

**Western Riverside County
Multiple Species Habitat Conservation Plan (MSHCP)
Biological Monitoring Program**

Los Angeles Pocket Mouse (*Perognathus longimembris
brevinasus*) Survey Report 2006



April 23, 2007

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NOTE TO READER:

This report is an account of survey activities undertaken by the Biological Monitoring Program for the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The MSHCP was permitted in June 2004. The Biological Monitoring Program monitors the distribution and status of the 146 Covered Species within the Conservation Area to provide information to Permittees, land managers, the public and the Wildlife Agencies (i.e., the California Department of Fish and Game and the U.S. Fish and Wildlife Service). Monitoring Program activities are guided by the MSHCP Species Objectives for each Covered Species, the MSHCP information needs identified in Section 5.3 or elsewhere in the document, and the information needs of the Permittees.

While we have made every effort to accurately represent our data and results, it should be recognized that our database is still under development. Any reader wishing to make further use of the information or data provided in this report should contact the Monitoring Program to ensure that they have access to the best available or most current data.

The primary preparer of this report was the 2006 Mammalogy Program Lead, Debra De La Torre. If there are any questions about the information provided in this report, please contact the Monitoring Program Administrator. If you have questions about the MSHCP, please contact the Executive Director of the Western Riverside County Regional Conservation Authority (RCA). For further information on the MSHCP and the RCA, go to www.wrc-rca.org

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INTRODUCTION

The Los Angeles pocket mouse (*Perognathus longimembris brevinasus*; “LAPM”), a subspecies of the long-tailed pocket mouse, is a California species of special concern and is believed to be widely distributed in the eastern two-thirds of the MSHCP Plan Area (Dudek & Associates 2003). Most of the records for this species in the Plan Area are the result of trapping efforts for either Stephens’ or San Bernardino kangaroo rats (*Dipodomys stephensi*; “SKR” and *D. merriami parvus*, respectively). Detailed information on the current status of LAPM populations in the Plan Area is not available from either the literature or local biologists. Detection of the species even when it is present can be problematic because it spends much of the year below ground hibernating or aestivating.

The MSHCP species objectives identifies 7 Core Areas for this species and requires that each of the Core Areas support a stable or increasing population occupying at least 30 percent of the suitable habitat as measured over any 8-consecutive year period. The 7 Core Areas for LAPM are described in the MSHCP as: 1) San Jacinto Wildlife Area-Lake Perris Reserve; 2) The Badlands; 3) San Jacinto River and Bautista Creek; 4) Anza Valley; 5) Lake Skinner-Domenigoni Reserve; 6) Potrero Valley; and 7) Temecula Creek.

In 2006, the Monitoring Program began a monthly trapping study of LAPM to better understand this species timing of above-ground activity, determine its distribution at known occupied sites in the Conservation Area, and to test a protocol for determining the number of trap nights needed to detect this species at new sites. It should be noted that during the LAPM study, the Monitoring Program was concurrently conducting a separate trapping study for SKR ((see *Stephens’ Kangaroo Rat Survey Report 2006* for details) and that detection of LAPM during the SKR study influenced the LAPM study as noted in text. The goals of the LAPM study were as follows:

Survey Goals

- A) Document above-ground LAPM activity within the Conservation Area.
- B) Better delineate the distribution of LAPM at the San Jacinto Wildlife Area.
- C) Assess the number of trap nights needed to capture LAPM when they are present on a grid.
- D) Locate LAPM populations within the Conservation Area.

METHODS

Protocol Development

The Biological Monitoring Program protocol for Los Angeles pocket mouse was developed in discussion with personnel at the U.S. Fish and Wildlife Service (USFWS) Carlsbad field office who are conducting an ongoing demographic study of the Pacific pocket mouse (a different sub-species of long-tailed pocket mouse). The USFWS study includes a 10-consecutive night trapping effort on very large grids with traps spaced 5m apart. For the purposes of simply detecting the species, a 5-night trapping effort, with 8 x 8 grids (64 total traps) with 10m spacing,

was deemed adequate for the Biological Monitoring Program trapping effort in 2006. It is expected that grid size, trapping duration, and trap spacing could change based on survey results.

Personnel and Training

The Monitoring Program trained small mammal trapping personnel to ensure proper handling and identification skills. Surveyors were taught safe handling procedures (Appendix A), with the goal of protecting both the captured animal and the handler. Identification of covered small mammal species was taught through hands-on training with biologists experienced with covered species identification. Training sessions were conducted at multiple locations to expose Monitoring Program staff to a range of population characteristics and identification techniques. Training was conducted at the Potrero Unit of the San Jacinto Wildlife Area (Potrero) and the Davis Unit of the San Jacinto Wildlife Area (SJWA) from February to December 2006. Training for new personnel was provided by the USFWS, California Department of Fish and Game (CDFG), and experienced Monitoring Program staff. Surveyors conducting LAPM trapping (both training and surveys) in 2006 included:

- Debra De La Torre, Mammalogy Program Lead (Regional Conservation Authority)
- Adam Malisch, Lead Biologist (Regional Conservation Authority)
- Yvonne C. Moore, Monitoring Program Administrator (CDFG)
- Karin Cleary-Rose, Monitoring Program Coordinator (USFWS)
- Rosina Gallego (CDFG/Regional Conservation Authority)
- Esperanza Sandoval (Regional Conservation Authority)
- Ryann Loomis (Regional Conservation Authority)
- Carol Thompson (Regional Conservation Authority)
- Ariana Malone (Regional Conservation Authority)
- Valerie Morgan (Regional Conservation Authority)
- Conan Guard (Regional Conservation Authority)
- Lynn Miller (Regional Conservation Authority)
- Angela Hyder (Regional Conservation Authority)
- Matt Talluto (Regional Conservation Authority)
- Samantha Marcum (USFWS)

Study Site Selection

LAPM trapping in 2006 took place where we knew LAPM were present. There were 9 LAPM trapping grids at the SJWA and 2 at Silverado Ranch (Figure 1). Both the SJWA and Silverado Ranch are identified as Core Areas for LAPM by the MSHCP. The locations of the LAPM and SKR grids are shown in Figure 1. We initially detected Los Angeles pocket mouse at the SJWA during SKR training activities in 2005. Grid SJWA01 (Figure 2) was established at the original detection location. Eight additional grids surrounding SJWA01 were established in subsequent months to begin to delineate the distribution of LAPM in that area of the SJWA. The 9 grids at SJWA are approximately contiguous. LAPM were detected at Silverado Ranch during SKR trapping activities in August 2006 (see *Stephens' Kangaroo Rat Survey Report 2006* for details). The 2 LAPM trapping grids were placed adjacent to the SKR grids at Silverado.

Future trapping to detect populations of LAPM will occur in suitable habitat across the Conservation Area. In order to develop and refine the trapping site selection criteria, Monitoring Program biologists searched small mammal trapping reports (primarily targeting SKR and San Bernardino kangaroo rat (*Dipodomys merriami parvus*) housed at the USFWS Carlsbad office for observation records of LAPM. The locations of the observations were digitized and will be used to create a GIS model of potential LAPM habitat. This model will be used to focus our LAPM survey efforts in 2007.

Live-Trapping Methods

Live-trapping methods are detailed in the *Western Riverside County MSHCP Biological Monitoring Program Small Mammal Trapping Standard Operating Procedures and LAPM Project Specific Procedures* (Appendix A). Live-trapping for LAPM was accomplished using Sherman folding aluminum traps. Sherman live-traps were baited at dusk (approximately 1800 hrs) and checked at approximately 1000 hrs and 0300 hrs. Both trap-setting and trap-checking times varied according to seasonal variations in the time of sunset. Captured animals were weighed, measured, hair-clipped, and released at the site of capture. Data collected included: species, sex, weight, trap location, age, ear length, hind foot length, tail length, and reproductive condition. Weather and habitat variables were also collected including moon phase, temperature, moisture level (dew, dry, fog, drizzle, etc.) and percent cloud cover.

Monthly trapping at the SJWA was conducted from February through July 2006 and September through December 2006 (Table 1). No trapping for LAPM was conducted in August at the SJWA because a Lake Perris SKR trapping grid was in close proximity to the SJWA grids and we took the above-ground activity detected during trapping for SKR at Lake Perris to be indicative of above-ground activity at the SJWA (see *Stephens' Kangaroo Rat Survey Report 2006* for details). We conducted monthly LAPM trapping at Silverado Ranch from September through December 2006.

The level of LAPM trapping effort varied from month to month based on the extent of other simultaneous small mammal trapping conducted by the Monitoring Program. During periods when other small mammal work was not being conducted, mammal crew staff concentrated on trapping LAPM at the SJWA. This effort allowed staff to continue to improve their small mammal identification and handling skills and increased our understanding of LAPM's distribution. In months when other small mammal work was being done, the effort expended on LAPM was reduced. Due to this variable effort, grid SJWA01 was trapped nearly every month in 2006, while other SJWA grids were intermittently trapped.

Trapping was conducted for 5 consecutive nights through August 2006, when we began an SKR trapping study. In September, due to personnel and equipment constraints, when we trapped for LAPM, we trapped for five nights or until we caught at least one LAPM. In December, we did not detect LAPM, but only trapped for 3 nights due to logistical issues.

Data Analysis

Percent trap success for LAPM trapping was calculated by dividing the number of LAPM caught by the number of trap nights until at least one individual LAPM was captured. Truncating the data after the night of first capture was necessary because trapping was continued for five nights regardless of whether or not LAPM were caught in the middle of the trapping effort for some months but not for all months. Including subsequent nights of data after the first capture introduces bias because small mammals typically return to baited traps after they have been caught. The number of traps, and thus the number of trap nights, varied by grid as SKR grids had 49 traps and LAPM grids had 64 traps.

Raw data are stored in both electronic and paper format at the Biological Monitoring Program office in Riverside, California.

RESULTS

During a total of 6,976 LAPM-focused trap nights in 2006, we recorded 338 LAPM captures (Table 2). The exact total number of individual LAPM caught cannot be accurately calculated because we did not uniquely mark captured animals; therefore we cannot determine whether an animal caught during 1 trapping effort was a new individual or a recapture of an animal caught during a previous trapping effort. However, because we hair-clipped captured LAPM, we can determine whether or not an animal was previously caught within a given month's trapping effort or whether an animal is new to that month's effort and these data are shown in Table 2. An additional single LAPM capture was recorded during SKR-focused trapping at Lake Perris and an additional 2 LAPM captures were recorded during SKR-focused trapping at Silverado Ranch, for a total of 335 captures across all study areas in 2006.

Other covered small mammal species caught during LAPM-focused trapping at the SJWA and Silverado Ranch were captured and released. At the SJWA, these included: San Diego pocket mouse (*Chaetodipus fallax*), San Diego desert woodrat (*Neotoma lepida intermedia*), SKR, and Dulzura kangaroo rat (*Dipodomys simulans*) (Appendix B). Additional, non-covered small mammal species caught at the SJWA included: deer mouse (*Peromyscus maniculatus*), western harvest mouse (*Reithrodontomys megalotis*), cactus mouse (*Peromyscus eremicus*), and pocket gopher (*Thomomys bottae*). Auditory and/or visual encounters of desert cottontail (*Sylvilagus audubonii*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), and black-tailed jackrabbit (*Lepus californicus bennettii*) were also recorded during the LAPM trapping effort at the SJWA.

Other covered small mammal species caught at Silverado Ranch included SKR and Dulzura kangaroo rat. Additional, non-covered small mammal species caught at Silverado Ranch included deer mouse and western harvest mouse. Auditory and/or visual encounters of coyote and black-tailed jackrabbit were also recorded during LAPM trapping at Silverado Ranch.

At least 1 LAPM was detected during every month of trapping at the SJWA except January, which was the only month during which trapping was not conducted, and December, which consisted of only 3 nights of trapping. No LAPM were captured until the final (fifth) night of trapping at the SJWA in March and July 2006.

LAPM were captured on 7 out of 9 grids at the SJWA (Figure 2). This area covers approximately 5 contiguous hectares. Most trapping bouts produced at least 1 LAPM by the third night, but we did not capture LAPM until the fifth night of trapping on 2 occasions (Figure 3). LAPM were captured on 1 SKR grid at Lake Perris, and at 7 out of 9 LAPM grids at the SJWA. LAPM were also captured on 2 SKR grids at Silverado Ranch, and 1 out of 2 newly established grids offset from the SKR grids where LAPM was first captured.

Grid SJWA01 was trapped consistently and along with results from grid SJWA07 shows that May through October were the months best suited for presence/absence surveys in 2006 (Figure 4). In addition, data analysis showed that the capture rate of LAPM on each grid varied by month and by grid within the 5 hectare area making it extremely difficult to calculate a detection probability for this species. For example, Figure 4 shows that in July on grid SJWA01 there were few captures of LAPM but during the same period on grid SJWA07 there were a high number of captures of LAPM. These 2 grids are separated by only 90m. Comparisons of other grids showed similar results.

DISCUSSION

The goals of the 2006 LAPM trapping effort were to document above-ground LAPM activity within the Conservation Area, better delineate the distribution of LAPM at the San Jacinto Wildlife Area, assess the number of trap nights needed to capture LAPM when they are present on a grid, and locate LAPM populations within the Conservation Area.

Documenting Above-Ground Activity

We re-trapped the grids at the SJWA where LAPM were detected during training exercises in 2005 to track their above-ground activity cycle. While LAPM are known to remain below-ground for part of the year, the fact that we captured LAPM at the SJWA in every month from February through November shows that they can be detectable for the majority of the year, at least under conditions found in 2006. We will continue to monitor the above-ground activities of the LAPM population at SJWA and at any additional sites where they are located through 2007.

We re-trapped the 2 grids at Silverado Ranch that were established next to SKR grids where LAPM were captured to track their above-ground activity cycle. LAPM were detected in August and October 2006 at Silverado. We will continue to monitor the above-ground activities of the LAPM population at Silverado through 2007.

Delineate the Distribution of LAPM at the San Jacinto Wildlife Area

LAPM were captured at the majority of grids at the SJWA in 2006, and their distribution at that site likely extends beyond the currently trapped area (approx. 5 hectares). If personnel and resources are available in 2007, we will continue to expand our trapping grid distribution to further delineate the extent of LAPM at this location.

Assess the Number of Trap Nights Needed to Detect LAPM

Because we did not capture LAPM until the fifth night of trapping on 2 occasions, our trapping efforts in 2006 showed that it is necessary to trap for at least 5 consecutive nights (using a 8 x 8 grid with 10m spacing) in order to conclude that LAPM are not detectable at a given site. However, most trapping bouts produced at least 1 LAPM by the third night which suggests that 3 nights may be appropriate for detecting LAPM as long as determining absence with a high degree of certainty is not a primary goal.

Locate LAPM Populations within the Conservation Area

As we detect other populations of LAPM in the Plan Area, our monitoring effort will expand. In 2007 we will conduct vegetation and soil sampling at LAPM trapping locations in order to further quantify the habitat preferences of LAPM. We will continue to look for correlations between above-ground activity and other variables including but not limited to: vegetation, soil structure, rain, and temperature. A reliable method for determining presence/absence of LAPM is needed. We will continue monthly trapping efforts while refining our protocols and developing a GIS model to determine potentially suitable habitat.

LAPM may not be detected because they are below-ground, or because they are not present; therefore trapping in a new location to determine presence/absence of this species should be conducted when the animals are known to be above-ground. This can be accomplished by trapping at known occupied sites at the same time as sites where LAPM have not been detected previously. However, known occupied sites are somewhat rare and need to be geographically close to the area in question. Because of this factor, it may be nearly impossible to be sure if the species is truly absent from an area without detections.

REFERENCES

Dudek & Associates. 2003. Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). Final MSHCP, Volumes I and II. Prepared for County of Riverside Transportation and Lands Management Agency. Prepared by Dudek & Associates, Inc. Approved June 17, 2003.

Table 1. LAPM trapping dates and locations in 2006.

Trapping Dates	Trapping Locations	Grids Trapped
2/14/06-2/17/06	San Jacinto Wildlife Area	SJWA01, SJWA03, SJWA04, SJWA02
3/21/06-3/25/06	San Jacinto Wildlife Area	SJWA01, SJWA03, SJWA04
4/18/06-4/22/06	San Jacinto Wildlife Area	SJWA01, SJWA02
5/16/06-5/20/06	San Jacinto Wildlife Area	SJWA01, SJWA05, SJWA06
6/13/06-6/17/06	San Jacinto Wildlife Area	SJWA01, SJWA05, SJWA06
7/18/03-7/22/06	San Jacinto Wildlife Area	SJWA01, SJWA07, SJWA08, SJWA09
8/10/06-8/12/06	Lake Perris State Park	LP08*
8/31/06-9/2/06	Silverado	SO04*
9/6/06-9/8/06	Silverado	SO105*
9/25/06-9/26/06	San Jacinto Wildlife Area	SJWA01, SJWA07
10/16/06-10/18/06	San Jacinto Wildlife Area, Silverado	SJWA01, SJWA07, SL01, SL02
11/28/06-12/1/06	San Jacinto Wildlife Area, Silverado	SJWA01, SJWA08, SL01, SL02
12/27/06-12/29/06	Silverado, San Jacinto Wildlife Area	SJWA01, SL02

* SKR grids where LAPM were detected.

Table 2. LAPM capture histories at the San Jacinto Wildlife Area and Silverado Ranch in 2006.

San Jacinto Wildlife Area							
		Trap Nights (# New / # Recapture)					
Grid	Month	Night 1	Night 2	Night 3	Night 4	Night 5	Totals
SJWA01	February	0/0	1/0	1/1	1/0	--	3/1
SJWA02	February	1/0	1/0	0/0	--	--	2/0
SJWA01	March	0/0	0/0	0/0	1/0	--	1/0
SJWA01	April	0/0	2/0	1/1	2/1	2/1	7/3
SJWA02	April	0/0	0/0	1/0	1/0	0/0	2/0
SJWA01	May	5/0	3/2	4/5	0/6	0/5	12/18
SJWA05	May	8/0	0/6	3/2	1/5	3/6	15/19
SJWA06	May	4/0	2/2	0/5	0/0	1/2	7/9
SJWA01	June	7/0	2/3	2/4	1/5	3/3	15/15
SJWA05	June	9/0	3/5	5/7	4/9	3/8	24/29
SJWA06	June	5/0	4/3	3/4	2/7	5/5	19/19
SJWA01	July	4/0	--	--	--	--	4/0
SJWA07	July	8/0	9/3	8/7	5/8	4/9	34/27
SJWA08	July	2/0	3/1	3/2	1/3	2/1	11/7
SJWA09	July	1/0	3/0	2/2	1/1	--	7/3
LP08*	August	0/0	0/0	1/0	--	--	1/0
SJWA01	September	1/0	2/0	--	--	--	3/0
SJWA07	September	6/0	0/0	--	--	--	6/0
SJWA01	October	1/0	1/0	3/2	0/0	--	5/2
SJWA07	October	0/0	3/0	0/0	1/0	--	4/0
SJWA01	November	0/0	--	--	--	--	0/0
SJWA08	November	1/0	--	--	--	--	1/0
All Grids							183/152

Silverado Ranch							
		Trap Nights (# New / # Recapture)					
Grid	Month	Night 1	Night 2	Night 3	Night 4	Night 5	Totals
SO04*	August	0/0	0/0	1/0	--	--	1/0
SO105*	August	0/0	0/0	1/0	--	--	1/0
SL02	October	0/0	1/0	0/0	0/0	0/0	1/0
All Grids							3/0

Grand Totals: 186 new, 152 recaptures = 338 total captures

*SKR Grids

Figure1: 2006 LAPM Trapping Grid Locations

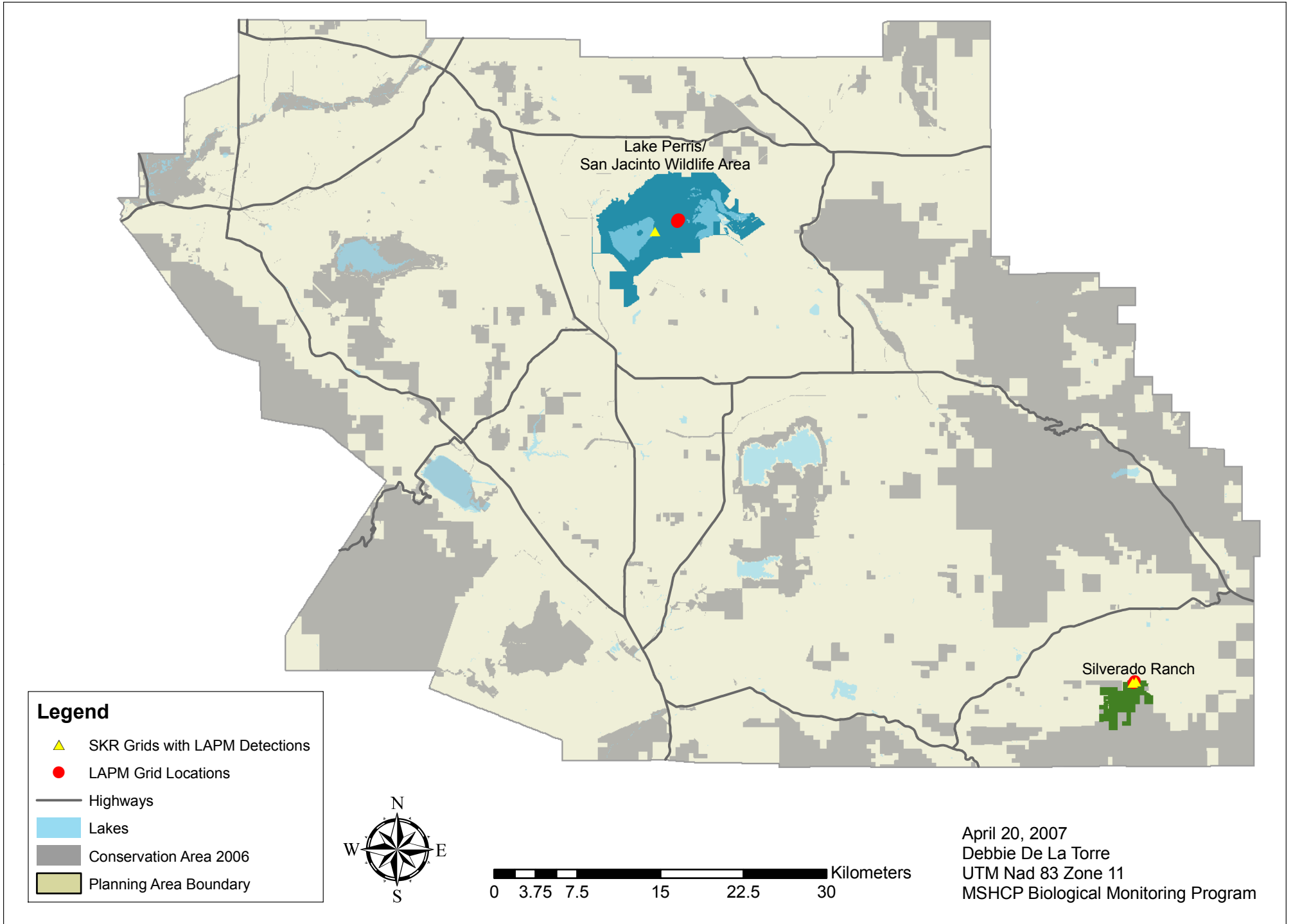
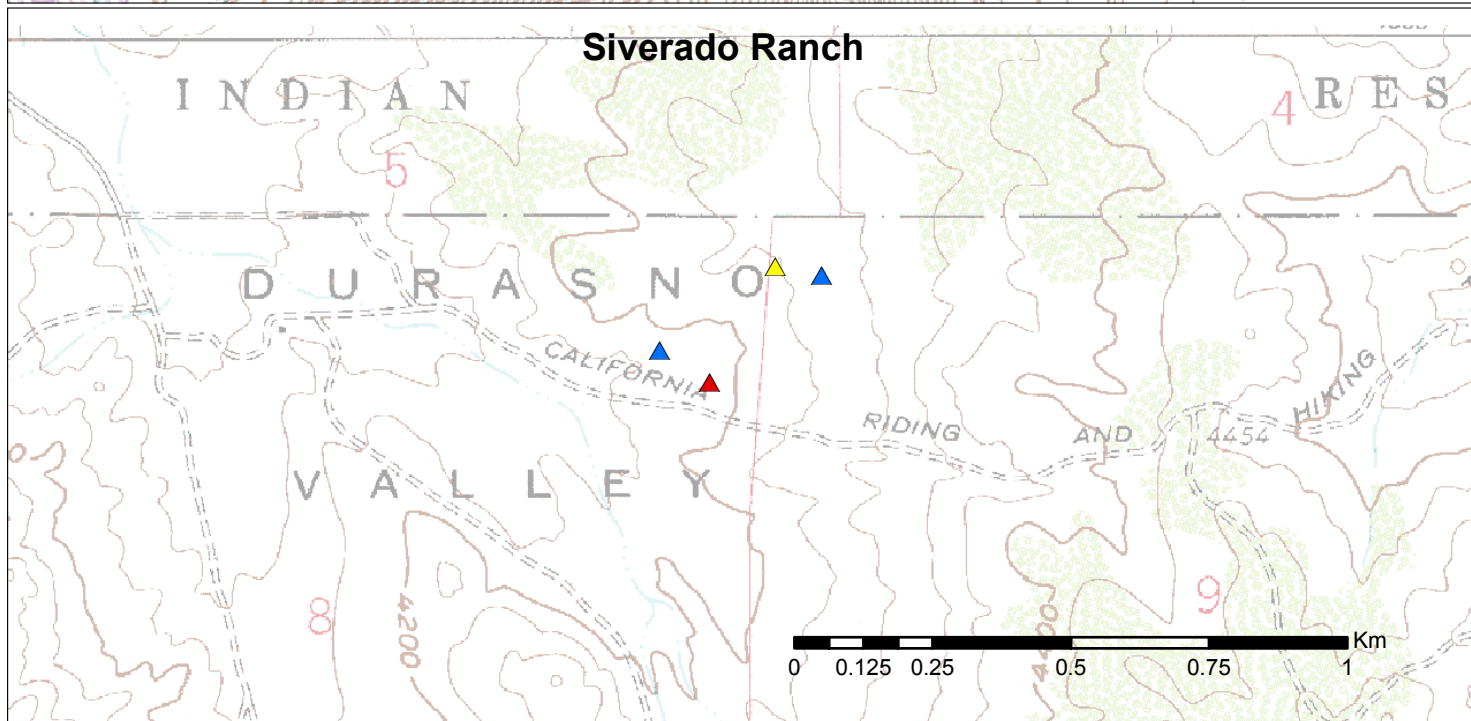
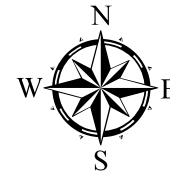
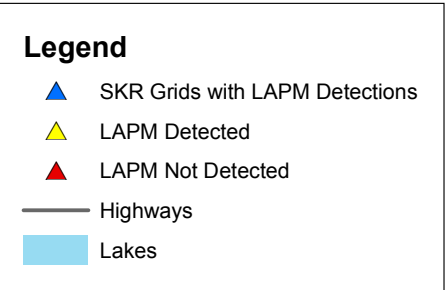
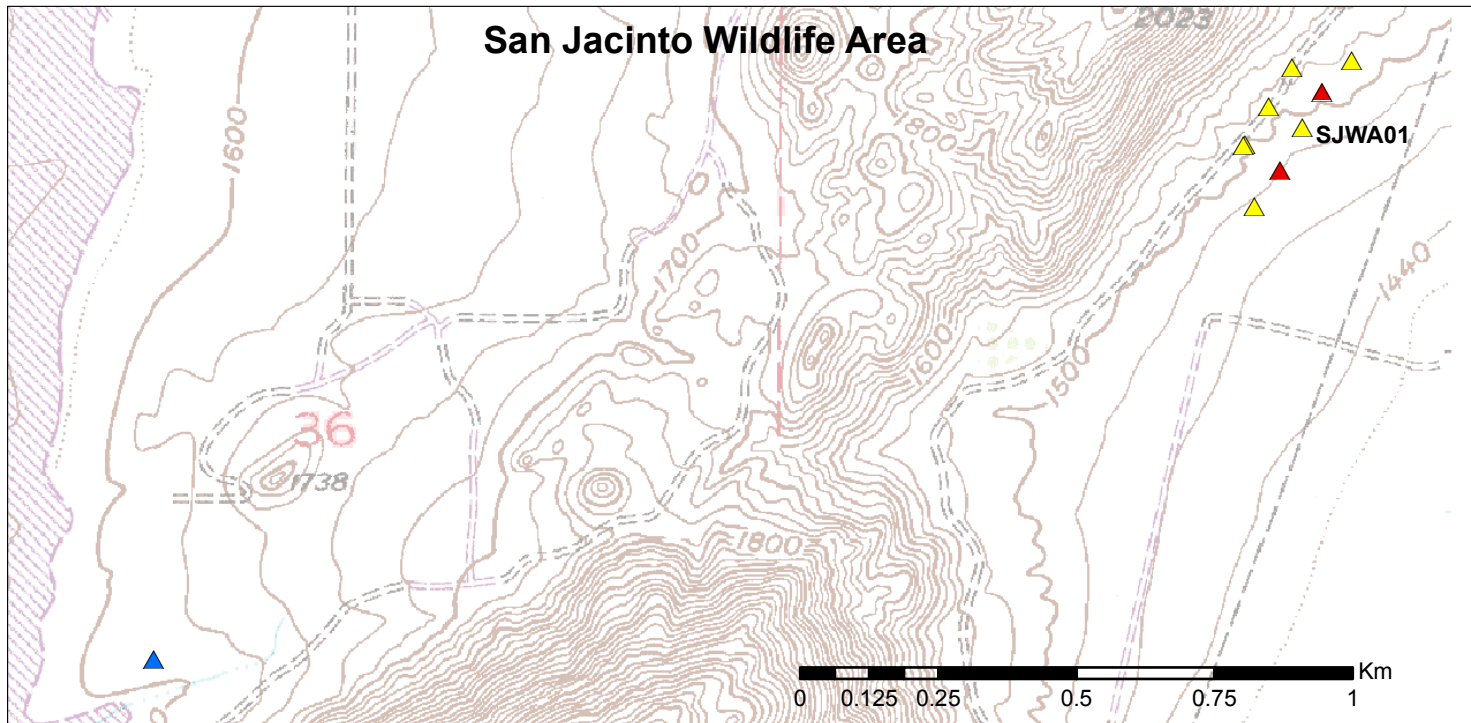


Figure 2: 2006 LAPM Detections at San Jacinto Wildlife Area and Silverado Ranch



April 20, 2007
Debbie De La Torre
UTM Nad 83 Zone 11
MSHCP Biological Monitoring Program

Figure 3: Number of times LAPM was first caught on a given trap night

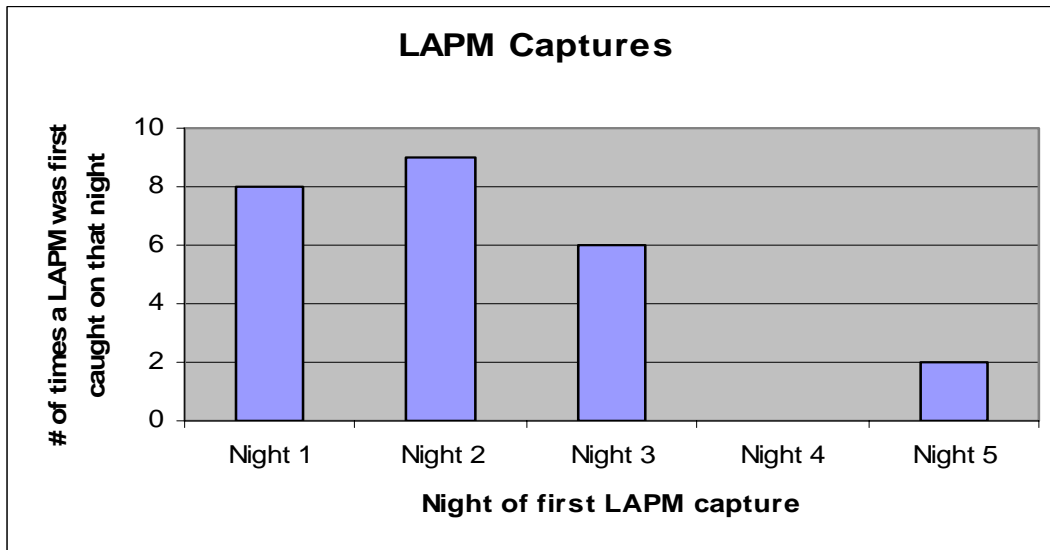
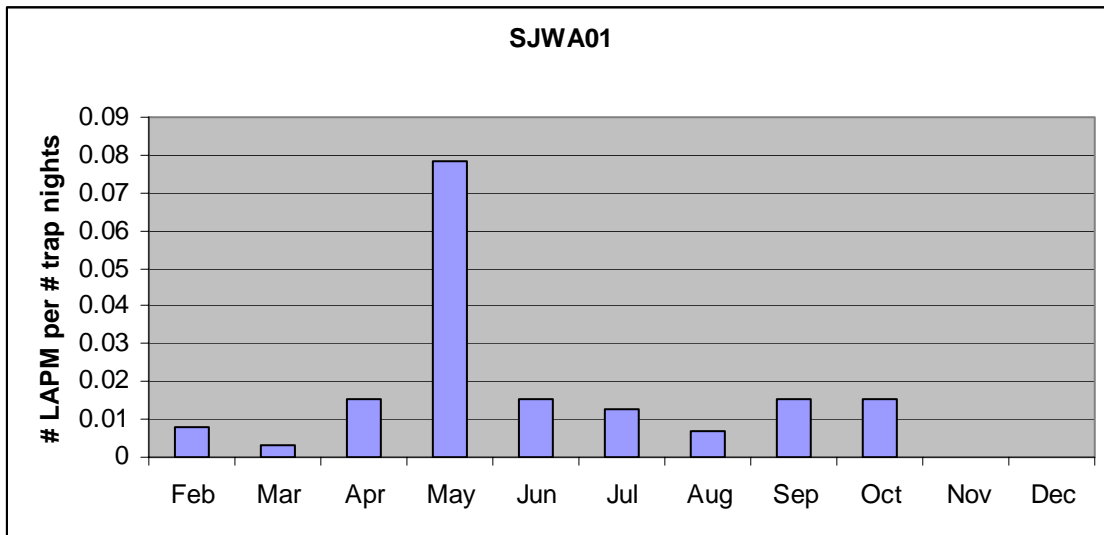
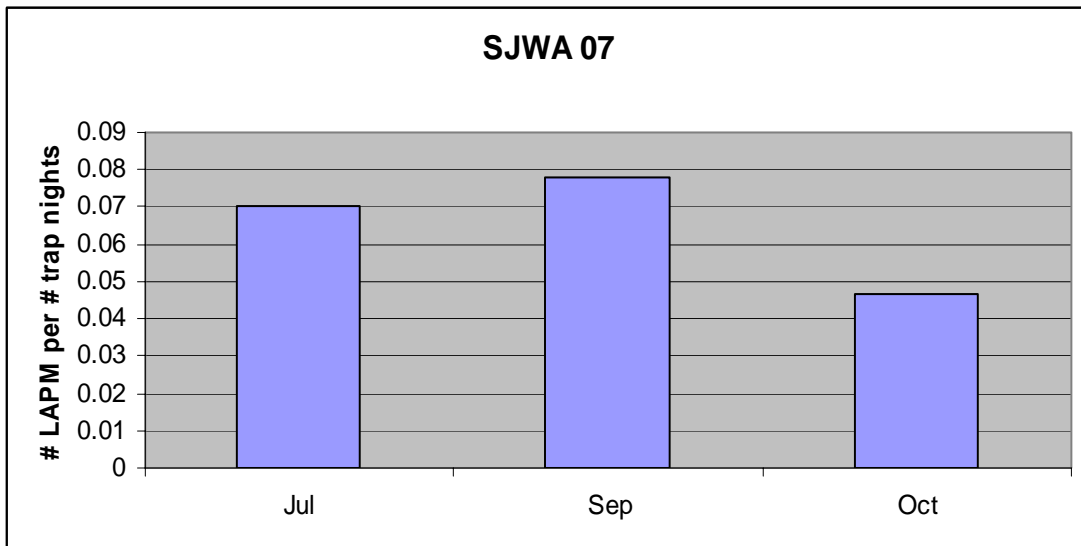


Figure 4: Number of LAPM per number trap nights on selected grids



August represents data collected at Lake Perris State Park in lieu of SJWA01 (see text). In November, LAPM was caught on grid SJWA09 but not on grid SJWA01.



Appendix A:

Western Riverside County MSHCP Biological Monitoring Program Standard Operating Procedures: Small Mammal Trapping

These are the general small mammal trapping standard procedures for the Western Riverside County MSHCP Biological Monitoring small mammal program. Individual projects may have specific procedures and requirements that vary from these. In those cases, project specific guidance will be provided.

Goal: Generally to determine presence/absence, life histories, species community composition, and/or habitat preferences. Each trapping effort or project will have its own goal or goals.

I. Site Selection

Site selection criteria will be project specific, but in general when random placement of trapping grids is desired the following procedures will be followed. The Mammal Lead will use a GIS to conduct queries and produce maps of potential trapping sites based on the current available knowledge for each species. The suitable areas of this map will be divided into 50 X 50 meter grids from which random points will be used to select trapping grids. The randomly chosen grids will be ground truthed to be sure the selected site conforms to the following site characteristics: vegetation within the grid should include one community type only (grassland, sage scrub, chaparral, etc), and soils specific to the target species when indicated. Grid boundaries should lie at least 70 meters from the edge of another kind of vegetation community to avoid edge effects.

II. Setting out Trap Lines

Equipment:

- Modified Sherman traps
- Millet
- List of random UTM points
- Ant powder
- Transect tape 100m
- Flagging/Pin flags
- Sharpie pens
- Trap carrying bags
- Handheld GPS unit/ Compass

Trap Grid Layout: The standard grid size will vary based on project specifics; currently we are using both 8 x 8 grids with 10 meter spacing and 7 x 7 grids with 15m spacing.

The pre-selected UTM point will be the southwestern corner unless this will result in a non-homogeneous grid. If this occurs than use the UTM point as any one of the other corners so that the grid is homogeneous. Record this change so the appropriate UTM is listed as the southwestern corner. After the corners are set, check a diagonal distance to ensure that the grid is square, ($a^2 + b^2 = c^2$). Adjust as necessary. From the final corner point use a 100 meter transect tape to place the north/south and east/west grid lines. Place marked pin-flags appropriately spaced (every 10 or 15 meters) along each line. The lower left corner of the square when facing north should be labeled A1, A2, A3, through A8 heading northward. The eastward line should be labeled A1, B1, and C1, through H1 (Fig. 2). Note: because the transect tape will begin at the corner point with the A1 flag at "0", each grid line will measure 70 meters. Individual grids should be at least 100 meters apart unless you are given other project-specific direction.

Trap Placement and Setting: Unfold the trap and push the front door until it engages with the treadle tab. The front door can easily be found by noticing that there is a crease on the left side of the trap when the door is facing you. There is also a "lip" at the top of the same side.

Lightly tap on the side or bottom of trap. A light tap will be about as hard as if you were tapping a container to make a spider fall off the side. If the trap is set properly the door should snap shut, if it does not, adjust the sensitivity of the trap by pulling the tab forward or pushing it backward. Pushing back will make the door more sensitive, a forward pull will make it less sensitive. Please ask if you cannot find the tab.

Once you are sure the sensitivity is correct place the trap on the ground at the station with the opening facing northward (placing all the traps facing the same direction reduces the number of variables). Traps should be placed on level ground so that the entrance of the trap is flush with the ground, and the trap does not teeter. Use your boot to scrape out a smooth, level space. Traps should be placed parallel to the trap line as indicated in the trap placement diagram (attached).

Take about 1 tablespoon of seed and toss most of it into the trap. Make sure that the millet is in the back of the trap, behind the treadle; otherwise an animal is likely to be too close to the door when it shuts, and its tail could get caught in or severed by the door.

Ant Caution: Ants can kill animals in a trap. If ants are present at a trap station sprinkle the ant powder that is provided to you heavily under and immediately around the trap. Make sure that there are no ants inside the trap before you rebait it. If you are doing the last trap check of the day/night and there are ants, apply ant powder unless the grid is being closed. If the ants are particularly thick and you are worried, then do not set the trap. Be sure to record that the trap was not set.

III. Checking the Traps

Note: All of the procedures described below require training and experience. If you are not comfortable with the training you have received, or you are fearful that the methodologies used

at your last job are not the ones used here, it is your responsibility to alert the Mammal Program Lead (Debbie) or the Monitoring Program Coordinator (Karin). If you are scheduled for an activity you do not feel qualified to conduct, alert Karin or Debbie as soon as possible. Do not ever conduct a procedure you are not comfortable with.

Equipment per handler:

1 Headlamp per person
3 Pesola® Scales: 20g, 100g and 300g
2 Rulers (1 short 1 long, 0 at edge)
1 Kestrel per handler
1 Manicure scissors for hair clipping
4 Animal handling bags (Ziplock® or bread) per grid
Datasheets (>2 per grid, extras better)
Grid quality control sheets (>1 per grid)
Animal Mortality Record
Clipboard 1 per recorder
Several pens
Species field guide/key
Digital camera for photos of unknown animals
Waste bags for used millet
Ant powder (approved and supplied only)
Backpack
Extra batteries
Mag light flash light

Traps will be checked either once or twice per night. The first time (midnight check) will be approximately 5 hours after sunset, the second check, if done, will be just before dawn. If only one check is to be done, it will always be the midnight check. Traps may be closed after the midnight check, but the midnight check can not be skipped in favor of a morning only check.

While checking trap lines, note pin-flag number and whether each trap was open, closed and empty, or closed with a capture. To ensure that no traps are missed, make note of the status of each trap in the appropriate box on your trap-check quality control sheet. Mark “O” for open traps, “C” for closed with no capture, “R” for robbed traps, (traps that are open with no bait inside), and use the four-letter species code for traps closed with an animal inside. Only record the status of the traps you or your handling/recording partner checked. Adjust the treadle on robbed traps.

When there is no animal in the trap: If the trap is open, visually check to see there is not a pocket mouse in the trap. We have captured several pocket mice in open traps, when a surveyor picked up the trap. Additionally, place your hand inside the trap and push the treadle to the bottom of the trap to ensure that no mice are hiding under the treadle. Never close a trap without looking inside and checking the treadle first.

If the grid is being closed, pick up all open traps and dispose of the bait in your waste bag. If it is not the last night of trapping and it is not the last check of the night, reset and bait the trap. If

it is the last check of the night, dispose of the excess bait in your waste bag and leave the trap perpendicular to the line.

If the door is closed, but the trap seems too light to contain an animal, slowly open the trap door to make sure that something small (mouse or pocket mouse) isn't inside. Gently depress the treadle to check for animals underneath. Harvest mice and pocket mice fit easily under the treadle. Determined *Peromyscus* also fit. If the trap is empty, either fold it and put it into your trap bag, or return it to the trap station as appropriate.

When there is an animal in the trap: If the door is closed pick up the trap and take notice of the weight. If it feels like an animal is inside follow the directions below. Use caution as occasionally non-mammal species may be captured. See rattlesnakes below.

To remove the mammal from the trap, hold the trap parallel to your body, door facing upward and the side of the trap with the split panel facing you. One hand should be on each side of the trap. Your right hand will be holding the bottom of the trap. Place a Ziplock® bag over the top of the trap. Pull the crease of the bag against the inside right corner of the trap. Wrap the excess portion of the bag around the trap away from you and hold it securely against the trap with your right hand. Open and extend the bag so that the animal will easily fall into it. With your right hand, through the plastic bag, open and hold the trap door open. Quickly and firmly give the trap a downward shake to make the animal fall into the bag. Be firm but remember you have a live animal in the trap. As soon as the animal drops into the bag quickly grasp the plastic bag and form a tight barrier between the animal and the trap. Remove the bag completely from the trap. Watch for trap wires hooked into the bag.

Be aware of ants! Treat as needed as specified above.

Missing Traps: If you cannot find a trap at a station make a methodical search for it then move on making note of the missing trap. Once the grid is finished, do another search. You should look until you either find it or you are very certain it is not in the area. Involve other crew members in the search if they are available. If the trap can not be found and there will be a morning crew, leave notice for them so they can search in the daylight. You should be very reluctant to leave a trap unaccounted for. Any animal captured will die and if a predator has moved the trap we also want to know this because it is likely they will return.

If you suspect there is a Rattlesnake in the trap: If there is a snake in the trap, the first thing you will notice is that the trap is solid and too heavy. If you think there is a snake, but are not sure if it is a rattle snake, tap on the trap lightly to see if you hear a rattle. If the snake rattles, or if it rattled when you picked up the trap do the following: Place the trap on the ground, with the door facing you. You are going to pull the pin out of the bottom of the trap. Before you do this, look around you and choose location or direction that is free of obstacles. Pull the pin out of the bottom left side of the trap. Move away from the trap in your chosen direction as you remove the pin. The trap will collapse and the snake will be free. You can turn the trap upside down if that makes it easier for you to remove the pin. This procedure will free all snakes in a trap, but you need to be alert and prepared to move when you are releasing a rattlesnake.

Make note of the incident on the data sheet in the notes section. Either repair the trap in the field or replace it with an extra one and repair it in the office.

IV. Filling out the datasheet:

Trap ID: Record the letter and the number of the trap where you catch an animal under ‘Trap ID’ on the data sheet.

Weighing the animal: Before you use a Pesola® scale the first time each night, be sure it is zeroed. Look at the scale while it is empty and see that it reads zero. If it does not, use the knob at the top of the scale to adjust it. Use the scale to weigh the animal and the bag. Fold the bag down then sideways and attach the clip of the scale in the center. The bag can also be twisted and held closed with the jaws of the scale. Wait until the animal is calm before reading the scale. Record this weight in grams under ‘Total wt’ on the data sheet. Save bag contents to weigh later.

Handling the animal: While the animal is in the bag, place the bag against your thigh or the ground and trap the animal in a section of the bag without allowing its nose to get into a corner. Grasp the animal firmly by the scruff of the neck with the bag between your fingers and the animal. Unfold the bag to expose the animal. Identify the genus and species, mark the animal if appropriate, as discussed below, take the standard measurements as listed below and record them on the data sheet. Some species may require only one or two of the measurements. You will memorize these.

Recaptured animals: If the animal is marked, it is a recapture. Marks will vary from project to project, and may even vary from night to night. Marking can be accomplished by PIT tag, trimming fur or using a colored marker. Be sure you are clear on the marking scheme being used anytime you are trapping. For recaptured animals, record the species, sex, and reproductive condition only. Marking is further discussed below.

Incidental deaths: if an animal is found dead in a trap, record the species and the sex and under fate record “dead.” If the animal is a Covered Species place the deceased animal in two Ziploc® bags, one inside the other, both zipped closed and bring it back to the office to be placed in the freezer for later disposition. Write the date, site, station and species on the bag with a sharpie. Fill out a mortality record form for each dead animal or incident while you are in the field. They are located in your trap kits. Place the completed form on the Mammal Program Lead’s desk. If the dead animal is a listed species (SKR, SBKR), also put a copy of the Mortality Record on Karin’s desk. If it is a Friday night, designate one crew member to call Karin at home on Saturday morning. We are required to notify the Fish and Wildlife Service within 24 hours of finding a listed animal that is dead.

Incidental births: If an animal gives birth while in the trap place the mother on the ground and watch her if she enters a burrow place the babies in the entrance of that burrow and leave them alone. If you do not know where she went, place the babies outside the trap and record the incident in the notes section on the data sheet.

Hot or Cold animals: If an animal is too cold (lethargic and unresponsive) place it in a pocket close to your body until it is revived. If you are really worried, you can bring the animal into a heated vehicle. Be careful about placing the animal directly in front of heater vents. They are small and can overheat quickly. Once the animal begins to warm up and move around release it at the station where it was captured. An animal that is overheated will also be lethargic and may have moisture around its mouth. If the animal is hot cool it down by wetting its fur with plain water and fanning or blowing on the animal. Record the species and sex of the animal and make note of the incident and the outcome.

Marking the animal: Animals can be marked by injection of a pit tag, trimming of fur, or coloring with a sharpie or Ideal Mark, depending on the project. Always be clear about the marking method being used when you are checking traps or recording data.

Trimming fur: Mark the animal by clipping a small amount of guard hair on the right hind quarter (or other identified area). Though it is not necessary to clip down to the skin, the mark must be obviously visible. Other clipping patterns may be used (different location on the animal) you will be informed if this is necessary. Circle on the data sheet yes 'Y' or no 'N' for hair sample. Only Mark yes if a hair sample is collected. Place the collected hair in a coin envelope and record the following on the envelope: station number, grid name, date, morning or midnight trap check.

Marker: Write on the animal in the specified location with the specified color.

PIT tagging: See separate written instructions. Do not attempt this procedure without training and permission.

Identify the species: You should be comfortable with identification of local small mammal species. Use the field guide included in your mammal packet to help with identification as needed. You can also consult crew mates if there is confusion. Record the species on your data sheet the 4 or 6 letter code. Species codes are included in your mammal packet if you forget one. If you cannot identify a species, take and record all standard measurements, and take photographs of the animal for later identification. Do not spend too much time on this task. Record the capture as new or recapture on the data sheet.

Sexing the animal: Males and females can be differentiated using the following cues:

- Look first for an enlarged scrotum or signs of lactation (bare skin around enlarged nipples).
- Males have a greater distance between anus and genitals than females (in females the genitalia is typically within 1-2 mm of the anus). The skin between the anus and genitals tends to be hairless in females.
- Check for baculum: Using your finger or the tip of a pencil, gently push the genitalia upward (toward the animal's head). If a tiny boney spur protrudes from the genitalia, the animal is a male. Record the 'sex' on the data sheet.

Reproductive status of the animal: The categories of reproductive status are: scrotal, or not reproductive for males; pregnant, perforate, lactating, plugged or not reproductive for females. Record the status on the data sheet under 'condition'.

Females: Note if the individual is lactating by the presence of enlarged nipples with an area of bare skin immediately surrounding the nipple. Large extended abdomen indicating possible pregnancy. Perforate means the vagina is open. Plugged means a copulatory plug is present. This is a mucous plug that forms in the vaginal orifice a few hours after mating. It looks like a big mucus scab over the vaginal area.

Males: Look for the presence of an enlarged, deflated, or small wrinkled scrotum in males. Any visual indication of a scrotum is to be considered a reproductive individual.

Age: Note the age as juvenile 'J' or adult 'A' depending on pelage. Juveniles of all species are smaller and usually quite gray. They may appear to have large ears and feet in relation to the body size.

Measuring the animal: Measurements are taken in the following manner. Be sure you are comfortable with all of these procedures. We follow *Ingles*, Mammals of the Pacific States. See attached Fig.A1, from p. 448.

Tail length: measure from the dorsal side (top) to the end of the tail bone (not the end of the hair).

Hind foot: measure from the heel to the tip of the longest claw.

Ear: distance from notch at front base of ear to distal-most border of the fleshy part of the ear. Do not push on or deform the ear with your ruler.

After processing the animal, remove it from the bag and gently release the animal by placing it on the ground at the trap station where it was captured. Weigh the bag and the contents and record that weight under 'bag wt'. Do not remove millet, waste, etc. from bag before obtaining bag weight. Carry a waste bag with you and after weighing the contents and the bag place the waste into your waste bag. The bag is then reused for the next animal unless it is torn or soiled. Record the fate of the animal as 'R' released, 'E' escaped, or 'D' dead on the data sheet.

Minimum Measurements: In most cases take all measurements on all animals. However, sometimes due to weather conditions, personnel shortages or other legitimate reasons minimum data may be recorded. At a minimum record species, sex, and reproductive status. If there is a crisis, you are authorized to make decisions about what to record and how to protect animals. See separately provided Mammal Trapping Guidelines for weather guidance.

The following measurements can be used to identify species. In most cases they should be collected, as a minimum.

- *Chaetodipus* – weight, ear at notch, hind foot length
- *Peromyscus* – all measurements on data sheet
- *Neotoma* – weight, color of top of hind foot, color of the base of hairs on the throat
- *Dipodomys* – weight, ear length, number of toes

- *Reithrodontomys* – weight, spots on ear bases? Grooves on upper incisors?
- *Microtus* – weight
- *Perognathus* – weight, spots on ears? Defines if LAPM

All other creatures, record species if known and release. Pictures should be taken if time permits.

Closing Traps : follow check procedures but do not re-bait or re-set the traps. Instead, empty all bait and waste from the trap into a designated trash bag, close the trap and leave the trap perpendicular to the trap line. Treat for ants as needed.

Grid quality control: Once all traps are checked, verify that all traps have been checked by reading through the control sheet out loud. Each party the checked traps will say out loud which traps they checked starting with trap A-1 and finishing at the last trap (e.g., G-7, H-8). Sign the sheet recording that you verified that all traps had been checked.

After you are sure that all of the traps have been checked, count robbed and closed but empty traps and subtract them from the total number of traps on the grid. Record that number as the number of trap nights.

V. Picking up Trap lines

Equipment:

Shoulder bags for carrying traps and pin flags
Rubber bands/Trap boxes
Waste bag for emptying traps

During the last check, collect the traps as you go. Empty remaining millet and waste into a trash bag, and collapse the trap for easy carrying in the shoulder bags. Pin flags are to be left in the field, only during ongoing projects. Flagging placed to mark trails must be picked up on the way out of the grid for the last time during that trapping session. If we are using the grid again, the trail can be remarked when the grid is reopened. Count the traps at the end of the collection effort. Make sure all of the traps are accounted for after collection at each grid.

If pin flags are collected, sort them by letter and place rubber bands around sorted groups of pin flags. Again, make sure you have them all. We do not want to be responsible for trash in the Conservation Area.

VI. Cleaning and storing traps

All traps must be cleaned and disinfected before being between sites. Make sure all millet and waste material are knocked out of the traps before soaking them in a 10% bleach and water solution for 10 minutes. Thoroughly rinse the traps with water and allow them to air dry outside preferably in the sun. Once dry, place the folded traps into the plastic buckets with lids for storage.

Western Riverside County MSHCP Biological Monitoring Program LAPM Project Specific Procedures

The information provided here is to specify procedures for the LAPM project and is supplemental to our Standard Operating Procedures (SOP) for Small Mammal Trapping. Procedures not covered in this protocol are to be conducted as specified in the SOP.

I. Site selection:

Grids will be selected randomly from the MSHCP LAPM GIS model. This model will contain suitable soils and vegetation as determined from recorded captures of LAPM. Selected grids will be visited and reevaluated to make sure that a grid can be placed on the site and that vegetation is uniform. Grids will be at least 100 meters apart.

II. Setting out Trap lines

Equipment:

Modified Sherman Traps 64/grid
UTM points
Transect tape 100m
Rebar/PVC/Mallet
Millet

Flagging tape/Pin flags
Marking pens
Trap carrying bags
GPS unit
Ant Powder

Grid Layout: The grid size to be used is a 70 x 70 meter square. Each station will be 10 meters from the next or last station. Staff will place pre-marked pin-flags every 10 meters along each line. The lower left corner of the square when facing north will be labeled A1 and heading northward will continue to A8. The eastward line will be labeled A1, B1, C1, and continue east to H1. Individual grids should be at least 100 meters apart. Corners will be permanently marked using rebar and PVC pipe. A piece of reflective tape will be placed near the top of the PVC pipe to enhance location in the dark.

III. Checking the Traps

Equipment per handler:

1 Headlamp per person
3 Pesola® Scales: 20g, 100g and 300g
2 Rulers (1 short 1 long, 0 at edge)
1 Kestrel per group
4 Animal handling bags (Ziplock® or bread) per grid
Datasheets (>2 per grid, extras better)
Grid quality control sheets (>1 per grid)
Clipboard 1 per recorder
Several pens
Species field guide/key
Digital camera for photos of unknown animals
Waste bags for used millet

Ant powder (approved and supplied only!)
Backpack
Mortality Record Sheets
Protocol Variation Form

Traps will be checked at or near five hours after sunset and should be closed within 7 hours after sunset. While checking trap lines, note pin-flag number and whether each trap was open, closed and empty, or closed with a capture. To ensure that no traps are missed, make note of the status of each trap in the appropriate box on your trap-check quality control sheet. Mark “O” for open traps, “C” for closed with no capture and “R” for robbed traps. Use the four letter code for the species for traps with animals.

Marking Animals

Mark LAPM and other Covered Species by hair clipping and or by using a marker to place a big spot under the chin or on the belly. Be sure you know what the marking protocol is for the bout before you begin trapping. There will a specified location for hair clipping and a specified color for using a marker.

IV. Filling out the datasheet:

Measuring the animals:

For LAPM: Record the weight, foot, ear, and tail measurements, sex and reproductive condition. Mark the animal with a colored marker (specified color for each night) under its chin.

For all other species, measure and record information necessary for identification.

Recaptured animals: Record species, sex, and reproductive condition only. Mark the animal with specified colored marker.

It is important that we do not dump millet on the ground on our grids. In general this is especially important in the summer because it attracts ants. So please be conscientious about disposing of the millet in waste bags.

**Appendix B:
Small mammal individuals captured during Los Angeles pocket mouse trapping in 2006**

Grid	Date	Species Captured							Total
		Los Angeles pocket mouse (<i>Perognathus longimembris brevinasus</i>)	Stephens' kangaroo rat (<i>Dipodomys stephensi</i>)	Dulzura kangaroo rat (<i>Dipodomys simulans</i>)	Northwestern San Diego pocket mouse (<i>Chaetodipus fallax</i>)	Deer mouse (<i>Peromyscus maniculatus</i>)	Harvest mouse (<i>Reithrodontomys megalotis</i>)	Other	
LP08	8/12/2006	1							1
LP08 Total New Captures		1							1
SJWA01	2/14/2006		12	4	3				19
	2/15/2006	1							1
	2/16/2006	1		4	4	1			10
	2/17/2006	1							1
	3/22/2006		26	5	5	13	1		50
	3/23/2006		7	1	2	5	2		17
	3/24/2006		4	1	4	1			10
	3/25/2006	1	8		4				13
	4/18/2006		8		3	2			13
	4/19/2006	2	2		1	1			6
	4/20/2006	1	1			1			3
	4/21/2006	2				1			3
	4/22/2006	2			2				4
	5/16/2006	5	22		2	1			30
	5/17/2006	3	2						5
	5/18/2006	4		1	1				6
	5/19/2006				1	1		<i>Sylvilagus audubonii</i>	2
	5/20/2006		4		1				5
	6/13/2006	7	25		2	1			35
	6/14/2006	2		2	1	2			7
	6/15/2006	2	9		2	1			14
	6/16/2006	1		1		1			3
	6/17/2006	3	4						7
	7/18/2006	4	23	3	5				35

Los Angeles Pocket Mouse Survey Report 2006

Grid	Date	Los Angeles pocket mouse (<i>Perognathus longimembris brevinasus</i>)	Stephens' kangaroo rat (<i>Dipodomys stephensi</i>)	Dulzura kangaroo rat (<i>Dipodomys simulans</i>)	Northwestern San Diego pocket mouse (<i>Chaetodipus fallax</i>)	Deer mouse (<i>Peromyscus maniculatus</i>)	Harvest mouse (<i>Reithrodontomys megalotis</i>)	Other	Total
SJWA01	9/25/2006	1	21		5				27
	9/26/2006	2	2		9	4			17
	10/16/2006	1	17		6	3			27
	10/17/2006	1	6		3	2			12
	10/18/2006	3			11	2			16
	11/28/2006		21		8	4			33
	12/27/2006		12		4	2			18
	12/28/2006		1		3				4
	12/29/2006				1				1
	2/20/2007		9		11				20
2/21/2007		3		1				4	
SJWA01 Total New Captures		50	249	22	105	49	3	<i>Sylvilagus audubonii</i>	478
SJWA02	2/16/2006	1		3	4				8
	2/17/2006		1		5	2	1		9
	4/18/2006		2		4	1			7
	4/19/2006				5				5
	4/20/2006	1	1		3	1			6
	4/21/2006	1	2		1				4
	4/22/2006				3				3
SJWA02 Total New Captures		3	6	3	25	4	1		42
SJWA03	2/14/2006		10	2	9				21
	3/22/2006		10	7	4	16	1	<i>Neotoma lepida intermedia,</i> <i>Peromyscus eremicus</i>	38
	3/23/2006		3	2	4	5	3		17
	3/24/2006		4		1	1	2	<i>Peromyscus eremicus</i>	8
	3/25/2006		2	2	6	2		<i>Peromyscus eremicus</i>	12
SJWA03 Total New Captures			29	13	24	24	6	<i>Neotoma lepida intermedia,</i> <i>Peromyscus eremicus</i>	96
SJWA04	2/14/2006		1						1
	3/22/2006		21	2		7			30
	3/23/2006		12			3			15
	3/24/2006		11			6		<i>Sylvilagus audubonii</i>	17

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Grid	Date	Los Angeles pocket mouse (<i>Perognathus longimembris brevinasus</i>)	Stephens' kangaroo rat (<i>Dipodomys stephensi</i>)	Dulzura kangaroo rat (<i>Dipodomys simulans</i>)	Northwestern San Diego pocket mouse (<i>Chaetodipus fallax</i>)	Deer mouse (<i>Peromyscus maniculatus</i>)	Harvest mouse (<i>Reithrodontomys megalotis</i>)	Other	Total
SJWA04	3/25/2006		3			2			5
SJWA04 Total New Captures			48	2		18		<i>Sylvilagus audubonii</i>	68
SJWA05	5/16/2006	8	1		9		1		19
	5/17/2006				4				4
	5/18/2006	3			6	1		<i>Thomomys bottae</i>	10
	5/19/2006	1	1		1		1		4
	5/20/2006	3	2					<i>Peromyscus eremicus</i>	5
	6/13/2006	9	2	2	5		1		19
	6/14/2006	3	2		21	1			27
	6/15/2006	5	1	1	11				18
	6/16/2006	4	1		3	1			9
6/17/2006	3	2		4				9	
SJWA05 Total New Captures		39	12	3	64	3	3	<i>Thomomys bottae, Peromyscus eremicus</i>	124
SJWA06	5/16/2006	4	5		8				17
	5/17/2006	2	1		1				4
	5/18/2006			1	1				2
	5/19/2006		3		1	1			5
	5/20/2006	1	1		2				4
	6/13/2006	5	7	2	9	1			24
	6/14/2006	4	2	3	2				11
	6/15/2006	3	5		3				11
	6/16/2006	2	2			1			5
6/17/2006	5			1				6	
SJWA06 Total New Captures		26	26	6	28	3			89
SJWA07	7/18/2006	8	1		8		1		18
	7/19/2006	9	2		4				15
	7/20/2006	8		3	4				15
	7/21/2006	5	1		7		1		14
	7/22/2006	4			8		1		13
	7/26/2006	5	5		5		1		16
	9/25/2006	5	2		10	1			18

Los Angeles Pocket Mouse Survey Report 2006

Grid	Date	Los Angeles pocket mouse (<i>Perognathus longimembris brevinasus</i>)	Stephens' kangaroo rat (<i>Dipodomys stephensi</i>)	Dulzura kangaroo rat (<i>Dipodomys simulans</i>)	Northwestern San Diego pocket mouse (<i>Chaetodipus fallax</i>)	Deer mouse (<i>Peromyscus maniculatus</i>)	Harvest mouse (<i>Reithrodontomys megalotis</i>)	Other	Total
SJWA07	10/17/2006	3	6		7	1			17
	10/19/2006	1	1		7	2			11
	2/20/2007		1		7				8
	2/21/2007		1		1				2
SJWA07 Total New Captures		48	20	3	68	4	4		147
SJWA08	7/18/2006	2	1	1	2				6
	7/19/2006	3	5		4				12
	7/20/2006	3	6	1	3				13
	7/21/2006	1	2						3
	7/22/2006	2	2	2					6
	11/28/2006	1			8	3			12
SJWA08 Total New Captures		12	16	4	17	3			52
SJWA09	7/19/2006	1	5		5				11
	7/20/2006	3	5		8				16
	7/21/2006	2			5		1		8
	7/22/2006	1			2		1		4
SJWA09 Total New Captures		7	10		20		2		39
SL01	10/17/2006						1		1
	10/18/2006		2						2
	11/29/2006		1				1		2
	1/24/2007					1			1
	1/25/2007		1						1
SL01 Total New Captures			4			1	2		7
SL02	10/16/2006		2			2			4
	10/17/2006	1	8						9
	10/18/2006		11						11
	10/19/2006		4			1			5
	11/28/2006		13						13
	11/29/2006		1	1					2
	12/1/2006		2						2
	12/27/2006		14	1		2			17

Los Angeles Pocket Mouse Survey Report 2006

Grid	Date	Los Angeles pocket mouse (<i>Perognathus longimembris brevinasus</i>)	Stephens' kangaroo rat (<i>Dipodomys stephensi</i>)	Dulzura kangaroo rat (<i>Dipodomys simulans</i>)	Northwestern San Diego pocket mouse (<i>Chaetodipus fallax</i>)	Deer mouse (<i>Peromyscus maniculatus</i>)	Harvest mouse (<i>Reithrodontomys megalotis</i>)	Other	Total
SL02	12/28/2006		3						3
	12/29/2006		1						1
	1/22/2007		19	1					20
	1/26/2007	1							1
	2/21/2007		11						11
	10/20/2007		3				1		4
SL02 Total New Captures		2	92	3		6			103
SO04	8/31/2006	1							1
SO04 Total New Captures		1							1
SO105	9/8/2006	1							1
SO105 Total New Captures		1							1
Grand Totals (New Captures)		190	512	59	351	115	21		1,248