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LSA ASSOCIATES, INC.
ONE PARK PLAZA, SUITE 500
IRVINE, CALIFORNIA 92614

949 553 0666 TEL
949 553 8076 FAX

OTHER OFFICES:
BERKELEY
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November 20, 2000

David Moore
Psomas
3187 Red Hill Avenue, Suite 250
Costa Mesa, CA 92626

Subject: Ballona Wetlands Small Mammal Analysis for October, 2000

Dear Mr. Moore:

Per your instructions, this letter report is to document the results of my habitat analysis and small mammal live-trapping at the Ballona wetlands in the City of Los Angeles. This effort was directed toward two sensitive species known to have occupied the site formerly: the Southern California saltmarsh shrew (*Sorex ornatus salicornicus*; a California Species of Special Concern) and the Pacific pocket mouse (*Perognathus longimembris pacificus*, a federal endangered species). The best available evidence suggests that both species are now extirpated from the Ballona wetlands.

STUDY AREA

The site is on the west side of the City of Los Angeles, north of Los Angeles International Airport, in Los Angeles County, California (Figure 1[1]). It covers essentially all of the undeveloped lowlands along lower Ballona Creek southwest of Interstate 405, south of Marina Del Rey and Culver City, and north of Playa del Rey and Westchester.

Remnant salt marsh (now essentially lacking any tidal influence) dominates the southwestern third of the site (south of the Ballona Creek channel), and disturbed and ruderal habitats dominate the rest. Urban runoff provides fresh water to the site, primarily via Centinela Creek, which runs through much of the length of the site near the southeast edge (e.g., along Teale Street). Several willow thickets along the southeast edge of the site are associated with the Centinela Creek drainage. Scrub-covered bluffs along the southeast edge of the site are not included in the study area.

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[1] All figures and tables are attached.

METHODS

I obtained an on-site overview of the entire study area on October 12, 2000, and examined aerial photographs and vegetation maps then and on subsequent occasions. Small mammal trapping focusing on the shrew commenced on the evening of October 17, continued through the morning of October 20, began again on October 22, and ended October 25. Psomas employees David Moore and Nathan Starr assisted with the trapping.

A total of 320 Sherman live-traps was set the first evening and maintained for three consecutive nights. A second bout of trapping involved 300 traps per night. Traps were arranged in nine traplines during the first session (A-H and L, as shown on Figure 2) and in five traplines during the second session (G-K, Figure 2). As recommended by Jesus Maldonado, who did his UCLA Ph.D. dissertation on the entire ornate shrew complex (all subspecies of *Sorex ornatus*), traps were placed in well vegetated areas near surface water and in other moist situations in order to maximize the chances of capturing shrews. Thus, trapping was concentrated along Centinela Creek and, especially, in a salt marsh in the southwest portion of the site. During the first session, 20 traps were set in sparse scrub on sandy alluvium (trapline L), the area that appeared most suitable for pocket mice. Each evening, traps were set and baited with live mealworms; cotton batting was provided for insulation. Traps in trapline L were baited with a mixture of seeds and rolled oats. Captured animals were identified and released each morning. A total of 1,860 trap nights was accumulated by the end of the five nights.

RESULTS

Trapping resulted in 113 rodent captures but no shrews. Two native species (California ground squirrel, *Spermophilus beecheyi*, and western harvest mouse, *Reithrodontomys megalotis*) and two nonnative pest species (house mouse, *Mus musculus*, and black rat, *Rattus rattus*) were found. There were no captures in the sparse scrub on trapline L. Complete trapping results are shown in Table A and a complete list of wildlife species observed on site is in an appendix.

DISCUSSION

The study area was once an important locality for the Southern California saltmarsh shrew and the Pacific pocket mouse, but the latter half of the 20th century brought many changes to the area. The Ballona wetlands are now completely isolated from other natural open space areas, and the habitat has undergone considerable degradation.

Playa del Rey is the type locality (the location whence the subspecies was originally described for science in 1932) for the Southern California saltmarsh shrew. Apparently, the last shrew recorded in the study area was found in the willow thicket just east of the gas plant (vicinity of trapline G) in February, 1991 (Maldonado, in litt.). Two trapping efforts (800 trap nights total) by Mr. Maldonado in June, 1991, were unsuccessful. Considering the negative results of the most recent trapping efforts for the species, habitat fragmentation in the area, and the degraded nature of the habitat, it appears the

Southern California saltmarsh shrew may no longer exist in the Ballona wetlands. Nevertheless, in accordance with Condition No 135 for Vesting Tentative Tract Map No. 49104, trapping should be done prior to any disturbance of natural habitat within the study area. Note that recent studies have shown the closely related ornate shrew (*S. ornatus ornatus*) to be quite common in dry upland habitats (e.g., coastal sage scrub) in coastal San Diego County (Phillip Unitt, pers. comm.), so future trapping should not necessarily be limited to wetland habitats.

The region from Marina Del Rey to El Segundo was once one of the most important known areas for the Pacific pocket mouse, but the species has not been found in Los Angeles County since 1938, despite considerable recent trapping effort in the remnant El Segundo dunes [Patten, M.A., S.J. Myers, C. McGaugh, J.R. Easton, and R.A. Erickson. 1998. *Perognathus longimembris* (Coues 1875) Little Pocket Mouse. Pages 83-85 *in* D.J. Hafner, E. Yensen, and G.L. Kirkland, Jr. (editors). North American Rodents: Status Survey and Conservation Action Plan. IUCN/SSC Rodent Specialist Group, International Union for the Conservation of Nature and Natural Resources, Gland, Switzerland and Cambridge, UK.] The species is now generally considered extinct in the County due to urban development, habitat fragmentation, and perhaps the impact of nonnative predators such as the red fox and feral cat. Disregarding the history of disturbance in the region, sandy areas such as in the vicinity of trapline L and at the extreme southwestern end of the study area appear suitable for Pacific pocket mice. The same may be true of the bluffs just outside the study area. Trapping for this species is probably not warranted in the study area, but may be wise given the controversial politics of the Playa Vista development.

Please contact me if you have any questions about this summary.

Sincerely,

LSA ASSOCIATES, INC.

Richard A. Erickson

Richard Erickson
Associate/Biologist

Attachments: Figures 1-2, Table A
Appendix

Source: USGS 7.5' Topographic Quadrangle, "Venice, Calif."

Figure 1

10/27/00(PBM730BH)

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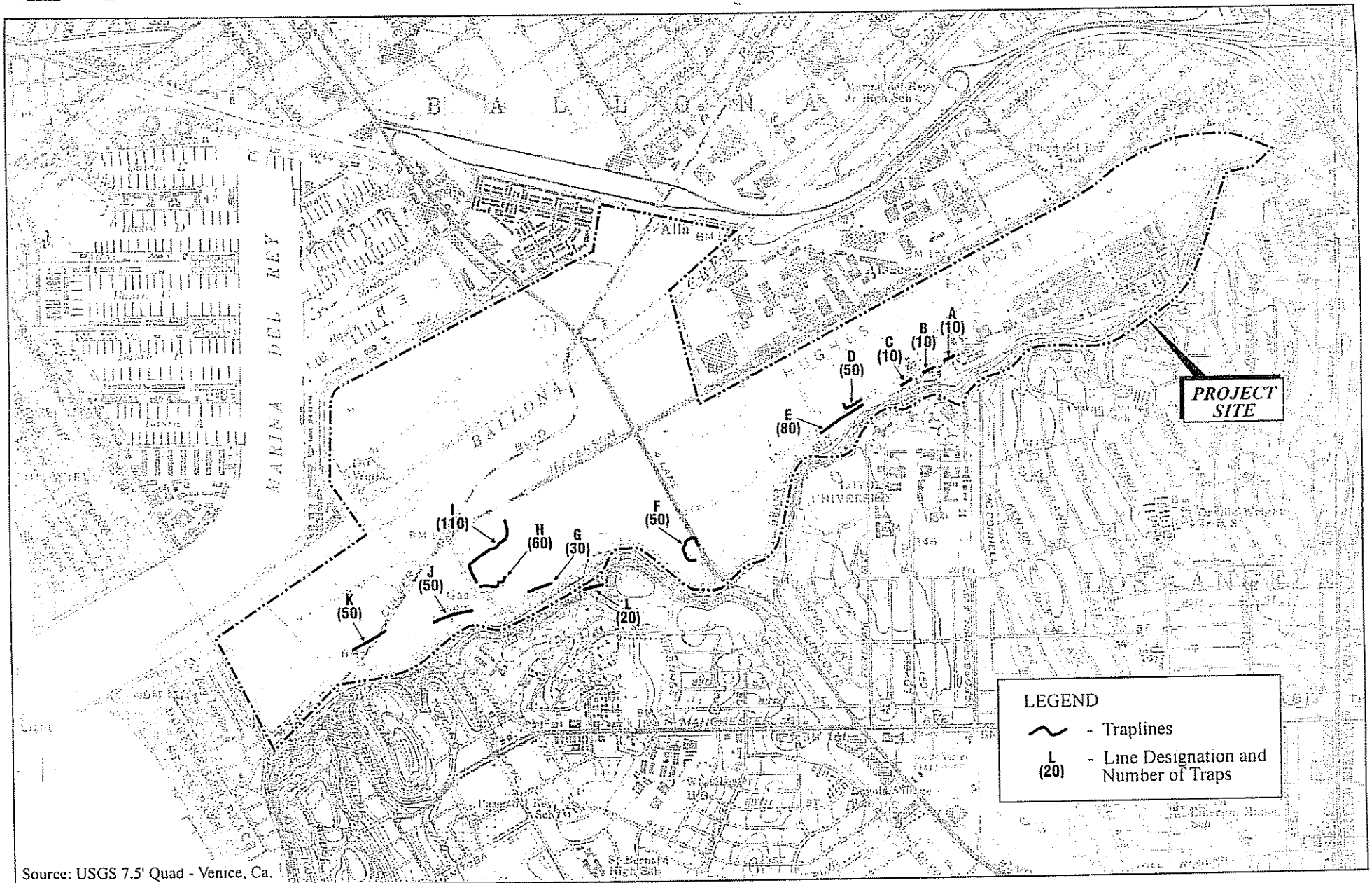
Scale in Feet

0 2000 4000

Project Location



10/27/00(PSO030)

Figure 2

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Scale in Feet

0 1000 2000

Trapline Locations

Table A - Ballona Wetlands Trapping Summary (Capture Totals)

Date	Oct 18 2000	Oct 19 2000	Oct 20 2000	Oct 23 2000	Oct 24 2000	Oct 25 2000	Total
Number of traps set	320	320	320	300	300	300	1,860
Species							
California ground squirrel *Spermophilus beecheyi*						1	1
Western harvest mouse *Reithrodontomys megalotis*			4	2	1	2	9
House mouse *Mus musculus*	6	15	15	15	20	28	99
Black rat *Rattus rattus*	1			2		1	4
Total Rodent Captures	**7**	**15**	**19**	**19**	**21**	**32**	**113**

APPENDIX
ANIMAL SPECIES OBSERVED

This is a list of the butterflies, amphibians, reptiles, birds and mammals noted in the study area. Presence may be noted if a species is seen or heard, or identified by the presence of tracks, scat or other signs.

* Introduced species

LEPIDOPTERA	**BUTTERFLIES**
Pieridae	**Whites, Orangetips and Sulphurs**
* *Pieris rapae*	Cabbage butterfly
Nymphalidae	**Brush-footed Butterflies**
Danaus plexippus	Monarch
Precis coenia	Buckeye
Lycaenidae	**Metalmarks, Hairstreaks, Coppers and Blues**
Brephidium exilis	Western pygmy blue
Hesperiidae	**True Skippers**
Hylephila phyleus	Fiery skipper
Paratrytone melane	Umber skipper
Panoquina panoquinoides	Wandering skipper
AMPHIBIA	**AMPHIBIANS**
Hylidae	**Treefrogs**
Hyla regilla	Pacific treefrog
REPTILIA	**REPTILES**
Iguanidae	**Iguanid Lizards**
Uta stansburiana	Side-blotched lizard
AVES	**BIRDS**
Pelecanidae	**Pelicans**
Pelecanus occidentalis californicus	California brown pelican
Phalacrocoracidae	**Cormorants**
Phalacrocorax auritus	Double-crested cormorant

Ardeidae		**Herons**
	Ardea herodias	Great blue heron
	Ardea alba	Great egret
	Egretta thula	Snowy egret
	Butorides striatus	Green heron
	Nycticorax nycticorax	Black-crowned night-heron
Anatidae		**Swans, Geese and Ducks**
	Anas americanus	American wigeon
	Anas platyrhynchos	Mallard
Accipitridae		**Kites, Hawks, Eagles and Ospreys**
	Elanus leucurus	White-tailed kite
	Accipiter cooperii	Cooper's hawk
Falconidae		**Falcons**
	Falco sparverius	American kestrel
Rallidae		**Rails and Gallinules**
	Rallus limicola	Virginia rail
	Porzana carolina	Sora
Charadriidae		**Plovers and Lapwings**
	Pluvialis squatarola	Black-bellied plover
	Charadrius vociferus	Killdeer
Scolopacidae		**Sandpipers and Phalaropes**
	Gallinago gallinago	Common snipe
Laridae		**Jaegers, Gulls and Terns**
	Larus californicus	California gull
	Larus occidentalis	Western gull
Columbidae		**Pigeons and Doves**
*	*Columba livia*	Rock dove
	Zenaida macroura	Mourning dove
Trochilidae		**Hummingbirds**
	Calypte anna	Anna's hummingbird
Alcedinidae		**Kingfishers**
	Ceryle alcyon	Belted kingfisher
Picidae		**Woodpeckers**
	Colaptes auratus	Northern flicker

Tyrannidae		**Tyrant Flycatchers**
	Empidonax minimus	Least flycatcher
	Empidonax difficilis	Pacific-slope flycatcher
	Sayornis nigricans	Black phoebe
	Sayornis saya	Say's phoebe
Laniidae		**Shrikes**
	Lanius ludovicianus	Loggerhead shrike
Corvidae		**Jays, Magpies and Crows**
	Aphelocoma californica	Western scrub-jay
	Corvus brachyrhynchos	American crow
	Corvus corax	Common raven
Aegithalidae		**Bushtits**
	Psaltriparus minimus	Bushtit
Troglodytidae		**Wrens**
	Troglodytes aedon	House wren
	Cistothorus palustris	Marsh wren
Sylviidae		**Old World Warblers & Gnatchachers**
	Polioptila caerulea	Blue-gray gnatcatcher
Regulidae		**Kinglets**
	Regulus calendula	Ruby-crowned kinglet
Mimidae		**Mimic Thrushes**
	Mimus polyglottos	Northern mockingbird
Sturnidae		**Starlings**
*	*Sturnus vulgaris*	European starling
Motacillidae		**Pipits**
	Anthus rubescens	American pipit
Parulidae		**Wood Warblers**
	Vermivora celata	Orange-crowned warbler
	Dendroica coronata	Yellow-rumped warbler
	Dendroica nigrescens	Black-throated gray warbler
	Geothlypis trichas	Common yellowthroat
Emberizidae		**New World Sparrows**
	Passerculus sandwichensis	Savannah sparrow
	Melospiza melodia	Song sparrow

	Melospiza lincolnii	Lincoln's sparrow
	Zonotrichia leucophrys	White-crowned sparrow
Cardinalidae		**Cardinalid Finches**
	Guiraca caerulea	Blue grosbeak
Icteridae		**American Orioles**
	Agelaius phoeniceus	Red-winged blackbird
	Sturnella neglecta	Western meadowlark
	Euphagus cyanocephalus	Brewer's blackbird
Fringillidae		**Fringillid Finches**
	Carpodacus mexicanus	House finch
	Carduelis pinus	Pine siskin
	Carduelis psaltria	Lesser goldfinch
Ploceidae		**Weavers**
*	*Euplectes franciscanus*	Orange bishop
Passeridae		**Old World Sparrows**
*	*Passer domesticus*	House sparrow
MAMMALIA		**MAMMALS**
Didelphidae		**Opossums**
*	*Didelphis virginiana*	Virginia opossum
Sciuridae		**Squirrels**
	Spermophilus beecheyi	Beechey ground squirrel
Geomyidae		**Pocket Gophers**
	Thomomys botta	Botta pocket gopher
Cricetidae		**Cricetid Rodents**
	Reithrodontomys megalotis	Western harvest mouse
*	*Mus musculus*	House mouse
*	*Rattus rattus*	Black rat

Taxonomy and nomenclature follow Mattoni (1990. Butterflies of Greater Los Angeles. Center for Conservation of Biodiversity/Lepidoptera Research Foundation, Los Angeles.), Laudenslayer et. al. (1991. A checklist of the amphibians, reptiles, birds, and mammals of California. California Fish and Game 77:109-141.), and the American Ornithologists' Union (1998. The A.O.U. Checklist of North American Birds, 7th Ed. American Ornithologists' Union, Washington D.C.).