

**REPORT ON CALIFORNIA GNATCATCHER AND
CACTUS WREN 2005 SURVEYS AT THE UCI
ECOLOGICAL PRESERVE**

HARMSWORTH ASSOCIATES

JANUARY 2006

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ECOLOGICAL PRESERVE**

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1.0 INTRODUCTION

The University of California at Irvine (UCI) manages the UCI Ecological Preserve, a 60 acre area of natural habitat located on the main UCI campus. The Preserve has been subject to ongoing avian surveys and ecological restoration efforts for over a decade. In 2002, UCI contracted Harmsworth Associates to conduct surveys for the California gnatcatcher (*Polioptila californica californica*) and cactus wren (*Campylorhynchus brunneicapillus*) to determine the number and location of breeding pairs of each species at the Preserve.

This report summarizes the results of surveys for gnatcatcher and cactus wren for the 2005 season.

1.1 Site description

The UCI Ecological Preserve is located in the City of Irvine, Orange County, California. On the main UCI campus the Preserve extends from East Peltason Drive to the San Joaquin Hills tollroad and consists of a number of small ridges and hills with elevations ranging from approximately 150 to 280 feet. The ridges are covered primarily by coastal sage scrub. Two restoration sites, Ecological Preserve North (#1) and Ecological Preserve West (#2) are located in this area (Figure 4). Another restoration area is located adjacent to, and east of the Ecological Preserve, and runs parallel to the tollroad. This restoration area is called the NCCP slopes (#3).

1.2 Target species biology

The California gnatcatcher is an obligate resident of coastal sage scrub in southern California and northwestern Baja California (Atwood and Bontrager 2001). This small, non-migratory, insectivorous bird nests and forages in moderately dense stands of coastal sage scrub occurring on arid hillsides, mesas, and in washes. The California gnatcatcher generally inhabits sage scrub vegetation below 820 feet in elevation (Atwood and Bolsinger 1992). Coastal sage scrub communities dominated by California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), California encelia (*Encelia californica*), and black sage (*Salvia mellifera*) seems to be preferred by this species.

The cactus wren is also an obligate resident of coastal sage scrub but is further restricted in its distribution to patches of prickly pear cactus (*Opuntia littoralis* and *O. oricola*) and cholla cactus (*Cylindropuntia* [= *O.*] *prolifera*) within the scrub.

2.0 SURVEY METHODS

To determine the distribution and abundance of California gnatcatchers and cactus wrens in the study area, presence/absence surveys were conducted at all suitable and potential habitat.

The optimal survey period for obtaining numbers of breeding pairs in an area is between late January and April for the California gnatcatcher, and between December and April for cactus wrens, however, surveys can be conducted at any time of the year (Mock *et al.* 1990, Brussard *et al.* 1992). Surveys commenced in March and were completed in April 2004.

Focused surveys for the California gnatcatcher and the cactus wren followed the U.S. Fish and Wildlife Service (USFWS) survey protocol (USFWS 1997), and the protocol developed by the Southern California Coastal Sage Scrub Scientific Review Panel and other researchers (Mock *et al.* 1990; Brussard *et al.* 1992). This protocol is primarily a tape-playback survey. The survey protocol used was as follows:

- Focused gnatcatcher and cactus wren surveys were conducted in all scrub habitat onsite between April 12 and July 22, 2005. Each area was surveyed 3 times, with a minimum of 7 days between surveys.
- Surveys were conducted between first light and 12 noon. No surveys were conducted during periods of excessive heat, wind, rain or other inclement weather.
- The project biologist walked through, or adjacent to all suitable habitat, searching each area thoroughly. The project biologist stopped frequently in each area and searched it for visual detection of gnatcatchers and wrens, while also listening for approximately 15 minutes for spontaneous singing by nearby gnatcatchers/wrens.
- When no birds were detected, the project biologist broadcast taped calls of gnatcatchers/wrens to elicit a response from any resident birds. The method of broadcasting the taped calls was as follows: the taped song was played for 15 - 30 seconds, then the biologist listened for 2 or 3 minutes for a response, this was repeated every 20-30 meters in each search area. The taped calls were played at the volume of natural bird calls.
- If gnatcatchers/wrens were located they were observed long enough to determine if they were paired or unpaired. This, and other behavioral information, was recorded at each location. The birds were also checked for the presence of bands.
- If gnatcatchers/wrens were located they were mapped on color aerial photographs and topographic maps of the project site.
- If brown-headed cowbirds (*Molothrus ater*) were detected, their locations and number were mapped on color aerial photographs of the site.
- A record was kept of all other avian and wildlife species encountered during the focused surveys.

Details of survey conditions are found in Appendix A. Harmsworth Associates biologists conducting this study hold current California gnatcatcher survey permits (Permit numbers TE 821967-3 and TE-810768-4).

3.0 RESULTS

3.1 California Gnatcatcher

Seven pairs of California gnatcatcher (locations G1 through G7, Figures 3 and 4) were recorded at the UCI Ecological Preserve. The number of pairs present is similar to prior surveys, which detected between five and ten pairs at the Ecological Preserve (Figure 1; Harmsworth Associates 2004; Bontrager *et al.* 2000). In fact, the gnatcatcher population at the Ecological Preserve is very stable, particularly for a species that is known to undergo extreme population fluctuations. No banded gnatcatchers were detected in 2005. Nesting activity was observed for all pairs including nest building, active nests with eggs and chicks and adults with fledged chicks. Four pairs were confirmed to nest successfully (observed with fledged chicks).

Two pairs of California gnatcatcher (locations G8 and G9, Figures 1 and 2) were recorded at the restoration area called the NCCP slopes. Fledged chicks were confirmed for both of these pairs. Two pairs have been present along the slope restoration area for the past few years.

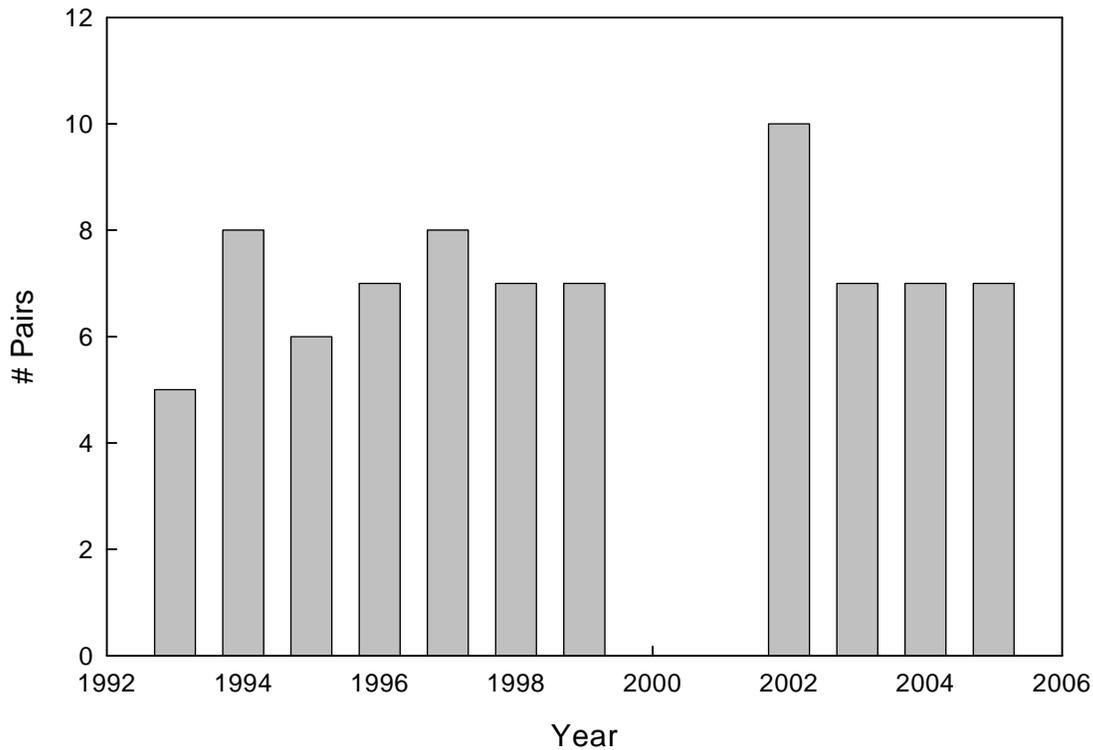


Figure 1: Number of California gnatcatcher pairs at the UCI Ecological Preserve 1993 through 2005. 1993-1999 data from Bontrager *et al.* 2000. No surveys were conducted in 2000 or 2001.

3.2 Cactus Wren

Three pairs of cactus wrens (locations W1 through W3, Figures 3 and 4) were recorded at the UCI Ecological Preserve. The number of pairs present is similar to prior surveys, which detected between two and four pairs at the Ecological Preserve (Figure 2; Harmsworth Associates 2004), and the wren population at the Ecological Preserve is apparently stable. An unpaired wren was present throughout the spring at a small patch of cactus in the southeastern area of the Ecological Preserve, and by summer there were several additional unpaired wrens at previously unused cactus patches. The wrens observed used a large area during the surveys and most of the large cactus patches in the Ecological Preserve were used at some stage during the surveys.

One banded cactus wren (pink over metal - pink) was detected during the protocol surveys. The same banded bird was also detected in the same general area in 2002 and 2003. Nesting activity was observed for all pairs including nest building, active nests with eggs and pairs with fledged chicks.

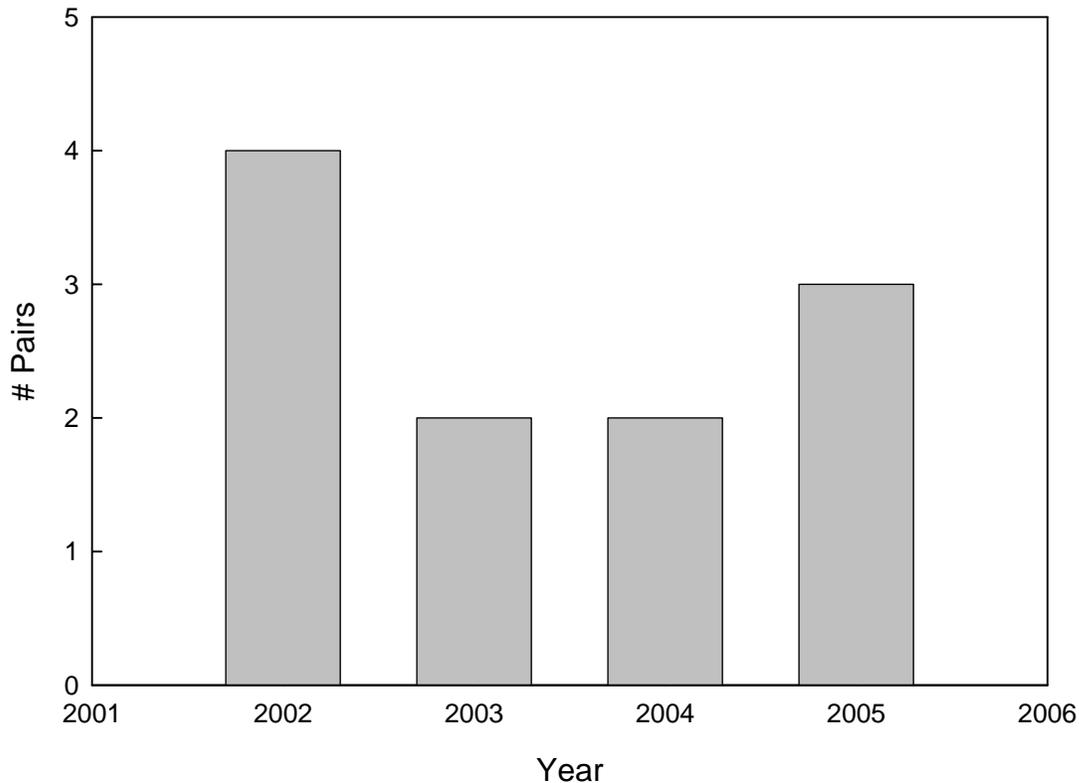


Figure 2: Number of cactus wren pairs at the UCI Ecological Preserve 2002 through 2005.

3.3 Brown-headed cowbirds

No brown-headed cowbirds (*Molothrus ater*) were observed at the Ecological Preserve or along the NCCP slopes restoration area during the 2005 surveys.

3.4 Other sensitive wildlife

In addition to California gnatcatchers and cactus wrens a number of other sensitive bird species were detected during the surveys. A pair of white-tailed kites (*Elanus leucurus*) was recorded foraging at the Ecological Preserve. Grasshopper sparrow (*Ammodramus savannarum*) and California horned lark (*Eremophila alpestris actia*) were regularly observed in grassland areas or on the sparsely vegetated dirt roads and trails. In addition, a male least Bell's vireo (*Vireo bellii pusillus*) was detected in a shallow canyon near G7 early in spring. Nesting vireos do occur adjacent the Ecological Preserve in Bonita Reservoir.

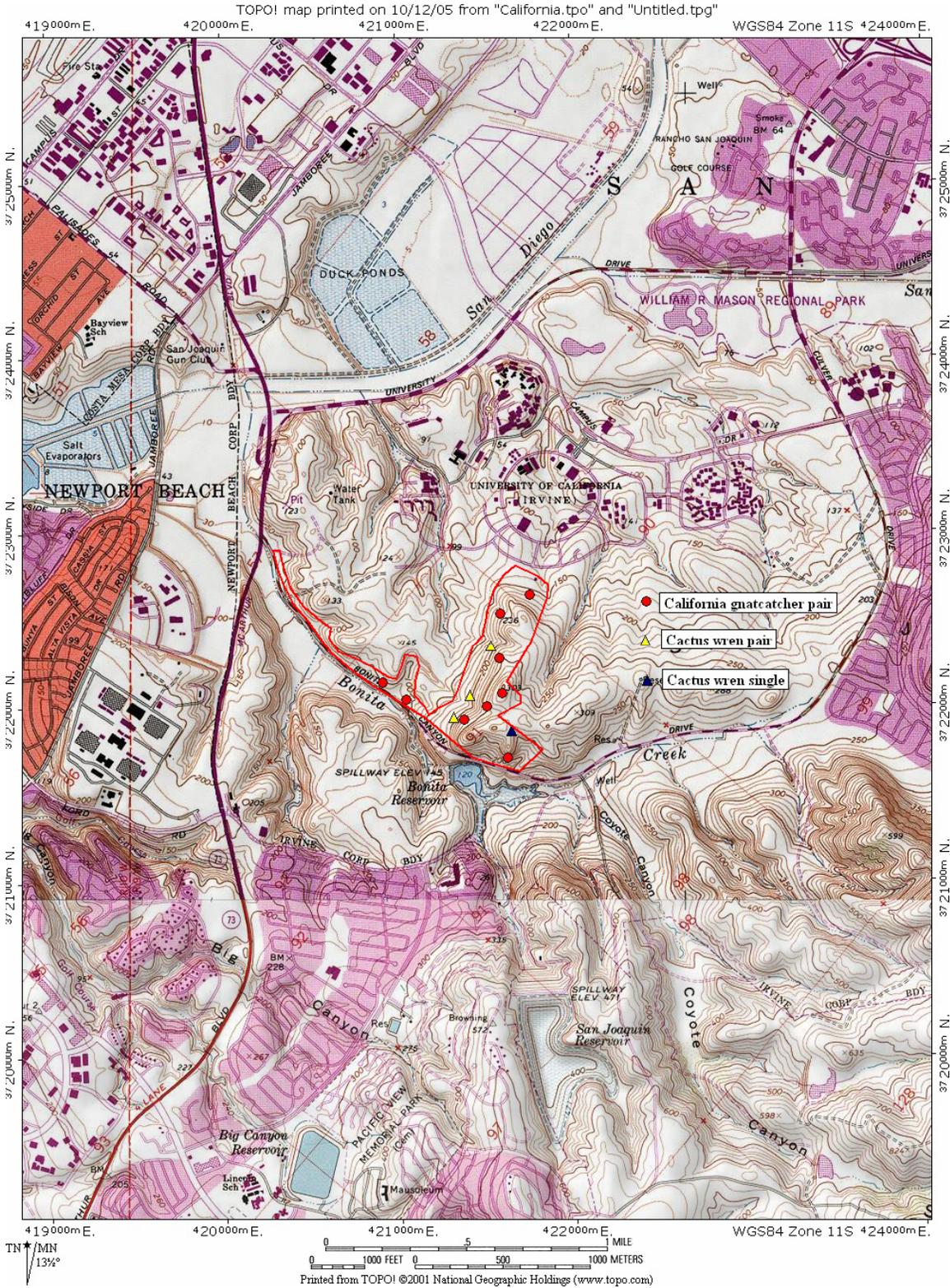


Figure 3 Location of California gnatcatchers and cactus wrens detected in 2005. Survey area in red. Source: TOPO!@2001 National geographic Holdings, Tustin USGS Quadrangle.



Figure 4 Approximate location of survey areas (in red) and California gnatcatchers (G) and cactus wrens (W) detected in 2005. Results for restoration area 4 are presented in the UC Natural Reserve System San Joaquin Marsh Reserve 2005 Final Report.

4.0 ACKNOWLEDGMENTS

The surveys and report were conducted/prepared by Harmsworth Associates biologists:
Paul Galvin, Project Manager
Spencer Langdon

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californica californica*) Presence/absence survey guidelines. February 1997.

6.0 APPENDICES

6.1 Appendix A: Survey conditions.

2004 California gnatcatcher surveys at UCI Ecological Preserve.

Date	Biologist	Time	%Cloud cover	Temp (°F)	Wind speed (mph)	Acres per survey	# CAGN	#BHCO
4/12/05	PG/SL	7:00-11:15	0-0	55-79	0-3	35	6 pair, 1 single	0
4/19/05	SL	6:30-10:00	100-20	57-67	0-7	35	4 pair, 1 single	0
4/26/05	PG/SL	6:00-10:00	60-30	59-65	0-0	35	6 pair, 1 single	0
7/22/05	PG	6:00-10:00	0-0	67-80	0-0	35	5 pair, 2 single	0

Paul Galvin (USFWS permit PRT# TE 821967-3); Spencer Landgon (USFWS permit PRT-810768-4).

6.2 Appendix B: Wildlife species recorded in the UCI Ecological Preserve, 2002-2005.

FAMILY/SPECIES NAME	COMMON NAME
AMPHIBIA	AMPHIBIANS
HYLIDAE	TREE FROGS & RELATIVES
<i>Pseudacris regilla</i>	Pacific Chorus Frog
REPTILIA	REPTILES
PHRYNOSOMATIDAE	NORTH AMERICAN SPINY LIZARDS & RELATIVES
<i>Sceloporus occidentalis</i>	Western Fence Lizard
<i>Uta stansburiana</i>	Side-Blotched Lizard
COLUBRIDAE	COLUBRIDS (EGG-LAYING SNAKES)
<i>Lampropeltis getula</i>	Common Kingsnake
<i>Pituophis catenifer</i>	Gopher Snake
AVES	BIRDS
ANATIDAE	SWANS, GEESE & DUCKS
<i>Anas platyrhynchos</i>	Mallard
ODONTOPHORIDAE	NEW WORLD QUAIL
<i>Callipepla californica</i>	California Quail
CATHARTIDAE	NEW WORLD VULTURES
<i>Cathartes aura</i>	Turkey Vulture
ACCIPITRIDAE	HAWKS, OLD WORLD VULTURES & HARRIERS
<i>Accipiter cooperii</i> ⁺	Cooper's Hawk
<i>Buteo jamaicensis</i>	Red-Tailed Hawk
<i>Buteo lineatus</i>	Red-Shouldered Hawk
<i>Circus cyaneus</i> ⁺	Northern Harrier
<i>Elanus leucurus</i> ⁺	White-tailed Kite
FALCONIDAE	CARACARAS & FALCONS
<i>Falco sparverius</i>	American Kestrel
<i>Falco peregrinus anatum</i> ⁺	American Peregrine Falcon
CHARADRIIDAE	PLOVERS & RELATIVES
<i>Charadrius vociferus</i>	Killdeer
COLUMBIDAE	PIGEONS & DOVES
<i>Columba livia</i>	Rock Pigeon
<i>Zenaida macroura</i>	Mourning Dove
CUCULIDAE	TYPICAL CUCKOOS
<i>Geococcyx californianus</i>	Greater Roadrunner
TYTONIDAE	BARN OWLS
<i>Tyto alba</i>	Barn Owl
APODIDAE	SWIFTS
<i>Chaetura vauxi</i> ⁺	Vaux's Swift
<i>Aeronautes saxatalis</i>	White-Throated Swift
TROCHILIDAE	HUMMINGBIRDS
<i>Calypte anna</i>	Anna's Hummingbird
<i>Selasphorus rufus</i> ⁺	Rufous Hummingbird

<i>Selasphorus sasin</i> ⁺	Allen's Hummingbird
PICIDAE	WOODPECKERS
<i>Colaptes auratus</i>	Northern Flicker
TYRANNIDAE	TYRANT FLYCATCHERS
<i>Empidonax difficilis</i>	Pacific-Slope Flycatcher
<i>Sayornis nigricans</i>	Black Phoebe
<i>Sayornis saya</i>	Say's Phoebe
<i>Myiarchus cinerascens</i>	Ash-Throated Flycatcher
<i>Tyrannus vociferans</i>	Cassin's Kingbird
<i>Tyrannus verticalis</i>	Western Kingbird
VIREONIDAE	TYPICAL VIREOS
<i>Vireo bellii pusillus</i> ⁺	Least Bell's Vireo
CORVIDAE	JAYS, MAGPIES & CROWS
<i>Aphelocoma californica</i>	Western Scrub-Jay
<i>Corvus brachyrhynchos</i>	American Crow
<i>Corvus corax</i>	Common Raven
ALAUDIDAE	LARKS
<i>Eremophila alpestris actia</i> ⁺	California Horned Lark
HIRUNDINIDAE	SWALLOWS
<i>Stelgidopteryx serripennis</i>	Northern Rough-Winged Swallow
<i>Petrochelidon pyrrhonota</i>	Cliff Swallow
<i>Hirundo rustica</i>	Barn Swallow
AEGITHALIDAE	LONG-TAILED TITS
<i>Psaltriparus minimus</i>	Bushtit
TROGLODYTIDAE	WRENS
<i>Campylorhynchus brunneicapillus sandiegensis</i> ⁺	San Diego Cactus Wren
<i>Thryomanes bewickii</i>	Bewick's Wren
<i>Troglodytes aedon</i>	House Wren
SYLVIIDAE	OLD-WORLD WARBLERS & GNATCATCHERS
<i>Polioptila californica californica</i> ⁺	Coastal California Gnatcatcher
TIMALIIDAE	BABLERS
<i>Chamaea fasciata</i>	Wrentit
MIMIDAE	MOCKINGBIRDS & THRASHERS
<i>Mimus polyglottos</i>	Northern Mockingbird
<i>Toxostoma redivivum</i> ⁺	California Thrasher
STURNIDAE	STARLINGS & ALLIES
<i>Sturnus vulgaris</i>	European Starling
BOMBYCILLIDAE	WAXWINGS
<i>Bombycilla cedrorum</i>	Cedar Waxwing
PARULIDAE	WOOD WARBLERS & RELATIVES
<i>Geothlypis trichas</i>	Common Yellowthroat
<i>Wilsonia pusilla</i>	Wilson's Warbler
<i>Icteria virens</i> ⁺	Yellow-Breasted Chat
EMBERIZIDAE	EMBERIZINES
<i>Pipilo maculatus</i>	Spotted Towhee
<i>Pipilo crissalis</i>	California Towhee
<i>Chondestes grammacus</i> ⁺	Lark Sparrow

<i>Ammodramus savannarum</i> ⁺	Grasshopper Sparrow
<i>Zonotrichia leucophrys</i>	White-Crowned Sparrow
CARDINALIDAE	CARDINALS, GROSBEEKS & ALLIES
<i>Passerina caerulea</i>	Blue Grosbeak
<i>Passerina amoena</i>	Lazuli Bunting
ICTERIDAE	BLACKBIRDS, ORIOLES & ALLIES
<i>Agelaius phoeniceus</i>	Red-Winged Blackbird
<i>Sturnella neglecta</i>	Western Meadowlark
<i>Molothrus ater</i>	Brown-Headed Cowbird
<i>Icterus bullockii</i>	Bullock's Oriole
FRINGILLIDAE	FRINGILLINE FINCHES
<i>Carpodacus mexicanus</i>	House Finch
<i>Carduelis psaltria</i>	Lesser Goldfinch
<i>Carduelis tristis</i>	American Goldfinch
MAMMALIA	MAMMALS
LEPORIDAE	RABBITS & HARES
<i>Sylvilagus audubonii</i>	Desert Cottontail
SCIURIDAE	SQUIRRELS, CHIPMUNKS & MARMOTS
<i>Spermophilus beecheyi</i>	California Ground Squirrel
MURIDAE	MICE, RATS & VOLES
<i>Neotoma lepida intermedia</i> ⁺	San Diego Desert Woodrat
CANIDAE	FOXES, WOLVES & RELATIVES
<i>Canis latrans</i>	Coyote
FELIDAE	CATS
<i>Lynx rufus</i>	Bobcat

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