

2005 RODENT SURVEY OF THE PUENTE  
HILLS LANDFILL NATIVE HABITAT  
PRESERVATION AUTHORITY LANDS

Submitted to:

The Puente Hills Landfill Native Habitat Preservation Authority

Prepared by:

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LSA

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LSA Associates, Inc. (LSA) was hired by the Puente Hills Landfill Native Habitat Preservation Authority (PHLNHPA) to conduct a survey for rodents on the approximately 3,810 acres of PHLNHPA lands in the Puente Hills, Los Angeles County, California. Eight species of rodents were captured during the survey.

## STUDY AREA

PHLNHPA jurisdictional lands consist of undeveloped land located within the Cities of Whittier and La Habra Heights, and unincorporated portions of Los Angeles County known as Hacienda Heights and Rowland Heights, stretching from Harbor Boulevard on the east to the intersection of Interstate 605 and State Route 60 on the west. The project area is comprised of approximately 3,810 acres, primarily composed of coastal sage scrub, chaparral, native and nonnative grassland, oak woodland, walnut woodland, and riparian woodland. The Habitat Authority currently owns 1,862 acres, and the remainder of the land is owned by either the City of Whittier or the Sanitation District of Los Angeles County.

## METHODS

Eight nights of trapping (October 24 to November 4, 2005) covered all 23 drainages previously identified by LSA (Figure 1). Figure 1 also shows the locations of the 57 traplines used in this survey; coordinates are provided in Table B. The 23 drainages received an average of more than 100 trapnights of effort each, for a total of 2,400 trapnights. Larger drainages received more coverage than smaller ones, as shown in the first column of Table A. The average number of traps per trapline was 43; the range was 20–75 (Table B). An effort was made to sample as many habitat types as possible within each drainage; however, complete coverage was not attained. A more important goal, which was more completely addressed, was adequate coverage of all major habitats within the entire study area.

Nine-inch Sherman live traps were used for the study. Each evening, the traps were set and baited with a mixture of wild bird seed and rolled oats. In the morning, animals were identified and released unharmed.

LSA biologist Richard Erickson was responsible for the entire trapping effort, with assistance from LSA biologist Marshall Iliff on the first night.

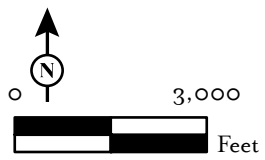
## RESULTS

A total of 353 rodent captures involved eight species: the California pocket mouse (*Chaetodipus californicus*), western harvest mouse (*Reithrodontomys megalotis*), cactus mouse (*Peromyscus eremicus*), California mouse (*Peromyscus californicus*), deer mouse (*Peromyscus maniculatus*), desert woodrat (*Neotoma lepida*) (recognized by the California Department of Fish and Game as a California Species of Special Concern), dusky-footed woodrat (*Neotoma fuscipes*), and California vole (*Microtus californicus*) (Table A). As shown in the totals at the bottom of Table A, the deer mouse was the species caught most often (110); however, the western harvest mouse was captured in the most drainages (21). The number of species caught per drainage ranged from 2 to 6 and averaged 4.1 (SD 1.39).



FIGURE 1

LSA



SOURCE: Aerial-EagleAerial (2003)

F:\PUE430\gis\Drainage\_Trapline\_Locs.mxd (11-08-05)

- WATERSHEDS-LABELED WITH NAME (RANDOMLY ASSIGNED-NORTH TO SOUTHEAST)
- HACIENDA HEIGHTS MANAGEMENT AREA
- LA HABRA HEIGHTS MANAGEMENT AREA
- WHITTIER MANAGEMENT AREA
- TRAPLINE LOCATIONS

PUENTE HILLS DRAINAGE ASSESSMENT  
Small Mammal Trapline Locations

**Table A: 2005 Rodent Captures within Drainages on Puente Hills Landfill Native Habitat Preservation Authority Lands**

<b>Drainage- Trap No.</b>	<b>Cpm</b>	<b>whm</b>	<b>cm</b>	<b>Cm</b>	<b>dm</b>	<b>dw</b>	<b>dfw</b>	<b>Cv</b>	<b>Totals sp./no.</b>
A-100	10	2		6	20	2	2		6/42
B-100	5	7		2	9	1	1		6/25
C-100	3	2		4	8	5		2	6/24
E-150	4	5	5			2			4/16
F-100	1	1	8		3	14	1		6/28
G-100			1			3			2/4
H-75	1	2				1			3/4
I-150		4			7	1			3/12
J-150	2	4			5	5			4/16
K-75		1			1				2/2
L-100	4	9			9	1	1		5/24
M-150	1	7			13	1	1		5/23
N-150	1	2		1	17	4			5/25
O-150	7	1		2	5	3			5/18
P-100	4	2		1		1	2		5/10
Q-75	1	1		3	2			1	5/8
R-75		9			2		5		3/16
S-50		2			5				2/7
T-75	1	5			1		1	1	5/9
U-75		3		5	3		2		4/13
V-75	2	6		3			9		4/20
W-150				1			1	1	3/3
X-75		3					1		2/4
<b>Totals Drainages/Number</b>	<b>15/47</b>	<b>21/78</b>	<b>3/14</b>	<b>10/28</b>	<b>16/110</b>	<b>14/44</b>	<b>12/27</b>	<b>4/5</b>	<b>353</b>

Species: California pocket mouse (Cpm), western harvest mouse (whm), cactus mouse (cm), California mouse (Cm), deer mouse (dm), desert woodrat (dw), dusky-footed woodrat (dfw), and California vole (Cv).

Trapping Schedule:

October 24–25 P, Q, R, S; October 25–26 A, B, C; October 26–27 F, G, H; October 27–28 J, K, L; October 28–29 M, N; October 31–November 1 E, I; November 2–3 O, W; and November 3–4 T, U, V, X.

**Table B: 2005 Rodent Captures on 57 Traplines on Puente Hills Landfill Native Habitat Preservation Authority Lands**

Trapline-Trap No. Location	Cpm	whm	cm	Cm	dm	dw	dfw	Cv	Totals
A1-35 34°00'33"118°00'36"W	X				X	X			3
A2-65 34°00'35"118°00'06"W	X	X		X	X		X		5
B1-40 34°00'23"118°00'26"W	X	X			X	X	X		5
B2-60 34°00'29"118°00'05"W	X			X	X				3
C1-40 34°00'13"118°00'23"W	X	X		X	X	X		X	6
C2-60 34°00'19"117°59'48"W				X	X				2
E1-50 34°00'15"118°03'15"W		X							1
E2-50 34°00'11"118°02'45"W	X	X	X			X			4
E3-50 33°57'26"117°55'23"W		X	X						2
F1-30 33°59'57"118°02'41"W			X		X	X			3
F2-35 33°59'48"118°02'11"W	X	X	X			X	X		5
F3-35 33°59'51"118°01'47"W			X			X			2
G1-30 33°59'32"118°01'51"W									0
G2-35 33°59'44"118°01'28"W									0
G3-35 33°59'51"118°01'44"W			X			X			2
H1-25 33°59'27"118°01'55"W		X				X			2
H2-25 33°57'36"117°55'14"W		X							1
H3-25 33°59'29"118°01'35"W	X								1
I1-35 33°59'26"118°01'15"W					X				1
I2-60 33°59'44"118°00'48"W		X			X				2
I3-55 33°59'29"118°00'38"W		X			X	X			3
J1-35 33°59'05"118°00'39"W		X			X	X			3
J2-40 34°00'02"118°00'45"W	X				X				2

Trapline-Trap No. Location	Cpm	whm	cm	Cm	dm	dw	dfw	Cv	Totals
J3-40 33°59'25"118°00'27"W		X			X				2
J4-35 33°59'23"118°00'10"W		X			X				2
K1-35 33°59'11"117°59'51"W									0
K2-40 33°59'04"117°59'51"W		X			X				2
L1-35 33°58'41"118°00'53"W		X			X				2
L2-35 33°58'47"118°00'46"W	X	X			X		X		4
L3-30 33°58'45"118°00'42"W	X	X			X	X			4
M1-50 33°58'54"118°00'33"W	X	X			X				3
M2-50 33°58'43"118°00'19"W		X			X		X		3
M3-50 33°58'24"118°00'22"W		X			X	X			3
N1-50 33°58'10"118°00'02"W	X				X	X			3
N2-50 33°58'20"117°59'49"W		X		X	X				3
N3-50 33°58'28"117°59'00"W					X	X			2
O1-50 33°58'00"117°59'42"W					X				1
O2-50 33°58'09"117°59'18"W				X	X	X			3
O3-50 33°58'14"117°58'58"W	X	X			X	X			4
P1-50 33°58'19"117°57'07"W		X							1
P2-50 33°58'16"117°56'55"W	X	X		X		X	X		5
Q-75 33°58'20"117°56'57"W	X	X		X	X			X	5
R1-25 33°58'22"117°56'44"W		X					X		2
R2-50 33°58'25"117°56'43"W		X			X		X		3
S1-30 33°58'24"117°56'28"W					X				1
S2-25 33°58'27"117°56'36"W		X			X				2
T1-25 33°58'20"117°56'35"W	X				X				2

Trapline–Trap No. Location	Cpm	whm	cm	Cm	dm	dw	dfw	Cv	Totals
T2–50 33°58'19"117°56'26"W		X					X	X	3
U1–40 33°58'23"117°56'11"W		X		X			X		3
U2–35 33°58'15"117°56'17"W		X		X	X				3
V1–50 33°58'10"117°56'16"W	X	X		X			X		4
V2–25 33°58'11"117°56'20"W	X	X					X		3
W1–50 33°57'49"117°55'33"W									0
W2–50 33°58'02"117°55'47"W								X	1
W3–50 33°58'08"117°55'21"W				X			X		2
X1–40 33°57'36"117°55'14"W		X							1
X2–35 33°57'26"117°55'23"W		X					X		2
<b>Totals</b>	<b>19</b>	<b>36</b>	<b>6</b>	<b>12</b>	<b>33</b>	<b>18</b>	<b>14</b>	<b>4</b>	

Species: California pocket mouse (Cpm), western harvest mouse (whm), cactus mouse (cm), California mouse (Cm), deer mouse (dm), desert woodrat (dw), dusky-footed woodrat (dfw), and California vole (Cv).

Table B shows the species distribution on each of the 57 traplines. By this measure, the deer mouse was nearly as widespread as the harvest mouse. The number of species caught per trapline ranged from 0 to 6 and averaged 2.5 (SD 1.39).

## DISCUSSION

Among local rodents, the ubiquitous Botta's pocket gopher (*Thomomys bottae*; already documented by LSA within every drainage on PHLNHPA lands) and the diurnal squirrels (Sciuridae) are not adequately sampled in a survey such as this, and, indeed, none were captured. A total of 16 other nocturnal species in the families Heteromyidae and Muridae were previously identified as potentially occurring on PHLNHPA lands (LSA 2004; Draft Resource Management Plan, PHLNHPA.). One-half of these species were confirmed as present in the current study.

As noted previously, of the eight documented species, the deer mouse was captured most often; however, the western harvest mouse was the most widespread. The California vole was caught the least often, but this survey method is not well suited to sample this species. Note that no voles were caught within the large middle block of drainages extending from Drainage E through Drainage O; however, they were found during pitfall trapping within several of these drainages.

Most other species were fairly well dispersed throughout the PHLNHPA lands, with the exception of the cactus mouse and desert woodrat. Both of these species were closely associated with cactus; the

mouse was restricted to Drainages E–G and the woodrat was not found east of Drainage P. The California mouse and dusky-footed woodrat are the two species requiring the most mesic habitats. The mouse was not captured within the block of Drainages E–M. It must be emphasized that more thorough surveys would surely expand the number of drainages occupied by each species.

Among the heteromyids and murids not captured during this survey, two nonnative species (the black rat [*Rattus rattus*] and house mouse [*Mus musculus*]) are almost certainly present, at least along the urban edges of PHLNHPA lands. These species generally do not fare well in natural upland habitats in Southern California. One other nonnative species (the Norway rat [*Rattus norvegicus*]) is much less widespread within the Los Angeles Basin and may not be present on PHLNHPA lands.

Of the “missing” native species, the brush mouse (*Peromyscus boylii*), was the most surprising. This species frequents oak woodlands, usually within reach of water, and is known to occur to the north and south within the San Gabriel and Santa Ana Mountains, respectively. Additional surveys may yet reveal this species; however, the current survey did target the oak woodlands specifically for this species.

One other murid was considered possible on PHLNHPA lands, the southern grasshopper mouse (*Onychomys torridus*) (recognized by the California Department of Fish and Game as a California Species of Special Concern). However, if still present at all in the Los Angeles Basin, this California Species of Special Concern is very rare and local. It typically occupies low-lying and wide-open country. Although the trapping methods employed in this survey were not well-suited for locating this carnivorous species, it is unlikely to be present on PHLNHPA lands.

The remaining missing species are heteromyids: the San Diego pocket mouse (*Chaedodipus fallax*) (recognized by the California Department of Fish and Game as a California Species of Special Concern) and Pacific (*Dipodomys agilis*) and San Diego (*D. simulans*) kangaroo rats. Although the pocket mouse, another Species of Special Concern, has been found within the Chino Hills (as well as the foothills of the San Gabriel and Santa Ana Mountains), it generally does not coexist with the California pocket mouse and currently is not expected to be found within the study area. The latter two species were only recently recognized as separate and also rarely coexist. The Puente Hills lay in the general contact zone for these species, both of which prefer rather sandy, friable soils. Additional surveys targeting such soils might reveal the presence of one of these species on PHLNHPA lands.

This preliminary survey of the rodents of the Puente Hills documented the widespread distribution of several species and more localized distribution of others. Existing management plans for PHLNHPA lands should serve native rodents well, and no specific suggestions are offered on their behalf at this time. Rodent populations are dynamic, however, and with the backdrop of habitat restoration, future surveys will likely show a somewhat different pattern. Periodic surveys comparable to this are recommended for the future at no more than five-year intervals. Focused surveys for potential and known uncommon species (e.g., kangaroo rats and cactus, brush, and grasshopper mice) should also be considered.