Description |
|---|---|---|---|
| Relocate | 30201002 | 320.00 | N 1.2 Sec. 1 T.32 R.37 |
| Relocate | 30201002 | 320.00 | S 1/2 Sec. 1 T.32 R.37 |
| 1 | 26915001 | 160.35 | PM 3 Sec. 15 T.31 R.39 |
| 2 | 26917003 | 155.73 | SW 1/4 Sec. 15 T.31 R.39 |
| 3 | 26917004 | 160.50 | SE 1/4 Sec. 15 T.31 R.39 |
| 4 | 26917005 | 150.40 | SE 1/4 Sec. 16 T.31 R.39 |
| 5 | 26917007 | 159.19 | NE 1/4 Sec. 9 T.31 R.39 |
| 6 | 26917008 | 150.20 | NE 1/4 Sec. 9 T.31 R.39 |
| 7 | 26917012 | 154.54 | S 1/4 Sec. 16 T.31 R.39 |
| 8 | 26917023 | 107.97 | NW 1/4 Sec. 15 T.31 R.39 |
| 9 | 26917024 | 114.92 | NE 1/4 Sec.15 T.31 R.39 |
| 10 | 26918014 | 162.45 | SW 1/4 Sec. 17 T.31 R.39 |
| 11 | 26918036 | 115.58 | NE 1/4 Sec. 17 T.31 R.39 |
| 12 | 26919001 | 77.48 | SW 1/4 Sec. 18 T.31 R.39 |
| 13 | 26919002 | 242.83 | SE 1/4 Sec. 18 T.31 R.39 |
| 14 | 26919003 | 210.44 | SW 1/4 Sec. 17 T.31 R.39 |
| 15 | 26943202 | 50.00 | W 1/2 E 1/4 Sec. 16 T.31 R.39 |
| 16 | 27101015 | 158.77 | SE 1/4 Sec. 39 T.31 R.39 |
| 17 | 27102008 | 167.93 | E 1/4 Sec. 1 T.31 R.39 |
| 18 | 27102015 | 147.83 | SE 1/4 Sec. 1 T.31 R.39 |
| 19 | 27103001 | 117.16 | NW 1/4 Sec. 6 T.31 R.40 |
| 20 | 27103002 | 78.50 | E 1/2 NE 1/4 Sec. 6 T.31 R.40 |
| 21 | 27103006 | 87.59 | SE 1/4 Sec. 6 T.31 R.40 |
| 22 | 27704004 | 163.52 | NE 1/4 Sec. 1 T.31 R.40 |
| 23 | 27705001 | 168.48 | SE 1/4 Sec. 1 T.31 R.40 |
| 24 | 27705002 | 171.12 | SW 1/4 Sec. 1 T.31 R.40 |

| | | | |
|---|---|---|---|
| 25 | 27706101 | 156.44 | NE 1/4 Sec. 2 T.31 R.40 |
| 26 | 27720001 | 163.21 | NE 1/4 Sec. 12 T.31 R.40 |
| 27 | 27720002 | 157.17 | SE 1/4 Sec. 12 T.31 R.40 |
| 28 | 30813001 | 153.07 | NW 1/4 Sec. 21 T.31 R.39 |
| 29 | 30813003 | 160.60 | NE 1/4 Sec. 21 T.31 R.39 |
| 30 | 30813004 | 155.22 | SE 1/4 Sec. 21 T.31 R.39 |
| 31 | 30813005 | 149.51 | SW 1/4 Sec. 21 T.31 R.39 |
| 32 | 33407201 | 238.10 | S 1/2 Sec. 25 T.31 R.38 |
| 33 | 33411301 | 240.00 | S 1/2 Sec. 6 T.31 R.38 |
| 34 | 45701006 | 130.20 | NW 1/4 Sec. 12 T.31 R.39 |
| 35 | 45701006 | 80.00 | S 1/2 Sec. 12 T.31 R.39 |
| 36 | 45701009 | 79.18 | S 1/2 of NE 1/8 Sec. 11 T.31 R.39 |
| 37 | 45701010 | 110.40 | N 1/2 NE 1/4 Sec. 12 T.31 R.39 |
| 38 | 45701013 | 161.28 | SE 1/4 Sec. 12 T.31 R.39 |
| 39 | 45701014 | 161.01 | SW 1/4 Sec. 12 T.31 R.39 |
| 40 | 45702019 | 88.84 | NE 1/4 Sec. 13 T.31 R.39 |
| 41 | 45704003 | 156.33 | NE 1/4 Sec. 7 T.31 R.39 |
| 42 | 27103005 | 165.57 | SW 1/4 Sec. 6 T.31 R.39 |
| 43 | 45704018 | 158.39 | SE 1/4 Sec. 17 T.31 R.40 |
| 44 | 18215002 | 160.00 | SW 1/4 Sec. 27 T.31 R.40 |
| 45 | 18215003 | 160.00 | SE 1/4 Sec. 27 T.31 R.40 |

## IV. Resource Management Plan

The compensation lands will be managed in compliance with the U*SFWS Desert Tortoise (Mojave Population) Recovery Plan (1994), The Sikes Act Management Plan for the DTRNA (1988)* and *Recommendations for Management of the Desert Tortoise in the California Desert (1988).* Two types of management actions will be undertaken:

**A. Short Term Enhancement Options.** Short-term enhancement includes any actions that can have an immediate effect on the compensation habitat and that can be initiated and concluded within nine (9) months of acquisition of the habitat. Initial enhancement activities will be determined on a parcel by parcel basis, during escrow. Prior to the close of escrow, enhancement will be specified, and will be either performed or fully funded by Hyundai and the City within nine (9) months of close of escrow. Either Project Applicants or CDFG, with the concurrence of the USFWS, may engage in the following activities to enhance the compensation lands:

- Emergency measures to control unleashed dogs and dog packs. *Desert Tortoise (Mojave population) Recovery Plan (1994)*, Appendix F, p. F29.

- Install perimeter fencing along Mohave-Randsburg Road and Munsey Road upon acquisition of parcels abutting each roadway. *Desert Tortoise (Mojave Population) Recovery Plan (1994)*

- Remove trash and debris from habitat acquired to reduce contamination and habitat degradation. *The Sikes Act Management Plan for the DTRNA (1988)*

- Stabilization of erosion areas, if any

- Hazardous materials removal, if any

- Removal of man-made features suitable for raven perching or nesting

**B. Long Term Management Options.** Long-term management includes any actions that require continuous management actions and/or resource investments to achieve results that positively affect the long-term recovery of the species. All funds designated for these purposes are expected to be managed as an endowment account whereby the principal of the account is not expended—and if possible increased through residual interest income—and parts of the interest income is used for management in perpetuity. CDFG, with the concurrence of the USFWS and Project Applicants, will engage in the following activities for long-term management:

- Reduce populations of the common raven to reduce predation on small desert tortoises. *Desert Tortoise (Mojave Population) Recovery Plan (1994)*, Appendix F, p. F30.

- Fund research focused on the DTRNA and adjacent Fremont-Kramer Desert Wildlife Management Area and Critical Habitat including issues of desert tortoise diseases, general health and nutrition, predation, habitat restoration, efficacy of barrier fencing and culverts, and other research recommended in the Recovery Plan. *Ibid*.

- Establish shooting closure throughout the Fremont-Kramer area during the tortoise activity season. *Recommendations for the Management of the Desert Tortoise in the California Desert (1988)*, Recommendation 16, p. 34.

- Fund and manage continued research on population characteristics and conservation requirements of the Mohave ground squirrel.

## V. Schedule for Completion

| Time / Activity | 1/04 | 2/04 | 3/04 | 4/04 | 5/04 through 2/05 | | | | | 3/05 |
|---|---|---|---|---|---|---|---|---|---|---|
| Prepare Land Acquisition Plan | x | | | | | | | | | |
| Obtain approval for Land Acquisition Plan | x | x | | | | | | | | |
| Conduct Site Visits | x | x | | | | | | | | |
| Compile Landowner Database | | x | | | | | | | | |
| Contact/negotiate with Landowners | | x | x | x | x | x | x | x | x | |
| Evaluate title reports | | | x | x | x | x | x | x | x | |
| | | | | | | | | | | |
| Obtain approval to acquire | | | x | x | x | x | x | x | x | |
| Execute Purchase Agreements & Escrow | | | x | x | x | x | x | x | x | |
| Finalize Escrow & Transfer Easement to State of CA | | | | | x | x | x | x | x | X |
| Initiate short-term enhancement | | | | | x | x | x | x | x | X |
| Schedule long-term management actions | | | | | x | x | x | x | x | X |
| Issue Final Acquisition Report | | | | x | x | x | x | x | x | X |

## VI. Acquisition Maps