CMP Resource-Specific Monitoring 2016 Annual Report

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Contents

Tables

Acronyms and Abbreviations

ASMDs	area specific management objectives
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CMP	Comprehensive Monitoring Plan
County	County of San Diego
DPR	Department of Parks and Recreation
ESA	Endangered Species Act
FMP	Framework Management Plan
GPS	Global Positioning System
HCP	Habitat Conservation Plan
MSCP	Multiple Species Conservation Plan
MSP	Management Strategic Plan
MSPA	Management Strategic Plan Area
NCCP	Natural Community Conservation Planning
NVCS	National Vegetation Classification System
ORV	Off Road Vehicle
SANDAG	San Diego Association of Governments
SDMMP	San Diego Management and Monitoring Program
SKR	Stephens' kangaroo rat
USFWS	U.S. Fish and Wildlife Service

Summary

As a participant in the San Diego Multiple Species Conservation Plan (MSCP), the County of San Diego (County) is obligated to conduct biological monitoring of habitats and species covered by the MSCP, within County-owned and managed conserved lands (open space parks and preserves) overseen by the County of San Diego Department of Parks and Recreation (DPR), to ensure that the MSCP biological conservation goals and conditions for species coverage are being met.

The County has prepared a Comprehensive Monitoring Plan (CMP) to provide detailed specifications for implementation of adaptive management and monitoring, which includes focused goals and objectives for target resources and detailed monitoring protocols. During this reporting period, the County continued robust implementation of the Comprehensive Monitoring Plan (CMP). The CMP prioritizes preserve level monitoring to allocate funding where it is most needed. The main goal for biological monitoring is to collect high quality, accurate data to detect population trends, changes in habitat quality, and wildlife corridor functionality to guide adaptive management for the preserves.

During the reporting period, ICF in support of the County, performed habitat and resource specific surveys and monitoring in four Preserves identified in the CMP for 2016 (Boulder Oaks, Lusardi Creek, Sycamore Canyon/Goodan Ranch and Ramona Grasslands Preserves). ICF performed resource specific monitoring for San Diego thornmint, San Miguel savory, variegated dudleya, arroyo toad, burrowing owl, Stephens' kangaroo rat, San Diego fairy shrimp, and vernal pool/alkali playa habitat. Rare plant monitoring plots were evaluated for San Diego thornmint at Sycamore Canyon/Goodan Ranch Preserve, San Miguel savory at Boulder Oaks Preserve, and variegated Dudleya at Lusardi Creek Preserve. An arroyo toad habitat assessment was conducted at Ramona Grasslands Preserve. A habitat assessment for burrowing owl was conducted at Sycamore Canyon/Goodan Ranch, Boulder Oaks, and Ramona Grasslands Preserves, and breeding-season surveys were conducted at Ramona Grasslands Preserve. Twenty-eight monitoring plots for Stephens' kangaroo rat were assessed at Ramona Grasslands Preserve, and ten monitoring plots had live trapping in November 2016. Twenty vernal pools were identified in the CMP for focused monitoring in Ramona Grasslands Preserve. Dry season fairy shrimp surveys and quantitative monitoring were conducted in these twenty pools in 2016. Wet season fairy shrimp surveys and hydrologic pool monitoring were performed in December 2016 to April2017; results of the surveys conducted primarily 2017 are included in the 2017 monitoring report.

This report summarizes all survey and monitoring methodologies, data collected during the 2016 survey period (March through November 2016), and includes recommendations for adaptive management.

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Chapter 1
Introduction

1.1 Purpose of the Project

As a participant in the Multiple Species Conservation Plan (MSCP), the County of San Diego (County) is obligated to conduct biological monitoring of habitats and species covered by the MSCP to ensure that the MSCP biological conservation goals and conditions for species coverage are being met. The County has prepared a Comprehensive Monitoring Plan (CMP) (ESA & ICF 2015) to provide detailed specifications for implementation of adaptive management and monitoring within County-owned and managed conserved lands (open space parks and preserves) overseen by the County of San Diego Department of Parks and Recreation (DPR). The CMP is an adaptive implementation plan that includes focused goals and objectives for target resources and detailed monitoring protocols and is intended to achieve the area specific management objectives (ASMDs) for species per the adopted South County MSCP Framework Management Plan (FMP).

To comply with the CMP's resource-specific goals and objectives, resource specific monitoring was conducted in four CMP Preserves identified in the CMP for 2016 (Boulder Oaks, Lusardi Creek, Sycamore Canyon/Goodan Ranch and Ramona Grasslands Preserves). ICF performed resource specific monitoring for San Diego thornmint, San Miguel savory, variegated dudleya, arroyo toad, burrowing owl, Stephens' kangaroo rat, San Diego fairy shrimp, and vernal pool/alkali playa habitat.

The main goal for resource-specific monitoring is to collect high quality, accurate data, to detect population trends, changes in habitat quality, and wildlife corridor functionality to guide adaptive management for the preserves and to ensure that the conservation goals of the MSCP are being met.

1.2 Multiple Species Conservation Program Context

The San Diego MSCP is a comprehensive habitat conservation planning program and one of several subregional habitat planning efforts in San Diego County that contribute to the preservation of regional biodiversity through coordination with other habitat conservation planning efforts throughout southern California. Agencies participating in the MSCP include the County, other local jurisdictions, the U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Wildlife (CDFW). Local jurisdictions and special districts implement their respective portions of the subregional MSCP Plan through Subarea Plans, which describe specific implementing mechanisms for the MSCP.

The combination of the subregional MSCP Plan and Subarea Plans serve as a Multiple Species Habitat Conservation Plan (HCP) pursuant to Section 10(a)(1)(B) of the Federal Endangered Species Act (ESA), the Natural Community Conservation Planning (NCCP) Program pursuant to the California NCCP Act of 1991 (amended in 2001), and the California Endangered Species Act (CESA). The South County MSCP Subarea Plan was adopted in October 1997 and covers 23 vegetation communities and 85 plant and animal species. The County is preparing the North County Plan for the northwestern unincorporated areas of the County. The North County Plan will help conserve

habitat that benefits numerous species, including the 29 species proposed for coverage under the plan.

Species-specific management and monitoring requirements for the South County MSCP are summarized in Table 3-5 of the MSCP Plan. In addition, the assurances and obligations to implement the South County MSCP Subarea Plan have been established in the Implementing Agreement, which was signed by the County, USFWS, and CDFW.

Chapter 2
Study Area Description

2.1 Project Location

Currently, this CMP includes the following 10 open space parks and preserves: Boulder Oaks Preserve, Del Dios Highlands Preserve, El Capitan Preserve, El Monte Regional Park, Lakeside Linkage Preserve, Lusardi Creek Preserve, Oakoasis Preserve, Ramona Grasslands Preserve, Stelzer Regional Park, and Sycamore Canyon/Goodan Ranch Preserve. During this reporting period (March – November 2016), ICF performed resource-specific monitoring in four preserves identified in the CMP (Boulder Oaks, Lusardi Creek, Sycamore Canyon/Goodan Ranch, and Ramona Grasslands Preserves) (Appendix A: Figures 1 and 2).

All of the preserves, with the exception of Ramona Grasslands and a portion of Del Dios Highlands, are within the South County MSCP and will be monitored and managed in accordance with the Implementing Agreement (County of San Diego 1998). Ramona Grasslands Preserve and the northern half of Del Dios Highlands Preserve are located within the draft North County Plan area and are included at this time due to the number of sensitive onsite resources, and existing conservation easements and deed restrictions that require their conservation and management. Several of the preserves in the CMP (Boulder Oaks, El Capitan, El Monte Regional Park, Oakoasis, and Stelzer Regional Park) are clustered together, and have similar topography, vegetation communities, and covered species. Additional preserves will be added to this CMP in the future. Monitoring prioritization, goals, objectives, and monitoring protocols will be re-evaluated, and the CMP will be revised every 8 years. Additional preserves that are not yet included in the CMP will be incorporated at that time.

Baseline biodiversity inventories have been completed for each of the CMP Preserves—Boulder Oaks (ICF 2013), Del Dios Highlands (TA 2008), El Capitan (ICF 2008a), El Monte Regional Park (ICF 2008b), Lakeside Linkage (ICF 2008c), Lusardi Creek (ICF 2008d), Oakoasis (ICF 2008e), Ramona Grasslands (RECON 2005; ICF 2010), Stelzer Regional Park (ICF 2008f), and Sycamore Canyon/Goodan Ranch (ICF 2008g).

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Chapter 3
Methods

Resource-specific monitoring followed the methods and key considerations as outlined in the CMP (ESA and ICF 2015) by Preserve and are described below.

3.1 Rare Plant Monitoring

As outlined in the CMP, seven rare plant species—San Diego thornmint (*Acanthomintha ilicifolia*), Encinitas baccharis (*Baccharis vanessae*), Lakeside ceanothus (*Ceanothus cyaneus*), San Miguel savory (*Clinopodium chandleri*), variegated dudleya (*Dudleya variegata*), willowy monardella (*Monardella viminea*), and spreading navarretia (*Navarretia fossalis*)—were prioritized for resource-specific monitoring. Species prioritization focused only on species for which population-level species-specific monitoring was considered critical for effective management.

Resource-specific monitoring was conducted in 2016 for three of the rare plant species: San Diego thornmint, San Miguel savory, and variegated dudleya. Resource-specific monitoring followed the Management Strategic Plan (MSP) 2016 Rare Plant Monitoring Protocol prepared by SDMMP. Establishment of permanent monitoring plots was conducted from April through May 2016 (Table 1).

Table 1. MSP Rare Plant Permanent Monitoring Plot Establishment

Date	Species	# Permanent Monitoring Plots	Preserve	Name of Biologists
April 22, May 4, and May 5, 2016	San Diego Thornmint	10	Sycamore Canyon/Goodan Ranch	Carol Crafts, Karen Larsen Gordon, Nicole Salas, Lance Woolley
April 6 and 16, 2016	San Miguel Savory	2	Boulder Oaks	Lance Woolley, Nicole Salas
April 27, 2016	Variegated Dudleya	1	Lusardi Creek	Lance Woolley, Nicole Salas

The most current MSP Rare Plant Monitoring Protocol was used to establish permanent monitoring plots and monitor sensitive plant occurrence status. The protocol includes the following steps:

- The perimeter of the current extent of the occurrence was mapped when feasible. When mapping the current extent of the occurrence was not feasible polygons delineating the extent of the occurrence from previously conducted biological baseline surveys were used as the current extent and surveyed for accuracy. Once the current extent of the occurrence was established the number of plants within the current mapped extent and area of the current mapped extent were recorded.

- Monitoring plots consisted of a 10-meter radius circle and were established within the current extent of the occurrence for each species. The center point of the monitoring plot was mapped with a sub-meter GPS unit and permanently marked with rebar. A permanent aluminum marker stenciled with the monitoring plot's number was installed on top of the rebar. The plot number consisted of a two or three letter code for the Preserve name, the year the plot was established, and the numerical order the plot was established within the Preserve. For example, BO201502 indicates that this plot is in Boulder Oaks Preserve, was established in 2015, and is the second monitoring plot established within the Preserve.
- Once a monitoring plot was established monitoring activities were conducted and included recording number of plants per plot, phenological stages of plants, evidence of herbivory, disease, and stunted growth. Associated species within the monitoring plot were recorded and a habitat assessment was conducted.
- A photo point was established at the edge of the monitoring plot, mapped with a sub-meter GPS unit, and permanently marked with rebar. A permanent aluminum marker stenciled with the code PP (Photo Point) was installed on top of the rebar. The photo point was placed to allow for the best vantage point of the entire monitoring plot. A picture was taken from the photo point facing towards the center point of the plot. The cardinal direction, elevation, and camera angle were recorded for each photo;
- A threats assessment was conducted within the current/maximum extent of the occurrence and an adjacent 10-meter buffer.

Additional data not specified in the SDMMP was also collected for San Diego thornmint, San Miguel savory, and variegated dudleya, as follows:

San Diego Thornmint

- Clay lenses in the vicinity of each San Diego thornmint subpopulation within Sycamore Canyon/Goodan Ranch were mapped using a Global Positioning System (GPS) unit with sub-meter accuracy. This will help identify the boundaries of potential habitat for San Diego thornmint in a given area.
- For each occurrence on Sycamore Canyon/Goodan Ranch and Ramona Grasslands Preserves, a soil type and texture field assessment was conducted per the CNPS vegetation rapid assessment methodology (Brewer and McCann 1982 in CNPS 2007) as described in Section D.2, Appendix D of the Adaptive Management Framework for San Diego Thornmint (CBI 2014).
- Prior to establishing monitoring plots, current and historical populations data within Sycamore Canyon/Goodan Ranch Preserve were reviewed to identify historical locations of the species that might no longer support thornmint. Data sources reviewed include CNDDB occurrence data as well as SanBIOS species data.

San Miguel Savory

- Previously documented occurrences of San Miguel Savory (ICF 2013) were visited within the Boulder Oaks Preserve and a survey in the vicinity of these occurrences in suitable habitat was conducted to document additional occurrences.

- All observed plants were mapped using a sub-meter accurate GPS unit and tagged with individually numbered aluminum tags.

Variegated Dudleya

The presence of known occurrences within Lusardi Creek and Sycamore Canyon/Goodan Ranch Preserves were surveyed and all observed plants were mapped using a sub-meter accurate GPS unit.

3.2 Arroyo Toad

3.2.1 Habitat Condition and Threats Assessment along Santa Maria Creek within Ramona Grasslands Preserve

Using coordinates obtained from USGS, the monitoring reaches along Santa Maria Creek were located and surveyed (Appendix A: Figure 3) on April 27 and May 4, 2016 by ICF biologists Manna Warburton and Will Kohn. Within the monitoring reaches along Santa Maria Creek, a habitat assessment was conducted to document the current condition of arroyo toad habitat. Ponding was inspected for presence of arroyo toad tadpoles or eggs, and the presence of any predators including bullfrogs, bullfrog tadpoles, fish, and crayfish. Locations of perennial invasive vegetation, including tamarisk or giant reed, was mapped. Representative photographs of the habitat condition were taken. Observations of aquatic wildlife were recorded.

3.2.2 Evaluate Monitoring Results and Implement Adaptive Management Actions as Necessary

Adaptive management recommendations, if any, will be made based on the results of the current habitat assessment and provided to DPR. All GIS data including, observed threats and arroyo toad observations will be submitted to DPR and be consistent with the SanBIOS format.

3.3 Burrowing Owl

3.3.1 Identify, Characterize, and Delineate Burrowing Owl Habitat

A detailed habitat assessment was conducted within Boulder Oaks, Sycamore Canyon/Goodan Ranch, and Ramona Grasslands Preserves to identify areas suitable for burrowing owl foraging and breeding, and capable of supporting no less than one node (i.e., five pairs). Burrowing owl habitat assessments and surveys were conducted on April 23, May 26, May 31, and July 13, 2016.

The habitat assessment followed the methodology described in the CDFW Staff Report on Burrowing Owl Mitigation (CDFG 2012). Habitat suitability was evaluated based on the most current knowledge of burrowing owl habitat preferences, such as soil type, topography, presence/absence of ground squirrels, presence/absence of refugia, presence/absence of or protection from predators, presence/absence of burrows, vegetation (low/open vs. tall/dense), etc. High priority areas were

identified (e.g. areas with an established ground squirrel population and other preferred habitat characteristics).The habitat evaluations include documentation of site conditions, an evaluation of threats and other limiting factors (such as lack of burrows or ground squirrels), and areas deemed as suitable habitat displayed on a map.

3.3.2 Monitor the Status of the Burrowing Owls on the Ramona Grasslands Preserve

Surveys were conducted for burrowing owls within up to 200 acres of suitable habitat (identified above) within Ramona Grasslands Preserve during the breeding season (February 15 through July 15). As vegetation was low within the identified survey areas and subsequent visibility was high, and temperatures were moderate, surveys were conducted throughout the day and not restricted to dawn and dusk.

Data would have been collected for observation of burrowing owls and/or signs of burrow occupancy using GPS coordinates, but no burrowing owls or burrows were observed.

3.3.3 Conduct Threats Assessment and Habitat Condition Assessment within sampling areas in the vicinity of Documented Occurrences within Ramona Grasslands Preserve

A threats assessment and habitat condition assessment was not performed because no burrowing owl individuals or sign were observed during 2016 surveys and the County does not have any data regarding locations of any recent breeding on Ramona Grasslands Preserve.

3.4 Stephens' Kangaroo Rat

The following methodology represents the implementation of DPR's CMP specifically for Stephens' kangaroo rat (SKR) monitoring at the Ramona Grasslands Preserve. This methodology resembles the methods used by Cheryl Brehme during the SKR monitoring at Camp Pendleton (Brehme et al. 2013).

3.4.1 Burrow/Sign Search and Habitat Characterization

- DPR had selected SKR Monitoring Areas within Ramona Grasslands Preserve and included Grazing Management Units 2A, 2B, and 3A and the 3-acre SKR Management Area; however, not all portions of Grazing Management Units 2A and 2B were included in this monitoring effort. Instead, the monitoring area for these two grazing units was confined to SKR Management Areas located within these management units. As depicted in Appendix A: Figure 4, SKR Management Area 1 is located on the west end of the Ramona Airport and extends into portions of Grazing Management Units 2A and 2B. SKR Management Area 2 is located north of the Ramona Airport and extends into portions of Grazing Management Unit 2B. Grazing Management Unit 3A is not located within a SKR Management Area; thus, the entire management unit was included in the monitoring effort. Within these Monitoring Area boundaries, a 50 x 50 square meter grid

pattern was overlaid onto georeferenced aerial photograph. Using the grid overlay, twenty-five 50 x 50 meter square sample plots were randomly selected. In addition, three sample plots were selected within SKR Management Area 3 (3-acre SKR Management Area). Appendix A: Figure 5 depicts the 2016 SKR Monitoring Area, 50 x 50 meter grid, and randomly selected 50 x 50 meter sample plots.

- Between November 13 and 15, 2016, Stephen Montgomery and Phil Richards navigated to all 28 sample plots using Avenza Maps 3.0.3 app on an Apple iPad and iPhone. Upon arrival to each sample plot, all four corners of the plot were flagged and a photograph was taken from the southeast corner facing northwest. The sample plot was then systematically traversed on foot to search for active sign of kangaroo rat (e.g., burrows, tracks, dust bathing sites, scat, and runways).
- For each sample plot, a data sheet was populated to document habitat covariates. Data sheets were modeled from the field forms used by Brehme et al. 2013 and provided documentation of estimates of bare ground; percent cover of grass, forbs, shrub, and litter; abundance of gopher and ground squirrel burrows; types of disturbances; types of kangaroo rat sign observed; land use; and comments.

3.4.2 Confirmation Trapping

Of the 28 sample plots assessed, 10 plots were scoped to receive confirmatory trapping as part of the SKR monitoring program. Given the limitation as to the number of plots to be trapped, plots were selected based on the following criteria:

- Plots that exhibit moderate to high potential for SKR based on conditions and observed sign;
- Plots that exhibit moderate to high potential for Dulzura kangaroo rat (*Dipodomys simulans*) (DKR) based on conditions and observed sign, but confirmation trapping was deemed necessary; and/or
- Plots that exhibit suitable conditions for SKR and serves to provide a representative sampling of nearby plots with very similar conditions and sign.

Between the evening of Sunday, November 13th and the morning of Thursday, November 17th, live mammal trapping was conducted at the 10 sample plots within the 2016 SKR monitoring area. The lead biologist for the SKR trapping was permitted SKR biologist Stephen J. Montgomery (USFWS recovery permit # TE-745541-11). SKR-permitted ICF biologist Phillip Richards (permit # TE-095896) assisted. The trapping effort incorporated the following:

- Each plot was trapped for two consecutive nights and consisted of a total of 25 traps in a 5 x 5 array, spaced approximately 10 meters apart. When obvious sign was within a few meters of a trapping point, traps were placed next to burrow entrances, dust bathing sites, or runways to maximize capture success.
- The trapping effort included 10 plots with 25 traps used in each plot for a total of 250 trapping locations, which were covered in two sessions. Each session covered 5 plots (125 traps) over 2 nights. For logistical purposes, the west side of the Preserve was trapped for session 1 and included sample plots A3-1, 3A-1, 3A-5, 3A-6, and 3A-7. The east side of the Preserve was trapped for session 2 and included sample plots A1-6, A2-1, A2-5, A2-6, and A2-7.

- All traps used in this survey were 12-inch Sherman live traps with doors modified to minimize potential risk of injury (e.g., tail lacerations or excisions) to kangaroo rats and other small mammals. A seed mixture of all-purpose wild bird food was used as bait. Traps were initially set and baited during the early evening. Traps were systematically checked near midnight and again at dawn for two consecutive nights.
- Overnight temperatures did drop below 50 degrees Fahrenheit each night of trapping; however, because relative humidity was low and rodent activity seemed normal, as demonstrated with numerous captures, traps were left open throughout each night with the exception of the last night (i.e., 11/16/2016). On the last night, overcast conditions moved in late and drizzle to light rain was forecasted. As a result of the observed conditions and wet forecast, traps were closed during the midnight check on the last night.
- Each captured animal was identified to the species level. Because DKR and SKR are similar, each captured kangaroo rat was carefully examined for distinguishing characteristics. Sex, reproductive status (e.g., scrotal male or females with vagina perforate), and estimated age (e.g., adult, juvenile, or young adult) were documented. Captured kangaroo rats were released where captured. For non-target animals, such as deer mice, animals were identified to species and released unharmed immediately at the point of capture without regularly documenting sex or other additional information.

A report summarizing the methods and results of the SKR surveys was submitted to the USFWS, as required by the biologists' recovery permits (ICF 2017a).

3.5 San Diego Fairy Shrimp

3.5.1 San Diego Fairy Shrimp Monitoring within Ramona Grasslands Preserve

In order to determine baseline occupancy and approximate population density of San Diego fairy shrimp, dry and wet season branchiopod surveys were conducted in the fall of 2016 and the fall/winter of 2016-2017, respectively, within the subset of 20 vernal pools selected from the pools in the southeast portion of the Ramona Grasslands Preserve, also known as the 'Ramona Airport mitigation pools' that have been conserved as mitigation for the Ramona Airport Runway Expansion Project, the pools present at the 'Oak Country' area of the Ramona Grasslands' southwest portion, those located on the 'Cagney' parcel in the southeast portion of the Ramona Grasslands Preserve, and those located to the east of the Ramona Grasslands Preserve within the 'Cumming Ranch' open space. (Appendix A: Figure 6). The reporting period for this annual report is from March 2016 to November 2016, as such the results of the wet season fairy shrimp surveys are not included in this annual report.

The 15-Day Notice to Protocol Surveys for Listed Vernal Pool Branchiopods, including dry and wet season surveys within the Ramona Grasslands Preserve, was provided to Stacey Love Recovery Permit Coordinator of the Carlsbad Fish and Wildlife Office on August 31, 2016. Surveys for vernal pool branchiopods were conducted to comply with the USFWS *Survey Guidelines the Listed Large Branchiopods* (Guidelines; USFWS 2015).

3.5.1.1 Soil Collection

Dry season soil sample collection was conducted by permitted biologist Lance Woolley (Permit # TE-14560C) on September 16, 2016 with assistance from ICF biologist Nicole Salas. Soil collection followed the Guidelines *(*USFWS 2015) as described below. For each of the 20 vernal pools, two perpendicular transects were visually estimated, with one transect passing along the pools lowest point and the second transect passing through the pools second lowest point. Depending on the area of the pool, a minimum of 10 core samples of approximately 100-milliliter (ml) aliquots were removed at each sub-sample site (for a total of 1 liter/ponded area), ensuring that no more than 10% of the sampled vernal pool's surface area was disturbed. Soil samples were taken as follows: two in the pool's lowest point, one at the pool's second lowest point, and two radiating in each of the four directions on the transect lines, at least 1.0 m from the pool center. The soil samples taken from each vernal pool were stored in a separate container with the collection date and vernal pool ID.

3.5.1.2 Soil Processing and Analysis

Soil samples were processed by ICF fairy shrimp biologist and USFWS permitted cyst-identifier Dale Ritenour (TE-58888A-1), assisted by Kimberly Davis, in accordance with the Guidelines. For each pool, the ten soil samples were measured into individual 250-ml plastic containers. These samples were hydrated in tap water then washed through a set of sieves. Material passing through a Number 45 (355 micrometer) USA Standard Testing Sieve, A.S.T.M.E.-11 specification was caught on a Number 70 (212 micrometer) Sieve. The caught sample was rinsed into a container with approximately 200 milliliters of a saturated brine solution to float organic material, including fairy shrimp cysts. The material floating on the brine was decanted onto a paper filter. The organic material collected on the paper was examined under a stereo zoom microscope. Distinctive fairy shrimp cysts, of any Branchiopod species, were counted if present. All sieves were thoroughly rinsed between pools to ensure no cysts adhered to the surfaces.

Fairy shrimp cysts were identified to the genus level through microscope examination. *Streptocephalus* cysts can be discerned from *Branchinecta* cysts based on cyst surface characteristics. Riverside fairy shrimp is the only member of the *Streptocephalus* genus found within San Diego County; therefore any observed *Streptocephalus* cysts would be accepted as Riverside fairy shrimp. San Diego fairy shrimp are the only *Branchinecta* species currently known from Ramona Grasslands Preserve, so any *Branchinecta* cysts are currently assumed to be San Diego fairy shrimp.

A summary survey report was prepared for the dry season monitoring and was submitted to the USFWS, as required by the biologist's recovery permit (ICF 2017b)

3.6 Vernal Pool Habitat/Alkali Playa Habitat

3.6.1 Quantitative Vegetation Monitoring at Ramona Grasslands Preserve

Quantitative vegetation monitoring was conducted in vernal pools on May 3, 11, and 12, 2016 by ICF biologists Lance Woolley, Dale Ritenour, Courtney Casey, and Ryan Laden. Date that surveys were

conducted within the subset of 20 vernal pools selected from the Ramona Airport mitigation pools, Cagney, Oak Country, and Cumming Ranch vernal pools is presented in Appendix A: Figure 6. The quantitative vegetation monitoring followed the Vernal Pool Vegetation Monitoring Protocol – Quadrat Methodology - detailed in the Ramona Grasslands Preserve Area Specific Management Directives (CBI 2007).

Following the protocol, one transect was established on randomly selected compass bearing and a second established perpendicular to the first. Quadrats, 10 cm x 50 cm in size, were randomly selected across these transects, generally five quadrats to each transect. Each quadrat was assigned to a visually estimated depth zone within each pool: 1) center (deepest area), 2) intermediate, and 3) pool edge (upland transition). The cover of all plant species (including bare ground and thatch) was recorded within each quadrat. Using the California Native Plant Society's (CNPS) plant cover methodology absolute percent cover of vernal pool indicator plant species (USACE 1997), total cover of native species, and total cover of invasive non-native species for each pool is grouped in the following classes to track changes in cover over time: <1%, 1–5%, 5–10%, 10–25%, 25–50%, 50–75%, and 75%+. Additionally, a comprehensive plant list was recorded of all plant species observed in each pool. Grazing intensity (low, medium, high) was visually estimated. All species found in a pool, whether or not present in a quadrat, was separately recorded for each vernal pool.

Permanent photopoints were established at each pool in 2016; the location was recorded with a sub-meter accuracy GPS and the direction of each photo was recorded.

3.6.2 Monitoring Results Evaluation

The following data was analyzed for each pool: total cover of the target species, total cover of vernal pool indicator species, total cover of native species, total cover of non-native species, and species diversity (number of plant species).

Chapter 4
Results

4.1 Rare Plant Monitoring

Thirteen rare plant monitoring plots were established within the CMP Preserves in 2016 (Appendix A: Figures 7a-7d). Ten monitoring plots for San Diego thornmint were established within the Sycamore Canyon/Goodan Ranch Preserve. Two monitoring plots for San Miguel savory were established Boulder Oaks Preserve. One monitoring plot for variegated dudleya was established in Lusardi Creek Preserve. Descriptions of the monitoring plots are provided below and summarized in Table 2. Photos are provided in Appendix B and MSP Rare Plant Occurrence Monitoring forms are included as Appendix C.

Table 2. MSP Rare Plant Monitoring Summary Results

Species	Preserve	Plot #	Center Point Coordinates	Population		Native		Nonnative		Management Recommendations
				# Individuals	% Cover	# Species	% Cover	# Species	% Cover	
Acanthomintha Ilicifolia	Sycamore Canyon	SYGOACIL01	E 501592 N 3644272	143	3	12	17	9	37	Conduct weed management on *Brachypodium distachyon* and *Centaurea melitensis*.
		SYGOACIL02	E 501522 N 3644277	33	1	14	8	11	40	
		SYGOACIL03	E 501546 N 3644380	495	4	18	20	6	20	
		SYGOACIL04	E 502555 N 3643683	0	0	9	6	4	60	
		SYGOACIL05	E 502915 N 3643523	62	1	22	28	4	45	
		SYGOACIL06	E 502252 N 3644084	11, 618	28	16	14	5	35	
		SYGOACIL07	E 502375 N 3644068	105	1	10	15	6	45	
		SYGOACIL08	E 502267 N 3644249	2,576	9	8	69	7	10	
		SYGOACIL09	E 501735 N 3644404	88	1	10	28	6	35	
		SYGOACIL10	E 501927 N 3644370	2,500	30	9	21	4	30	
Clinopodium chandleri	Boulder Oaks	BOCLCH01	E 505067 N 3646951	25	1	14	55	2	1	
		BOCLCH02	E 505422 N 3647075	46	2	13	46	3	1	Treat any *Ehrharta calycina* in vicinity.
Dudleya variegata	Lusardi Creek	LCDUVA01	E 484873	79	2	13	22	5	22	Conduct weed management on *Brachypodium distachyon*

4.1.1 San Diego Thornmint Monitoring Plots

4.1.1.1 Sycamore Canyon/Goodan Ranch Preserve

Ten monitoring plots were established within the San Diego thornmint population in Sycamore Canyon/Goodan Ranch Preserve (Appendix A: Figure 7A). Within the plots a total of 17, 770 San Diego thornmint plants were detected in 2016. The entire population of San Diego thornmint within Sycamore Canyon Preserve is estimated to be somewhere in the range of 20,000-30,000 plants. Additionally, approximately 41 acres of clay lens habitat with the potential to support San Diego thornmint populations was mapped (Appendix A: Figure 7b).

Overall the habitat of thornmint was under heavy invasion from purple false brome (*Brachypodium distachyon*) and tocalote (*Centaurea melitensis*). In a few instances there are relatively intact areas of San Diego thornmint with high cover of special-status species small-flowered bindweed (*Convolvulus simulans*) and Palmer's grappling hook (*Harpagonella palmeri*) and low cover of invasive plants.

Monitoring Plot Number SYGOACIL01

Monitoring plot SYGOACIL01 was established in the northwestern portion of the San Diego thornmint population. Center point coordinates of the plot are E 501592, N 3644272. Within the plot, 143 San Diego thornmint plants were detected, all of which were flowering and/or fruiting. Total vegetative cover in the plot was 53 percent, with 17 percent native cover and 37 percent nonnative cover. Invasive plants, purple false brome, tocalote, and storksbill, accounted for the highest cover of all plants. Additional sensitive plant species detected within the plot include small-flower bindweed and Palmer's grappling-hook.

Monitoring Plot Number SYGOACIL02

Monitoring plot SYGOACIL02 was established in the northwestern portion of the San Diego thornmint population. Center point coordinates of the plot are E 501522, N 3644277. Within the plot, 33 San Diego thornmint plants were detected, all of which were flowering and/or fruiting. Total vegetative cover in the plot was 49 percent, with 9 percent native cover and 40 percent nonnative cover. Invasive plant, purple false brome accounted for the highest cover of all plants. Additional sensitive plant species detected within the plot include small-flower bindweed and Palmer's grappling-hook.

Monitoring Plot Number SYGOACIL03

Monitoring plot SYGOACIL03 was established in the northwestern portion of the San Diego thornmint population. Center point coordinates of the plot are E 501546, N 3644380. Within the plot, 495 San Diego thornmint plants were detected, all of which were flowering and/or fruiting. Total vegetative cover in the plot was 44 percent, with 24 percent native cover and 20 percent nonnative cover. Invasive plant, tocalote accounted for the highest cover of all plants. Additional sensitive plant species detected within the plot include Palmer's grappling-hook.

Monitoring Plot Number SYGOACIL04

Monitoring plot SYGOACIL04 was established in the southeastern portion of the San Diego thornmint population. Center point coordinates of the plot are E 50255, N 3643683. The plot was established within a historical population of San Diego thornmint, however no San Diego thornmint plants were detected. Total vegetative cover in the plot was 66 percent, with 6 percent native cover and 60 percent nonnative cover. Invasive plants, purple false brome and tocalote accounted for the highest cover of all plants. Additional sensitive plant species detected within the plot include small-flower bindweed.

Monitoring Plot Number SYGOACIL05

Monitoring plot SYGOACIL05 was established in the southeastern portion of the San Diego thornmint population. Center point coordinates of the plot are E 502915, N 3643523. Within the plot, 62 San Diego thornmint plants were detected, all of which were flowering and/or fruiting. Total vegetative cover in the plot was 74 percent, with 29 percent native cover and 45 percent nonnative cover. Invasive plant, purple false brome accounted for the highest cover of all plants. Additional sensitive plant species detected within the plot include a few variegated dudleya and Palmer's grappling-hook.

Monitoring Plot Number SYGOACIL06

Monitoring plot SYGOACIL06 was established in the central-northern portion of the San Diego thornmint population. Center point coordinates of the plot are E 502252, N 3644084. Within the plot, 11,618 San Diego thornmint plants were detected, all of which were flowering and/or fruiting. Total vegetative cover in the plot was 77 percent, with 42 percent native cover and 35 percent nonnative cover. Invasive plant, tocalote accounted for the highest cover of all plants. Additional sensitive plant species detected within the plot include small-flower bindweed and Palmer's grappling-hook.

Monitoring Plot Number SYGOACIL07

Monitoring plot SYGOACIL07 was established in the central-northern portion of the San Diego thornmint population. Center point coordinates of the plot are E 502375, N 3644068. Within the plot, 34 San Diego thornmint plants were detected, all of which were flowering and/or fruiting. Total vegetative cover in the plot was 61 percent, with 16 percent native cover and 45 percent nonnative cover. Invasive plants, purple false brome and tocalote accounted for the highest cover of all plants. Additional sensitive plant species detected within the plot include small-flower bindweed and Palmer's grappling-hook.

Monitoring Plot Number SYGOACIL08

Monitoring plot SYGOACIL08 was established in the central-northern portion of the San Diego thornmint population. Center point coordinates of the plot are E 502267, N 3644249. Within the plot, 2,576 San Diego thornmint plants were detected, all of which were flowering and/or fruiting. Total vegetative cover in the plot was 88 percent, with 78 percent native cover and 10 percent

nonnative cover. Sensitive plant, small-flower bindweed accounted for the highest cover of all plants.

Monitoring Plot Number SYGOACIL09

Monitoring plot SYGOACIL09 was established in the northwestern portion of the San Diego thornmint population. Center point coordinates of the plot are E 501735, N 3644404. Within the plot, 88 San Diego thornmint plants were detected, all of which were flowering and/or fruiting. Total vegetative cover in the plot was 64 percent, with 29 percent native cover and 35 percent nonnative cover. Invasive plant, purple false brome accounted for the highest cover of all plants. Additional sensitive plant species detected within the plot include small-flower bindweed and Palmer's grappling-hook.

Monitoring Plot Number SYGOACIL10

Monitoring plot SYGOACIL10 was established in the northwestern portion of the San Diego thornmint population. Center point coordinates of the plot are E 501927, N 3544370. Within the plot, 2,500 San Diego thornmint plants were detected, all of which were flowering and/or fruiting. Total vegetative cover in the plot was 81 percent, with 51 percent native cover and 30 percent nonnative cover. San Diego thornmint and tocalote accounted for the highest cover of all plants. Additional sensitive plant species detected within the plot include small-flower bindweed.

4.1.1.2 Ramona Grasslands Preserve

The Ramona Grasslands population of San Diego thornmint was not relocated. No monitoring plot was established.

4.1.2 San Miguel Savory Monitoring Plots

4.1.2.1 Boulder Oaks Preserve

A total of 139 San Miguel savory individuals were mapped and tagged with individually numbered aluminum tags. An additional 45 seedlings were also counted. Two monitoring plots were established within the San Miguel savory population (Appendix A: Figure 7C).

Monitoring Plot Number BOCLCH01

Monitoring plot BOCLCH01 was established in the western portion of the San Miguel savory population. Center point coordinates of the plot are E 505067, N 3646951. Within the plot, 25 San Miguel savory plants were detected—21 flowering, 1 vegetative, and 3 fruiting. Total vegetative cover in the plot was 57 percent, with 56 percent native cover and 1 percent nonnative cover. Ramona-lilac (*Ceanothus tomentosus*) accounted for the most cover of all plants. Additional sensitive plant species occurring within the plot include southern mountain misery (*Chamaebatia australis*).

Monitoring Plot Number BOCLCH02

Monitoring plot BOCLCH02 was established in the eastern portion of the San Miguel savory population. Center point coordinates of the plot are E 505422, N 3647075. Within the plot, 46 San Miguel savory plants were detected—39 flowering, 2 vegetative, and 5 fruiting. Total vegetative cover in the plot was 49 percent, with 48 percent native cover and 1 percent nonnative cover. Chamise (*Adenostoma fasciculatum*) accounted for the most cover of all plants. Additional sensitive plant species occurring within the plot include southern mountain misery.

4.1.3 Variegated Dudleya

4.1.3.1 Lusardi Creek Preserve

A total of 199 variegated dudleya individuals were mapped within the Lusardi Creek preserve. One monitoring plot was established in the central portion of the population (Appendix A: Figure 7D).

Monitoring Plot Number LCDUVA01

Monitoring plot LCDUVA01 was established in the eastern portion of the San Miguel savory population. Center point coordinates of the plot are E 484873, N 365255. Within the plot, 79 variegated dudleya plants were detected—71 flowering and 8 vegetative. Total vegetative cover in the plot was 66 percent, with 44 percent native cover and 22 percent nonnative cover. An invasive plant, purple false brome accounted for the most cover of all plants. Additional sensitive plant species occurring within the plot include coast barrel cactus (*Ferocactus viridescens* var. *viridescens*).

4.1.3.2 Sycamore Canyon/Goodan Ranch Preserve

A monitoring plot for variegated dudleya was not established within the Sycamore Canyon/Goodan Ranch Preserve because of the low number of variegated dudleya observed and the fact that a thornmint monitoring plot overlaps with the . Only 11 plants of variegated dudleya were detected, scattered near San Diego thornmint monitoring plot SYGOACIL05. Variegated dudleya were not detected outside of this area in other areas where it was historically observed.

4.2 Arroyo Toad Threats Assessment

A habitat and threats assessment was conducted within the 23 monitoring reaches established by the USGS (Appendix A: Figure 3). Photographs are provided in Appendix B.

4.2.1 General Observations

The stream channel and surrounding upland habitat on Ramona Grasslands Preserve appears to be intact and providing habitat for all life stages of arroyo toads (*Anaxyrus californicus*). There are unvegetated sandy banks providing appropriate foraging area and burrowing refugia for adult animals. While winter-spring 2016 was a below-average rainfall year, at the time of the site visits (April 27th, May 4th, 2016), portions of the creek were wetted and occupied by arroyo toad tadpoles and metamorphs. Recruitment looked strong and large numbers of tadpoles and metamorphs were

observed. Arroyo toad metamorphs and tadpoles were observed in the wetted creek bottom immediately north and south of the Ramona Municipal Water District property where the water district lands overlaps the Santa Maria Creek.

Arroyo toads appeared to be absent from upstream pools further south, and these pools were occupied by western toads (*Anaxyrus boreas*) and bullfrogs (*Rana catesbiana*). Arroyo toads were also absent from downstream pools further north. The stream channel entered a rocky gorge and the habitat changed from braided sandy stream to plunge pools. These pools were occupied by California tree frogs (*Pseudacris cadaverina*) and bullfrogs. Foraging two-stripe garter snakes (*Thamnophus hammondii*) were observed on several occasions. A summary of aquatic species observations is provided in Table 3 and displayed in Appendix A: Figure 8.

4.2.2 Threats

Bullfrogs and mosquitofish (*Gambusia affinis*) were observed throughout the survey area, but were concentrated in areas that appeared to be perennially wetted. This included several sand or silt bottom pools in the upstream reach, and several granite plunge pools in the downstream reach. Both species may have negative impacts on arroyo toad through competition or predation. Because their distribution was patchy, and they were mostly absent from the middle of the survey reach, these predators do not appear to be excluding arroyo toad from the Preserve.

Saltcedar (*Tamarix* spp.) was observed throughout the reach (Appendix A: Figure 9). Saltcedar may negatively impact habitat values for arroyo toad by forming dense monotypic stands, obscuring sandy banks and reducing surface water availability, but no dense stands or larger trees were observed in Santa Maria Creek. The majority of salt cedar observed were short (1-2 m) individual occurrences interspersed through native riparian vegetation. At present, saltcedar does not appear to be negatively impacting habitat values in the survey area. Three small areas of giant reed (*Arundo donax*) were observed in the far northwestern portion of the reach (Appendix A: Figure 9).

Disturbance from domestic cattle was observed in the upper portions (Preserve property immediately north and south of Ramona Municipal Water District inholding in the western portion of the Preserve) of the survey area, but not in the northern portion where the stream enters a gorge. Grazing of cattle is allowed in Santa Maria Creek outside of the arroyo toad breeding season (March 15 – July 31) to reduce levels of vegetation within the creek. Disturbance took the form of denudement of vegetation of sandy banks being used by cattle for grazing and movement through the Preserve. Cattle may directly impact arroyo toad through disturbance of aestivation habitat. However, cattle may offset these impacts by increasing the availability of loose sandy soils surrounding the stream channel through grazing and soil disturbance.

Non-native grasses were observed throughout the survey area and in the Preserve as a whole. Non-native grasses may negatively impact arroyo toad by presenting barriers to movement by metamorph and adult animals attempting to move between breeding and upland habitat. Additionally, grasses may be reducing habitat values of previously unvegetated sandy 10-year flood banks by covering them with vegetation. Adult arroyo toads rely heavily on available sandy soils adjacent to stream habitat for foraging and burrowing refugia.

Table 3. Aquatic Species Observations within Santa Maria Creek Arroyo Toad Monitoring Reaches

Scientific Name	Common Name	Reach Observed
Anaxyrus boreas halophilus	California (Western) toad	35-53
Anaxyrus californicus	Arroyo toad	24-34
**Gambusia affinis*	Mosquitofish	22-36
**Lepomis cyanellus*	Green sunfish	36
**Procambarus clarkii*	Red swamp crawfish	22-23, 29-30, 35-36
Pseudacris cadaverina	California treefrog	23
Pseudacris hypochondriaca	Baja California treefrog	23
**Rana catesbiana*	Bullfrog	22-23, 29-30, 35-36
Thamnophus hammondii	Two-striped garter snake	23-24

* Nonnative species

4.3 Burrowing Owl

The grassland areas of Ramona Grasslands, Boulder Oaks, and Sycamore Canyon/Goodan Ranch Preserves were assessed for habitat suitability for burrowing owl to determine the highest quality habitat to conduct focused surveys. Focus was on presence or abundance of ground squirrels and suitable burrow complexes, and low vegetation height.

Burrowing owl survey areas were chosen on Ramona Grasslands Preserve, as this Preserve was determined to the highest potential area for new observations of breeding season burrowing owl, as discussed below. Survey areas are displayed in Appendix A: Figure 10.

No burrowing owls were observed during 2016 surveys in Ramona Grasslands Preserve. An incidental sighting of burrowing owl was reported by DPR staff within Ramona Grasslands Preserve south of the Ramona Airport, and the observation appears to have been in or before March 2016. No burrowing owls were observed in this area during focused surveys during the breeding season.

4.3.1 Boulder Oaks Preserve

The Boulder Oaks Preserve consists of over 2,000 acres in the central foothills, east of Poway and southwest of Ramona. There are two distinct grassland areas at Boulder Oaks Preserve, one in the southern valley, and a second in the recently acquired northern portion. The southern grasslands of Boulder Oaks Preserve are not currently being grazed. There was a heavy thatch and few ground squirrel burrows observed in this area in May 2016. As few suitable burrows were identified in this area; however, this area was determined to be of lower potential and no focused effort was expended.

The north grasslands, north of the DPR ranger station (formerly Wildwood Ranch), have had heavy grazing and high activity by ground squirrels, providing potential nesting habitat and good visibility, and appeared to be highly suitable habitat for burrowing owl. Avian point count surveys were previously conducted in this grassland area in March-July 2013 by ICF (ICF 2013) and this area has frequent traffic by the onsite DPR staff. Wintering or breeding burrowing owl would likely be incidentally detected if present in the northern grasslands, so further survey effort was conducted in this area.

4.3.2 Sycamore Canyon/Goodan Ranch Preserve

Sycamore Canyon/Goodan Ranch Preserve supports a large grassland area in the northern portion of the Preserve. Three small ground squirrel complexes were observed in this area in May 2016. Much of the grasslands in this area are on heavy clay soils (with many special-status clay-soil plants), which may be less attractive to ground squirrels as burrowing habitat. Following habitat assessment, and because of the general paucity of potential burrows compared to Ramona Grasslands Preserve, further survey effort was not conducted in this area.

4.3.3 Ramona Grasslands Preserve

The Ramona grasslands area of the Ramona valley consists of thousands of acres of open, gently rolling grasslands. The portions of the Ramona grasslands within the Ramona Grasslands Preserve include several areas around the periphery of the Ramona airport and Ramona Municipal Water District lands. This includes areas 1) the large grassland south/southwest of the airport and east of Rangeland Road, 2&3) grasslands west of Rangeland Road and immediately north of Highland Valley Road (Oak Country), 4) a small section of grasslands northwest of Ramona Municipal Water District lands on the west side of the Preserve, 5) approximately 160 acres north of the northern Ramona Municipal Water District pond, and 6&7) the grassland immediately north of Ramona airport (Figure 10). Burrowing owl habitat assessments and surveys were conducted on April 23, May 26, May 31, and July 13, 2016. The focus of the assessments and surveys were to visit the perceived highest quality habitat including burrow complexes with good visibility, to have the highest potential to detect any burrowing owl.

Predators of burrowing owl including coyote (*Canis latrans*), corvids (ravens and crows), and red-tailed hawk (*Buteo jamaicensis*) were observed at Ramona Grasslands Preserve. Ravens were observed nesting in Santa Maria Creek, west of Rangeland Road.

In sections of Ramona Grasslands Preserve south of the airport (Area 1) and west of Rangeland Road and southwest of Ramona Municipal Water District lands (Areas 2&3), ground squirrel complexes were primarily associated with rock outcrops, with few burrows in the open grasslands. Most of the burrows were holes under the boulders. Mediterranean annual grasses (*Bromus* spp., *Hordeum* spp.) and storksbill (*Erodium* spp.) were relatively tall and dense (2-3' tall) in these areas in April and May 2016; tall, dense grasslands may be used by burrowing owl but are not preferred habitat. The rock outcrops did have open areas, good visibility, and burrows, and would be potentially suitable habitat. Areas near Santa Maria Creek, east of Rangeland Road, did however support large numbers of ground squirrel burrows not associated with rock outcrops, as well as two artificial burrows near the fence-line. Rock outcrops north of the southwest portion staging area (off Highland Valley Road) had high level of squirrel activity and appropriate burrows. The boulder piles were mixed in with buckwheat scrub and grassland. This seemed to be the highest quality potential habitat and was surveyed in April, May, and July.

The areas northwest (Area 4) and north (Area 5) of the Ramona Municipal Water District lands had few ground squirrels or burrows, so limited effort was expended in these areas.

The grasslands north of the Ramona Airport (Area 6&7) were distinct in that squirrel burrows were not so confined to rock outcrops in this area. While there were many ground squirrels associated with boulder outcrops (such as north of the west end of the Ramona Airport runway), squirrel burrows were common throughout this area. Soils in this area are mapped as Bonsall sandy loam,

Fallbrook sandy loams, Vista coarse sandy loam, and Vista rocky coarse sandy loam. Bonsall sandy loams are shallow to moderately deep sandy loam with a heavy clay loam subsoil. Fallbrook sandy loams are moderately deep soils with a restrictive subsoil sandy clay loam layer. Vista series are moderately deep sandy loams. All of these soils are friable at the surface, but may have a restrictive layer at 1 to 2 feet deep. This grassland area also contains management areas for Stephens' kangaroo rat. Storksbill was not as tall in this area, giving better potential visibility.

4.4 Stephens' Kangaroo Rat

The following section summarizes the results of the 2016 SKR monitoring effort at the Ramona Grasslands Preserve. Table 4 summarizes dates and conditions during the survey effort.

Table 4. Dates and Weather Conditions

Date	Temperature Range (F)	Cloud Cover Range (%)	Wind Range (mph)
11-13	49 – 88	0	3 – 10
11-14	42 – 88	0	0 – 8
11-15	42 – 86	0	0 – 9
11-16	44 – 74	0 – 100	0 – 10
11-17	41 – 72	100 – 0	3 – 6

4.4.1 Burrow/Sign Search and Habitat Characterization

Of the 28 sample plots receiving an SKR habitat assessment, 15 were characterized as having a high potential for SKR, 2 were characterized as having a moderate potential, 4 were assigned a low potential rating, and 7 were characterized as having no potential and were presumed unoccupied by SKR (see Table 5). The overall rating for SKR potential was based on the quality of potentially suitable SKR habitat and the density of apparent kangaroo rat sign. SKR potential was estimated using the following criteria:

- ***High:***
    - Readily apparent potential SKR sign (particularly scat and burrows);
    - Relatively flat to gently sloped open space;
    - Presence of bare ground;
    - Relatively low living herb density;
    - Extremely low to no shrub density; and
    - Relatively low obstruction factor (O.F.[1]).
- ***Moderate:***
    - Some potential SKR sign (particularly scat and burrows) observed, but very infrequent and/or appeared dated or inactive;

[1] Obstruction factor (O.F.) describes the observable ground level conditions of herbaceous vegetation or dead litter that would appear to obstruct movement of kangaroo rats across the landscape. High O.F. would consist of a very high density of herb and/or dead litter at the ground level. Low O.F. would consist of a low density of herb or dead litter at the ground level, with patches of bare ground being common

  - Gently to moderately sloped open space;
  - Low to moderate shrub percentage;
  - Low to moderate obstruction factor.
- ***Low***:
  - No apparent SKR sign;
  - Moderately sloped open space;
  - Moderate to high shrub percentage;
  - Moderate to high living herb density;
  - Moderate to high obstruction factor.

Table 5 summarizes the results of the habitat assessment for each randomly selected sample plot. Appendix B provides photographs showing conditions at each sample plot. Appendix D includes a copy of the data sheets populated in the field.

Table 5. SKR Habitat Assessment Summary

Plot ID	Bare Ground	Living Herb Density	Shrub/Tree Density	Plant Litter (Dead)	Gopher/Ground Squirrel Density	Obstruction Factor	*Potential K-rat Rat Sign	SKR Potential†	Trapped?/ K-rat Species
A1-1	5-25%	Low	0%	75-95%	Low/Low	Medium	B	High**	No / ---
A1-2	0-5%	Low	0-5%	75-95%	Low/Low	Medium	B, S	High**	No / ---
A1-3	0-5%	Low	0%	75-95%	Low/Low	Low	B, S	High**	No / ---
A1-4	0-5%	Low	0-5%	75-95%	Low/Low	Low-High	B, S	High**	No / ---
A1-5	0-5%	Low-Medium	0-5%	75-95%	Medium/Low	Medium	B	Low	No / ---
A1-6	0-5%	Low	0-5%	75-95%	Medium/Low	Medium	B, S	High	Yes / SKR
A1-7	0-5%	Low	0%	75-95%	Medium/None	High	None	Low	No / ---
A1-8	0-5%	Low	0%	75-95%	Low/Low	Medium	None	Low	No / ---
A1-9	0-5%	High	0-5%	5-25%	High/Low	High	None	Low	No / ---
A1-10	0-5%	High	0-5%	50-75%	Medium/Low	High	None	Low	No / ---
A2-1	5-25%	Low	0-5%	75-95%	Low/Medium	Low	B, S	Medium	Yes / DKR
A2-2	5-25%	Low	0-5%	75-95%	Low/Medium	Medium	B, S	Medium	No / ---
A2-3	25-50%	Medium	50-75%	5-25%	Low/Low	Low	B, S	Low	No / ---
A2-4	25-50%	Low	25-50%	50-75%	Low/Low	Low	B, S	Low	No / ---
A2-5	25-50%	Low	5-25%	50-75%	Low/Low	Low	B	Low	Yes / DKR
A2-6	25-50%	Low	0%	50-75%	Low/Low	Low	B, S	High	Yes / SKR & DKR
A2-7	25-50%	Low	0%	50-75%	Low/Low	Low	B, S	High	Yes / SKR
A3-1	25-50%	Low	0%	75-95%	Low/Medium	Low	B, S	High	Yes / None
A3-2	25-50%	Low	0%	75-95%	Low/Medium	Low	B, S	High	No / ---
A3-3	25-50%	Low	0-5%	75-95%	Low/Low	Low	B, S	High	No / ---
3A-1	5-25%	High	0%	0-5%	Low/Medium	Low	B, S	High	Yes / SKR
3A-2	5-25%	High	0-5%	0-5%	Low/Low	High	None	Low	No / ---
3A-3	0-5%	Low	0-5%	95-100%	Low/Low	Low	B, S	Medium	No / ---
3A-4	5-25%	Low	0%	75-95%	Medium/Low	Medium	None	Low	No / ---
3A-5	5-25%	Low	0%	95-100%	Low/Low	Low	B, S	High	Yes / SKR
3A-6	0-5%	Low	0%	75-95%	Low/High	Low	B, S	High	Yes / None
3A-7	5-25%	Medium	0-5%	5-25%	Medium/Low	Medium	B, T	High	Yes / SKR
3A-8	5-25%	Low	0%	25-50%	Low/Medium	Low	B, S	High**	No / ---

* = Potential Kangaroo Rat Sign: B=Burrow(s); S=Scat; T=Tracks; TD=Tail Drag; TV=Trails in Vegetation; O=Other

** = Exhibited habitat conditions and observed sign indicates plot is likely occupied by SKR. Nearby trapping likely confirms SKR presence.

† = Estimated potential for SKR occupancy based on habitat community condition and observed kangaroo rat sign. Trapping events were chosen to be conducted in plots with kangaroo rat sign where the species present was uncertain and habitat could be occupied by either SKR or DKR (based on habitat).

4.4.2 Confirmation Trapping

Confirmatory trapping conducted at the selected 10 sample plots included 8 plots rated as high, 1 plot rated as medium, and 1 rated as low. Trapping confirmed the presence of SKR in 6 of the 8 sample plots rated high for SKR potential. SKR was also captured in 1 sample plot rated as medium. No SKR were captured in the 1 sample plot rated as low. DKR were captured in 3 plots consisting of moderate slopes and/or supporting scrub or occurring immediately adjacent to lands with scrub. Both SKR and DKR were captured at 1 of the 10 sample plots (A2-6). No kangaroo rats were captured at two of the sample plots (A3-1 and 3A-6). Other captured small mammal species included the deer mouse (*Peromyscus maniculatus*), San Diego pocket mouse (*Chaetodipus fallax fallax*), and San Diego desert woodrat (*Neotoma lepida intermedia*). Table 6 summarizes the species captured at each trapped plot. Figure 4 depicts the location of each trapped plot and its kangaroo rat capture results.

Table 6. Summary of Small Mammal Captures

Date	Plot	SKR	DKR	CHFA	PEMA	NBRY
11/14	A3-1					
	3A-1	1♀; 1♂				
	3A-5					
	3A-6				1	
	3A-7	--- ; 1♂		1		
11/15	A3-1				1	
	3A-1	1♀; ---			1	
	3A-5	1♀; ---			1	
	3A-6				1	
	3A-7	--- ; 2♂				
11/16	A1-6	--- ; 1♂			2	
	A2-1		1	1		
	A2-5		5	1	1	1
	A2-6	1♀; 3♂	3	1	1	
	A2-7	3♀; ----			1	
11/17	A1-6				1	
	A2-1		1	1	1	
	A2-5		3	2	3	
	A2-6	1♀; 1♂	3	2	1	
	A2-7	2♀; 1♂				
Totals		**10♀; 10♂**	**16**	**9**	**16**	**1**

SKR, Stephens' kangaroo rat (*Dipodomys Stephensi*)
DKR, Dulzura kangaroo rat (*Dipodomys simulans*)
CHFA, San Diego pocket mouse (*Chaetodipus fallax fallax*)*
PEMA, deer mouse (*Peromyscus maniculatus*)
NBRY, San Diego desert woodrat (*Neotoma lepida intermedia*)

4.5 San Diego Fairy Shrimp

San Diego fairy shrimp cysts were observed in 14 of the 20 monitored pools in dry season sampling (Table 7). San Diego fairy shrimp cysts were found in high densities, averaging over 50 cysts per 100ml of soil, in pools c3e and c20 during the 2016 survey. San Diego fairy shrimp cysts were observed in moderate density, defined as averaging 11-50 cysts/100ml, in pool e53. San Diego fairy shrimp were found in low densities in the following 11 pools: e48, e52, e56, e59, e61, e62, e63, p7, p13, ev3 and cs (Cagney swale) (Appendix A: Figure 11).

Cagney swale is notable because it is an ephemeral drainage swale that flows through Ramona Grasslands Preserve, and it supports San Diego fairy shrimp, a species which is normally restricted to static-water ephemeral pools. Within the swale, there are several basins (deepwater refugia) which can shelter, collect, and support San Diego fairy shrimp. Pool ev3 similarly is a basin within a drainage channel that was observed to support San Diego fairy shrimp cysts.

Pools e45, e48, e52, e53, and e77 are part of the Ramona Airport mitigation pools located near the southeast side of Ramona Airport. These pools are situated in a mima mound complex on Placentia sandy loam soils. Placentia sandy loam soils have a restrictive clay layer in the B-horizon and are defined by Bauder and McMillan (1998) as one of the five main soil types in San Diego supporting vernal pools. These pools are contiguous and generally similar in depth, vegetative cover and grazing levels; San Diego fairy shrimp cysts were present in moderate amounts in pool e53, present in low levels in pools e48 and e52, and absent in e45 and e77.

Table 7. Dry Season Fairy Shrimp Sampling Results

Pool	Number of SDFS cysts per sample*									
	#1	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**#8**	**#9**	**#10**
cs	7	5	11	11	5	5	10	9	12	8
c20	50	30	100	60	70	60	30	100	60	150
c3e	90	70	70	100	120	80	60	60	100	100
e45	None									
e48	5	7	0	4	6	0	0	2	4	0
e52	20	10	4	8	20	20	5	0	0	15
e53	8	10	11	40	10	12	20	4	10	20
e56	0	1	1	0	0	0	1	0	0	0
e58	None									
e59	0	0	0	1	0	0	0	0	0	0
e61	4	5	3	8	0	1	2	6	0	1
e62	0	0	0	0	3	0	0	0	0	0
e63	0	0	0	4	2	0	0	4	0	0
e77	None									
e82	None									
ev3	4	0	3	3	3	0	3	3	2	4
p7	4	3	6	10	5	3	3	10	5	0
p13	0	0	2	0	0	0	0	0	0	0
p14	None									
raap17	None									

* No riverside fairy shrimp cysts were observed

4.6 Vernal Pool Habitat/Alkali Playa Habitat

4.6.1 Quantitative Vegetation Monitoring

Quantitative vegetation monitoring was conducted for twenty pools within the Ramona Grasslands Preserve (Table 8 and Appendix A: Figure 6). The quantitative vegetation monitoring followed the protocols detailed in the Ramona Grasslands Preserve Area Specific Management Directives (CBI 2007). Overall, nonnative cover was greater than native cover throughout the pools. The highest number of nonnative species recorded in a pool was 19 and the highest number of native species was 13. The majority of pools contained at least one vernal pool indicator species. The vernal pool indicator species observed within pools were water pygmyweed (*Crassula aquatica*), annual hair grass (*Deschampsia danthonioides*), toothed downingia (*Downingia cuspidata*), pale spike-rush (*Eleocharis macrostachya*), sand spike-rush (*Eleocharis montevidensis*), hairy clover fern (*Marsilea vestita*), prairie plantain (*Plantago elongata*), and dwarf woolly-marbles (*Psilocarphus brevissimus* var. *brevissimus*). Grazing by cattle was moderate in most pools and disturbance generally consisted of hoof prints. A complete species list for each pool is provided in Table 8. The complete Vernal Pool

Quantitative Vegetation Monitoring data table is provided as Appendix E and data sheets are provided as Appendix F.

Table 8. Summary of Vernal Pool Quantitative Vegetation Monitoring Data

Vernal Pool	Native		Nonnative		# Vernal Pool Indicator Species
	# Species	% Cover	# Species	% Cover	
C3E	12	45	14	2	2
C20	13	19	19	13	3
CS-1	1	1	5	19	1
EV3	2	23	9	37	1
E77	6	5	5	36	0
E45	7	22	5	20	1
E48	6	9	6	29	2
E52	8	16	7	34	2
E53	11	21	9	31	5
E56	5	6	16	50	1
E58	2	16	13	30	0
E59	8	13	9	22	3
E61	2	0.33	16	35	1
E62	3	27	7	41	1
E63	7	15	11	14	3
E82	6	9	8	29	0
P7	12	15	11	34	4
P13	4	8	10	36	2
P14	8	20	8	29	0
RAAP 17	5	15	9	21	0

Table 9. Plant Species Occurring within the Sampled Pools

Species	Vernal Pool																			
	C3E	E52	E53	E56	E58	E59	E61	E62	E63	E77	E82	CS	EV3	E45	E48	C20	P7	RAAP 17	P13	P14
Acmispon americanus	X														X	X				
**Amaranthus albus*	X	X	X						X							X				
Ambrosia psilostachya		X								X	X			X		X				
**Anthemis cotula*				X		X	X		X			X				X	X			
Atriplex coulteri																		X		
**Avena barbata*	X	X	X	X			X		X	X	X		X	X	X	X	X		X	X
**Brassica nigra*				X	X														X	
Brodiaea terrestris ssp. *kernensis*		X		X				X		X	X			X	X					X
**Bromus diandrus*		X								X			X	X	X	X				
**Bromus hordeaceus*				X	X		X	X	X							X	X	X		X
**Bromus madritensis* ssp. *rubens*																X				
‡Centromadia parryi ssp. *australis*	X			X	X											X	X	X		
**Cotula coronopifolia*				X		X	X													
†Crassula aquatica	X					X											X			
Cressa truxillensis											X									X
Croton setiger	X	X				X			X	X				X		X				X
**Cynodon dactylon*				X	X	X	X	X	X		X	X	X		X	X	X			
Deinandra fasciculata	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X
†Deschampsia danthonioides			X						X								X			
Distichlis spicata	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X
†Downingia cuspidata			X																	
†Eleocharis macrostachya	X	X																		
†Eleocharis montevidensis		X	X			X		X	X					X	X	X	X		X	
Erigeron canadensis	X															X			X	
**Erodium botrys*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
**Euphorbia serpens*	X																			
**Festuca myuros*	X			X	X		X				X					C			X	X
**Festuca perennis*	X			X	X		X	X	X			X	X		X	X	X	X	X	X
Grindelia camporum	X		X						X	X	X									
Heliotropium currasavicum									X							X				
**Hirschfeldia incana*	X										X							X		
‡Holocarpha virgata ssp. *elongata*																				

Species	Vernal Pool																			
	C3E	E52	E53	E56	E58	E59	E61	E62	E63	E77	E82	CS	EV3	E45	E48	C20	P7	RAAP 17	P13	P14
**Hordeum marinum* ssp. *gussoneanum*	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X	X
**Hypochaeris glabra*	X	X			X		X			X						X				X
Isocoma menziesii											X									X
Juncus bufonius	X					X											X			
Juncus mexicanus						X														
**Lamarckia aurea*																X				
Lepidium sp.																		X		X
**Logfia gallica*	X															X				
**Lupinus bicolor*																X				
**Lythrum hyssopifolia*	X		X	X	X	X	X	X	X			X	X	X		X	X		X	
**Malvella leprosa*				X																
†Marsilea vestita												X	X			X				
**Medicago polymorpha*					X		X						X					X		
**Melilotus albus*																		X		
Muilla maritima										X										
**Plantago coronopus*	X																			
†Plantago elongata			X																	
Plantago erecta															X					
**Polygonum aviculare ssp. depressum*		X	X	X	X	X		X	X				X			X	X		X	
**Polypogon monspeliensis*				X		X											X		X	
Pseudognaphalium sp.			X																	
†Psilocarphus brevissimus	X		X	X		X	X		X						X	X	X		X	
**Rumex crispus*			X	X	X	X			X							X	X			
**Salsola tragus*	X		X				X									X		X		
**Silene gallica*					X		X				X					X				
Sisyrinchium bellum														X						
**Sonchus asper*																			X	
**Sonchus oleraceus*	X																			
**Spergularia bocconi*			X	X			X									X		X		
Trichostema lanatum	X	X	X											X	X	X				
Veronica peregrina ssp. *halapensis*	X	X	X			X										X				

* Nonnative species † Vernal pool indicator species ǂ Special-status species

Chapter 5
CMP Management and Monitoring Recommendations

This chapter presents resource-specific monitoring and adaptive management recommendations as outlined in the CMP for the resource-specific monitoring conducted in 2016.

5.1 CMP Resource-Specific Monitoring Goals and Objectives

5.1.1 San Diego Thornmint (*Acanthomintha ilicifolia*)

5.1.1.1 Monitoring Objective

Collect baseline data on the status, habitat condition and threats for the thornmint population on El Capitan Preserve, reported by CBI (2014). If this population is extant, and it occurs within the County's jurisdiction (CBI states that this population is within Bureau of Land Management jurisdiction), conduct long-term monitoring of this population.

Evaluate the status (perimeter and abundance) of thornmint populations on Sycamore Canyon/Goodan Ranch, Ramona Grasslands, and El Capitan Preserves annually for five years to evaluate the response of thornmint populations to focused management actions.

Collect covariate data on vegetation composition and cover, soils, invasive plants, and other threats. Ensure consistency in data collection across the Management Strategic Plan Area (MSPA) by using rare plant monitoring protocols and forms developed by SDMMP. Using the information collected, identify or refine appropriate management actions.

Results

The first year of the monitoring objective of establishing monitoring plots following the rare plant monitoring protocols and forms developed by SDMMP within the Sycamore Canyon/Goodan Ranch Preserve has been completed. Ten monitoring plots were established. Within the plots a total of 17,770 San Diego thornmint plants were detected. The entire population of San Diego thornmint within Sycamore canyon is estimated to be somewhere in the range of 20,000-30,000 plants. Approximately 41 acres of clay lens habitat with the potential to support San Diego thornmint populations was mapped

The San Diego thornmint population on the Ramona Grasslands Preserve was inspected but could not be relocated in 2016. No surveys for San Diego thornmint were conducted on Ramona Grasslands Preserve in 2016.

5.1.1.2 Management Objectives

Implement focused management for populations on Sycamore Canyon/Goodan Ranch and Ramona Grasslands Preserves by spring of 2016. Maintain at least baseline acreage of suitable clay lens habitat (to be delineated the first year of long-term monitoring).Conduct invasive species removal and thatch removal annually for five years. Maintain <10% cover of purple false brome and <20% cover of other invasive weeds within management areas. Protect thornmint population within Ramona Grasslands Preserve from trampling by cattle by installing fencing in 2016.

Based on the results of the annual monitoring (species, habitat condition, and threats), determine if potential threats are negatively affecting the species, and implement additional adaptive management actions as necessary (i.e., inspect and manage the species).

Results

Currently, within the 10 monitoring plots in Sycamore Canyon/Goodan Ranch Preserve overall nonnative plant cover averages 36 percent and purple false brome cover averages 22 percent. These are well above the management objectives.

Adaptive Management Recommendations

Monitor and control nonnative species to ensure low cover throughout the population.

Conduct dethatching activities throughout the population to encourage seedling establishment.

5.1.2 San Miguel Savory (*Clinopodium chandleri*)

5.1.2.1 Monitoring Objective

Between March and July 2016, conduct a baseline population assessment within the three known locations and surrounding area on the Boulder Oaks Preserve to determine the abundance, population extent and seedling recruitment of San Miguel savory and to assess the effect of management. Collect covariate data on vegetation composition and cover, soils, invasive plants, and other threats. Ensure consistency in data collection across the Management Strategic Plan Area (MSPA) by using rare plant monitoring protocols and forms developed by SDMMP. Using the information collected, identify or refine appropriate management actions.

Results

The first year of the monitoring objective of conducting a baseline population assessment and establishing monitoring plots following the rare plant monitoring protocols and forms developed by SDMMP has been completed. A total of 139 San Miguel savory individuals were mapped and tagged with individually numbered aluminum tags. An additional 45 seedlings were also counted. Two monitoring plots were established within the San Miguel savory population in Boulder Oaks Preserve.

5.1.2.2 Management Objectives

Maintain less than 20 percent cover of invasive plant species within management areas. Conduct routine management of the San Miguel savory on Boulder Oaks Preserve as indicated by the monitoring results (i.e., inspect and manage the species), annually for five years, beginning in spring, 2016.

By 2018, re-evaluate management priorities based on the regional implementation plan and Best Management Practices, which will be developed by SDMMP to enhance existing occurrences and establish new occurrences of San Miguel savory.

Results

Currently, the San Miguel savory population within the Boulder Oaks Preserve appears to be doing well, with a low level of stressors and/or disturbances. Nonnative cover was 1% in both monitoring plots, well below the management objective of 20%.

Adaptive Management Recommendations

Perennial veldt grass (*Ehrharta calycina*) is an exotic bunchgrass prevalent in sections of Boulder Oaks Preserve. Although not currently negatively affecting the San Miguel savory population, the potential invasion of perennial veldt grass into the San Miguel savory population should be monitored.

5.1.3 Variegated Dudleya (*Dudleya variegata*)

5.1.3.1 Monitoring Objective

In 2016, during the blooming season (April - June), conduct a baseline population and habitat assessment within known occurrences of variegated dudleya on Lusardi Creek Preserve (one location), and Sycamore Canyon/Goodan Ranch Preserve (two locations) to determine the number of individuals and population extent. Collect covariate data on vegetation composition and cover, soils, invasive plants, and other threats. Ensure consistency in data collection across the Management Strategic Plan Area (MSPA) by using rare plant monitoring protocols and forms developed by SDMMP. Using the information collected, identify or refine appropriate management actions.

Results

The first year of the monitoring objective of conducting a baseline population assessment and establishing monitoring plots following the rare plant monitoring protocols and forms developed by SDMMP has been completed. A total of 199 variegated dudleya individuals were mapped and one monitoring plot was established in the central portion of the population within the Lusardi Creek Preserve.

A monitoring plot for variegated dudleya was not established within the Sycamore Canyon/Goodan Ranch Preserve. Only 11 plants of variegated dudleya were detected, and these were scattered near

San Diego thornmint monitoring plot SYGOACIL05. The monitoring for variegated dudleya at this location is captured by the San Diego thornmint monitoring plot.

5.1.3.2 Management Objectives

Maintain <20% ground cover of invasive species in the vicinity of the variegated dudleya population. Implement additional appropriate adaptive management actions to protect the variegated dudleya on Lusardi Creek and Sycamore Canyon/Goodan Ranch Preserves as indicated by the monitoring results (i.e., inspect and manage the species), annually for five years, beginning in spring, 2016. Management actions could include invasive species control, access control, and pre-fire management.

By 2018, re-evaluate management priorities based on the regional implementation plan and Best Management Practices, which will be developed by SDMMP to enhance existing occurrences and establish new occurrences of variegated dudleya.

Results

Currently, the variegated dudleya population within Lusardi Creek Preserve appears to be doing well. Invasive non-native plant species cover was 21 percent within the monitoring plot, above the 20 percent management threshold. The 20% of the invasive non-native plant cover was composed of the problematic invasive plant, purple false brome.

Adaptive Management Recommendations

Control invasive non-native plant species, specifically purple false brome to ensure low weed cover throughout the population.

Conduct dethatching activities throughout the population to encourage seedling establishment.

5.1.4 Arroyo Toad (*Anaxyrus californicus)*

5.1.4.1 Monitoring Objective

Starting in the spring of 2016, evaluate the status of arroyo toad populations within Santa Maria Creek at Ramona Grasslands Preserve annually for five years.

Starting in the spring of 2016, evaluate the habitat condition (collect covariate data) and identify potential threats to arroyo toads on Ramona Grassland Preserve annually for five years. Monitor the effectiveness of the grazing program to reduce the cover of thatch and invasive species within grazing unit 1A as described in the Vegetation Management Plan for Ramona Grasslands Preserve (2012). Use the monitoring data to inform adaptive management actions.

Based on the results of the threats assessment, habitat condition assessment (including assessment of the effects of grazing), and species status surveys, evaluate whether or not the identified potential threats are having a negative impact on the resident arroyo toads and breeding success/recruitment.

Results

The first year of the monitoring objective of evaluating the habitat condition and identifying potential threats to arroyo toads on Ramona Grassland Preserve has been completed. Threats identified include bullfrogs, mosquitofish, saltcedar, and nonnative grasses.

5.1.4.2 Management Objectives

Maintain the arroyo toad population west of Rangeland Road on Ramona Grasslands Preserve. Based on the results of the annual monitoring and threats assessment, conduct adaptive management actions as necessary (i.e., inspect and manage the species), starting in 2016.

Results

Recruitment looked strong and large numbers of tadpoles and metamorphs were observed. Arroyo toad metamorphs and tadpoles were observed in the wetted creek bottom immediately north and south of the Ramona Municipal Water District property in the western portion of the Preserve where it overlaps Santa Maria Creek.

Adaptive Management Recommendations

Potential management issues in the Ramona Grasslands Reserve include non-native plants, and non-native animals. Regarding exotic plants, density of giant reed and salt cedar are both low in the Preserve. As a result these invasive non-native plant species are not currently negatively modifying the habitat. Invasive non-native plant control activities should take place in the near future to avoid large scale modification of the habitat (canopy exclusion, reduced surface water presentation, reduced sediment bed mobility, increased ground cover). Regarding non-native animals, bullfrogs and mosquitofish are present on the Preserve and represent an ongoing threat to native amphibians. While non-native species are not currently excluding arroyo toad from the Preserve, they may have negative impacts on arroyo toad through competition or predation. Non-native species removal efforts targeting bullfrogs should take place as soon as possible, to relieve predation pressure on arroyo toad.

5.1.5 Burrowing Owl (*Athene cunicularia)*

5.1.5.1 Monitoring Objective

The monitoring objective for burrowing owl from the CMP is as follows:

"Starting in the spring of 2016, conduct a detailed habitat assessment within Ramona Grasslands, Sycamore Canyon/Goodan Ranch, and Boulder Oaks Preserves to identify areas suitable for burrowing owl foraging and breeding, and capable of supporting no less than one node (i.e., 5 pairs).

Starting in the spring of 2016, conduct annual presence/absence surveys during the breeding season (February - August) within suitable burrowing owl habitat on Ramona Grasslands Preserve. Document the presence or absence of individuals, and document foraging behavior and signs of nesting.

Starting in the spring of 2016, evaluate the habitat condition (i.e., suitability of the habitat for burrowing owls) and identify potential threats to the species on Ramona Grassland Preserve annually for four years.

Monitor the effectiveness of the grazing program to reduce the cover of thatch and invasive species within grazing units 2A, 2B, 3A, 3B, 3C, 3D, and 4A as described in the Vegetation Management Plan for Ramona Grasslands Preserve (2012). Monitoring data will be used to inform adaptive management actions.

Based on the results of the threats assessment, habitat condition assessment (including assessment of the effects of grazing), and species status surveys, evaluate whether or not the identified potential threats are having a negative impact on the resident burrowing owls."

Results

No burrowing owls were observed within Boulder Oaks, Sycamore Canyon/Goodan Ranch, or Ramona Grasslands Preserves during 2016 surveys. All of these Preserves appear to have suitability for breeding burrowing owl, but no recent breeding burrowing owl sightings are known from these Preserves.

Burrowing owls have historically been observed in the Ramona Grasslands Preserve vicinity during the summer (CNDDB 2016), but breeding for this species does not appear to be occurring in the Ramona Grasslands Preserve area.

ICF conducted a review of eBird.org sightings of burrowing owl in the Ramona Grasslands Preserve area (eBird.org 2016). Almost all sightings in the last 5 years were within November to early March, with most in January and February. There were no records from April through July within this period. Highland Valley Road and Rangeland Road are popular destinations for birdwatchers, and eBird is the most widely used platform for reporting observation data, so these records are useful in corroborating the negative survey results. Burrowing owl were reported from near the intersection of Highland Valley Road and Rangeland Road in February 2016, but no birds were observed in this area during any ICF 2016 surveys later in the year.

Burrowing owls were once common residents of coastal San Diego County, but are now restricted to a few isolated breeding locations (Unitt 2004). As identified in the results section of this report (Section 4), Ramona Grasslands and Boulder Oaks Preserves appear to have suitable habitat for this species. Constraints for burrowing owl at Ramona Grasslands Preserve include predators, vehicle mortality, and vegetation density. Predators at Ramona Grasslands Preserve include coyote, raptors, and corvids. Coyotes and raptors were commonly observed while conducting field work. Corvids have been identified as a major source of nest predation and corvids have had an explosion in population numbers in the latter half of the twentieth century. Rangeland Road and Highland Valley Road are both high speed roads with fences (potential perches) and can cause mortality of any birds that would take up residence. While grazing of cattle occurs at Ramona Grasslands Preserve, growth of grasses and herbs can be prolific in the springtime, creating dense vegetation for a period, which coincides with the peak of the burrowing owl breeding season.

The highest quality suitable habitat identified was areas near east of Rangeland Road and north of Santa Maria Creek. This area supported large numbers of ground squirrel burrows not associated with rock outcrops, as well as two artificial burrows near the fence-line. Rock outcrops north of the southwest staging area (off Highland Valley Road) had high level of squirrel activity and many

suitable burrows. The boulder piles were mixed in with buckwheat scrub and grassland. High quality habitat was also noted to the north of the Ramona airport.

At Boulder Oaks Preserve, the northern grasslands had many ground squirrels and low vegetation cover, and appeared to be high quality habitat for burrowing owl.

Adaptive Management Recommendations.

As DPR staff have the highest level of presence at the preserves, ensure that DPR staff are familiar with burrowing owls and who to contact if an observation is made. Observations should include the date and location of observations.

5.1.5.2 Management Objectives

Maintain suitable foraging and nesting habitat on Ramona Grasslands Preserve by continued implementation of the managed grazing program (ICF 2012). Based on the results of the annual monitoring and threats assessment, conduct adaptive management actions as necessary (i.e., inspect and manage the species). Note that the SDMMP will prepare a regional management implementation plan, including management BMPs, for enhancing existing occurrences and establishing new occurrences of burrowing owls. Site-specific management objectives (adaptive management actions) for burrowing owls will be re-evaluated by the County once the regional implementation plan has been completed.

Results

Burrowing owls prefer grassland habitat with short vegetation, as this allows for better visibility and detection of predators. Vegetation grazing should be continued, which will help keep vegetation levels low and provide better suitability for burrowing owl.

5.1.6 Stephens' Kangaroo Rat (*Dipodomys stephensi)*

5.1.6.1 Monitoring Objective

Assess the status and distribution of SKR at Ramona Grasslands Preserve beginning in late 2015, and every other year for five years to assess population response to management actions, including translocation success (in the southwestern portion of the Preserve, 3-acre SKR management area).

Annually monitor habitat conditions within grazing units 2A, 2B, and 3A and identify potential threats to SKR. Monitor the effectiveness of the grazing program to reduce the cover of thatch and invasive species. Based on the results of the threats assessment, habitat condition assessment (including assessment of the effects of grazing), and species status surveys, evaluate whether or not the identified potential threats are having a negative impact on the resident SKR. Use the monitoring data to inform adaptive management actions.

Results

The 2016 SKR monitoring area exhibits grassland habitat that is generally suitable for SKR. That is, this species prefers open grassland habitats in level to gently sloping terrain on loamy soils. These

conditions are present across most of the monitoring area. The current suitability of different areas of the Preserve for SKR appears to be determined by such ephemeral factors as: (a) the timing (recent, older); intensity (light, heavy); and frequency (frequent, infrequent) of grazing, and (b) frequency, timing and intensity of rainfall. Changes in these factors over time should result in different patterns of SKR occupancy across the Preserve. Subtle differences in soil composition among areas also may affect vegetation growth and composition, which will in turn affect SKR presence, absence, and abundance.

Most grassland areas located to the south of the Ramona Airport exhibited a very high density of dead litter during the monitoring survey; in many locations, the density approached or equaled 100% cover, with depths of 1 to 6 inches of thatch. These conditions suggested that the grassland areas had not been recently grazed. If such areas were grazed, a considerable amount of this litter would be crushed, and bare ground would be correspondingly revealed. Alternatively, grazing would reduce the vegetation that produced the heavy litter layer. Such effects would create conditions more favorable to SKR, and the only thing limiting SKR distribution would likely then be access to a source population to provide colonizers for such improved habitat areas. Other, more recently grazed, parts of the Preserve located to the north of the airport exhibited generally lower levels of litter as well as a corresponding higher abundance of bare ground, and SKR were relatively common in these areas.

Trapping for kangaroo rats, and SKR in particular, can sometimes produce inexplicable results. For example, on occasion, kangaroo rat sign will be readily observable at a sample plot, but no captures will be recorded during initial nights of trapping. This was the case for the two plots yielding no captures during the monitoring survey in 2016 (A3-1 and 3A-6). Continued trapping is often required to capture the resident individuals. In some cases, even extended trapping will not produce captures of kangaroo rats that are clearly present, as confirmed by new nightly signs of activity and/or nocturnal observations of actual animals at a sample site. Such occurrences are unavoidable and may require additional effort to provide positive results; these instances also must be considered in the overall analysis of monitoring results.

Optimization of SKR Monitoring Area

As a result of "lower than optimal power to detect population declines," the managers of the SKR monitoring program at MCBCP implemented a program review and optimization beginning in 2010 (Brehme et al. 2016). As part of this review, the sample area was redefined into two types—a focal monitoring area and a discovery area for SKR. The focal area was based on previously known occupied habitat areas and immediately adjacent suitable habitats on the Preserve. The discovery area included a sample area comprised of grasslands, disturbed habitats, and open Engelmann oak woodlands with slopes under 50% within 4 kilometers of known occupied habitat. The Discovery Area consisted of lands in the immediate vicinity of the monitoring area that exhibit generally or potentially suitable habitat that lie outside of known occupied SKR habitats.

The current SKR monitoring area for the Preserve provides a functional sampling area; however; based on the distribution of potentially suitable SKR habitat within the Preserve, the opportunity exists to redefine the monitoring area so as to optimize the SKR monitoring effort and provide DPR with more comprehensive results encompassing the entire suit of grassland habitat in the Preserve. Toward that end, the following changes to the SKR monitoring area are recommended.

- Redefine a focal SKR monitoring area.

  - Include all contiguous grasslands within Preserve managed lands.
  - Exclude areas supporting dense scrub.
  - Exclude areas with dense woodlands.
  - Exclude lands with steep topography.
  - Exclude lands not readily accessible for regularly monitoring activities (e.g., irrigated fields, water district lands).
  - Establish a semi-permanent focal SKR monitoring area. Figure 5 provides a recommended SKR monitoring area based on conditions exhibited in the fall of 2016. It is recommended that an area similar to that which is proposed in Figure 5 be established as a semi-permanent focal SKR monitoring area. As part of the adaptive management of the SKR monitoring program, it is also recommended that the established SKR management area boundaries be reevaluated on a regular basis (e.g., once every 5 years) to account for any changes that occur to the Preserve as a result of environmental factors, such as fire, drought, and land management practices, or management factors including, future land acquisition.

- Define focal SKR discovery areas (Figure 5).
  - Include non-contiguous grasslands.
  - Exclude areas supporting dense scrub.
  - Exclude areas with dense woodlands.
  - Exclude areas with steep topography.
  - Exclude lands not readily accessible for periodic monitoring activities (e.g., irrigated fields, RMWD, etc.).

Establish semi-permanent focal SKR discovery areas. Figure 5provides a draft of potential SKR discovery areas based on a review of Google Earth imagery and recent vegetation mapping. It is recommended that areas similar to those proposed in Figure 5 be established as a semi-permanent focal SKR discovery areas. As part of the adaptive management of the SKR monitoring program, it is also recommended that the established SKR discovery areas be reevaluated on a regular basis (e.g., once every 5 years) to account for any changes to the Preserve as a result environmental factors, such as fire, drought, and land management practices.

Optimization of SKR Sampling Area

Along with the revised monitoring area, the managers of the SKR monitoring program at MCBCP modified the sampling scheme to increase the ability to detect trends in SKR over time (Brehme et al. 2016). Modifications included the following: doubling the number of permanent plots (66% of total effort), sampling of random plots within the monitoring area (17% of total effort), and sampling of random plots within the discovery area (17% of total effort). The current protocol as outlined in the CMP calls for establishing 28 long-term monitoring plots (25 plots plus 3 in the 3-acre SKR management area in the southwest portion of the Preserve). Following the MCBCP methodology, recommended modifications to the Preserve SKR monitoring program include the following.

- Allocate approximately 50% of the sampling effort at permanent plots within the Preserve SKR monitoring area.

- Allocate approximately 25% of the sampling effort to randomly selected plots within the Preserve SKR monitoring area.
- Allocate approximately 25% of the sampling effort to randomly selected plots within the Preserve SKR discovery areas.

To implement this, the three plots in the 3-acre SKR management area would be kept as long-term monitoring plots, to monitor the success of the habitat creation there. Of the remaining 25, 13 would be chosen and kept as long-term monitoring plots, would be evaluated every year and trapped every 10 years. Six plots would be randomly selected every year within the Preserve SKR monitoring area to investigate the SKR monitoring area for continuing presence and distribution of kangaroo rat. Six plots would be randomly selected every year within the Preserve SKR areas to investigate if SKR are colonizing appropriate habitat in adjacent portions of the Preserve,

An additional recommendation to optimize the SKR monitoring includes the following.

- After 2 consecutive nights of confirmatory trapping with negative results in plots rated as "high" potential for SKR and exhibiting clear kangaroo rat sign, extend the trapping effort to a maximum of 4 consecutive nights.

SKR Density/Population Analysis

The MCBCP SKR monitoring program used a proportion of area occupied (PAO) approach to analyze the SKR population at Camp Pendleton, using the integrated habitat occupancy logistic model in program PRESENCE. This approach allowed the monitors to analyze the data from the two survey methods simultaneously (sign search and live trapping). In addition, a density index for SKR within each stratum was calculated using the Huggins closed capture and full closed capture with heterogeneity models available in program MARK. Unlike the SKR monitoring program at MCBCP, statistical data analysis programs are not currently established for the Ramona Grasslands Preserve SKR monitoring program. It is recommended that an appropriate set of statistical data analysis programs and approaches be incorporated into future SKR monitoring efforts on the Preserve. This should allow DPR to track changes in the Preserve occupied by the species, as well as estimate changes in occupation and density per acres for SKR. The appropriate statistical approaches for the Preserve's SKR population ultimately may be similar to but different from those used at MCBCP. A statistical analysis program would require the involvement of a statistics expert to develop the program and manage the data through the program.

5.1.6.2 Management Objectives

Continue to implement the managed cattle grazing program. Maintain <20% ground cover of invasive non-native plant species in areas within the Preserve identified as habitat for SKR. Based on the results of the annual monitoring and threats assessment, conduct additional adaptive management actions as necessary (i.e., inspect and manage the species).

Adaptive Management Recommendations

It is well known that SKR prefer more open grassland habitats, and it is hypothesized that a reduction of grass cover through natural (e.g., drought, wildfire) or man-induced (e.g., grazing, mowing, weed-whacking, and mechanical scraping) means could greatly increase the distribution

and density of SKR in the grasslands in the current SKR monitoring areas within the Preserve. Even with the active grazing operations ongoing in portions of the Preserve, much of the lowland grasslands exhibited a lack of bare ground and/or high obstruction factors during the 2016 monitoring effort. Much of the obstructions consisted of a thick litter layer comprised mainly of disarticulated *Erodium* spp. (Appendix A). In large expanses of the grasslands this litter layer appeared to be deep and thick enough to reduce and/or nearly preclude SKR movement. Similarly, earlier in the year when the annuals were in bloom, the herbaceous cover across much of the Preserve was so dense that SKR movement was likely highly impaired (Appendix A, Photographs 29 and 30). Thus, factors impeding SKR movement (including dispersal) across the Preserve grasslands can be greatly improved by reducing vegetation cover and associated litter accumulation. The Ramona Grasslands Preserve Vegetation Management Plan (2011) includes recommendations for leaf litter management by cattle grazing and prescribes residual dry matter (RDM) measurements. Grazing intensity and RDM values should be reviewed for 2016 to determine if the RDM values from the grazing management areas were being met. If they were not being met in 2016, the grazing intensity (number of cattle or time in pasture) should be increased for 2017. If the RDM values were being met, the County should consider altering the RDM target values to meet the goal of lower grass cover to benefit SKR.

Other methods of achieving this objective include, those listed below.

- Weed-whacking
    - Using mechanical line trimmers to clear vegetation in small focal areas, such as areas with dense weed infestations or potential habitat near dense populations of SKR.
- Scraping or Dragging
    - Scraping can be carried out carefully by setting a small dozer bucket at ground level and removing the very top veneer of herb cover. This will leave an area of bare ground that maximizes the ability of SKR to move across the landscape. Similarly, in areas exhibiting high levels of dead litter, a piece of heavily weighted chain link fencing can be dragged across the landscape behind a pickup truck or small tractor or dozer to remove the litter layer and reveal the underlying bare ground. Ranchers at or adjacent to Ramona Grasslands Preserve were observed to have the equipment necessary for fence dragging. These methods have been used successfully at Fallbrook Naval Weapons Station (Tetra Tech 2013) and Juliett Area on Camp Pendleton (Tetra Tech 2015) to enhance conditions for SKR and resulted in expansions of existing population into previously unoccupied grassland habitats.
- Mowing
    - Mowing has the obvious effect of reducing the overall height of the existing vegetation to a desired level and assisting with herbaceous disarticulation.
- Grazing
    - Grazing operations could be increased in duration in areas identified to support SKR in order to control vegetation growth within the Preserve. In addition, RDM value ranges can be modified to increase suitable SKR habitat.

5.1.7 Vernal Pools/Alkali Playa

5.1.7.1 Monitoring Objective

Assess the status of spreading navarretia and San Diego fairy shrimp on Ramona Grasslands Preserve annually beginning in late 2015.

Annually monitor RDM values within the grazing management units 2A, 3A, 3B, and 3D to ensure that the values are within target limits. Evaluate the effectiveness of the grazing program to reduce the cover of thatch and invasive non-native plant species.

In 2015/2016 or the following year if climatic conditions are not suitable (e.g., drought), conduct vegetation transects, a hydrologic assessment, and San Diego fairy shrimp surveys in vernal pools located in the Ramona Airport mitigation pools, and vernal pools within the Oak Country, Cagney, and Cumming Ranch parcels to determine the baseline conditions of the following: native plant species richness, percent cover of non-native forbs and grasses, presence and cover of vernal pool indicator species and hydrology. Using these data and historical information, develop management targets for species richness, species composition, percent cover of non-native grasses and forbs, and duration of inundation.

In 2015/2016 or the following year if climatic conditions are not suitable (e.g., drought), conduct a baseline assessment of alkali playas within Ramona Grasslands Preserve to determine the baseline conditions of the following: native plant species richness and composition, and percent cover of non-native forbs and grasses. Using these data and historical information (i.e., vegetation data previously collected at this location), develop management targets for species richness, species composition, percent cover of non-native species.

Annually evaluate potential threats to vernal pool species, vernal pool habitat, and alkali playa habitat. Based on monitoring results, evaluate whether or not the identified potential threats are having a negative impact on the species or habitat, and implement adaptive management actions as necessary.

Results

The monitoring objectives of conducting dry season San Diego fairy shrimp surveys and conducting quantitative vegetation monitoring for a subset of vernal pools within the Ramona Grasslands Preserve was completed in 2016, and monitoring results are presented in Sections 4.5 and 4.6 of this report.

5.1.7.2 Management Objectives

Annually use managed cattle grazing, herbicides and mechanical means to reduce invasive species cover, reduce thatch, and maintain hydroperiod within grazing management units 2A, 3A, 3B, 3C and 3D on Ramona Grasslands Preserve. Maintain Residual Dry Matter (RDM) at 800 - 1,500 pounds per acre within Management Unit 3C, and 800 – 1,200 pounds per acre in the other Management Units (ICF 2012). Within vernal pool basins, maintain invasive non-native plant species cover at less than 20%.

Based on the results of long-term monitoring and threats assessment, conduct additional adaptive management actions as necessary (e.g., revise RDM targets, change grazing regime, etc.).

In 2016 identify high priority areas for enhancement and/or reintroduction of vernal pool plant species, including spreading navarretia, a CMP priority species. Evaluate the feasibility of establishing a population of San Diego button celery (*Eryngium aristulatum* var. *parishii*) in these areas by collecting seeds from known populations in the vicinity of the Preserve (community of Ramona. Coordinate efforts with the City of San Diego Vernal Pool Management Plan (in progress), SDMMP, IEMM, and the Wildlife Agencies.

Results

Of the 20 pools surveyed, 16 have an invasive non-native plant species cover of greater than or equal to the 20% threshold.

Adaptive Management Recommendations

Weeds should be controlled to reduce cover to meet 20% threshold. Weeding should be conducted by hand or weed-whip. No herbicides should be used within pools.

Many of these pools appear to be appropriate to be high quality habitat for San Diego button celery, supporting existing vernal pool species and having appropriate topography. The highest quality of the sampled pools for San Diego button celery would be pools as c20, c3e, p7, and several of the Ramona airport mitigation pools (e48, e52, e53), based on topography and species composition. The presence of associated vernal pool species, including San Diego fairy shrimp and vernal pool indicator plants, in all of these basins suggests that the pools have hydroperiods sufficient to support San Diego button celery. San Diego button celery is currently known from only one location in the Ramona area: a small open space parcel within downtown Ramona.

Chapter 6
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Appendix A
Figures

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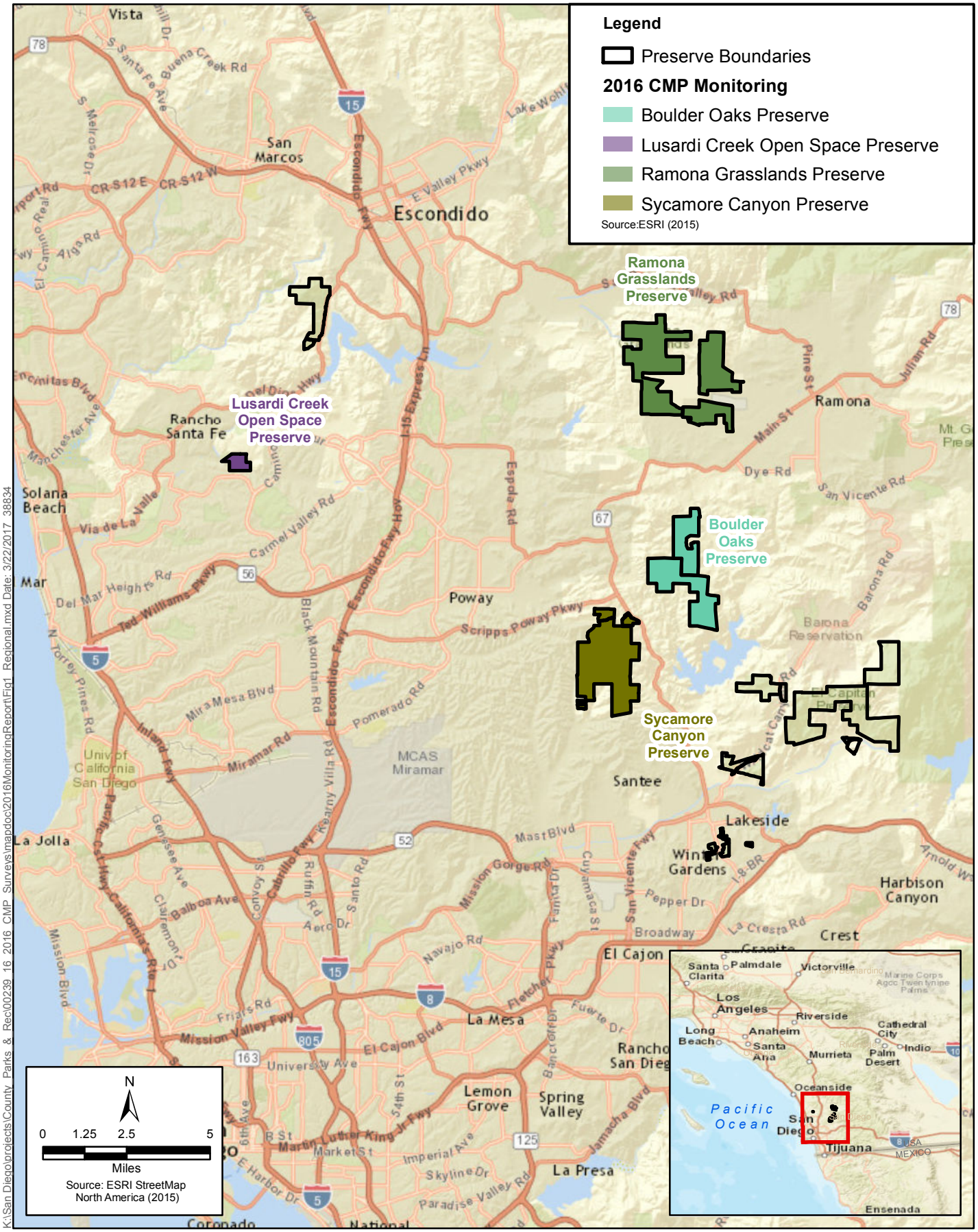

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Figure 1
Regional Location
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County of San Diego Department of Parks and Recreation

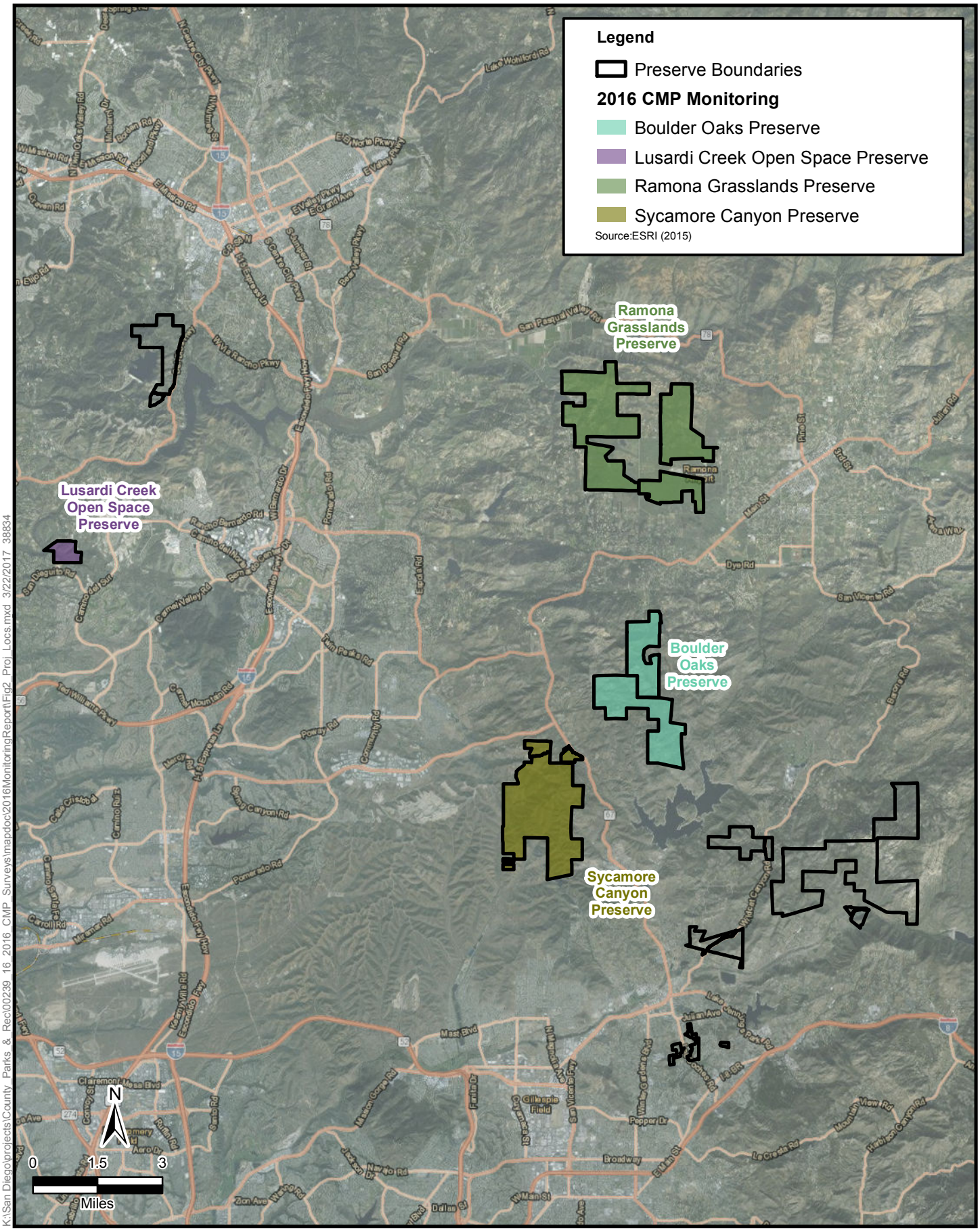

Figure 2
Project Location Map
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County of San Diego Department of Parks and Recreation

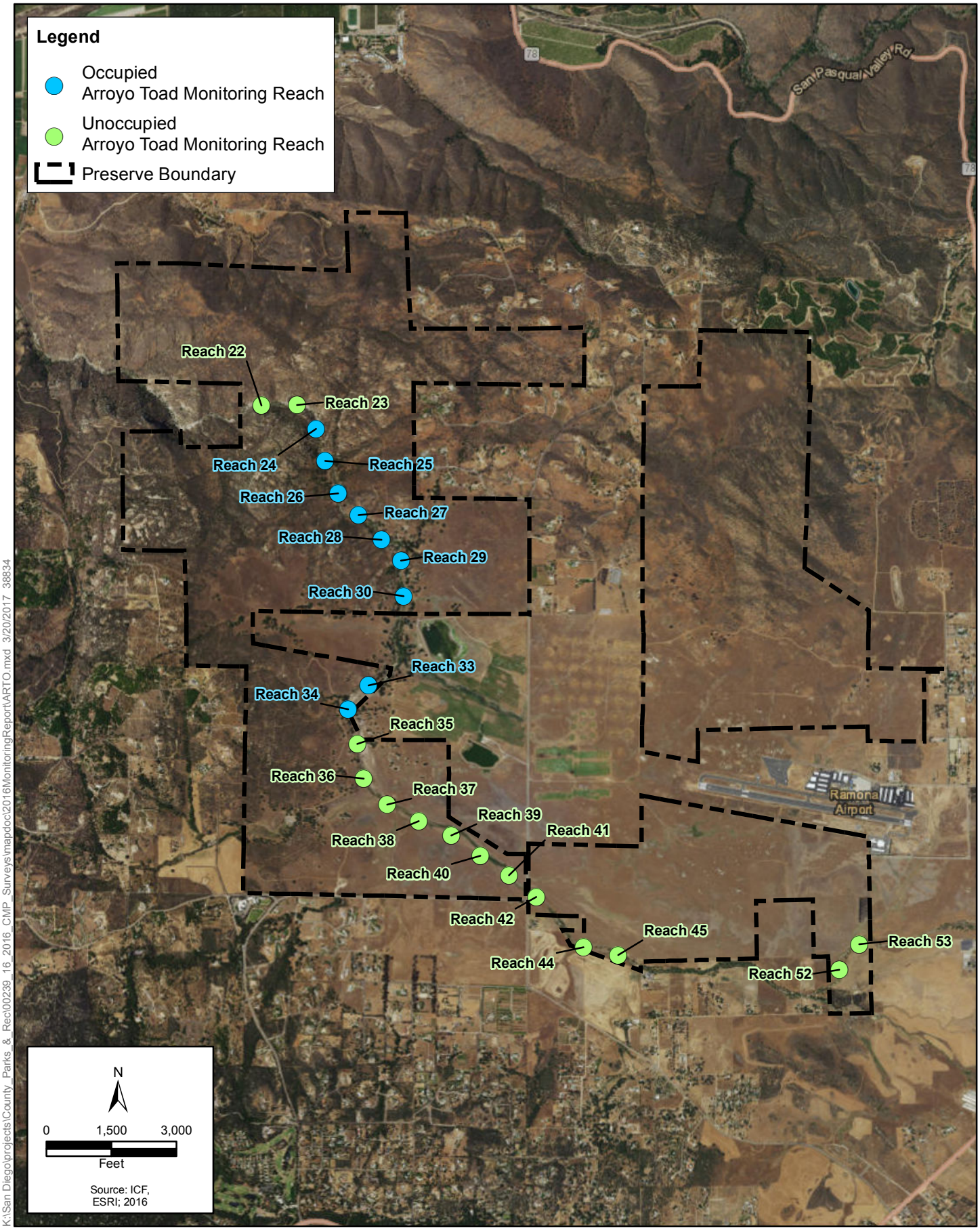

Figure 3
Arroyo Toad Monitoring Reaches - Ramona Grasslands Preserve
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County of San Diego Department of Parks and Recreation

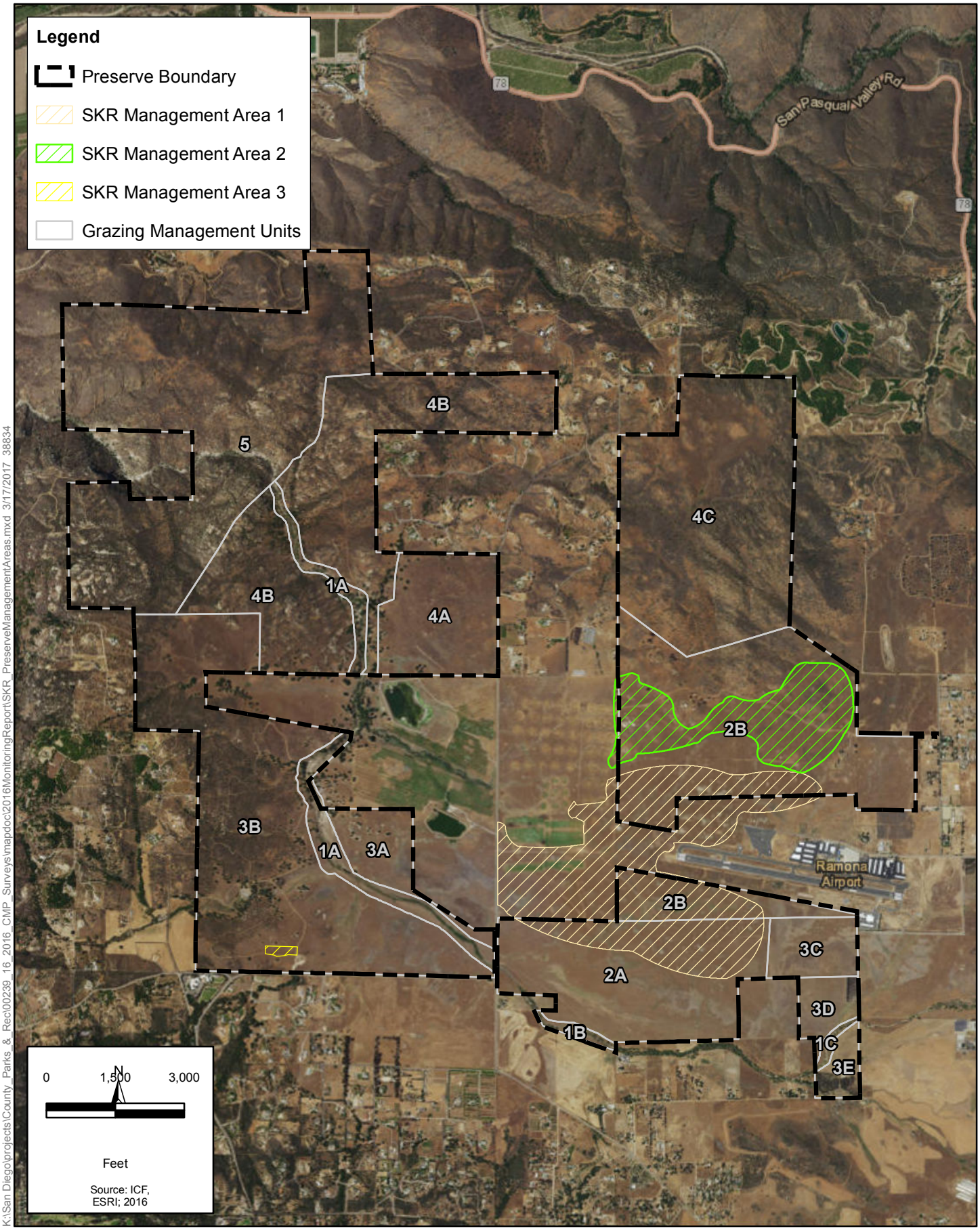

Figure 4
Preserve Management Areas - Ramona Grassland Preserve – SKR Monitoring
Implementation of CMP – 2016 Resource Specific Monitoring Annual Report
County of San Diego Department of Parks and Recreation

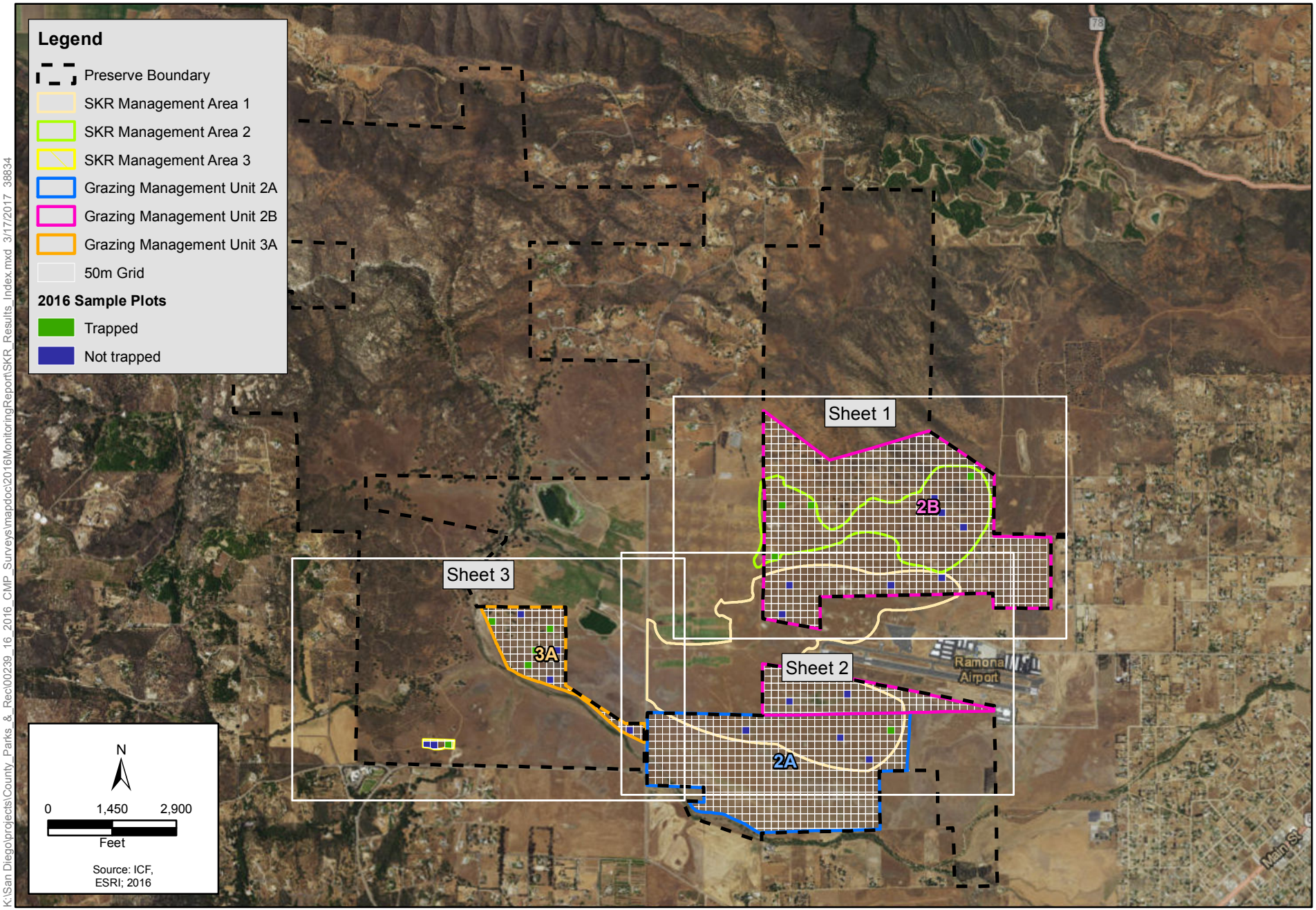

Figure 5
Results Index - Ramona Grassland Preserve – SKR Monitoring
Implementation of CMP – 2016 Resource Specific Monitoring Annual Report
County of San Diego Department of Parks and Recreation

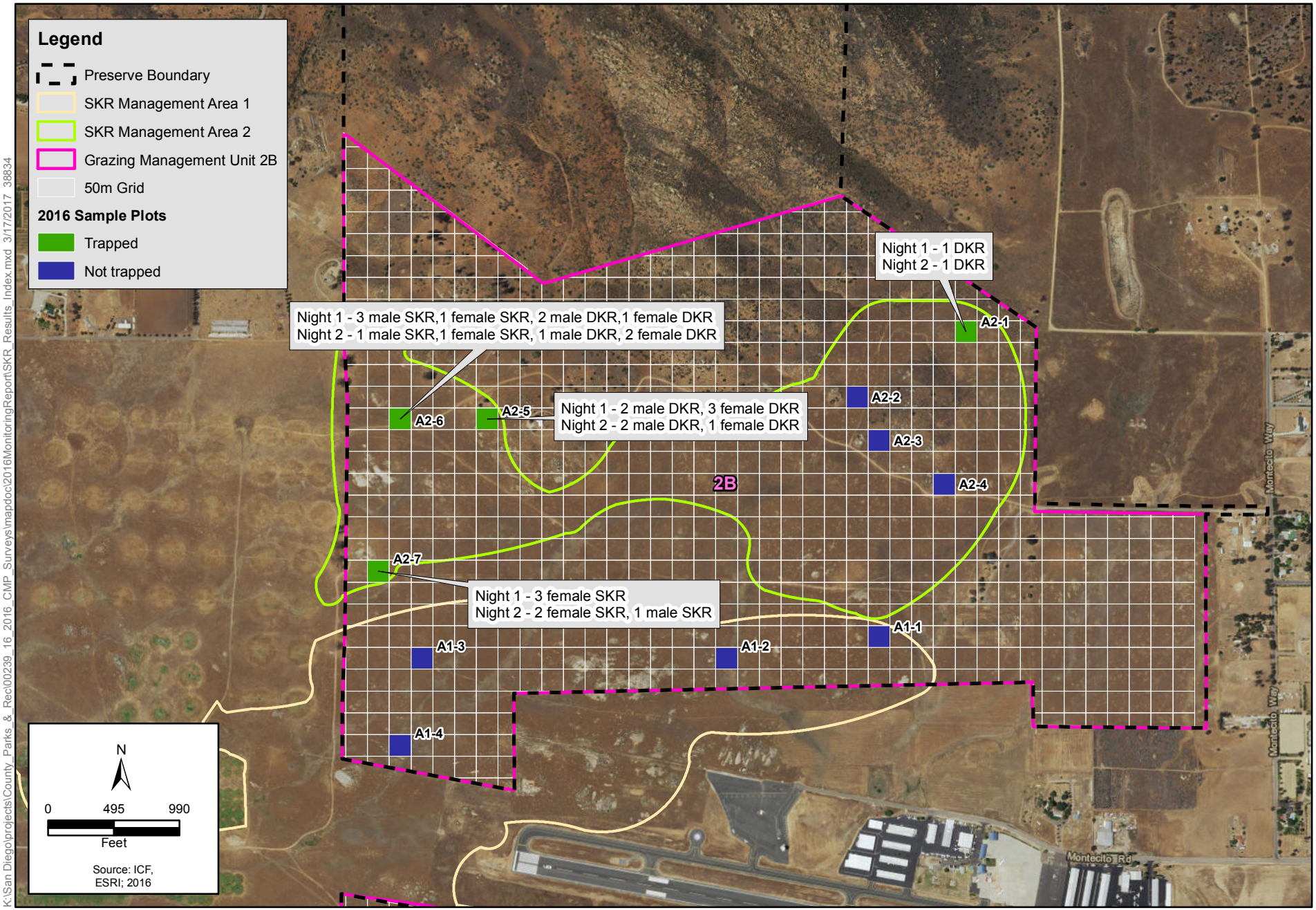

Figure 5
Results Sheet 1 - Ramona Grassland Preserve – SKR Monitoring
Implementation of CMP – 2016 Resource Specific Monitoring Annual Report
County of San Diego Department of Parks and Recreation

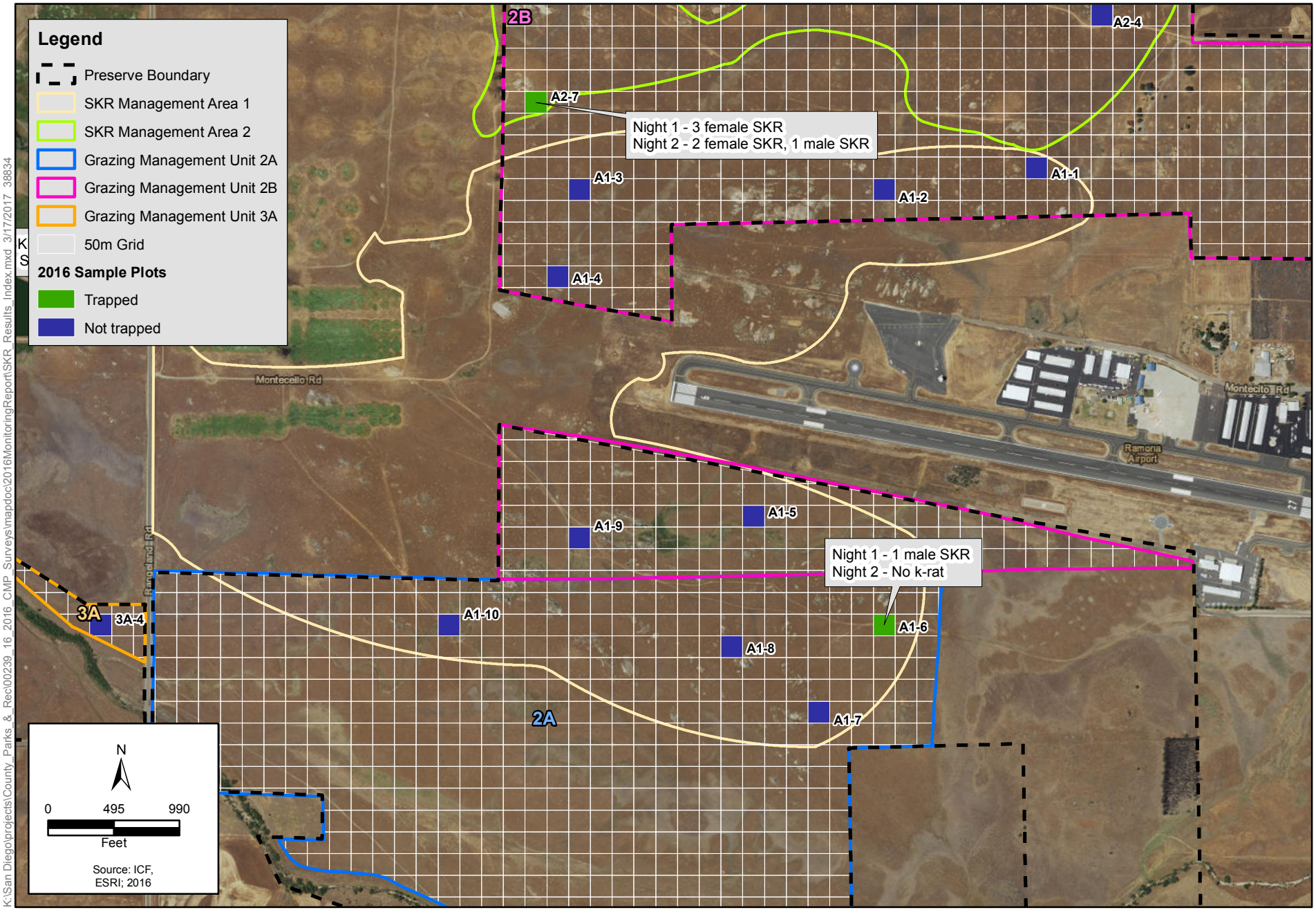

Figure 5
Results Sheet 2 - Ramona Grassland Preserve – SKR Monitoring
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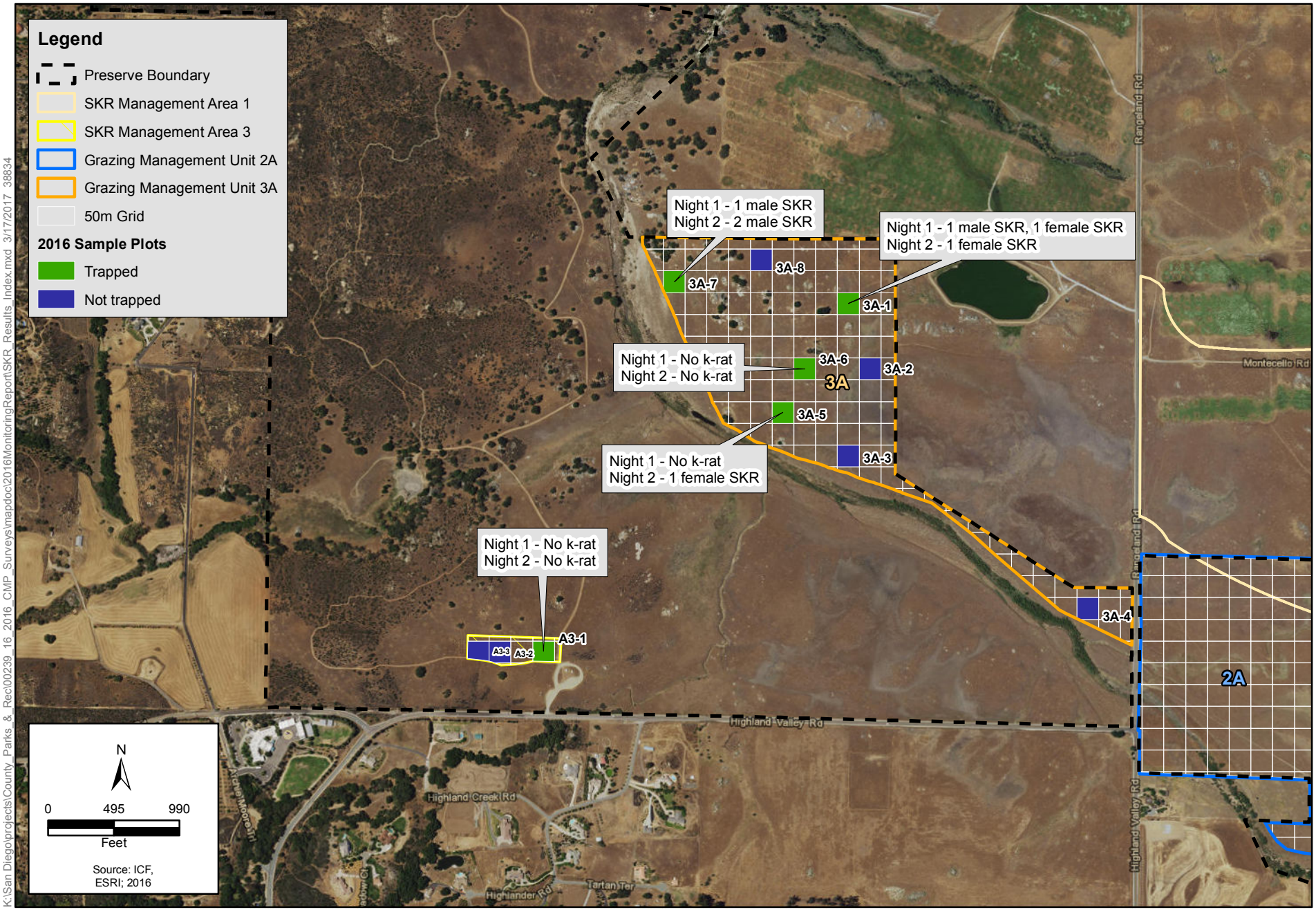

Figure 5
Results Sheet 3 - Ramona Grassland Preserve – SKR Monitoring
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County of San Diego Department of Parks and Recreation

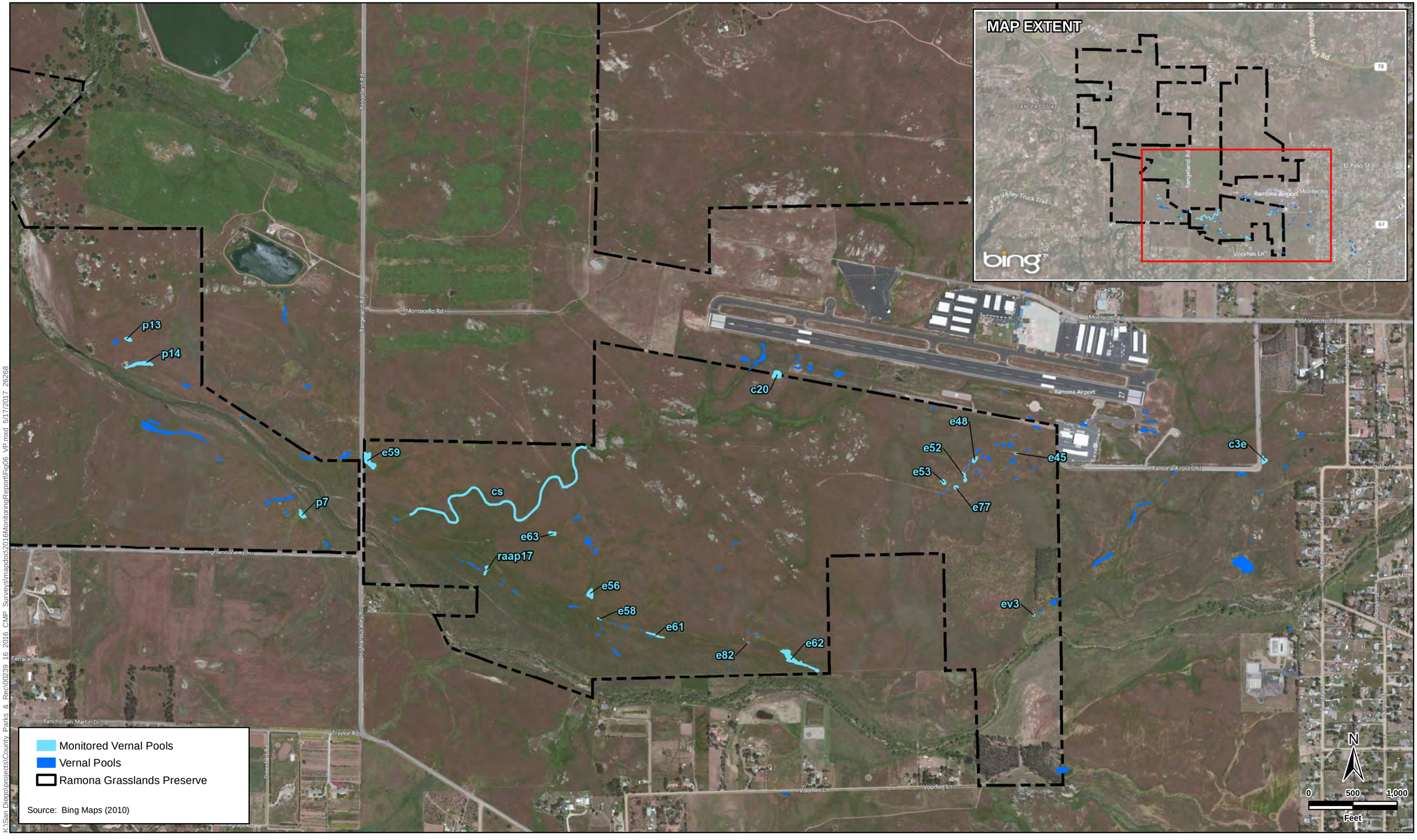

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Figure 6
Vernal Pool Monitoring - Ramona Grasslands Preserve
Implementation of CMP - 2016 Resource Specific Monitoring Annual Report
County of San Diego Department of Parks and Recreation

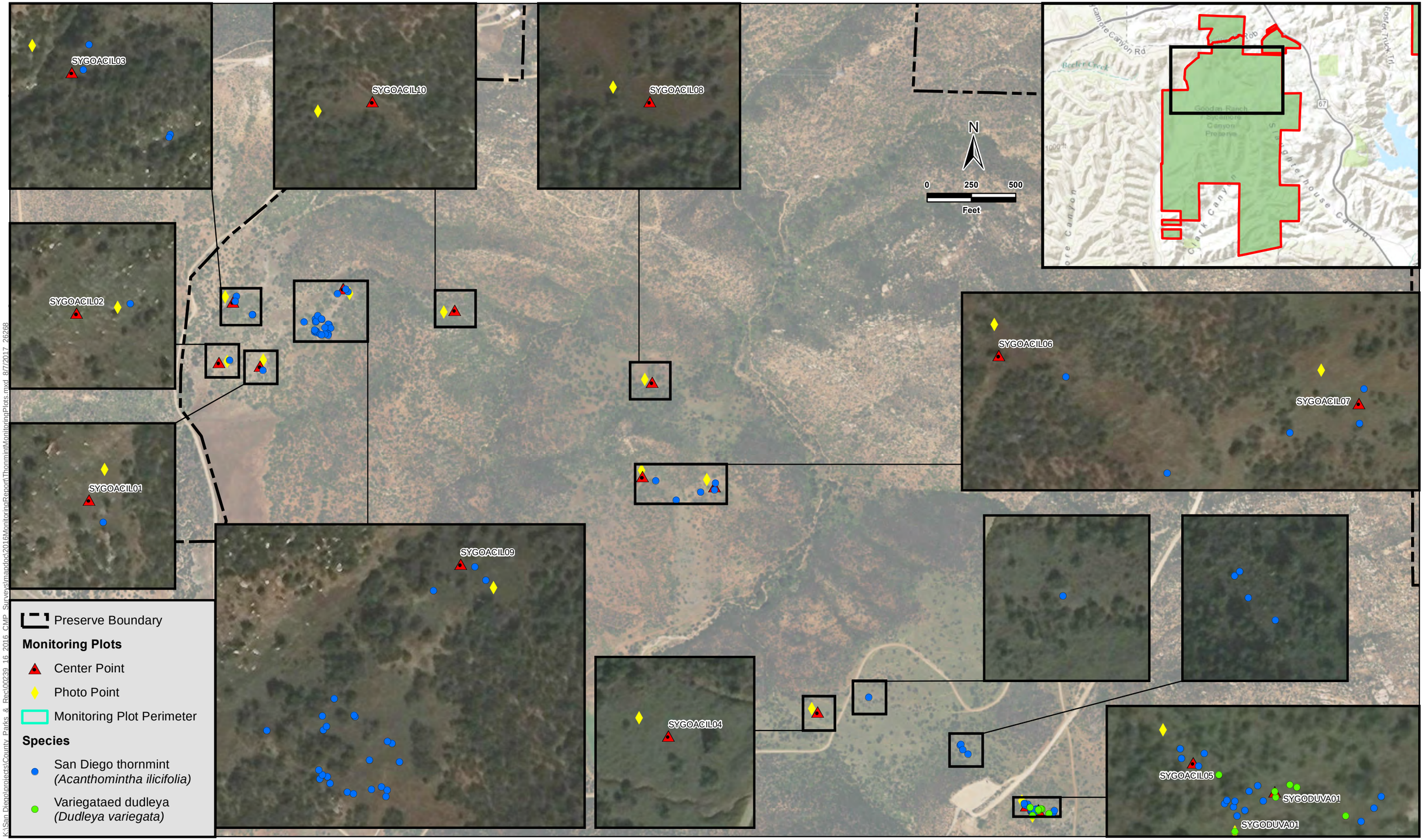

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Figure 7a
San Diego Thornmint Monitoring Plots - Sycamore Canyon/Goodan Ranch Preserve
Implementation of CMP – 2016 Resource Specific Monitoring Annual Report
County of San Diego Department of Parks and Recreation

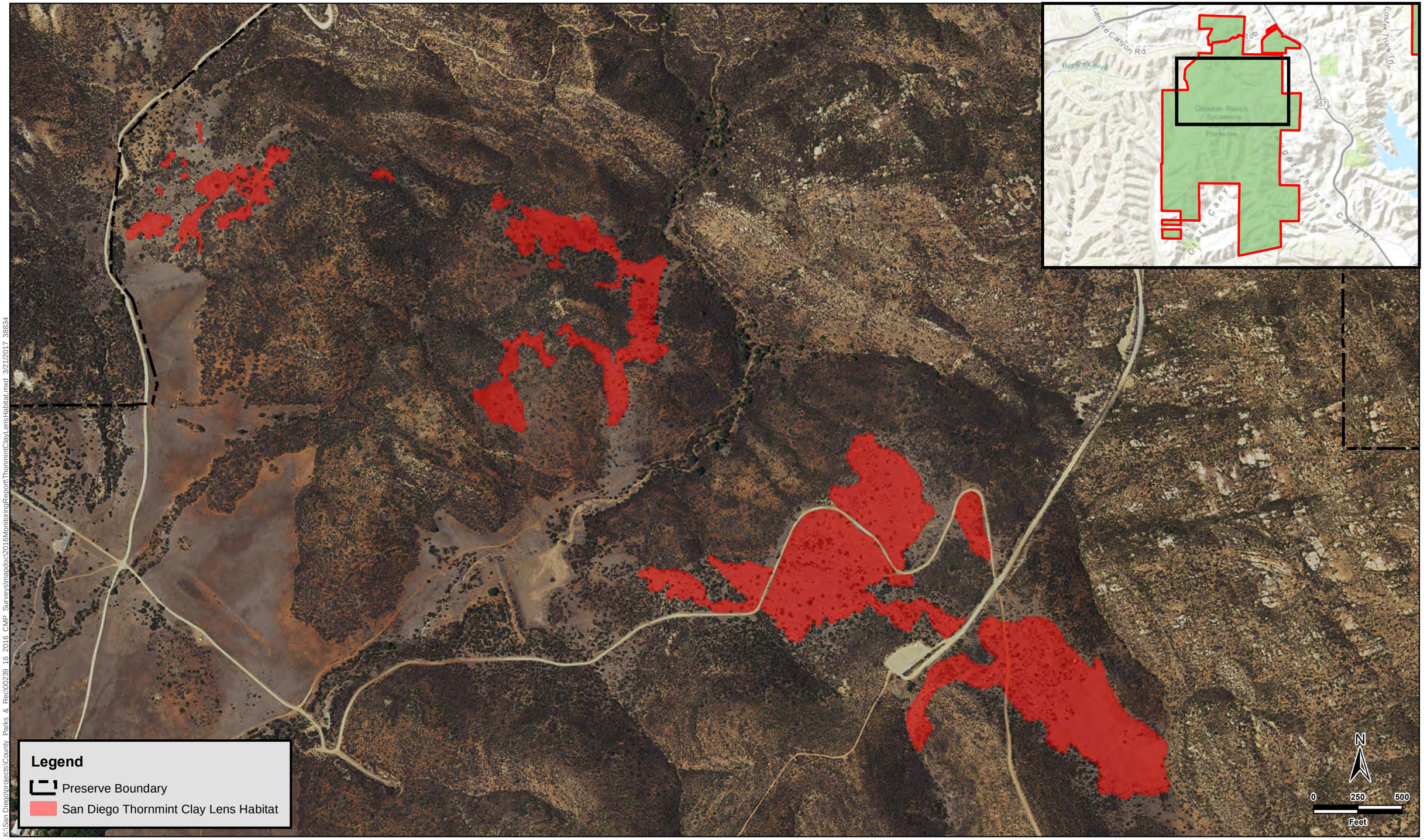

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Figure 7b
San Diego Thornmint Clay Lens Habitat - Sycamore Canyon/Goodan Ranch Preserve
Implementation of CMP – 2016 Resource Specific Monitoring Annual Report
County of San Diego Department of Parks and Recreation

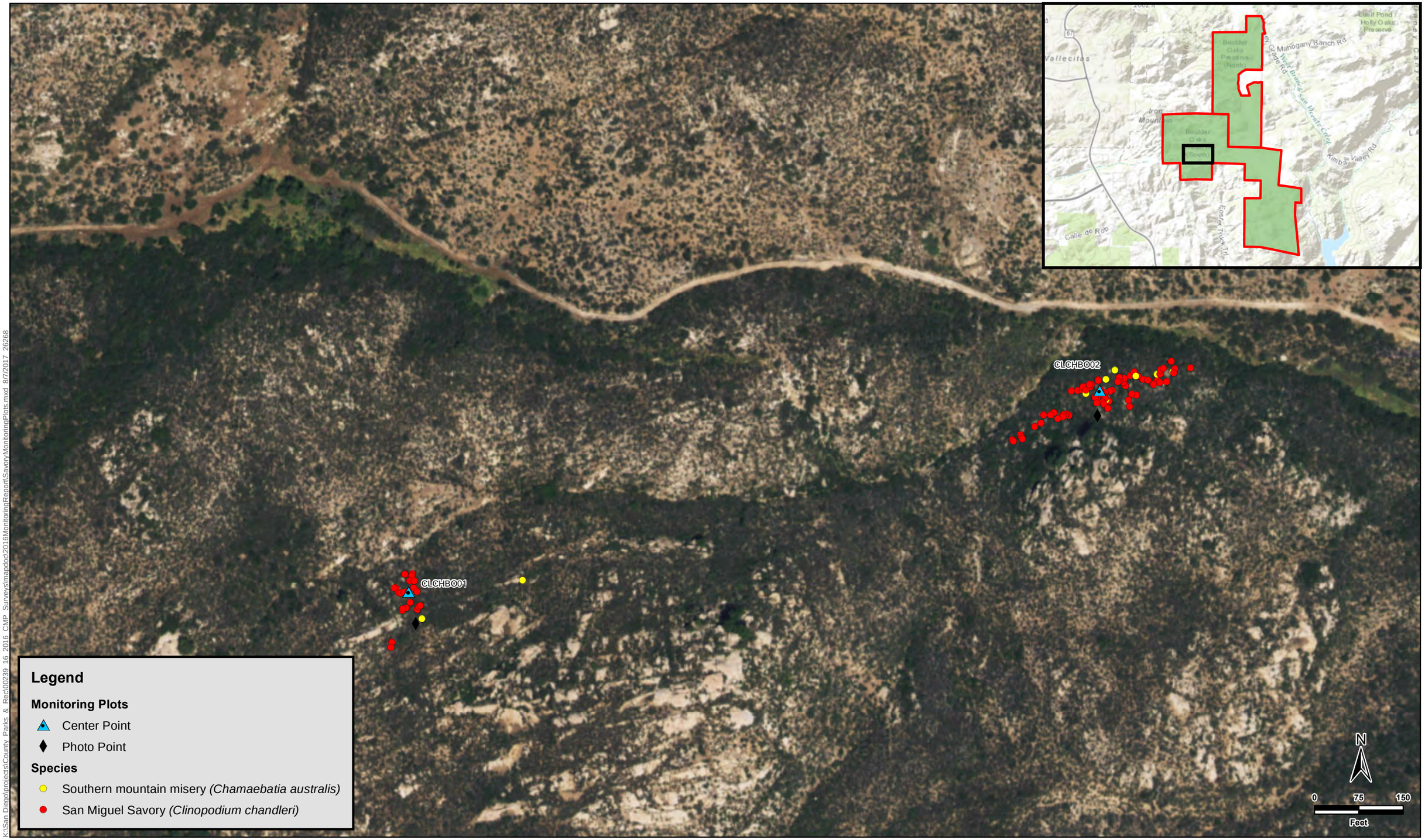

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Figure 7c
San Miguel Savory Monitoring Plots - Boulder Oaks Preserve
Implementation of CMP – 2016 Resource Specific Monitoring Annual Report
County of San Diego Department of Parks and Recreation

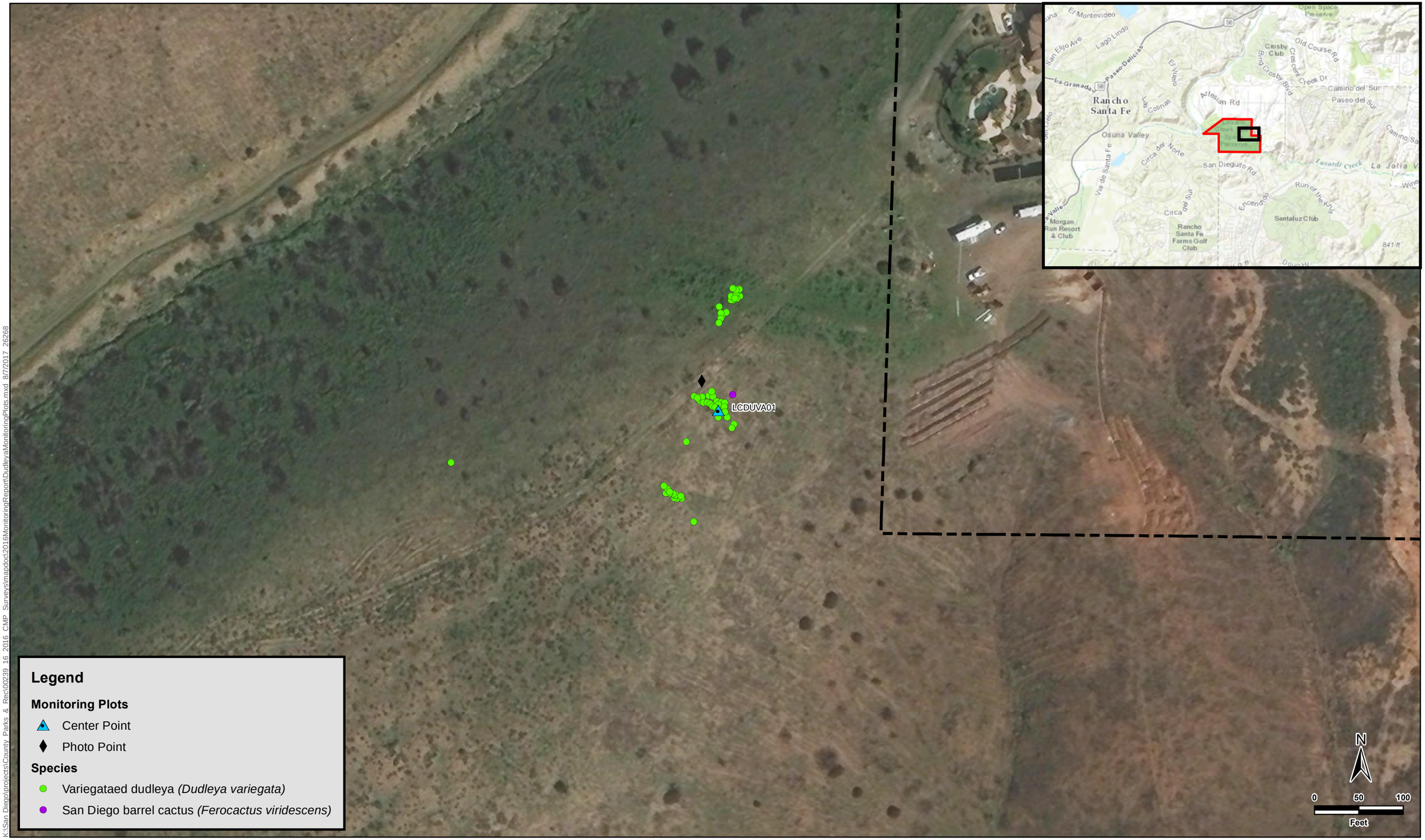

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Figure 7d
Variegated Dudleya Monitoring Plots - Lusardi Creek Preserve
Implementation of CMP – 2016 Resource Specific Monitoring Annual Report
County of San Diego Department of Parks and Recreation

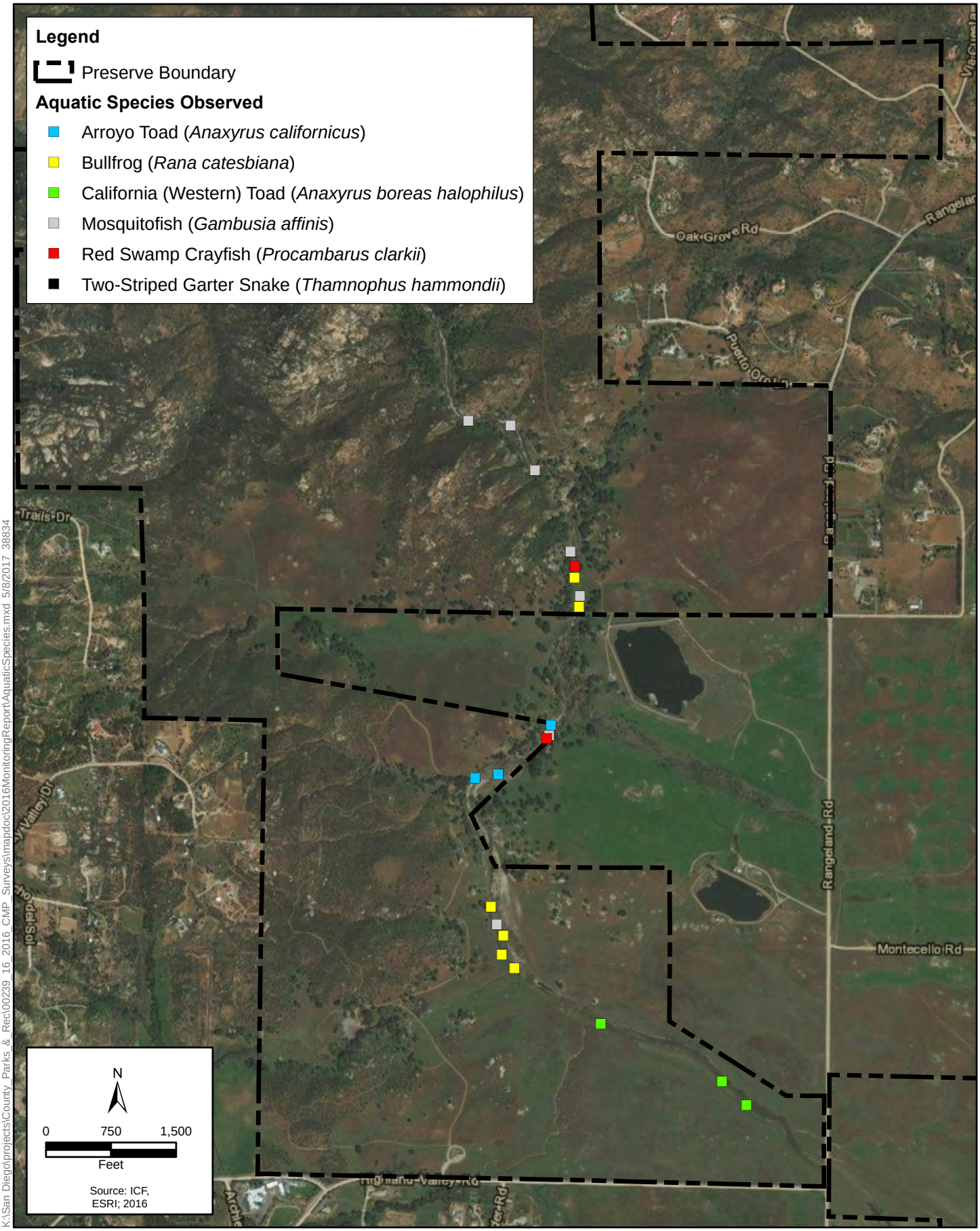

Figure 8
Aquatic Species Observations - Ramona Grasslands Preserve
Implementation of CMP – 2016 Resource Specific Monitoring Annual Report
County of San Diego Department of Parks and Recreation

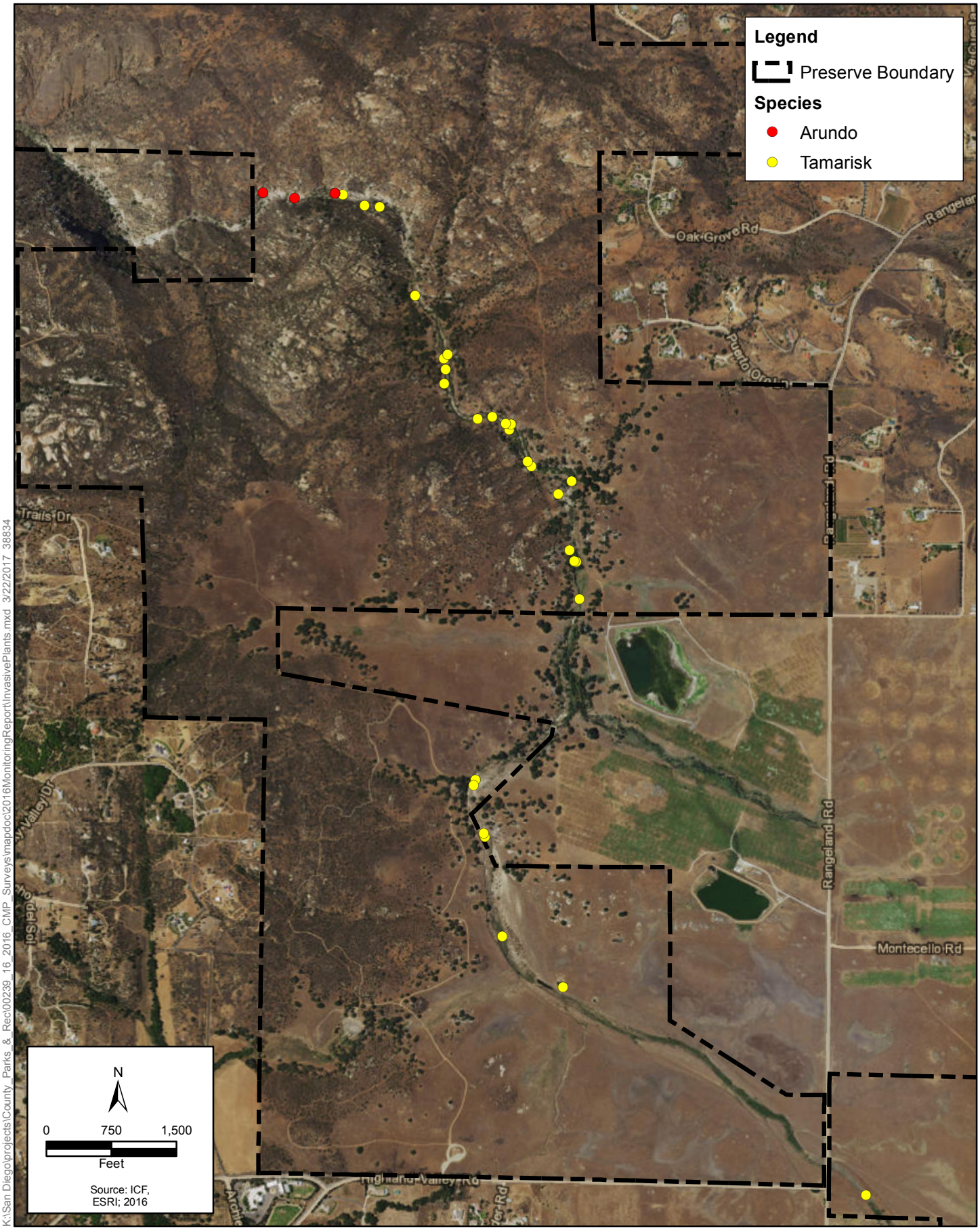

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Figure 9
Invasive Plant Species Observations - Ramona Grasslands Preserve
Implementation of CMP – 2016 Resource Specific Monitoring Annual Report
County of San Diego Department of Parks and Recreation

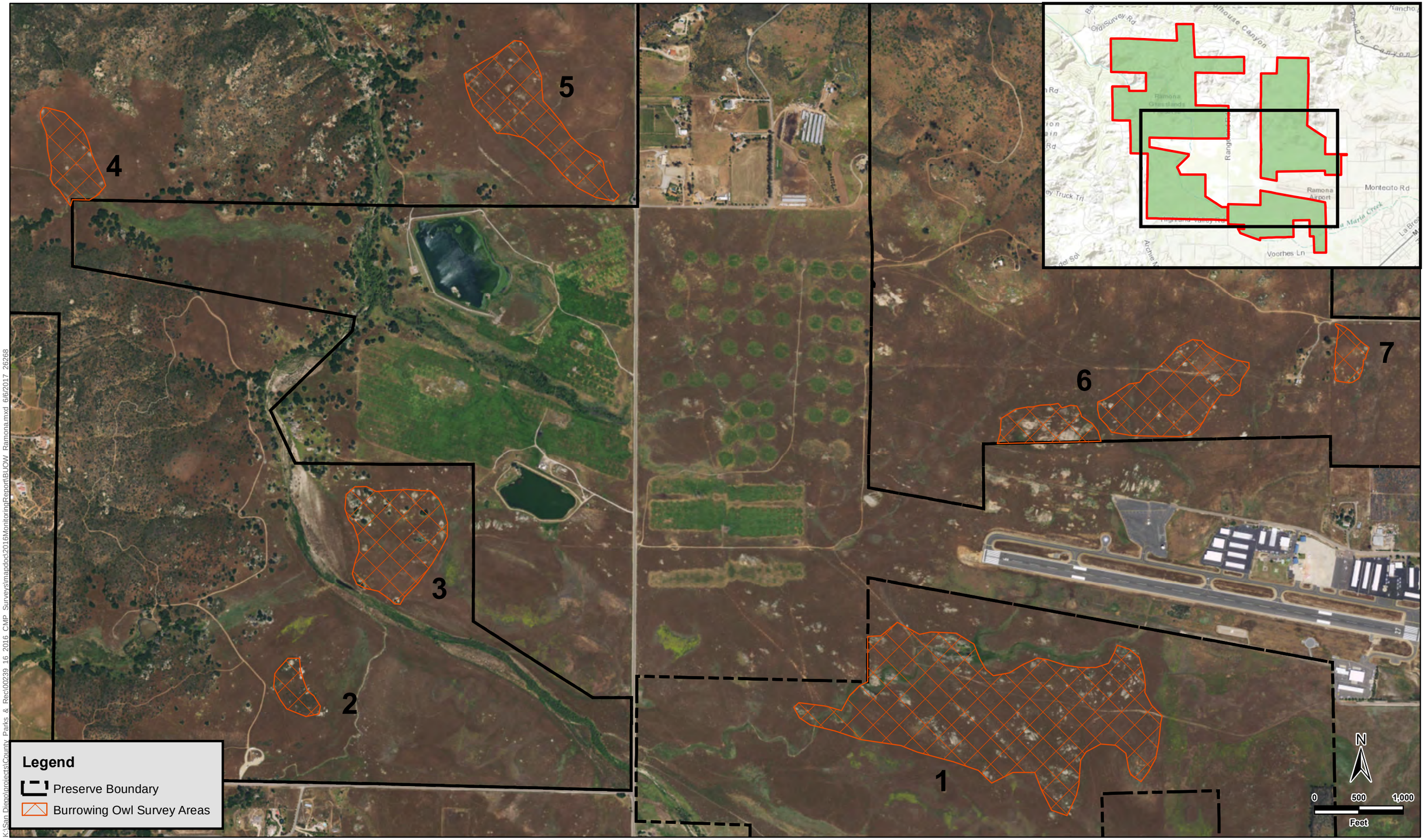

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Figure 10
Burrowing Owl Survey Areas - Ramona Grasslands Preserve
Implementation of CMP – 2016 Resource Specific Monitoring Annual Report
County of San Diego Department of Parks and Recreation

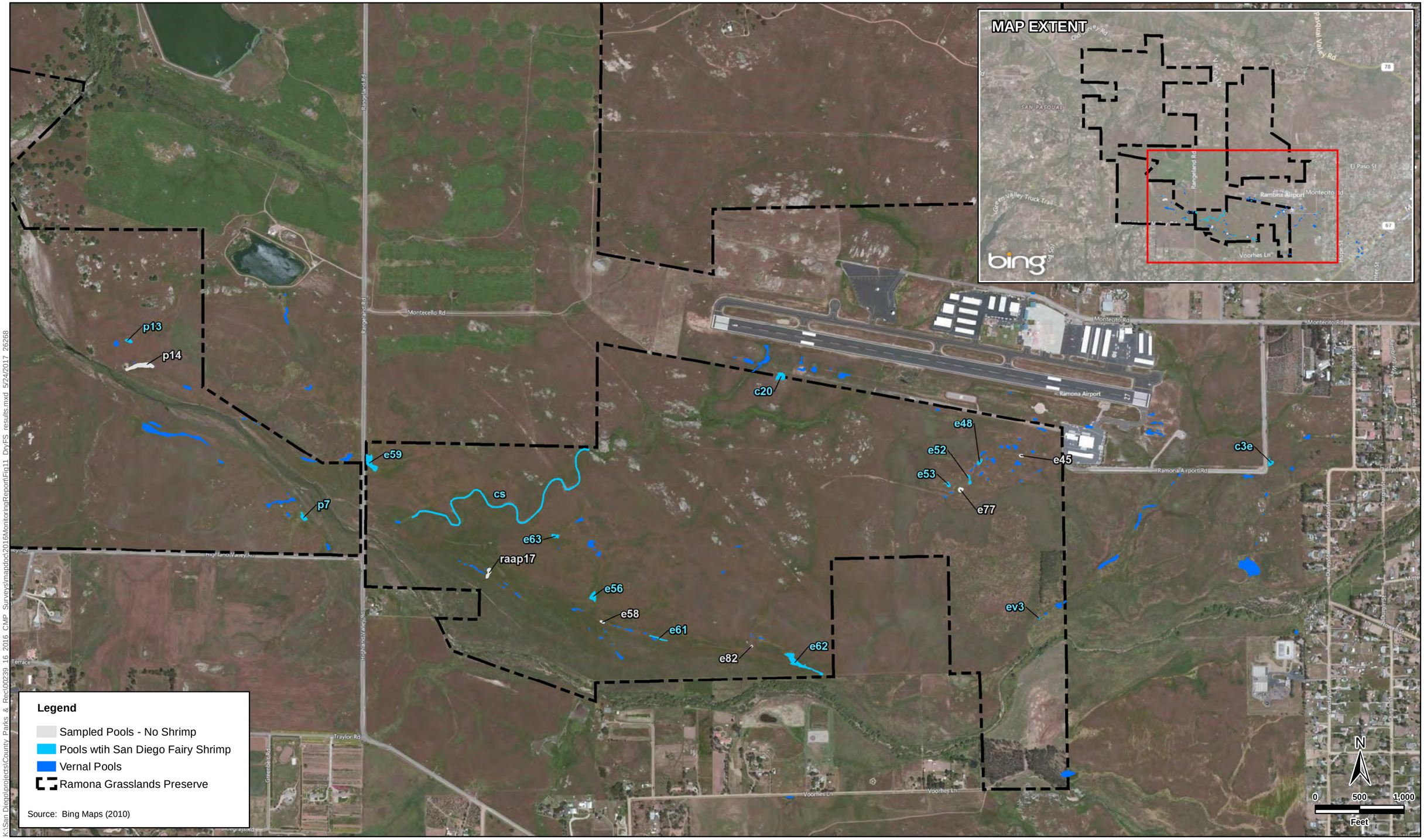

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Figure 11
Dry Season Fairy Shrimp Results - Ramona Grasslands Preserve
Implementation of CMP - 2016 Resource Specific Monitoring Annual Report
County of San Diego Department of Parks and Recreation

Appendix B

Photo Log

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Photograph: 1

Plot ID: SYGOACIL01

Date: May 4, 2016

Direction: View facing west

Photograph: 2

Plot ID: SYGOACIL02

Date: May 4, 2016

Direction: View facing west

Photograph: 3

Plot ID: SYGOACIL03

Date: May 4, 2016

Direction: View facing east

Photograph: 4

Plot ID: SYGOACIL04

Date: May 4, 2016

Direction: View facing southeast

Photograph: 5

Plot ID: SYGOACIL05

Date: May 4, 2016

Direction: View facing southeast

Photograph: 6

Plot ID: SYGOACIL06

Date: May 5, 2016

Direction: View facing northwest

Photograph: 7

Plot ID: SYGOACIL07

Date: May 5, 2016

Direction: View facing northeast

Photograph: 8

Plot ID: SYGOACIL08

Date: May 5, 2016

Direction: View facing southeast

Photograph: 9

Plot ID: SYGOACIL09

Date: May 5, 2016

Direction: View facing northwest

Photograph: 10

Plot ID: SYGOACIL10

Date: May 5, 2016

Direction: View facing southeast

Photograph: 11

Notes: San Diego thornmint in flower with Palmer's grappling hook

Date: May 5, 2016

Direction: N/A

Photograph: 12

Notes: San Diego thornmint habitat invaded by purple false brome

Date: May 5, 2016

Direction: N/A

Photograph: 13

Plot ID: BOCLCH01

Date: April 16, 2016

Direction: View facing northwest

Photograph: 14

Plot ID: BOCLCH02

Date: April 16, 2016

Direction: View facing northeast

Photograph: 15

Notes: San Miguel savory in flower

Date: April 16, 2016

Direction: N/A

Photograph: 16

Plot ID: LCDUVA01

Date: April 27, 2016

Direction: View facing southeast

Photograph: 17

Notes: Variegated dudleya in flower

Date: April 27, 2016

Direction: N/A

Photograph: 1

Notes: Western toads in Santa Maria Creek
Date: April 27, 2016

Direction: N/A

Photograph: 2

Notes: Western toad tadpoles in Santa Maria Creek
Date: April 27, 2016

Direction: N/A

Photograph: 3

Notes: Tree frog in Santa Maria Creek
Date: April 27, 2016

Direction: N/A

Photograph: 4

Notes: Bull frog in Santa Maria Creek
Date: April 27, 2016

Direction: N/A

Photograph: 5

Pool ID: Saltcedar in Santa Maria Creek
Date: May 4, 2016

Direction: View facing south

Photograph: 1

Plot ID: A1-1

Date: November 14, 2016

Direction: View facing northwest

Photograph: 2

Plot ID: A1-2

Date: November 14, 2016

Direction: View facing northwest

Photograph: 3

Plot ID: A1-3

Date: November 14, 2016

Direction: View facing northwest

Photograph: 4

Plot ID: A1-4

Date: November 14, 2016

Direction: View facing northwest

Photograph: 5

Plot ID: A1-5

Date: November 14, 2016

Direction: View facing northwest

Photograph: 6

Plot ID: A1-6

Date: November 14, 2016

Direction: View facing northwest

Photograph: 7

Plot ID: A1-7

Date: November 15, 2016

Direction: View facing northwest

Photograph: 8

Plot ID: A1-8

Date: November 14, 2016

Direction: View facing northwest

Photograph: 9

Plot ID: A1-9

Date: November 15, 2016

Direction: View facing northwest

Photograph: 10

Plot ID: A1-10

Date: November 15, 2016

Direction: View facing northwest

Photograph: 11

Plot ID: A2-1

Date: November 14, 2016

Direction: View facing northwest

Photograph: 12

Plot ID: A2-2

Date: November 14, 2016

Direction: View facing northwest

Photograph: 13

Plot ID: A2-3

Date: November 14, 2016

Direction: View facing northwest

Photograph: 14

Plot ID: A2-4

Date: November 14, 2016

Direction: View facing northwest

Photograph: 15

Plot ID: A2-5

Date: November 14, 2016

Direction: View facing northwest

Photograph: 16

Plot ID: A2-6

Date: November 14, 2016

Direction: View facing northwest

Photograph: 17

Plot ID: A2-7

Date: November 14, 2016

Direction: View facing northwest

Photograph: 18

Plot ID: A3-1

Date: November 13, 2016

Direction: View facing northwest

Photograph: 19

Plot ID: A3-2

Date: November 13, 2016

Direction: View facing northwest

Photograph: 20

Plot ID: A3-3

Date: November 13, 2016

Direction: View facing northwest

Photograph: 21

Plot ID: 3A-1

Date: November 13, 2016

Direction: View facing northwest

Photograph: 22

Plot ID: 3A-2

Date: November 13, 2016

Direction: View facing northwest

Photograph: 23

Plot ID: 3A-3

Date: November 13, 2016

Direction: View facing northwest

Photograph: 24

Plot ID: 3A-4

Date: November 14, 2016

Direction: View facing northwest

Photograph: 25

Plot ID: 3A-5

Date: November 13, 2016

Direction: View facing northwest

Photograph: 26

Plot ID: 3A-6

Date: November 13, 2016

Direction: View facing northwest

Photograph: 27

Plot ID: 3A-7

Date: November 13, 2016

Direction: View facing northwest

Photograph: 28

Plot ID: 3A-8

Date: November 13, 2016

Direction: View facing northwest

Photograph: 29

Location: West half of Grazing Management Unit 2A.

Date: April 23, 2016

Direction: View facing north

Comment: Photo depicts dense vegetation cover in the Spring of 2016. Dominate herb is *Erodium* sp. SKR obstruction factor is high.

Photograph: 30

Location: Southeast corner of Grazing Management Unit 3B.

Date: April 25, 2016

Direction: View facing northwest

Comment: Photo depicts dense vegetation cover in the Spring of 2016. SKR obstruction factor is high.

Photograph: 31

Plot ID: 3A-7

Date: November 14, 2016

Comment: SKR capture.

Photograph: 32

Plot ID: 3A-7

Date: November 14, 2016

Comment: SKR capture.

Photograph: 33

Plot ID: A2-1 & A2-5

Date: November 16, 2016

Comment: DKR capture.

Photograph: 1

Pool ID: E59

Date: May 11, 2016

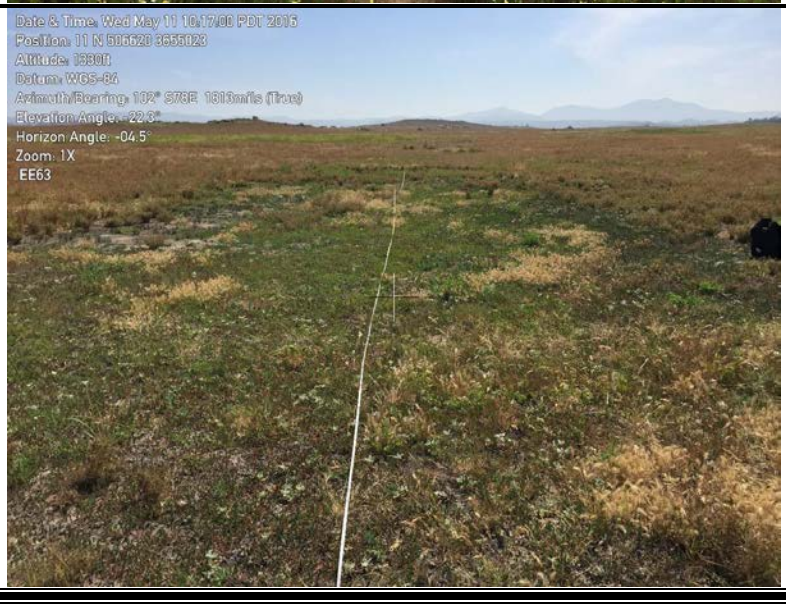
Direction: View facing northwest

Photograph: 2

Pool ID: CS

Date: May 11, 2016

Direction: View facing southeast



Photograph: 3

Pool ID: E63

Date: May 11, 2016

Direction: View facing southeast

Photograph: 4

Pool ID: E62

Date: May 11, 2016

Direction: View facing southeast

Photograph: 5

Pool ID: E82

Date: May 11, 2016

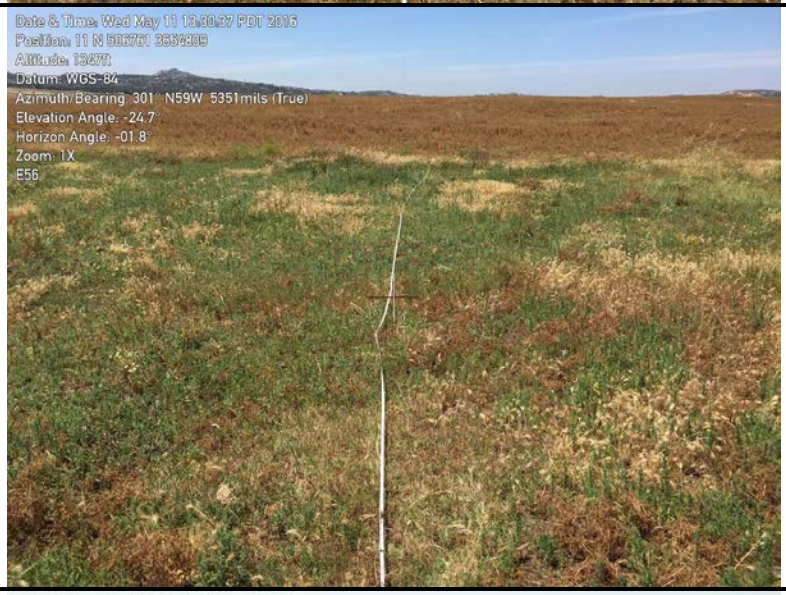
Direction: View facing southeast

Photograph: 6

Pool ID: E61

Date: May 11, 2016

Direction: View facing northeast

	**Photograph:** 7 **Pool ID:** E58 **Date:** May 11, 2016 **Direction:** View facing northwest
	**Photograph:** 8 **Pool ID:** E56 **Date:** May 11, 2016 **Direction:** View facing northwest
	**Photograph:** 9 **Pool ID:** RAAP17 **Date:** May 12, 2016 **Direction:** View facing southeast

Photograph: 10

Pool ID: C20

Date: May 12, 2016

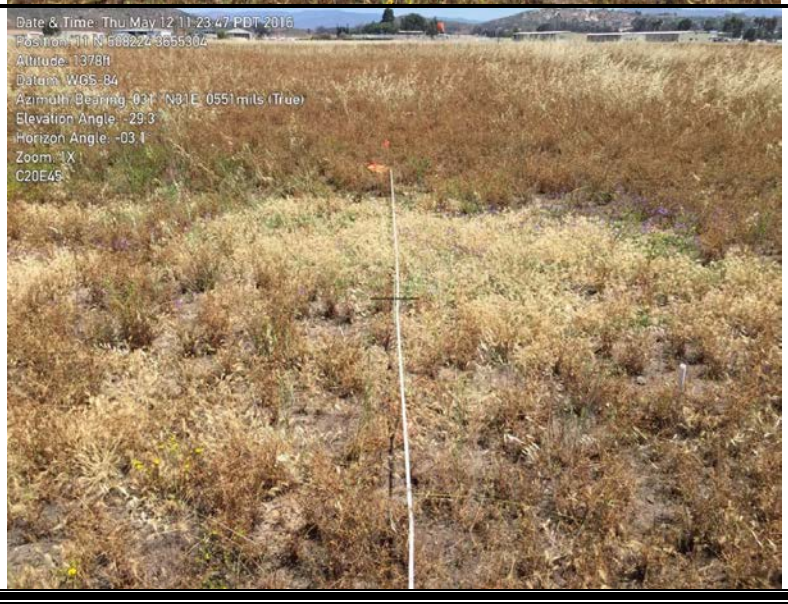
Direction: View facing southwest

Photograph: 11

Pool ID: E48

Date: May 12, 2016

Direction: View facing southwest



Photograph: 12

Pool ID: E45

Date: May 12, 2016

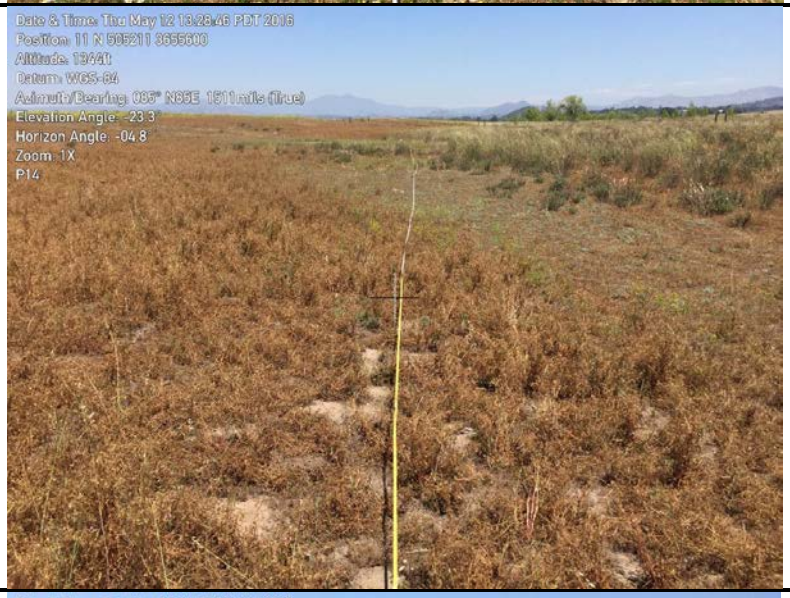
Direction: View facing northeast

Photograph: 13

Pool ID: P7

Date: May 12, 2016

Direction: View facing northwest



Photograph: 14

Pool ID: P14

Date: May 12, 2016

Direction: View facing northeast

Photograph: 15

Pool ID: P13

Date: May 12, 2016

Direction: Southwest

Appendix C

MSP Rare Plant Monitoring Forms

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MSP - Rare Plant Occurrence Monitoring Form 2016

Scientific Name:	Acanthomintha ilicifolia	Common Name:	San Diego thornmint
Existing MSP Occurrence?	yes	MSP Occurr. ID:	ACIL_4SYCA027
CNDDB Elem. Occur. #:		Translocated?	no
Preserve:	Sycamore Canyon and Goodan Ranch Preserves	Mgmt Unit:	MU4
Land Owner:	County San Diego Department of Parks and Recreation	Land Mangr:	County San Diego Department of Parks and Recreation
Occurrence Name:	Sycamore Canyon	Sample Point #:	SYGOACIL01
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation	Friends of Sycamore Cany
Date:	5/4/2016	Time Start:	8:00
Time Finish:	9:20		

I. OCCURRENCE STATUS - *Assess # plants in both species-specific **sampling area** (typically 10-m radius circle) & in **current mapped extent.** See p. 4 for definitions of categories describing phenology & evidence of herbivory, disease & stunted growth within the sampling area. Record any notes on p. 3.*

# Plants/Current Mapped Extent:	1,000s	exact count or estimate?	estimate (extrapolate partial ct)	uncert.	low
Area of Current Mapped Extent:	30	units	acres	exact (GPS) or estim?	estimate
Species Found in Maximum Extent?	yes	if not found, known or suspected reason:			
# Plants/Sampling Area	143	exact count or estimate?	exact	uncert.	low
Sample Area Radius (m)	10		exact		
Phenology In Sampling Area (1-6):	Vegetative 1 (0%)	Flowering	1 (0%)	Fruiting	1 (0%)
	Dead 1 (0%)	Flowering & Fruiting	6 (≥75%)		
Evidence in Sampling Area (1-6):	Herbivory 1 (0%)	Disease	1 (0%)	Stunted Growth	1 (0%)
Is Sampling Area within Current Mapped Extent?	yes				
Collection (if not collected previously)?	no				
If yes: Collector		Collection #			
Museum/Herbarium					

II. SAMPLING AREA LOCATION & SITE PHOTOMONITORING

GPS Accuracy: +/-	1	accur. units:	meters	Datum:	NAD83
coord. system	UTM (m)				
Coordin's at Center of Plot: E:	501592	N:	3644272		
Camera type:	Iphone 6				
Locat. 1 Coord.--E, N	501600, 3644281	Direction facing	203 Degrees	Height	5 Feet
Camera angle	1 Degrees	Photo #	1	File location	
Locat. 2 Coord.-- E,N		Direction facing		Height	
Camera angle		Photo #		File location	

III. ASSOCIATED SPECIES *If need more room, record additional data and any notes on page 3.*

species/substrate	% Cover	Collection #, or NC if not collected	species/substrate	% Cover	Collect.# or NC if not collected
Acanthomintha ilicifolia	3	NC	Harpagonella palmeri	2	NC
Acmispon glaber	0.1	NC	Heteromeles arbutifolia	1	NC
Allium sp.	0.1	NC	Hypochaeris glabra	0.1	NC
Apiastrum angustifolium	10	NC	Logfia gallica	0.1	NC
Artemisia californica	0.1	NC	Lysimachia arvensis	0.1	NC
Baccharis sarothroides	0.1	NC	Malosma laurina	0.1	NC
Brachypodium distachyon	15	NC	Rhamnus crocea	0.1	NC
Bromus hordeaceus	0.1	NC	Salvia apiana	0.1	NC
Bromus madritensis ssp. rubens	0.1	NC	Sisyrinchium bellum	0.1	NC
Calochortus splendens	0.1	NC	Sonchus asper	0.1	NC
Centaurea melitensis	12	NC	Stipa cernua	0.1	NC
Convolvulus simulans	1	NC	**bare ground**	30	
Deinandra fasciculatum	0.1	NC	**rock**	2	
Erodium moschatum	10	NC	**litter**	12	

COVER: Total % Cover:	56	%Herb:	53	%Shrub:	3	%Tree:	0

MSP - Rare Plant Habitat and Threats Assessment Form 2016

(top 4 rows auto-fill from page 1)

Scientific Name:	Acanthomintha ilicifolia	MSP Occur. ID:	ACIL_4SYCA027
Preserve:	Sycamore Canyon and Goodan Ranch Preserves		
Occurrence Name:	Sycamore Canyon		
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation:	Friends of Sycamore Ca
Date:	5/4/2016	Time Start: 8:00 AM	Time Finish: 9:20 AM

IV. **HABITAT ASSESSMENT IN SAMPLING AREA** - Assess habitat covariates within **species-specific sampling area (typically 10-m radius circle)**. Vegetation alliance/association can be assigned using San Diego vegetation key (AECOM 2012) in the office or field, using "Associated Species" data from page 1. See page 4 for definitions of habitat assessment categories. Record any notes on page 3.

SANDAG 2012 Vegetation Alliance/Association: Brachypodium distachyon Semi-Natural Stand Type

Cover classes (1-6)

Cryptogamic Crust Cover: 1 (0%) | Thatch Cover: 1 (0%)

Thatch Depth Average (cm): | Thatch Depth max (cm):

Dead Standing Biomass: no

If yes, cover/species class: | Average height (cm):

Mammal Species Activity (categ. 1-4)

Feral pig activity: 1 = No feral pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) detected.

ground squirr. activity: 1 = No ground squirrel burrows detected.

gopher activity: 1 = No pocket gopher mounds detected.

Sampling area representative of mapped occurrence? yes (If no, note differences on page 3)

VI. **THREATS ASSESSMENT IN MAXIMUM EXTENT** - Assess threats within the **occurrence's maximum extent** (cumulative extent over years of monitoring) **plus 10-m surrounding buffer**. See page 4 for definitions of threat assessment categories. Record notes on page 3. See Argentine Ant Protocol (USGS 2015) for setting up bait, etc.

Surrounding Land Use/Activity at, or Adjacent to, Site: Open Space

Argentine ant abundance at bait station (1-4)

Time start: | Temp start: | Time end: | Temp end:

Ant sample collected? | Ant sample # | Ant Station Photo #:

DISTURBANCES (Rank each as 1-6):

Non-native forbs	6 = Disturbance occurs 50% to < 75% of area within	feral pig activity	1 = No sign	altered hydrology	1 = No sign of disturbanc
Non-native grasses	6 = Disturbance occurs 50% to < 75% of area within	trampling	1 = No sign	erosion	1 = No sign of disturbanc
Non-native woody pl.	1 = No sign of disturbance within maxinum extent or	vandalism	1 = No sign	urban runoff	1 = No sign of disturbanc
competitive native pl.	1 = No sign of disturbance within maxinum extent or	current grazing	1 = No sign	slope movement	3 = Disturbance present
dumping/trash	1 = No sign of disturbance within maxinum extent or	historic grazing	1 = No sign	soil compaction	1 = No sign of disturbanc
encampments	1 = No sign of disturbance within maxinum extent or	historic agriculture	1 = No sign		

fuel modification zone/fire break: 1 = No sign of

road construction/maintenance: 1 = No sign of | if present, describe:

illegal vegetation clearing: 1 = No sign of | if present, describe:

brush management/restoration: 1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer.

ORV activity: 1 = No sign of | if present, describe:

Evidence of recent fire: 1 = No sign of disturbance within maxinum

If sign of recent fire, year burned?

Trails: 1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer. | If trails are present, are they authorized? no

Type of trail use

hiking: no | biking: no | equestrian: no | dog: no

service vehicles: no | other: no

illegal trail use?: 1 = No sign of | describe:

Other disturbance?: 1 = No sign of disturbance within maxinum extent or | describe:

MSP-Management Needs and Notes 2016

(top 2 rows auto-fill from page 1)

Scientific Name: Acanthomintha ilicifolia

MSP Occur ID. ACIL_4SYCA027

Date: 5/4/2016

VI. MANAGEMENT RECOMMENDATIONS

Nonnative plant control.

VII. MANAGEMENT ACTIONS IN LAST YEAR

None.

VIII. CNDDB SPECIES DETECTED (list any plant or animal species to add to the CNDDB)

Convolvulus simulans and Harpagonella palmeri.

NOTES

MSP - Rare Plant Occurrence Monitoring Form 2016

Scientific Name:	Acanthomintha ilicifolia	Common Name:	San Diego thornmint
Existing MSP Occurrence?	yes	MSP Occurr. ID:	ACIL_4SYCA027
CNDDB Elem. Occur. #:		Translocated?	no
Preserve:	Sycamore Canyon and Goodan Ranch Preserves	Mgmt Unit:	MU4
Land Owner:	County San Diego Department of Parks and Recreation	Land Mangr:	County San Diego Department of Parks and Recreation
Occurrence Name:	Sycamore Canyon	Sample Point #:	SYGOACIL02
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation	Friends of Sycamore Cany
Date:	5/4/2016	Time Start:	9:30
Time Finish:	10:30		

I. OCCURRENCE STATUS - *Assess # plants in both species-specific **sampling area** (typically 10-m radius circle) & in **current mapped extent.** See p. 4 for definitions of categories describing phenology & evidence of herbivory, disease & stunted growth within the sampling area. Record any notes on p. 3.*

# Plants/Current Mapped Extent:	1,000s	exact count or estimate?	estimate (extrapolate partial ct)	uncert.	low
Area of Current Mapped Extent:	30	units	acres	exact (GPS) or estim?	estimate
Species Found in Maximum Extent?	yes	if not found, known or suspected reason:			
# Plants/Sampling Area	33	exact count or estimate?	exact	uncert.	low
Sample Area Radius (m)	10		exact		
Phenology In Sampling Area (1-6): Vegetative	1 (0%)	Flowering	1 (0%)	Fruiting	1 (0%)
Dead	1 (0%)	Flowering & Fruiting	6 (≥75%)		
Evidence in Sampling Area (1-6): Herbivory	1 (0%)	Disease	1 (0%)	Stunted Growth	1 (0%)
Is Sampling Area within Current Mapped Extent?	yes				
Collection (if not collected previously)?	no				
If yes: Collector		Collection #			
Museum/Herbarium					

II. SAMPLING AREA LOCATION & SITE PHOTOMONITORING

GPS Accuracy: +/-	1	accur. units:	meters	Datum:	NAD83
coord. system	UTM (m)				
Coordin's at Center of Plot: E:	501522	N:	3644277		
Camera type:	Iphone 6				
Locat. 1 Coord.--E, N	501531, 3644282	Direction facing	259 Degrees	Height	5 Feet
Camera angle	3 Degrees	Photo #	1	File location	
Locat. 2 Coord.-- E,N		Direction facing		Height	
Camera angle		Photo #		File location	

III. ASSOCIATED SPECIES *If need more room, record additional data and any notes on page 3.*

species/substrate	% Cover	Collection #, or NC if not collected	species/substrate	% Cover	Collect.# or NC if not collected
Acmispon glaber	0.1	NC	Hazardia squarrosa	0.1	NC
Allium sp.	0.1	NC	Hypochaeris glabra	0.1	NC
Apiastrum angustifolium	2	NC	Isocoma menziesii	0.1	NC
Brachypodium distachyon	40	NC	Lepidium sp.	0.1	NC
Brassica nigra	0.1	NC	Logfia gallica	0.1	NC
Bromus madritensis ssp. rubens	0.1	NC	Lysimachia arvensis	0.1	NC
Calochortus splendens	0.1	NC	Rhamnus crocea	0.1	NC
Calystegia macrostegia	0.1	NC	Sisyrinchium bellum	0.1	NC
Centaurea melitensis	5	NC	Stipa cernua	1	NC
Convolvulus simulans	0.1	NC			NC
Deinandra fasciculata	1	NC			NC
Erodium botrys	0.1	NC	**bare ground**	25	
Erodium moschatum	0.1	NC	**rock**	15	
Harpagonella palmeri	0.1	NC	**litter**	9	

COVER: Total % Cover:	51	%Herb:	50	%Shrub:	1	%Tree:	0

MSP - Rare Plant Habitat and Threats Assessment Form 2016

(top 4 rows auto-fill from page 1)

Scientific Name:	Acanthomintha ilicifolia	MSP Occur. ID:	ACIL_4SYCA027
Preserve:	Sycamore Canyon and Goodan Ranch Preserves		
Occurrence Name:	Sycamore Canyon		
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation:	Friends of Sycamore Ca
Date:	5/4/2016	Time Start: 9:30 AM	Time Finish: 10:30 AM

IV. **HABITAT ASSESSMENT IN SAMPLING AREA** - Assess habitat covariates within **species-specific sampling area (typically 10-m radius circle)**. Vegetation alliance/association can be assigned using San Diego vegetation key (AECOM 2012) in the office or field, using "Associated Species" data from page 1. See page 4 for definitions of habitat assessment categories. Record any notes on page 3.

SANDAG 2012 Vegetation Alliance/Association: Brachypodium distachyon Semi-Natural Stand Type

Cover classes (1-6)

Cryptogamic Crust Cover: 2 (>0% to <1

Thatch Cover: 2 (>0% to <10%)

Thatch Depth Average (cm):

Thatch Depth max (cm):

Dead Standing Biomass: no

If yes, cover/species class:

Average height (cm):

Mammal Species Activity (categ. 1-4)

Feral pig activity: 1 = No feral pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) detected.

ground squirr. activity: 1 = No ground squirrel burrows detected.

gopher activity: 1 = No pocket gopher mounds detected.

Sampling area representative of mapped occurrence? yes (If no, note differences on page 3)

VI. **THREATS ASSESSMENT IN MAXIMUM EXTENT** - Assess threats within the **occurrence's maximum extent** (cumulative extent over years of monitoring) **plus 10-m surrounding buffer**. See page 4 for definitions of threat assessment categories. Record notes on page 3. See Argentine Ant Protocol (USGS 2015) for setting up bait, etc.

Surrounding Land Use/Activity at, or Adjacent to, Site: Open Space

Argentine ant abundance at bait station (1-4)

Time start:

Temp start:

Time end:

Temp end:

Ant sample collected?

Ant sample #:

Ant Station Photo #:

DISTURBANCES (Rank each as 1-6):

Non-native forbs	6 = Disturbance occurs 50% to < 75% of area within	feral pig activity	1 = No sign	altered hydrology	1 = No sign of disturbanc
Non-native grasses	6 = Disturbance occurs 50% to < 75% of area within	trampling	1 = No sign	erosion	1 = No sign of disturbanc
Non-native woody pl.	1 = No sign of disturbance within maxinum extent or	vandalism	1 = No sign	urban runoff	1 = No sign of disturbanc
competitive native pl.	1 = No sign of disturbance within maxinum extent or	current grazing	1 = No sign	slope movement	3 = Disturbance present
dumping/trash	1 = No sign of disturbance within maxinum extent or	historic grazing	1 = No sign	soil compaction	1 = No sign of disturbanc
encampments	1 = No sign of disturbance within maxinum extent or	historic agriculture	1 = No sign		

fuel modification zone/fire break: 1 = No sign of

road construction/maintenance: 1 = No sign of — if present, describe:

illegal vegetation clearing: 1 = No sign of — if present, describe:

brush management/restoration: 1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer.

ORV activity: 1 = No sign of — if present, describe:

Evidence of recent fire: 1 = No sign of disturbance within maxinum

If sign of recent fire, year burned?

Trails: 1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer. — If trails are present, are they authorized? no

Type of trail use

hiking: no — biking: no — equestrian: no — dog: no

service vehicles: no — other: no

illegal trail use?: 1 = No sign of — describe:

Other disturbance?: 1 = No sign of disturbance within maxinum extent or — describe:

MSP-Management Needs and Notes 2016

(top 2 rows auto-fill from page 1)

Scientific Name: Acanthomintha ilicifolia

MSP Occur ID. ACIL_4SYCA027

Date: 5/4/2016

VI. MANAGEMENT RECOMMENDATIONS

Nonnative plant control.

VII. MANAGEMENT ACTIONS IN LAST YEAR

None.

VIII. CNDDB SPECIES DETECTED (list any plant or animal species to add to the CNDDB)

Convolvulus simulans and Harpagonella palmeri.

NOTES

MSP - Rare Plant Occurrence Monitoring Form 2016

Scientific Name:	Acanthomintha ilicifolia	Common Name:	San Diego thornmint
Existing MSP Occurrence?	yes	MSP Occurr. ID:	ACIL_4SYCA027
CNDDB Elem. Occur. #:		Translocated?	no
Preserve:	Sycamore Canyon and Goodan Ranch Preserves	Mgmt Unit:	MU4
Land Owner:	County San Diego Department of Parks and Recreation	Land Mangr:	County San Diego Department of Parks and Recreation
Occurrence Name:	Sycamore Canyon	Sample Point #:	SYGOACIL03
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation	Friends of Sycamore Cany
Date:	5/4/2016	Time Start:	10:30
Time Finish:	11:40		

I. OCCURRENCE STATUS - *Assess # plants in both species-specific **sampling area** (typically 10-m radius circle) & in **current mapped extent.** See p. 4 for definitions of categories describing phenology & evidence of herbivory, disease & stunted growth within the sampling area. Record any notes on p. 3.*

# Plants/Current Mapped Extent:	1,000s	exact count or estimate?	estimate (extrapolate partial ct)	uncert.	low
Area of Current Mapped Extent:	30	units	acres	exact (GPS) or estim?	estimate
Species Found in Maximum Extent?	yes	if not found, known or suspected reason:			
# Plants/Sampling Area	495	exact count or estimate?	exact	uncert.	low
Sample Area Radius (m)	10		exact		
Phenology In Sampling Area (1-6): Vegetative	1 (0%)	Flowering	1 (0%)	Fruiting	1 (0%)
Dead	1 (0%)	Flowering & Fruiting	6 (≥75%)		
Evidence in Sampling Area (1-6): Herbivory	1 (0%)	Disease	1 (0%)	Stunted Growth	1 (0%)
Is Sampling Area within Current Mapped Extent?	yes				

Collection (if not collected previously)?	no		
If yes: Collector		Collection #	
Museum/Herbarium			

II. SAMPLING AREA LOCATION & SITE PHOTOMONITORING

GPS Accuracy: +/-	1	accur. units:	meters	Datum:	NAD83
coord. system	UTM (m)				
Coordin's at Center of Plot: E:	501546	N:	3644380		
Camera type:	Iphone 6				
Locat. 1 Coord.--E, N	501534, 3644390	Direction facing	134 Degrees	Height	5 Feet
Camera angle	6 Degrees	Photo #	1	File location	
Locat. 2 Coord.-- E,N		Direction facing		Height	
Camera angle		Photo #		File location	

III. ASSOCIATED SPECIES *If need more room, record additional data and any notes on page 3.*

species/substrate	% Cover	Collection #, or NC if not collected	species/substrate	% Cover	Collect.# or NC if not collected
Acanthomintha ilicifolia	4	NC	Eriophyllum confertiflorum	0.1	NC
Artemisia californica	3	NC	Harpagonella palmeri	1	NC
Avena sp.	0.1	NC	Heteromeles arbutifolia	2	NC
Bloomeria crocea	0.1	NC	Lysimachia arvensis	0.1	NC
Brachypodium distachyon	1	NC	Malosma laurina	5	NC
Bromus hordeaceus	1	NC	Navarretia hamata	0.1	NC
Bromus madritensis ssp. rubens	4	NC	Plantago erecta	0.1	NC
Calochortus splendens	0.1	NC	Rhamnus crocea	0.1	NC
Calystegia macrostegia	0.1	NC	Salvia apiana	1	NC
Centaurea melitensis	12	NC	Salvia mellifera	8	NC
Chorizanthe fimbriata	0.1	NC			NC
Corethrogyne filaginifolia	0.1	NC	**bare ground**	40	
Delphinium sp.	0.1	NC	**rock**	6	
Eriogonum fasciculatum	0.1	NC	**litter**	6	

COVER: Total % Cover:	44	%Herb:	25	%Shrub:	19	%Tree:	0

MSP - Rare Plant Habitat and Threats Assessment Form 2016

(top 4 rows auto-fill from page 1)

Scientific Name:	Acanthomintha ilicifolia	MSP Occur. ID:	ACIL_4SYCA027
Preserve:	Sycamore Canyon and Goodan Ranch Preserves		
Occurrence Name:	Sycamore Canyon		
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation:	Friends of Sycamore Ca
Date:	5/4/2016	Time Start: 10:30 AM	Time Finish: 11:40 AM

IV. **HABITAT ASSESSMENT IN SAMPLING AREA** - Assess habitat covariates within **species-specific sampling area (typically 10-m radius circle)**. Vegetation alliance/association can be assigned using San Diego vegetation key (AECOM 2012) in the office or field, using "Associated Species" data from page 1. See page 4 for definitions of habitat assessment categories. Record any notes on page 3.

SANDAG 2012 Vegetation Alliance/Association: Artemisia californica-Salvia mellifera Alliance

Cover classes (1-6)

Cryptogamic Crust Cover:	2 (>0% to <1	Thatch Cover:	2 (>0% to <10%)
Thatch Depth Average (cm)		Thatch Depth max (cm)	
Dead Standing Biomass	no		
If yes, cover/species class		Average height (cm)	

Mammal Species Activity (categ. 1-4)

Feral pig activity	1 = No feral pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) detected.
ground squirr. activity	1 = No ground squirrel burrows detected.
gopher activity	1 = No pocket gopher mounds detected.
Sampling area representative of mapped occurrence?	yes (If no, note differences on page 3)

VI. **THREATS ASSESSMENT IN MAXIMUM EXTENT** - Assess threats within the **occurrence's maximum extent** (cumulative extent over years of monitoring) **plus 10-m surrounding buffer**. See page 4 for definitions of threat assessment categories. Record notes on page 3. See Argentine Ant Protocol (USGS 2015) for setting up bait, etc.

Surrounding Land Use/Activity at, or Adjacent to, Site: Open Space

Argentine ant abundance at bait station (1-4)

Time start		Temp start		Time end	Temp end
Ant sample collected?		Ant sample #		Ant Station Photo #	

DISTURBANCES (Rank each as 1-6):

Non-native forbs	6 = Disturbance occurs 50% to < 75% of area within	feral pig activity	1 = No sign	altered hydrology	1 = No sign of disturbanc
Non-native grasses	6 = Disturbance occurs 50% to < 75% of area within	trampling	1 = No sign	erosion	1 = No sign of disturbanc
Non-native woody pl.	1 = No sign of disturbance within maxinum extent or	vandalism	1 = No sign	urban runoff	1 = No sign of disturbanc
competitive native pl.	1 = No sign of disturbance within maxinum extent or	current grazing	1 = No sign	slope movement	3 = Disturbance present
dumping/trash	1 = No sign of disturbance within maxinum extent or	historic grazing	1 = No sign	soil compaction	1 = No sign of disturbanc
encampments	1 = No sign of disturbance within maxinum extent or	historic agriculture	1 = No sign		

fuel modification zone/fire break	1 = No sign of		
road construction/maintenance	1 = No sign of	if present, describe:	
illegal vegetation clearing	1 = No sign of	if present, describe:	
brush management/restoration	1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer.		
ORV activity	1 = No sign of	if present, describe:	
Evidence of recent fire	1 = No sign of disturbance within maxinum		
If sign of recent fire, year burned?			

Trails	1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer.				If trails are present, are they authorized?	no	
Type of trail use	hiking	no	biking	no	equestrian	no	dog no
	service vehicles	no	other	no			
	illegal trail use?	1 = No sign of	describe:				
Other disturbance?	1 = No sign of disturbance within maxinum extent or	describe:					

MSP-Management Needs and Notes 2016

(top 2 rows auto-fill from page 1)

Scientific Name: Acanthomintha ilicifolia

MSP Occur ID. ACIL_4SYCA027

Date: 5/4/2016

VI. MANAGEMENT RECOMMENDATIONS

Nonnative plant control.

VII. MANAGEMENT ACTIONS IN LAST YEAR

None.

VIII. CNDDB SPECIES DETECTED (list any plant or animal species to add to the CNDDB)

Harpagonella palmeri.

NOTES

MSP - Rare Plant Occurrence Monitoring Form 2016

Scientific Name:	Acanthomintha ilicifolia	Common Name:	San Diego thornmint
Existing MSP Occurrence?	yes	MSP Occurr. ID:	ACIL_4SYCA027
CNDDB Elem. Occur. #:		Translocated?	no
Preserve:	Sycamore Canyon and Goodan Ranch Preserves	Mgmt Unit:	MU4
Land Owner:	County San Diego Department of Parks and Recreation	Land Mangr:	County San Diego Department of Parks and Recreation
Occurrence Name:	Sycamore Canyon	Sample Point #:	SYGOACIL04
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation	Friends of Sycamore Cany
Date:	5/4/2016	Time Start:	12:30
		Time Finish:	13:56

I. OCCURRENCE STATUS - *Assess # plants in both species-specific **sampling area** (typically 10-m radius circle) & in **current mapped extent.** See p. 4 for definitions of categories describing phenology & evidence of herbivory, disease & stunted growth within the sampling area. Record any notes on p. 3.*

# Plants/Current Mapped Extent:	1,000s	exact count or estimate?	estimate (extrapolate partial ct)	uncert.	low
Area of Current Mapped Extent:	30	units	acres	exact (GPS) or estim?	estimate
Species Found in Maximum Extent?	yes	if not found, known or suspected reason:			
# Plants/Sampling Area	0	exact count or estimate?	exact	uncert.	low
Sample Area Radius (m)	10		exact		
Phenology In Sampling Area (1-6):	Vegetative 1 (0%)	Flowering 1 (0%)		Fruiting	1 (0%)
	Dead 1 (0%)	Flowering & Fruiting	1 (0%)		
Evidence in Sampling Area (1-6):	Herbivory 1 (0%)	Disease 1 (0%)		Stunted Growth	1 (0%)
Is Sampling Area within Current Mapped Extent?	yes				

Collection (if not collected previously)?	no		
If yes: Collector		Collection #	
Museum/Herbarium			

II. SAMPLING AREA LOCATION & SITE PHOTOMONITORING

GPS Accuracy: +/-	1	accur. units:	meters	Datum:	NAD83
coord. system	UTM (m)				
Coordin's at Center of Plot: E:	50255	N:	36443683		
Camera type:	Iphone 6				
Locat. 1 Coord.--E, N	502552, 3643692			Direction facing	125 Degrees
Height	5 Feet				
Camera angle	5 Degrees	Photo #	1	File location	
Locat. 2 Coord.-- E,N				Direction facing	
Height					
Camera angle		Photo #		File location	

III. ASSOCIATED SPECIES *If need more room, record additional data and any notes on page 3.*

species/substrate	% Cover	Collection #, or NC if not collected	species/substrate	% Cover	Collect.# or NC if not collected
Brachypodium distachyon	50	NC			NC
Calochortus splendens	0.1	NC			NC
Calystegia macrostegia	0.1	NC			NC
Centaurea melitensis	8	NC			NC
Convolvulus simulans	0.1	NC			NC
Deinandra fasciculatum	1	NC			NC
Hypochaeris glabra	0.1	NC			NC
Malosma laurina	0.1	NC			NC
Salvia apiana	0.1	NC			NC
Sanicula sp.	0.1	NC			NC
Sisyrinchium bellum	0.1	NC			NC
Sonchus asper	0.1	NC	**bare ground**	25	
Stipa cernua	3	NC	**rock**	8	
		NC	**litter**	1	

COVER: Total % Cover:	66	%Herb:	65	%Shrub:	1	%Tree:	0

MSP - Rare Plant Habitat and Threats Assessment Form 2016

(top 4 rows auto-fill from page 1)

Scientific Name:	Acanthomintha ilicifolia	MSP Occur. ID:	ACIL_4SYCA027
Preserve:	Sycamore Canyon and Goodan Ranch Preserves		
Occurrence Name:	Sycamore Canyon		
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation:	Friends of Sycamore Ca
Date:	5/4/2016	Time Start: 12:30 PM	Time Finish: 1:56 PM

IV. **HABITAT ASSESSMENT IN SAMPLING AREA** - Assess habitat covariates within **species-specific sampling area (typically 10-m radius circle)** Vegetation alliance/association can be assigned using San Diego vegetation key (AECOM 2012) in the office or field, using "Associated Species" data from page 1. See page 4 for definitions of habitat assessment categories. Record any notes on page 3.

SANDAG 2012 Vegetation Alliance/Association: Brachypodium distachyon Semi-Natural Stand Type

Cover classes (1-6)

Cryptogamic Crust Cover: 1 (0%)

Thatch Cover: 4 (25% to <50%)

Thatch Depth Average (cm): 3

Thatch Depth max (cm): 5

Dead Standing Biomass: no

If yes, cover/species class:

Average height (cm):

Mammal Species Activity (categ. 1-4)

Feral pig activity: 1 = No feral pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) detected.

ground squirr. activity: 1 = No ground squirrel burrows detected.

gopher activity: 1 = No pocket gopher mounds detected.

Sampling area representative of mapped occurrence? yes (If no, note differences on page 3)

VI. **THREATS ASSESSMENT IN MAXIMUM EXTENT** - Assess threats within the **occurrence's maximum extent** (cumulative extent over years of monitoring) **plus 10-m surrounding buffer**. See page 4 for definitions of threat assessment categories. Record notes on page 3. See Argentine Ant Protocol (USGS 2015) for setting up bait, etc.

Surrounding Land Use/Activity at, or Adjacent to, Site: Open Space

Argentine ant abundance at bait station (1-4)

Time start: Temp start: Time end: Temp end:

Ant sample collected? Ant sample #: Ant Station Photo #:

DISTURBANCES (Rank each as 1-6):

Non-native forbs	6 = Disturbance occurs 50% to < 75% of area within	feral pig activity	1 = No sign	altered hydrology	1 = No sign of disturbanc
Non-native grasses	6 = Disturbance occurs 50% to < 75% of area within	trampling	1 = No sign	erosion	1 = No sign of disturbanc
Non-native woody pl.	1 = No sign of disturbance within maxinum extent or	vandalism	1 = No sign	urban runoff	1 = No sign of disturbanc
competitive native pl.	1 = No sign of disturbance within maxinum extent or	current grazing	1 = No sign	slope movement	3 = Disturbance present
dumping/trash	1 = No sign of disturbance within maxinum extent or	historic grazing	1 = No sign	soil compaction	1 = No sign of disturbanc
encampments	1 = No sign of disturbance within maxinum extent or	historic agriculture	1 = No sign		

fuel modification zone/fire break: 1 = No sign of

road construction/maintenance: 1 = No sign of — if present, describe:

illegal vegetation clearing: 1 = No sign of — if present, describe:

brush management/restoration: 1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer.

ORV activity: 1 = No sign of — if present, describe:

Evidence of recent fire: 1 = No sign of disturbance within maxinum

If sign of recent fire, year burned?

Trails: 1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer. — If trails are present, are they authorized? no

Type of trail use

hiking: no — biking: no — equestrian: no — dog: no

service vehicles: no — other: no

illegal trail use?: 1 = No sign of — describe:

Other disturbance?: 1 = No sign of disturbance within maxinum extent or — describe:

MSP-Management Needs and Notes 2016

(top 2 rows auto-fill from page 1)

Scientific Name: Acanthomintha ilicifolia

MSP Occur ID. ACIL_4SYCA027

Date: 5/4/2016

VI. MANAGEMENT RECOMMENDATIONS

Nonnative plant control.

VII. MANAGEMENT ACTIONS IN LAST YEAR

None.

VIII. CNDDB SPECIES DETECTED (list any plant or animal species to add to the CNDDB)

Convolvulus simulans.

NOTES

MSP - Rare Plant Occurrence Monitoring Form 2016

Scientific Name:	Acanthomintha ilicifolia	Common Name:	San Diego thornmint
Existing MSP Occurrence?	yes	MSP Occurr. ID:	ACIL_4SYCA027
CNDDB Elem. Occur. #:		Translocated?	no
Preserve:	Sycamore Canyon and Goodan Ranch Preserves	Mgmt Unit:	MU4
Land Owner:	County San Diego Department of Parks and Recreation	Land Mangr:	County San Diego Department of Parks and Recreation
Occurrence Name:	Sycamore Canyon	Sample Point #:	SYGOACIL05
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation	Friends of Sycamore Cany
Date:	5/4/2016	Time Start:	14:00
Time Finish:	15:00		

I. OCCURRENCE STATUS - *Assess # plants in both species-specific **sampling area** (typically 10-m radius circle) & in **current mapped extent.** See p. 4 for definitions of categories describing phenology & evidence of herbivory, disease & stunted growth within the sampling area. Record any notes on p. 3.*

# Plants/Current Mapped Extent:	1,000s	exact count or estimate?	estimate (extrapolate partial ct)	uncert.	low
Area of Current Mapped Extent:	30	units	acres	exact (GPS) or estim?	estimate
Species Found in Maximum Extent?	yes	if not found, known or suspected reason:			
# Plants/Sampling Area	62	exact count or estimate?	exact	uncert.	low
Sample Area Radius (m)	10		exact		
Phenology In Sampling Area (1-6): Vegetative	1 (0%)	Flowering	1 (0%)	Fruiting	1 (0%)
Dead	1 (0%)	Flowering & Fruiting	6 (≥75%)		
Evidence in Sampling Area (1-6): Herbivory	1 (0%)	Disease	1 (0%)	Stunted Growth	1 (0%)
Is Sampling Area within Current Mapped Extent?	yes				
Collection (if not collected previously)?	no				
If yes: Collector		Collection #			
Museum/Herbarium					

II. SAMPLING AREA LOCATION & SITE PHOTOMONITORING

GPS Accuracy: +/-	1	accur. units:	meters	Datum:	NAD83
coord. system	UTM (m)				
Coordin's at Center of Plot: E:	502915	N:	3643523		
Camera type:	Iphone 6				
Locat. 1 Coord.--E, N	502903, 3643536	Direction facing	150 Degrees	Height	5 Feet
Camera angle	3 Degrees	Photo #	1	File location	
Locat. 2 Coord.-- E,N		Direction facing		Height	
Camera angle		Photo #		File location	

III. ASSOCIATED SPECIES *If need more room, record additional data and any notes on page 3.*

species/substrate	% Cover	Collection #, or NC if not collected	species/substrate	% Cover	Collect.# or NC if not collected
Acanthomintha ilicifolia	1	NC	Heteromeles arbutifolia	1	NC
Adenostoma fasciculatum	6	NC	Hypochaeris glabra	0.1	NC
Apiastrum angustifolium	0.1	NC	Lepidium sp.	0.1	NC
Bloomeria crocea	0.1	NC	Logfia gallica	0.1	NC
Brachypodium distachyon	40	NC	Malosma laurina	2	NC
Bromus madritensis ssp. rubens	0.1	NC	Plantago erecta	0.1	NC
Calochortus splendens	0.1	NC	Plantago rhodosperma	4	NC
Calystegia macrostegia	0.1	NC	Rhamnus crocea	1	NC
Centaurea melitensis	0.1	NC	Salvia apiana	0.1	NC
Cneoridium dumosum	0.1	NC	Stipa cernua	0.1	NC
Deinandra fasciculata	0.1	NC	Xylococcus bicolor	12	NC
Dudleya variegata	0.1	NC	**bare ground**	20	
Erodium moschatum	0.1	NC	**rock**	8	
Harpagonella palmeri	0.1	NC	**litter**	5	
COVER: Total % Cover:	67	%Herb: 46	%Shrub: 21	%Tree:	0

MSP - Rare Plant Habitat and Threats Assessment Form 2016

(top 4 rows auto-fill from page 1)

Scientific Name:	Acanthomintha ilicifolia	MSP Occur. ID:	ACIL_4SYCA027
Preserve:	Sycamore Canyon and Goodan Ranch Preserves		
Occurrence Name:	Sycamore Canyon		
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation:	Friends of Sycamore Ca
Date:	5/4/2016	Time Start:	2:00 PM
Time Finish:	3:00 PM		

IV. **HABITAT ASSESSMENT IN SAMPLING AREA** - Assess habitat covariates within **species-specific sampling area (typically 10-m radius circle)**. Vegetation alliance/association can be assigned using San Diego vegetation key (AECOM 2012) in the office or field, using "Associated Species" data from page 1. See page 4 for definitions of habitat assessment categories. Record any notes on page 3.

SANDAG 2012 Vegetation Alliance/Association: Brachypodium distachyon Semi-Natural Stand Type

Cover classes (1-6)

Cryptogamic Crust Cover:	1 (0%)	Thatch Cover	3 (10% to <25%)
Thatch Depth Average (cm)	3	Thatch Depth max (cm)	5
Dead Standing Biomass	no		
If yes, cover/species class		Average height (cm)	

Mammal Species Activity (categ. 1-4)

Feral pig activity	1 = No feral pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) detected.
ground squirr. activity	1 = No ground squirrel burrows detected.
gopher activity	1 = No pocket gopher mounds detected.

Sampling area representative of mapped occurrence? yes (If no, note differences on page 3)

VI. **THREATS ASSESSMENT IN MAXIMUM EXTENT** - Assess threats within the **occurrence's maximum extent** (cumulative extent over years of monitoring) **plus 10-m surrounding buffer**. See page 4 for definitions of threat assessment categories. Record notes on page 3. See Argentine Ant Protocol (USGS 2015) for setting up bait, etc.

Surrounding Land Use/Activity at, or Adjacent to, Site: Open Space

Argentine ant abundance at bait station (1-4)

Time start		Temp start		Time end	Temp end
Ant sample collected?		Ant sample #		Ant Station Photo #	

DISTURBANCES (Rank each as 1-6):

Non-native forbs	6 = Disturbance occurs 50% to < 75% of area within	feral pig activity	1 = No sign	altered hydrology	1 = No sign of disturbanc
Non-native grasses	6 = Disturbance occurs 50% to < 75% of area within	trampling	1 = No sign	erosion	1 = No sign of disturbanc
Non-native woody pl.	1 = No sign of disturbance within maxinum extent or	vandalism	1 = No sign	urban runoff	1 = No sign of disturbanc
competitive native pl.	1 = No sign of disturbance within maxinum extent or	current grazing	1 = No sign	slope movement	3 = Disturbance present
dumping/trash	1 = No sign of disturbance within maxinum extent or	historic grazing	1 = No sign	soil compaction	1 = No sign of disturbanc
encampments	1 = No sign of disturbance within maxinum extent or	historic agriculture	1 = No sign		

fuel modification zone/fire break	1 = No sign of		
road construction/maintenance	1 = No sign of	if present, describe:	
illegal vegetation clearing	1 = No sign of	if present, describe:	
brush management/restoration	1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer.		
ORV activity	1 = No sign of	if present, describe:	
Evidence of recent fire	1 = No sign of disturbance within maxinum		
If sign of recent fire, year burned?			

Trails	1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer.					If trails are present, are they authorized?	no
Type of trail use	hiking	no	biking	no	equestrian	no	dog no
	service vehicles	no	other	no			
	illegal trail use?	1 = No sign of	describe:				
Other disturbance?	1 = No sign of disturbance within maxinum extent or	describe:					

MSP-Management Needs and Notes 2016

(top 2 rows auto-fill from page 1)

Scientific Name: Acanthomintha ilicifolia

MSP Occur ID. ACIL_4SYCA027

Date: 5/4/2016

VI. MANAGEMENT RECOMMENDATIONS

Nonnative plant control.

VII. MANAGEMENT ACTIONS IN LAST YEAR

None.

VIII. CNDDB SPECIES DETECTED (list any plant or animal species to add to the CNDDB)

Dudleya variegata and Harpagonella palmeri.

NOTES

MSP - Rare Plant Occurrence Monitoring Form 2016

Scientific Name:	Acanthomintha ilicifolia	Common Name:	San Diego thornmint
Existing MSP Occurrence?	yes	MSP Occurr. ID:	ACIL_4SYCA027
CNDDB Elem. Occur. #:		Translocated?	no
Preserve:	Sycamore Canyon and Goodan Ranch Preserves	Mgmt Unit:	MU4
Land Owner:	County San Diego Department of Parks and Recreation	Land Mangr:	County San Diego Department of Parks and Recreation
Occurrence Name:	Sycamore Canyon	Sample Point #:	SYGOACIL06
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation	Friends of Sycamore Cany
Date:	5/5/2016	Time Start:	8:30
		Time Finish:	9:45

I. OCCURRENCE STATUS - *Assess # plants in both species-specific **sampling area** (typically 10-m radius circle) & in **current mapped extent.** See p. 4 for definitions of categories describing phenology & evidence of herbivory, disease & stunted growth within the sampling area. Record any notes on p. 3.*

# Plants/Current Mapped Extent:	1,000s	exact count or estimate?	estimate (extrapolate partial ct)	uncert.	low
Area of Current Mapped Extent:	30	units	acres	exact (GPS) or estim?	estimate
Species Found in Maximum Extent?	yes	if not found, known or suspected reason:			
# Plants/Sampling Area	11,618	exact count or estimate?	estimate (1ks,10ks)	uncert.	high
Sample Area Radius (m)	10		exact		

Phenology In Sampling Area (1-6):	Vegetative	1 (0%)	Flowering	1 (0%)		Fruiting	1 (0%)
	Dead	1 (0%)	Flowering & Fruiting	6 (≥75%)			
Evidence in Sampling Area (1-6):	Herbivory	1 (0%)	Disease	1 (0%)		Stunted Growth	1 (0%)
Is Sampling Area within Current Mapped Extent?	yes						

Collection (if not collected previously)?	no		
If yes: Collector		Collection #	
Museum/Herbarium			

II. SAMPLING AREA LOCATION & SITE PHOTOMONITORING

GPS Accuracy: +/-	1	accur. units:	meters	Datum:	NAD83		
coord. system	UTM (m)						
Coordin's at Center of Plot: E:	502252	N:	3644068				
Camera type:	Iphone 6						
Locat. 1 Coord.--E, N	502253, 3644093			Direction facing	333 Degrees	Height	5 Feet
Camera angle	6 Degrees	Photo #	1	File location			
Locat. 2 Coord.-- E,N				Direction facing		Height	
Camera angle		Photo #		File location			

III. ASSOCIATED SPECIES *If need more room, record additional data and any notes on page 3.*

species/substrate	% Cover	Collection #, or NC if not collected	species/substrate	% Cover	Collect.# or NC if not collected
Acanthomintha ilicifolia	28	NC	Hesperoyucca whipplei	0.1	NC
Apiastrum angustifolium	0.1	NC	Heteromeles arbutifolia	1	NC
Artemisia californica	0.1	NC	Lonicera subspicata	0.1	NC
Avena barbata	0.1	NC	Malosma laurina	0.1	NC
Bloomeria crocea	0.1	NC	Rhus integrifolia	5	NC
Bromus madritensis ssp. rubens	0.1	NC	Salvia mellifera	2	NC
Centaurea melitensis	35	NC	Sonchus asper	0.1	NC
Cneoridium dumosum	0.1	NC	Xylococcus bicolor	0.1	NC
Convolvulus simulans	0.1	NC			NC
Cryptantha sp.	0.1	NC			NC
Deinandra fasciculata	1	NC			NC
Euphorbia peplus	0.1	NC	**bare ground**	15	
Harpagonella palmeri	0.1	NC	**rock**	2	
Hazardia squarrosa	0.1	NC	**litter**	6	

COVER: Total % Cover:	77	%Herb:	67	%Shrub:	10	%Tree:	0

MSP - Rare Plant Habitat and Threats Assessment Form 2016

(top 4 rows auto-fill from page 1)

Scientific Name:	Acanthomintha ilicifolia	MSP Occur. ID:	ACIL_4SYCA027
Preserve:	Sycamore Canyon and Goodan Ranch Preserves		
Occurrence Name:	Sycamore Canyon		
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation:	Friends of Sycamore Ca
Date:	5/5/2016	Time Start: 8:30 AM	Time Finish: 9:45 AM

IV. **HABITAT ASSESSMENT IN SAMPLING AREA** - Assess habitat covariates within **species-specific sampling area (typically 10-m radius circle)**. Vegetation alliance/association can be assigned using San Diego vegetation key (AECOM 2012) in the office or field, using "Associated Species" data from page 1. See page 4 for definitions of habitat assessment categories. Record any notes on page 3.

SANDAG 2012 Vegetation Alliance/Association: Mediterranean California Naturalized Annual Perennial Grassland Semi-Natural Stands

Cover classes (1-6)

Cryptogamic Crust Cover:	1 (0%)	Thatch Cover	2 (>0% to <10%)
Thatch Depth Average (cm)	3	Thatch Depth max (cm)	4
Dead Standing Biomass	no		
If yes, cover/species class		Average height (cm)	

Mammal Species Activity (categ. 1-4)

Feral pig activity	1 = No feral pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) detected.
ground squirr. activity	1 = No ground squirrel burrows detected.
gopher activity	1 = No pocket gopher mounds detected.
Sampling area representative of mapped occurrence?	yes (If no, note differences on page 3)

VI. **THREATS ASSESSMENT IN MAXIMUM EXTENT** - Assess threats within the **occurrence's maximum extent** (cumulative extent over years of monitoring) **plus 10-m surrounding buffer**. See page 4 for definitions of threat assessment categories. Record notes on page 3. See Argentine Ant Protocol (USGS 2015) for setting up bait, etc.

Surrounding Land Use/Activity at, or Adjacent to, Site: Open Space

Argentine ant abundance at bait station (1-4)

Time start		Temp start		Time end	Temp end
Ant sample collected?		Ant sample #		Ant Station Photo #	

DISTURBANCES (Rank each as 1-6):

Non-native forbs	6 = Disturbance occurs 50% to < 75% of area within	feral pig activity	1 = No sign	altered hydrology	1 = No sign of disturbanc
Non-native grasses	6 = Disturbance occurs 50% to < 75% of area within	trampling	1 = No sign	erosion	1 = No sign of disturbanc
Non-native woody pl.	1 = No sign of disturbance within maxinum extent or	vandalism	1 = No sign	urban runoff	1 = No sign of disturbanc
competitive native pl.	1 = No sign of disturbance within maxinum extent or	current grazing	1 = No sign	slope movement	3 = Disturbance present
dumping/trash	1 = No sign of disturbance within maxinum extent or	historic grazing	1 = No sign	soil compaction	1 = No sign of disturbanc
encampments	1 = No sign of disturbance within maxinum extent or	historic agriculture	1 = No sign		

fuel modification zone/fire break	1 = No sign of		
road construction/maintenance	1 = No sign of	if present, describe:	
illegal vegetation clearing	1 = No sign of	if present, describe:	
brush management/restoration	1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer.		
ORV activity	1 = No sign of	if present, describe:	
Evidence of recent fire	1 = No sign of disturbance within maxinum		
If sign of recent fire, year burned?			

Trails	1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer.					If trails are present, are they authorized?	no
Type of trail use	hiking	no	biking	no	equestrian	no	dog no
	service vehicles	no	other	no			
	illegal trail use?	1 = No sign of	describe:				
Other disturbance?	1 = No sign of disturbance within maxinum extent or	describe:					

MSP-Management Needs and Notes 2016

(top 2 rows auto-fill from page 1)

Scientific Name: Acanthomintha ilicifolia

MSP Occur ID. ACIL_4SYCA027

Date: 5/5/2016

VI. MANAGEMENT RECOMMENDATIONS

Nonnative plant control.

VII. MANAGEMENT ACTIONS IN LAST YEAR

None.

VIII. CNDDB SPECIES DETECTED (list any plant or animal species to add to the CNDDB)

Convolvulus simulans and Harpagonella palmeri.

NOTES

MSP - Rare Plant Occurrence Monitoring Form 2016

Scientific Name:	Acanthomintha ilicifolia	Common Name:	San Diego thornmint
Existing MSP Occurrence?	yes	MSP Occurr. ID:	ACIL_4SYCA027
CNDDB Elem. Occur. #:		Translocated?	no
Preserve:	Sycamore Canyon and Goodan Ranch Preserves	Mgmt Unit:	MU4
Land Owner:	County San Diego Department of Parks and Recreation	Land Mangr:	County San Diego Department of Parks and Recreation
Occurrence Name:	Sycamore Canyon	Sample Point #:	SYGOACIL07
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation	Friends of Sycamore Cany
Date:	5/5/2016	Time Start:	10:00
		Time Finish:	10:30

I. OCCURRENCE STATUS - *Assess # plants in both species-specific **sampling area** (typically 10-m radius circle) & in **current mapped extent.** See p. 4 for definitions of categories describing phenology & evidence of herbivory, disease & stunted growth within the sampling area. Record any notes on p. 3.*

# Plants/Current Mapped Extent:	1,000s	exact count or estimate?	estimate (extrapolate partial ct)	uncert.	low
Area of Current Mapped Extent:	30	units	acres	exact (GPS) or estim?	estimate
Species Found in Maximum Extent?	yes	if not found, known or suspected reason:			
# Plants/Sampling Area	34	exact count or estimate?	exact	uncert.	high
Sample Area Radius (m)	10		exact		
Phenology In Sampling Area (1-6): Vegetative	1 (0%)	Flowering	1 (0%)	Fruiting	1 (0%)
Dead	1 (0%)	Flowering & Fruiting	6 (≥75%)		
Evidence in Sampling Area (1-6): Herbivory	1 (0%)	Disease	1 (0%)	Stunted Growth	1 (0%)
Is Sampling Area within Current Mapped Extent?	yes				
Collection (if not collected previously)?	no				
If yes: Collector		Collection #			
Museum/Herbarium					

II. SAMPLING AREA LOCATION & SITE PHOTOMONITORING

GPS Accuracy: +/-	1	accur. units:	meters	Datum:	NAD83
coord. system	UTM (m)				
Coordin's at Center of Plot: E:	502375	N:	3644068		
Camera type:	Iphone 6				
Locat. 1 Coord.--E, N	502358, 3644080	Direction facing	116 Degrees	Height	5 Feet
Camera angle	3 Degrees	Photo #	1	File location	
Locat. 2 Coord.-- E,N		Direction facing		Height	
Camera angle		Photo #		File location	

III. ASSOCIATED SPECIES *If need more room, record additional data and any notes on page 3.*

species/substrate	% Cover	Collection #, or NC if not collected	species/substrate	% Cover	Collect.# or NC if not collected
Apiastrum angustifolium	1	NC	Rhamnus crocea	2	NC
Bloomeria crocea	0.1	NC	Salvia apiana	0.1	NC
Brachypodium distachyon	37	NC	Sonchus asper	0.1	NC
Calochortus splendens	0.1	NC	Stipa cernua	0.1	NC
Centaurea melitensis	8	NC			NC
Convolvulus simulans	0.1	NC			NC
Deinandra fasciculata	1	NC			NC
Erodium moschatum	0.1	NC			NC
Gutierrezia sarothrae	0.1	NC			NC
Harpagonella palmeri	1	NC			NC
Logfia depressa	0.1	NC			NC
Logfia galica	0.1	NC	**bare ground**	35	
Lysimachia arvensis	0.1	NC	**rock**	5	
Malosma laurina	2	NC	**litter**	5	

COVER: Total % Cover:	55	%Herb:	50	%Shrub:	4	%Tree:	0

MSP - Rare Plant Habitat and Threats Assessment Form 2016

(top 4 rows auto-fill from page 1)

Scientific Name:	Acanthomintha ilicifolia	MSP Occur. ID:	ACIL_4SYCA027
Preserve:	Sycamore Canyon and Goodan Ranch Preserves		
Occurrence Name:	Sycamore Canyon		
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation:	Friends of Sycamore Ca
Date:	5/5/2016	Time Start: 10:00 AM	Time Finish: 10:30 AM

IV. **HABITAT ASSESSMENT IN SAMPLING AREA** - Assess habitat covariates within **species-specific sampling area (typically 10-m radius circle)**. Vegetation alliance/association can be assigned using San Diego vegetation key (AECOM 2012) in the office or field, using "Associated Species" data from page 1. See page 4 for definitions of habitat assessment categories. Record any notes on page 3.

SANDAG 2012 Vegetation Alliance/Association: Brachypodium distachyon Semi-Natural Stand Type

Cover classes (1-6)

Cryptogamic Crust Cover: 1 (0%)

Thatch Cover: 1 (0%)

Thatch Depth Average (cm):

Thatch Depth max (cm):

Dead Standing Biomass: no

If yes, cover/species class:

Average height (cm):

Mammal Species Activity (categ. 1-4)

Feral pig activity: 1 = No feral pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) detected.

ground squirr. activity: 1 = No ground squirrel burrows detected.

gopher activity: 1 = No pocket gopher mounds detected.

Sampling area representative of mapped occurrence? yes (If no, note differences on page 3)

VI. **THREATS ASSESSMENT IN MAXIMUM EXTENT** - Assess threats within the **occurrence's maximum extent** (cumulative extent over years of monitoring) **plus 10-m surrounding buffer**. See page 4 for definitions of threat assessment categories. Record notes on page 3. See Argentine Ant Protocol (USGS 2015) for setting up bait, etc.

Surrounding Land Use/Activity at, or Adjacent to, Site: Open Space

Argentine ant abundance at bait station (1-4)

Time start:

Temp start:

Time end:

Temp end:

Ant sample collected?

Ant sample #:

Ant Station Photo #:

DISTURBANCES (Rank each as 1-6):

Non-native forbs	6 = Disturbance occurs 50% to < 75% of area within	feral pig activity	1 = No sign	altered hydrology	1 = No sign of disturbanc
Non-native grasses	6 = Disturbance occurs 50% to < 75% of area within	trampling	1 = No sign	erosion	1 = No sign of disturbanc
Non-native woody pl.	1 = No sign of disturbance within maxinum extent or	vandalism	1 = No sign	urban runoff	1 = No sign of disturbanc
competitive native pl.	1 = No sign of disturbance within maxinum extent or	current grazing	1 = No sign	slope movement	3 = Disturbance present
dumping/trash	1 = No sign of disturbance within maxinum extent or	historic grazing	1 = No sign	soil compaction	1 = No sign of disturbanc
encampments	1 = No sign of disturbance within maxinum extent or	historic agriculture	1 = No sign		

fuel modification zone/fire break: 1 = No sign of

road construction/maintenance: 1 = No sign of — if present, describe:

illegal vegetation clearing: 1 = No sign of — if present, describe:

brush management/restoration: 1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer.

ORV activity: 1 = No sign of — if present, describe:

Evidence of recent fire: 1 = No sign of disturbance within maxinum

If sign of recent fire, year burned?

Trails: 1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer. — If trails are present, are they authorized? no

Type of trail use

hiking: no — biking: no — equestrian: no — dog: no

service vehicles: no — other: no

illegal trail use?: 1 = No sign of — describe:

Other disturbance?: 1 = No sign of disturbance within maxinum extent or — describe:

MSP-Management Needs and Notes 2016

(top 2 rows auto-fill from page 1)

Scientific Name: Acanthomintha ilicifolia

MSP Occur ID. ACIL_4SYCA027

Date: 5/5/2016

VI. MANAGEMENT RECOMMENDATIONS

Nonnative plant control.

VII. MANAGEMENT ACTIONS IN LAST YEAR

None.

VIII. CNDDB SPECIES DETECTED (list any plant or animal species to add to the CNDDB)

Convolvulus simulans and Harpagonella palmeri.

NOTES

MSP - Rare Plant Occurrence Monitoring Form 2016

Scientific Name:	Acanthomintha ilicifolia	Common Name:	San Diego thornmint
Existing MSP Occurrence?	yes	MSP Occurr. ID:	ACIL_4SYCA027
CNDDB Elem. Occur. #:		Translocated?	no
Preserve:	Sycamore Canyon and Goodan Ranch Preserves	Mgmt Unit:	MU4
Land Owner:	County San Diego Department of Parks and Recreation	Land Mangr:	County San Diego Department of Parks and Recreation
Occurrence Name:	Sycamore Canyon	Sample Point #:	SYGOACIL08
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation	Friends of Sycamore Cany
Date:	5/5/2016	Time Start:	10:40
Time Finish:	11:30		

I. OCCURRENCE STATUS - *Assess # plants in both species-specific **sampling area** (typically 10-m radius circle) & in **current mapped extent.** See p. 4 for definitions of categories describing phenology & evidence of herbivory, disease & stunted growth within the sampling area. Record any notes on p. 3.*

# Plants/Current Mapped Extent:	1,000s	exact count or estimate?	estimate (extrapolate partial ct)	uncert.	low
Area of Current Mapped Extent:	30	units	acres	exact (GPS) or estim?	estimate
Species Found in Maximum Extent?	yes	if not found, known or suspected reason:			
# Plants/Sampling Area	2,576	exact count or estimate?	exact	uncert.	high
Sample Area Radius (m)	10		exact		
Phenology In Sampling Area (1-6): Vegetative	1 (0%)	Flowering	1 (0%)	Fruiting	1 (0%)
Dead	1 (0%)	Flowering & Fruiting	6 (≥75%)		
Evidence in Sampling Area (1-6): Herbivory	1 (0%)	Disease	1 (0%)	Stunted Growth	1 (0%)
Is Sampling Area within Current Mapped Extent?	yes				
Collection (if not collected previously)?	no				
If yes: Collector		Collection #			
Museum/Herbarium					

II. SAMPLING AREA LOCATION & SITE PHOTOMONITORING

GPS Accuracy: +/-	1	accur. units:	meters	Datum:	NAD83
coord. system	UTM (m)				
Coordin's at Center of Plot: E:	502267	N:	3644249		
Camera type:	Iphone 6				
Locat. 1 Coord.--E, N	502258, 3644250	Direction facing	121 Degrees	Height	5 Feet
Camera angle	4 Degrees	Photo #	1	File location	
Locat. 2 Coord.-- E,N		Direction facing		Height	
Camera angle		Photo #		File location	

III. ASSOCIATED SPECIES *If need more room, record additional data and any notes on page 3.*

species/substrate	% Cover	Collection #, or NC if not collected	species/substrate	% Cover	Collect.# or NC if not collected
Acanthomintha ilicifolia	9	NC	Stipa cernua	0.1	NC
Apiastrum angustifolium	7	NC			NC
Avena barbata	0.1	NC			NC
Brachypodium distachyon	8	NC			NC
Bromus madritensis ssp. rubens	0.1	NC			NC
Centaurea melitensis	2	NC			NC
Convolvulus simulans	50	NC			NC
Euphorbia peplus	0.1	NC			NC
Heteromeles arbutifolia	0.1	NC			NC
Hypochaeris glabra	0.1	NC			NC
Lupinus sp.	0.1	NC			NC
Malosma laurina	0.1	NC	**bare ground**	15	
Rhus integrifolia	0.1	NC	**rock**	5	
Sonchus asper	0.1	NC	**litter**	3	

COVER: Total % Cover:	77	%Herb:	76	%Shrub:	1	%Tree:	0

MSP - Rare Plant Habitat and Threats Assessment Form 2016

(top 4 rows auto-fill from page 1)

Scientific Name:	Acanthomintha ilicifolia	MSP Occur. ID:	ACIL_4SYCA027
Preserve:	Sycamore Canyon and Goodan Ranch Preserves		
Occurrence Name:	Sycamore Canyon		
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation:	Friends of Sycamore Ca
Date:	5/5/2016	Time Start: 10:40 AM	Time Finish: 11:30 AM

IV. **HABITAT ASSESSMENT IN SAMPLING AREA** - Assess habitat covariates within **species-specific sampling area (typically 10-m radius circle)**. Vegetation alliance/association can be assigned using San Diego vegetation key (AECOM 2012) in the office or field, using "Associated Species" data from page 1. See page 4 for definitions of habitat assessment categories. Record any notes on page 3.

SANDAG 2012 Vegetation Alliance/Association: Brachypodium distachyon Semi-Natural Stand Type

Cover classes (1-6)

Cryptogamic Crust Cover:	1 (0%)	Thatch Cover	1 (0%)
Thatch Depth Average (cm)		Thatch Depth max (cm)	
Dead Standing Biomass	no		
If yes, cover/species class		Average height (cm)	

Mammal Species Activity (categ. 1-4)

Feral pig activity	1 = No feral pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) detected.
ground squirr. activity	1 = No ground squirrel burrows detected.
gopher activity	1 = No pocket gopher mounds detected.

Sampling area representative of mapped occurrence? yes (If no, note differences on page 3)

VI. **THREATS ASSESSMENT IN MAXIMUM EXTENT** - Assess threats within the **occurrence's maximum extent** (cumulative extent over years of monitoring) **plus 10-m surrounding buffer**. See page 4 for definitions of threat assessment categories. Record notes on page 3. See Argentine Ant Protocol (USGS 2015) for setting up bait, etc.

Surrounding Land Use/Activity at, or Adjacent to, Site: Open Space

Argentine ant abundance at bait station (1-4)

Time start		Temp start		Time end	Temp end
Ant sample collected?		Ant sample #		Ant Station Photo #	

DISTURBANCES (Rank each as 1-6):

Non-native forbs	6 = Disturbance occurs 50% to < 75% of area within	feral pig activity	1 = No sign	altered hydrology	1 = No sign of disturbanc
Non-native grasses	6 = Disturbance occurs 50% to < 75% of area within	trampling	1 = No sign	erosion	1 = No sign of disturbanc
Non-native woody pl.	1 = No sign of disturbance within maxinum extent or	vandalism	1 = No sign	urban runoff	1 = No sign of disturbanc
competitive native pl.	1 = No sign of disturbance within maxinum extent or	current grazing	1 = No sign	slope movement	3 = Disturbance present
dumping/trash	1 = No sign of disturbance within maxinum extent or	historic grazing	1 = No sign	soil compaction	1 = No sign of disturbanc
encampments	1 = No sign of disturbance within maxinum extent or	historic agriculture	1 = No sign		

fuel modification zone/fire break	1 = No sign of		
road construction/maintenance	1 = No sign of	if present, describe:	
illegal vegetation clearing	1 = No sign of	if present, describe:	
brush management/restoration	1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer.		
ORV activity	1 = No sign of	if present, describe:	
Evidence of recent fire	1 = No sign of disturbance within maxinum		
If sign of recent fire, year burned?			

Trails	1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer.				If trails are present, are they authorized?	no	
Type of trail use	hiking	no	biking	no	equestrian	no	dog no
	service vehicles	no	other	no			
	illegal trail use?	1 = No sign of	describe:				
Other disturbance?	1 = No sign of disturbance within maxinum extent or	describe:					

MSP-Management Needs and Notes 2016

(top 2 rows auto-fill from page 1)

Scientific Name: Acanthomintha ilicifolia

MSP Occur ID. ACIL_4SYCA027

Date: 5/5/2016

VI. MANAGEMENT RECOMMENDATIONS

Nonnative plant control.

VII. MANAGEMENT ACTIONS IN LAST YEAR

None.

VIII. CNDDB SPECIES DETECTED (list any plant or animal species to add to the CNDDB)

Convolvulus simulans.

NOTES

MSP - Rare Plant Occurrence Monitoring Form 2016

Scientific Name:	Acanthomintha ilicifolia	Common Name:	San Diego thornmint
Existing MSP Occurrence?	yes	MSP Occurr. ID:	ACIL_4SYCA027
CNDDB Elem. Occur. #:		Translocated?	no
Preserve:	Sycamore Canyon and Goodan Ranch Preserves	Mgmt Unit:	MU4
Land Owner:	County San Diego Department of Parks and Recreation	Land Mangr:	County San Diego Department of Parks and Recreation
Occurrence Name:	Sycamore Canyon	Sample Point #:	SYGOACIL09
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation	Friends of Sycamore Cany
Date:	5/5/2016	Time Start:	14:00
		Time Finish:	15:00

I. OCCURRENCE STATUS - *Assess # plants in both species-specific **sampling area** (typically 10-m radius circle) & in **current mapped extent.** See p. 4 for definitions of categories describing phenology & evidence of herbivory, disease & stunted growth within the sampling area. Record any notes on p. 3.*

# Plants/Current Mapped Extent:	1,000s	exact count or estimate?	estimate (extrapolate partial ct)	uncert.	low
Area of Current Mapped Extent:	30	units	acres	exact (GPS) or estim?	estimate
Species Found in Maximum Extent?	yes	if not found, known or suspected reason:			
# Plants/Sampling Area	88	exact count or estimate?	exact	uncert.	low
Sample Area Radius (m)	10		exact		
Phenology In Sampling Area (1-6):	Vegetative 1 (0%)	Flowering	1 (0%)	Fruiting	1 (0%)
	Dead 1 (0%)	Flowering & Fruiting	6 (≥75%)		
Evidence in Sampling Area (1-6):	Herbivory 1 (0%)	Disease	1 (0%)	Stunted Growth	1 (0%)
Is Sampling Area within Current Mapped Extent?	yes				
Collection (if not collected previously)?	no				
If yes: Collector		Collection #			
Museum/Herbarium					

II. SAMPLING AREA LOCATION & SITE PHOTOMONITORING

GPS Accuracy: +/-	1	accur. units:	meters	Datum:	NAD83
coord. system	UTM (m)				
Coordin's at Center of Plot: E:	501927	N:	3544370		
Camera type:	Iphone 6				
Locat. 1 Coord.--E, N	501751, 3644400	Direction facing	299 Degrees	Height	5 Feet
Camera angle	3 Degrees	Photo #	1	File location	
Locat. 2 Coord.-- E,N		Direction facing		Height	
Camera angle		Photo #		File location	

III. ASSOCIATED SPECIES *If need more room, record additional data and any notes on page 3.*

species/substrate	% Cover	Collection #, or NC if not collected	species/substrate	% Cover	Collect.# or NC if not collected
Apiastrum angustifolium	2	NC	Salvia apiana	0.1	NC
Bloomeria crocea	0.1	NC	Sonchus asper	0.1	NC
Brachypodium distachyon	30	NC			NC
Centaurea melitensis	5	NC			NC
Convolvulus simulans	5	NC			NC
Deinandra fasciculata	0.1	NC			NC
Erodium moschatum	0.1	NC			NC
Euphorbia peplus	0.1	NC			NC
Harpagonella palmeri	20	NC			NC
Heteromeles arbutifolia	0.1	NC			NC
Hypochaeris glabra	0.1	NC			NC
Lysimachia arvensis	0.1	NC	**bare ground**		
Malosma laurina	1	NC	**rock**		
Rhamnus crocea		NC	**litter**		
COVER: Total % Cover:	64	%Herb: 63	%Shrub: 1	%Tree:	0

MSP - Rare Plant Habitat and Threats Assessment Form 2016

(top 4 rows auto-fill from page 1)

Scientific Name:	Acanthomintha ilicifolia	MSP Occur. ID:	ACIL_4SYCA027
Preserve:	Sycamore Canyon and Goodan Ranch Preserves		
Occurrence Name:	Sycamore Canyon		
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation:	Friends of Sycamore Ca
Date:	5/5/2016	Time Start: 2:00 PM	Time Finish: 3:00 PM

IV. **HABITAT ASSESSMENT IN SAMPLING AREA** - Assess habitat covariates within **species-specific sampling area (typically 10-m radius circle)**. Vegetation alliance/association can be assigned using San Diego vegetation key (AECOM 2012) in the office or field, using "Associated Species" data from page 1. See page 4 for definitions of habitat assessment categories. Record any notes on page 3.

SANDAG 2012 Vegetation Alliance/Association: Brachypodium distachyon Semi-Natural Stand Type

Cover classes (1-6)

Cryptogamic Crust Cover: 1 (0%)

Thatch Cover: 2 (>0% to <10%)

Thatch Depth Average (cm): 2

Thatch Depth max (cm): 4

Dead Standing Biomass: no

If yes, cover/species class:

Average height (cm):

Mammal Species Activity (categ. 1-4)

Feral pig activity: 1 = No feral pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) detected.

ground squirr. activity: 1 = No ground squirrel burrows detected.

gopher activity: 1 = No pocket gopher mounds detected.

Sampling area representative of mapped occurrence? yes (If no, note differences on page 3)

VI. **THREATS ASSESSMENT IN MAXIMUM EXTENT** - Assess threats within the **occurrence's maximum extent** (cumulative extent over years of monitoring) **plus 10-m surrounding buffer**. See page 4 for definitions of threat assessment categories. Record notes on page 3. See Argentine Ant Protocol (USGS 2015) for setting up bait, etc.

Surrounding Land Use/Activity at, or Adjacent to, Site: Open Space

Argentine ant abundance at bait station (1-4)

Time start: Temp start: Time end: Temp end:

Ant sample collected? Ant sample #: Ant Station Photo #:

DISTURBANCES (Rank each as 1-6):

Non-native forbs	6 = Disturbance occurs 50% to < 75% of area within	feral pig activity	1 = No sign	altered hydrology	1 = No sign of disturbanc
Non-native grasses	6 = Disturbance occurs 50% to < 75% of area within	trampling	1 = No sign	erosion	1 = No sign of disturbanc
Non-native woody pl.	1 = No sign of disturbance within maxinum extent or	vandalism	1 = No sign	urban runoff	1 = No sign of disturbanc
competitive native pl.	1 = No sign of disturbance within maxinum extent or	current grazing	1 = No sign	slope movement	3 = Disturbance present
dumping/trash	1 = No sign of disturbance within maxinum extent or	historic grazing	1 = No sign	soil compaction	1 = No sign of disturbanc
encampments	1 = No sign of disturbance within maxinum extent or	historic agriculture	1 = No sign		

fuel modification zone/fire break: 1 = No sign of

road construction/maintenance: 1 = No sign of — if present, describe:

illegal vegetation clearing: 1 = No sign of — if present, describe:

brush management/restoration: 1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer.

ORV activity: 1 = No sign of — if present, describe:

Evidence of recent fire: 1 = No sign of disturbance within maxinum

If sign of recent fire, year burned?

Trails: 1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer. — If trails are present, are they authorized? no

Type of trail use

hiking: no — biking: no — equestrian: no — dog: no

service vehicles: no — other: no

illegal trail use?: 1 = No sign of — describe:

Other disturbance?: 1 = No sign of disturbance within maxinum extent or — describe:

MSP-Management Needs and Notes 2016

(top 2 rows auto-fill from page 1)

Scientific Name: Acanthomintha ilicifolia

MSP Occur ID. ACIL_4SYCA027

Date: 5/5/2016

VI. MANAGEMENT RECOMMENDATIONS

Nonnative plant control.

VII. MANAGEMENT ACTIONS IN LAST YEAR

None.

VIII. CNDDB SPECIES DETECTED (list any plant or animal species to add to the CNDDB)

Convolvulus simulans and Harpagonella palmeri.

NOTES

MSP - Rare Plant Occurrence Monitoring Form 2016

Scientific Name:	Acanthomintha ilicifolia	Common Name:	San Diego thornmint
Existing MSP Occurrence?	yes	MSP Occurr. ID:	ACIL_4SYCA027
CNDDB Elem. Occur. #:		Translocated?	no
Preserve:	Sycamore Canyon and Goodan Ranch Preserves	Mgmt Unit:	MU4
Land Owner:	County San Diego Department of Parks and Recreation	Land Mangr:	County San Diego Department of Parks and Recreation
Occurrence Name:	Sycamore Canyon	Sample Point #:	SYGOACIL10
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation	Friends of Sycamore Cany
Date:	5/5/2016	Time Start:	15:00
		Time Finish:	15:30

I. OCCURRENCE STATUS - *Assess # plants in both species-specific **sampling area** (typically 10-m radius circle) & in **current mapped extent.** See p. 4 for definitions of categories describing phenology & evidence of herbivory, disease & stunted growth within the sampling area. Record any notes on p. 3.*

# Plants/Current Mapped Extent:	1,000s	exact count or estimate?	estimate (extrapolate partial ct)	uncert.	low
Area of Current Mapped Extent:	30	units	acres	exact (GPS) or estim?	estimate
Species Found in Maximum Extent?	yes	if not found, known or suspected reason:			
# Plants/Sampling Area	2,500	exact count or estimate?	estimate (1ks,10ks)	uncert.	low
Sample Area Radius (m)	10		exact		
Phenology In Sampling Area (1-6): Vegetative	1 (0%)	Flowering	1 (0%)	Fruiting	1 (0%)
Dead	1 (0%)	Flowering & Fruiting	6 (≥75%)		
Evidence in Sampling Area (1-6): Herbivory	1 (0%)	Disease	1 (0%)	Stunted Growth	1 (0%)
Is Sampling Area within Current Mapped Extent?	yes				
Collection (if not collected previously)?	no				
If yes: Collector		Collection #			
Museum/Herbarium					

II. SAMPLING AREA LOCATION & SITE PHOTOMONITORING

GPS Accuracy: +/-	1	accur. units:	meters	Datum:	NAD83
coord. system	UTM (m)				
Coordin's at Center of Plot: E:	501927	N:	3544370		
Camera type:	Iphone 6				
Locat. 1 Coord.--E, N	501909, 3644372	Direction facing	093 Degrees	Height	5 Feet
Camera angle	6 Degrees	Photo #	1	File location	
Locat. 2 Coord.-- E,N		Direction facing		Height	
Camera angle		Photo #		File location	

III. ASSOCIATED SPECIES *If need more room, record additional data and any notes on page 3.*

species/substrate	% Cover	Collection #, or NC if not collected	species/substrate	% Cover	Collect.# or NC if not collected
Acanthomintha ilicifolia	30	NC			NC
Apiastrum angustifolium	1	NC			NC
Bromus madritensis ssp. rubens	0.1	NC			NC
Centaurea melitensis	30	NC			NC
Cneoridium dumosum	0.1	NC			NC
Convolvulus simulans	10	NC			NC
Deinandra fasciculata	0.1	NC			NC
Eriophyllum confertiflorum	0.1	NC			NC
Hesperoyucca whipplei	0.1	NC			NC
Hypochaeris glabra	0.1	NC			NC
Quercus xacutidens	5	NC			NC
Salvia mellifera	5	NC	**bare ground**	15	
Sonchus asper	0.1	NC	**rock**	2	
Xylococcus bicolor	0.1	NC	**litter**	2	

COVER: Total % Cover:	81	%Herb:	71	%Shrub:	10	%Tree:	0

MSP - Rare Plant Habitat and Threats Assessment Form 2016

(top 4 rows auto-fill from page 1)

Scientific Name:	Acanthomintha ilicifolia	MSP Occur. ID:	ACIL_4SYCA027
Preserve:	Sycamore Canyon and Goodan Ranch Preserves		
Occurrence Name:	Sycamore Canyon		
Surveyors:	Carol Crafts, Karen Larsen, Nicole Salas, and Lance Woolley	Affiliation:	Friends of Sycamore Ca
Date:	5/5/2016	Time Start: 3:00 PM	Time Finish: 3:30 PM

IV. **HABITAT ASSESSMENT IN SAMPLING AREA** - Assess habitat covariates within **species-specific sampling area (typically 10-m radius circle)**. Vegetation alliance/association can be assigned using San Diego vegetation key (AECOM 2012) in the office or field, using "Associated Species" data from page 1. See page 4 for definitions of habitat assessment categories. Record any notes on page 3.

SANDAG 2012 Vegetation Alliance/Association: Centaurea (solstitialis, melitensis) Herbaceous Semi-Natural Alliance

Cover classes (1-6)

Cryptogamic Crust Cover:	1 (0%)	Thatch Cover	1 (0%)
Thatch Depth Average (cm)		Thatch Depth max (cm)	
Dead Standing Biomass	no		
If yes, cover/species class		Average height (cm)	

Mammal Species Activity (categ. 1-4)

Feral pig activity	1 = No feral pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) detected.
ground squirr. activity	1 = No ground squirrel burrows detected.
gopher activity	1 = No pocket gopher mounds detected.

Sampling area representative of mapped occurrence? yes (If no, note differences on page 3)

VI. **THREATS ASSESSMENT IN MAXIMUM EXTENT** - Assess threats within the **occurrence's maximum extent** (cumulative extent over years of monitoring) **plus 10-m surrounding buffer**. See page 4 for definitions of threat assessment categories. Record notes on page 3. See Argentine Ant Protocol (USGS 2015) for setting up bait, etc.

Surrounding Land Use/Activity at, or Adjacent to, Site: Open Space

Argentine ant abundance at bait station (1-4)

Time start		Temp start		Time end	Temp end
Ant sample collected?		Ant sample #		Ant Station Photo #	

DISTURBANCES (Rank each as 1-6):

Non-native forbs	6 = Disturbance occurs 50% to < 75% of area within	feral pig activity	1 = No sign	altered hydrology	1 = No sign of disturbanc
Non-native grasses	6 = Disturbance occurs 50% to < 75% of area within	trampling	1 = No sign	erosion	1 = No sign of disturbanc
Non-native woody pl.	1 = No sign of disturbance within maxinum extent or	vandalism	1 = No sign	urban runoff	1 = No sign of disturbanc
competitive native pl.	1 = No sign of disturbance within maxinum extent or	current grazing	1 = No sign	slope movement	3 = Disturbance present
dumping/trash	1 = No sign of disturbance within maxinum extent or	historic grazing	1 = No sign	soil compaction	1 = No sign of disturbanc
encampments	1 = No sign of disturbance within maxinum extent or	historic agriculture	1 = No sign		

fuel modification zone/fire break	1 = No sign of		
road construction/maintenance	1 = No sign of	if present, describe:	
illegal vegetation clearing	1 = No sign of	if present, describe:	
brush management/restoration	1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer.		
ORV activity	1 = No sign of	if present, describe:	
Evidence of recent fire	1 = No sign of disturbance within maxinum		
If sign of recent fire, year burned?			

Trails: 1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer. If trails are present, are they authorized? no

Type of trail use

hiking	no	biking	no	equestrian	no
service vehicles	no	other	no	dog	no
illegal trail use?	1 = No sign of	describe:			

Other disturbance? 1 = No sign of disturbance within maxinum extent or describe:

MSP-Management Needs and Notes 2016

(top 2 rows auto-fill from page 1)

Scientific Name: Acanthomintha ilicifolia

MSP Occur ID. ACIL_4SYCA027

Date: 5/5/2016

VI. MANAGEMENT RECOMMENDATIONS

Nonnative plant control.

VII. MANAGEMENT ACTIONS IN LAST YEAR

None.

VIII. CNDDB SPECIES DETECTED (list any plant or animal species to add to the CNDDB)

Convolvulus simulans.

NOTES

MSP - Rare Plant Occurrence Monitoring Form 2016

Scientific Name:	Clinopodium chandleri	Common Name:	San Miguel savory
Existing MSP Occurrence?	yes	MSP Occurr. ID:	CLCH5_4BOPR002
CNDDB Elem. Occur. #:		Translocated?	no
Preserve:	Boulder Oaks Preserve	Mgmt Unit:	MU4
Land Owner:	County San Diego Department of Parks and Recreation	Land Mangr:	County San Diego Department of Parks and Recreation
Occurrence Name:	Boulder Oaks Preserve	Sample Point #:	BOCLCH01
Surveyors:	Nicole Salas and Lance Woolley	Affiliation:	ICF
Date:	4/16/2016	Time Start:	8:00
		Time Finish:	13:00

I. OCCURRENCE STATUS - *Assess # plants in both species-specific **sampling area** (typically 10-m radius circle) & in **current mapped extent.** See p. 4 for definitions of categories describing phenology & evidence of herbivory, disease & stunted growth within the sampling area. Record any notes on p. 3.*

# Plants/Current Mapped Extent:	29	exact count or estimate?	exact	uncert.	low
Area of Current Mapped Extent:	0.14	units	acres	exact (GPS) or estim?	exact (GPS ma
Species Found in Maximum Extent?	yes	if not found, known or suspected reason:			
# Plants/Sampling Area	25	exact count or estimate?	exact	uncert.	low
Sample Area Radius (m)	10		exact		
Phenology In Sampling Area (1-6):	Vegetative: 2 (>0% to <1	Flowering: 6 (≥75%)		Fruiting: 1 (0%)	
	Dead: 1 (0%)	Flowering & Fruiting: 2 (>0% to <10%)			
Evidence in Sampling Area (1-6):	Herbivory: 1 (0%)	Disease: 1 (0%)		Stunted Growth: 1 (0%)	
Is Sampling Area within Current Mapped Extent?	yes				

Collection (if not collected previously)?	no		
If yes: Collector		Collection #	
Museum/Herbarium			

II. SAMPLING AREA LOCATION & SITE PHOTOMONITORING

GPS Accuracy: +/-	1	accur. units:	meters	Datum:	NAD83
coord. system	UTM (m)				
Coordin's at Center of Plot: E:	505067	N:	3646951		
Camera type:	Iphone 6				
Locat. 1 Coord.--E, N	505070, 3646943			Direction facing:	349 Degrees
Height:	5 Feet				
Camera angle	6 Degrees	Photo #:	1	File location	
Locat. 2 Coord.-- E,N				Direction facing	
Height:					
Camera angle		Photo #:		File location	

III. ASSOCIATED SPECIES *If need more room, record additional data and any notes on page 3.*

species/substrate	% Cover	Collection #, or NC if not collected	species/substrate	% Cover	Collect.# or NC if not collected
Adenostoma fasciculatum	5	NC	Xylococcus bicolor	15	NC
Arctostaphylos glandulosa	0.1	NC			NC
Bromus madritensis ssp. rubens	0.1	NC			NC
Ceanothus tomentosus	25	NC			
Chamaebatia australis	0.1	NC			
Crocanthemum scoparium	0.1	NC			
Dendromecon rigida	2	NC			
Dichelostemma capitatum	0.1	NC			
Festuca myuros	0.1	NC			
Galium sp.	0.1	NC			
Hazardia squarrosa	0.1	NC			
Logfia galica	0.1	NC	**bare ground**	45	
Stipa sp.	0.1	NC	**rock**	5	
Toxicoscordion sp.	0.1	NC	**litter**	2	

COVER: Total % Cover:	48	%Herb:	1	%Shrub:	47	%Tree:	0

MSP - Rare Plant Habitat and Threats Assessment Form 2016

(top 4 rows auto-fill from page 1)

Scientific Name:	Clinopodium chandleri	MSP Occur. ID:	CLCH5_4BOPR002
Preserve:	Boulder Oaks Preserve		
Occurrence Name:	Boulder Oaks Preserve		
Surveyors:	Nicole Salas and Lance Woolley	Affiliation:	ICF
Date:	4/16/2016	Time Start: 8:00 AM	Time Finish: 1:00 PM

IV. **HABITAT ASSESSMENT IN SAMPLING AREA** - Assess habitat covariates within **species-specific sampling area (typically 10-m radius circle)**. Vegetation alliance/association can be assigned using San Diego vegetation key (AECOM 2012) in the office or field, using "Associated Species" data from page 1. See page 4 for definitions of habitat assessment categories. Record any notes on page 3.

SANDAG 2012 Vegetation Alliance/Association: Ceanothus tomentosus Alliance/Ceanothus tomentosus Association

Cover classes (1-6)

Cryptogamic Crust Cover: 2 (>0% to <1

Thatch Cover: 1 (0%)

Thatch Depth Average (cm):

Thatch Depth max (cm):

Dead Standing Biomass: yes

If yes, cover/species class: 2/XYBI,ARGL.CETO

Average height (cm): 152

Mammal Species Activity (categ. 1-4)

Feral pig activity: 1 = No feral pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) detected.

ground squirr. activity: 1 = No ground squirrel burrows detected.

gopher activity: 1 = No pocket gopher mounds detected.

Sampling area representative of mapped occurrence? yes (If no, note differences on page 3)

VI. **THREATS ASSESSMENT IN MAXIMUM EXTENT** - Assess threats within the **occurrence's maximum extent** (cumulative extent over years of monitoring) **plus 10-m surrounding buffer**. See page 4 for definitions of threat assessment categories. Record notes on page 3. See Argentine Ant Protocol (USGS 2015) for setting up bait, etc.

Surrounding Land Use/Activity at, or Adjacent to, Site: Open Space

Argentine ant abundance at bait station (1-4)

Time start: Temp start: Time end: Temp end:

Ant sample collected? Ant sample #: Ant Station Photo #:

DISTURBANCES (Rank each as 1-6):

Non-native forbs	1 = No sign of disturbance within maxinum extent or	feral pig activity	1 = No sign	altered hydrology	1 = No sign of disturbanc
Non-native grasses	1 = No sign of disturbance within maxinum extent or	trampling	1 = No sign	erosion	1 = No sign of disturbanc
Non-native woody pl.	1 = No sign of disturbance within maxinum extent or	vandalism	1 = No sign	urban runoff	1 = No sign of disturbanc
competitive native pl.	1 = No sign of disturbance within maxinum extent or	current grazing	1 = No sign	slope movement	3 = Disturbance present
dumping/trash	1 = No sign of disturbance within maxinum extent or	historic grazing	1 = No sign	soil compaction	1 = No sign of disturbanc
encampments	1 = No sign of disturbance within maxinum extent or	historic agriculture	1 = No sign		

fuel modification zone/fire break: 1 = No sign of

road construction/maintenance: 1 = No sign of — if present, describe:

illegal vegetation clearing: 1 = No sign of — if present, describe:

brush management/restoration: 1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer.

ORV activity: 1 = No sign of — if present, describe:

Evidence of recent fire: 1 = No sign of disturbance within maxinum

If sign of recent fire, year burned?

Trails: 1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer. — If trails are present, are they authorized? no

Type of trail use

hiking: no — biking: no — equestrian: no — dog: no

service vehicles: no — other: no

illegal trail use?: 1 = No sign of — describe:

Other disturbance?: 1 = No sign of disturbance within maxinum extent or — describe:

MSP-Management Needs and Notes 2016

(top 2 rows auto-fill from page 1)

Scientific Name: Clinopodium chandleri

MSP Occur ID. CLCH5_4BOPR002

Date: 4/16/2016

VI. MANAGEMENT RECOMMENDATIONS

None.

VII. MANAGEMENT ACTIONS IN LAST YEAR

None.

VIII. CNDDB SPECIES DETECTED (list any plant or animal species to add to the CNDDB)

Chamaebatia australis.

NOTES

MSP - Rare Plant Occurrence Monitoring Form 2016

Scientific Name:	Clinopodium chandleri	Common Name:	San Miguel savory
Existing MSP Occurrence?	unknown	MSP Occurr. ID:	
CNDDB Elem. Occur. #:		Translocated?	no
Preserve:	Boulder Oaks Preserve	Mgmt Unit:	MU4
Land Owner:	County San Diego Department of Parks and Recreation	Land Mangr:	County San Diego Department of Parks and Recreation
Occurrence Name:	Boulder Oaks Preserve	Sample Point #:	BOCLCH02
Surveyors:	Nicole Salas and Lance Woolley	Affiliation:	ICF
Date:	4/16/2016	Time Start:	13:00
		Time Finish:	17:00

I. OCCURRENCE STATUS - *Assess # plants in both species-specific **sampling area** (typically 10-m radius circle) & in **current mapped extent.** See p. 4 for definitions of categories describing phenology & evidence of herbivory, disease & stunted growth within the sampling area. Record any notes on p. 3.*

# Plants/Current Mapped Extent:	110	exact count or estimate?	exact	uncert.	low
Area of Current Mapped Extent:	0.34	units	acres	exact (GPS) or estim?	exact (GPS ma
Species Found in Maximum Extent?	yes	if not found, known or suspected reason:			
# Plants/Sampling Area	46	exact count or estimate?	exact	uncert.	low
Sample Area Radius (m)	10		exact		
Phenology In Sampling Area (1-6):	Vegetative	2 (>0% to <1	Flowering	6 (≥75%)	Fruiting	1 (0%)
	Dead	1 (0%)	Flowering & Fruiting	2 (>0% to <10%)		
Evidence in Sampling Area (1-6):	Herbivory	1 (0%)	Disease	1 (0%)	Stunted Growth	1 (0%)
Is Sampling Area within Current Mapped Extent?	yes					
Collection (if not collected previously)?	no					
If yes: Collector		Collection #			
Museum/Herbarium					

II. SAMPLING AREA LOCATION & SITE PHOTOMONITORING

GPS Accuracy: +/-	1	accur. units:	meters	Datum:	NAD83
coord. system	UTM (m)				
Coordin's at Center of Plot: E:	505422	N:	3647075		
Camera type:	Iphone 6				
Locat. 1 Coord.--E, N	505418, 3647045		Direction facing	012 Degrees	Height	5 Feet
Camera angle	1 Degrees	Photo #	1	File location	
Locat. 2 Coord.-- E,N			Direction facing		Height	
Camera angle		Photo #		File location	

III. ASSOCIATED SPECIES *If need more room, record additional data and any notes on page 3.*

species/substrate	% Cover	Collection #, or NC if not collected	species/substrate	% Cover	Collect.# or NC if not collected
Adenostoma fasciculatum	25	NC	Toxicoscordion sp.	0.1	NC
Arctostaphylos glandulosa	3	NC	Xylococcus bicolor	3	NC
Bromus madritensis ssp. rubens	0.1	NC			NC
Ceanothus tomentosus	10	NC			
Chamaebatia australis	5	NC			
Crocanthemum scoparium	0.1	NC			
Dendromecon rigida	0.1	NC			
Dichelostemma capitatum	0.1	NC			
Ehrharta calycina	0.1	NC			
Eriophyllum confertiflorum	0.1	NC			
Festuca myuros	0.1	NC			
Galium sp.	0.1	NC	**bare ground**	45	
Logfia gallica	0.1	NC	**rock**	6	
Stipa sp.	0.1	NC	**litter**	2	

COVER: Total % Cover:	47	%Herb:	1	%Shrub:	46	%Tree:	0

MSP - Rare Plant Habitat and Threats Assessment Form 2016

(top 4 rows auto-fill from page 1)

Scientific Name:	Clinopodium chandleri	MSP Occur. ID:	0
Preserve:	Boulder Oaks Preserve		
Occurrence Name:	Boulder Oaks Preserve		
Surveyors:	Nicole Salas and Lance Woolley	Affiliation:	ICF
Date:	4/16/2016	Time Start: 1:00 PM	Time Finish: 5:00 PM

IV. **HABITAT ASSESSMENT IN SAMPLING AREA** - Assess habitat covariates within **species-specific sampling area (typically 10-m radius circle)** Vegetation alliance/association can be assigned using San Diego vegetation key (AECOM 2012) in the office or field, using "Associated Species" data from page 1. See page 4 for definitions of habitat assessment categories. Record any notes on page 3.

SANDAG 2012 Vegetation Alliance/Association: Adenostoma fasciculatum Alliance/Adenostoma fasciculatum Association

Cover classes (1-6)

Cryptogamic Crust Cover: 2 (>0% to <1

Thatch Cover: 1 (0%)

Thatch Depth Average (cm):

Thatch Depth max (cm):

Dead Standing Biomass: yes

If yes, cover/species class: 2/XYBI,ARGL.CETO

Average height (cm): 152

Mammal Species Activity (categ. 1-4)

Feral pig activity: 1 = No feral pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) detected.

ground squirr. activity: 1 = No ground squirrel burrows detected.

gopher activity: 1 = No pocket gopher mounds detected.

Sampling area representative of mapped occurrence? yes (If no, note differences on page 3)

VI. **THREATS ASSESSMENT IN MAXIMUM EXTENT** - Assess threats within the **occurrence's maximum extent** (cumulative extent over years of monitoring) **plus 10-m surrounding buffer**. See page 4 for definitions of threat assessment categories. Record notes on page 3. See Argentine Ant Protocol (USGS 2015) for setting up bait, etc.

Surrounding Land Use/Activity at, or Adjacent to, Site: Open Space

Argentine ant abundance at bait station (1-4)

Time start: Temp start: Time end: Temp end:

Ant sample collected? Ant sample #: Ant Station Photo #:

DISTURBANCES (Rank each as 1-6):

Non-native forbs	1 = No sign of disturbance within maxinum extent or	feral pig activity	1 = No sign	altered hydrology	1 = No sign of disturbanc
Non-native grasses	3 = Disturbance present in >0% to <10% of area wit	trampling	1 = No sign	erosion	1 = No sign of disturbanc
Non-native woody pl.	1 = No sign of disturbance within maxinum extent or	vandalism	1 = No sign	urban runoff	1 = No sign of disturbanc
competitive native pl.	1 = No sign of disturbance within maxinum extent or	current grazing	1 = No sign	slope movement	3 = Disturbance present
dumping/trash	1 = No sign of disturbance within maxinum extent or	historic grazing	1 = No sign	soil compaction	1 = No sign of disturbanc
encampments	1 = No sign of disturbance within maxinum extent or	historic agriculture	1 = No sign		

fuel modification zone/fire break: 1 = No sign of

road construction/maintenance: 1 = No sign of — if present, describe:

illegal vegetation clearing: 1 = No sign of — if present, describe:

brush management/restoration: 1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer.

ORV activity: 1 = No sign of — if present, describe:

Evidence of recent fire: 1 = No sign of disturbance within maxinum

If sign of recent fire, year burned?

Trails: 1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer. If trails are present, are they authorized? no

Type of trail use

hiking: no biking: no equestrian: no dog: no

service vehicles: no other: no

illegal trail use?: 1 = No sign of describe:

Other disturbance?: 1 = No sign of disturbance within maxinum extent or describe:

MSP-Management Needs and Notes 2016

(top 2 rows auto-fill from page 1)

Scientific Name: Clinopodium chandleri

MSP Occur ID. 0

Date: 4/16/2016

VI. MANAGEMENT RECOMMENDATIONS

Ehrharta calycina in access road and drainage north of monitoring plot. Very sparse in monitoring plot but could potentially become a problem.

VII. MANAGEMENT ACTIONS IN LAST YEAR

None.

VIII. CNDDB SPECIES DETECTED (list any plant or animal species to add to the CNDDB)

Chamaebatia australis.

NOTES

MSP - Rare Plant Occurrence Monitoring Form 2016

Scientific Name:	Dudleya variegata	Common Name:	Variegated dudleya
Existing MSP Occurrence?	yes	MSP Occurr. ID:	DUVA_6LUCR023
CNDDB Elem. Occur. #:		Translocated?	no
Preserve:	Lusardi Creek Preserve	Mgmt Unit:	MU6
Land Owner:	County San Diego Department of Parks and Recreation	Land Mangr:	County San Diego Department of Parks and Recreation
Occurrence Name:	Lusardi Creek	Sample Point #:	LCDUVA01
Surveyors:	Nicole Salas and Lance Woolley	Affiliation:	ICF
Date:	4/27/2016	Time Start:	8:00
Time Finish:	12:00		

I. OCCURRENCE STATUS - *Assess # plants in both species-specific **sampling area** (typically 10-m radius circle) & in **current mapped extent.** See p. 4 for definitions of categories describing phenology & evidence of herbivory, disease & stunted growth within the sampling area. Record any notes on p. 3.*

# Plants/Current Mapped Extent:	199	exact count or estimate?	exact	uncert.	low
Area of Current Mapped Extent:	0.6	units	acres	exact (GPS) or estim?	exact (GPS ma
Species Found in Maximum Extent?	yes	if not found, known or suspected reason:			
# Plants/Sampling Area	79	exact count or estimate?	exact	uncert.	low
Sample Area Radius (m)	10		exact		

Phenology In Sampling Area (1-6):	Vegetative	2 (>0% to <1	Flowering	6 (≥75%)		Fruiting	1 (0%)
	Dead	1 (0%)	Flowering & Fruiting	1 (0%)			
Evidence in Sampling Area (1-6):	Herbivory	1 (0%)	Disease	1 (0%)		Stunted Growth	1 (0%)
Is Sampling Area within Current Mapped Extent?	yes						

Collection (if not collected previously)?	no		
If yes: Collector		Collection #	
Museum/Herbarium			

II. SAMPLING AREA LOCATION & SITE PHOTOMONITORING

GPS Accuracy: +/-	1	accur. units:	meters	Datum:	NAD83
coord. system	UTM (m)				
Coordin's at Center of Plot: E:	484873	N:	3652555		
Camera type:	Iphone 6				
Locat. 1 Coord.--E, N	484865, 3652564	Direction facing	158 Degrees	Height	5 Feet
Camera angle	5 Degrees	Photo #	1	File location	
Locat. 2 Coord.-- E,N		Direction facing		Height	
Camera angle		Photo #		File location	

III. ASSOCIATED SPECIES *If need more room, record additional data and any notes on page 3.*

species/substrate	% Cover	Collection #, or NC if not collected	species/substrate	% Cover	Collect.# or NC if not collected
Acmispon glaber	3	NC	Salvia mellifera	0.1	NC
Artemisia californica	0.1	NC	Sisyrinchium bellum	0.1	NC
Brachypodium distachyon	20	NC	Solanum sp.	0.1	NC
Calochortus splendens	0.1	NC	Stipa pulchra	15	
Chlorogalum parviflorum	0.1	NC			
Deinandra fasciculata	1	NC			
Dudleya variegata	0.1	NC			
Eriogonum fasciculatum	0.1	NC			
Erodium cicutarium	0.1	NC			
Ferocactus viridescens	0.1	NC			
Hypochaeris glabra	0.1	NC			
Lysimachia arvensis	0.1	NC	**bare ground**	55	
Pseudognaphalium sp.	0.1	NC	**rock**	4	
Salsola tragus	0.1	NC	**litter**	0.6	

COVER: Total % Cover:	40.4	%Herb:	37.1	%Shrub:	3.3	%Tree:	0

MSP - Rare Plant Habitat and Threats Assessment Form 2016

(top 4 rows auto-fill from page 1)

Scientific Name:	Dudleya variegata	MSP Occur. ID:	DUVA_6LUCR023
Preserve:	Lusardi Creek Preserve		
Occurrence Name:	Lusardi Creek		
Surveyors:	Nicole Salas and Lance Woolley	Affiliation:	ICF
Date:	4/27/2016	Time Start: 8:00 AM	Time Finish: 12:00 PM

IV. **HABITAT ASSESSMENT IN SAMPLING AREA** - Assess habitat covariates within **species-specific sampling area (typically 10-m radius circle)**. Vegetation alliance/association can be assigned using San Diego vegetation key (AECOM 2012) in the office or field, using "Associated Species" data from page 1. See page 4 for definitions of habitat assessment categories. Record any notes on page 3.

SANDAG 2012 Vegetation Alliance/Association: Stipa pulchra Alliance/Stipa pulchra Association

Cover classes (1-6)

Cryptogamic Crust Cover: 2 (>0% to <1

Thatch Cover: 1 (0%)

Thatch Depth Average (cm):

Thatch Depth max (cm):

Dead Standing Biomass: no

If yes, cover/species class:

Average height (cm):

Mammal Species Activity (categ. 1-4)

Feral pig activity: 1 = No feral pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) detected.

ground squirr. activity: 1 = No ground squirrel burrows detected.

gopher activity: 1 = No pocket gopher mounds detected.

Sampling area representative of mapped occurrence? yes (If no, note differences on page 3)

VI. **THREATS ASSESSMENT IN MAXIMUM EXTENT** - Assess threats within the **occurrence's maximum extent** (cumulative extent over years of monitoring) **plus 10-m surrounding buffer**. See page 4 for definitions of threat assessment categories. Record notes on page 3. See Argentine Ant Protocol (USGS 2015) for setting up bait, etc.

Surrounding Land Use/Activity at, or Adjacent to, Site: Open Space, old access road through DUVA population.

Argentine ant abundance at bait station (1-4)

Time start: Temp start: Time end: Temp end:

Ant sample collected? Ant sample #: Ant Station Photo #:

DISTURBANCES (Rank each as 1-6):

Non-native forbs	5 = Disturbance occurs in 25% to <50% of area with	feral pig activity	1 = No sign	altered hydrology	1 = No sign of disturbanc
Non-native grasses	5 = Disturbance occurs in 25% to <50% of area with	trampling	1 = No sign	erosion	1 = No sign of disturbanc
Non-native woody pl.	1 = No sign of disturbance within maxinum extent or	vandalism	1 = No sign	urban runoff	1 = No sign of disturbanc
competitive native pl.	1 = No sign of disturbance within maxinum extent or	current grazing	1 = No sign	slope movement	3 = Disturbance present
dumping/trash	3 = Disturbance present in >0% to <10% of area wit	historic grazing	1 = No sign	soil compaction	1 = No sign of disturbanc
encampments	1 = No sign of disturbance within maxinum extent or	historic agriculture	1 = No sign		

fuel modification zone/fire break: 1 = No sign of

road construction/maintenance: 1 = No sign of — if present, describe:

illegal vegetation clearing: 1 = No sign of — if present, describe:

brush management/restoration: 1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer.

ORV activity: 1 = No sign of — if present, describe:

Evidence of recent fire: 1 = No sign of disturbance within maxinum

If sign of recent fire, year burned?

Trails: 1 = No sign of disturbance within maxinum extent or in adjacent 10 m buffer. — If trails are present, are they authorized? no

Type of trail use

hiking: no — biking: no — equestrian: no — dog: no

service vehicles: no — other: no

illegal trail use?: 1 = No sign of — describe:

Other disturbance?: 1 = No sign of disturbance within maxinum extent or — describe:

MSP-Management Needs and Notes 2016

(top 2 rows auto-fill from page 1)

Scientific Name: Dudleya variegata

MSP Occur ID. DUVA_6LUCR023

Date: 4/27/2016

VI. MANAGEMENT RECOMMENDATIONS

Control Brachypodium distachyon.

VII. MANAGEMENT ACTIONS IN LAST YEAR

None.

VIII. CNDDB SPECIES DETECTED (list any plant or animal species to add to the CNDDB)

Ferocactus viridescens and Dichondra occidentalis.

NOTES

Appendix D

Stephens' Kangaroo Rat Habitat Assessment Forms

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Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A3-1 **Date:** 11/13/2016 **Time:** 12:00

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one) – 1, 2, (3)**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM) (PR) other_____(write in)

Trapping needed to confirm SKR vs DKR? (Yes) / No

Overall Plot Comments: Numerous grd. sq. burrows (large diameter); few small burrows; abundant litter (Erod. sp)

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **LIVING/STANDING HERB DENSITY:** High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium___, Low ✓

BARE GROUND: 0-5%___, >5-25%___, >25-50% X, >50-75%___, >75-95%___, >95-100%_____

PLANT LITTER (Dead): 0-5%___, >5-25%___, >25-50%___, >50-75%___, >75-95% X (Erod), >95-100%_____

FORB cover: 0-5% X, >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100%_____

GRASS cover: 0-5% X, >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100%_____

SHRUB cover: 0% X >0-5%___ >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100%_____

FORBS - 3 Dominant Species: Erod. sp (detritus), croton setig., _____

GRASSES - 3 Dominant Species: _____, _____, _____

SHRUBS - 3 Dominant Species: _____, _____, _____

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate___, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High___, Moderate ✓, Low___

Substrate Disturbance: None___ Grazing ✓ Grading___ Discing___ Furrows___ Mowing___ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, (12 months, / older)

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) (Scat), (Burrow(s)), Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe) mostly ground squirrel

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A3-2 **Date:** 11 / 13 / 2016 **Time:** 12:15

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one) – 1, 2, (3)**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM) - (PR) other_____(write in)

Trapping needed to confirm SKR vs DKR? (Yes) / No

Overall Plot Comments: same as A3-1

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **LIVING/STANDING HERB DENSITY:** High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium___, Low___

BARE GROUND: 0-5%___, >5-25%___, >25-50% X, >50-75%___, >75-95%___, >95-100%___

PLANT LITTER (Dead): 0-5%___, >5-25%___, >25-50%___, >50-75%___, >75-95% X Erod. sp., >95-100%___

FORB cover: 0-5% X, >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100%___

GRASS cover: 0-5% X, >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100%___

SHRUB cover: 0% X >0-5%___ >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100%___

FORBS - 3 Dominant Species: Erod spp litter, Croton setig., Ambr. psilost.

GRASSES - 3 Dominant Species: _____, _____, _____

SHRUBS - 3 Dominant Species: _____, _____, _____

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate___, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High___, Moderate ✓, Low___

Substrate Disturbance: None___ Grazing ✓ Grading___ Discing___ Furrows___ Mowing___ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, (12 months, older)

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) (Scat,) (Burrow(s),) Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe) Primarily ground squirrel burrows

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A3-3 **Date:** 11 / 13 / 2016 **Time:** 12:30

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one) – 1, 2, (3)**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM) (PR) other_____(write in)

Trapping needed to confirm SKR vs DKR? (Yes) / No

Overall Plot Comments: same as A3-1 and A3-2

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **LIVING/STANDING HERB DENSITY**: High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium___, Low ✓

BARE GROUND:	0-5%___,	>5-25%___,	>25-50% X,	>50-75%___,	>75-95%___,	>95-100%___
PLANT LITTER (Dead):	0-5%___,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100% X
FORB cover:	0-5% [illegible],	>5-25% X,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
GRASS cover:	0-5% X,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
SHRUB cover: 0%___	>0-5% X	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___

FORBS - 3 Dominant Species: Erod sp (litter), Croton setig., Ambr. psilost.

GRASSES - 3 Dominant Species: —, _____, _____

SHRUBS - 3 Dominant Species: Isoc. menz., _____, _____

TREES - 3 Dominant species: —, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate___, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High___, Moderate___, Low ✓

Substrate Disturbance: None___ Grazing___ Grading___ Discing___ Furrows___ Mowing___ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, (12 months, older)

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) (Scat,) (Burrow(s),) Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe) primary ground squirrel burrows

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: 3A-1 **Date:** 11 / 13 / 2016 **Time:** 15:45

Grazing Management Unit: (circle one) – 2A, 2B, (3A) **SKR Management Area: (circle one) – 1, 2, 3**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM) (PR) other_____(write in)

Trapping needed to confirm SKR vs DKR? (Yes) / No

Overall Plot Comments: _____

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium___, Soft ✓ **LIVING/STANDING HERB DENSITY**: High ✓, Medium___, Low____

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High____, Medium_____, Low_____

BARE GROUND:	0-5%___,	>5-25% X,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____
PLANT LITTER (Dead):	0-5% X,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____
FORB cover:	0-5%___,	>5-25%___,	>25-50%___,	>50-75% X,	>75-95%___,	>95-100%_____
GRASS cover:	0-5%___,	>5-25%___,	>25-50%___,	>50-75% X,	>75-95%___,	>95-100%_____
SHRUB cover: 0% X	>0-5%___	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____

FORBS - 3 Dominant Species: Ambros. psilo. _____, _____, _____

GRASSES - 3 Dominant Species: Dist. spic. _____, _____, _____

SHRUBS - 3 Dominant Species: —, _____, _____

TREES - 3 Dominant species: —, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate____, Low ✓ **INACTIVE** - High___, Moderate ✓, Low___

Abundance of ground squirrel burrows: High___, Moderate ✓, Low____

Substrate Disturbance: None____ Grazing ✓ Grading_____Discing____Furrows_____ Mowing____ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, (6 months), 12 months, older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) (Scat), (Burrow(s)), Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe)_____

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: 3A-2 **Date:** 11 / 13 / 2016 **Time:** 13:20

Grazing Management Unit: (circle one) – 2A, 2B, (3A) **SKR Management Area: (circle one) – 1, 2, 3**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM) (PR) other_____(write in)

Trapping needed to confirm SKR vs DKR? (Yes) / No

Overall Plot Comments: soils dark (clay domin.); Low area (wet?)

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium___, Soft ✓ **LIVING/STANDING HERB DENSITY**: High ✓, Medium___, Low____

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High ✓, Medium____, Low_____

BARE GROUND:	0-5%___,	>5-25% ✓,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____
PLANT LITTER (Dead):	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____
FORB cover:	0-5%___,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95% ✓,	>95-100%_____
GRASS cover:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____
SHRUB cover: 0%____	>0-5% ✓	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____

FORBS - 3 Dominant Species: Deinand. fascic., Salsola tragus, Brass. nigra

GRASSES - 3 Dominant Species: Dist. spic., _____, _____

SHRUBS - 3 Dominant Species: Isoc. menz., _____, _____

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High____, Moderate_____, Low ✓ **INACTIVE** - High____, Moderate____, Low ✓

Abundance of ground squirrel burrows: High____, Moderate_____, Low ✓

Substrate Disturbance: None_____ Grazing ✓ Grading_____Discing_____Furrows_____ Mowing_____ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, (12 months), older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) Scat, Burrow(s), Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe) None detected

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: 3A-3 **Date:** 11 / 13 / 2016 **Time:** 13:00

Grazing Management Unit: (circle one) – 2A, 2B, (3A) **SKR Management Area: (circle one) – 1, 2, 3**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM) (PR) other_____(write in)

Trapping needed to confirm SKR vs DKR? (Yes) / No

Overall Plot Comments: _____

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **LIVING/STANDING HERB DENSITY:** High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium___, Low ✓

BARE GROUND: 0-5% ✓, >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100%___

PLANT LITTER (Dead): 0-5%___, >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100% ✓ Erod. sp

FORB cover: 0-5% ✓, >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100%___

GRASS cover: 0-5%___, >5-25% ✓, >25-50%___, >50-75%___, >75-95%___, >95-100%___

SHRUB cover: 0%___ >0-5% ✓ >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100%___

FORBS - 3 Dominant Species: Erod. sp. (litter), Croton setig., Ambro. psilo.

GRASSES - 3 Dominant Species: Dist. spic., _____, _____

SHRUBS - 3 Dominant Species: Isoc. menz, _____, _____

TREES - 3 Dominant species: —, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate___, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High___, Moderate___, Low ✓

Substrate Disturbance: None___ Grazing ✓ Grading___ Discing___ Furrows ✓ Mowing___ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, (12 months), older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing ✓ Estimate when?? (circle one) past 3 months, 6 months, 12 months, (older)

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) (Scat), (Burrow(s)), Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe) SE corner w/ old scat and burrows

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: 3A-4 **Date:** 11/14/2016 **Time:** 09:45

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one) – 1, 2, 3**

Digital Photograph taken @ SE Corner of Plot?? X

Observer(s): (SJM) PR other Nicole Salas (write in)

Trapping needed to confirm SKR vs DKR? Yes / No

Overall Plot Comments: Heavy grazing. Low area next to Sta Maria Crk. Dense herb cover.

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium___, Soft ✓ **LIVING/STANDING HERB DENSITY**: High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium ✓, Low_____

BARE GROUND:	0-5%___,	>5-25% ✓,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____
PLANT LITTER (Dead):	0-5%___,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95% ✓ Erodium,	>95-100%_____
FORB cover:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____
GRASS cover:	0-5%___,	>5-25% ✓,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____
SHRUB cover: 0% ✓	>0-5%___	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____

FORBS - 3 Dominant Species: Croton setig., Ambrosia, _____

GRASSES - 3 Dominant Species: Dist. spic., _____, _____

SHRUBS - 3 Dominant Species: _____, _____, _____

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate ✓, Low___ **INACTIVE** - High___, Moderate ✓, Low___

Abundance of ground squirrel burrows: High___, Moderate_____, Low ✓

Substrate Disturbance: None_____ Grazing ✓ Grading_____ Discing_____ Furrows_____ Mowing_____ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) Scat, Burrow(s), Tracks, Tail drag, Caching/foraging craters, Trails in Vegetation, Other (describe) None

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: 3A-5 **Date:** 11 / 13 / 2016 **Time:** 13:25

Grazing Management Unit: (circle one) – 2A, 2B, (3A) **SKR Management Area: (circle one) – 1, 2, 3**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM) (PR) other_____(write in)

Trapping needed to confirm SKR vs DKR? (Yes) / No

Overall Plot Comments: furrows, but very old and indicates historic discing

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **LIVING/STANDING HERB DENSITY**: High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium___, Low ✓

BARE GROUND:	0-5%___,	>5-25% X,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
PLANT LITTER (Dead):	0-5%___,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100% X
FORB cover:	0-5% X,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
GRASS cover:	0-5% X,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
SHRUB cover: 0% X	>0-5%___	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___

FORBS - 3 Dominant Species: Erod. sp. (litter), Deinand. fasc., _____

GRASSES - 3 Dominant Species: Dist. spic., _____, _____

SHRUBS - 3 Dominant Species: _____, _____, _____

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate___, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High___, Moderate___, Low ✓

Substrate Disturbance: None___ Grazing ✓ Grading___ Discing___ Furrows ✓ Mowing___ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, (6 months, 12 months,) older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing ✓ Estimate when?? (circle one) past 3 months, 6 months, 12 months, (older)

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) (Scat, (Burrow(s),) Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe)_____

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: 3A-6 **Date:** 11 / 13 / 2016 **Time:** 13:00

Grazing Management Unit: (circle one) – 2A, 2B, (3A) **SKR Management Area: (circle one) – 1, 2, 3**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM) - (PR) other_____(write in)

Trapping needed to confirm SKR vs DKR? Yes / No

Overall Plot Comments: _____

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium___, Soft ✓ **LIVING/STANDING HERB DENSITY**: High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium___, Low ✓

BARE GROUND:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
PLANT LITTER (Dead):	0-5%___,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95% ✓,	>95-100%___
FORB cover:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
GRASS cover:	0-5%___,	>5-25% ✓,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
SHRUB cover: 0% ✓	>0-5%___	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___

FORBS - 3 Dominant Species: Erod. (litter), Crot. setig., Ambr. psilo.

GRASSES - 3 Dominant Species: Dist. spic., _____, _____

SHRUBS - 3 Dominant Species: _____, _____, _____

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate___, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High ✓, Moderate___, Low___

Substrate Disturbance: None___ Grazing ✓ Grading___ Discing___ Furrows___ Mowing___ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, (6 months, 12 months,) older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) (Scat, Burrow(s),) Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe) Numerous burrows mostly ground squirrel

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: 3A-7 **Date:** 11/13/2016 **Time:** 1430

Grazing Management Unit: (circle one) – 2A, 2B, (3A) **SKR Management Area: (circle one) – 1, 2, 3**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM) - (PR) other_____(write in)

Trapping needed to confirm SKR vs DKR? (Yes) / No

Overall Plot Comments: sandy substrate

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium___, Soft ✓ **LIVING/STANDING HERB DENSITY**: High___, Medium ✓, Low___

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium ✓, Low_____

BARE GROUND:	0-5%___,	>5-25% X,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____
PLANT LITTER (Dead):	0-5%___,	>5-25% X,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____
FORB cover:	0-5%___,	>5-25% X,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____
GRASS cover:	0-5%___,	>5-25%___,	>25-50% X,	>50-75%___,	>75-95%___,	>95-100%_____
SHRUB cover: 0%_____	>0-5% X	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____

FORBS - 3 Dominant Species: Crot. setig., Erod sp. (litter), Brass. nigra.

GRASSES - 3 Dominant Species: Dist. spic., Vulpia myuros, _____

SHRUBS - 3 Dominant Species: Isoc. menz., _____, _____

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate ✓, Low___ **INACTIVE** - High___, Moderate ✓, Low___

Abundance of ground squirrel burrows: High___, Moderate_____, Low ✓

Substrate Disturbance: None_____ Grazing ✓ Grading_____ Discing_____ Furrows_____ Mowing_____ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, (6 months, 12 months,) older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) Scat, (Burrow(s), Tracks,) Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe)_____

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: 3A-8 **Date:** 11 / 13 / 2016 **Time:** 16:13

Grazing Management Unit: (circle one) – 2A, 2B, (3A) **SKR Management Area: (circle one) – 1, 2, 3**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM) - (PR) other_____(write in)

Trapping needed to confirm SKR vs DKR? (Yes) / No

Overall Plot Comments: _____

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium___, Soft ✓ **LIVING/STANDING HERB DENSITY**: High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium___, Low ✓

BARE GROUND:	0-5%___,	>5-25% X,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
PLANT LITTER (Dead):	0-5%___,	>5-25%___,	>25-50% X,	>50-75%___,	>75-95%___,	>95-100%___
FORB cover:	0-5%___,	>5-25% X,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
GRASS cover:	0-5% X,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
SHRUB cover: 0% X	>0-5%___	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___

FORBS - 3 Dominant Species: Crot. setig., Evod. (litter), Brass. nigra

GRASSES - 3 Dominant Species: _____, _____, _____

SHRUBS - 3 Dominant Species: _____, _____, _____

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate___, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High___, Moderate ✓, Low___

Substrate Disturbance: None___ Grazing ✓ Grading___ Discing___ Furrows___ Mowing___ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, (12 months, older)

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) (Scat, (Burrow(s), Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe)_____

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A2-1 **Date:** 11/14/16 **Time:** 10:14

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one) – 1, (2), 3**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM) (PR) other Nicole (write in)

Trapping needed to confirm SKR vs DKR? (Yes) / No

Overall Plot Comments: Moderate slope

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **LIVING/STANDING HERB DENSITY**: High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium___, Low ✓

BARE GROUND:	0-5%___,	>5-25% ✓,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
PLANT LITTER (Dead):	0-5%___,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95% ✓ (Erodium),	>95-100%___
FORB cover:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
GRASS cover:	0-5%___,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
SHRUB cover: 0%___	>0-5% ✓	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___

FORBS - 3 Dominant Species: Mutton Setig, Brassica, Coreth filag

GRASSES - 3 Dominant Species: —, _____, _____

SHRUBS - 3 Dominant Species: Artem cal, _____, _____

TREES - 3 Dominant species: —, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate___, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High___, Moderate ✓, Low___

Substrate Disturbance: None___ Grazing ✓ Grading___ Discing___ Furrows___ Mowing___ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, (6 months), 12 months, older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) (Scat), (Burrow(s)), Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe)_____

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A2-2 **Date:** 11/14/16 **Time:** 10:38

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one) – 1, (2), 3**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM) (PR) other Nico (write in)

Trapping needed to confirm SKR vs DKR? (Yes) / No

Overall Plot Comments: Dense Erodium cover

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **LIVING/STANDING HERB DENSITY**: High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium ✓, Low_____

BARE GROUND:	0-5%___,	>5-25% ✓,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____
PLANT LITTER (Dead):	0-5%___,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95% ✓ (Erodium),	>95-100%_____
FORB cover:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____
GRASS cover:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____
SHRUB cover: 0%_____	>0-5% ✓	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____

FORBS - 3 Dominant Species: Croton setig, Brassica, _____

GRASSES - 3 Dominant Species: _____, _____, _____

SHRUBS - 3 Dominant Species: Artem Cal, Eriogin fasci, Salvia apia

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate_____, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High___, Moderate ✓, Low_____

Substrate Disturbance: None_____ Grazing ✓ Grading_____ Discing_____ Furrows_____ Mowing_____ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, (6 months), 12 months, older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) (Scat), (Burrow(s)), Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe)_____

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: AZ-3 **Date:** 11/14/2016 **Time:** 10:55

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one) – 1, (2), 3**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM) - PR other Nicole (write in)

Trapping needed to confirm SKR vs (DKR)? Yes / No

Overall Plot Comments: Steep slope, rock outcrops, sage brush * very low quality for SKR (too steep, etc.)

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **LIVING/STANDING HERB DENSITY**: High___, Medium ✓, Low___

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium___, Low___

BARE GROUND:	0-5%___,	>5-25%___,	>25-50% ✓,	>50-75%___,	>75-95%___,	>95-100%___
PLANT LITTER (Dead):	0-5%___,	>5-25% (Erodium),	>25-50% ✓,	>50-75%___,	>75-95%___,	>95-100%___
FORB cover:	0-5%___,	>5-25%___,	>25-50% ✓,	>50-75%___,	>75-95%___,	>95-100%___
GRASS cover:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
SHRUB cover: 0%___	>0-5%___	>5-25%___,	>25-50%___,	>50-75% ✓,	>75-95%___,	>95-100%___

FORBS - 3 Dominant Species: Brassica _____, _____, _____

GRASSES - 3 Dominant Species: _____, _____, _____

SHRUBS - 3 Dominant Species: Erogium fasci, Artem cal, Salvia apia

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate___, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High___, Moderate___, Low ✓

Substrate Disturbance: None___ Grazing ✓ Grading___ Discing___ Furrows___ Mowing___ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, (12 months), older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) (Scat), (Burrow(s)), Tracks, Tail drag, Caching/foraging craters, Trails in Vegetation, Other (describe) Suitable DKR habitat

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A2-4 **Date:** 11/14/2016 **Time:** 0975

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one) – 1, (2), 3**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM - PR) other Nicole (write in)

Trapping needed to confirm SKR vs DKR? Yes (No) very likely DKR (rocky, shrubs, steep)

Overall Plot Comments: Steep slope, rock outcrops, sage scrub * low quality habitat for SKR (too steep, etc.)

Plot Habitat Descriptors

Describe Current Land Use: grazing _____, open space_____, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **LIVING/STANDING HERB DENSITY**: High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium____, Low ✓

BARE GROUND:	0-5%___,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%____
PLANT LITTER (Dead):	0-5%___,	>5-25%___,	>25-50%___,	>50-75% ✓ (Erodium),	>75-95%___,	>95-100%____
FORB cover:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%____
GRASS cover:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%____
SHRUB cover: 0%____	>0-5%___	>5-25%___,	>25-50% ✓,	>50-75%___,	>75-95%___,	>95-100%____

FORBS - 3 Dominant Species: Crotan setig, _____, _____

GRASSES - 3 Dominant Species: _____, _____, _____

SHRUBS - 3 Dominant Species: Artcal, Salv Apia, Eriog fasc

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate____, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High___, Moderate____, Low ✓

Substrate Disturbance: None____ Grazing ✓ Grading_____Discing____Furrows_____ Mowing____ Other??_____

Grazing X Estimate when?? (circle one) past 3 months, (6 months,) 12 months, older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) (Scat,) (Burrow(s),) Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe)_____

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A2-5 **Date:** 11/14/16 **Time:** 11:23

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one) – 1, (2), 3**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM) (PR) other Nicole (write in)

Trapping needed to confirm SKR vs DKR? Yes / (No)

Overall Plot Comments: Steep slope, rocky, sage brush (steepish) * low quality SKR habitat (too steep, rocky, etc.)

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard ___, Medium ✓, Soft ___ **LIVING/STANDING HERB DENSITY:** High ___, Medium ___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High ___, Medium ___, Low ✓

BARE GROUND:	0-5% ___,	>5-25% ___,	>25-50% ✓,	>50-75% ___,	>75-95% ___,	>95-100% ___
PLANT LITTER (Dead):	0-5% ___,	>5-25% ___,	>25-50% ___,	>50-75% ✓ (Erodium),	>75-95% ___,	>95-100% ___
FORB cover:	0-5% ___,	>5-25% ✓,	>25-50% ___,	>50-75% ___,	>75-95% ___,	>95-100% ___
GRASS cover:	0-5% ✓,	>5-25% ___,	>25-50% ___,	>50-75% ___,	>75-95% ___,	>95-100% ___
SHRUB cover: 0% ___	>0-5% ___	>5-25% ✓,	>25-50% ___,	>50-75% ___,	>75-95% ___,	>95-100% ___

FORBS - 3 Dominant Species: Brassica _____, _____, _____

GRASSES - 3 Dominant Species: _____, _____, _____

SHRUBS - 3 Dominant Species: Eriogonum fasci, Artem cal, _____

TREES - 3 Dominant species: unknown ornamental, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High ___, Moderate ___, Low ✓ **INACTIVE** - High ___, Moderate ___, Low ✓

Abundance of ground squirrel burrows: High ___, Moderate ___, Low ✓

Substrate Disturbance: None ___ Grazing ✓ Grading ___ Discing ___ Furrows ___ Mowing ___ Other?? _____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, (12 months), older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe) _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) Scat, (Burrow(s)), Tracks, Tail drag, Caching/foraging craters, Trails in Vegetation, Other (describe) _____

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A2-6 **Date:** 11/14/2016 **Time:** 11:45

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one) – 1, (2), 3**

Digital Photograph taken @ SE Corner of Plot?? _____

Observer(s): (SJM) (PR) other Nicole (write in)

Trapping needed to confirm SKR vs DKR? (Yes) / No

Overall Plot Comments: good quality SKR habitat

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft ✓ **LIVING/STANDING HERB DENSITY**: High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium___, Low ✓

BARE GROUND:	0-5%___,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95% ✓ (Erodium),	>95-100%___
PLANT LITTER (Dead):	0-5%___,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95% ✓,	>95-100%___
FORB cover:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
GRASS cover:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
SHRUB cover: 0% ✓	>0-5%___	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___

FORBS - 3 Dominant Species: Crotan Setig, Brassica, _____

GRASSES - 3 Dominant Species: —, _____, _____

SHRUBS - 3 Dominant Species: —, _____, _____

TREES - 3 Dominant species: —, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate___, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High___, Moderate___, Low ✓

Substrate Disturbance: None___ Grazing ✓ Grading___ Discing___ Furrows___ Mowing___ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) Scat, Burrow(s), Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe)_____

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A2-7 **Date:** 11/14/16 **Time:** 12:02

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one) – 1, (2), 3**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM) (PR) other Nicole (write in)

Trapping needed to confirm SKR vs DKR? (Yes) / No

Overall Plot Comments: sensitive tarplant?

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **LIVING/STANDING HERB DENSITY**: High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium___, Low ✓

BARE GROUND:	0-5%___,	>5-25%___,	>25-50% ✓,	>50-75%___,	>75-95%___,	>95-100%___
PLANT LITTER (Dead):	0-5%___,	>5-25%___,	>25-50%___,	>50-75% ✓,	>75-95%___,	>95-100%___
FORB cover:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
GRASS cover:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
SHRUB cover: 0%___	>0-5%___	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___

FORBS - 3 Dominant Species: Croton Setig, _____, _____

GRASSES - 3 Dominant Species: Distich spic, _____, _____

SHRUBS - 3 Dominant Species: _____, _____, _____

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate___, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High___, Moderate___, Low ✓

Substrate Disturbance: None___ Grazing ✓ Grading___ Discing___ Furrows___ Mowing___ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) Scat, Burrow(s), Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe)_____

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A1-1 **Date:** 11/14/2016 **Time:** 1:19

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one)** (1), 2, 3

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM - PR) other Nicole (write in)

Trapping needed to confirm SKR vs DKR? Yes / (No)

Overall Plot Comments: SKR signs observed.

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **LIVING/STANDING HERB DENSITY:** High___, Medium ~~✓~~, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium ✓, Low_____

BARE GROUND:	0-5% ~~✓~~	>5-25% ✓	>25-50%___	>50-75%___	>75-95%___	>95-100%_____
PLANT LITTER (Dead):	0-5%___	>5-25%___	>25-50%___	>50-75%___	>75-95% ✓	>95-100%_____
FORB cover:	0-5% ✓	>5-25%___	>25-50%___	>50-75%___	>75-95%___	>95-100%_____
GRASS cover:	0-5% ✓	>5-25%___	>25-50%___	>50-75%___	>75-95%___	>95-100%_____
SHRUB cover: 0% ✓	>0-5%___	>5-25%___	>25-50%___	>50-75%___	>75-95%___	>95-100%_____

FORBS - 3 Dominant Species: Ambrosia, Croton Setig, Brassica

GRASSES - 3 Dominant Species: _____, _____, _____

SHRUBS - 3 Dominant Species: _____, _____, _____

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate_____, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High___, Moderate_____, Low ✓

Substrate Disturbance: None_____ Grazing ✓ Grading_____Discing_____Furrows_____ Mowing_____ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, (12 months), older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) Scat, (Burrow(s)), Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe)_____

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A1-2 **Date:** 11/14/2016 **Time:** 12:57

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one)** (1) 2, 3

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM) (PR) other Nicole (write in)

Trapping needed to confirm SKR vs DKR? Yes / (No) (good quality SKR habitat)

Overall Plot Comments: _____

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **LIVING/STANDING HERB DENSITY**: High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium ✓, Low_____

BARE GROUND:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____
PLANT LITTER (Dead):	0-5%___,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95% ✓,	>95-100%_____
FORB cover:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____
GRASS cover:	0-5%___,	>5-25%___,	>25-50%___,	>50-75% ✓,	>75-95%___,	>95-100%_____
SHRUB cover: 0% ~~✓~~	>0-5% ✓	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%_____

FORBS - 3 Dominant Species: Ambrosia, croton setig, Brassica

GRASSES - 3 Dominant Species: Distich spic, _____, _____

SHRUBS - 3 Dominant Species: Isocoma menz., _____, _____

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate_____, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High___, Moderate_____, Low ✓

Substrate Disturbance: None_____ Grazing ✓ Grading_____ Discing_____ Furrows_____ Mowing_____ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) (Scat, Burrow(s), Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe)_____

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A1-3 **Date:** 11/14/16 **Time:** 12:15

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one) – 1, 2, 3**

Digital Photograph taken @ SE Corner of Plot?? _____

Observer(s): (SJM) (PR) other_____(write in)

Trapping needed to confirm SKR vs DKR? (Yes) No (definite SKR) many burrows + scat) - could trap.

Overall Plot Comments: _____

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **LIVING/STANDING HERB DENSITY:** High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium___, Low___

BARE GROUND:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
PLANT LITTER (Dead):	0-5%___,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95% ✓,	>95-100%___
FORB cover:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
GRASS cover:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___
SHRUB cover: 0% ✓	>0-5%___	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%___

FORBS - 3 Dominant Species: Ambrosia, Croton setig, _____

GRASSES - 3 Dominant Species: Distich spic, _____, _____

SHRUBS - 3 Dominant Species: _____, _____, _____

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate___, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High___, Moderate___, Low ✓

Substrate Disturbance: None___ Grazing ✓ Grading___ Discing___ Furrows___ Mowing___ Other??_____

Grazing ✓ Estimate when?? (circle one) ~~past 3 months~~, ~~6 months~~, 12 months, older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) (Scat,) (Burrow(s)), Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe)_____

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A1-4 **Date:** 11/14/16 **Time:** 12:29

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one) – 1, 2, 3**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM) - (PR) other Nicole (write in)

Trapping needed to confirm SKR vs DKR? Yes / (No) Abundant skk signs

Overall Plot Comments: gray soil / clay? in parts

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **LIVING/STANDING HERB DENSITY:** High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High ✓, Medium____, Low ✓

BARE GROUND:	0-5% ✓,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%____
PLANT LITTER (Dead):	0-5%___,	>5-25%___,	>25-50%___,	>50-75%___,	>75-95% ✓,	>95-100%____
FORB cover:	0-5%___,	>5-25% ✓,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%____
GRASS cover:	0-5%___,	>5-25%___,	>25-50% ✓,	>50-75%___,	>75-95%___,	>95-100%____
SHRUB cover: 0%____	>0-5% ✓	>5-25%___,	>25-50%___,	>50-75%___,	>75-95%___,	>95-100%____

FORBS - 3 Dominant Species: Croton setig, Ambrosia, _____

GRASSES - 3 Dominant Species: Bistich spic, Bromus M. rubens

SHRUBS - 3 Dominant Species: Isocoma menz, _____, _____

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate____, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High___, Moderate____, Low ✓

Substrate Disturbance: None____ Grazing ✓ Grading____Discing____Furrows____ Mowing____ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) (Scat), (Burrow(s)), Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe)_____

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A1-5 **Date:** 11/14/2016 **Time:** 3:03

Grazing Management Unit: (circle one) – 2A, 2B, 3A ✓ **SKR Management Area: (circle one)** 1, 2, 3

Digital Photograph taken @ SE Corner of Plot?? _____

Observer(s): SJM - PR other Nicole (write in)

Trapping needed to confirm SKR vs DKR? Yes / No (not suitable SKR – some signs of SKR activity)

Overall Plot Comments: _____

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **LIVING/STANDING HERB DENSITY:** High___, Medium ✓, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium ✓, Low_____

BARE GROUND:	0-5% ✓	>5-25%___	>25-50%___	>50-75%___	>75-95%___	>95-100%_____
PLANT LITTER (Dead):	0-5%___	>5-25%___	>25-50%___	>50-75%___	>75-95% ✓	>95-100%_____
FORB cover:	0-5%___	>5-25%___	>25-50% ✓	>50-75%___	>75-95%___	>95-100%_____
GRASS cover:	0-5%___	>5-25% X	>25-50%___	>50-75%___	>75-95%___	>95-100%_____
SHRUB cover: 0%_____	>0-5% ✓	>5-25%___	>25-50%___	>50-75%___	>75-95%___	>95-100%_____

FORBS - 3 Dominant Species: Ambrosia, Brassica, Croton setig, Coreth filag

GRASSES - 3 Dominant Species: Dist Spic, _____, _____

SHRUBS - 3 Dominant Species: Iso Cama Menz, _____, _____

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate ✓, Low___ **INACTIVE** - High___, Moderate ✓, Low___

Abundance of ground squirrel burrows: High___, Moderate_____, Low ✓

Substrate Disturbance: None_____ Grazing ✓ Grading_____ Discing_____ Furrows_____ Mowing_____ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) Scat, Burrow(s) 2, Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe)_____

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A1-6 **Date:** 11/14/2016 **Time:** 2:37

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one)** (1) 2, 3

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM - PR) other Nicole (write in)

Trapping needed to confirm SKR vs DKR? (Yes) No (Some signs, trap if nothing better)

Overall Plot Comments: _____

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **LIVING/STANDING HERB DENSITY:** High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium ✓, Low_____

BARE GROUND:	0-5% ✓	>5-25%___	>25-50%___	>50-75%___	>75-95%___	>95-100%_____
PLANT LITTER (Dead):	0-5%___	>5-25%___	>25-50%___	>50-75%___	>75-95% ✓	>95-100%_____
FORB cover:	0-5% ✓	>5-25%___	>25-50%___	>50-75%___	>75-95%___	>95-100%_____
GRASS cover:	0-5%___	>5-25% ✓	>25-50%___	>50-75%___	>75-95%___	>95-100%_____
SHRUB cover: 0%_____	>0-5% ✓	>5-25%___	>25-50%___	>50-75%___	>75-95%___	>95-100%_____

FORBS - 3 Dominant Species: Ambrosia, croton setig, trichostema lanc

GRASSES - 3 Dominant Species: Distich spic, nasella sp., bromus. m. rubens/spp.

SHRUBS - 3 Dominant Species: unid sp., _____, _____

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate ✓, Low ✓ **INACTIVE** - High___, Moderate ✓, Low ✓

Abundance of ground squirrel burrows: High___, Moderate_____, Low ✓

Substrate Disturbance: None_____ Grazing ✓ Grading_____ Discing_____ Furrows_____ Mowing_____ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, (12 months), older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) (Scat), (Burrow(s)), Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe)_____

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: Al-7 **Date:** 11/15/2016 **Time:** 10:15

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area:** (circle one) 1, 2, 3

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): SJM / PR other________(write in)

Trapping needed to confirm SKR vs DKR? Yes / No

Overall Plot Comments: Very dense, deep Erodium

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) ________

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **LIVING/STANDING HERB DENSITY:** High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High ✓, Medium____, Low____

BARE GROUND: 0-5% ✓, >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100%___

PLANT LITTER (Dead): 0-5%___, >5-25%___, >25-50%___, >50-75%___, >75-95% ✓ Erodium, >95-100%___

FORB cover: 0-5% ✓, >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100%___

GRASS cover: 0-5% ✓, >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100%___

SHRUB cover: 0% ✓ >0-5%___ >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100%___

FORBS - 3 Dominant Species: Ambrosia psilost., Cryptantha/Logfia filag.

GRASSES - 3 Dominant Species: Dist spic ________, ________

SHRUBS - 3 Dominant Species: — ________, ________

TREES - 3 Dominant species: — ________, ________

Abundance of Gopher Excavations: ACTIVE - High___, Moderate ✓, Low___ INACTIVE - High___, Moderate ✓, Low___

Abundance of ground squirrel burrows: High___, Moderate___, Low ✓ (none)

Substrate Disturbance: None___ Grazing ✓ Grading___ Discing___ Furrows___ Mowing___ Other??________

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Grading ________ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing ________ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing ________ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road ________ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road ________ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)________ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) Scat, Burrow(s), Tracks, Tail drag, Caching/foraging craters, Trails in Vegetation, Other (describe) None found

11 nov. 2016

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A1-8 **Date:** 11/14/2016 **Time:** 3:19

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one)** (1), 2, 3

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM - PR) other Nicole (write in)

Trapping needed to confirm SKR vs DKR? Yes (No) (no real signs of skr)

Overall Plot Comments: _____

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

SOIL SURFACE HARDNESS: Hard___, Medium___, Soft ✓ **LIVING/STANDING HERB DENSITY**: High___, Medium___, Low ✓

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High___, Medium ✓, Low_____

BARE GROUND: 0-5% ✓, >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100%_____

PLANT LITTER (Dead): 0-5%___, >5-25%___, >25-50%___, >50-75%___, >75-95% ✓, >95-100%_____

FORB cover: 0-5%___, >5-25% ✓, >25-50%___, >50-75%___, >75-95%___, >95-100%_____

GRASS cover: 0-5%___, >5-25%___, >25-50% ✓, >50-75%___, >75-95%___, >95-100%_____

SHRUB cover: 0% ✓ >0-5%___ >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100%_____

FORBS - 3 Dominant Species: Ambrosia, Croton setig, _____

GRASSES - 3 Dominant Species: (2) Nasella sp., (1) Distich spic, _____

SHRUBS - 3 Dominant Species: _____, _____, _____

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate_____, Low ✓ **INACTIVE** - High___, Moderate___, Low ✓

Abundance of ground squirrel burrows: High___, Moderate_____, Low ✓

Substrate Disturbance: None_____ Grazing ✓ Grading_____ Discing_____ Furrows_____ Mowing_____ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, (12 months), older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) Scat, Burrow(s), Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe)_____

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A1-9 **Date:** 11/15/2016 **Time:** 09:00

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one)** (1), 2, 3

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): ~~SM~~ PR other_____(write in)

Trapping needed to confirm SKR vs DKR? Yes / No

Overall Plot Comments: dark gray soils - clay - Dense grass - some Krat sign off plot to west

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

LIVING/STANDING

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **HERB DENSITY:** High ✓, Medium___, Low____

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High ✓, Medium____, Low_____

BARE GROUND: 0-5% ✓, >5-25%____, >25-50%____, >50-75%____, >75-95%____, >95-100%_____

PLANT LITTER (Dead): 0-5%____, >5-25% ✓, >25-50% Erodium, >50-75%____, >75-95%____, >95-100%_____

FORB cover: 0-5%____, >5-25% ✓, >25-50%____, >50-75%____, >75-95%____, >95-100%_____

GRASS cover: 0-5%____, >5-25%____, >25-50%____, >50-75%____, >75-95% X, >95-100%_____

SHRUB cover: 0% ~~✓~~, >0-5% ✓, >5-25%____, >25-50%____, >50-75%____, >75-95%____, >95-100%_____

FORBS - 3 Dominant Species: Ambrosia psil., sensitive tarweed, Centaurea melitensis

GRASSES - 3 Dominant Species: Dist. spic, _____, _____

SHRUBS - 3 Dominant Species: Isocoma menz., _____, _____

TREES - 3 Dominant species: —, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High ✓, Moderate____, Low____ **INACTIVE** - High ✓, Moderate____, Low____

Abundance of ground squirrel burrows: High____, Moderate_____, Low ✓

Substrate Disturbance: None_____ Grazing ✓ Grading_____Discing_____Furrows_____ Mowing_____ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) Scat, Burrow(s), Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe) none detected on plot

Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A1-16 **Date:** 11/15/2016 **Time:** 09:30

Grazing Management Unit: (circle one) – 2A, 2B, 3A **SKR Management Area: (circle one) – 1, 2, 3**

Digital Photograph taken @ SE Corner of Plot?? ✓

Observer(s): (SJM - PR) other_____(write in)

Trapping needed to confirm SKR vs DKR? (Yes) / No

Overall Plot Comments: 1° dark soil – clay –

Plot Habitat Descriptors

Describe Current Land Use: grazing ✓, open space ✓, Other (describe) _____

LIVING/STANDING

SOIL SURFACE HARDNESS: Hard___, Medium ✓, Soft___ **HERB DENSITY**: High ✓, Medium___, Low____

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High ✓, Medium_____, Low_____

BARE GROUND: 0-5% ✓, >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100%_____

PLANT LITTER (Dead): 0-5%___, >5-25%___, >25-50%___, >50-75% ✓ Erodium, >75-95%___, >95-100%_____

FORB cover: 0-5%___, >5-25% ✓, >25-50%___, >50-75%___, >75-95%___, >95-100%_____

GRASS cover: 0-5%___, >5-25%___, >25-50%___, >50-75%___, >75-95% ✓, >95-100%_____

SHRUB cover: 0%_____ >0-5% ✓ >5-25%___, >25-50%___, >50-75%___, >75-95%___, >95-100%_____

FORBS - 3 Dominant Species: Ambr. psil., _____, _____

GRASSES - 3 Dominant Species: Dist spic, Avena sp, Brom [redacted]. sp.

SHRUBS - 3 Dominant Species: Isoc menz., _____, _____

TREES - 3 Dominant species: _____, _____, _____

Abundance of Gopher Excavations: **ACTIVE** - High___, Moderate ✓, Low___ **INACTIVE** - High___, Moderate ✓, Low___

Abundance of ground squirrel burrows: High___, Moderate_____, Low ✓

Substrate Disturbance: None_____ Grazing ✓ Grading_____Discing_____Furrows_____ Mowing_____ Other??_____

Grazing ✓ Estimate when?? (circle one) past 3 months, 6 months, (12 months,) older

Grading _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Discing/Furrowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Mowing _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Dirt Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Paved Road _____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Other??? (describe)_____ Estimate when?? (circle one) past 3 months, 6 months, 12 months, older

Evidence of Kangaroo Rat Presence?? (Circle type of sign observed) Scat, Burrow(s), Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe) None detected

Appendix E

Vernal Pool Quantitative Vegetation Monitoring Data Table

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2016 Vernal Pool Quantitative Vegetation Monitoring Data Table — Ramona Grasslands Preserve

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
C3E	Dale Ritenour, Lance Woolley	5/3/2016		1	E	*Hordeum marinum* ssp. *gussoneanum*	5	15	0.1	N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		1	E	*Distichlis spicata*	10			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		1	E	*Lythrum hyssopifolia*	0			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		1	E	*Trichostema lanatum*	0.1			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		2	I	*Distichlis spicata*	50	68	0.1	N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		2	I	*Psilocarphus brevissimus*	10			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		2	I	*Veronica peregrina* ssp. *halapensis*	5			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		2	I	*Erigeron canadensis*	3			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		2	I	*Lythrum hyssopifolia*	0.1			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		2	I	*Euphorbia serpens*	0.1			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Distichlis spicata*	60	70	0.1	N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Erigeron canadensis*	10			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Psilocarphus brevissimus*	7			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Lythrum hyssopifolia*	0.1			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Euphorbia serpens*	3			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Croton setiger*	0.1			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Trichostema lanatum*	1			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		4	C	*Trichostema lanatum*	10	30	0	N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		4	C	*Erigeron canadensis*	10			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		4	C	*Croton setiger*	8			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		4	C	*Psilocarphus brevissimus*	3			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		4	C	*Euphorbia serpens*	0.1			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		5	I	*Psilocarphus brevissimus*	45	45	11	N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		5	I	*Lythrum hyssopifolia*	10			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		5	I	*Crassula aquatica*	0.1			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		5	I	*Festuca perennis*	1			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		6	I	*Psilocarphus brevissimus*	25	50	0	N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		6	I	*Eleocharis macrostachya*	25			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		6	I	*Lythrum hyssopifolia*	5			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		6	I	*Crassula aquatica*	1			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		6	I	*Euphorbia serpens*	0.1			N	N

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
C3E	Dale Ritenour, Lance Woolley	5/3/2016		7	I	*Psilocarphus brevissimus*	30	35	5	N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		7	I	*Crassula aquatica*	5			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		7	I	*Lythrum hyssopifolia*	5			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		7	I	*Deinandra fasciculata*	2			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		8	E	*Psilocarphus brevissimus*	8			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		8	E	*Lythrum hyssopifolia*	10			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		8	E	*Crassula aquatica*	0.1			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		8	E	*Croton setiger*	3			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		8	E	*Juncus bufonius*	1			N	N
C3E	Dale Ritenour, Lance Woolley	5/3/2016		8	E	*Veronica peregrina* ssp. *halapensis*	5			N	N
EV3	Dale Ritenour, Lance Woolley	5/3/2016		1	E	*Distichlis spicata*	90	90	1	N	H
EV3	Dale Ritenour, Lance Woolley	5/3/2016		1	E	*Festuca perennis*	1			N	H
EV3	Dale Ritenour, Lance Woolley	5/3/2016		2	I	*Hordeum marinum* ssp. *gussoneanum*	50	3	50	N	H
EV3	Dale Ritenour, Lance Woolley	5/3/2016		2	I	*Festuca perennis*	3			N	H
EV3	Dale Ritenour, Lance Woolley	5/3/2016		2	I	*Distichlis spicata*	3			N	H
EV3	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Hordeum marinum* ssp. *gussoneanum*	30	20	30	N	H
EV3	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Marsilea vestita*	20			N	H
EV3	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Festuca perennis*	0.1			N	H
EV3	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Polygonum aviculare* ssp. *depressum*	3			N	H
EV3	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Cynodon dactylon*	5			N	H
EV3	Dale Ritenour, Lance Woolley	5/3/2016		4	I	*Hordeum marinum* ssp. *gussoneanum*	40	0	40	N	H
EV3	Dale Ritenour, Lance Woolley	5/3/2016		4	I	*Festuca perennis*	1			N	H
EV3	Dale Ritenour, Lance Woolley	5/3/2016		5	I	*Hordeum marinum* ssp. *gussoneanum*	60	0	65	N	H
EV3	Dale Ritenour, Lance Woolley	5/3/2016		5	I	*Festuca perennis*	5			N	H
EV3	Dale Ritenour, Lance Woolley	5/3/2016		6	E	*Distichlis spicata*	60			N	H
EV3	Dale Ritenour, Lance Woolley	5/3/2016		6	E	*Hordeum marinum* ssp. *gussoneanum*	30			N	H
EV3	Dale Ritenour, Lance Woolley	5/3/2016		6	E	*Festuca perennis*	2			N	H
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	1	E	*Hordeum marinum* ssp. *gussoneanum*	5	0	30	N	N
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	1	E	*Erodium botrys*	25			N	N

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	2	I	*Erodium botrys*	30	15	30	N	N
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	2	I	*Distichlis spicata*	15			N	N
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	2	I	*Hordeum marinum* ssp. *gussoneanum*	0.1			N	N
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	3	C	*Erodium botrys*	30	0	30	N	N
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	3	C	*Hordeum marinum* ssp. *gussoneanum*	0.1			N	N
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	4	C	*Distichlis spicata*	10	10	30	N	N
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	4	C	*Erodium botrys*	30			N	N
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	4	C	*Hordeum marinum* ssp. *gussoneanum*	0.1			N	N
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	5	C	*Distichlis spicata*	15	15	30	N	N
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	5	C	*Erodium botrys*	30			N	N
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	5	C	*Hordeum marinum* ssp. *gussoneanum*	0.1			N	N
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	6	I	*Erodium botrys*	40	1	40	N	N
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	6	I	*Brodiaea terrestris* ssp. *kernensis*	1			N	N
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	7	E	*Erodium botrys*	50	0.1	50	N	N
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	7	E	*Avena barbata*	1			N	N
E77	Dale Ritenour, Lance Woolley	5/3/2016	250	7	E	*Distichlis spicata*	0.1			N	N
E52	Dale Ritenour, Lance Woolley	5/3/2016	65	1	E	*Erodium botrys*	60	0	60	N	N
E52	Dale Ritenour, Lance Woolley	5/3/2016	65	2	I	*Hordeum marinum* ssp. *gussoneanum*	15	0	20	N	N
E52	Dale Ritenour, Lance Woolley	5/3/2016	65	2	I	*Erodium botrys*	5			N	N
E52	Dale Ritenour, Lance Woolley	5/3/2016	65	3	C	*Hordeum marinum* ssp. *gussoneanum*	30	10	30	N	N
E52	Dale Ritenour, Lance Woolley	5/3/2016	65	3	C	*Eleocharis macrostachya*	10			N	N
E52	Dale Ritenour, Lance Woolley	5/3/2016	65	4	C	*Hordeum marinum* ssp. *gussoneanum*	15	0	35	N	N
E52	Dale Ritenour, Lance Woolley	5/3/2016	65	4	C	*Polygonum aviculare* ssp. *depressum*	20			N	N
E52	Dale Ritenour, Lance Woolley	5/3/2016	65	5	C	*Hordeum marinum* ssp. *gussoneanum*	40	50	40	N	N
E52	Dale Ritenour, Lance Woolley	5/3/2016	65	5	C	*Distichlis spicata*	50			N	N
E52	Dale Ritenour, Lance Woolley	5/3/2016	65	5	C	*Eleocharis montevidensis*	0.1			N	N
E52	Dale Ritenour, Lance Woolley	5/3/2016	65	6	I	*Distichlis spicata*	50	50	30	N	N
E52	Dale Ritenour, Lance Woolley	5/3/2016	65	6	I	*Erodium botrys*	20			N	N

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
E52	Dale Ritenour, Lance Woolley	5/3/2016	65	6	I	*Hordeum marinum* ssp. *gussoneanum*	10			N	N
E52	Dale Ritenour, Lance Woolley	5/3/2016	65	7	E	*Distichlis spicata*	5	5	25	N	N
E52	Dale Ritenour, Lance Woolley	5/3/2016	65	7	E	*Erodium botrys*	25			N	N
E52	Dale Ritenour, Lance Woolley	5/3/2016	65	7	E	*Hordeum marinum* ssp. *gussoneanum*	0.1			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		1	E	*Erodium botrys*	30	0	35	N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		1	E	*Hordeum marinum* ssp. *gussoneanum*	5			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		2	I	*Hordeum marinum* ssp. *gussoneanum*	65	1	65	N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		2	I	*Erodium botrys*	1			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		2	I	*Distichlis spicata*	1			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Psilocarphus brevissimus*	25	50	0.1	N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Downingia cuspidata*	0.1			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Trichostema lanatum*	15			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Veronica peregrina* ssp. *halapensis*	5			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Eleocharis montevidensis*	15			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		3	C	*Pseudognaphalium sp.*	0.1			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		4	C	*Psilocarphus brevissimus*	15	25	5	N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		4	C	*Eleocharis montevidensis*	5			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		4	C	*Veronica peregrina* ssp. *halapensis*	5			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		4	C	*Cryptantha* sp.	2			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		4	C	*Polygonum aviculare* ssp. *depressum*	5			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		5	C	*Psilocarphus brevissimus*	20	40	20	N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		5	C	*Veronica peregrina* ssp. *halapensis*	10			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		5	C	*Eleocharis montevidensis*	10			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		5	C	*Erodium botrys*	20			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		5	C	*Trichostema lanatum*	5			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		5	C	*Hordeum marinum* ssp. *gussoneanum*	0.1			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		5	C	*Polygonum aviculare* ssp. *depressum*	1			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		6	I	*Hordeum marinum* ssp. *gussoneanum*	15	10	45	N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		6	I	*Psilocarphus brevissimus*	5			N	N

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
E53	Dale Ritenour, Lance Woolley	5/3/2016		6	I	*Erodium botrys*	30			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		6	I	*Eleocharis montevidensis*	5			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		6	I	*Trichostema lanatum*	1			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		6	I	*Lythrum hyssopifolia*	0.1			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		7	E	*Distichlis spicata*	20	20	50	N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		7	E	*Erodium botrys*	40			N	N
E53	Dale Ritenour, Lance Woolley	5/3/2016		7	E	*Hordeum marinum* ssp. *gussoneanum*	10			N	N
E82	Courtney Casey, Lance Woolley	5/11/2016	110	1	E	*Erodium botrys*	50	4	51	M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	1	E	*Ambrosia psilostachya*	4			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	1	E	*Festuca myuros*	1			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	2	I	*Erodium botrys*	30	3	30	M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	2	I	*Deinandra fasciculata*	1			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	2	I	*Cressa truxillensis*	2			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	2	I	*Festuca perennis*	0.1	30	6	M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	3	I	*Cressa truxillensis*	20			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	3	I	*Deinandra fasciculata*	10			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	3	I	*Erodium botrys*	6			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	4	C	*Festuca perennis*	10	10	10	M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	4	C	*Cressa truxillensis*	10			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	4	C	*Erodium botrys*	10			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	4	C	*Avena barbata*	0.1			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	5	C	*Deinandra fasciculata*	2	5	20	M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	5	C	*Festuca perennis*	7			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	5	C	*Cressa truxillensis*	5			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	5	C	*Erodium botrys*	10			M	H

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
E82	Courtney Casey, Lance Woolley	5/11/2016	110	6	I	*Cynodon dactylon*	15	15	20	M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	6	I	*Cressa truxillensis*	15			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	6	I	*Festuca perennis*	1			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	6	I	*Deinandra fasciculata*	0.1			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	6	I	*Erodium botrys*	5			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	6	I	*Silene gallica*	0.1			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	6	I	*Hordeum marinum* ssp. *gussoneanum*	0.1			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	7	I	*Cynodon dactylon*	20	6	27	M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	7	I	*Cressa truxillensis*	5			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	7	I	*Erodium botrys*	7			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	7	I	*Deinandra fasciculata*	1			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	8	E	*Cynodon dactylon*	70	1	71	M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	8	E	*Avena barbata*	1			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	8	E	*Festuca myuros*	0.1			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	8	E	*Deinandra fasciculata*	0.1			M	H
E82	Courtney Casey, Lance Woolley	5/11/2016	110	8	E	*Cressa truxillensis*	0.1			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	1	E	*Cynodon dactylon*	5	5	60	M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	1	E	*Erodium botrys*	60			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	1	E	*Hordeum marinum* ssp. *gussoneanum*	0.1			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	1	E	*Polygonum aviculare* ssp. *depressum*	0.1			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	2	I	*Cynodon dactylon*	70	0	74	M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	2	I	*Hordeum marinum* ssp. *gussoneanum*	2			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	2	I	*Lythrum hyssopifolia*	0.1			M	H

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
E56	Courtney Casey, Lance Woolley	5/11/2016	290	2	I	*Cotula coronopifolia*	0.1			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	2	I	*Erodium botrys*	2			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	3	I	*Cynodon dactylon*	5	5	36	M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	3	I	*Polygonum aviculare* ssp. *depressum*	20			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	3	I	*Bromus hordeaceus*	1			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	3	I	*Erodium botrys*	15			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	4	C	*Cynodon dactylon*	30	11	30	M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	4	C	*Polygonum aviculare* ssp. *depressum*	10			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	4	C	*Spergularia bocconi*	1			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	4	C	*Festuca perennis*	0.1			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	4	C	*Lythrum hyssopifolia*	0.1			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	5	I	*Cynodon dactylon*	50	6	50	M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	5	I	*Festuca perennis*	0.1			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	5	I	*Lythrum hyssopifolia*	1			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	5	I	*Erodium botrys*	5			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	5	I	*Malvella leprosa*	0.1			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	6	I	*Cynodon dactylon*	20	1	40	M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	6	I	*Polygonum aviculare* ssp. *depressum*	20			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	6	I	*Lythrum hyssopifolia*	0.1			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	6	I	*Malvella leprosa*	0.1			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	7	E	*Anthemis cotula*	3			M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	7	E	*Malvella leprosa*	15	15	60	M	H
E56	Courtney Casey, Lance Woolley	5/11/2016	290	7	E	*Erodium botrys*	50			M	H

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
E56	Courtney Casey, Lance Woolley	5/11/2016	290	7	E	*Hordeum marinum* ssp. *gussoneanum*	5			M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	1	E	*Distichlis spicata*	40	40	20	M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	1	E	*Hypochaeris glabra*	0.1			M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	1	E	*Erodium botrys*	20			M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	1	E	*Hordeum marinum* ssp. *gussoneanum*	0.1	10	40	M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	1	E	*Festuca myuros*	0.1			M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	2	I	*Erodium botrys*	35			M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	2	I	*Distichlis spicata*	10			M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	2	I	*Hordeum marinum* ssp. *gussoneanum*	4			M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	3	I	*Erodium botrys*	35	1	36	M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	3	I	*Hordeum marinum* ssp. *gussoneanum*	1			M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	3	I	*Distichlis spicata*	1			M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	4	C	*Distichlis spicata*	10	10	30	M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	4	C	*Festuca perennis*	5			M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	4	C	*Erodium botrys*	25			M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	4	C	*Festuca myuros*	0.1			M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	5	I	*Distichlis spicata*	1	1	35	M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	5	I	*Deinandra fasciculata*	0.1			M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	5	I	*Erodium botrys*	35			M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	5	I	*Hordeum marinum* ssp. *gussoneanum*	0.1			M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	6	E	*Centromadia parryi* ssp. *australis*	25	35	16	M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	6	E	*Distichlis spicata*	10			M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	6	E	*Hordeum marinum* ssp. *gussoneanum*	5			M	H

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
E58	Courtney Casey, Lance Woolley	5/11/2016	286	6	E	*Erodium botrys*	10			M	H
E58	Courtney Casey, Lance Woolley	5/11/2016	286	6	E	*Lythrum hyssopifolia*	0.1			M	H
E59	Courtney Casey, Lance Woolley	5/11/2016	280	1	E	*Anthemis cotula*	55	0	60	H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	1	E	*Polygonum aviculare* ssp. *depressum*	10			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	1	E	*Lythrum hyssopifolia*	1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	1	E	*Erodium botrys*	0.1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	2	I	*Polygonum aviculare* ssp. *depressum*	30	0	30	H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	3	I	*Polygonum aviculare* ssp. *depressum*	20	1	20	H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	3	I	*Anthemis cotula*	2			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	3	I	*Lythrum hyssopifolia*	1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	3	I	*Psilocarphus brevissimus*	0.1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	3	I	*Eleocharis montevidensis*	0.1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	3	I	*Deinandra fasciculata*	0.1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	4	C	*Psilocarphus brevissimus*	15	20	10	H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	4	C	*Lythrum hyssopifolia*	10			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	4	C	*Eleocharis montevidensis*	5			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	4	C	*Deinandra fasciculata*	1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	4	C	*Veronica peregrina* ssp. *halapensis*	0.1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	4	C	*Cynodon dactylon*	0.1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	5	C	*Psilocarphus brevissimus*	20	25	8	H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	5	C	*Eleocharis montevidensis*	5			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	5	C	*Lythrum hyssopifolia*	8			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	6	C	*Psilocarphus brevissimus*	10	10	10	H	H, AT

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
E59	Courtney Casey, Lance Woolley	5/11/2016	280	6	C	*Polygonum aviculare* ssp. *depressum*	5			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	6	C	*Lythrum hyssopifolia*	5			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	6	C	*Deinandra fasciculata*	0.1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	6	C	*Croton setiger*	0.1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	7	I	*Polygonum aviculare* ssp. *depressum*	15	1	20	H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	7	I	*Lythrum hyssopifolia*	5			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	7	I	*Anthemis cotula*	3			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	7	I	*Psilocarphus brevissimus*	0.1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	7	I	*Deinandra fasciculata*	0.1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	7	I	*Cotula coronopifolia*	0.1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	8	I	*Lythrum hyssopifolia*	30	3	35	H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	8	I	*Anthemis cotula*	5			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	8	I	*Deinandra fasciculata*	2			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	8	I	*Psilocarphus brevissimus*	1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	8	I	*Veronica peregrina* ssp. *halapensis*	0.1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	8	I	*Crassula aquatica*	0.1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	8	I	*Juncus bufonius*	0.1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	9	E	*Distichlis spicata*	60	60	4	H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	9	E	*Lythrum hyssopifolia*	3			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	9	E	*Hordeum marinum* ssp. *gussoneanum*	0.1			H	H, AT
E59	Courtney Casey, Lance Woolley	5/11/2016	280	9	E	*Polygonum aviculare* ssp. *depressum*	0.1			H	H, AT
E61	Courtney Casey, Lance Woolley	5/11/2016	3	1	E	*Spergularia bocconi*	20	0	40	M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	1	E	*Cynodon dactylon*	20			M	H

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
E61	Courtney Casey, Lance Woolley	5/11/2016	3	1	E	*Hordeum marinum* ssp. *gussoneanum*	3			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	1	E	*Medicago polymorpha*	0.1			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	2	I	*Silene gallica*	5	0	40	M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	2	I	*Cynodon dactylon*	30			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	2	I	*Erodium botrys*	5			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	2	I	*Bromus hordeaceus*	0.1			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	2	I	*Festuca myuros*	0.1			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	2	I	*Festuca perennis*	0.1			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	2	I	*Lythrum hyssopifolia*	0.1			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	3	C	*Psilocarphus brevissimus*	0.1	1	10	M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	3	C	*Lythrum hyssopifolia*	5			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	3	C	*Cotula coronopifolia*	3			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	3	C	*Cynodon dactylon*	1			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	3	C	*Spergularia bocconi*	0.1			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	4	C	*Lythrum hyssopifolia*	5	0	10	M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	4	C	*Cynodon dactylon*	5			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	4	C	*Festuca perennis*	0.1			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	4	C	*Spergularia bocconi*	0.1			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	5	I	*Cynodon dactylon*	70	1	70	M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	5	I	*Deinandra fasciculata*	0.1			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	5	I	*Lythrum hyssopifolia*	0.1			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	5	I	*Spergularia bocconi*	0.1			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	5	I	*Erodium botrys*	0.1			M	H

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
E61	Courtney Casey, Lance Woolley	5/11/2016	3	6	E	*Spergularia bocconi*	20	0	40	M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	6	E	*Cynodon dactylon*	20			M	H
E61	Courtney Casey, Lance Woolley	5/11/2016	3	6	E	*Hordeum marinum* ssp. *gussoneanum*	0.1			M	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	1	E	*Erodium botrys*	25	1	45	N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	1	E	*Cynodon dactylon*	20			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	1	E	*Lythrum hyssopifolia*	0.1			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	1	E	*Eleocharis montevidensis*	0.1			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	2	I	*Polygonum aviculare* ssp. *depressum*	1	2	21	N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	2	I	*Erodium botrys*	20			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	2	I	*Eleocharis montevidensis*	2			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	2	I	*Hordeum marinum* ssp. *gussoneanum*	0.1			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	3	I	*Brodiaea terrestris* ssp. *kernensis*	0.1	1	75	N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	3	I	*Erodium botrys*	75			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	3	I	*Hordeum marinum* ssp. *gussoneanum*	1			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	3	I	*Bromus hordeaceus*	0.1			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	3	I	*Polygonum aviculare* ssp. *depressum*	0.1			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	4	I	*Deinandra fasciculata*	0.1	2	50	N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	4	I	*Brodiaea terrestris* ssp. *kernensis*	0.1			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	4	I	*Erodium botrys*	50			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	5	C	*Distichlis spicata*	80	80	12	N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	5	C	*Festuca perennis*	5			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	5	C	*Bromus hordeaceus*	1			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	5	C	*Erodium botrys*	1			N	H

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
E62	Courtney Casey, Lance Woolley	5/11/2016	97	5	C	*Cynodon dactylon*	5			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	6	C	*Distichlis spicata*	80	80	12	N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	6	C	*Festuca perennis*	5			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	6	C	*Hordeum marinum* ssp. *gussoneanum*	1			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	6	C	*Erodium botrys*	1			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	6	C	*Cynodon dactylon*	5			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	7	C	*Distichlis spicata*	75	75	13	N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	7	C	*Festuca perennis*	5			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	7	C	*Hordeum marinum* ssp. *gussoneanum*	1			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	7	C	*Erodium botrys*	2			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	7	C	*Cynodon dactylon*	5			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	8	I	*Cynodon dactylon*	10	1	70	N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	8	I	*Erodium botrys*	60			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	8	I	*Eleocharis montevidensis*	0.1			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	8	I	*Distichlis spicata*	0.1			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	9	E	*Erodium botrys*	60	0	70	N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	9	E	*Cynodon dactylon*	10			N	H
E62	Courtney Casey, Lance Woolley	5/11/2016	97	9	E	*Hordeum marinum* ssp. *gussoneanum*	1			N	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	1	E	*Lythrum hyssopifolia*	5	5	15	M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	1	E	*Erodium botrys*	10			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	1	E	*Eleocharis montevidensis*	5			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	2	I	*Deschampsia danthonioides*	0.1	13	10	M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	2	I	*Lythrum hyssopifolia*	10			M	H

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
E63	Courtney Casey, Lance Woolley	5/11/2016	75	2	I	*Eleocharis montevidensis*	5			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	2	I	*Croton setiger*	3			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	2	I	*Psilocarphus brevissimus*	5			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	2	I	*Festuca perennis*	0.1			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	3	I	*Lythrum hyssopifolia*	20	14	21	M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	3	I	*Polygonum aviculare* ssp. *depressum*	1			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	3	I	*Eleocharis montevidensis*	7			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	3	I	*Deschampsia danthonioides*	0.1			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	3	I	*Psilocarphus brevissimus*	7			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	3	I	*Cynodon dactylon*	0.1			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	3	I	*Deinandra fasciculata*	0.1			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	4	C	*Eleocharis montevidensis*	35	38	7	M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	4	C	*Lythrum hyssopifolia*	2			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	4	C	*Polygonum aviculare* ssp. *depressum*	5			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	4	C	*Psilocarphus brevissimus*	3			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	4	C	*Erodium botrys*	0.1			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	5	I	*Hordeum marinum* ssp. *gussoneanum*	10	2	16	M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	5	I	*Erodium botrys*	5			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	5	I	*Croton setiger*	2			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	5	I	*Lythrum hyssopifolia*	1			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	5	I	*Polygonum aviculare* ssp. *depressum*	0.1			M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	6	I	*Lythrum hyssopifolia*	20	0	4	M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	6	I	*Erodium botrys*	20			M	H

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
E63	Courtney Casey, Lance Woolley	5/11/2016	75	7	E	*Deinandra fasciculata*	30	30	25	M	H
E63	Courtney Casey, Lance Woolley	5/11/2016	75	7	E	*Erodium botrys*	25			M	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	1	E	*Festuca perennis*	8	2	30	H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	1	E	*Distichlis spicata*	2			H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	1	E	*Erodium botrys*	20			H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	1	E	*Lythrum hyssopifolia*	1			H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	1	E	*Anthemis cotula*	1			H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	2	I	*Lythrum hyssopifolia*	25	1	25	H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	2	I	*Festuca perennis*	0.1			H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	2	I	*Deinandra fasciculata*	1			H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	3	C	*Lythrum hyssopifolia*	1	0	1	H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	3	C	Bareground	Bareground			H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	4	I	*Festuca perennis*	1	1	7	H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	4	I	*Lythrum hyssopifolia*	1			H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	4	I	*Anthemis cotula*	5			H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	4	I	*Deinandra fasciculata*	0.1			H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	5	E	*Anthemis cotula*	15	1	32	H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	5	E	*Cynodon dactylon*	7			H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	5	E	*Deinandra fasciculata*	0.1			H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	5	E	*Festuca perennis*	10			H	H
EE14 CS-1	Courtney Casey, Lance Woolley	5/11/2016	130	5	E	*Lythrum hyssopifolia*	0.1			H	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	1	E	*Anthemis cotula*	5	12	38	M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	1	E	*Erodium botrys*	30			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	1	E	*Distichlis spicata*	10			M	H

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	1	E	*Lythrum hyssopifolia*	3			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	1	E	*Centromadia parryi* ssp. *australis*	2			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	1	E	*Polypogon monspeliensis*	0.1			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	2	I	*Centromadia parryi* ssp. *australis*	3	5	13	M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	2	I	*Lythrum hyssopifolia*	10			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	2	I	*Anthemis cotula*	3			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	2	I	*Hordeum marinum* ssp. *gussoneanum*	0.1			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	2	I	*Psilocarphus brevissimus*	2			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	3	I	*Centromadia parryi* ssp. *australis*	10	12	30	M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	3	I	*Lythrum hyssopifolia*	25			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	3	I	*Anthemis cotula*	5			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	3	I	*Psilocarphus brevissimus*	1			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	3	I	*Juncus bufonius*	1			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	4	C	*Cynodon dactylon*	25	15	40	M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	4	C	*Polypogon monspeliensis*	5			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	4	C	*Lythrum hyssopifolia*	10			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	4	C	*Psilocarphus brevissimus*	15			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	4	C	*Eleocharis montevidensis*	0.1			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	4	C	*Crassula aquatica*	0.1			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	5	C	*Cynodon dactylon*	30	16	50	M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	5	C	*Lythrum hyssopifolia*	20			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	5	C	*Psilocarphus brevissimus*	15			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	5	C	*Eleocharis montevidensis*	1			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	5	C	*Polypogon monspeliensis*	0.1			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	6	C	*Lythrum hyssopifolia*	30			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	6	C	*Psilocarphus brevissimus*	20			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	6	C	*Polygonum aviculare* ssp. *depressum*	5			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	6	C	*Anthemis cotula*	2			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	6	C	*Eleocharis montevidensis*	0.1			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	6	C	*Juncus bufonius*	0.1			M	H

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	6	C	*Hordeum marinum* ssp. *gussoneanum*	0.1			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	7	I	*Centromadia parryi* ssp. *australis*	30	36	28	M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	7	I	*Polygonum aviculare* ssp. *depressum*	20			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	7	I	*Psilocarphus brevissimus*	5			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	7	I	*Juncus bufonius*	1			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	7	I	*Lythrum hyssopifolia*	5			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	7	I	*Anthemis cotula*	3			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	8	I	*Anthemis cotula*	30	10	40	M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	8	I	*Lythrum hyssopifolia*	10			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	8	I	*Eleocharis montevidensis*	5			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	8	I	*Deinandra fasciculata*	2			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	8	I	*Centromadia parryi* ssp. *australis*	2			M	H
R 152 P7	Ryan Hayden, Lance Woolley	5/12/2016	301	8	I	*Psilocarphus brevissimus*	1			M	H
F 147 E45	Ryan Hayden, Lance Woolley	5/12/2016	13	1	E	*Erodium botrys*	25	1	25		
F 147 E45	Ryan Hayden, Lance Woolley	5/12/2016	13	1	E	*Brodiaea terrestris* ssp. *kernensis*	0.1				
F 147 E45	Ryan Hayden, Lance Woolley	5/12/2016	13	1	E	*Lythrum hyssopifolia*	0.1				
F 147 E45	Ryan Hayden, Lance Woolley	5/12/2016	13	2	I	*Hordeum marinum* ssp. *gussoneanum*	15	0	35		
F 147 E45	Ryan Hayden, Lance Woolley	5/12/2016	13	2	I	*Erodium botrys*	20				
F 147 E45	Ryan Hayden, Lance Woolley	5/12/2016	13	3	C	*Hordeum marinum* ssp. *gussoneanum*	20	37	20		
F 147 E45	Ryan Hayden, Lance Woolley	5/12/2016	13	3	C	*Distichlis spicata*	35				
F 147 E45	Ryan Hayden, Lance Woolley	5/12/2016	13	3	C	*Brodiaea terrestris* ssp. *kernensis*	2				
F 147 E45	Ryan Hayden, Lance Woolley	5/12/2016	13	3	C	*Avena barbata*	0.1				
F 147 E45	Ryan Hayden, Lance Woolley	5/12/2016	13	4	C	*Distichlis spicata*	40	40	20		
F 147 E45	Ryan Hayden, Lance Woolley	5/12/2016	13	4	C	*Brodiaea terrestris* ssp. *kernensis*	1				
F 147 E45	Ryan Hayden, Lance Woolley	5/12/2016	13	4	C	*Hordeum marinum* ssp. *gussoneanum*	20				
F 147 E45	Ryan Hayden, Lance Woolley	5/12/2016	13	5	I	*Eleocharis montevidensis*	3	30	1		
F 147 E45	Ryan Hayden, Lance Woolley	5/12/2016	13	5	I	*Distichlis spicata*	30				
F 147 E45	Ryan Hayden, Lance Woolley	5/12/2016	13	5	I	*Hordeum marinum* ssp. *gussoneanum*	1				
F 147 E45	Ryan Hayden, Lance Woolley	5/12/2016	13	6	E	*Erodium botrys*	1	30			

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
F 147 E45	Ryan Hayden, Lance Woolley	5/12/2016	13	6	E	*Distichlis spicata*					
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	1	E	*Erodium botrys*	40	0	40		
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	1	E	*Hordeum marinum* ssp. *gussoneanum*	0.1				
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	2	I	*Distichlis spicata*	20	20	30		
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	2	I	*Erodium botrys*	25				
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	2	I	*Hordeum marinum* ssp. *gussoneanum*	5				
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	3	I	*Distichlis spicata*	10	10	23		
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	3	I	*Erodium botrys*	20				
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	3	I	*Hordeum marinum* ssp. *gussoneanum*	3				
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	3	I	*Bromus diandrus*	0.1				
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	4	C	*Distichlis spicata*	20	20	25		
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	4	C	*Erodium botrys*	25				
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	4	C	*Bromus diandrus*	0.1				
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	5	C	*Distichlis spicata*	15	15	30		
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	5	C	*Erodium botrys*	30				
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	6	I	*Erodium botrys*	40	0	40		
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	6	I	*Hordeum marinum* ssp. *gussoneanum*	0.1				
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	7	I	*Eleocharis montevidensis*	10	15	20		
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	7	I	*Trichostema lanatum*	5				
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	7	I	*Erodium botrys*	20				
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	7	I	*Hordeum marinum* ssp. *gussoneanum*	0.1				
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	7	I	*Avena barbata*	0.1				
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	8	E	*Erodium botrys*	25	1	25		
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	8	E	*Deinandra fasciculata*	1				
F 147 E48	Ryan Hayden, Lance Woolley	5/12/2016	216	8	E	*Eleocharis montevidensis*	0.1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	1	E	*Eleocharis montevidensis*	1	6	10		
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	1	E	*Erodium botrys*	10				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	1	E	*Marsilea vestita*	5				

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	1	E	*Psilocarphus brevissimus*	0.1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	1	E	*Avena barbata*	0.1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	1	E	*Acmispon americanus*	0.1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	1	E	*Croton setiger*	0.1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	2	I	*Spergularia bocconi*	20	11	20		
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	2	I	*Trichostema lanatum*	0.1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	2	I	*Marsilea vestita*	5				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	2	I	*Croton setiger*	1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	2	I	*Lythrum hyssopifolia*	0.1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	2	I	*Psilocarphus brevissimus*	5				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	3	I	*Marsilea vestita*	25	25	25		
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	3	I	*Lythrum hyssopifolia*	20				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	3	I	*Spergularia bocconi*	5				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	4	C	*Marsilea vestita*	35	38	0		
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	4	C	*Croton setiger*	3				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	5	C	*Marsilea vestita*	25	25	2		
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	5	C	*Croton setiger*	0.1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	5	C	*Lythrum hyssopifolia*	2				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	5	C	*Psilocarphus brevissimus*	0.1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	6	C	*Marsilea vestita*	40	45	2		
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	6	C	*Croton setiger*	5				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	6	C	*Lythrum hyssopifolia*	2				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	6	C	*Spergularia bocconi*	0.1				

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	7	I	*Croton setiger*	1	2	25		
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	7	I	*Lythrum hyssopifolia*	25				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	7	I	*Marsilea vestita*	0.1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	7	I	*Veronica peregrina* ssp. *halapensis*	1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	8	I	*Lythrum hyssopifolia*	20	2	20		
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	8	I	*Marsilea vestita*	2				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	8	I	*Psilocarphus brevissimus*	0.1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	9	E	*Marsilea vestita*	10	14	11		
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	9	E	*Psilocarphus brevissimus*	1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	9	E	*Lythrum hyssopifolia*	0.1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	9	E	*Veronica peregrina* ssp. *halapensis*	1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	9	E	*Erodium botrys*	10				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	9	E	*Bromus madritensis* ssp. *rubens*	1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	9	E	*Erigeron canadensis*	0.1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	9	E	*Croton setiger*	1				
HH 145 C20	Ryan Hayden, Lance Woolley	5/12/2016	270	9	E	*Ambrosia psilostachya*	1				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	1	E	*Salsola tragus*	15	5	20		
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	1	E	*Hordeum marinum* ssp. *gussoneanum*	5				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	1	E	*Distichlis spicata*	5				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	1	E	*Erodium botrys*	1				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	2	I	*Atriplex coulteri*	5	5	6		
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	2	I	*Salsola tragus*	5				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	2	I	*Erodium botrys*	1				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	3	I	*Atriplex coulteri*	10	20	7		
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	3	I	*Distichlis spicata*	10				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	3	I	*Erodium botrys*	1				

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	3	I	*Hordeum marinum* ssp. *gussoneanum*	5				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	3	I	*Medicago polymorpha*	1				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	3	I	*Melilotus albus*	0.1				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	4	C	*Atriplex coulteri*	30	31	4		
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	4	C	*Spergularia bocconi*	4				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	4	C	*Distichlis spicata*	1				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	4	C	*Erodium botrys*	0.1				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	5	C	*Distichlis spicata*	15	20	7		
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	5	C	*Atriplex coulteri*	5				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	5	C	*Melilotus albus*	0.1				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	5	C	*Erodium botrys*	5				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	5	C	*Hordeum marinum* ssp. *gussoneanum*	0.1				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	5	C	*Spergularia bocconi*	2				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	6	I	*Distichlis spicata*	20	20	27		
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	6	I	*Erodium botrys*	25				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	6	I	*Medicago polymorpha*	2				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	6	I	*Hordeum marinum* ssp. *gussoneanum*	0.1				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	7	I	*Hordeum marinum* ssp. *gussoneanum*	15	5	27		
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	7	I	*Distichlis spicata*	5				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	7	I	*Erodium botrys*	10				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	7	I	*Melilotus albus*	2				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	8	E	*Erodium botrys*	70	10	72		
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	8	E	*Distichlis spicata*	10				
RAAP 17	Ryan Hayden, Lance Woolley	5/12/2016	81	8	E	*Hordeum marinum* ssp. *gussoneanum*	2				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	1	E	*Erodium botrys*	50	0	50		
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	2	I	*Deinandra fasciculata*	20	20	30		
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	2	I	*Erodium botrys*	30				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	3	I	*Lythrum hyssopifolia*	20	1	35		
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	3	I	*Erodium botrys*	15				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	3	I	*Psilocarphus brevissimus*	0.1				

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	3	I	*Eleocharis montevidensis*	0.1				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	4	C	*Psilocarphus brevissimus*	20	20	30		
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	4	C	*Lythrum hyssopifolia*	20				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	4	C	*Erodium botrys*	10				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	4	C	*Eleocharis montevidensis*	1				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	5	C	*Lythrum hyssopifolia*	25	11	35		
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	5	C	*Psilocarphus brevissimus*	10				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	5	C	*Eleocharis montevidensis*	1				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	5	C	*Erodium botrys*	10				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	6	I	*Lythrum hyssopifolia*	30				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	6	I	*Eleocharis montevidensis*	3	4	26		
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	6	I	*Polypogon monspeliensis*	0.1				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	6	I	*Erodium botrys*	5				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	6	I	*Psilocarphus brevissimus*	1				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	6	I	*Sonchus asper*	1				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	7	I	*Lythrum hyssopifolia*	20	4	25		
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	7	I	*Erodium botrys*	5				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	7	I	*Festuca myuros*	3				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	7	I	*Eleocharis montevidensis*	1				
W 151 P13	Ryan Hayden, Lance Woolley	5/12/2016	260	8	E	*Erodium botrys*	60	0	60		
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	1	E	*Erodium botrys*	40	0	45		
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	1	E	*Avena barbata*	5				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	2	I	*Cressa truxillensis*	10	10	40		
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	2	I	*Erodium botrys*	40				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	2	I	*Deinandra fasciculata*	0.1				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	3	I	*Distichlis spicata*	10	11	20		
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	3	I	*Cressa truxillensis*	0.1				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	3	I	*Erodium botrys*	20				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	3	I	*Deinandra fasciculata*	1				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	3	I	*Hordeum marinum* ssp. *gussoneanum*	0.1				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	4	C	*Cressa truxillensis*	20	20	35		

Pool ID	Monitors	Date	Compass	Quad	Zone[1]	Species	Cover	Native Cover	Nonnative Cover	Grazing[1]	Disturbance[1]
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	4	C	*Erodium botrys*	35				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	5	C	*Cressa truxillensis*	30	30	30		
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	5	C	*Erodium botrys*	30				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	5	C	*Hordeum marinum* ssp. *gussoneanum*	1				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	6	C	*Cressa truxillensis*	25	25	30		
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	6	C	*Erodium botrys*	30				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	7	I	*Distichlis spicata*	20	20	25		
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	7	I	*Erodium botrys*	25				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	7	I	*Isocoma menziesii*	1				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	8	I	*Bromus hordeaceus*	1	30	35		
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	8	I	*Distichlis spicata*	30				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	8	I	*Erodium botrys*	35				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	8	I	*Deinandra fasciculata*	0.1				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	8	I	*Hordeum marinum* ssp. *gussoneanum*	0.1				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	9	E	*Erodium botrys*	35	35	5		
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	9	E	*Cressa truxillensis*	5				
W 151 P14	Ryan Hayden, Lance Woolley	5/12/2016	82	9	E	*Hordeum marinum* ssp. *gussoneanum*	0.1				

[1] Zone: C = Center, I = Intermediate, E = Edge
Grazing Intensity: H = High, M = Moderate, N = None
Distirbance: OG = Old Gopher, NG = New Gopher, N = None, AT = Animal Trail, H = Hoof-Print

Appendix F

Vernal Pool Quantitative Vegetation Monitoring Data Sheets

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool C3C Monitors: DaleR LanceW Date: 5/3/2016

GPS @1104

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: ____ Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

Quad	Zone	Species	Cover	Grazing	Disturb
1	[illegible]	[illegible]	5	N	N
	E	Dissp i	[illegible]	[illegible]	
		Lythyr	[illegible]		
		Trilan	[illegible]		
		VPI	0		
		N	15		
		NNS	[illegible]		
2	I	Dissp i	50	N	N
		Psibre	10		
		Verpor	5		
		Erocon	3		
		Lythyr	0.1		
		Euphsp	0.1		
	—	NN	0.1		
	—	N	68		
	—	VPI	[illegible]		
3	C	Dissp i	60	N	N
		Erocon	10		
		[illegible]	7		
		[illegible]	0.1		
		Empe	3		
		Crusat	0.1		
		Trilan	1		
4	C	Trilan	10	N	N
		Erocon	10		
		Crusat	8		
		Psibre	3		
		Empsp.	0.1		
5	I	Psibre	45	N	N
		Lythyr	10		
		Crusat	0.1		
		Poasec	1		
6	I	Psibre	25	N	N
		Elemar	25		
		Lythyr	5		
		Crusat	1		
		Euphsp	0.1		
7	I	Trilan	30		
		Crusat	5		
		Lythyr	5		
		Deldel	2		
8	E	Psibre	8		
		Lythyr	10		
		Crusat	0.1		
		Crusat	3		
		Junbuf	1		
		Verpor	5		
		Ave			

Quad	Zone	Species	Cover	Grazing	Disturb

15
0.1
VPI 0
N
VPI 10
N-70
NN-
VPI-7
N-30
NN-01
VPI-
N-45
NN-11
VPI-45
50
VPI 50
N-35
NN 5
VPI-35
N
NN
VPI

Notes:

C
for collected

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID c3c		Date: 5/3/2016	
Species List	Species List	Species List	Species List
Disspi			
Fesple r			
Psibra			
Cra aqu			
(Con clan)			
↳ Erigeron			
Verb. brac			
Crot set			
Son ole			
Lythy s			
Hir inc			
Grin. camp			
Ero bot			
Ele mac			
Jun aci			
Des fo c			
C – Eleo. mac ?			
C – ~~[illegible]~~ Chamaesyce			
(Euphorbia)			
Avena barbata			
Hypo glabra			
Hordeum ? c			
↳ only in pool			
No ligule			
Log			
Pla cor			
Fes my u			
Acm ame			
Sal tra			
Cen par aus †			
Ama. albus			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool: eV3   Monitors: DR, + LWool   Date: 5/3/2012?

Assuming Hordeum - AN

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: ______   Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

N-90
NN-1
N 3
NN-50
N-20
NN-[illegible]
NN-40
NN-65

Quad	Zone	Species	Cover	Grazing	Disturb
1	E	Disspi	90	N	H
		Fesper	1		
2	I	Hordeum	60	N	H
		Fesper	3		
		Disspi	3		
3	C	Hordeum	30	N	H
		Marvul	20		
		Fesper	0.1		
		Polypogon	3		
		CYNDAC	5		
4	I	HORDEUM	40	N	H
		FESPER	1		
5	I	HORDEUM	60	N	H
		FESPER	5		
6	E	DISSPI	60		
		HORDEUM	30		
		FESPER			

Notes:

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID: CV3 Date: 5/3/2016

Species List	Species List	Species List	Species List
Cyn dac			
Eust. pere			
Hordeum. sp			
Disspi			
Polygonum sp.			
~~Crypsis sch~~			
Lythrum hys			
† Mar vest			
Bro dia			
ERO BOT			
AVE BAR			
MED POL			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool e77 Monitors: DR LW Date: 5/3/2011

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: 250° Magnt Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

Quad	Zone	Species	Cover	Grazing	Disturb
1	E	HORDEUM	5	N	N
		EROBOT	25		
2	I	EROBOT	30	N	N
		DISSPI	15		
		MOLDEUM	0.1		
3	C	EROBOT	30	N	N
		MOR	0.1		
4	C	DISSPI	10	N	N
		EROBOT	30		
		MOR	0.1		
5	C	DISSPI	15	N	N
		EROBOT	30		
		LIOR	0.1		
6	I	EROBOT	40	N	N
		BTK.	1	N	
7	E	EROBOT	50		
		AVEBAR	1		
		DISSPI	0.1		

Quad	Zone	Species	Cover	Grazing	Disturb

NN-50
N 15
NN 30
NN-30
N-10
NN-30
N 15
NN 30
N - 1
NN-40
N 0.1
NN-50

Notes:

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

5/3/2016

Pool ID C 1 1	Date:		
Species List	Species List	Species List	Species List
Erobot			
HORDEUM			
AVE BAR			
BRO. T. K.			
AMB PSI			
GRI CAM			
DEI FAS			
DISSD I			
MUI MAR			
BROM. DIA.			
HYP GLA			
CROT SC I			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool e52 Monitors: DR LW Date: 5/3/2016

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: 65° Grazing Intensity: H= High, M = Moderate, N = None
Magnetic Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

	Quad	Zone	Species	Cover	Grazing	Disturb
NN-60	1	E	ERODOT	60	N	N
NN-10	2	I	HOR	15	N	N
			[illegible]	5		
N-10	3	C	HOR	30	N	N
NN-30			ELEMAC	10		
NN-35	4	C	HOR	15	N	N
			POLYG	30		
N-50	5	C	HOR	40	N	N
NN-40			DISSPI	50		
			ELEMON	0.1		
N-50	6	I	DISSPI	50	N	N
NN 30			ERODOT	20		
			[illegible]R	10		
N-[illegible]	7		DISSPI	5	N	N
NN-[illegible]			ERODOT	25		
			HOR	0.1		

Quad	Zone	Species	Cover	Grazing	Disturb

Notes:

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID e52 Date: 5/3/2016

Species List	Species List	Species List	Species List
EROBOT	ELE MONT	<1% total cover pool-wide	
HORDEUM sp	VER PEC	<1%	
POLYGONUM sp			
BOT.KI			
DISSPI			
DELTA			
AMB PSI			
CRO SET			
AVE BAR			
BRO DIA			
TRI CAN			
HYP GAL			
AMA ALI			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool e53 Monitors: Lance Dale Date: 5/3/2016

1450

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

Quad	Zone	Species	Cover	Grazing	Disturb
1	E	ERIBOT	30	N	N
		HOR	5		
2	I	HOR	65	N	N
		ERIBOT	1		
		[illegible]	1		
3	C	PSIBRE	35	N	N
		[illegible]	0.1		
		[illegible]	15		
		VERPER	5		
		ELEMON	15		
		PSEUDOC	0.1		
4	C	PSIBRE	15	N	N
		ELEMON	5		
		VERPER	5		
		CRYPT	2		
		POLYGON	5		
5	C	PSIBRE	20	N	N
		VERPER	10		
		[illegible]	10		
		ERIBOT	20		
		[illegible]	5		
		HOR	0.1		
		POLYGON	1		
6	I	HOR	5	N	N
		PSIBRE	5		
		ERIBOT	30		
		ELEMON	5		
		[illegible]	1		
		LYTHYS	0.1		
7	E	DISSDI	20	N	N
		ERIBOT	40		
		HOR	10		

Quad	Zone	Species	Cover	Grazing	Disturb

Notes:

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID e53 Date: 5/7/2016

Species List	Species List	Species List	Species List
EROBOT	PSI SRL	25-50%	
HORDEUM sp	[illegible]		
AVE BAR	DOM CUS	2-10%	
SPE BOL	DES DAN	<1%	
TRI LAN	PLA ELO	<1%	
[illegible]	VER PER	1-5%	
DEI FAS	ELE MON	5-25%	
ELEOCHARIS sp			
VERPER			
AMA ALI3			
CRYPT sp1			
RUM CRI			
GRI CAM			
SAL TRA			

HOLA

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool: ESE

Monitors: LANCE W; COURTNEY C

Date: 5/11/16

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: 110° E
Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

	Quad	Zone	Species	Cover	Grazing	Disturb
N: 4% NN: 51%	1	E	Evo Bot	50		
			Amb Psi	4		
			Fes. Mya	1		
N: 3% NN: 30%	2	I	Evo Bot	30		
			Dei Fas	1		
			Cre Tru	2		
			Fes. Per	.01		
N: 30% NN: 6%	3	I	Cre Tru	20		
			Dei Fas	10		
			Evo Bot	6		
N: 10% NN: 10%	4	C	Fes Per	10		
			Cre Tru	10		
			Evo Bot	10		
			Ave Bar	0.1		
N: 5% NN 19%	5	C	Dei Fas	2		
			Fes Per	7		
			Cre Tru	5		
			Evo Bot	10		
N: 15 NN: 20%	6	I	Cyn Dac	15		
			Cre Tru	15		
			Fes Per	1		
			Dei Fas	0.1		
			Evo Bot	5		
			Sil Gal	0.1		
			Hordeum	0.1		
N: 6% NN: 27%	7	I	Cyn Dac	20		
			Cre Tru	5		
			Evo Bot	7		
			Dei Fas	1		
N: 0% NN: 71%	8	E	Cyn Dac	70		
			Ave Bar	1		
			Fes Mya	0.1		
			Dei Fas	0.1		
			Cre Tru	0.1		

Quad	Zone	Species	Cover	Grazing	Disturb

Notes:
DISTURBANCE: HOOF PRINTS (light H)
GRAZING: MODERATE

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID EP2 Date: 5/11/16

Species List	Species List	Species List	Species List
Bro tor s			
Dei fas			
Cyc tru x			
Ave bar			
Fes per			
Fes my			
Iso Mem			
Hordeum			
Lasthenia			
Ero bot			
Gri cam			
Hyp gal			
Dis spi			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool: E 56

Monitors: LANGE W; COURTNEY C

Date: 5/11/10

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: 290 ° W
Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

Quad	Zone	Species	Cover	Grazing	Disturb
1	E	Con Par	5		
		Gro Bot	60		
		Hordeum	0.1		
		Polygonum	0.1		
2	I	Cyn Dac	70		
		Hordeum	2		
		Lythrum	0.1		
		Cot Ech	0.1		
		Gro Bot	2		
3	I	Cyn Dac	5		
		Polygonum	70		
		Bro Hor	1		
		Gro Bot	15		
4	C	Cyn Dac	30		
		Phy [illegible]	10		
		Spe [illegible]	1		
		Fes Per	0.1		
		Lythrum	0.1		
5	I	Cyn Dac	50		
		Fes Per	0.1		
		Lythrum	1		
		Gro Bot	5		
		Mal Lep	0.1		
6	I	Cyn Dac	20		
		Polygonum	20		
		Lythrum	0.1		
		Mal Lep	0.1		
7	E	Ant Cot	3		
		Mal Lep	15		
		Gro Bot	50		
		Hordeum	5		

Quad	Zone	Species	Cover	Grazing	Disturb

N: 5%
NN: 60%

N: 0%
NN: 74%

N: 5%
NN: 36%

N: 30%
NN: 11%

N 50%
NN 1,%

N: 20%
NN: 20%

N: 15
NN: 58%

Notes:

Grazing: M
Dist: H

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID ES6 Date: 5-11-16

Species List	Species List	Species List	Species List
Cun par aus →	100%		
Dei fas			
pln...num			
Fes myu			
Fes per			
Hordeum			
polygonum			
Ero bot			
Malv lep			
Bro tor k			
Dis spic			
Anth cot			
Lyth hyss			
Rumex cris			
Ave bar			
Sperg clar in			
Poly mon			
Psil brev			
Bro hor			
Sal trag			
Brn shick			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool: E 58

Monitors: LANCE W., COVERNSY C

Date: 5/11/2016

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung

Compass: 286° W

Grazing Intensity: H= High, M = Moderate, N = None

Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

Quad	Zone	Species	Cover	Grazing	Disturb
1	E	Dis Spi	40		
		Hyp Gla	0.1		
		Ero Bot	20		
		Hordeum	0.1		
		Fes Myu	0.1		
2	I	Ero Bot	35		
		Fes Spi	10		
		Hordeum	4		
		Ero Bot	25		
3	I	Ero Bot	35		
		Hordeum	1		
		Dis Spi	1		
4	C	Dis Spi	10		
		Fes Per	5		
		Ero Bot	25		
		Fes Myu	0.1		
5	I	Dis Spi	1		
		Del Fas	0.1		
		Ero Bot	35		
		Hordeum	0.1		
6	E	Del. Sp.	25		
		Dis Spi	10		
		Hordeum	5		
		Ero Bot	10		
		Lythrum	0.1		

Quad	Zone	Species	Cover	Grazing	Disturb

N: 40%
NN: 20%

N: 10%
NN: 64%

N: 1%
NN: 36%

N: 10%
NN: 30%

N: 1%
NN: 35%

N: 25%
NN: 25%

Notes:
- potential southern Tar Plant
  Dist: H (low)
  Grazing: N

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID ES8 Date: 5-11-12

Species List	Species List	Species List	Species List
[illegible]			
Fes per			
Lyth hyssop			
Dis spi			
[illegible]			
Hordeum sp.			
[illegible] cas			
Ero but			
Med poly			
Bras nigra			
Bro hor			
Polygonum			
Silene gall.			
Rumex crisp.			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool ES9 Monitors: LANCE [illegible] Date: 5-11-2016

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: 250° W Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

	Quad	Zone	Species	Cover	Grazing	Disturb	Quad	Zone	Species	Cover	Grazing	Disturb
N: 0% NN: 60%	1	E	Anthema	55%								
			Polygonum	10%								
			[illegible]	1%								
			Erodium									
			Botrys	0.1%								
N: [illegible] NN: 30%	2	I	Polygonum	30%								
[illegible] N: 20%	3	I	[illegible]	20%								
			[illegible]	2%								
			[illegible]	1%								
			Psilo	0.1%								
			Eleocharis	0.1%								
			Deinandra	0.1%								
N: 20% NN: 10%	4	C	Psilo	15%								
			Lythrum	10%								
			Eleocharis	5%								
			Deinandra	1%								
			Ver. Per.	0.1%								
			[illegible]	0.1%								
N: 25% [illegible]	5	C	Psilo	20%								
			Eleocharis	5%								
			Lythrum	8%								
N: [illegible] NN: 10%	6	C	Psilo	10%								
			Polygonum	[illegible]								
			[illegible]	5%								
			Deinandra	[illegible]								
			Cra. Set.	0.1%								
N: 0% NN: 20%	7	I	Polygonum	15%								
			Lythrum	5%								
			Anthemis	3%								
			Psilo	0.1%								
			Deinandra	0.1%								
			Cot. Cor	0.1%								
N: [illegible] NN: 35%	8	I	Lythrum	30%								
			Anthemis	5%								
			Deinandra	2%								
			Psilo	1%								
			Ver. Per.	0.1%								
			Cra. Aqu	0.1%								
			Jun. Buf.	0.1%								
N: [illegible] NN: 4%	9	E	Dis. Spi.	60%								
			Lythrum	3%								
			Hordeum	0.1%								
			Polygonum	1%								

Notes: Grazing High — Disturbance: Hoofprint - High — Animal Trail - Low

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID [illegible] | Date: [illegible]

Species List	Species List	Species List	Species List
[illegible]			
[illegible]			
[illegible]			
[illegible]			
[illegible] sp			
[illegible]			
Lythrum hyssopif.			
[illegible]			
[illegible]			
[illegible]			
Crassula aquat			
Veronica pereg.			
Rumex crispus			
[illegible]			
Erodium botrys			
Lytran sc T			
Polypogon mons.			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool: EG1

Monitors: LANCE W; COURTNEY C

Date: 5/11/16

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: 3° N
Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

Quad	Zone	Species	Cover	Grazing	Disturb
1	E	Spergularia	20		
		cyn dac	20		
		Hordeum	3		
		Med Pol	0.1		
2	I	Sil Gal	5		
		Cyn dac	30		
		Eso Bol	5		
		Bro Hor	0.1		
		Fes Myu	0.1		
		Fes Pki	0.1		
		Lythrum	0.1		
3	C	Psilo	0.1		
		lythrum	5		
		Cot. Cor	3		
		cyn dac	1		
		Spergularia	0.1		
4	C	lythrum	5		
		cyn dac	5		
		Fes Pki	0.1		
		Spergularia	0.1		
5	I	cyn dac	70		
		pei Fas	0.1		
		lythrum	0.1		
		spergularia	0.1		
		Eso Bol	0.1		
	E	spergularia	20		
		cyn dac	20		
		Hordeum	0.1		

N: 0.1
NN: 43.

N: 0.1
NN: 40.

N: 0.1
NN: 9.

N 0.1
NN: 10.

N: 01
NN: 70.

N: 01
NN 40.

Notes:

Disturbance: moderate HOOF PRINTS
Grazing: moderate

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID E61		Date: 5-11-16	
Species List	Species List	Species List	Species List
CYN DAC			
SIL GAL			
FES [illegible]			
COT COR			
OE: FAS			
FES MYU			
BRO HOR			
PSI BRE			
LYTH [illegible]			
Hordeum sp.			
[illegible]			
[illegible]			
ERO BOT			
ALS SP			
ANTHEMIS COT			
SIL GAL			
SAL TRAG			
AVE BAR			
MEDI POL			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool: EG2 | Monitors: LANCE W, COURTNEY C | Date: 5/15/16

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: 91°E
Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

Quad	Zone	Species	Cover	Grazing	Disturb
1	E	Ero Bot	25		
		Cyn Dac	20		
		Lythrum	0.1		
		Eliocharis	0.1		
2	I	Polygonum	1		
		Ero Bot	20		
		Eliocharis	2		
		Hordeum	.1		
3	I	Bro Ter.	0.1		
		Ero Bot	75		
		Hordeum	1		
		Bro. Hor	0.1		
		Polygonum	0.1		
4	I	Pei Fas	0.1		
		Bro Ter.	0.1		
		Ero Bot	50		
5	C	Dis. Spi	80		
		Fes Per	5		
		Bro. Hor	1		
		Ero Bot	1		
		Cyn Dac	5		
6	C	Dis. Spi	80		
		Fes Per	5		
		Hordeum	1		
		Ero Bot	1		
		Cyn Dac	5		
7	C	Dis Spi	75		
		Fes Per	5		
		Hordeum	1		
		Ero Bot	2		
		Cyn Dac	5		
8	I	Cyn Dac	10		
		Ero Bot	60		
		Eliocharis	0.1		
		Dis Spi	0.1		
9	E	Ero Bot	60		
		Cyn Dac	10		
		Hordeum	1		

N: 0.1%
NN: 45%

N:
NN: 23%

N: .1%
NN: 70%

N: 0.2%
NN: 50%

N: 80%
NN: 12%

N: 80%
NN: 12%

N: 75%
NN: 13%

N: 10%
NN: 60%

N: 10%
NN: 60%

Notes:
DIST: HOOF PRINTS (LOW)
GRAZING: NONE

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool: E03 | Monitors: JANES W ; COURTNEY C | Date: 5/11/16

Compass: 75° E

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

Quad	Zone	Species	Cover	Grazing	Disturb
1	E	lythrum	5		
		Ero Bot	10		
		Eliochiaris	5		
2	I	Pes. Dan	0.1		
		Lythrum	10		
		Eliocharis	5		
		Cyn. Set	3		
		Psilo	5		
		Se.h. Bar	0.1		
		Fes. Per	0.1		
3		Lythrum	20		
		Polygonum	1		
		Eliocharis	7		
		pes. Dan	0.1		
		Psilo	7		
		Cyn. Dac	0.1		
		Deinandrum	0.5		
4	C	Eliocharis	35		
		lythrum	2		
		polygonum	5		
		psilo	3		
		Ero. Bot	0.1		
5	I	Hordeum	10		
		Ero. Bot	5		
		Cyn Set	2		
		[illegible]	1		
		Polygonum	0.1		
6	I	Lythrum	20		
		Ero Bot	20		
7	E	Dei. Fas.	30		
		Ero. Bot	25		

Quad	Zone	Species	Cover	Grazing	Disturb

N: 5%
NN: 15%

N: 13%
NN: 10%

N: 14%
NN: 21%

N: 35%
NN: 7%

N: 0%
NN: 18%

N: 0%
NN: 40%

N: 30%
NN: 25%

Notes:
GRAZING: MODERATE (M)
DISTURBANCE 2: HOOF PRINTS (LOW H)

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID EE63 Date: 5-[illegible]

Species List	Species List	Species List	Species List
Ero bot			
Geo bot			
DFS BRY			
SF I FAS			
PSI BRE			
Hordeum sp			
Polypogon sp.			
Rumex crisp.			
Bromus hord			
Helio cures.			
Grindel. camp.			
Eleocharis sp.			
Dist spic.			
Clin dac			
Avena bar			
Anthem. cot.			
Fes per.			
Psilocarphus? alb.			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool: EE14 CS-1

Monitors: LATICE W COURTNEY C

Date: 5/11/16

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: 130° NS
Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

N: 2%
NN: 30%

N: 1%
NN: 25%

N:
NN: 1%

1
NN: 7%

N: 0.1
NN: 30%

Quad	Zone	Species	Cover	Grazing	Disturb
1	E	Fes. Per.	8		
		Dis. Spi.	2		
		Sub. Bal	20		
		Lythrum	1		
		Ant. Cot	1		
2	I	lythrum	25		
		Fes. Per	0.1		
		Deinandra	1		
3	C	lythrum	1		
		BG	99		
4	I	Fes Per	1		
		lythrum	1		
		Ant Cot	5		
		Deinandra	0.1		
5	E	Ant. Cot	15		
		Cyn. Dac	7		
		Deinandra	0.1		
		Fes. Per	10		
		lythrum	0.1		

Quad	Zone	Species	Cover	Grazing	Disturb

Notes:
Disturbance: Hoof Prints
Grazing: High

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID EE/4-CS Date: 5-11-2016

Species List	Species List	Species List	Species List
ANT COT			
Lythrum hyssop			
[illegible]			
Crassula [illegible]			
FEST per.			
Frankia hom.			
DIST spic.			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool r-152.p7 Monitors: LW, RL Date: 12 MA / 2016

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: 301' Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

Quad	Zone	Species	Cover	Grazing	Disturb
1	E	Arc cal	5		
		Ero bot	30		
		Dis spi	10		
		Lyt hys	3		
		Cen par	2		
		Pol mon	0.1		
2	I	Cen par	3		
		Lyt hys	10		
		Ant cot	3		
		Hor sp	0.1		
		Psilo sp	2		
3	I	Cen par	10		
		Lyt Hys	25		
		Ant cot	5		
		Psilo sp	1		
		Jun buf	1		
4	C	Cyn dac	25		
		Pol mon	5		
		Lyt hys	10		
		Psilo sp	15		
		Elio sp	0.1		
		Cra apia	0.1		
5	C	Cyn dac	30		
		Lyt hys	20		
		Psilo sp	15		
		Elio sp	1		
		Pol mon	0.1		
6	C	Lyt hys	30		
		Psilo sp	20		
		Poly sp	5		
		Ant cot	2		
		Elio sp	0.1		
		Jun buf	0.1		
		Hor sp	0.1		
7	I	Cen par	30		
		Poly sp	20		
		Psilo sp	5		
		Jun buf	1		
		Lyt hys	5		
		Ant cot	3		
8	I	Ant cot	30		
		Lyt hys	10		
		Elio sp	5		
		Dei fas	2		
		Cen par	2		
		Psilo sp	1		
9	E	Ero bot	40		
		Dei fas	15		
		Ant cot	3		
		Lyt hys	1		
		Cyn dac	5		

N: 12%
NN: 38.1%

N: 5%
NN: 13.1%

N: 12%
NN: 30%

N: 15.2%
NN: 40%

N: 16%
NN: 50.1%

N: 20.2%
NN: 37.1%

N: 36%
NN: 28%

N: 10%
NN: 40%

N: 15%
NN: 49%

Notes:

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID r-152-p7 Date: 12 MAY 2016

Species List	Species List	Species List	Species List
Ant cot			
Era bat			
Dis spi			
Lyt hyS			
Cen par			
Pol mon			
Her sp			
Psilo sp.			
Jun buf			
Cyn dac			
Ele sp			
Cra aqu			
Des dan			
Bro hor			
Ave bar			
Fes per			
Polyg sp			
Rum cri			
Dri fas			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool F-147-E45 Monitors: LW, RL Date: 12 MAY 2016

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: 130° Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

	Quad	Zone	Species	Cover	Grazing	Disturb
N: 0.1 % NN: 25.1 %	1	E	Ero bot	25		
			Bro ter	0.1		
			Lyt hyss	0.1		
NN: 35%	2	I	Hor sp	15		
			Ero bot	20		
N: 57 % NN: 20.1 %	3	C	Hor sp	20		
			Dis spi	35		
			Bro ter	2		
			Ave bar	0.1		
N: 41 % NN: 20 %	4	C	Dis spi	40		
			Bro ter	1		
			Hor sp.	20		
N: 33 % NN: 1 %	5	I	Ele sp	3		
			Dis spi	30		
			Hor spi	1		
N: 1 % NN: 30 %	6	E	Ero bot	30		
			Dis spi	1		

Quad	Zone	Species	Cover	Grazing	Disturb

Notes:

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID F. 147.645 Date: 12 MAY 2016

Species List	Species List	Species List	Species List
Hor sp.			
Dis spi			
Ave bar			
Dci fas			
Bro tec			
Fre bot			
Trich sp.			
Eliech sp			
Lyt hys			
Sisy bel			
Cre set			
Bro dia			
Amb psi			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool f.147. c48 Monitors: LW, RL Date: 12 May 2016

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: 216° Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

	Quad	Zone	Species	Cover	Grazing	Disturb
NN: 40.1%	1	E	Ero bot	40		
			Hor sp.	0.1		
N: 20%	2	I	Dis spi	20		
NN: 30%			Ero bot	25		
			Hor sp	5		
N: 10 %	3	I	Dis spi	10		
NN 23.1%			Ero bot	20		
			Hor sp	3		
			Bro dia	0.1		
N: 20%	4	C	Dis spi	20		
NN: 25.1%			Ero bot	25		
			Bro dia	0.1		
N: 15%	5	C	Dis spi	15		
NN: 30%			Ero bot	30		
NN: 40.1%	6	I	Ero bot	40		
			Hor spi	0.1		
N: 15%	7	I	Elio sp	10		
NN: 20.2%			Trich sp	5		
			Ero bot	20		
			Hor sp	0.1		
			Ave bar	0.1		
N: 1.1%	8	E	Ero bot	25		
NN: 25%			Dei fas	1		
			Elio sp	0.1		

Notes:

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID f-147-e48 Date: 12 MAY 2016

Species List	Species List	Species List	Species List
Dis spi			
Era bot			
Ave bar			
Hor sp			
Elio sp.			
Fes per			
Dei fas			
Cyn car			
Pla eri			
Bro ter			
Trich sp.			
Bro dia			
Psilo sp			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool hh-145-C20 Monitors: LW, RL Date: 12 May 2016

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: 270° Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

	Quad	Zone	Species	Cover	Grazing	Disturb
N: 6.3% NN: 10.1%	1	E	Elea sp.	1		
			Ero bot	10		
			Mar ves	5		
			Psilo sp	0.1		
			Ave bar	0.1		
			Acm ame	0.1		
			Cro sct	0.1		
N: 11.2% NN: 20.1%	2	I	Spec sp	20		
			Trich sp.	0.1		
			Mar ves	5		
			Cro sct	1		
			Lyt hys	0.1		
			Psilo sp	5		
N: 25% NN: 25%	3	I	Mar ves	25		
			Lyt hys	20		
			Spec sp.	5		
N: 38%	4	C	Mar ves	35		
			Cro sct	3		
N: 25.7% NN: 2%	5	C	Mar ves	25		
			Cro sct	0.1		
			Lyt hys	2		
			Psilo sp	0.1		
N: 45% NN: 2.1%	6	C	Mar ves	40		
			Cro sct	5		
			Lyt hys	2		
			Spec sp	0.1		
N: 2.1% NN: 25%	7	I	Cro sct	1		
			Lyt hys	25		
			Mar ves	0.1		
			Vee per	1		
N: 2.1% NN: 20%	8	I	Lyt hys	20		
			Mar ves	2		
			Psilo sp	0.1		
N: 14.1% NN: 11.1%	9	E	Mar ves	10		
			Psilo sp	1		
			Lyt hys	0.1		
			Ver per	1		
			Ero bot	10		
			Bro mad	1		
			Eri con	0.1		
			Cro sct	1		
			Amb psi	1		

Quad	Zone	Species	Cover	Grazing	Disturb

Notes:

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID hh-145-C20 Date: 12 May 2016

Species List	Species List	Species List	Species List
Amb psi			
Mar ves			
cro set			
Acm ame			
Lyt hys			
Fes per			
Spec sp			
Psilo sp.			
Sal dra			
Poly sp.			
Ame alb			
Ero bot			
Ave bar			
Hel cur			
Ant col			
Ver per			
Trich sp.			
Bro hor.			
Del Fas			
Bro mac			
Sil gal			
Lam amp			
Fes myu			
Log gal			
Elio sp.			
Cen par			
Cyn dac			
Eri con			
Bro dia			
Rum cri			
Lup bic			
Hyp gal			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool Raap17 Monitors: L-W, RL Date: 12 May 2016

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: 81° Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

	Quad	Zone	Species	Cover	Grazing	Disturb
N: 5%	1	E	Sal tra	15		
NN: 21%			Hor sp.	5		
			Dis spi	5		
			Ero bot	1		
N: 5%	2	I	Atr col	5		
NN: 6%			Sal tra	5		
			Ero bot	1		
	3	I	Atr col	10		
N: 20%			Dis spi	10		
			Ero bot	1		
NN: 7.1%			Hor sp.	5		
			Med pol	1		
			Mel alb	0.1		
	4	C	Atr col	30		
N: 31%			Sper sp.	4		
NN: 4.1%			Dis spi	1		
			Ero bot	0.1		
	5	C	Dis spi	15		
N: 20%			Atr col	5		
NN: 7.2%			Mel alb	0.1		
			Ero bot	5		
			Hor sp	0.1		
			Sper sp	2		
N: 20%	6	I	Dis spi	20		
			Ero bot	25		
NN: 27.1%			Med pol	2		
			Hor sp	0.1		
N: 5%	7	I	Hor sp	15		
			Dis spi	5		
NN: 27%			Ero bot	10		
			Mel alb	2		
	8	E	Ero bot	70		
N: 10%			Dis spi	10		
			Hor sp.	2		
NN: 72%						

	Quad	Zone	Species	Cover	Grazing	Disturb

Notes:

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID Roop 17 Date: 12 May 2016

Species List	Species List	Species List	Species List
Cen par			
Sal tra			
Ero bot			
Har sp.			
Spe sp.			
Mel ind			
Hir inc			
Dis spi			
Atr col			
Lep sp.			
Bro hor			
med pol			
Fes per			
Dei fas			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool WCI51-p13 Monitors: LW, RL Date: 12 MAY 2016

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: 260° Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

	Quad	Zone	Species	Cover	Grazing	Disturb
NN: 50%	1	E	Ero bot	50		
N: 20	2	I	Del fas	20		
NN: 30			Ero bot	30		
	3	I	Lyt hys	20		
N: 0.2			Ero bot	15		
NN: 35			Psilo sp	0.1		
			Elio sp	0.1		
N: 21	4	C	Psilo sp	20		
NN: 30			Lyt hys	20		
			Ero bot	10		
			Elio sp	1		
N: 11	5	C	Lyt hys	25		
NN: 35			Psilo sp	10		
			Elio sp	1		
			Ero bot	10		
N: 4	6	I	Lyt hys	20		
NN: 26.1			Elio sp	3		
			Pol mon	0.1		
			Ero bot	5		
			Psilo sp	1		
			Sonchus	1		
N: 4	7	I	Lyt hys	20		
NN: 25			Ero bot	5		
			Fes mon	3		
			Elio sp	1		
NN: 60	8	E	Ero bot	60		

Notes:

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID W. ISL. p13 Date: 12 May 2016

Species List	Species List	Species List	Species List
Ero bot			
Dei fas			
Lyt hys			
Psilo sp.			
Elio sp.			
Pol mon			
Sonchus sp.			
Fes myu			
Ave bar			
Polys. sp.			
Fes per			
Hor sp.			
Bra nig			
Eri can			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool W_151_pl4 Monitors: LW, RL Date: 12 MAY 2016

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Compass: 82° Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

Quad	Zone	Species	Cover	Grazing	Disturb
1	E	Ero bot	40		
		Ave bar	5		
2	I	Cre tru	10		
		Ero bot	40		
		Dei fas	0.1		
3	I	Dis spi	10		
		cre tru	0.1		
		Ero bot	20		
		Dei fas	1		
		Hor sp	0.1		
4	C	Cre tru	20		
		Ero bot	35		
5	C	Cre tru	30		
		Ero bot	30		
		Hor sp	1		
6	C	Cre tru	25		
		Ero bot	30		
7	I	Dis spi	20		
		Ero bot	25		
		Iso mon	1		
8	I	Bro hor	1		
		Dis spi	30		
		Ero bot	35		
		Dei fas	0.1		
		Hor sp	0.1		
9	E	Ero bot	35		
		Cre tru	5		
		Hor sp	0.1		

Quad	Zone	Species	Cover	Grazing	Disturb

N: 45%
NN: 10.1%
NN: 40%
N: 11.1%
NN: 20.1%
N: 20
NN: 35
N: 30
NN: 31
N: 25
NN: 30
N: 21
NN: 25
N: 30.1
NN: 30.1
N: 5
NN: 35.1

Notes:

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID W-151-p11 Date: 12 MAY 2016

Species List	Species List	Species List	Species List
Ero bot			
Auc bar			
Cic tru			
Del fas			
Hor int			
Dis spi			
Iso men			
Bro hor			
Fes myu			
Cro set			
Hol vir			
Hyp gla			
Lep sp.			
Bro ter			
Fes per			

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID E-77 Date:

Species List	Species List	Species List	Species List
BRO TER k			
[illegible]			
Cyn [illegible]			
[illegible]			
[illegible]			
Hordeum sp.			
[illegible]			
Bro hor			
Amb ps			
Fes per			
[illegible]			
Spergularia sp			
[illegible]			
[illegible]			
Salsola tra			
Anthemis cotula			
Eso wen			
Fest myuros			
Bras nigra			
Rumex crispa			