BIOLOGICAL RESOURCES REPORT

MSCP CALIFORNIA GNATCATCHER
MONITORING SURVEY REPORT

PREPARED FOR:

CITY OF SAN DIEGO
PLANNING DEPARTMENT, MSCP

URS PROJECT NO. 58-00167002.01-00100

AUGUST 8, 2001

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Prepared for

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202 C Street, MS5A
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URS Project No. 58-00167002.01-00100

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1.0 INTRODUCTION

The City of San Diego (City) is required under the Multiple Species Conservation Plan (MSCP) to conduct monitoring surveys for selected covered species as described in the Biological Monitoring Plan for the MSCP (Ogden 1996). The City contracted with URS to conduct protocol presence/absence surveys for California gnatcatcher. Nine sites located throughout the City's MSCP preserve were surveyed to determine presence of California gnatcatcher at each site in spring of 2001. Survey sites consisted of 200-acre plots (or two sub plots that totaled 200 acres). The sites were located at Lake Hodges, San Pasqual Valley, Black Mountain, Los Penasquitos Canyon, Mission Trails Regional Park, Spooner's Mesa, Otay Mesa/Spring Canyon, Lower Otay Reservoir, and Marron Valley. Figure 1 is a regional map showing the general location of each plot.

2.0 METHODS

Focused surveys for California gnatcatcher (*Polioptila californica californica*) were conducted by URS biologists under FWS Recovery Permit No. TE-025582-0. MSCP monitoring forms were completed for each site visit and summary forms were completed after the final site visit. These forms are included as an attachment to this report (Appendix A). The surveys were conducted during morning hours, when bird vocalizations are most frequent. Surveys only continued past the noon hour when gnatcatchers were detected and followed past that time. Taped vocalizations of the gnatcatcher were used to elicit a response. The sites were visited three times, except for those sites where gnatcatchers were detected in all potential habitat on the first or second visit. The detailed survey protocol from the Biological Monitoring Plan for the MSCP is provided as an attachment to this report (Appendix B). Survey personnel, locations, dates, times, and weather conditions are provided in Table 1.

3.0 RESULTS

California gnatcatcher detected at each site during the spring 2001 surveys is detailed below. Information regarding other sensitive species detected on the sites is also included. Locations of California gnatcatcher and other sensitive species detected in spring 2001 are shown in Figures 2-10. A complete list of animal species detected at each plot is included as an attachment to this report (Appendix C).

3.1 LAKE HODGES

Two 100-acre plots were selected at Lake Hodges, one on the north side of the lake and one on the south side. A total of six pairs of California gnatcatcher were detected on the northern 100-acre site (Figure 2A). This results in an average density of 16.5 acres CSS per breeding pair. This site is considered to be relatively densely populated by the gnatcatcher, since territory sizes at inland locations are often 20 acres or more in size. (Preston et al., 1998). During the final site visit on May 5, one pair was observed incubating and another pair was seen nest building. Other sensitive species detected onsite include white-tailed kite, Cooper's hawk, rufous-crowned

sparrow, and mule deer. The surveys at the Lake Hodges North plot were all conducted during cool weather conditions that were not appropriate for detecting sensitive reptiles.

Table 1
CITY OF SAN DIEGO MSCP CALIFORNIA GNATCATCHER SURVEY CONDITIONS

Location**	Personnel*	Date	Time	Temp	Clouds	Wind (mph)
BM-E	RB	5/12/01	06:30-10:30	58°F	100%	0-7
BM-W	RB	6/11/01	06:00-12:00	60-75°F	0-100%	0-5
BM-W&E	RB, HG, TW	3/27/01	06:25-12:00	55-70°F	0-5%	0-4
BM-W&E	RB, PR	3/2/01	06:50-12:00	52-60°F	30-50%	0-4
LH-N	RB	2/3/01	07:20-11:45	41-75°F	0%	0-4
LH-N	RB, HG, TW	5/5/01	06:30-11:30	42-65°F	0%	0-2
LH-N	RB, PR	2/11/01	07:20-11:40	45-63°F	40%	0-3
LH-S	RB, PR	2/9/01	09:05-11:15	50-62°F	0-40%	0-2
LH-S	RB, PR	2/10/01	07:10-11:15	40-56°F	40%	0-4
LH-S	RB, PR, JR	2/7/01	09:00-11:15	60°F	100%	5
LH-S	RB, PR, JR, TW	2/21/01	09:00-11:15	60-70°F	0%	0-2
Marron-E	RB, HG, TW	3/22/01	06:50-08:50	55-60°F	100%	1-2
Marron-E&W	RB, BL	3/30/01	06:50-11:45	63-78°F	0%	0-2
Marron-W	RB, TW	3/21/01	07:50-12:00	65-75°F	20-30%	0-5
Marron-W&E	RB, JR	6/23/01	07:10-12:00	70-90°F	0-10%	1-7
MT-N	RB	3/5/01	07:00-09:00	55-65°F	10-50%	1-10
MT-N	RB	3/12/01	06:30-12:00	52-70°F	50-80%	1-3
MT-N&S	RB, BL	6/25/01	06:45-11:45	62-75°F	0-100%	0-5
MT-N&S	RB, PR	4/1/01	06:45-12:00	57-61°F	100%	0-3
MT-S	RB, TW	3/24/01	06:20-09:00	55°F	100%	0
OR-N	RB, TW	3/19/01	06:45-10:55	57-80°F	0%	0-4
OR-N&S	RB, HG	6/15/01	06:50-11:10	62-80°F	0%	3-4
OR-S	RB	6/27/01	06:15-12:00	62-80°F	0%	2-4
OR-S & Spring-W	RB, HG, TW	3/23/01	07:25-12:05	60-75°F	90-95%	2-5
PQ-N	RB	3/4/01	07:00-12:00	55-60°F	90-100%	1-5
PQ-N	RB	5/13/01	06:30-11:30	60-70°F	100%	0-5
PQ-N&S	RB, HG, TW	3/25/01	07:00-11:45	55-70°F	5-100%	0-5
PQ-S	PM	6/26/01	08:20-10:05	___	_____	___
PQ-S	RB	3/3/01	06:45-13:20	55-60°F	50-80%	2-5
SP-N	RB	2/24/01	06:30-11:00	42-55°F	90-100%	2-6
SP-N	RB	3/31/01	06:00-11:30	57-75°F	0-100%	1-5
SP-N&S	RB, JR	6/17/01	06:30-11:50	55-85°F	0-100%	0-5
Spnr'sMesa	RB, HG, BL	3/14/01	06:45-12:00	54-70°F	10-100%	1-5
Spnr'sMesa	RB, PR	6/16/01	06:45-11:45	60-70°F	0-100%	0-10
Spnr'sMesa	RB, TW	3/28/01	06:25-12:00	55-68°F	95-100%	0-5
Spring-E	RB, JR	5/6/01	07:00-12:00	58-75°F	0-100%	0-2
Sprlng-E & OR-N	RB	6/24/01	06:00-10:15	60-80°F	0-100%	0-2
Spring-W&E	RB, HG	3/15/01	07:00-12:00	55-70°F	0-100%	0-7
SP-S	RB	3/18/01	06:45-12:00	50-73°F	0%	0-3
SP-S	RB, HG	3/29/01	06:45-09:30	55-56°F	100%	0-1

* BL = Brian Lohstroh
JR = Jim Rocks
PR = Phillip Richards
TW = Theresa Weber
HG = Heather Green
PM = Patrick Mock
RB = Rick Bailey/Eric Bailey

** BM-W&E = Black Mountain West and East
LH-N&S = Lake Hodges North and South
Marron-W&E = Marron Valley West and East
MT-N&S = Mission Trails Regional Park North and South
OR-N&S = Otay Reservoir North and South
PQ-N&S = Los Penasquitos Canyon North and South
SP-N&S = San Pasqual Valley North and South
Spnr'sMesa = Spooner's Mesa
Spring-W&E = Otay Mesa/Spring Canyon West and East

The 100-acre Lake Hodges South plot was also densely populated by gnatcatchers (Figure 2B). A total of seven pairs were detected along with a single male and a gnatcatcher that was heard but not seen. This results in an average density of about 14 CSS acres per breeding pair. No cactus wrens were detected on this site during the 2001 surveys, although historic records exist and the cactus thickets are still present. Other sensitive species detected onsite include white-tailed kite, northern harrier, and rufous-crowned sparrow. The surveys were all conducted early in the spring and were not appropriate for detecting sensitive reptiles.

3.2 SAN PASQUAL VALLEY

Two 100-acre plots were selected at San Pasqual Valley. One of the sites was north of State Route 78 (SR78) and west of Guejito Creek and the other site was south of SR 78 and east of Bandy Canyon Road. Both sites appear to have been partially burned several years ago during the Guejito brush fire. Patches of unburned coastal sage scrub currently provide higher quality habitat for California gnatcatcher. These patches are dominated by California sagebrush, black sage, and prickly pear cactus (*Opuntia* sp.). Previously burned areas consist mainly of deerweed (*Lotus scoparius*) and mustard (*Brassica* sp.). Historical data at the northern site include California gnatcatcher and cactus wren. Historical data at the southern site are limited to cactus wren.

A total of 5 pairs, one female, and one dispersing juvenile California gnatcatcher were detected on the 100-acre San Pasqual Valley North plot (Figure 3A). This results in an average density of 20 acres CSS per breeding pair. The actual territory sizes are likely to be much smaller, however, as the gnatcatcher locations were clustered in the higher quality areas of coastal sage scrub. During the final site visit on June 17, one pair was observed feeding three young fledglings and another pair was seen feeding three older (nearly independent) fledglings.

The San Pasqual Valley North plot was also found to support nine pairs of cactus wren and four individuals (some of which are likely to be paired also) (Figure 3A). The cactus wrens were located in the same patches of unburned scrub where the gnatcatchers were located. Other sensitive species detected onsite include Cooper's hawk, rufous-crowned sparrow, and mule deer.

No California gnatcatchers were detected at the 100-acre San Pasqual Valley South plot (Figure 3B). Some suitable coastal sage scrub is present at the western edge of the site, but most of the site has not recovered from the Guejito brush fire. One pair of cactus wren was detected onsite. At least one of the pair of cactus wren was always seen in a prickly pear cactus thicket at the western edge of the site. A family group was seen at that location during the final site visit on June 17. Another cactus thicket onsite (about 500 feet to the north) was not occupied by cactus wren. The only other sensitive species detected onsite was rufous-crowned sparrow.

3.3 BLACK MOUNTAIN

Two survey plots were selected at Black Mountain; the western plot is 150 acres in size and the eastern site is 50 acres. One pair of California gnatcatcher and one individual gnatcatcher heard but not identified to sex and age class were detected on the western plot (Figure 4A). The

gnatcatcher that was heard was viewed only briefly in dense brush. The date of detection (March 2, 2001) suggests that this individual was likely an established adult since no juveniles are present that early in the breeding season.

The brush on the western site is very dense and the slope ranges from moderate to steep. Black sage (*Salvia melifera*) is the dominant plant species onsite, except for a relatively flat area at the western end of the site that is dominated by California sagebrush (*Artemisia californica*). This area has likely been disturbed in the past by powerline construction. Weedy species such as artichoke thistle (*Cynara cardunculus*) and wild mustard (*Brassica* sp.) predominate along the western boundary. The gnatcatcher pair was located in the western portion of the site in the California sagebrush dominated area. The gnatcatcher individual was located nearby in black sage dominated scrub. Other sensitive species detected onsite include rufous-crowned sparrow and western whiptail lizard.

No California gnatcatchers were detected at the 50-acre Black Mountain East plot (Figure 4B). This site contains dense black sage dominated scrub on the hillsides, and somewhat disturbed flatter areas vegetated by broom baccharis (*Baccharis sarothroides*), California sagebrush, and artichoke thistle. Other sensitive species detected onsite include northern harrier and rufous-crowned sparrow. The surveys at this site were all conducted during cool weather conditions that were not appropriate for detecting sensitive reptiles.

3.4 LOS PENASQUITOS CANYON

Two 100-acre plots were selected at Los Penasquitos Canyon. The northern plot includes the mesa and small canyons north side of Los Penasquitos Canyon. The southern plot was in Lopez Canyon downstream from the Camino Santa Fe Bridge. No California gnatcatcher was detected at the northern site, although historical records exist (Figure 5A). The coastal sage scrub in the canyons on site is a thick mixture of California sagebrush, black sage, and lemonade berry (*Rhus integrifolia*). There are pockets of chaparral vegetation interspersed, represented by such species as chamise (*Adenostema fasciculata*) and mission manzanita (*Xylococus bicolor*). The mesa top contains a sparse cover of coastal sage scrub. Sensitive species detected onsite include two-striped garter snake, white-tailed kite, rufous-crowned sparrow, and mule deer.

A total of six pairs of California gnatcatcher were detected at the Lopez Canyon plot (Figure 5B). This results in an average density of 16.5 acres CSS per breeding pair. This site is within five miles of the coast, and gnatcatcher territories less than 15 acres are typical in such localities. The CSS within the east one-third of this plot that lacked gnatcatchers was considered least suitable in terms of vegetation composition and steepness of slope. Other sensitive species detected onsite include northern harrier, Cooper's hawk, white-tailed kite, greater roadrunner, rufous-crowned sparrow, and mule deer. Tracks of 10 to 20 deer were observed in the wildlife tunnel under Sorrento Valley Boulevard.

3.5 MISSION TRAILS REGIONAL PARK

Two 100-acre plots were selected at Mission Trails Regional Park. The northern site is near State Route 52, and west of Fortuna Mountain. The southern site is south of Mission Gorge

Road, and north of Cowles Mountain. A single juvenile California gnatcatcher was detected at the northern site on June 25. No adult gnatcatcher was detected onsite, although historical records exist (Figure 6A). The presence of a juvenile suggests that nearby coastal sage scrub habitat is occupied by successfully breeding pairs of gnatcatcher. The sage scrub onsite appears to be a suitable mixture of black sage and California sagebrush dominated scrub. Slopes onsite range from gentle to steep. It is likely that the site will be occupied by breeding pairs of gnatcatcher in the future. Other sensitive species detected onsite include orange-throated whiptail, rufous-crowned sparrow, grasshopper sparrow, and mule deer.

No California gnatcatcher was detected at the southern Mission Trails plot, where apparently suitable habitat of coastal sage scrub exists (Figure 6B). There are no historical records of gnatcatcher at this site. Sensitive species detected onsite include orange-throated whiptail, rufous-crowned sparrow, and mule deer.

3.6 LOWER OTAY RESERVOIR

Two 100-acre survey plots were selected at Lower Otay Reservoir; one plot was located along the northeastern shore of the lake and one site was near the southeast shore of the lake. A total of ten territories of California gnatcatcher were detected at the northern site, including detection of two juveniles in June. Presence of juveniles suggests that successful breeding occurred in the vicinity of this survey plot (Figure 7A). The ten territories onsite had an average of 10 acres per territory, making this the most densely populated of the MSCP survey sites in 2001. The coastal sage scrub vegetation onsite is somewhat sparse with high amounts of native grasses and non-native herbaceous species. The amount of grass onsite was sufficient to support Grasshopper sparrow at several locations. Since sparse coastal sage scrub mixed with grassland is not typically considered high quality gnatcatcher habitat, there may be other factors that account for the high number of gnatcatchers onsite. The gently sloping terrain and the potential for higher numbers of insects near the lake may be contributing factors to the success of the population onsite. Other sensitive species detected onsite include great blue heron and the aforementioned grasshopper sparrow.

No California gnatcatchers were detected at the southern Lower Otay Reservoir plot, although historical records exist (Figure 7B). This site appears to have burned several years ago, leaving very sparse coastal sage scrub with some patches of moderate quality coastal sage scrub. Non-native herbaceous species are abundant, and several cows were observed grazing the site. The site also contains moderately steep slopes that rise away from the lake, as opposed to the northern site with more level terrain along the lake. The moderate quality patches of coastal sage scrub may become occupied by gnatcatchers in the future. Sensitive species detected on the site include golden eagle, northern harrier, great blue heron, greater roadrunner, rufous-crowned sparrow, grasshopper sparrow, and black-tailed jackrabbit.

3.7 SPOONER'S MESA

This plot consists of a single 200-acre area located between Monument Road and the U.S./Mexico Border. Two pairs, a single female, and a single male California gnatcatcher were detected onsite (Figure 8). The single gnatcatchers may have mates that were not detected. The

gnatcatcher locations were clustered in the northwestern area of the site. Other historically occupied areas of the site support suitable coastal sage scrub habitat, but were not occupied in the spring of 2001. Additional sensitive species detected onsite include golden eagle, Cooper's hawk, sharp-shinned hawk, white-tailed kite, northern harrier, greater roadrunner, rufous-crowned sparrow, and black-tailed jackrabbit. The surveys were all conducted during cool weather conditions that were not appropriate for detection of sensitive reptile species.

3.8 OTAY MESA/SPRING CANYON

Two 100-acre plots were selected at Otay Mesa/Spring Canyon. The western 100-acre plot is located east of Interstate 805 in Moody Canyon and the eastern 100-acre plot is located at the end of Heritage Road in Spring Canyon.

A total of five pairs of California gnatcatcher were detected at the Moody Canyon plot. This results in an average density of 20 acres CSS per breeding pair (Figure 9A). Actual gnatcatcher territory sizes onsite are likely about 10 acres, since all the sightings are restricted to the south-facing slope of the canyon. The north-facing slope supports much denser and taller scrub, with a substantial component of lemonade berry shrubs; the vegetation composition is considered less suitable for gnatcatchers. One cactus wren was detected onsite and large cactus thickets nearby are likely to support additional cactus wrens. Other sensitive species detected onsite include northern harrier and greater roadrunner. The surveys were conducted early in the spring season and were not appropriately timed for detecting sensitive reptile species.

One pair of California gnatcatcher, a single male gnatcatcher, and a juvenile gnatcatcher were detected at the eastern plot in Spring Canyon (Figure 9B). The juvenile was detected on June 24, and likely originated from onsite or from a nearby breeding territory. A pair of least Bell's vireo was also detected onsite. The vireo pair was observed in a patch of young willow trees on May 6. A yellow-breasted chat was observed at that location as well. A northern cardinal was observed onsite, but since the range of this species is outside of California, the individual is believed to be an escaped cage bird (Unitt 1984). Additional sensitive species detected onsite include western whiptail, orange-throated whiptail, sharp-shinned hawk, greater roadrunner, rufous-crowned sparrow, and black-tailed jackrabbit.

3.9 MARRON VALLEY

Two plots were selected at Marron Valley; the western site is 144 acres in size and the eastern site is 56 acres. The western plot is located on the slopes directly north of Marron Valley and the eastern plot is located along a tributary to Cottonwood Creek. No California gnatcatchers were detected at either of the plots, although historical records exist in the eastern plot and the vicinity (Figures 10A and 10B). The eastern site has been partially burned several years ago, and both of the sites have been grazed by cattle. Patches of moderate quality coastal sage scrub remain distributed within the two plots. The sites may become inhabited by California gnatcatcher in the future; however, this region has few gnatcatcher sightings in the vicinity and local weather conditions may preclude consistent occupation by gnatcatchers (Mock 1998). Sensitive species detected at the western plot include western whiptail, rufous-crowned sparrow, and mule deer. Sensitive species at the eastern site include rufous-crowned sparrow and mule deer.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The City's MSCP monitoring plots demonstrated varying levels of gnatcatcher occupation. The most notable result was the lack of adult gnatcatchers at the Mission Trails plots. Mission Trails is known as a core population area for gnatcatchers, and given the historical sightings of gnatcatchers at the northern Mission Trails plot, a nominal level of occupation was expected at these plots. The past three wet seasons have produced below normal rains. These chronic dry conditions influence gnatcatcher reproduction and survival. Years directly following above-normal rains typically allow for good reproductive success and subsequent re-occupation of habitat patches unoccupied during dry periods (Mock 1993, 1998). Other plots (San Pasqual Valley South and Black Mountain East) had limited occupation by gnatcatchers, which is likely due to current unsuitable site conditions (e.g., recently burned, suboptimal vegetation composition). Additional gnatcatcher surveys for the Mission Trails North plot conducted after an above-normal wet season is recommended to verify plot reoccupation expected to result from a "good year" of reproduction.

MSCP preserve areas are managed to maintain sufficient suitable CSS habitat for California gnatcatcher metapopulation viability. Ongoing cattle grazing at the Lower Otay Reservoir South 100-acre plot and at both plots in Marron Valley may not be compatible with CSS habitat management goals. The number of cattle observed at each of these sites was low, and may not have a great effect on extant mature coastal sage scrub vegetation; however, even a small number of cattle can prevent coastal sage scrub from regrowing in areas recently burned. Cattle should be excluded from burned CSS areas to protect the sprouting coastal sage scrub species. If cattle cannot be removed from the sites, then perhaps only a small number could be permitted to graze onsite. California gnatcatcher may be able to tolerate low amounts of grazing more than other MSCP covered species.

5.0 REFERENCES

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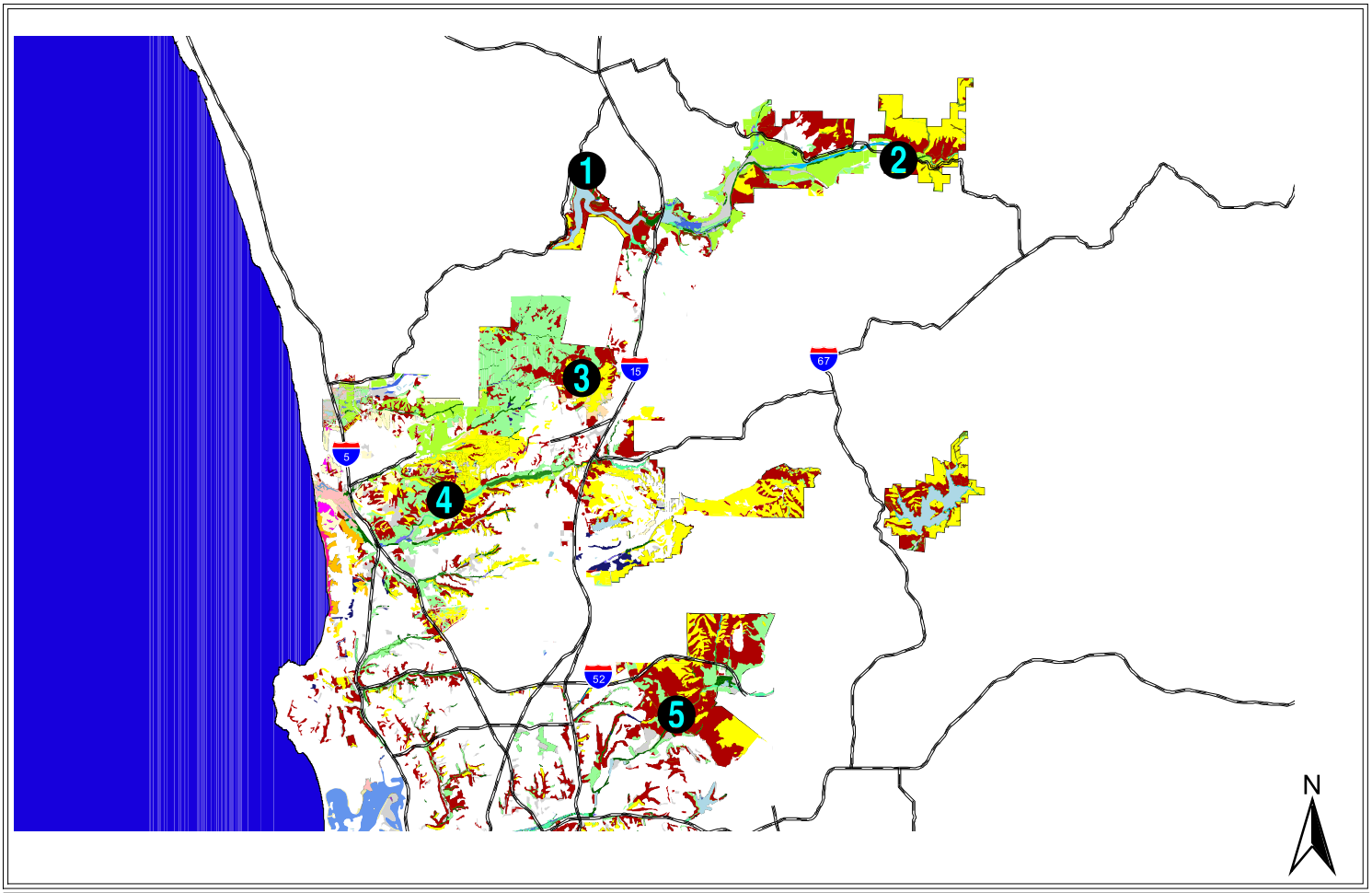
FIGURES



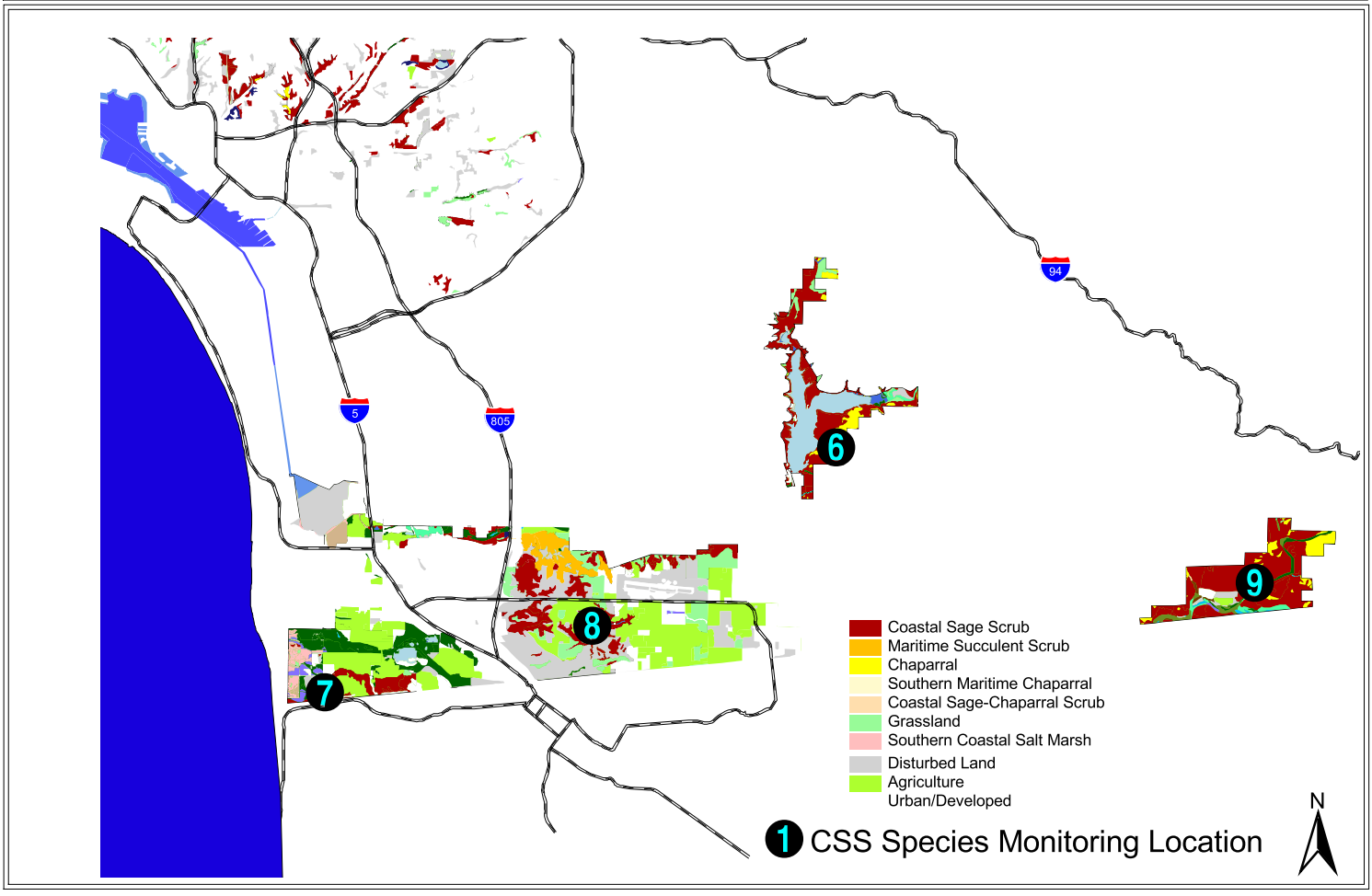


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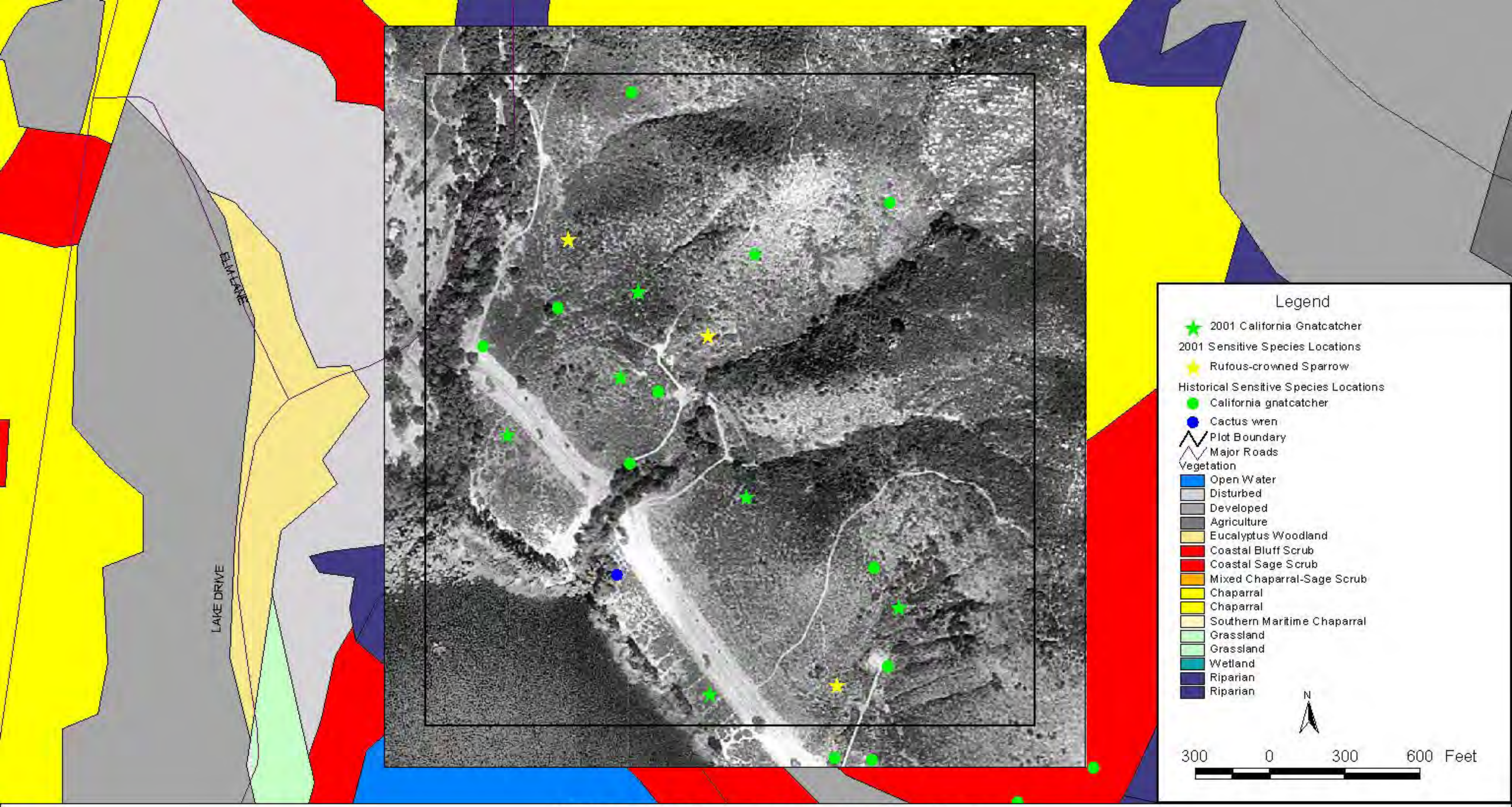
FIGURE 1: MONITORING LOCATIONS



MSCP CSS Species Monitoring Project
Lake Hodges North 100-acre Plot

URS Project No: 58-00167002.01

Figure 2A

Legend

2001 California Gnatcatcher

2001 Sensitive Species Locations

Rufous-crowned Sparrow

Historical Sensitive Species Locations

California Gnatcatcher

Cactus Wren

Plot Boundary

Vegetation

Open Water

Developed

Coastal Bluff Scrub

Coastal Sage Scrub

Chaparral

Riparian

Riparian

Mixed Oak Woodland

N

300 0 300 600 Feet

MSCP CSS Species Monitoring Project
Lake Hodges South 100-acre Plot

URS Project No: 58-00167002.01

Figure 2B

Legend

2001 California Gnatcatcher

2001 Cactus Wren

2001 Sensitive Species Locations

Orange-throated Whiptail

Rufous-crowned Sparrow

Historical Sensitive Species Locations

California Gnatcatcher

Cactus wren

Plot Boundary

Vegetation

Developed

Agriculture

Coastal Sage Scrub

Chaparral

Grassland

Riparian

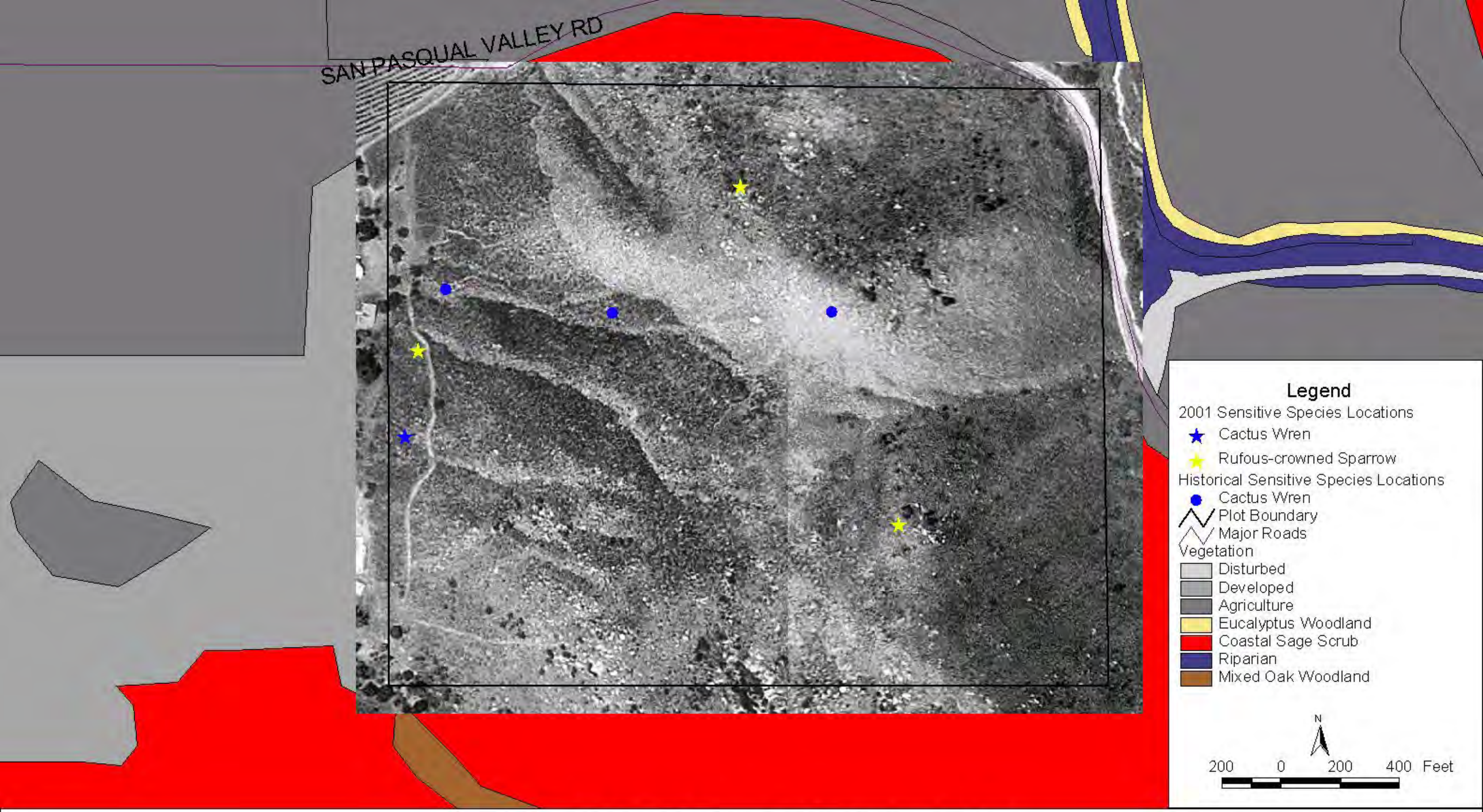
N

100 0 100 200 Feet

MSCP CSS Species Monitoring Project
San Pasqual North 150-acre Plot

URS Project No: 58-00167002.01

Figure 3A



MSCP CSS Species Monitoring Project
San Pasqual South 100-acre Plot

URS Project No: 58-00167002.01

Figure 3B

Legend

2001 California Gnatcatcher

2001 Sensitive Species Locations

Rufous-crowned Sparrow

Western Whiptail

Historical Sensitive Species Locations

California gnatcatcher

Plot Boundary

Vegetation

Disturbed

Developed

Agriculture

Coastal Bluff Scrub

Coastal Sage Scrub

Mixed Chaparral-Sage Scrub

Chaparral

Chaparral

Grassland

N

200 0 200 400 Feet

MSCP CSS Species Monitoring Project

Black Mountain West 150-acre Plot

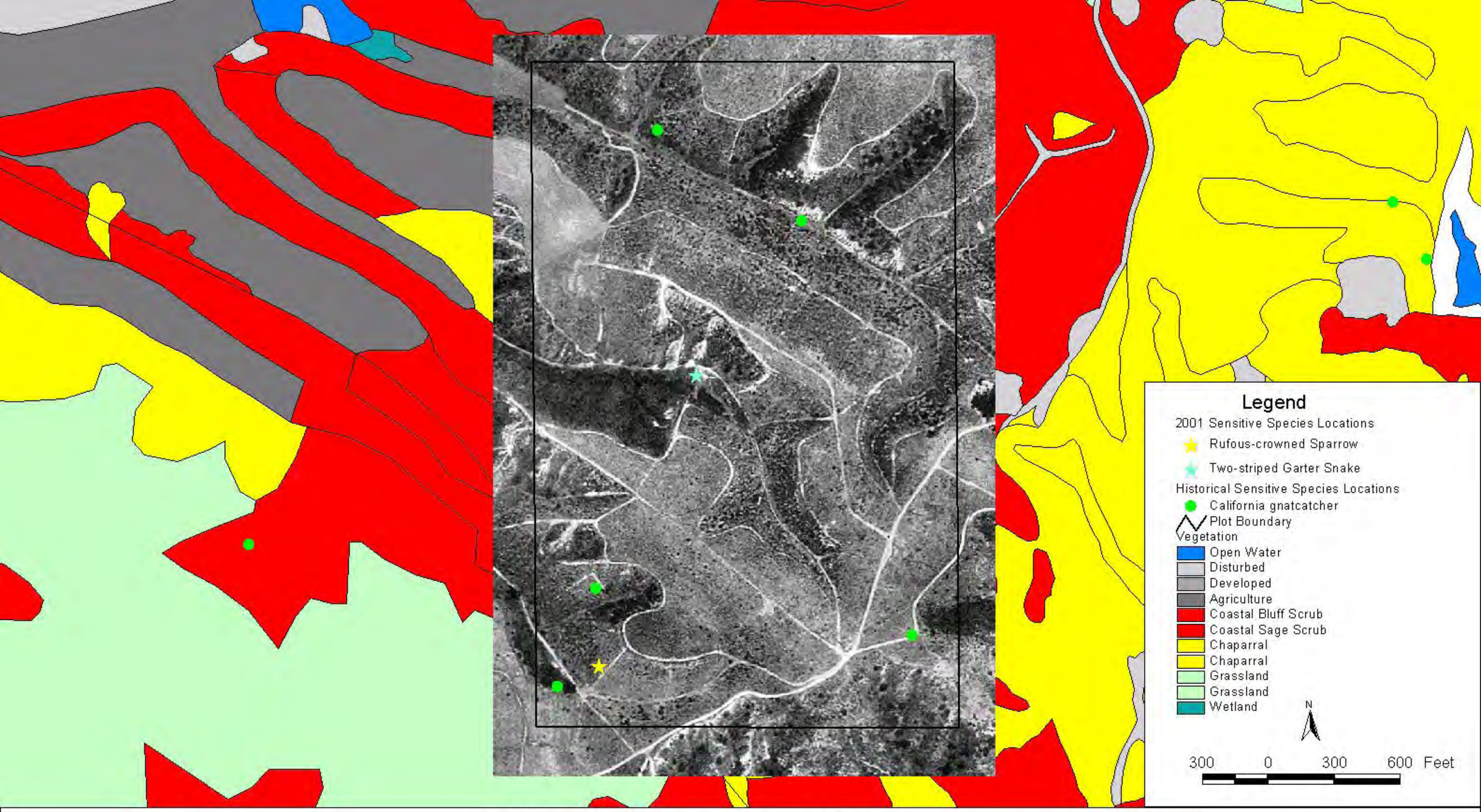
URS Project No: 58-00167002.01

Figure 4A

MSCP CSS Species Monitoring Project
Black Mountain East 50-acre Plot

URS Project No: 58-00167002.01

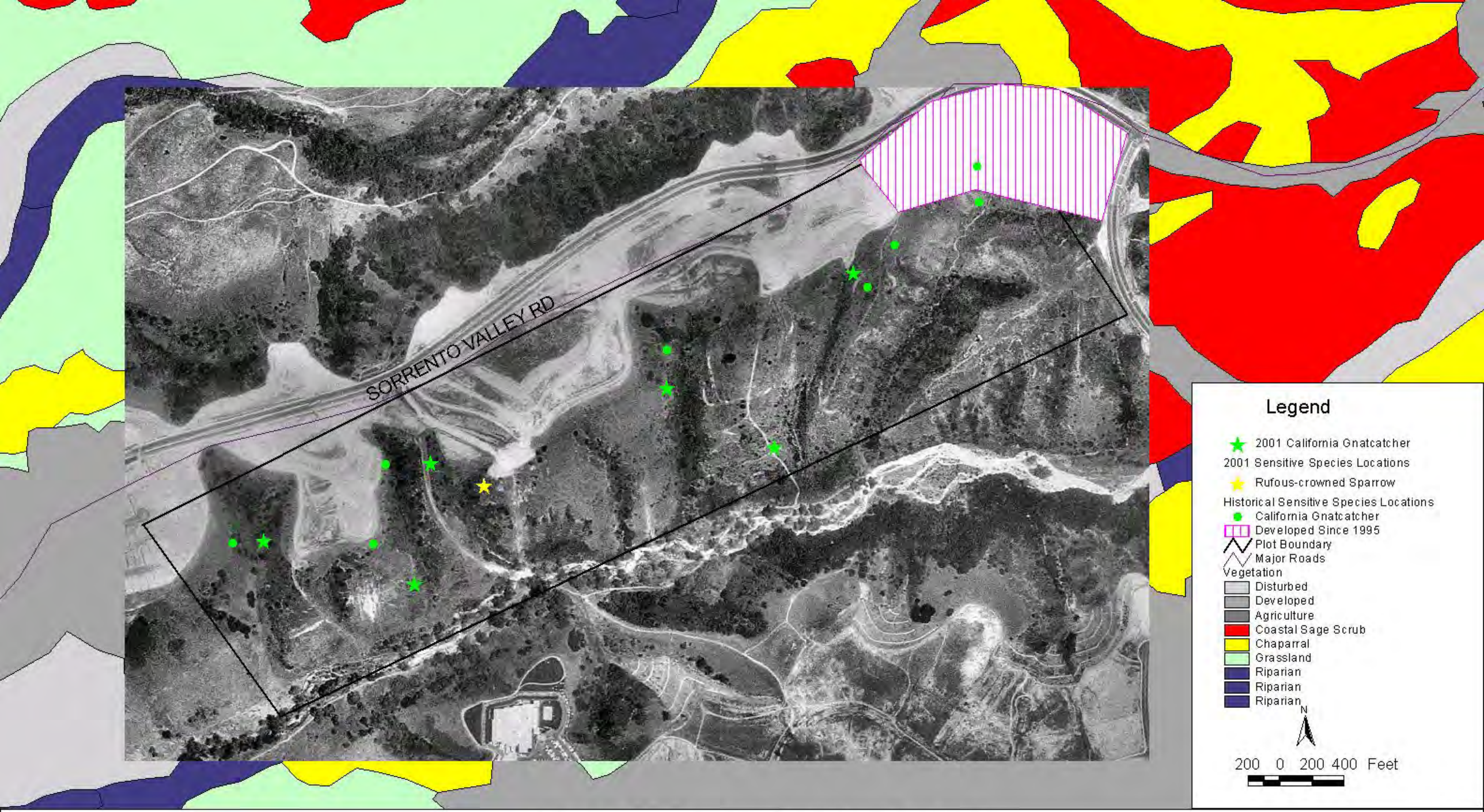
Figure 4B



MSCP CSS Species Monitoring Project
Los Penasquitos North 100-acre Plot

URS Project No: 58-00167002.01

Figure 5A



MSCP CSS Species Monitoring Project
Lopez Canyon 100-acre Plot

URS Project No: 58-00167002.01

Figure 5B

Legend

2001 California Gnatcatcher

2001 Sensitive Species Locations

Grasshopper Sparrow

Rufous-crowned Sparrow

Historical Sensitive Species Locations

California gnatcatcher

Plot Boundary

Vegetation

Disturbed

Developed

Agriculture

Coastal Sage Scrub

Chaparral

Grassland

Riparian

Riparian

Mixed Oak Woodland

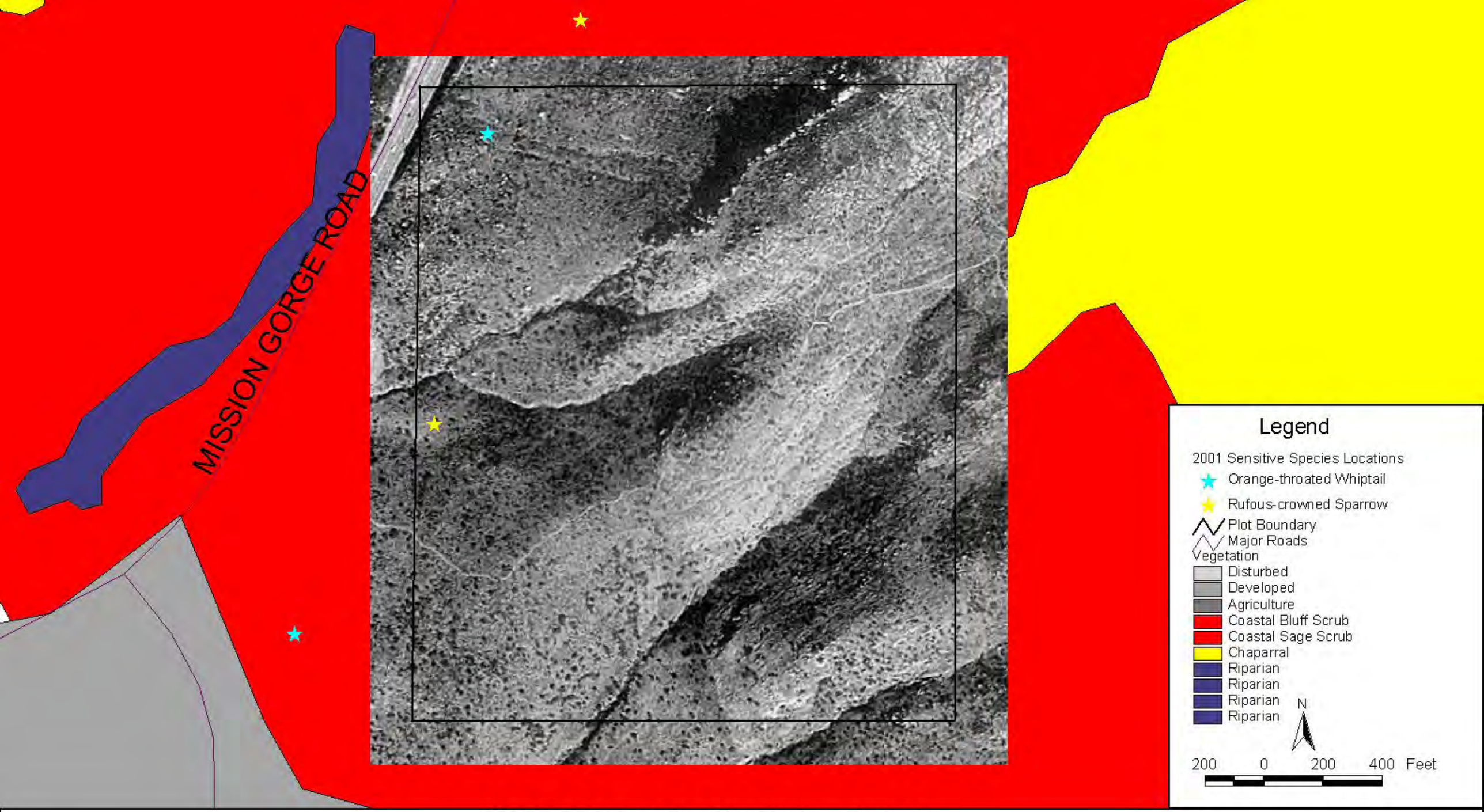
N

200 0 200 400 Feet

MSCP CSS Species Monitoring Project
Mission Trails North 100-acre Plot

URS Project No: 58-00167002.01

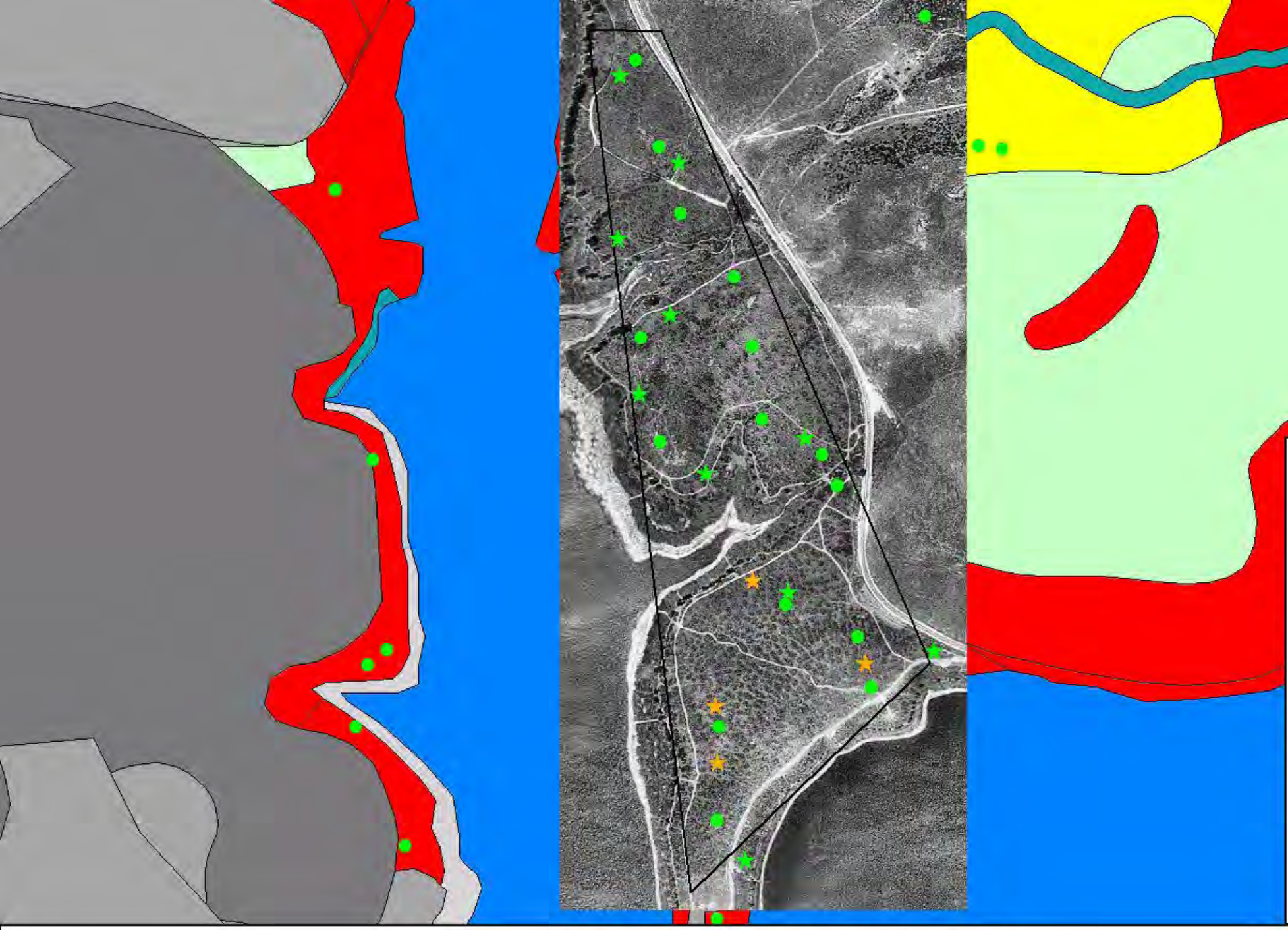
Figure 6A



MSCP CSS Species Monitoring Project
Mission Trails South 100-acre Plot

URS Project No: 58-00167002.01

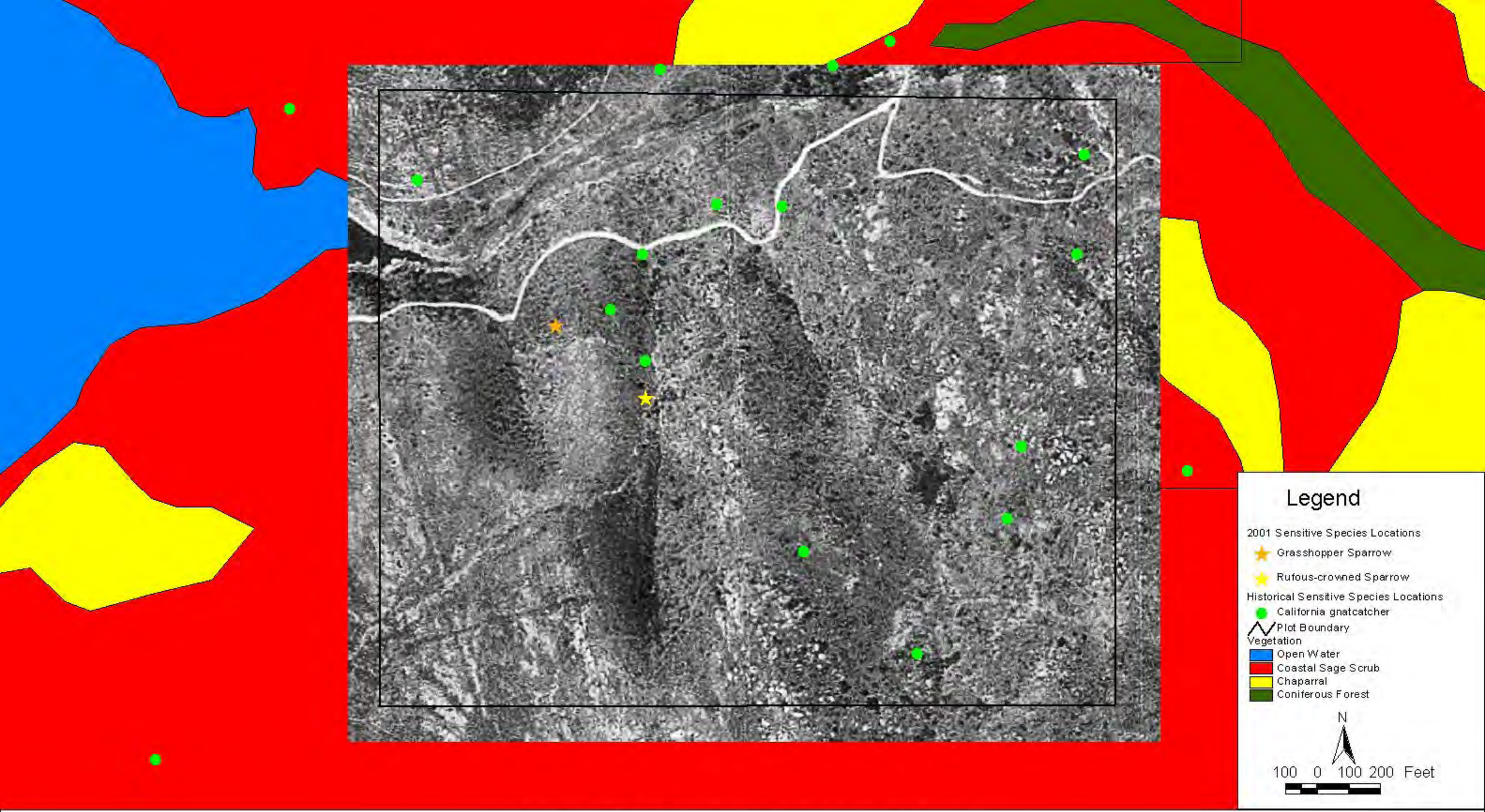
Figure 6B



MSCP CSS Species Monitoring Project
Lower Otay Reservoir North 100-acre Plot

URS Project No: 58-00167002.01

Figure 7A



MSCP CSS Species Monitoring Project
Otay Reservoir South 100-acre Plot

URS Project No: 58-00167002.01

Figure 7B

MSCP CSS Species Monitoring Project
Spooner's Mesa 200-acre Plot

URS Project No: 58-00167002.01

Figure 8

Legend

2001 California Gnatcatcher

2001 Sensitive Species Locations

Cactus wren

Historical Sensitive Species Locations

California gnatcatcher

Cactus wren

Plot Boundary

Vegetation

Disturbed

Developed

Agriculture

Coastal Bluff Scrub

Coastal Sage Scrub

Grassland

Grassland

N

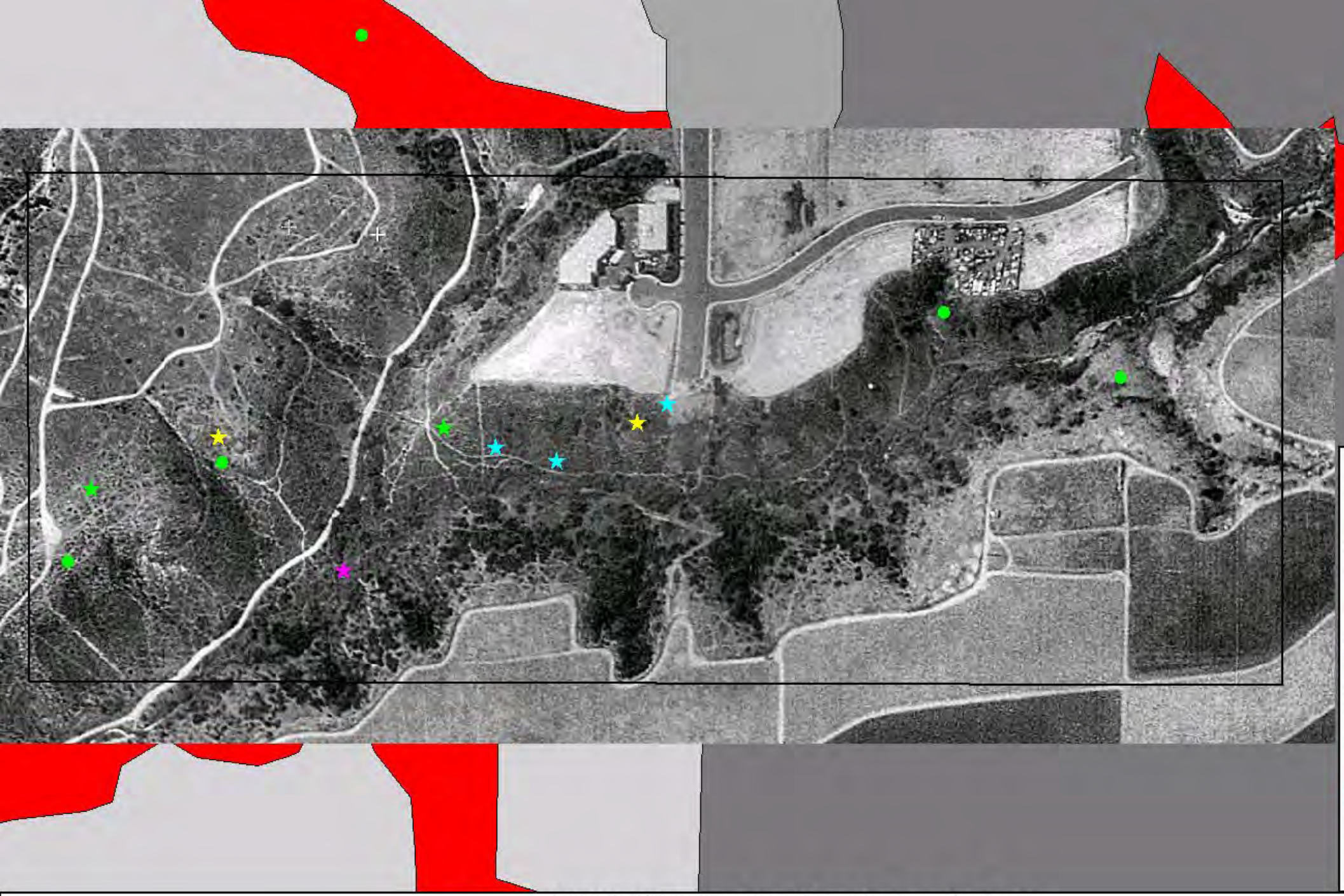
200 0 200 400 Feet

MSCP CSS Species Monitoring Project

Spring Canyon West 100-acre Plot

URS Project No: 58-00167002.01

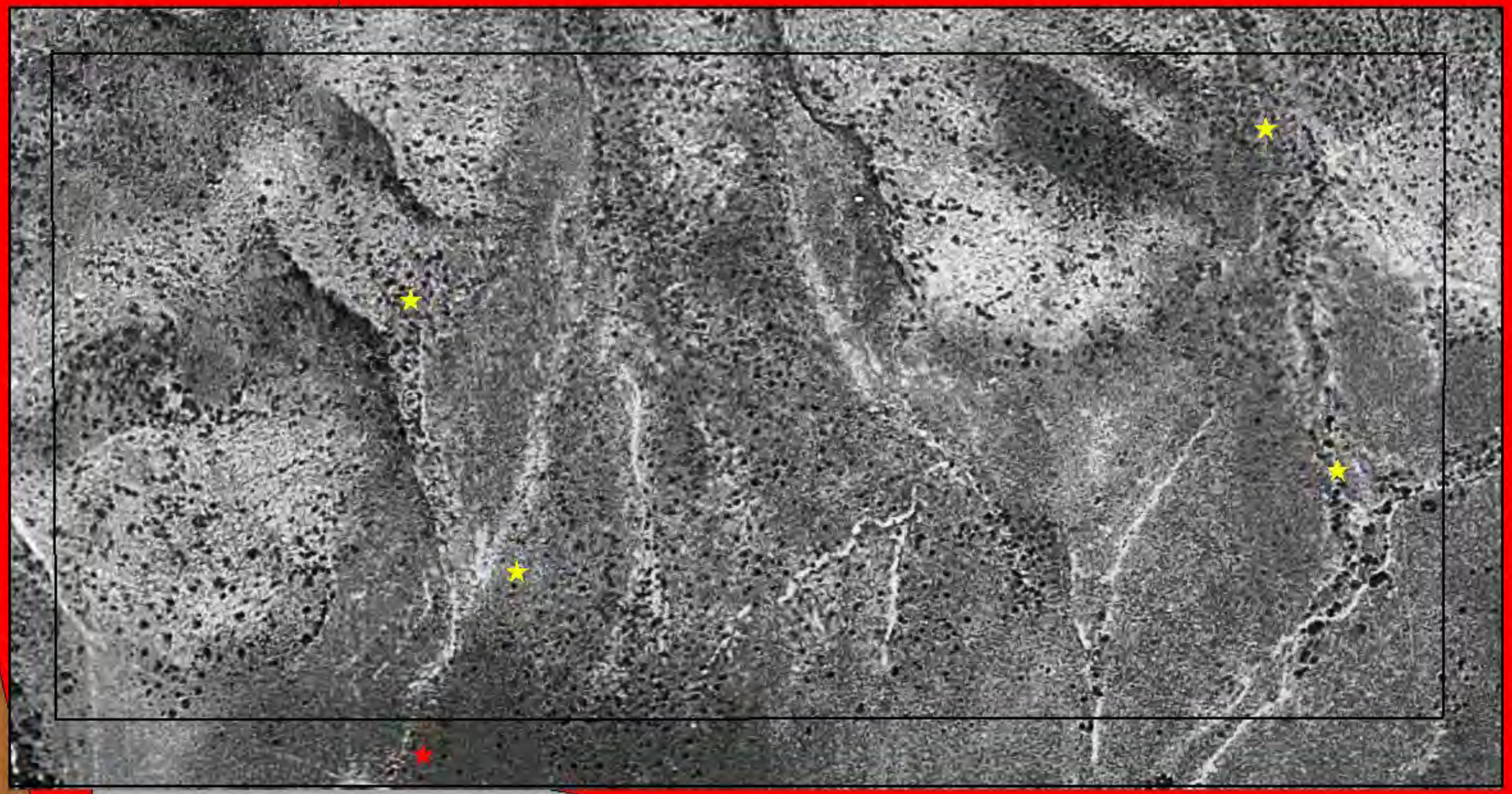
Figure 9A



MSCP CSS Species Monitoring Project
Spring Canyon East 100-acre Plot

URS Project No: 58-00167002.01

Figure 9B



Legend

2001 Sensitive Species Locations

Rufous-crowned Sparrow

Western Whiptail

Plot Boundary

Vegetation

Disturbed

Developed

Coastal Bluff Scrub

Coastal Sage Scrub

Mixed Chaparral-Sage Scrub

Mixed Oak Woodland

Coniferous Forest

N

200 0 200 400 Feet

MSCP CSS Species Monitoring Project

Marron Valley West 150-acre Plot

URS Project No: 58-00167002.01

Figure 10A

Legend

2001 Sensitive Species Locations

Rufous-crowned Sparrow

Historical Sensitive Species Locations

California gnatcatcher

Plot Boundary

Vegetation

Coastal Sage Scrub

Chaparral

Riparian

N

100 0 100 200 300 Feet

MSCP CSS Species Monitoring Project
Marron Valley East 50-acre Plot

URS Project No: 58-00167002.01

Figure 10B