

# TARGETED MONITORING PLAN RESOURCE-SPECIFIC MONITORING 2018 ANNUAL REPORT

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## Acronyms and Abbreviations

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|        |  |
|--------|--|
| ASMDs  | area specific management objectives        |
| CDFG   | California Department of Fish and Game     |
| CDFW   | California Department of Fish and Wildlife |
| County | County of San Diego                        |
| DPR    | Department of Parks and Recreation         |
| ESA    | Endangered Species Act                     |
| FMP    | Framework Management Plan                  |
| GIS    | Geographic Information System              |
| GPS    | Global Positioning System                  |
| HCP    | Habitat Conservation Plan                  |
| MSCP   | Multiple Species Conservation Plan         |
| MSP    | Management Strategic Plan                  |
| NCCP   | Natural Community Conservation Planning    |
| SKR    | Stephens' kangaroo rat                     |
| TMP    | Targeted Monitoring Plan                   |
| USFWS  | U.S. Fish and Wildlife Service             |
| USGS   | U.S. Geological Survey                     |

# Chapter 1

## Introduction

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### 1.1 Purpose of the Project

As a participant in the Multiple Species Conservation Program (MSCP) and an adopted South County MSCP Subarea Plan, the County of San Diego 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 of San Diego Department of Parks and Recreation (DPR) has prepared a Targeted Monitoring Plan (TMP) 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 DPR. The TMP currently addresses monitoring within ten Preserve/Parks: 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. The TMP 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 directives (ASMDs) for species per the South County MSCP Framework Management Plan (FMP). The regional framework that guides monitoring at the preserve level has been refined over time and is still evolving through a collaborative effort among U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW; collectively known as the Wildlife Agencies), MSCP jurisdictions and outside scientific experts. It is understood by all stakeholders (e.g., state and federal wildlife resource agencies, municipal and county agencies, land managers, etc.) that adaptive management is an iterative process in which lessons are learned and used to further refine priorities, goals, objectives, and monitoring methods. Resource specific monitoring was conducted in five Preserves identified in the TMP for 2018 monitoring efforts (Boulder Oaks, Lusardi Creek, Sycamore Canyon/Goodan Ranch, Ramona Grasslands, and Lakeside Linkage Preserves).

Monitoring was conducted for the following nine MSCP-covered species and habitats in 2018:

- San Miguel savory (*Clinopodium chandleri*)
- Variegated dudleya (*Dudleya variegata*)
- Willowy monardella (*Monardella viminea*)
- Tricolored blackbird (*Agelaius tricolor*)
- Arroyo toad (*Anaxyrus californica*)
- Burrowing owl (*Athene cunicularia*)
- Stephens' kangaroo rat (*Dipodomys stephensi*)
- Vernal pool/Alkali playa habitat
- San Diego cactus wren (*Campylorhynchus brunneicapillus sandiegensis*)

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, USFWS, and CDFW. Local jurisdictions and special districts implement their respective portions of the 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) and a Natural Community Conservation Plan (NCCP) pursuant to the California NCCP Act of 1991 (amended in 2001), and the state Endangered Species Act. The South County MSCP Subarea Plan was adopted in October 1997 and covers 23 vegetation communities and 85 species. The County is preparing the North County Plan for the northwestern unincorporated areas of the County.

Species-specific management and monitoring requirements for the 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

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### 2.1 Project Location

During this reporting period, ICF performed resource-specific monitoring in the following five preserves identified in the TMP: Boulder Oaks, Lusardi Creek, Sycamore Canyon/Goodan Ranch, Ramona Grasslands and Lakeside Linkage Preserves (Appendix A: Figures 1 and 2).

All of the preserves/parks, with the exception of Ramona Grasslands Preserve and a portion of Del Dios Highlands Preserve, are located within the 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 in the TMP 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/parks in the TMP (El Capitan, El Monte Regional Park, Oakoasis, and Stelzer Regional Park) are clustered together, and have similar topography, vegetation communities, and covered species, and are referred collectively as the El Capitan Suite. Additional preserves will be added to the TMP in the future to include all Preserves in the MSCP and the draft North County Plan area with Resource Management Plans.

Baseline biodiversity inventories have been completed for the current 10 Preserves/Parks included in the TMP —Boulder Oaks (ICF 2013), Del Dios Highlands (TAIC 2008; Dudek 2011), El Capitan (ICF 2008a), Lakeside Linkage (ICF 2008c), Lusardi Creek (ICF 2008d), Oakoasis (ICF 2008e), Ramona Grasslands (ICF 2010), Sycamore Canyon/Goodan Ranch (ICF 2008g), and El Monte (ICF 2008b) and Stelzer Regional Parks (ICF 2008f).

## Chapter 3 Methods

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

### 3.1 Rare Plant Monitoring

As outlined in the TMP, seven rare plant species—San Diego thornmint (*Acanthomintha ilicifolia*), Encinitas baccharis (*Baccharis vanessae*), Lakeside ceanothus (*Ceanothus cyaneus*), San Miguel savory, variegated dudleya, willowy monardella, 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 2018 by ICF for three of the seven rare plant species: San Miguel savory (Figure 3), variegated dudleya (Figure 4), and willowy monardella (Figure 5). Resource-specific monitoring followed the Management Strategic Plan (MSP) 2018 Rare Plant Monitoring Protocol prepared by SDMMP.

**Table 1. MSP Rare Plant Monitoring**

| Plot Establishment Date | 2018 Monitoring Date | Species            | # Monitoring Plots | Preserve                     | Name of Biologists                                   |
|-------------------------|----------------------|--------------------|--------------------|------------------------------|--|
| April 16, 2016          | May 9, 2018          | San Miguel savory  | 1                  | Boulder Oaks                 | Nicole Salas, (Frank Landis, Anna Arft)              |
| April 16, 2016          | May 15, 2018         | San Miguel savory  | 1                  | Boulder Oaks                 | Nicole Salas, (Frank Landis, Anna Arft)              |
| April 27, 2016          | May 10, 2018         | Variegated dudleya | 1                  | Lusardi Creek                | Nicole Salas, (Beth Mather, Jim Roberts, Sam Navidi) |
| July 7, 2015            | July 13, 2018        | Willowy monardella | 1                  | Sycamore Canyon/Goodan Ranch | Nicole Salas, James Hickman                          |

Names in (parentheses) were volunteers being trained

Two permanent monitoring plots were established for San Miguel savory within Boulder Oaks Preserve by ICF in 2016, one permanent monitoring plot was established for variegated dudleya within Lusardi Creek Preserve by ICF in 2016, and one permanent monitoring plot was established for willowy monardella within Sycamore Canyon/Goodan Ranch Preserve by ICF in 2015.

Establishment and monitoring of sensitive plant occurrence status within the permanent monitoring plots followed the MSP Rare Plant Monitoring Protocol which 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, an abbreviation of the species name, and the numerical order the plot was established within the Preserve. For example, BOCLCH01 indicates that this plot is in Boulder Oaks Preserve and was the first plot established for *Clinopodium chandleri* (Clch) 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 (Appendix B1). 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.

Data sheets are presented in Appendix C. Additional data not specified in the SDMMP but included in the TMP was also collected for willow monardella as follows:

### **Willow Monardella**

- Willow monardella – the height, width, and length in meters of each willow monardella patch was recorded within the monitoring plot. These two measurements were multiplied together and divided by the value 0.785 meters to give an estimated number of plants (Rebman and Dossey 2006). The estimated number of plants was rounded to the nearest whole number and then classified as a seedling, juvenile, mature or adult.
  - Seedling: lacks multiple stems and is less than 4 inches tall.
  - Juvenile: lacks multiple stems and is more than 4 inches tall.
  - Mature: more than 4 inches tall and has less than 20 stems.
  - Adult: is more than 4 inches tall and has more than 20 stems.

## **3.2 Tricolored Blackbird**

A survey for suitable tricolored blackbird nesting habitat was conducted in Ramona Grasslands Preserve. The habitat assessment and mapping focused on Santa Maria Creek and the on-site stock pond within Ramona Grasslands Preserve. Wildlife biologists Brett Bowen and Ryan Layden

conducted a habitat condition assessment and threats assessment within suitable habitat on May 3, 2018. Biologists revisited areas assessed in 2017 to inspect for any changes in habitat condition.

Suitable nesting habitat was mapped in the field using an aerial figure of Ramona Grasslands Preserve. Areas identified as suitable nesting habitat were then incorporated into a GIS shapefile (Figure 6).

Wildlife biologists Brett Bowen and Ryan Layden conducted focused surveys of potentially suitable riparian habitat within the Preserve on May 3, 2018. Biologists documented observations of tricolored blackbirds by collecting GPS coordinates. These observations included estimations of the number of individuals and documentation of any signs of nesting. Biologists collected information on location and number of individuals and any incidental sightings of tricolored blackbird outside of breeding habitat (e.g. foraging flocks in grasslands).

### 3.3 Arroyo Toad

USGS established monitoring reaches for arroyo toad along Santa Maria Creek in Ramona Grasslands Preserve. Using coordinates obtained from USGS, the monitoring reaches along Santa Maria Creek were located and surveyed on May 2, 2018 by ICF biologists Manna Warburton, Brett Bowen, and Ryan Layden, and May 3, 2018 by Mr. Bowen and Mr. Layden. 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 (Figure 7). Locations of perennial invasive vegetation, including tamarisk or giant reed, was mapped. Representative photographs of the habitat condition were taken (Appendix B2). Observations of aquatic wildlife were recorded.

Adaptive management recommendations 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.

### 3.4 Burrowing Owl

Seven areas of Ramona Grasslands Preserve were surveyed for presence of nesting burrowing owl in spring and summer 2018, with a focus on the presence or abundance of California ground squirrels (*Otospermophilus beecheyi*) and suitable burrow complexes (Figure 8).

The Ramona grasslands area of Ramona consists of thousands of acres of open, gently rolling grasslands. The portions of the Ramona grasslands within the DPR Ramona Grasslands Preserve includes several areas around the periphery of the Ramona airport and Ramona Municipal Water District (RMWD) lands. This includes 1) the large grassland south/southwest of Ramona airport and east of Rangeland Road, 2) grasslands west of Rangeland Road and immediately north of Highland Valley Road, 3) a small section of grasslands northwest of RMWD lands on the west side of the Preserve, 4) approximately 160 acres north of the northern RMWD pond, and southwest of the Highland Hills residential development, and 5) the grassland immediately north of Ramona airport.

Based upon results from a burrowing owl habitat assessments and surveys conducted in 2016 (ICF 2017), seven areas were determined to be areas with the highest potential for burrowing owl suitability (Figure 9). These areas represent approximately 200-acres of the highest quality potential breeding habitat for burrowing owl at Ramona Grasslands Preserve. The survey areas were chosen based on the presence of California ground squirrels, their burrows, or rock outcrops that provide natural cover sites for ground squirrels and burrowing owls. Burrowing owls in southern California typically use small mammal burrows for nesting sites and therefore their breeding distribution is strongly correlated with the presence and distribution of ground squirrels.

The TMP describes that presence/absence surveys for burrowing owls will be conducted within the highest quality suitable habitat for five years, following the methodology described in Appendix D of the CDFG Staff Report on Burrowing Owl Mitigation (CDFG 2012) as much as feasible. The 2018 burrowing owl breeding season surveys methods were based on the recommended guidelines provided in the Staff Report on Burrowing Owl Mitigation (CDFG 2012). Four complete surveys of the survey area were conducted during the height of the burrowing owl breeding season (defined in the 2012 CDFG Staff Report as April 15 to July 15), were completed at least 3 weeks apart, and at least one visit was conducted after June 15. Four rounds of surveys were conducted between May 8 and July 12, 2018 (Table 2). ICF biologists Ryan Layden, Brett Bowen, Phil Richards, Ford Bendell, Nicole Salas, Nick Janssen, and Mike Ireland, as well as volunteers Peter Thomas and Millie Basden, walked transects through the seven designated survey polygons at approximately 100 feet (30m) apart. Surveys were conducted in morning hours when burrowing owls are most active and included frequent stops to look for individuals and listen for vocalizations (scolds). Surveys were not conducted during inclement weather such as extreme hot or cold temperatures, fog, high winds, or rain. Representative site photos are presented in Appendix B3.

**Table 2: Burrowing Owl Survey Dates and Weather Conditions**

| Survey Date | Survey Type and Number | Start–End Time | Temperature (Start–Stop, °F) | Wind Speed (mph) | % Cloud Cover (Start–Stop) | Surveyors   |
|-------------|------------------------|----------------|------------------------------|------------------|----------------------------|---|
| 5/8/2018    | BUOW 1a                | 0600-1130      | 51-75                        | 0-10             | 100-0                      | R. Layden<br>N. Salas   |
| 5/9/2018    | BUOW 1b                | 0600-1045      | 52-75                        | 3-6              | 100-0                      | R. Layden<br>M. Ireland<br>N. Janssen                             |
| 5/30/2018   | BUOW 2a                | 0545-1115      | 57-62                        | 0-5              | 100-100                    | R. Layden<br>F. Bendell<br>B. Bowen                               |
| 5/31/2018   | BUOW 2b                | 0600-1000      | 57-63                        | 0-5              | 100-100                    | R. Layden<br>F. Bendell<br>B. Bowen<br>(M. Basden)<br>(P. Thomas) |
| 6/20/2018   | BUOW 3a                | 0530-1000      | 52-67                        | 0-5              | 0-0                        | R. Layden<br>F. Bendell<br>B. Bowen                               |

| Survey Date | Survey Type and Number | Start–End Time | Temperature (Start–Stop, °F) | Wind Speed (mph) | % Cloud Cover (Start–Stop) | Surveyors                            |
|-------------|------------------------|----------------|------------------------------|------------------|----------------------------|--------------------------------------|
| 6/21/2018   | BUOW 3b                | 0545-0900      | 55-64                        | 0-3              | 100-0                      | R. Layden<br>F. Bendell<br>B. Bowen  |
| 7/11/2018   | BUOW 4a                | 0530-1045      | 65-90                        | 3-10             | 10-0                       | R. Layden<br>N. Salas<br>P. Richards |
| 7/12/2018   | BUOW 4b                | 0600-1000      | 67-82                        | 3-7              | 30-30                      | R. Layden<br>N. Salas<br>P. Richards |

Names in (parentheses) were volunteers being trained

### 3.5 Stephens' Kangaroo Rat

The following methodology represents the implementation of DPR's TMP specifically for Stephens' kangaroo rat (SKR) monitoring at Ramona Grasslands Preserve. This methodology resembles that used by Cheryl Brehme in her SKR monitoring at Camp Pendleton (Brehme et al. 2016) and is used as a template for the monitoring plan for the Preserve.

- TMP selected SKR monitoring areas, included Grazing Management Units 2A, 2B, and 3A and the 3-acre SKR Management Area 3; 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 contained therein. As depicted in Figure 11a, SKR Management Area 1 is located at 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 previously identified SKR Management Area. However, Management Unit 3A is currently being managed for SKR through grazing, so the entire management unit was included in the monitoring effort.
- Within the selected monitoring areas, a 50 x 50-meter grid pattern was overlaid onto a georeferenced aerial photograph. A total of 25 of these sample plots were randomly selected with this grid overlay. In addition, 3 sample plots were selected within SKR Management Area 3. Figure 11a depicts the current SKR monitoring areas, the 50 x 50-meter grid overlay, and the randomly selected 28 sample plots (established during the 2016 SKR monitoring effort (ICF 2017) and used again for the winter 2017-2018 SKR Monitoring effort.
- On December 21, 2017 and January 4, 2018, ICF biologists Phil Richards (USFWS permit # TE-095896) and Nicole Salas navigated to all 28 sample plots using Avenza Maps 3.0.3 app on an iPhone. Upon arrival at each sample plot, all four corners of the plot were flagged, and a photograph was taken from the southeast corner facing northwest (Appendix D). The sample plot was then systematically traversed on foot in search of active kangaroo rat sign (e.g., burrows, tracks, dust bathing sites, scat, and runways). The 2017/2018 monitoring effort included a habitat assessment of the 28 plots established during the 2016 SKR monitoring effort

(ICF 2017) per the TMP. Per the TMP confirmation trapping is scheduled to occur every 10 years.

For each sample plot, a habitat assessment form was populated to document habitat variables and related information. Habitat assessment forms were modeled after the field forms used by Brehme et al. 2016 (adapted from a field form in Montgomery et al. 2008), which 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; potential for SKR, and comments. Completed habitat assessment forms are included in the SKR monitoring report which is included as Appendix D.

## 3.6 Vernal Pool/Alkali Playa

Per the TMP, two qualitative monitoring surveys of vernal pools/alkali playas at Ramona Grasslands Preserve were conducted in 2018. The winter survey was conducted on February 23, 2018 by Lance Woolley and Nicole Salas, and the spring survey was conducted on May 2, 2018 by Nicole Salas and Linnea Spears-Lebrun. Qualitative monitoring was 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 Figure 12.

Qualitative vernal pool monitoring surveys include inspections for water quality, edge effects, invasive non-native plant species, topographic disturbance, vernal pool indicator plant species, and target sensitive plant and animal species.

Permanent photo-points were established at each pool in 2016 (ICF 2017). Photographs were taken from these photo-points during the February 2018 survey and are presented in Appendix B4.

## 3.7 Cactus Wren

### 3.7.1 Avian Point Counts

Five avian point count stations were established during baseline inventory surveys in 2008 (ICF 2008) as part of a biological resources inventory conducted on the Preserve (Figure 13). Two cactus wren habitat restoration sites were installed in the central portion of Lakeside Linkage Preserve in 2011 (Figure 14). Two additional avian point count stations (R1 and R2) were placed specifically to capture potential cactus wren activity in and around the two restoration sites (Figure 13). The avian point count locations provide a means to monitor for the status of cactus wren within Lakeside Linkage Preserve. For 2018, the point count location #3 was removed because of pseudo-replication and overlap with surrounding point count locations R1 and 4.

A total of four avian point count surveys were conducted during 2018 at the six point count stations, on March 24, April 07, May 17, and June 14, 2018 (Table 2). The surveys were conducted by ICF senior biologist Will Kohn. Mr. Kohn trained volunteer Markus Spiegelberg during the May 17, 2018 survey.

Avian point count surveys follow the methodology in Ralph et al. (1995). Each point count survey was 10 minutes in duration at each location. Surveyors recorded each species observed or detected

(heard), and well as the total number of individuals of that species. Locations of MSCP covered or other sensitive species are recorded by means of a GPS when they were encountered. Survey data are recorded on a paper form and then transcribed into an Excel spreadsheet for inclusion in SanBIOS. SanBIOS observation data will be provided in a spreadsheet to DPR.

Immediately after point count surveys, cactus restoration areas and other large cactus on Lakeside Linkage Preserve were inspected for presence of cactus wren nests.

### **3.7.2 Habitat Evaluation and Threats Assessment**

ICF biologist Will Kohn conducted the cactus wren habitat evaluation and threats assessment on July 13, 2018. Photo-monitoring was conducted at photo-points established within each restoration area in 2011 (Figure 13). Photographs were taken from the same vantage points as previous photos taken during the five years of quantitative restoration monitoring to document the progress of the two restoration sites over time. Photographs are included in Appendix B5.

As SDMMP and other regional entities have not developed a species-specific threats assessment for cactus wren, this threats assessment used Section VI of the Rare Plant Habitat and Threats Assessment Data Form [SDMMP 2018]. The threats assessment also included an evaluation of the vegetation as it pertains to the needs of cactus wren (e.g., native or non-native vegetation overtopping cactus, low cactus density, etc.).

## Chapter 4

# Results and Discussion

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### 4.1 Rare Plant Monitoring

Monitoring was conducted on four rare plant monitoring plots in 2018 (Appendix A: Figures 3-5). The two monitoring plots for San Miguel savory that were established in Boulder Oaks Preserve in 2016 were monitored in 2018. The one monitoring plot for variegated dudleya that was established in Lusardi Creek Preserve in 2016 was monitored in 2018. The one willowy monardella monitoring plot established within the Sycamore Canyon/Goodan Ranch Preserve in 2015 was monitored in 2018. Descriptions of the monitoring plots and monitoring results and recommendations are provided on the following page in Table 3. Representative photographs of the monitored plants are provided in Appendix B.

**Table 3. MSP 2018 Rare Plant Monitoring Summary Results**

| Species   | Preserve                         | Plot #    | Center Point Coordinates | Population    |         | Native Plant Cover |         | Non-native Plant Cover |         | Management Recommendations  |  |
|---|----------------------------------|-----------|--------------------------|---------------|---------|--------------------|---------|------------------------|---------|---|--|
|   |                                  |           |                          | # Individuals | % Cover | # Species          | % Cover | # Species              | % Cover |   |  |
| San Miguel Savory<br>( <i>Clinopodium chandleri</i> ) | Boulder Oaks                     | BOCLCH01  | E 505067                 | 34            | 1       | 16                 | 58      | 2                      | 1       | No recommendation.  |  |
|   |                                  |           | N 3646951                |               |         |                    |         |                        |         |   |  |
|   |                                  | BOCLCH02  | E 505422                 | 41            | 1       | 22                 | 53      | 5                      | 1       |   | Treat any perennial veldt grass ( <i>Ehrharta calycina</i> ) in vicinity |
|   |                                  |           | N 3647075                |               |         |                    |         |                        |         |   |  |
| Variegated dudleya<br>( <i>Dudleya variegata</i> )    | Lusardi Creek                    | LCDUVA01  | E 484873                 | 140           | 1       | 13                 | 21      | 3                      | 10      | Continue weed management on purple false brome ( <i>Brachypodium distachyon</i> ) |  |
|   |                                  |           | N 3652555                |               |         |                    |         |                        |         |   |  |
| Willow monardella<br>( <i>Monardella viminea</i> )    | Sycamore Canyon/<br>Goodan Ranch | SYC201501 | E 502411                 | 63            | 17      | 11                 | 41      | 8                      | 15      |   | Weed management to reduce cover below 10%.                               |
|   |                                  |           | N 3642217                |               |         |                    |         |                        |         |   |  |

### 4.1.1 San Miguel Savory

Two San Miguel savory plots were monitored at Boulder Oaks Preserve in 2018. The total known population of San Miguel savory within Boulder Oaks Preserve is approximately 145 individuals; of these seventy-five individuals were monitored in two plots. (Figure 3).

#### 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, 34 San Miguel savory plants were detected; over half of these were flowering with the remainder in vegetative state. Total vegetative cover in the plot was 59 percent, with 58 percent native cover and 1 percent non-native cover. Ramona-lilac (*Ceanothus tomentosus*) and manzanita (*Arctostaphylos glandulosa*) accounted for the majority of cover of plants. Non-native cover was negligible, and no maintenance activities are needed at this location. 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, 41 San Miguel savory plants were detected with the majority in fruit and the remainder in vegetative state. Total vegetative cover in the plot was 53 percent, with 52 percent native cover and 1 percent non-native cover. Chamise (*Adenostoma fasciculatum*) accounted for the most cover of all plants. Additional sensitive plant species occurring within the plot include southern mountain misery. San Miguel savory was occurring within the understory of southern mountain misery which was in the understory of chamise. Of the total vegetative in the plot (53%) 1 percent of invasive non-native cover included the bunchgrass perennial veldt grass (*Ehrharta calycina*).

#### Adaptive Management Recommendations

Invasive non-native plant cover was extremely low in both of the monitoring plots. No maintenance activities are currently required for this species.

Perennial veldt grass is an invasive non-native 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. If perennial veldt grass encroaches into San Miguel savory populations, perennial veldt grass should be treated with direct application of herbicide. Mowing, grazing, and weed-whipping are ineffective control strategies for perennial veldt grass.

San Miguel savory has been observed growing in the understory of dense chaparral on the steep, inaccessible terrain of the Boulder Oaks Preserve. This small subshrub is difficult to detect even when in bloom because of the density of the chaparral. This species may be more abundant on the Preserve than is currently documented. Additional focused rare plant surveys conducted in appropriate habitat during the blooming period would help to determine the current extent of this species on Boulder Oaks Preserve. The blooming period has been recorded as being March to July; reference populations should be visited and blooming confirmed before surveys are conducted.

## 4.1.2 Variegated Dudleya

One variegated dudleya plots was monitored in 2018 at Lusardi Creek Preserve. The known population of variegated dudleya within Lusardi Creek Preserve was observed to be approximately 199 individuals in 2018.

### Monitoring Plot Number LCDUVA01

Monitoring plot LCDUVA01 was established in the central portion of the variegated dudleya population (Figure 4). Center point coordinates of the plot are E 484873, N 365255. Within the plot, 140 variegated dudleya plants were detected all in flower. Total vegetative cover in the plot was 31 percent, with 20 percent native cover and 11 percent non-native cover during the May 10, 2018 monitoring visit. Additional sensitive plant species occurring within the plot include coast barrel cactus (*Ferocactus viridescens*) and western dichondra (*Dichondra occidentalis*).

### Adaptive Management Recommendations

Maintenance was conducted by D&D Wildlife Habitat Restoration for this population in 2018 and invasive non-native plant cover was maintained at or below 10 percent cover. Continued control of purple false brome is recommended around the variegated dudleya populations at Lusardi Creek Preserve. Tocalote (*Centaurea melitensis*) is also prevalent in the clay soils around the variegated dudleya and should continue to be managed and removed.

## 4.1.3 Willowy Monardella

The known population of willowy monardella within Sycamore Canyon/Goodan Ranch Preserve was approximately 283 individuals in 2018.

### Monitoring Plot Number SYC201501

Monitoring plot SYC201501 has been established in the central portion of the willowy monardella population (Figure 5). Center point coordinates of the plot are E 502411, N 3642217. Within the plot, 63 willowy monardella plants were detected with almost all in fruiting stage. Total vegetative cover in the plot was 61 percent, with 41 percent native cover and 20 percent invasive non-native cover. Willowy monardella accounted for second highest cover of all plants.

Overall, the southeastern population of willowy monardella appears to be doing well, with minor weed management required.

### Adaptive Management Recommendations

Following recommendations in the TMP, invasive non-native plants should be hand-weeded in the immediate vicinity of willowy monardella plants, with the goal of keeping weeds below 10 percent cover. In the willowy monardella management area, invasive non-native plants should be managed by mechanical or herbicide means to reduce invasive non-native plant cover to keep invasive non-native plants in the vicinity below 20 percent cover.

## 4.2 Tricolored Blackbird

During 2018 monitoring surveys, Ramona Grasslands Preserve was assessed for presence of tricolored blackbird and suitable nesting habitat, with a focus on Santa Maria Creek. Two large ponds are present on RMWD land, which is encircled by the Ramona Grasslands Preserve. A flock of 200-300 tricolored blackbirds was observed near the northern RMWD pond in 2017 and the RMWD ponds have been known to support breeding colonies in the past (Unitt 2004). The flock included adult males and females as well as fledglings. The birds were observed foraging within Ramona Grasslands Preserve just north of the pond and flying between the pond and the Preserve. No nesting or foraging tricolored blackbirds were observed in 2018 during focused surveys, nor incidentally during other surveys including burrowing owl surveys.

Riparian habitat on Ramona Grasslands Preserve could potentially serve as “overflow” nesting area for a tricolored blackbird colony nesting on RMWD lands. However, there is no marsh habitat on Ramona Grasslands Preserve of sufficient size and quality to support a primary colony. Tricolored blackbird nesting within riparian areas on Ramona Grasslands Preserve would be unlikely. Marginally suitable tricolored blackbird nesting habitat occurs in riparian thickets along Santa Maria Creek from Rangeland Road northwest approximately 5,000 feet (Figure 6).

A stock pond located within the southwest portion of Ramona Grasslands Preserve (Figure 6) was assessed in 2017 and reviewed again in 2018 to see if it could be enhanced to provide suitable tricolored blackbird nesting habitat. The stock pond had small patches of bulrush (*Schoenoplectus* sp.) along the western edge of the pond. The pond is approximately 0.7 acre in surface area during maximum inundation. Even if this pond were entirely filled with suitable vegetation including bulrush, cattails (*Typha* spp.), blackberries (*Rubus* spp.), and stinging nettle (*Urtica dioica*) the size of the habitat would still be well below 2 acres, which is currently considered to be the minimum nesting habitat patch size (Dr. Robert Meese, Pers comm.). A pond of this small size would not have the interior space required by breeding females. Additionally, from a management position, the entire pond cannot be completely occupied by emergent wetland vegetation, as this pond serves as a watering location for cows grazing on Ramona Grasslands Preserve and provides drinking opportunities for bats and other sensitive wildlife species. The stock pond is not large enough to be enhanced into suitable nesting habitat for tricolored blackbird colonies.

Outside of the breeding season, tricolored blackbird readily forages in grasslands, as well as artificial habitats including dairies, dumps, and parking lots. Ramona Grasslands Preserve provides large areas of suitable habitat for foraging for insect prey including grasshoppers.

### Adaptive Management Recommendations

The management goal of the TMP for tricolored blackbirds is to “Maintain suitable foraging and nesting habitat for tricolored blackbirds on Ramona Grasslands Preserve”. Habitat assessments conducted for tricolored blackbird in 2017 and 2018 have determined that Ramona Grasslands Preserve does not include areas with reasonable potential to serve as nesting habitat for tricolored blackbird. No wetland areas exist on Ramona Grasslands Preserve which are large enough to support breeding colonies of tricolored blackbird. Tricolored blackbirds typically nest in colonies in large cattail and bulrush marshes, often protected from predators by blackberries or thistles (Unitt 2004). Riparian areas on Ramona Grasslands Preserve could potentially serve as “overflow” nesting areas, but do not provide enough habitat density or expanse to serve as primary nesting area.

Ramona Grasslands Preserve provides large tracks of undeveloped grasslands which can and do serve as wintering and breeding season foraging habitat for tricolored blackbird. Tricolored blackbirds are known to use grasslands, irrigated pasture, grain crops, and alfalfa as preferred foraging locations (Shuford and Gardali eds. 2008). Shuford and Gardali (2008) report that vineyards and other row crops do not provide suitable foraging habitat. Development of this sort of agriculture around Ramona Grasslands Preserve, such as the vineyard installed south of Ramona Grasslands Preserve, will decrease the regional suitability of habitat for this species. Preservation of the Ramona Grasslands Preserve and other undeveloped grasslands and pasture help support foraging opportunities for populations of tricolored blackbirds. Current management activities within Ramona Grasslands Preserve meets the TMP goal of maintaining suitable foraging habitat for tricolored blackbirds.

### 4.3 Arroyo Toad

The Santa Maria Creek channel and surrounding upland habitat on Ramona Grasslands Preserve appears to be stable and provides adequate cover for all life stages of arroyo toad. There are unvegetated sandy banks providing appropriate foraging area and burrowing refugia for adult arroyo toads. Rainfall during the 2017-2018 wet season resulted in a below-average rainfall year of 5.94 inches (NOAA 2018). At the time of the site visits (May 2<sup>nd</sup> and May 3<sup>rd</sup>, 2018), portions of the creek were flowing or ponded and occupied by arroyo toad tadpoles. Recruitment looked strong as sections of the creek which were occupied contained good numbers of tadpoles relative to the size of the available wetted habitat. Arroyo toad tadpoles were observed in the wetted creek bottom between reaches 24-25, 27-28, and within all reaches 29-34, all of which were all low gradient, intermittent or low flow sections of Santa Maria Creek (Figure 8).

Arroyo toads appeared to be absent from upstream pools further south where the only available surface water was confined to a number of large deep pools which contained bullfrogs (*Rana catesbiana*). Surface water was not observed upstream (east) in Santa Maria Creek from Reach 42-53. Arroyo toads were also absent from downstream pools further north. The creek channel enters a rocky gorge on the northwest side of the Preserve and the habitat changed from braided sandy creek to plunge pools, which are less suitable as habitat (Appendix B2).

Flowing sections of the stream contained Baja California treefrog tadpoles (*Pseudacris hypochondriaca*), and California treefrogs (*Pseudacris cadaverina*). The creek also contained an abundant and diverse macroinvertebrate assemblage, including damselflies and dragonflies (Order: Odonata), mayflies (Order: Ephemeroptera), midges (Order: Diptera), and freshwater snails (Order: Basommatophora), and invasive red swamp crayfish (*Procambarus clarkii*). A summary of aquatic species observations is provided in Table 4 and displayed in Appendix A: Figure 7.

**Table 4. Aquatic Species Observations within Santa Maria Creek Arroyo Toad Monitoring Reaches**

| Scientific Name                | Common Name              | Reach Observed      |
|--------------------------------|--------------------------|---------------------|
| * <i>Ameiurus sp.</i>          | Bullhead catfish         | 40-41               |
| <i>Anaxyrus californicus</i> † | Arroyo toad              | 24-34               |
| * <i>Gambusia affinis</i>      | Mosquitofish             | Throughout          |
| * <i>Procambarus clarkii</i>   | Red swamp crayfish       | 22-23, 29-30, 35-36 |
| * <i>Rana catesbiana</i>       | Bullfrog                 | 22-23, 29-30, 35-36 |
| <i>Thamnophis hammondi</i> †   | Two-striped garter snake | 40-41               |

\* Non-native species

† Sensitive species

## Threats

### Invasive Animals

Bullfrogs, mosquitofish (*Gambusia affinis*), red swamp crayfish, and bullhead catfish (*Ameiurus sp.*) were observed in Santa Maria Creek during the spring 2018 surveys (Table 4). The majority of bullfrog observations and the single bullhead catfish observation occurred between reaches 35 and 42, in areas where arroyo toads were not observed (Figures 7 and 8). Most bullfrog occurrences were in isolated, large, deep ponded areas, including the stock pond approximately 0.4 miles west of Santa Maria Creek. Mosquitofish fish appeared to be the most widespread invasive species observed, as it was found throughout Santa Maria Creek in most areas where water was found, which included reaches where arroyo toad occurred. The majority of crayfish observations were limited to molted exoskeletons, dead individuals, and/or burrows, however, a small number of live crayfish were observed in ponded areas of the creek. Evidence of crayfish appeared to be relatively widespread throughout the creek, including within reaches occupied by arroyo toad, density did not seem very high as compared to numbers observed from working in other creeks in San Diego County. Invasive wildlife species may have negative impacts on arroyo toad through competition or predation, however because both arroyo toad and invasive animal species were found occupying the same reaches, they do not appear to be excluding arroyo toad from the Ramona Grasslands Preserve.

### Invasive Vegetation

Field teams made general observations and mapped invasive non-native plant species such as saltcedar (*Tamarix spp.*) and giant reed (*Arundo donax*) while performing the arroyo toad surveys. Saltcedar was observed in very small patches and as individual plants throughout Santa Maria Creek (Figure 7). Saltcedar has potential to negatively impact habitat values for arroyo toad by forming dense monotypic stands, precluding arroyo toad from accessing sandy banks and potentially reducing surface water availability. The majority of salt cedar observed were short (1-2 m) individual occurrences interspersed through native riparian vegetation. Small areas (approximately 20 ft. x 20 ft.) of giant reed were also observed in the canyon area to the far northwestern portion in Reaches 22-24 and 25-27. Both saltcedar and giant reed distribution and density appears to be similar to 2016 survey observations. At present, saltcedar and giant reed do not appear to be negatively impacting habitat values in the survey area. Non-native grasses were observed throughout the survey area and in Ramona Grasslands 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 creek habitat for foraging and burrowing refugia.

### **Cattle**

Cattle grazing is allowed in Santa Maria Creek outside of the arroyo toad breeding season (defined as March 15 – July 31) to reduce levels of vegetation within the creek. Two cows were incidentally observed walking within and along the banks of Santa Maria Creek in areas occupied by arroyo toad tadpoles during the survey on May 2<sup>nd</sup>. Disturbances from cattle can include trampling and erosion of creekbanks, sedimentation of pools, and overgrazing of vegetation. Cattle may directly impact arroyo toad through trampling or disturbance of aestivation habitat. However, cattle may offset these impacts by increasing the availability of loose sandy soils surrounding the creek channel through grazing and soil disturbance.

### **Azolla**

Field teams observed dense mats of azolla (*Azolla* sp.), also called mosquito fern, in pooled and ponded sections of Santa Maria Creek which were occupied by arroyo toad. Azolla forms a dense carpet like cover approximately 1 centimeter thick on the surface of the creek. At low densities, azolla likely has a benefit for toad tadpoles by providing cover from terrestrial predators, and reducing sunlight penetration, keeping waters cooler. At higher densities, azolla may reduce sunlight penetration to a point which inhibits benthic algal growth, a food source for tadpoles, and may also reduce dissolved oxygen levels in the evening through plant respiration. Additionally, higher densities of azolla may reduce available aquatic habitat as water levels reduce, which may entrap tadpoles preventing mobility to open water habitat. While this species is likely the native azolla (*Azolla mexicana*), it is conceivable that the presence of this species may have a positive and/or negative effect on toad based on the density of the azolla and the available open water habitat for toads and other aquatic species.

## **Adaptive Management Recommendations**

Santa Maria Creek and its surrounding upland habitat supports adult arroyo toads and adequate instream habitat and conditions for annual arroyo toad reproduction; however, threats identified in above may diminish the success of the species over time without application of effective management strategies.

Targeted invasive animal species removal for bullfrogs may yield a positive effect for all native aquatic species in Ramona Grasslands Preserve, including arroyo toad. Bullfrogs are ravenous predators, and based on 2018 surveys, appear to be primarily isolated in the larger ponded areas within Ramona Grasslands Preserve. Targeted removal of breeding size adult bullfrogs may reduce the bullfrog abundance within Ramona Grasslands Preserve over time. This activity could be performed by small field teams experienced in locating and eradicating bullfrogs. Targeted removal of bullfrogs will also have little to no negative impact on native species as field teams are selecting individual frogs for removal, versus sweeping habitat for tadpoles, or employing collection methods like netting or electrofishing which will result in incidental take of non-target species or habitat disturbance. Removal of saltcedar and crayfish may also be performed as an additional activity during bullfrog eradication, or other management activities planned in Santa Maria Creek. Saltcedar and crayfish numbers do not appear high enough to warrant a dedicated removal effort at the current time.

An additional strategy for bullfrog eradication could include temporarily dewatering of infested ponded areas or allowing detention basins to dry, outside of the arroyo toad breeding season. Bullfrog tadpoles require over a year to fully develop, so any drying or dewatering in the summer or fall will remove the existing bullfrog tadpole population without killing native tadpoles. Dewatering may help manage bullfrogs by reducing available habitat for adults and tadpoles which rely on the perennial water for foraging and successful metamorphosis. This method will have ancillary benefits of removing invasive fish species which also utilize these ponded areas.

Azolla removal may provide a benefit to arroyo toad, however further evaluation of azolla density and distribution within Santa Maria Creek would be needed before proposing removal in the creek. One strategy is to document the presence and density of azolla at pre-determined stations throughout the season. This would require mapping the wetted area of the study location and estimating percent cover using a photo station during each trip to evaluate the natural drying of the creek and the relative density of azolla over time. General aquatic wildlife observation data should be collected while monitoring azolla to help determine its effect on creek ecology. If this study determines that azolla may have a negative impact on toads, manual removal (raking) of azolla prior to breeding season and continued monitoring could be employed as a management strategy to further evaluate if azolla removal is feasible and provides a benefit to arroyo toad.

Ongoing rangeland management, including keeping cattle outside of Santa Maria Creek and the riparian area during arroyo toad breeding season, appears to be an effective measure for protecting arroyo toad and the quality of the creek.

## 4.4 Burrowing Owl

No burrowing owls were observed during the 2018 focused surveys. Grasses within Ramona Grasslands Preserve were either very short (<6") or nonexistent, providing conditions suitable for high detectability for burrows and sign (Figure 9). Survey Area 1 had very few ground squirrel observations or ground squirrel complexes found in the open. Survey Area 1 has the highest concentration of large rock outcrops, but ground squirrel density was very low with few observations or burrows detected. Survey Area 4 also had very few burrows found in the open and only a small amount located within rock features. Survey Areas 2, 3, and 5 contained a greater amount of active squirrel complexes, associated with outcrops and in open grasslands. Survey Area 5 had many ground squirrel burrows in open grasslands but the site was only fully transected during the fourth survey date (Survey 4b) due to the presence of grazing bulls in this portion of the Preserve. Survey Area 5 was partially surveyed by transect and partially surveyed by binocular during surveys 1b, 2b, and 3b. Survey Areas 6 and 7 contained the most active ground squirrel populations. Many active burrows were observed within rock outcrops and in the open.

### Adaptive Management Recommendations

Ramona Grasslands Preserve continues to provide suitable foraging and nesting habitat for burrowing owl. No adaptive management actions are determined to be necessary to improve or expand suitable habitat for burrowing owl at Ramona Grasslands Preserve. As detailed in the TMP, focused surveys for burrowing owl should be continued annually in 2019, 2020, and 2021 to monitor the Preserve for the presence and status of burrowing owls during the breeding season.

Surveys conducted in 2018 gave additional information regarding the distribution of ground squirrels at Ramona Grasslands Preserve. In order to maximize the potential for burrowing owl detection within Ramona Grasslands Preserve for future surveys, adjustments to the survey areas are recommended (Figure 10). Survey Areas 3 and 6 (revised Survey Areas 4 and 8) should be expanded to include additional areas with high ground squirrel activity. Two new areas should also be included in future surveys due to suitable burrow habitat and winter 2017-2018 reports of burrowing owls in the eBird database (eBird 2018). Survey Area 2 would be immediately north of Highland Valley Road (near survey area 3). Survey Area 7 is located west of Survey Area 8, near the eucalyptus trees with the bald eagle nest. Although Survey Area 1 had the lowest density of ground squirrels, the area contains highly suitable habitat and surveys should be limited to the rock outcrops themselves, as there were not any burrows found in the open grasslands.

## 4.5 Stephens' Kangaroo Rat

Of the 28 sample plots receiving an SKR habitat assessment during the winter 2017 – 2018 season, 14 were deemed occupied and 14 were considered not occupied with SKR based solely on the presence or absence of likely SKR sign (see Appendix C). Plots were also assigned a general SKR potential rating based on the quality of potentially suitable SKR habitat and the density of apparent kangaroo rat sign. Eleven were characterized as having a high potential for SKR, 5 were characterized as having a moderate potential, 7 were assigned a low potential rating, and 5 were characterized as having no potential (see Appendix C).

In general, sample plot conditions appeared similar in the winter of 2017-2018 season to the conditions reported in 2016. Eighteen plots showed no change in the rating of SKR potential. Of the 10 plots that did show a change in the rating, 3 had an improved rating and 7 had a declined rating. Rating improvements are mainly based on an increase in observed potential SKR sign. Rating declines are based on the lack of potential SKR sign and/or a reduction in the overall quality of the SKR habitat within the sample plot (mainly due to an increase in biomass).

### 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 Ramona Grasslands 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 2017 monitoring. Much of the obstructions consisted of a thick litter layer comprised mainly of disarticulated filaree (*Erodium* spp.) 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. 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 2017 to determine if the RDM values from the grazing management areas were being met. If they

were not being met in 2017, the grazing intensity (number of cattle or time in pasture) should be increased for 2018. 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.

## 4.6 Vernal Pool/Alkali Playa

Rainfall was below average in 2018. Ramona airport reported approximately 5.94 inches of rain during the hydrologic period of July 1, 2017 to June 30, 2018 (NOAA 2018). The majority of that precipitation fell in one storm event, during January 9 to 10, 2018, with 3.27 inches of rainfall measured. Two other moderate storms, with over 0.5 inches of rainfall, occurred on February 27 and March 11, 2018. Winter monitoring was conducted on February 23, 2018, a day with light rain of 0.05 inches.

Qualitative monitoring was conducted in the 20 monitored pools during 2018. No ponding was observed at any pool on February 23, 2018, a period when most pools would normally be inundated. Spring surveys were conducted during a weekend of light rain on May 2, 2018.

Five plants that are highly restricted to and indicative of vernal pools (i.e. vernal pool indicator plant species [USACE 1997]) were observed in the monitoring basins. Woolly marbles (*Psilocarphus brevissimus*), a small, fuzzy, annual aster, were observed in pools c20, c3e, Cagney swale (CS), e48, e53, e56, e59, e61, e62, e63, and f7. Flowering quill-wort (*Triglochin scilloides*), a perennial,

herbaceous vernal pool indicator plant species, was observed in Pool e53 (Figure 12). Hairy clover fern (*Marselia vestita*), a floating, aquatic, leptosporangiate fern and vernal pool indicator, was observed in the pools c20 and ev3. Water pygmyweed (*Crassula aquatica*), a diminutive stonecrop, was observed in pools c20 and c3e. Prairie plantain (*Plantago elongata*) was observed in pool e61 and e62. All of these species were observed in low numbers and small extents within all basins, except c3e. C3e had over 20 percent cover of woolly marbles.

Additional native wetlands that often occur in vernal pools were observed. Spike rush (*Eleocharis* sp.), an herbaceous, perennial, aquatic plant, was observed in every pool. Pale toad rush (*Juncus bufonius*), a diminutive rush associated with the margins of pools, was observed in CS. Saltgrass (*Distichlis spicata*) was observed in 17 of the basins.

Rare annual tarplants were found in the 14 of the monitored pools in 2018. Southern tarplant (*Centromadia parryi* ssp. *australis*), a California Rare Plant Rank 1B.1 species, was observed in nine pools: c20, c3e, CS, e56, e58, e59, e62, F7, and RAAP 17. Southern tarplant favors mesic grasslands and freshwater marsh fringes, communities rare throughout its' limited range. Southern tarplant is locally common in the alkali flats areas on the flat floodplain of Ramona Grasslands Preserve, upstream from Rangeland Road. In San Diego County, this species is essentially restricted to Ramona, San Pasqual Valley, and San Dieguito Lagoon. Ramona Grasslands Preserve represents a significant population of this species. Graceful tarplant (*Holocarpha virgata*), a California Rare Plant Rank 4.2, was observed in Pools e63, e82, F13, and F14. Graceful tarplant has a range restricted to Southern California and Northern Baja California but is often locally common in grasslands and coastal terraces. In San Diego County, it is known from the coastal slope, as well as Ramona, Santa Ysabel, and Warner Springs.

Spreading navarretia (*Navarretia fossalis*) was not observed in any of the monitored basins in 2018.

## Threats

Several upland weeds are widespread through Ramona Grasslands Preserve and are present in most pools, including red-beaked filaree (*Erodium botrys*) and wild barley (*Hordeum marinum* ssp. *gussoneanum*). Several problematic invasive non-native wetland plants were present in vernal pools including perennial ryegrass (*Festuca perennis*), grass poly (*Lythrum hyssopifolia*), and brass buttons (*Cotula coronopifolia*). Perennial ryegrass was observed in pools CS, e48 and ev3. Grass poly was present in the following pools: c20, CS, e45, e48, e59, e61, e63, F7, F13, and F14. Brass buttons were observed in pool e61.

### **In undisturbed pools, these species can outcompete and crowd out native vernal pool species. Adaptive Management Recommendations**

As cattle are present in Ramona Grasslands Preserve and being used to promote habitat suitability for sensitive species such as SKR and arroyo toad, pools should be monitored for outbreaks of the problematic invasive non-native plant species discussed above and thinned out manually if these invasive non-native plants are not controlled by cattle grazing.

Many of the monitored pools appear appropriate to be high quality habitat for spreading navarretia and San Diego button celery (*Eryngium aristulatum* var. *parishii*), as these pools support existing vernal pool species and have appropriate topography. These two plant species often, but not always, occur in deeper pools, which typically have greater hydroperiods. Of the monitored pools, the

highest quality pools for San Diego button celery would be 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 and spreading navarretia. San Diego button celery is currently known in Ramona from only one small open space parcel within downtown Ramona. Spreading navarretia has historically been observed on Ramona Grasslands Preserve but has not been observed during recent surveys.

## 4.7 Cactus Wren

### 4.7.1 Avian Point Counts

San Diego cactus wren were observed foraging on Lakeside Linkage Preserve on March 24 and June 14, 2018. A single male cactus wren was observed approximately 100 yards north of avian point count station R1 on March 24. A pair of cactus wren were observed approximately 50 yards west of avian point count station R1 on June 14. This pair was observed carrying food offsite, indicating potential offsite nesting. The northern restoration area was thoroughly inspected for presence of cactus wren nests. No nests were observed. There are extensive patches of cactus off-site to the west which have contained a singing cactus wren male in previous years.

Thirty-six avian species were detected during surveys in 2018. This included four sensitive avian species including coastal California gnatcatcher (*Poliophtila californica californica*), San Diego cactus wren, Cooper's hawk (*Accipiter cooperi*), and turkey vulture (*Cathartes aura*) (Figure 13). The most common bird species observed included typical residents of coastal sage scrub at the urban interface including house finch, northern mockingbird, mourning dove, American crow, Anna's hummingbird, Lesser goldfinch, California quail, and California towhee.

### 4.7.2 Habitat Assessment and Threats Monitoring

In 2018 photo-monitoring was conducted from established photo-points. Images from 2018 are included with images from 2011-2016 to show change through time of the restoration sites (Appendix B5).

The northern restoration area was in good condition. There were no signs of unauthorized disturbance. There was an unauthorized trail through the restoration area which was restricted with signs and fencing in 2015. This unauthorized trail did not appear to be in use and the previously impacted cactus patches have begun to recover. Cover of invasive non-native plants was low, with less than 10 percent cover of non-native forbs and negligible cover of non-native grasses. There were California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and field mustard (*Hirschfeldia incana*) growing among cactus patches which can create ladders for cactus wren predators to access potential nesting sites.

The southern restoration area was also in good condition but had maintenance issues. There was dirt bike activity within 10 to 25 percent of the restoration area, including some smaller unauthorized trails. California buckwheat, broom baccharis (*Baccharis pilularia*), and field mustard were growing up and adjacent to cactus patches, which creates a ladder for cactus wren predators to access potential nesting sites; this was occurring in 10 to 25 percent of the cactus patches. Cover of

invasive non-native plants was low, with less than 10 percent cover of non-native forbs and negligible cover of non-native grasses.

### **Adaptive Management Recommendations**

ICF recommends that a one-time maintenance visit be conducted, outside of the bird breeding season (February 15 to August 15), to remove ladder plants from the cactus patches within the restoration areas.

## Chapter 5 References

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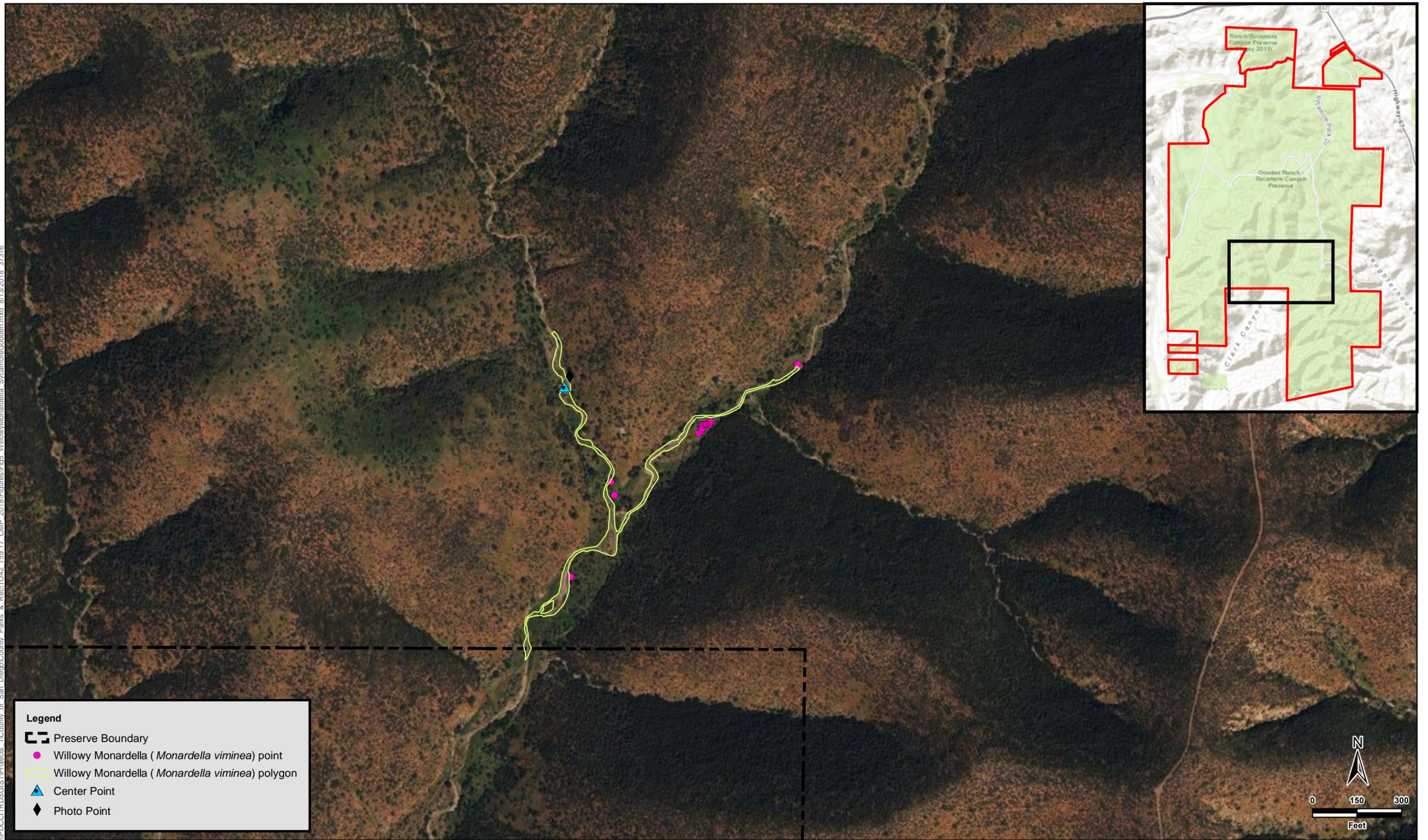
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Appendix A  
**Figures**

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\\PDC\ITRDS\GIS\Projects\1\County of San Diego\County Parks & Rec\TD42\_759.17\_CMP\_2018\Figures\Figs\_WillowMonardella\_SycamoreGooden.mxd 8/13/2018 37316

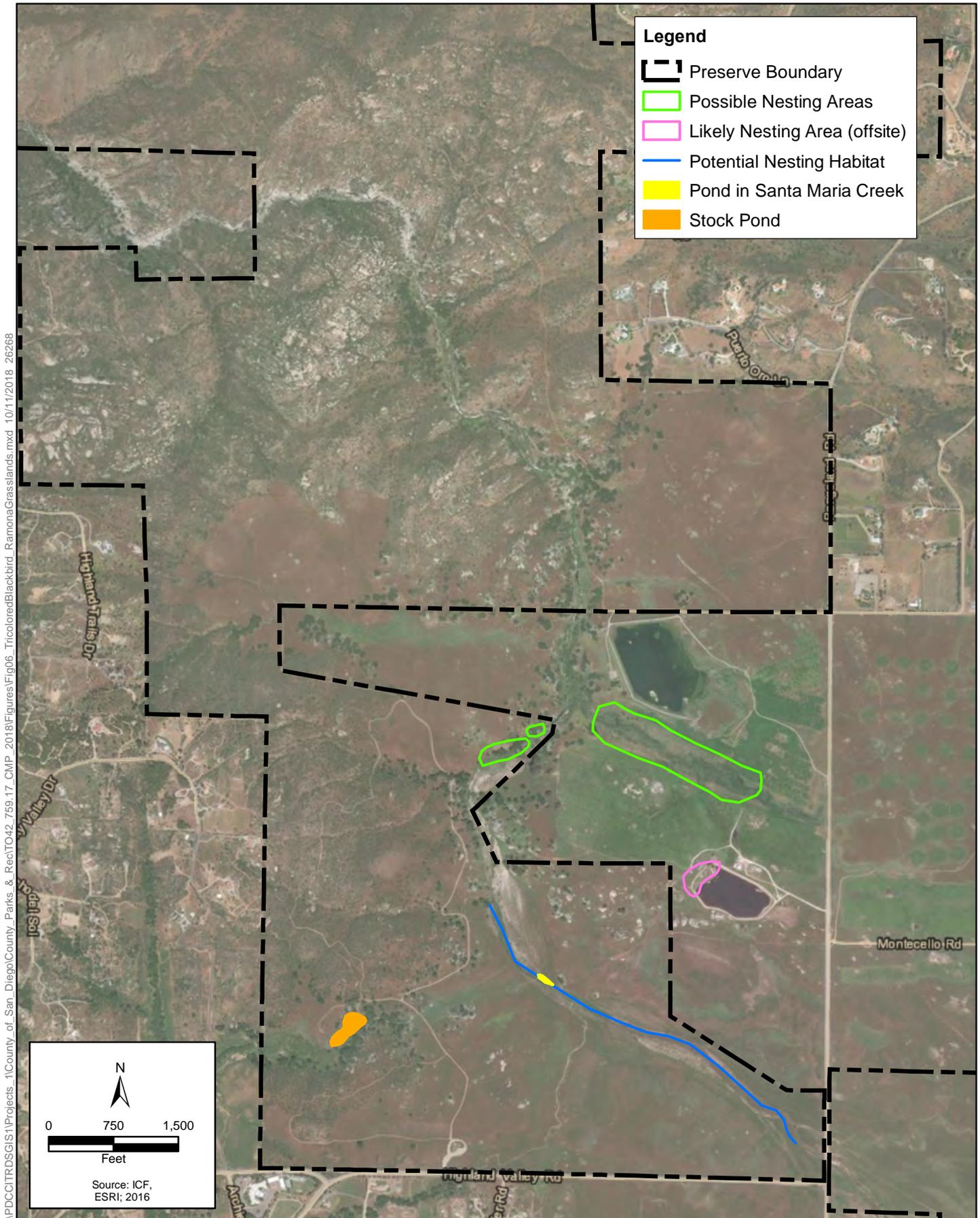


**Legend**

- ▭ Preserve Boundary
- Willowy Monardella (*Monardella viminea*) point
- ▭ Willowy Monardella (*Monardella viminea*) polygon
- ▲ Center Point
- ◆ Photo Point



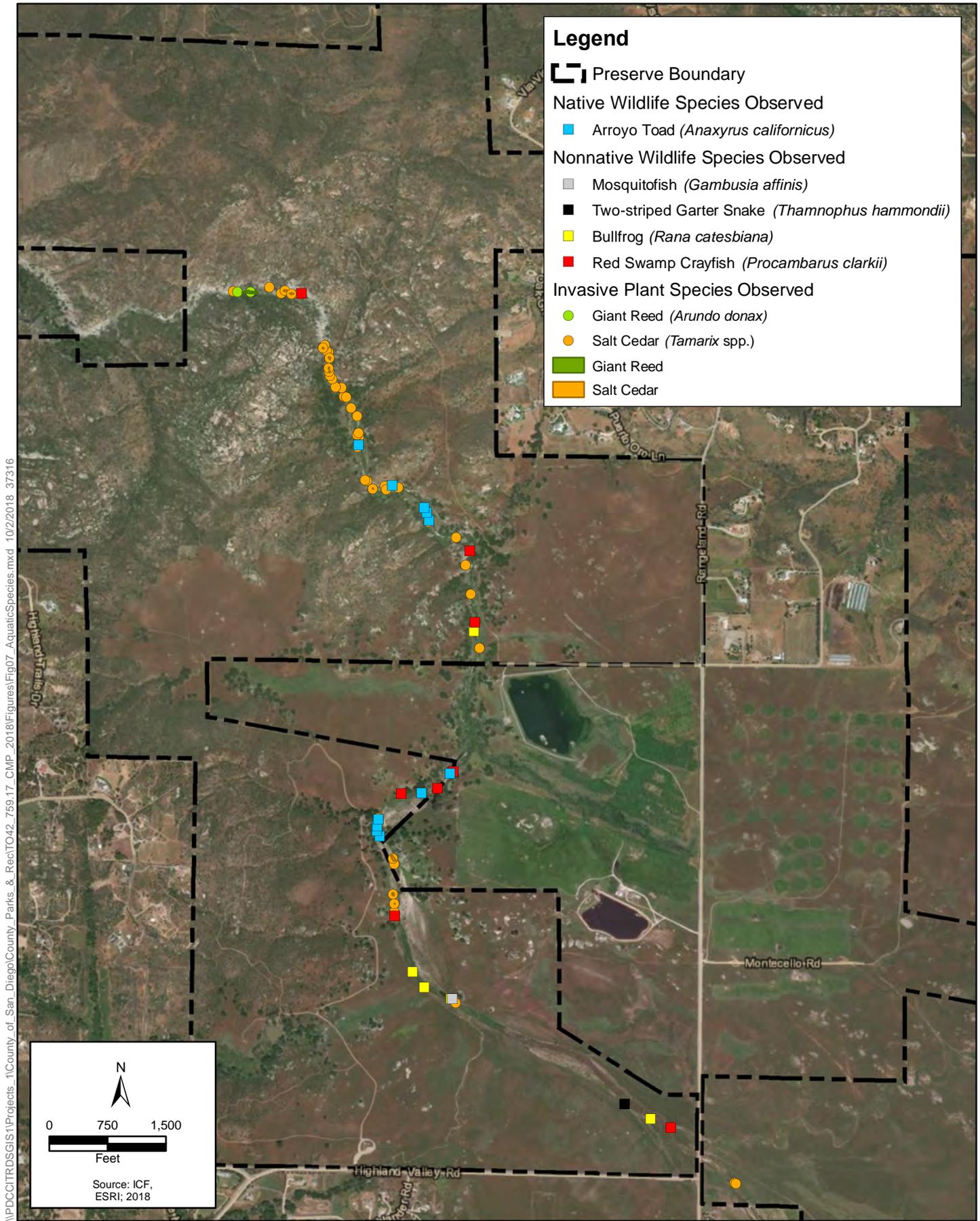
**Figure 5**  
**Willowly Dudleya Monitoring Plots – Sycamore Canyon/Goodan Ranch Preserve**  
**Implementation of TMP – 2018 Resource Specific Monitoring Annual Report**



\\PDC\ITRDS\GIS\Projects\_1\County\_of\_San\_Diego\County\_Parks\_&\_Rec\TO42\_759.17\_CMP\_2018\Figures\Fig06\_TricoloredBlackbird\_RamonaGrasslands.mxd 10/11/2018 26268



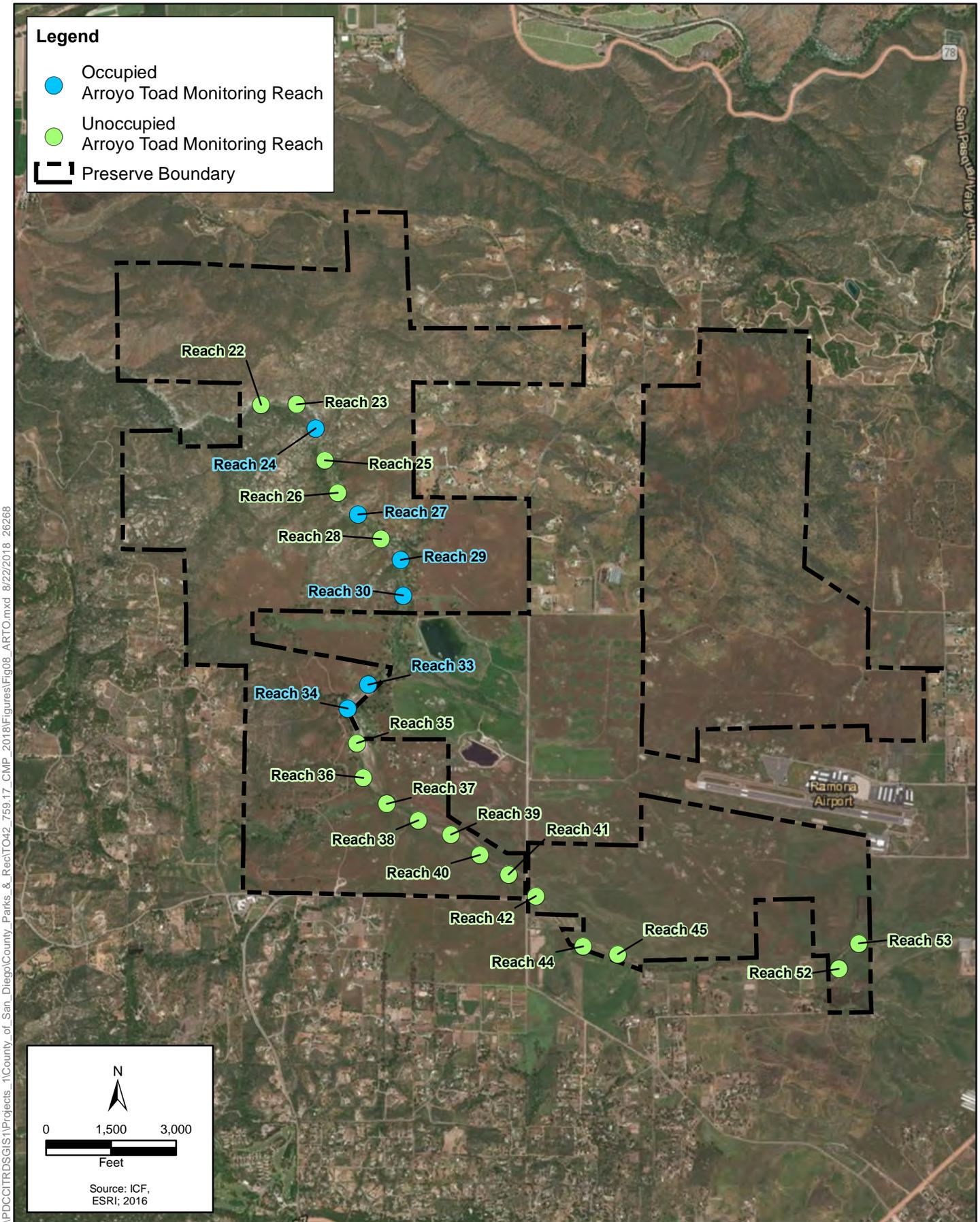
**Figure 6**  
**Tricolored Blackbird Survey – Ramona Grasslands Preserve**  
**Implementation of TMP – 2018 Resource Specific Monitoring Annual Report**



\\PDC\ITRDS\GIS\Projects\_1\County\_of\_San\_Diego\County\_Parks\_&\_Rec\TO42\_759.17\_CMP\_2018\Figures\Fig07\_AquaticSpecies.mxd 10/2/2018 37316



**Figure 7**  
 Aquatic Species Observations - Ramona Grasslands Preserve  
 Implementation of TMP – 2018 Resource Specific Monitoring Annual Report

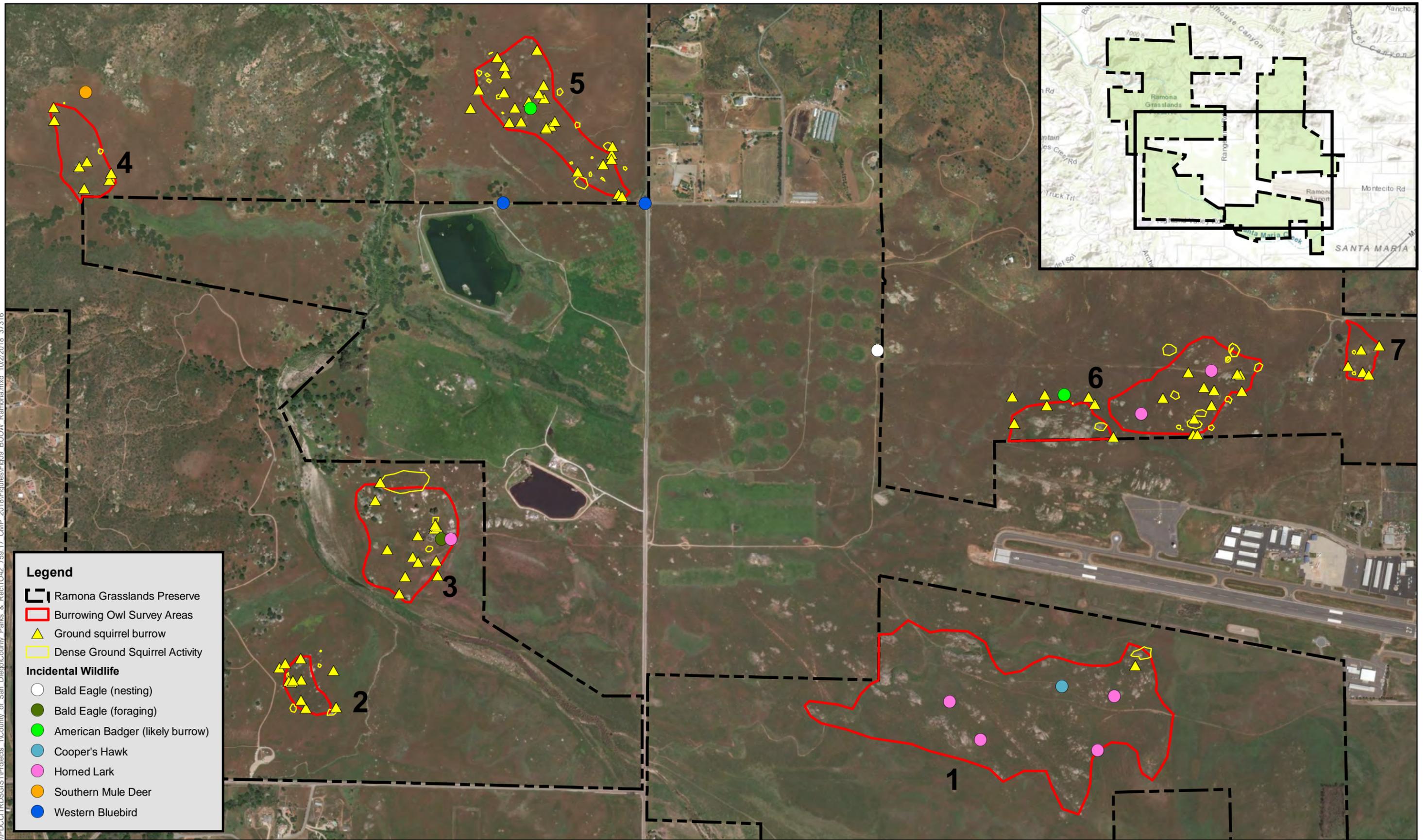


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**Figure 8**  
**Arroyo Toad Monitoring Reaches - Ramona Grasslands Preserve**  
**Implementation of TMP – 2018 Resource Specific Monitoring Annual Report**

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**Legend**

- Ramona Grasslands Preserve
- Burrowing Owl Survey Areas
- Ground squirrel burrow
- Dense Ground Squirrel Activity

**Incidental Wildlife**

- Bald Eagle (nesting)
- Bald Eagle (foraging)
- American Badger (likely burrow)
- Cooper's Hawk
- Horned Lark
- Southern Mule Deer
- Western Bluebird

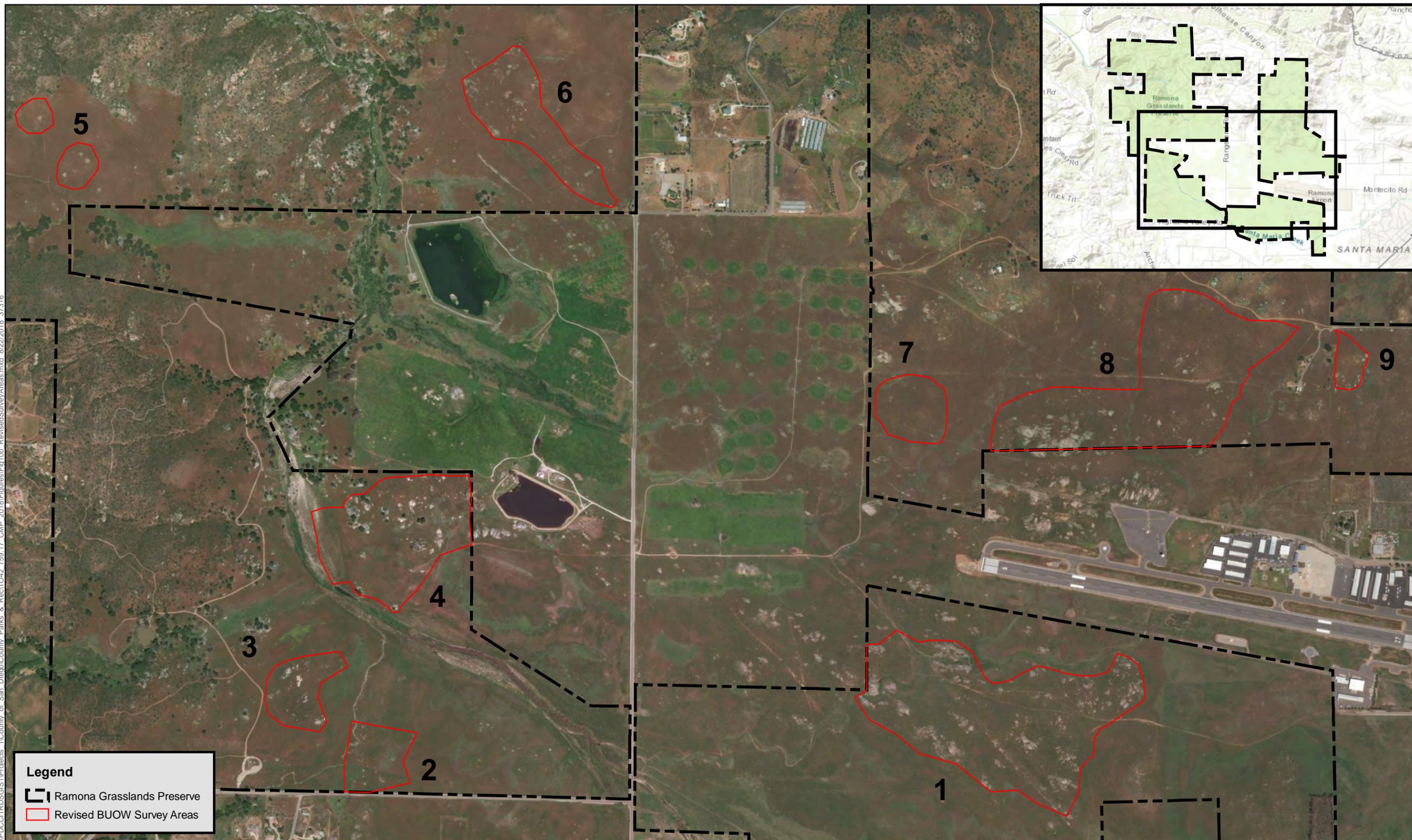
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Figure 9  
2018 Burrowing Owl Survey Areas - Ramona Grasslands Preserve  
Implementation of TMP – 2018 Resource Specific Monitoring Annual Report

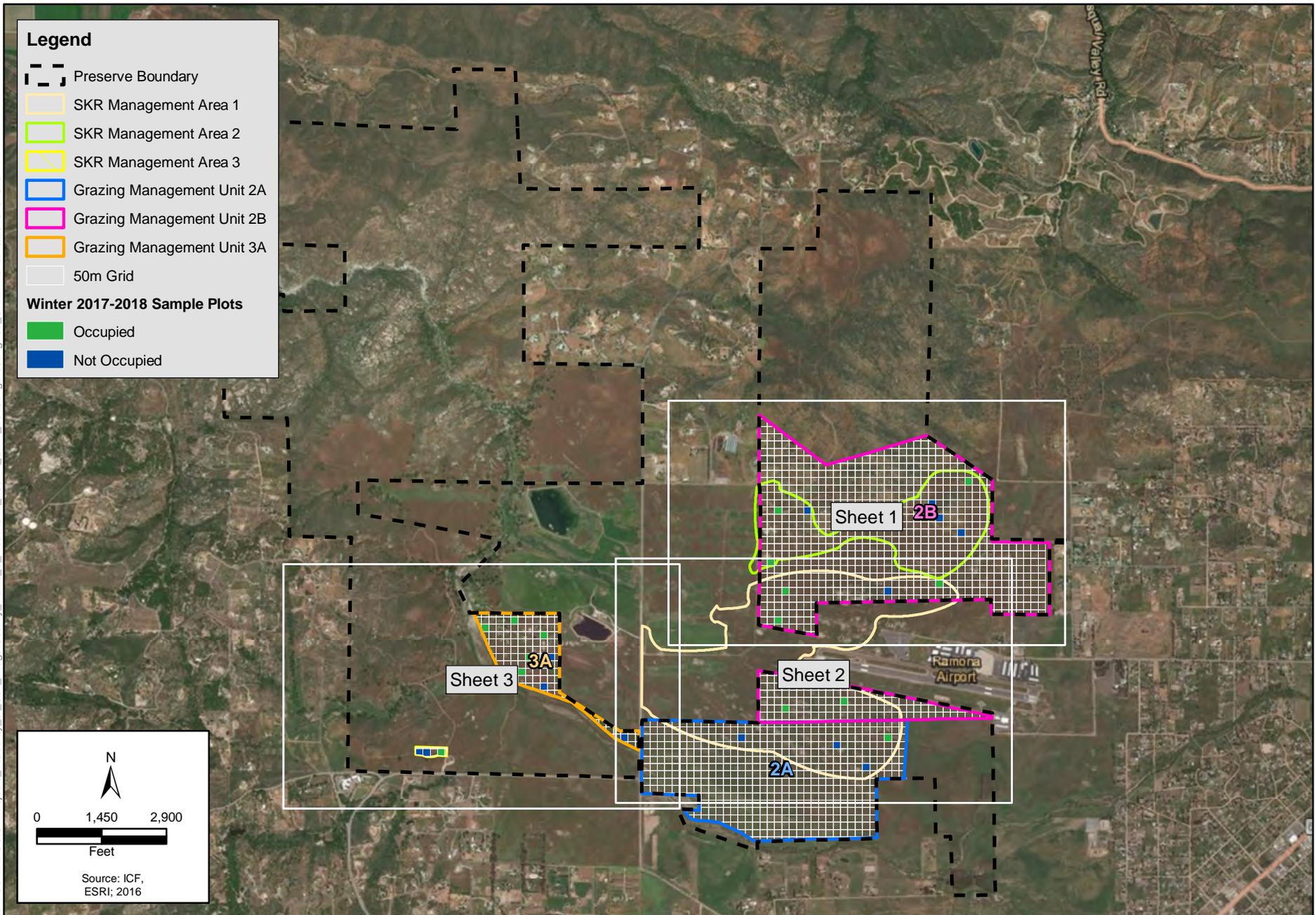
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**Legend**

- Ramona Grasslands Preserve
- Revised BUOW Survey Areas

**Figure 10**  
Proposed Burrowing Owl Survey Area Revisions - Ramona Grasslands Preserve  
Implementation of TMP – 2018 Resource Specific Monitoring Annual Report



**Figure 11a**  
**Stephen's Kangaroo Rat - Results Index**  
**Implementation of TMP - 2018 Resource Specific Monitoring Annual Report**

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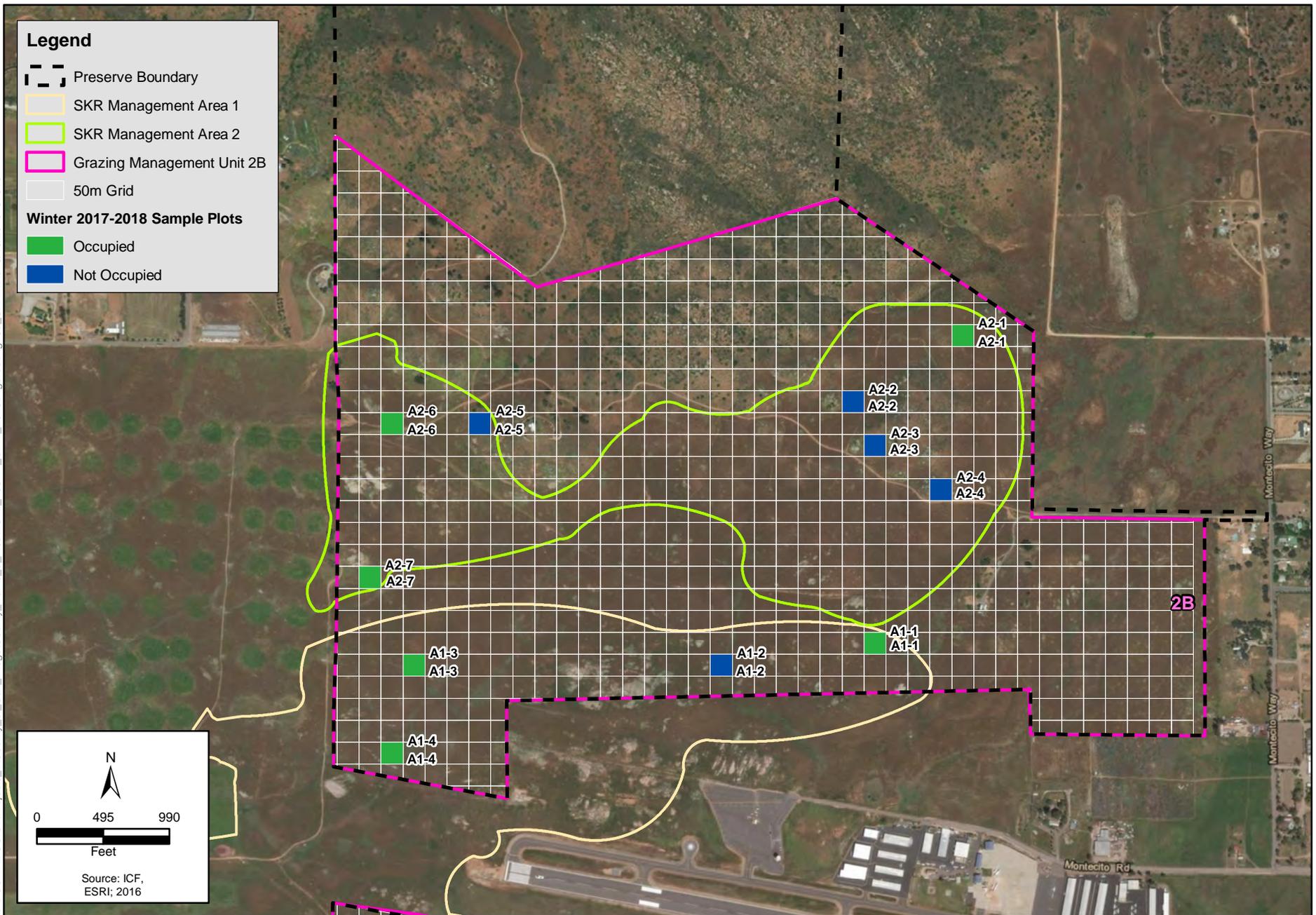


Figure 11b  
Stephen's Kangaroo Rat - Results Sheet 1  
Implementation of TMP - 2018 Resource Specific Monitoring Annual Report

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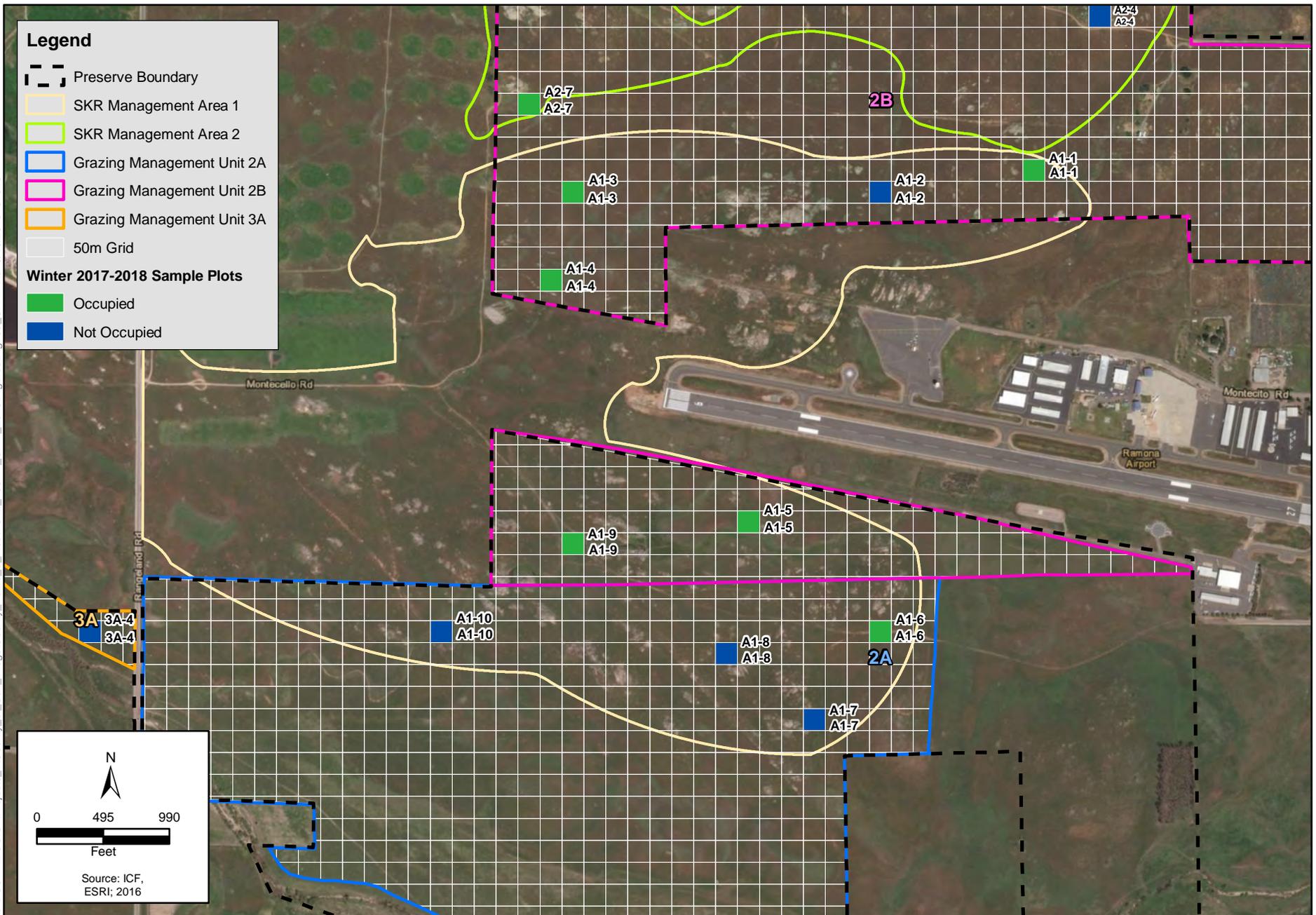


Figure 11c  
Stephen's Kangaroo Rat - Results Sheet 2  
Implementation of TMP - 2018 Resource Specific Monitoring Annual Report

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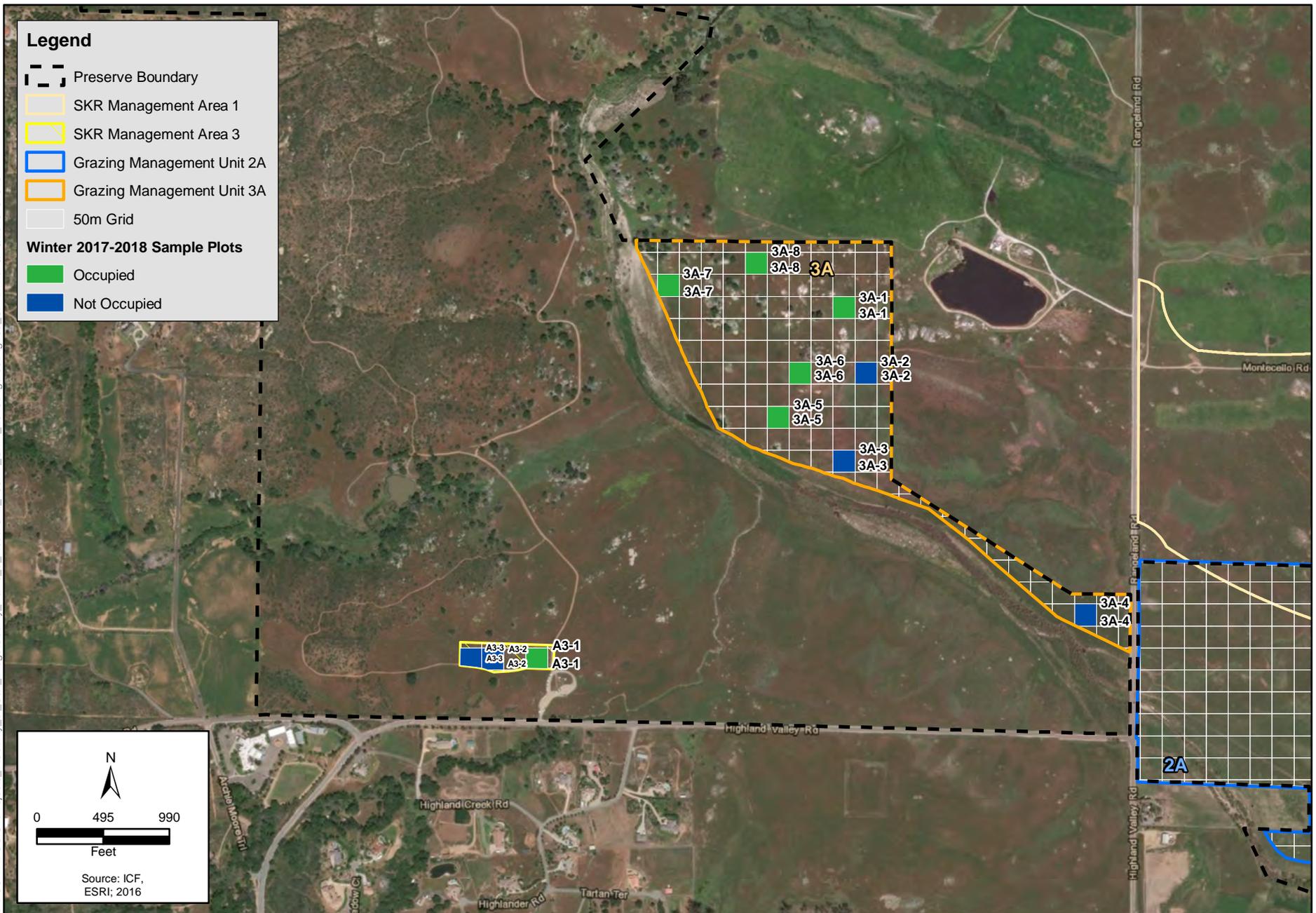
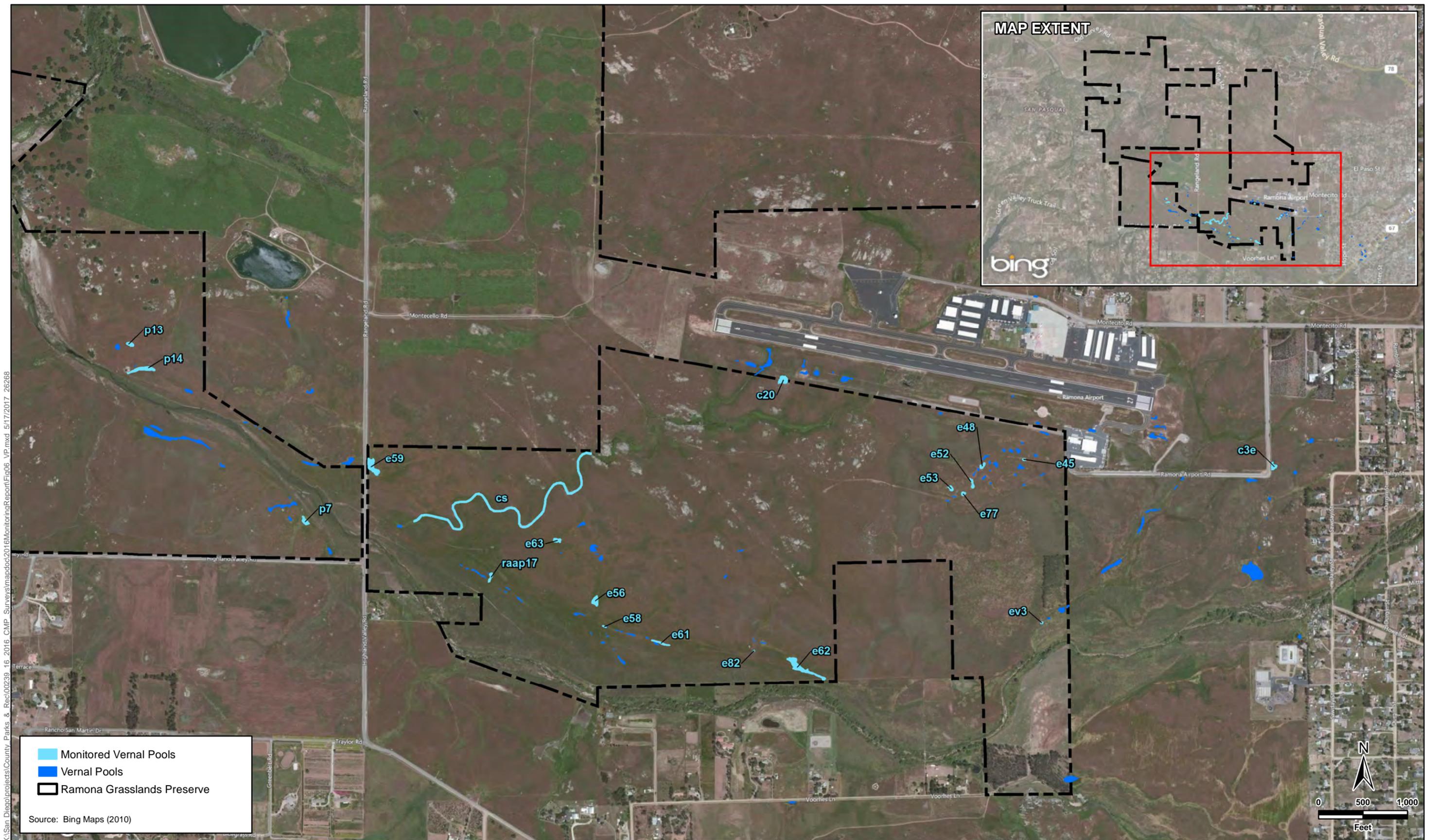


Figure 11d  
Stephen's Kangaroo Rat - Results Sheet 3  
Implementation of TMP - 2018 Resource Specific Monitoring Annual Report



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Monitored Vernal Pools  
 Vernal Pools  
 Ramona Grasslands Preserve

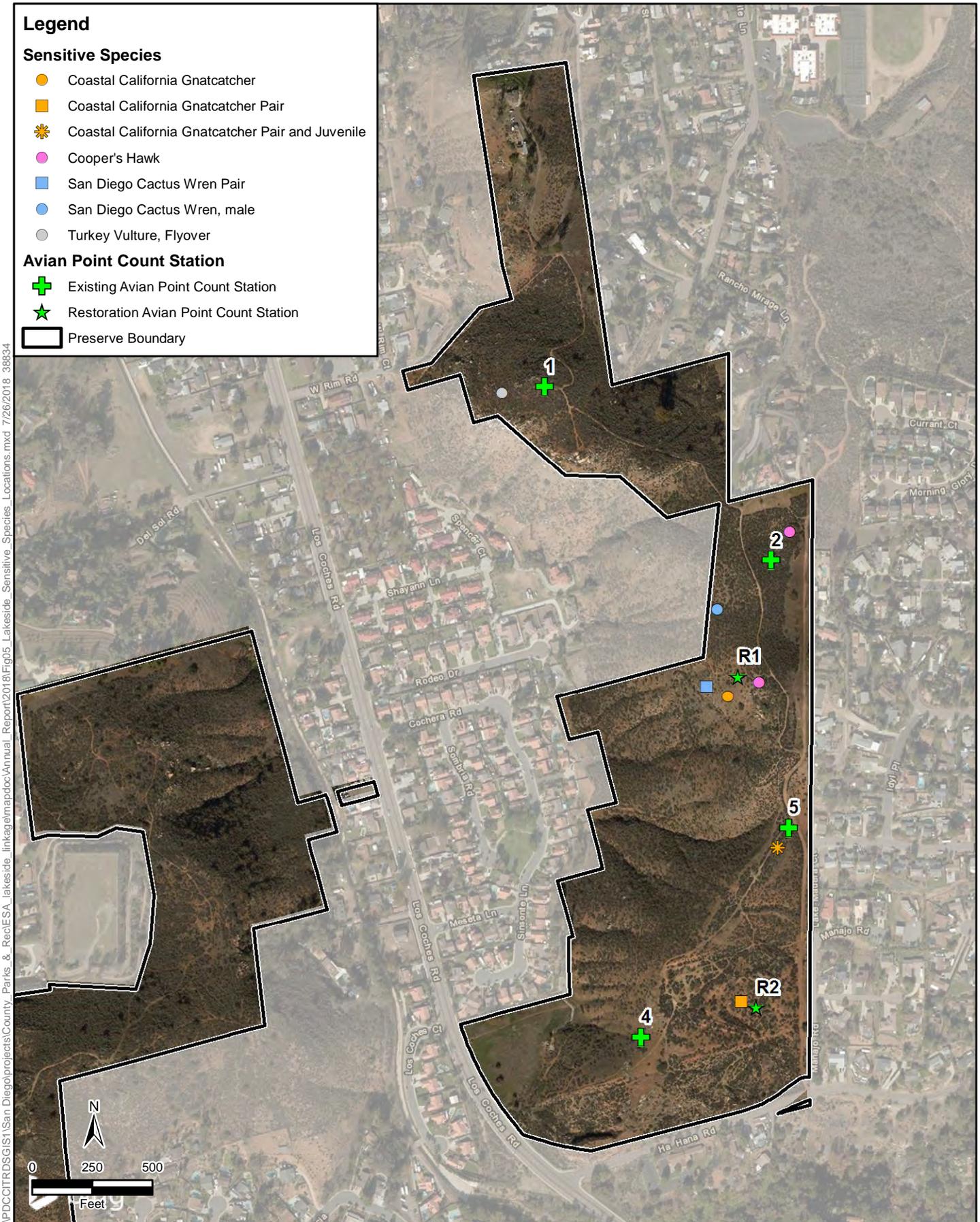
Source: Bing Maps (2010)

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**Figure 12**  
**Vernal Pool Monitoring - Ramona Grasslands Preserve**  
**Implementation of TMP - 2018 Resource Specific Monitoring Annual Report**



\PDC\TRD\SIGIS1\San Diego\projects\County\_Parks\_ & Rec\ESA\_lakeside\_linkage\mapdoc\Annual\_Report\2018\Fig05\_Lakeside\_Sensitive\_Species\_Locations.mxd 7/26/2018 38834

**Figure 13**  
**2018 Lakeside Linkage Sensitive Species Observations**  
**Implementation of TMP - 2018 Resource Specific Monitoring Annual Report**





**Figure 14**  
**Photopoint and Existing Cactus Locations at Lakeside Linkage Preserve**  
**Implementation of TMP - 2018 Resource Specific Monitoring Annual Report**

Appendix B  
**Photo Logs**

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Photo 1 – San Miguel savory in understory at Boulder Oaks Preserve (CLCH\_PP01)



Photo 2 – San Miguel savory in understory at Boulder Oaks Preserve (CLCH\_02)



Photo 3 – Variegated dudleya in managed area at Lusardi Creek Preserve (DUVA\_PP01).



Photo 4 – Willow monardella at Sycamore Canyon/Goodan Ranch Preserve (MOVI\_PP01).



Photo 5 – Willowy monardella individuals



Photo 1 – Santa Maria Creek riparian strip near Rangeland Road.



Photo 2. largest in-channel pool in Santa Maria Creek.



Photo 3. Azolla fern carpeting pool.



Photo 4. Santa Maria Creek prior to dropping into canyon



Photo 5. Santa Maria Creek in canyon.



Photo 6. Example of plunge pool in canyon.



Photo 1 – Representative overview - burrowing owl survey area #1



Photo 2 – Representative overview - burrowing owl survey area #3



Photo 3 – Representative overview - burrowing owl survey area #4



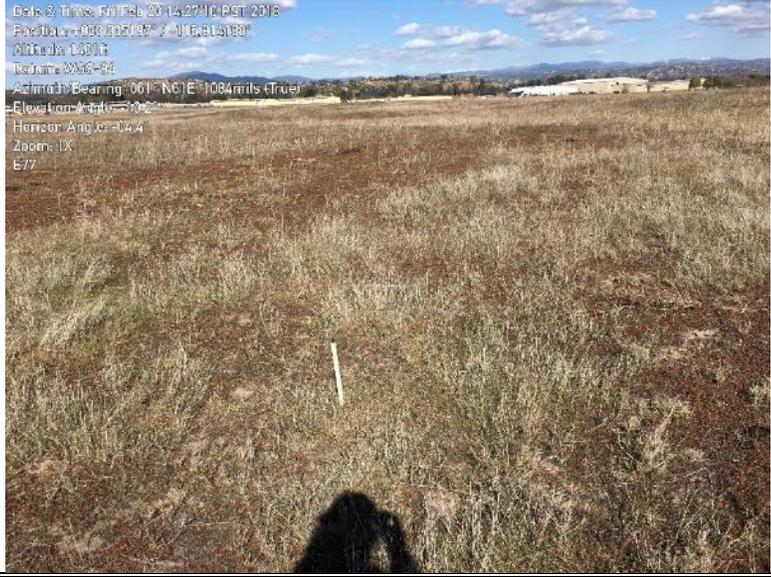
Photo 4 - Representative overview - burrowing owl survey area #6

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| <p>Date &amp; Time: Fri Feb 23 13:22:37 PST 2018<br/>                 Position: 11 N 509066 3555273<br/>                 Altitude: 1351ft<br/>                 Datum: WGS-84<br/>                 Azimuth/Bearing: 017° N175' 0802mils (True)<br/>                 Elevation Angle: +24.9°<br/>                 Horizon Angle: +08.1°<br/>                 Zoom: 1X<br/>                 C3E</p>       | <p><b>Photograph:</b> 2</p> <p><b>Pool ID:</b> C3E</p> <p><b>Date:</b> February 23, 2018</p> <p><b>Direction:</b> North</p>                   |
| <p>Date &amp; Time: Fri Feb 23 11:39:02 PST 2018<br/>                 Position: 40311882047 -111.032710<br/>                 Altitude: 1331ft<br/>                 Datum: WGS-84<br/>                 Azimuth/Bearing: 325° N656' 6778mils (True)<br/>                 Elevation Angle: -13.8°<br/>                 Horizon Angle: -16.8°<br/>                 Zoom: 1X<br/>                 C5</p>   | <p><b>Photograph:</b> 3</p> <p><b>Pool ID:</b> Cagney Swale (CS)</p> <p><b>Date:</b> February 23, 2018</p> <p><b>Direction:</b> Northwest</p> |

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| <p>Date &amp; Time: Fri Feb 23 14:44:34 PST 2018<br/>                 Position: -033.036431° -113.913549°<br/>                 Altitude: 1400ft<br/>                 Datum: WGS-84<br/>                 Azimuth/Bearing: 050° N50E 0889mils (True)<br/>                 Elevation Angle: -20.0°<br/>                 Horizon Angle: -10.6°<br/>                 Zoom: 1X<br/>                 E48</p>   | <p><b>Photograph:</b> 5</p> <p><b>Pool ID:</b> E48</p> <p><b>Date:</b> February 23, 2018</p> <p><b>Direction:</b> Northeast</p> |
| <p>Date &amp; Time: Fri Feb 23 14:48:51 PST 2018<br/>                 Position: -033.036730° -113.913824°<br/>                 Altitude: 1320ft<br/>                 Datum: WGS-84<br/>                 Azimuth/Bearing: 033° N38E 0676mils (True)<br/>                 Elevation Angle: -19.0°<br/>                 Horizon Angle: -01.1°<br/>                 Zoom: 1X<br/>                 E52</p>  | <p><b>Photograph:</b> 6</p> <p><b>Pool ID:</b> E52</p> <p><b>Date:</b> February 23, 2018</p> <p><b>Direction:</b> Northeast</p> |

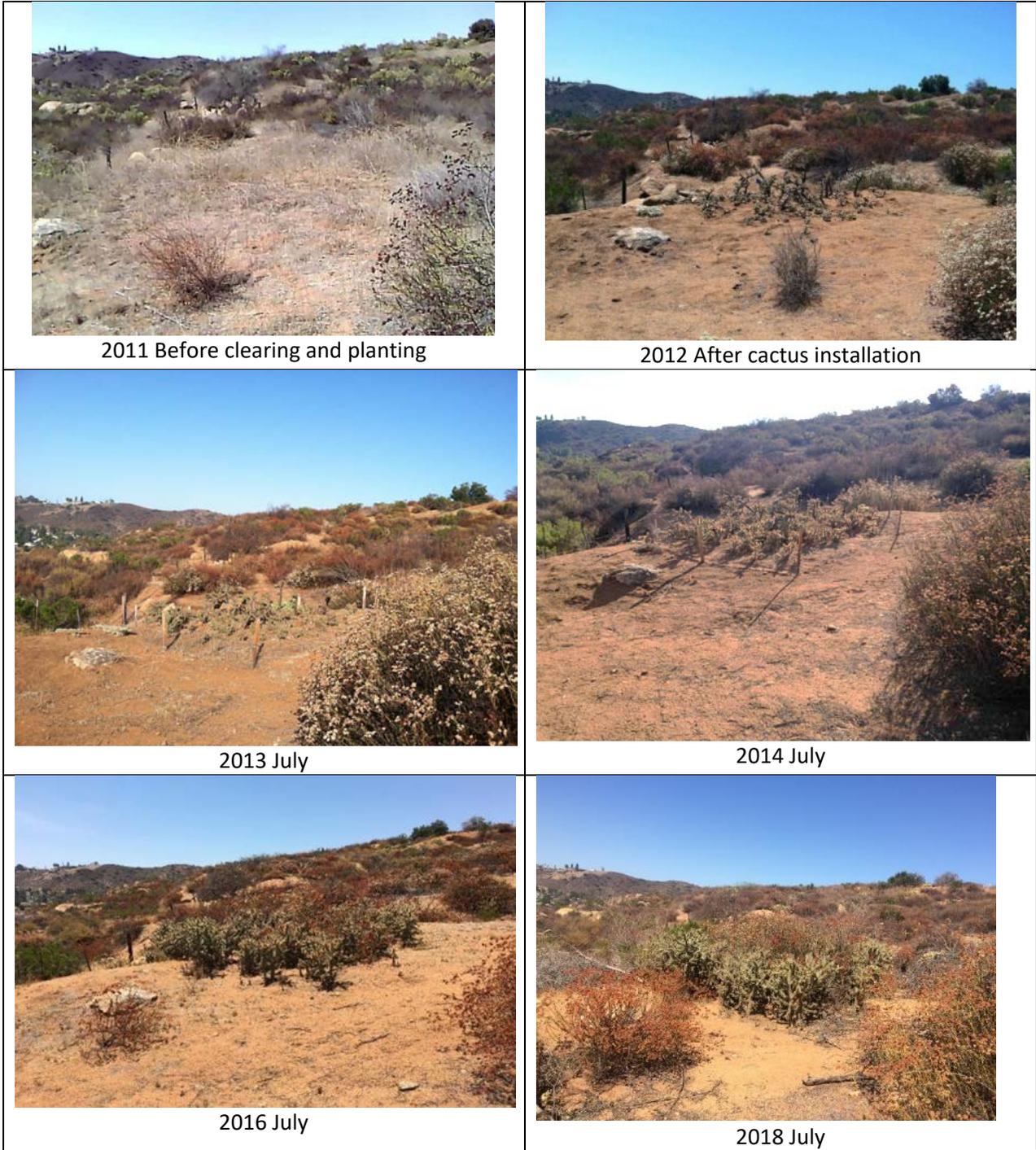
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| <p>Date &amp; Time: Fri Feb 23 12:12:45 PST 2018<br/>                 Position: -033.031848° / -116.927488°<br/>                 Altitude: 1315ft<br/>                 Datum: WGS-84<br/>                 Azimuth-Bearing: 273° N87W 4853mils (true)<br/>                 Elevation Angle: -12.7°<br/>                 Horizon Angle: -04.2°<br/>                 Zoom: 1X<br/>                 E56</p>    | <p><b>Photograph:</b> 8</p> <p><b>Pool ID:</b> E56</p> <p><b>Date:</b> February 23, 2018</p> <p><b>Direction:</b> Northwest</p> |

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| <p>Date &amp; Time: Fri Feb 23 11:58:03 PST 2018<br/>                 Position: +33.0123798° / -116.920063°<br/>                 Altitude: 1525ft<br/>                 Datum: WGS-84<br/>                 Azimuth/Bearing: 101° S78E 1795mils (True)<br/>                 Elevation Angle: -10.8°<br/>                 Horizon Angle: -02.2°<br/>                 Zoom: 1X<br/>                 E63</p>   | <p><b>Photograph:</b> 13</p> <p><b>Pool ID:</b> E63</p> <p><b>Date:</b> February 23, 2018</p> <p><b>Direction:</b> Southeast</p> |
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| <p>Date &amp; Time: Fri Feb 23 10:40:50 PST 2018<br/>                 Position: +033.0395607° / -116.9447157°<br/>                 Altitude: 1330ft<br/>                 Datum: WGS-84<br/>                 Azimuth/Bearing: 284° N75W 0.035mils (True)<br/>                 Elevation Angle: -16.5°<br/>                 Horizon Angle: -04.6°<br/>                 Zoom: 1X<br/>                 P13</p>     | <p><b>Photograph:</b> 18</p> <p><b>Pool ID:</b> P13</p> <p><b>Date:</b> February 23, 2018</p> <p><b>Direction:</b> Northwest</p> |
| <p>Date &amp; Time: Fri Feb 23 10:42:54 PST 2018<br/>                 Position: +033.038847° / -116.944508°<br/>                 Altitude: 1330ft<br/>                 Datum: WGS-84<br/>                 Azimuth/Bearing: 236° S60W 4.190mils (True)<br/>                 Elevation Angle: -08.0°<br/>                 Horizon Angle: -04.3°<br/>                 Zoom: 1X<br/>                 P14</p>      | <p><b>Photograph:</b> 19</p> <p><b>Pool ID:</b> P14</p> <p><b>Date:</b> February 23, 2018</p> <p><b>Direction:</b> Southwest</p> |
| <p>Date &amp; Time: Fri Feb 23 12:51:29 PST 2018<br/>                 Position: +033.032233° / -116.932071°<br/>                 Altitude: 1297ft<br/>                 Datum: WGS-84<br/>                 Azimuth/Bearing: 042° N42E 0.747mils (True)<br/>                 Elevation Angle: -07.7°<br/>                 Horizon Angle: -03.5°<br/>                 Zoom: 1X<br/>                 RAAP17</p>  | <p><b>Photograph:</b> 20</p> <p><b>Pool ID:</b> RAAP17</p> <p><b>Date:</b> February 23, 2018</p> <p><b>Direction:</b> North</p>  |



Photopoint A West



2011 Before clearing and planting



2012 After cactus installation



2013 July



2014 July



2016 July



2018 July

Photopoint B North



2011 Before clearing and planting



2012 After cactus installation



2013 July



2014 July



2016 July



2018 July

Photopoint B west



2011 Before clearing and planting



2012 After cactus installation



2013 July



2014 July



2016 July



2018 July

**Photopoint C West**



2011 Before clearing and planting



2012 After cactus installation



2013 July



2014 July



2016 July



2018 July

Photopoint D North



2011 Before clearing and planting



2012 After cactus installation



2013 July



2014 July



2016 July



2018 July

Photopoint D East



2011 Before clearing and planting



2012 After cactus installation



2013 July



2014 July



2016 July



2018 July

Photopoint D South



2011 Before clearing and planting



2012 After cactus installation



2013 July



2014 July



2016 July



2018 July

Photopoint E East



2011 Before clearing and planting



2012 After cactus installation



2013 July



2014 July



2016 July



2018 July

Photopoint F South



2011 Before clearing and planting



2012 cactus installation



2013 July



2014 July



2016 July



2018 July

Photopoint G North



2011 Before clearing and planting



2012 After cactus installation



2013 July



2014 July



2016 July



2018 July

Photopoint H East

Appendix C

## **MSP Rare Plant Monitoring Forms**

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| <b>MSP Rare Monitoring 2018</b> |  |   |
|---------------------------------|--|---|
| <b>Field_name</b>               | <b>Entry</b>   | <b>definition</b>   |
| <b>Date</b>                     | 5/9/2018   | date the survey was conducted (mm/dd/yyyy)  |
| <b>TimeStart</b>                | 10:45  | time the plant field survey began (24 hour time)  |
| <b>TimeFinish</b>               | 11:45  | time the plant field survey ended (24 hour time)  |
| <b>ScientificName</b>           | Clinopodium chandleri                                  | Record the monitored species' scientific name, including subspecies or variety, if applicable. Reminder: Drop-down list. (Current scientific names are also provided in MOM in the column "SName" field). |
| <b>CommonName</b>               | San Miguel savory                                      | Reminder: Drop-down list. (The species common name can also be obtained from the column "CName" in MOM.)  |
| <b>Existing MSP Occurrence</b>  | yes  | Indicate whether this is an existing occurrence in MOM or a new occurrence . If you are unsure, enter "unknown".  |
| <b>MSPOccurrenceID</b>          | CLCH5_4BOPR002   | The occurrence ID can be obtained from the "OccID" column in MOM (see protocol for a description of the Occurrence ID code).  |
| <b>CNDDB_EO_num</b>             |  | If the occurrence has a CNDDB EO#, this will be listed in the "OtherID" column in MOM as "EOXX" (e.g., EO4, EO15).  |
| <b>Translocated_occur</b>       | no   | Enter whether the occurrence is translocated or not. MOM has a "Transloc" field that can help to complete this field.   |
| <b>Preserve</b>                 | BOULDER OAKS PRESERVE                                  | Name of Preserve. This information can also be found in MOM   |
| <b>LandOwner</b>                | County San Diego Department of Parks and Recreation    | Land Owner. This information can also be found in MOM   |
| <b>LandMangr</b>                | County of San Diego Department of Parks and Recreation | Land Manager. This information can also be found in MOM   |
| <b>OccurrenceName</b>           | Boulder Oaks Preserve                                  | Record the occurrence name from the "OccName" field in MOM.   |

|  |  |   |
|--|--|---|
| <b>SamplePointNum</b>                  | <b>BOCLCH01</b>                              | There can be multiple sampling areas that are part of the same occurrence. These are designated in the occurrence name as "-Obs. #X" (e.g., Carmel Mountain - Obs. #1, Carmel Mountain - Obs. #2) or as unique names (e.g., Crest Canyon North, Crest Canyon South). For the sample point, enter an observation number or name only if there are multiple sampling areas for that occurrence. |
| <b>Surveyors</b>                       | <b>Nicole Salas, Frank Landis, Anna Arft</b> | Record names all field personnel (use full names)   |
| <b>Affiliation</b>                     | <b>ICF, County Volunteers</b>                | Record agencies of all field personnel (use full names)   |
| <b>NumPlantsperCurrentMappedExtent</b> | <b>34</b>                                    | If the mapped occurrence perimeter falls entirely within the sampling area, then this number is the same as that entered for "# Plants/Sampling Area". If the occurrence perimeter is larger than the sampling area, then count or estimate the number of plants within the entire occurrence perimeter. See protocol for additional information.   |
| <b>ExactCountorEstimate1</b>           | <b>exact</b>                                 | "exact/estimate"; indication of whether "Number of plants per current mapped extent" was an exact count of plants or an estimate of plant number  |
| <b>uncertainty1</b>                    | <b>low</b>                                   | uncertainty associated with "Number of plants per current mapped extent"; categories: very high, high, medium, low, very low  |
| <b>Count_type1</b>                     | <b>individ_plants</b>                        | For both exact counts and estimates of "Number of plants per Current Mapped Extent" indicate whether you counted individual plants or clusters, of plants ("individual plants" or "clusters of plants")   |
| <b>Flower_Veget1</b>                   | <b>vegetative</b>                            | For both exact counts and estimates of "Number of plants per Current Mapped Extent", indicate whether the count was of flowering individuals or of vegetative individuals (latter applies primarily to geophytes)   |
| <b>AreaCurrentMappedExtent</b>         | <b>0.14</b>                                  | The size of the area based on GPS'ing the perimeter of the occurrence.  |
| <b>Area_units</b>                      | <b>Acres</b>                                 | units (e.g., square meters, square feet) of "AreaCurrentMappedExtent"   |
| <b>Area_exact_or_estim</b>             | <b>exact (GPS mapping)</b>                   | "exact/estimate"; refers to uncertainty associated with "AreaCurrentMappedExtent"   |

|  |                |  |
|--|----------------|--|
| <b>CurrentExtentPerimMethod</b>        | walking        | Indicate whether the perimeter of the current extent was determined by (a) walking it and delineating with a GPS or smartphone, or (b) whether the extent was determined by another means, such as GIS, aerial photographs, etc. ("walking"; "other"). If other, indicate in Notes section |
| <b>SpeciesLocated_in_MaximumExtent</b> | yes            | Yes/no to indicate whether the species was found within the maximum extent.  |
| <b>Reason_IfNotFound</b>               |                | If the species was not found, note any potential explanations for why the species wasn't detected.   |
| <b>NumPlantsperSamplArea</b>           | 29             | Count or estimate of the total number of plants in the sampling area.  |
| <b>ExactCountorEstimate2</b>           | exact          | "exact/estimate"; refers to whether "Number of plants per sample area" was an exact count of plants or an estimate of plant number   |
| <b>uncertainty2</b>                    | low            | uncertainty associated with "Number of plants per sample area"; categories: very high, high, medium, low, very low   |
| <b>SampleAreaRadius(m)</b>             | 10             | enter the radius of the sampling area in meters  |
| <b>Count_type2</b>                     | individ_plants | For both exact counts and estimates of "Number of plants per Sample Area" indicate whether you counted individual plants or clusters, of plants ("individual plants" or "clusters of plants")  |
| <b>Flower_Veget2</b>                   | vegetative     | For both exact counts and estimates of "Number of plants per Sample Area", indicate whether the count was of flowering individuals or of vegetative individuals (latter applies primarily to geophytes)  |
| <b>Vegetative_percent</b>              | 4              | Phenology in sampling area. Category representing the % of plants in the vegetative stage in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)  |
| <b>Flowering_percent</b>               | 5              | Phenology in sampling area. Category representing the % of plants in the flowering stage in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)   |
| <b>Fruiting_percent</b>                | 1              | Phenology in sampling area. Category representing the % of plants in the fruiting stage in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)  |
| <b>Flowering&amp;Fruiting_percent</b>  | 1              | Phenology in sampling area. Category representing the % of plants in the fruiting and flowering stage in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)  |

|  |                  |   |
|--|------------------|---|
| <b>Dead_percent</b>                            | <b>1</b>         | Phenology in sampling area. Category representing the % of plants dead in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)  |
| <b>Herbivory_percent</b>                       | <b>1</b>         | Applies to sampling area. Category representing the % of plants showing signs of herbivory in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)  |
| <b>Disease_percent</b>                         | <b>1</b>         | Applies to sampling area. Category representing the % of plants showing signs of disease in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)  |
| <b>StuntedGrowth_percent</b>                   | <b>1</b>         | Applies to sampling area. Category representing the % of plants showing signs of stunted growth in the sampling area in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)  |
| <b>SamplingArea_within_CurrentMappedExtent</b> | <b>yes</b>       | Yes/no to indicate whether the current distribution of the plant is outside of the sampling area.   |
| <b>Collection</b>                              |                  | Indicate whether a collection of plants within the sampling area was taken or has previously been done ("yes/no/collected previously")  |
| <b>Collector</b>                               |                  | If there is a collection, indicate name of person who collected.  |
| <b>Collection_Num</b>                          |                  | If there is a collection, indicate a number for collection.   |
| <b>Museum_Herbarium</b>                        |                  | If there is a collection, where collected specimen was submitted.   |
| <b>GPSAccuracy</b>                             | <b>1</b>         | accuracy of the GPS unit or smartphone you are using (a number without units)   |
| <b>GPSAccuracyUnits</b>                        | <b>meters</b>    | The units associated with the accuracy of the GPS unit or smartphone you are using (choices: meters, feet).   |
| <b>Datum</b>                                   | <b>NAD83</b>     | Datum setting for the GPS unit (e.g., NAD83, WGS84).  |
| <b>CoordSystem</b>                             | <b>UTM (m)</b>   | The coordinate system used (e.g., UTM, State Plane, Latitude-Long)  |
| <b>PlotCenterCoordReason</b>                   | <b>no change</b> | Check your location of the Plot Center against the location provided as the sampling location in MOM or other SDMMMP source (e.g, Rare Plant Viewer). Indicate "no change" if Plot Center coordinates where you are sampling match those provided in MOM or other SDMMMP source. Otherwise indicate "new location" (if location has not been monitored previously) or "correction" (if coordinates in SDMMMP source are incorrect) and enter coordinates below. |

|                                    |                               |   |
|------------------------------------|-------------------------------|---|
| <b>PlotCenterCoordinates_E</b>     |                               | Based on the GPS/smartphone reading, the easting coordinate at the center of the sampling area.   |
| <b>PlotCenterCoordinates_N</b>     |                               | Based on the GPS/smartphone reading, the northing coordinate at the center of the sampling area.  |
| <b>PhotoLoc1CoordReason</b>        | <b>no change</b>              | Check your location of the Photo Location 1 against the location provided as the photo location in MOM or other SDMMP source (e.g, Rare Plant Viewer). Indicate "no change" if Photo Location coordinates where you are sampling match those provided in MOM or other SDMMP source. Otherwise indicate "new location" (if location has not been monitored previously) or "correction" (if coordinates in SDMMP source are incorrect) and enter coordinates below. |
| <b>CameraType</b>                  | <b>Iphone 8</b>               | the type of camera being used for photo monitoring, including make, model, and lens type.   |
| <b>PhotoLocationCoord_E_Photo1</b> |                               | Based on the GPS/smartphone reading, the easting coordinate of the photopoint at the sampling area. Typically, this location is at the edge of the sampling area looking toward the rare plant population.  |
| <b>PhotoLocationCoord_N_Photo1</b> |                               | Based on the GPS/smartphone reading, the northing coordinate of the photopoint at the sampling area. Typically, this location is at the edge of the sampling area looking toward the rare plant population.   |
| <b>DirectionFacingPhoto1</b>       | <b>Northwest, 355 Degrees</b> | The direction that Photo 1 was taken using either cardinal directions and/or degrees using a compass  |
| <b>CameraHeightPhoto1</b>          | <b>5 feet</b>                 | The height of the camera in meters (taken from the ground to the bottom of the camera body, unless otherwise noted) for Photo 1.  |
| <b>CameraAnglePhoto1</b>           | <b>downward facing angle</b>  | The angle that Photo 1 was taken, whether level or at an upward or downward facing angle. Include degree of angle, if possible.   |
| <b>PhotoNumPhoto1</b>              |                               | Number on the camera or number that observer otherwise records to indicate Photo1   |
| <b>File_location_Photo1</b>        |                               | The file location of Photo1 on the computer of the observer once monitoring photos downloaded and filed   |

|                                    |                                  |  |
|------------------------------------|----------------------------------|--|
| <b>PhotoLoc2CoordReason</b>        |                                  | Check your location of the Photo Location 2 against the location provided as the photo location in MOM or other SDMMMP source (e.g, Rare Plant Viewer). Indicate "no change" if Photo Location coordinates where you are sampling match those provided in MOM or other SDMMMP source. Otherwise indicate "new location" (if location has not been monitored previously) or "correction" (if coordinates in SDMMMP source are incorrect) and enter coordinates below. |
| <b>PhotoLocationCoord_E_Photo2</b> |                                  | If a photo is taken at a second location (Photo2), record the easting coordinate of that location based on the GPS reading.  |
| <b>PhotoLocationCoord_N_Photo2</b> |                                  | If a photo is taken at a second location (Photo2), record the northing coordinate of that location based on the GPS reading.   |
| <b>DirectionFacingPhoto2</b>       |                                  | The direction that Photo 2 was taken using either cardinal directions and/or degrees using a compass   |
| <b>CameraHeightPhoto2</b>          |                                  | The height of the camera in meters (taken from the ground to the bottom of the camera body, unless otherwise noted) for Photo 2.   |
| <b>CameraAnglePhoto2</b>           |                                  | The angle that Photo 2 was taken, whether level or at an upward or downward facing angle. Include degree of angle, if possible.  |
| <b>PhotoNumPhoto2</b>              |                                  | Number on the camera or other number that observer otherwise records to indicate Photo2  |
| <b>File_location_Photo2</b>        |                                  | The file location of Photo2 on the computer of the observer once monitoring photos downloaded and filed  |
| <b>species1</b>                    | <b>Adenostoma fasciculatum</b>   | Scientific name for first plant species listed (Species 1). Includes native and nonnative plant species encountered during sampling, from section III (Associated Species) of the paper data form. See protocol for additional instructions.   |
| <b>cover1</b>                      | <b>20</b>                        | Estimate of absolute percent cover within the sampling area for Species 1.   |
| <b>species2</b>                    | <b>Arctostaphylos glandulosa</b> | Scientific name for second plant species listed (Species 2). Includes native and nonnative plant species encountered during sampling, from section III (Associated Species) of the paper data form. See protocol for additional instructions.  |
| <b>cover2</b>                      | <b>20</b>                        | Estimate of absolute percent cover within the sampling area for Species 2.   |

|                  |                                   |  |
|------------------|-----------------------------------|--|
| <b>Species3</b>  | <b>Dendromecon rigida</b>         | Scientific name for third plant species listed (Species 3). Includes native and nonnative plant species encountered during sampling, from section III (Associated Species) of the paper data form. See protocol for additional instructions. |
| <b>cover3</b>    | <b>10</b>                         | Estimate of absolute percent cover within the sampling area for Species 3.   |
| <b>Species4</b>  | <b>Malosma laurina</b>            | see species3 above   |
| <b>cover4</b>    | <b>1</b>                          | see cover3 above   |
| <b>Species5</b>  | <b>Rhus ovata</b>                 | see species3 above   |
| <b>cover5</b>    | <b>1</b>                          | see cover3 above   |
| <b>Species6</b>  | <b>Chamaebatia australis</b>      | see species3 above   |
| <b>cover6</b>    | <b>0.2</b>                        | see cover3 above   |
| <b>Species7</b>  | <b>Crocianthem scoparium</b>      | see species3 above   |
| <b>cover7</b>    | <b>0.2</b>                        | see cover3 above   |
| <b>species8</b>  | <b>Dichelostemma capitatum</b>    | see species3 above   |
| <b>cover8</b>    | <b>0.2</b>                        | see cover3 above   |
| <b>species9</b>  | <b>Festuca myuros</b>             | see species3 above   |
| <b>cover9</b>    | <b>0.2</b>                        | see cover3 above   |
| <b>species10</b> | <b>Galium sp.</b>                 | see species3 above   |
| <b>cover10</b>   | <b>0.2</b>                        | see cover3 above   |
| <b>species11</b> | <b>Hazardia squarrosa</b>         | see species3 above   |
| <b>cover11</b>   | <b>0.2</b>                        | see cover3 above   |
| <b>species12</b> | <b>Logfia gallica</b>             | see species3 above   |
| <b>cover12</b>   | <b>0.2</b>                        | see cover3 above   |
| <b>species13</b> | <b>Stipa sp.</b>                  | see species3 above   |
| <b>cover13</b>   | <b>0.2</b>                        | see cover3 above   |
| <b>species14</b> | <b>Toxicoscordion sp.</b>         | see species3 above   |
| <b>cover14</b>   | <b>0.2</b>                        | see cover3 above   |
| <b>species15</b> | <b>Xylococcus bicolor</b>         | see species3 above   |
| <b>cover15</b>   | <b>0.2</b>                        | see cover3 above   |
| <b>species16</b> | <b>Eriophyllum confertiflorum</b> | see species3 above   |
| <b>cover16</b>   | <b>5</b>                          | see cover3 above   |

|                                    |                             |  |
|------------------------------------|-----------------------------|--|
| <b>species17</b>                   | <b>Diplacus aurantiacus</b> | see species3 above   |
| <b>cover17</b>                     | <b>0.2</b>                  | see cover3 above   |
| <b>species18</b>                   |                             | see species3 above   |
| <b>cover18</b>                     |                             | see cover3 above   |
| <b>coll_num1</b>                   |                             | If a specimen of Species 1 is submitted to a herbarium, indicate the collection number for that specimen and the herbarium name  |
| <b>BareGround</b>                  | <b>45</b>                   | Estimate of % cover of bare ground   |
| <b>Rock</b>                        | <b>5</b>                    | Estimate of % of rock  |
| <b>Litter</b>                      | <b>5</b>                    | Estimate of % of litter  |
| <b>TotalPercCover</b>              | <b>59.2</b>                 | Estimate of % total cover  |
| <b>PercHerbCover</b>               | <b>2.2</b>                  | Estimate of % herbaceous cover   |
| <b>PercShrubCover</b>              | <b>57</b>                   | Estimate of % shrub cover  |
| <b>PercTreeCover</b>               |                             | Estimate of % tree cover.  |
| <b>SANDAG2012_VegAllianceAssoc</b> | <b>Ceanothus tomentosus</b> | At the sampling point, the vegetation alliance/association based upon the data collected in "Associated Species" and using the vegetation key posted on the SDMMP Rare Plant Monitoring website and/or the CDROM in the "Vegetation Classification Manual for Western San Diego County"  |
| <b>CryptogamicCrustCover</b>       | <b>2</b>                    | % cover class for cryptogamic crust cover within the sampling area. Cover classes: 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)   |
| <b>ThatchCover</b>                 | <b>1</b>                    | % cover class for thatch cover within the sampling area. Cover classes: 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)  |
| <b>ThatchDepthAverageCateg</b>     | <b>2 (&lt;1 cm)</b>         | Estimate of average thatch depth within the sampling area. Thatch Depth categories (new for 2016): 1 (no thatch); 2 (<1 cm); 3 (1 to <5 cm); 4 (5 to <10 cm); 5 (10 to <15 cm); 6 (15 to < 20 cm); 7 (≥ to 25 cm). Thatch consists of dead dry grass that lays over on the ground or is not attached, and can build up over years. |
| <b>ThatchDepthMax</b>              | <b>1</b>                    | Estimate of maximum thatch depth in cm within the sampling area. Thatch consists of dead dry grass that lays over on the ground or is not attached, and can build up over years.   |

|   |            |   |
|---|------------|---|
| <b>DeadStandingBiomass_Presence</b>           | <b>yes</b> | Presence of dead standing biomass (yes/no). Standing biomass is typically larger dead forbs, such as fennel, mustard, dock, and even taller oats (Avena spp.).  |
| <b>DeadStanding_CoverSpeciesClass</b>         |            | <b>2</b> The dominant species and cover class of dead standing biomass. Cover classes: 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%).   |
| <b>DeadStandingHeightAverage</b>              | <b>150</b> | average height in cm of dead standing biomass. Standing biomass is typically larger dead forbs, such as fennel, mustard, dock, and even taller oats .   |
| <b>FeralPigActivity</b>                       | <b>1</b>   | Feral pig activity within sampling area. 1 = No feral pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) detected; 2 = Signs of pig activity (rooting, wallowing, vegetation destruction) in sampling area appear months old; 3 = Signs of recent pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) in adjacent area but not within sampling area; 4 = Recent signs of pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pigs) within sampling area. |
| <b>GroundSquirrelActivity</b>                 | <b>1</b>   | Ground squirrel activity within sampling area. 1 = No ground squirrel burrows detected; 2 = Burrows and/or ground squirrels observed adjacent to sampling area but not within sampling area; 3 = Single squirrel or burrow seen within sampling area; 4 = Multiple burrows and/or squirrels seen within sampling area.  |
| <b>GopherActivity</b>                         | <b>1</b>   | Gopher activity within sampling area. 1 = No pocket gopher mounds detected; 2 = Mounds or gophers observed adjacent to sampling area but not within sampling area; 3 = <10 mounds observed within sampling area; 4 = ≥10 mounds or one or more gophers seen within sampling area.   |
| <b>SamplingAreaRepresent_of_mapped_occurr</b> | <b>Yes</b> | Indicate whether the sampling area appears representative of the maximum extent (yes/no). If "no" (ie, the sampling area appears to differ substantially from the maximum extent), then note the differences in the Notes field (last row of this form) or in the field below ("SamplingArea_diffs_from_mapped_occurr"); please specify which covariates differ and how they differ.  |

|   |   |  |
|---|---|--|
| <b>SamplingArea_diffs_from_mapped_occurr</b>            |   | If the sampling area appears to differ substantially from the maximum extent, then differences would be noted here or in Notes field.  |
| <b>SurroundingLandUse&amp;Activity_Adjacent_to_Site</b> |   | Land use surrounding the observation area (e.g., residential, road, open space, etc),and indicate distance to the sampling area.   |
| <b>NonnativeForbs</b>                                   | 1 | Disturbance from non-native forbs within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.        |
| <b>NonnativeGrasses</b>                                 | 1 | Disturbance from non-native grasses within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.      |
| <b>NonnativeWoodyPlts</b>                               | 1 | Disturbance from non-native woody plants within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent. |

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| <p><b>CompetitiveNativePlts</b></p> | <p><b>1</b></p> | <p>Disturbance from competitive native plants within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p> |
| <p><b>Dumping&amp;trash</b></p>     | <p><b>1</b></p> | <p>Disturbance from dumping and trash within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p>         |
| <p><b>Encampments</b></p>           | <p><b>1</b></p> | <p>Disturbance from encampments within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p>               |

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| <p>FeralPigActivity</p> | <p>1</p> | <p>Disturbance from feral pig activity within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p> |
| <p>Trampling</p>        | <p>1</p> | <p>Disturbance from trampling within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>          |
| <p>Vandalism</p>        | <p>1</p> | <p>Disturbance from vandalism within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>          |

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| <p><b>CurrentGrazing</b> 1</p>      |  | <p>Disturbance from current grazing within the maximum extent.<br/> Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>      |
| <p><b>HistoricGrazing</b> 1</p>     |  | <p>Disturbance from historic grazing within the maximum extent.<br/> Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>     |
| <p><b>HistoricAgriculture</b> 1</p> |  | <p>Disturbance from historic agriculture within the maximum extent.<br/> Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p> |

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| <p>AlteredHydrology 1</p> | <p>1</p> | <p>Disturbance from altered hydrology within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p> |
| <p>Erosion 1</p>          | <p>1</p> | <p>Disturbance from erosion within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p>           |
| <p>UrbanRunoff 1</p>      | <p>1</p> | <p>Disturbance from urban runoff within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p>      |

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| <p><b>SlopeMovement</b> 1</p>         | <p>1</p> | <p>Disturbance from soil movement within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs 75% of area within maximum extent.</p>                       |
| <p><b>SoilCompaction</b> 1</p>        | <p>1</p> | <p>Disturbance from soil compaction within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>                   |
| <p><b>FuelModZone_FireBreak</b> 1</p> | <p>1</p> | <p>Disturbance from fuel modification zone/fire break within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p> |

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| RoadConst&Mainten         | 1 | Disturbance from road construction/maintenance within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs $\geq$ 75% of area within maximum extent. |
| RoadConst&Mainten_descrip |   | If observed, description of disturbance from road construction/maintenance within the maximum extent.   |
| Illegal_Veg_Clearing      | 1 | Disturbance from illegal vegetation clearing within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs $\geq$ 75% of area within maximum extent.   |
| VegClearing_descript      |   | If observed, description of disturbance from vegetation clearing within the maximum extent.   |
| BrushMgmtorRestoration    | 1 | Disturbance from brush management/restoration within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs $\geq$ 75% of area within maximum extent.  |

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| <b>BrushMgmtorRestoration</b> |  | If observed, description of disturbance from brush management/restoration within the maximum extent.   |
| <b>ORVActivity</b> 1          |  | Disturbance from ORV activity within the maximum extent.<br>Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent. |
| <b>ORVActivity_type</b>       |  | If observed, description of disturbance from ORV activity within the maximum extent.   |
| <b>EvidenceRecentFire</b> 1   |  | Disturbance from recent fire within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.     |
| <b>YearBurned</b>             |  | year burned if sign of recent fire; if unknown year indicate "unknown"   |
| <b>Trails_authorized</b>      |  | If trails are present whether they are authorized (yes/no)   |
| <b>TrailUse_Hiking</b>        |  | if trails are present, whether they are used for hiking (yes/no)   |
| <b>TrailUse_Biking</b>        |  | if trails are present, whether they are used for biking (yes/no)   |
| <b>TrailUse_Equestrian</b>    |  | if trails are present, whether they are used for equestrian activities (yes/no)  |
| <b>TrailUse_Dog</b>           |  | if trails are present, whether they are used for dogs (yes/no)   |

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| <b>TrailUse_ServiceVehicles</b>  |                       | if trails are present, whether they are used by service vehicles (yes/no)  |
| <b>TrailUse_illegal</b>          |                       | if trails are present, whether they are illegal trails (yes/no)  |
| <b>TrailUse_illegal_descript</b> |                       | if illegal trails are present, provide description   |
| <b>OtherDisturbance_rank</b>     |                       | Other disturbances within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent. |
| <b>OtherDisturbance_descript</b> |                       | describe disturbances not listed elsewhere   |
| <b>ManageRecomm</b>              | None                  | management recommendations for the site based on disturbances and threats noted previously   |
| <b>ManageActions_PastYr</b>      | None                  | any known management actions that have been implemented at the rare plant occurrence over the last year  |
| <b>CNDDDB_SppDetected</b>        | Chamaebatia australis | list any plant or animal species to add to the CNDDDB  |
| <b>Notes</b>                     |                       | additional notes (any other useful field comments that have not been previously addressed)   |

| MSP Rare Monitoring 2018       |   |   |
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| Field_name                     | Entry   | definition  |
| <b>Date</b>                    | 5/15/2018   | date the survey was conducted (mm/dd/yyyy)  |
| <b>TimeStart</b>               | 9:40  | time the plant field survey began (24 hour time)  |
| <b>TimeFinish</b>              | 11:00   | time the plant field survey ended (24 hour time)  |
| <b>ScientificName</b>          | Clinopodium chandleri                                     | Record the monitored species' scientific name, including subspecies or variety, if applicable. Reminder: Drop-down list. (Current scientific names are also provided in MOM in the column "SName" field).   |
| <b>CommonName</b>              | San Miguel savory   | Reminder: Drop-down list. (The species common name can also be obtained from the column "CName" in MOM.)  |
| <b>Existing MSP Occurrence</b> | yes   | Indicate whether this is an existing occurrence in MOM or a new occurrence . If you are unsure, enter "unknown".  |
| <b>MSPOccurrenceID</b>         | CLCH5_4BOPR002  | The occurrence ID can be obtained from the "OccID" column in MOM (see protocol for a description of the Occurrence ID code).  |
| <b>CNDDDB_EO_num</b>           |   | If the occurrence has a CNDDDB EO#, this will be listed in the "OtherID" column in MOM as "EOXX" (e.g., EO4, EO15).   |
| <b>Translocated_occur</b>      | no  | Enter whether the occurrence is translocated or not. MOM has a "Transloc" field that can help to complete this field.   |
| <b>Preserve</b>                | BOULDER OAKS PRESERVE                                     | Name of Preserve. This information can also be found in MOM   |
| <b>LandOwner</b>               | County San Diego<br>Department of Parks and Recreation    | Land Owner. This information can also be found in MOM   |
| <b>LandMangr</b>               | County of San Diego<br>Department of Parks and Recreation | Land Manager. This information can also be found in MOM   |
| <b>OccurrenceName</b>          | Boulder Oaks Preserve                                     | Record the occurrence name from the "OccName" field in MOM.   |
| <b>SamplePointNum</b>          | BOCLCH02  | There can be multiple sampling areas that are part of the same occurrence. These are designated in the occurrence name as "-Obs. #X" (e.g., Carmel Mountain - Obs. #1, Carmel Mountain - Obs. #2) or as unique names (e.g., Crest Canyon North, Crest Canyon South). For the sample point, enter an observation number or name only if there are multiple sampling areas for that occurrence. |
| <b>Surveyors</b>               | Nicole Salas, Frank Landis                                | Record names all field personnel (use full names)   |

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| <b>Affiliation</b>                     | ICF, County Volunteers | Record agencies of all field personnel (use full names)   |
| <b>NumPlantsperCurrentMappedExtent</b> | 111                    | If the mapped occurrence perimeter falls entirely within the sampling area, then this number is the same as that entered for "# Plants/Sampling Area". If the occurrence perimeter is larger than the sampling area, then count or estimate the number of plants within the entire occurrence perimeter. See protocol for additional information. |
| <b>ExactCountorEstimate1</b>           | exact                  | "exact/estimate"; indication of whether "Number of plants per current mapped extent" was an exact count of plants or an estimate of plant number  |
| <b>uncertainty1</b>                    | low                    | uncertainty associated with "Number of plants per current mapped extent"; categories: very high, high, medium, low, very low  |
| <b>Count_type1</b>                     | individ_plants         | For both exact counts and estimates of "Number of plants per Current Mapped Extent" indicate whether you counted individual plants or clusters, of plants ("individual plants" or "clusters of plants"  |
| <b>Flower_Veget1</b>                   | vegetative             | For both exact counts and estimates of "Number of plants per Current Mapped Extent", indicate whether the count was of flowering individuals or of vegetative individuals (latter applies primarily to geophytes)   |
| <b>AreaCurrentMappedExtent</b>         | 0.34                   | The size of the area based on GPS'ing the perimeter of the occurrence.  |
| <b>Area_units</b>                      | Acres                  | units (e.g., square meters, square feet) of "AreaCurrentMappedExtent"   |
| <b>Area_exact_or_estim</b>             | exact (GPS mapping)    | "exact/estimate"; refers to uncertainty associated with "AreaCurrentMappedExtent"   |
| <b>CurrentExtentPerimMethod</b>        | walking                | Indicate whether the perimeter of the current extent was determined by (a) walking it and delineating with a GPS or smartphone, or (b) whether the extent was determined by another means, such as GIS, aerial photographs, etc. ("walking"; "other"). If other, indicate in Notes section  |
| <b>SpeciesLocated_in_MaximumExtent</b> | yes                    | Yes/no to indicate whether the species was found within the maximum extent.   |
| <b>Reason_IfNotFound</b>               |                        | If the species was not found, note any potential explanations for why the species wasn't detected.  |
| <b>NumPlantsperSamplArea</b>           | 41                     | Count or estimate of the total number of plants in the sampling area.   |
| <b>ExactCountorEstimate2</b>           | exact                  | "exact/estimate"; refers to whether "Number of plants per sample area" was an exact count of plants or an estimate of plant number  |

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| <b>uncertainty2</b>                            | <b>low</b>            | uncertainty associated with "Number of plants per sample area"; categories: very high, high, medium, low, very low   |
| <b>SampleAreaRadius(m)</b>                     | <b>10</b>             | enter the radius of the sampling area in meters  |
| <b>Count_type2</b>                             | <b>individ_plants</b> | For both exact counts and estimates of "Number of plants per Sample Area" indicate whether you counted individual plants or clusters, of plants ("individual plants" or "clusters of plants")                                  |
| <b>Flower_Veget2</b>                           | <b>vegetative</b>     | For both exact counts and estimates of "Number of plants per Sample Area", indicate whether the count was of flowering individuals or of vegetative individuals (latter applies primarily to geophytes)                        |
| <b>Vegetative_percent</b>                      | <b>4</b>              | Phenology in sampling area. Category representing the % of plants in the vegetative stage in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                            |
| <b>Flowering_percent</b>                       | <b>5</b>              | Phenology in sampling area. Category representing the % of plants in the flowering stage in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                             |
| <b>Fruiting_percent</b>                        | <b>1</b>              | Phenology in sampling area. Category representing the % of plants in the fruiting stage in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                              |
| <b>Flowering&amp;Fruiting_percent</b>          | <b>1</b>              | Phenology in sampling area. Category representing the % of plants in the fruiting and flowering stage in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                |
| <b>Dead_percent</b>                            | <b>2</b>              | Phenology in sampling area. Category representing the % of plants dead in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)   |
| <b>Herbivory_percent</b>                       | <b>1</b>              | Applies to sampling area. Category representing the % of plants showing signs of herbivory in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                           |
| <b>Disease_percent</b>                         | <b>1</b>              | Applies to sampling area. Category representing the % of plants showing signs of disease in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                             |
| <b>StuntedGrowth_percent</b>                   | <b>1</b>              | Applies to sampling area. Category representing the % of plants showing signs of stunted growth in the sampling area in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%) |
| <b>SamplingArea_within_CurrentMappedExtent</b> | <b>yes</b>            | Yes/no to indicate whether the current distribution of the plant is outside of the sampling area.  |

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| <b>Collection</b>                  |           | Indicate whether a collection of plants within the sampling area was taken or has previously been done ("yes/no/collected previously")  |
| <b>Collector</b>                   |           | If there is a collection, indicate name of person who collected.  |
| <b>Collection_Num</b>              |           | If there is a collection, indicate a number for collection.   |
| <b>Museum_Herbarium</b>            |           | If there is a collection, where collected specimen was submitted.   |
| <b>GPSAccuracy</b>                 | 1         | accuracy of the GPS unit or smartphone you are using (a number without units)   |
| <b>GPSAccuracyUnits</b>            | meters    | The units associated with the accuracy of the GPS unit or smartphone you are using (choices: meters, feet).   |
| <b>Datum</b>                       | NAD83     | Datum setting for the GPS unit (e.g., NAD83, WGS84).  |
| <b>CoordSystem</b>                 | UTM (m)   | The coordinate system used (e.g., UTM, State Plane, Latitude-Long)  |
| <b>PlotCenterCoordReason</b>       | no change | Check your location of the Plot Center against the location provided as the sampling location in MOM or other SDMMP source (e.g, Rare Plant Viewer). Indicate "no change" if Plot Center coordinates where you are sampling match those provided in MOM or other SDMMP source. Otherwise indicate "new location" (if location has not been monitored previously) or "correction" (if coordinates in SDMMP source are incorrect) and enter coordinates below.      |
| <b>PlotCenterCoordinates_E</b>     |           | Based on the GPS/smartphone reading, the easting coordinate at the center of the sampling area.   |
| <b>PlotCenterCoordinates_N</b>     |           | Based on the GPS/smartphone reading, the northing coordinate at the center of the sampling area.  |
| <b>PhotoLoc1CoordReason</b>        | no change | Check your location of the Photo Location 1 against the location provided as the photo location in MOM or other SDMMP source (e.g, Rare Plant Viewer). Indicate "no change" if Photo Location coordinates where you are sampling match those provided in MOM or other SDMMP source. Otherwise indicate "new location" (if location has not been monitored previously) or "correction" (if coordinates in SDMMP source are incorrect) and enter coordinates below. |
| <b>CameraType</b>                  | iphone 8  | the type of camera being used for photo monitoring, including make, model, and lens type.   |
| <b>PhotoLocationCoord_E_Photo1</b> |           | Based on the GPS/smartphone reading, the easting coordinate of the photopoint at the sampling area. Typically, this location is at the edge of the sampling area looking toward the rare plant population.  |
| <b>PhotoLocationCoord_N_Photo1</b> |           | Based on the GPS/smartphone reading, the northing coordinate of the photopoint at the sampling area. Typically, this location is at the edge of the sampling area looking toward the rare plant population.   |

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| <b>DirectionFacingPhoto1</b>       | <b>Northeast, 14 Degrees</b>   | The direction that Photo 1 was taken using either cardinal directions and/or degrees using a compass  |
| <b>CameraHeightPhoto1</b>          | <b>5 feet</b>                  | The height of the camera in meters (taken from the ground to the bottom of the camera body, unless otherwise noted) for Photo 1.  |
| <b>CameraAnglePhoto1</b>           | <b>Down ward facing angle</b>  | The angle that Photo 1 was taken, whether level or at an upward or downward facing angle. Include degree of angle, if possible.   |
| <b>PhotoNumPhoto1</b>              |                                | Number on the camera or number that observer otherwise records to indicate Photo1   |
| <b>File_location_Photo1</b>        |                                | The file location of Photo1 on the computer of the observer once monitoring photos downloaded and filed   |
| <b>PhotoLoc2CoordReason</b>        |                                | Check your location of the Photo Location 2 against the location provided as the photo location in MOM or other SDMMP source (e.g, Rare Plant Viewer). Indicate "no change" if Photo Location coordinates where you are sampling match those provided in MOM or other SDMMP source. Otherwise indicate "new location" (if location has not been monitored previously) or "correction" (if coordinates in SDMMP source are incorrect) and enter coordinates below. |
| <b>PhotoLocationCoord_E_Photo2</b> |                                | If a photo is taken at a second location (Photo2), record the easting coordinate of that location based on the GPS reading.   |
| <b>PhotoLocationCoord_N_Photo2</b> |                                | If a photo is taken at a second location (Photo2), record the northing coordinate of that location based on the GPS reading.  |
| <b>DirectionFacingPhoto2</b>       |                                | The direction that Photo 2 was taken using either cardinal directions and/or degrees using a compass  |
| <b>CameraHeightPhoto2</b>          |                                | The height of the camera in meters (taken from the ground to the bottom of the camera body, unless otherwise noted) for Photo 2.  |
| <b>CameraAnglePhoto2</b>           |                                | The angle that Photo 2 was taken, whether level or at an upward or downward facing angle. Include degree of angle, if possible.   |
| <b>PhotoNumPhoto2</b>              |                                | Number on the camera or other number that observer otherwise records to indicate Photo2   |
| <b>File_location_Photo2</b>        |                                | The file location of Photo2 on the computer of the observer once monitoring photos downloaded and filed   |
| <b>species1</b>                    | <b>Adenostoma fasciculatum</b> | Scientific name for first plant species listed (Species 1). Includes native and nonnative plant species encountered during sampling, from section III (Associated Species) of the paper data form. See protocol for additional instructions.  |
| <b>cover1</b>                      | <b>25</b>                      | Estimate of absolute percent cover within the sampling area for Species 1.  |

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| <b>species2</b>  | <b>Arctostaphylos glandulosa</b>  | Scientific name for second plant species listed (Species 2). Includes native and nonnative plant species encountered during sampling, from section III (Associated Species) of the paper data form. See protocol for additional instructions. |
| <b>cover2</b>    | <b>3</b>                          | Estimate of absolute percent cover within the sampling area for Species 2.  |
| <b>species3</b>  | <b>Ceanothus tomentosus</b>       | Scientific name for third plant species listed (Species 3). Includes native and nonnative plant species encountered during sampling, from section III (Associated Species) of the paper data form. See protocol for additional instructions.  |
| <b>cover3</b>    | <b>10</b>                         | Estimate of absolute percent cover within the sampling area for Species 3.  |
| <b>species4</b>  | <b>Chamaebatia australis</b>      | see species3 above  |
| <b>cover4</b>    | <b>5</b>                          | see cover3 above  |
| <b>species5</b>  | <b>Crocanthemum scoparium</b>     | see species3 above  |
| <b>cover5</b>    | <b>0.2</b>                        | see cover3 above  |
| <b>species6</b>  | <b>Dendromecon rigida</b>         | see species3 above  |
| <b>cover6</b>    | <b>3</b>                          | see cover3 above  |
| <b>species7</b>  | <b>Dichelostemma capitatum</b>    | see species3 above  |
| <b>cover7</b>    | <b>0.2</b>                        | see cover3 above  |
| <b>species8</b>  | <b>Festuca myuros</b>             | see species3 above  |
| <b>cover8</b>    | <b>0.2</b>                        | see cover3 above  |
| <b>species9</b>  | <b>Galium sp.</b>                 | see species3 above  |
| <b>cover9</b>    | <b>0.2</b>                        | see cover3 above  |
| <b>species10</b> | <b>Hazardia squarrosa</b>         | see species3 above  |
| <b>cover10</b>   | <b>0.2</b>                        | see cover3 above  |
| <b>species11</b> | <b>Logfia gallica</b>             | see species3 above  |
| <b>cover11</b>   | <b>0.2</b>                        | see cover3 above  |
| <b>species12</b> | <b>Stipa sp.</b>                  | see species3 above  |
| <b>cover12</b>   | <b>0.2</b>                        | see cover3 above  |
| <b>species13</b> | <b>Toxicoscordion sp.</b>         | see species3 above  |
| <b>cover13</b>   | <b>0.2</b>                        | see cover3 above  |
| <b>species14</b> | <b>Xylococcus bicolor</b>         | see species3 above  |
| <b>cover14</b>   | <b>3</b>                          | see cover3 above  |
| <b>species15</b> | <b>Eriophyllum confertiflorum</b> | see species3 above  |

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| <b>cover15</b>        | 0.2                               | see cover3 above  |
| <b>species16</b>      | <b>Ehrharta calycina</b>          | see species3 above  |
| <b>cover16</b>        | 0.2                               | see cover3 above  |
| <b>species17</b>      | <b>Gastridium phleoides</b>       | see species3 above  |
| <b>cover17</b>        | 0.2                               | see cover3 above  |
| <b>species18</b>      | <b>Brachypodium distachyon</b>    | see species3 above  |
| <b>cover18</b>        | 0.2                               | see cover3 above  |
| <b>species19</b>      | <b>Melica imperfecta</b>          | see species3 above  |
| <b>cover19</b>        | 0.2                               | see cover3 above  |
| <b>species20</b>      | <b>Carex triquetra</b>            | see species3 above  |
| <b>cover20</b>        | 0.2                               | see cover3 above  |
| <b>species21</b>      | <b>Ribes sp.</b>                  | see species3 above  |
| <b>cover21</b>        | 0.2                               | see cover3 above  |
| <b>species22</b>      | <b>Acmispon glaber</b>            | see species3 above  |
| <b>cover22</b>        | 0.2                               | see cover3 above  |
| <b>species23</b>      | <b>Eriophyllum confertiflorum</b> | see species3 above  |
| <b>cover23</b>        | 0.2                               | see cover3 above  |
| <b>species24</b>      | <b>Rhamnus crocea</b>             | see species3 above  |
| <b>cover24</b>        | 0.2                               | see cover3 above  |
| <b>species25</b>      | <b>Pentagramma triangularis</b>   | see species3 above  |
| <b>cover25</b>        | 0.2                               | see cover3 above  |
| <b>species26</b>      | <b>Diplacus aurantiacus</b>       | see species3 above  |
| <b>cover26</b>        | 0.2                               | see cover3 above  |
| <b>species27</b>      |                                   | see species3 above  |
| <b>cover27</b>        |                                   | see cover3 above  |
| <b>coll_num1</b>      |                                   | If a specimen of Species 1 is submitted to a herbarium, indicate the collection number for that specimen and the herbarium name |
| <b>BareGround</b>     | 45                                | Estimate of % cover of bare ground  |
| <b>Rock</b>           | 6                                 | Estimate of % of rock   |
| <b>Litter</b>         | 2                                 | Estimate of % of litter   |
| <b>TotalPercCover</b> | 53                                | Estimate of % total cover   |

|                                       |                             |   |
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| <b>PercHerbCover</b>                  | <b>4</b>                    | Estimate of % herbaceous cover  |
| <b>PercShrubCover</b>                 | <b>51</b>                   | Estimate of % shrub cover   |
| <b>PercTreeCover</b>                  |                             | Estimate of % tree cover.   |
| <b>SANDAG2012_VegAllianceAssoc</b>    | <b>Ceanothus tomentosus</b> | At the sampling point, the vegetation alliance/association based upon the data collected in "Associated Species" and using the vegetation key posted on the SDMMP Rare Plant Monitoring website and/or the CDROM in the "Vegetation Classification Manual for Western San Diego County"   |
| <b>CryptogamicCrustCover</b>          | <b>2</b>                    | % cover class for cryptogamic crust cover within the sampling area. Cover classes: 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)  |
| <b>ThatchCover</b>                    | <b>1</b>                    | % cover class for thatch cover within the sampling area. Cover classes: 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)   |
| <b>ThatchDepthAverageCateg</b>        | <b>2</b>                    | Estimate of average thatch depth within the sampling area. Thatch Depth categories (new for 2016): 1 (no thatch); 2 (<1 cm); 3 (1 to <5 cm); 4 (5 to <10 cm); 5 (10 to <15 cm); 6 (15 to < 20 cm); 7 (≥ to 25 cm). Thatch consists of dead dry grass that lays over on the ground or is not attached, and can build up over years.  |
| <b>ThatchDepthMax</b>                 | <b>5 cm</b>                 | Estimate of maximum thatch depth in cm within the sampling area. Thatch consists of dead dry grass that lays over on the ground or is not attached, and can build up over years.  |
| <b>DeadStandingBiomass_Presence</b>   | <b>yes</b>                  | Presence of dead standing biomass (yes/no). Standing biomass is typically larger dead forbs, such as fennel, mustard, dock, and even taller oats ( <i>Avena</i> spp.).  |
| <b>DeadStanding_CoverSpeciesClass</b> |                             | <b>2</b> The dominant species and cover class of dead standing biomass. Cover classes: 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%).   |
| <b>DeadStandingHeightAverage</b>      | <b>150</b>                  | average height in cm of dead standing biomass. Standing biomass is typically larger dead forbs, such as fennel, mustard, dock, and even taller oats .   |
| <b>FeralPigActivity</b>               | <b>1</b>                    | Feral pig activity within sampling area. 1 = No feral pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) detected; 2 = Signs of pig activity (rooting, wallowing, vegetation destruction) in sampling area appear months old; 3 = Signs of recent pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) in adjacent area but not within sampling area; 4 = Recent signs of pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pigs) within sampling area. |

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| <b>GroundSquirrelActivity</b>                           | <b>1</b>   | Ground squirrel activity within sampling area. 1 = No ground squirrel burrows detected; 2 = Burrows and/or ground squirrels observed adjacent to sampling area but not within sampling area; 3 = Single squirrel or burrow seen within sampling area; 4 = Multiple burrows and/or squirrels seen within sampling area.  |
| <b>GopherActivity</b>                                   | <b>1</b>   | Gopher activity within sampling area. 1 = No pocket gopher mounds detected; 2 = Mounds or gophers observed adjacent to sampling area but not within sampling area; 3 = <10 mounds observed within sampling area; 4 = ≥10 mounds or one or more gophers seen within sampling area.   |
| <b>SamplingAreaRepresent_of_mapped_occurr</b>           | <b>Yes</b> | Indicate whether the sampling area appears representative of the maximum extent (yes/no). If "no" (ie, the sampling area appears to differ substantially from the maximum extent), then note the differences in the Notes field (last row of this form) or in the field below ("SamplingArea_diffs_from_mapped_occurr"); please specify which covariates differ and how they differ.  |
| <b>SamplingArea_diffs_from_mapped_occurr</b>            |            | If the sampling area appears to differ substantially from the maximum extent, then differences would be noted here or in Notes field.   |
| <b>SurroundingLandUse&amp;Activity_Adjacent_to_Site</b> |            | Land use surrounding the observation area (e.g., residential, road, open space, etc),and indicate distance to the sampling area.  |
| <b>NonnativeForbs</b>                                   | <b>1</b>   | Disturbance from non-native forbs within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.   |
| <b>NonnativeGrasses</b>                                 | <b>3</b>   | Disturbance from non-native grasses within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent. |

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| NonnativeWoodyPlts    | 1 | Disturbance from non-native woody plants within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.   |
| CompetitiveNativePlts | 1 | Disturbance from competitive native plants within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent. |
| Dumping&trash         | 1 | Disturbance from dumping and trash within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.         |
| Encampments           | 1 | Disturbance from encampments within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.               |

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| FeralPigActivity | 1 | Disturbance from feral pig activity within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent. |
| Trampling        | 1 | Disturbance from trampling within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.          |
| Vandalism        | 1 | Disturbance from vandalism within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.          |
| CurrentGrazing   | 1 | Disturbance from current grazing within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.    |

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| <p><b>HistoricGrazing</b> 1</p>     |  | <p>Disturbance from historic grazing within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p>     |
| <p><b>HistoricAgriculture</b> 1</p> |  | <p>Disturbance from historic agriculture within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p> |
| <p><b>AlteredHydrology</b> 1</p>    |  | <p>Disturbance from altered hydrology within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p>    |
| <p><b>Erosion</b> 1</p>             |  | <p>Disturbance from erosion within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p>              |

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| UrbanRunoff           | 1 | Disturbance from urban runoff within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs $\geq$ 75% of area within maximum extent.                      |
| SlopeMovement         | 1 | Disturbance from soil movement within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs 75% of area within maximum extent.                            |
| SoilCompaction        | 1 | Disturbance from soil compaction within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs $\geq$ 75% of area within maximum extent.                   |
| FuelModZone_FireBreak | 1 | Disturbance from fuel modification zone/fire break within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs $\geq$ 75% of area within maximum extent. |

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| <b>RoadConst&amp;Mainten</b>         | <b>1</b> | Disturbance from road construction/maintenance within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent. |
| <b>RoadConst&amp;Mainten_descrip</b> |          | If observed, description of disturbance from road construction/maintenance within the maximum extent.  |
| <b>Illegal_Veg_Clearing</b>          | <b>1</b> | Disturbance from illegal vegetation clearing within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.   |
| <b>VegClearing_descript</b>          |          | If observed, description of disturbance from vegetation clearing within the maximum extent.  |
| <b>BrushMgmtorRestoration</b>        | <b>1</b> | Disturbance from brush management/restoration within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.  |
| <b>BrushMgmtorRestoration</b>        |          | If observed, description of disturbance from brush management/restoration within the maximum extent.   |

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| <b>ORVActivity</b>               | <b>1</b> | Disturbance from ORV activity within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent. |
| <b>ORVActivity_type</b>          |          | If observed, description of disturbance from ORV activity within the maximum extent.  |
| <b>EvidenceRecentFire</b>        | <b>1</b> | Disturbance from recent fire within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.  |
| <b>YearBurned</b>                |          | year burned if sign of recent fire; if unknown year indicate "unknown"  |
| <b>Trails_authorized</b>         |          | If trails are present whether they are authorized (yes/no)  |
| <b>TrailUse_Hiking</b>           |          | if trails are present, whether they are used for hiking (yes/no)  |
| <b>TrailUse_Biking</b>           |          | if trails are present, whether they are used for biking (yes/no)  |
| <b>TrailUse_Equestrian</b>       |          | if trails are present, whether they are used for equestrian activities (yes/no)   |
| <b>TrailUse_Dog</b>              |          | if trails are present, whether they are used for dogs (yes/no)  |
| <b>TrailUse_ServiceVehicles</b>  |          | if trails are present, whether they are used by service vehicles (yes/no)   |
| <b>TrailUse_illegal</b>          |          | if trails are present, whether they are illegal trails (yes/no)   |
| <b>TrailUse_illegal_descript</b> |          | if illegal trails are present, provide description  |

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| <b>OtherDisturbance_rank</b>     |  | Other disturbances within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs $\geq$ 75% of area within maximum extent. |
| <b>OtherDisturbance_descript</b> |  | describe disturbances not listed elsewhere  |
| <b>ManageRecomm</b>              | Monitor Ehrharta calycina in access road and drainage north of plot. | management recommendations for the site based on disturbances and threats noted previously  |
| <b>ManageActions_PastYr</b>      | None   | any known management actions that have been implemented at the rare plant occurrence over the last year   |
| <b>CNDDDB_SppDetected</b>        | Chamaebatia australis  | list any plant or animal species to add to the CNDDDB   |
| <b>Notes</b>                     |  | additional notes (any other useful field comments that have not been previously addressed)  |

| MSP Rare Monitoring 2018       |  |   |
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| Field_name                     | Entry  | definition  |
| <b>Date</b>                    | 5/10/2018  | date the survey was conducted (mm/dd/yyyy)  |
| <b>TimeStart</b>               | 10:15  | time the plant field survey began (24 hour time)  |
| <b>TimeFinish</b>              | 11:45  | time the plant field survey ended (24 hour time)  |
| <b>ScientificName</b>          | Dudleya variegata  | Record the monitored species' scientific name, including subspecies or variety, if applicable. Reminder: Drop-down list. (Current scientific names are also provided in MOM in the column "SName" field).   |
| <b>CommonName</b>              | Variegated dudleya   | Reminder: Drop-down list. (The species common name can also be obtained from the column "CName" in MOM.)  |
| <b>Existing MSP Occurrence</b> |  | Indicate whether this is an existing occurrence in MOM or a new occurrence . If you are unsure, enter "unknown".  |
| <b>MSPOccurrenceID</b>         | DUVA_6LUCR023  | The occurrence ID can be obtained from the "OccID" column in MOM (see protocol for a description of the Occurrence ID code).  |
| <b>CNDDDB_EO_num</b>           |  | If the occurrence has a CNDDDB EO#, this will be listed in the "OtherID" column in MOM as "EOXX" (e.g., EO4, EO15).   |
| <b>Translocated_occur</b>      | no   | Enter whether the occurrence is translocated or not. MOM has a "Transloc" field that can help to complete this field.   |
| <b>Preserve</b>                | LUSARDI CREEK PRESERVE                                       | Name of Preserve. This information can also be found in MOM   |
| <b>LandOwner</b>               | County San Diego<br>Department of Parks and<br>Recreation    | Land Owner. This information can also be found in MOM   |
| <b>LandMangr</b>               | County of San Diego<br>Department of Parks and<br>Recreation | Land Manager. This information can also be found in MOM   |
| <b>OccurrenceName</b>          | Lusardi Creek  | Record the occurrence name from the "OccName" field in MOM.   |
| <b>SamplePointNum</b>          |  | There can be multiple sampling areas that are part of the same occurrence. These are designated in the occurrence name as "-Obs. #X" (e.g., Carmel Mountain - Obs. #1, Carmel Mountain - Obs. #2) or as unique names (e.g., Crest Canyon North, Crest Canyon South). For the sample point, enter an observation number or name only if there are multiple sampling areas for that occurrence. |

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| <b>Surveyors</b>                       | Nicole Salas, Frank Landis, Beth Mather, Jim Roberts, Sam Naviei | Record names all field personnel (use full names)   |
| <b>Affiliation</b>                     | ICF, County Volunteers   | Record agencies of all field personnel (use full names)   |
| <b>NumPlantsperCurrentMappedExtent</b> | 199  | If the mapped occurrence perimeter falls entirely within the sampling area, then this number is the same as that entered for "# Plants/Sampling Area". If the occurrence perimeter is larger than the sampling area, then count or estimate the number of plants within the entire occurrence perimeter. See protocol for additional information. |
| <b>ExactCountorEstimate1</b>           | exact  | "exact/estimate"; indication of whether "Number of plants per current mapped extent" was an exact count of plants or an estimate of plant number  |
| <b>uncertainty1</b>                    | low  | uncertainty associated with "Number of plants per current mapped extent"; categories: very high, high, medium, low, very low  |
| <b>Count_type1</b>                     | individ_plants   | For both exact counts and estimates of "Number of plants per Current Mapped Extent" indicate whether you counted individual plants or clusters, of plants ("individual plants" or "clusters of plants")   |
| <b>Flower_Veget1</b>                   | vegetative   | For both exact counts and estimates of "Number of plants per Current Mapped Extent", indicate whether the count was of flowering individuals or of vegetative individuals (latter applies primarily to geophytes)   |
| <b>AreaCurrentMappedExtent</b>         | 0.6  | The size of the area based on GPS'ing the perimeter of the occurrence.  |
| <b>Area_units</b>                      | Acres  | units (e.g., square meters, square feet) of "AreaCurrentMappedExtent"   |
| <b>Area_exact_or_estim</b>             | exact (GPS mapping)  | "exact/estimate"; refers to uncertainty associated with "AreaCurrentMappedExtent"   |
| <b>CurrentExtentPerimMethod</b>        | walking  | Indicate whether the perimeter of the current extent was determined by (a) walking it and delineating with a GPS or smartphone, or (b) whether the extent was determined by another means, such as GIS, aerial photographs, etc. ("walking"; "other"). If other, indicate in Notes section  |
| <b>SpeciesLocated_in_MaximumExtent</b> | yes  | Yes/no to indicate whether the species was found within the maximum extent.   |
| <b>Reason_IfNotFound</b>               |  | If the species was not found, note any potential explanations for why the species wasn't detected.  |
| <b>NumPlantsperSamplArea</b>           | 140  | Count or estimate of the total number of plants in the sampling area.   |

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| <b>ExactCountorEstimate2</b>          | <b>exact</b>          | "exact/estimate"; refers to whether "Number of plants per sample area" was an exact count of plants or an estimate of plant number   |
| <b>uncertainty2</b>                   | <b>low</b>            | uncertainty associated with "Number of plants per sample area"; categories: very high, high, medium, low, very low   |
| <b>SampleAreaRadius(m)</b>            | <b>10</b>             | enter the radius of the sampling area in meters  |
| <b>Count_type2</b>                    | <b>individ_plants</b> | For both exact counts and estimates of "Number of plants per Sample Area" indicate whether you counted individual plants or clusters, of plants ("individual plants" or "clusters of plants")                                  |
| <b>Flower_Veget2</b>                  | <b>vegetative</b>     | For both exact counts and estimates of "Number of plants per Sample Area", indicate whether the count was of flowering individuals or of vegetative individuals (latter applies primarily to geophytes)                        |
| <b>Vegetative_percent</b>             | <b>1</b>              | Phenology in sampling area. Category representing the % of plants in the vegetative stage in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                            |
| <b>Flowering_percent</b>              | <b>6</b>              | Phenology in sampling area. Category representing the % of plants in the flowering stage in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                             |
| <b>Fruiting_percent</b>               | <b>1</b>              | Phenology in sampling area. Category representing the % of plants in the fruiting stage in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                              |
| <b>Flowering&amp;Fruiting_percent</b> | <b>1</b>              | Phenology in sampling area. Category representing the % of plants in the fruiting and flowering stage in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                |
| <b>Dead_percent</b>                   | <b>2</b>              | Phenology in sampling area. Category representing the % of plants dead in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)   |
| <b>Herbivory_percent</b>              | <b>1</b>              | Applies to sampling area. Category representing the % of plants showing signs of herbivory in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                           |
| <b>Disease_percent</b>                | <b>1</b>              | Applies to sampling area. Category representing the % of plants showing signs of disease in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                             |
| <b>StuntedGrowth_percent</b>          | <b>1</b>              | Applies to sampling area. Category representing the % of plants showing signs of stunted growth in the sampling area in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%) |

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| <b>SamplingArea_within_CurrentMappedExtent</b> | <b>yes</b>       | Yes/no to indicate whether the current distribution of the plant is outside of the sampling area.   |
| <b>Collection</b>                              |                  | Indicate whether a collection of plants within the sampling area was taken or has previously been done ("yes/no/collected previously")  |
| <b>Collector</b>                               |                  | If there is a collection, indicate name of person who collected.  |
| <b>Collection_Num</b>                          |                  | If there is a collection, indicate a number for collection.   |
| <b>Museum_Herbarium</b>                        |                  | If there is a collection, where collected specimen was submitted.   |
| <b>GPSAccuracy</b>                             | <b>1</b>         | accuracy of the GPS unit or smartphone you are using (a number without units)   |
| <b>GPSAccuracyUnits</b>                        | <b>meters</b>    | The units associated with the accuracy of the GPS unit or smartphone you are using (choices: meters, feet).   |
| <b>Datum</b>                                   | <b>NAD83</b>     | Datum setting for the GPS unit (e.g., NAD83, WGS84).  |
| <b>CoordSystem</b>                             | <b>UTM (m)</b>   | The coordinate system used (e.g., UTM, State Plane, Latitude-Long)  |
| <b>PlotCenterCoordReason</b>                   | <b>no change</b> | Check your location of the Plot Center against the location provided as the sampling location in MOM or other SDMMP source (e.g, Rare Plant Viewer). Indicate "no change" if Plot Center coordinates where you are sampling match those provided in MOM or other SDMMP source. Otherwise indicate "new location" (if location has not been monitored previously) or "correction" (if coordinates in SDMMP source are incorrect) and enter coordinates below.      |
| <b>PlotCenterCoordinates_E</b>                 |                  | Based on the GPS/smartphone reading, the easting coordinate at the center of the sampling area.   |
| <b>PlotCenterCoordinates_N</b>                 |                  | Based on the GPS/smartphone reading, the northing coordinate at the center of the sampling area.  |
| <b>PhotoLoc1CoordReason</b>                    | <b>no change</b> | Check your location of the Photo Location 1 against the location provided as the photo location in MOM or other SDMMP source (e.g, Rare Plant Viewer). Indicate "no change" if Photo Location coordinates where you are sampling match those provided in MOM or other SDMMP source. Otherwise indicate "new location" (if location has not been monitored previously) or "correction" (if coordinates in SDMMP source are incorrect) and enter coordinates below. |
| <b>CameraType</b>                              | <b>iphone 8</b>  | the type of camera being used for photo monitoring, including make, model, and lens type.   |

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| <b>PhotoLocationCoord_E_Photo1</b> |                               | Based on the GPS/smartphone reading, the easting coordinate of the photopoint at the sampling area. Typically, this location is at the edge of the sampling area looking toward the rare plant population.   |
| <b>PhotoLocationCoord_N_Photo1</b> |                               | Based on the GPS/smartphone reading, the northing coordinate of the photopoint at the sampling area. Typically, this location is at the edge of the sampling area looking toward the rare plant population.  |
| <b>DirectionFacingPhoto1</b>       | <b>Southeast, 155 degrees</b> | The direction that Photo 1 was taken using either cardinal directions and/or degrees using a compass   |
| <b>CameraHeightPhoto1</b>          | <b>5 feet</b>                 | The height of the camera in meters (taken from the ground to the bottom of the camera body, unless otherwise noted) for Photo 1.   |
| <b>CameraAnglePhoto1</b>           | <b>level</b>                  | The angle that Photo 1 was taken, whether level or at an upward or downward facing angle. Include degree of angle, if possible.  |
| <b>PhotoNumPhoto1</b>              |                               | Number on the camera or number that observer otherwise records to indicate Photo1  |
| <b>File_location_Photo1</b>        |                               | The file location of Photo1 on the computer of the observer once monitoring photos downloaded and filed  |
| <b>PhotoLoc2CoordReason</b>        |                               | Check your location of the Photo Location 2 against the location provided as the photo location in MOM or other SDMMMP source (e.g, Rare Plant Viewer). Indicate "no change" if Photo Location coordinates where you are sampling match those provided in MOM or other SDMMMP source. Otherwise indicate "new location" (if location has not been monitored previously) or "correction" (if coordinates in SDMMMP source are incorrect) and enter coordinates below. |
| <b>PhotoLocationCoord_E_Photo2</b> |                               | If a photo is taken at a second location (Photo2), record the easting coordinate of that location based on the GPS reading.  |
| <b>PhotoLocationCoord_N_Photo2</b> |                               | If a photo is taken at a second location (Photo2), record the northing coordinate of that location based on the GPS reading.   |
| <b>DirectionFacingPhoto2</b>       |                               | The direction that Photo 2 was taken using either cardinal directions and/or degrees using a compass   |
| <b>CameraHeightPhoto2</b>          |                               | The height of the camera in meters (taken from the ground to the bottom of the camera body, unless otherwise noted) for Photo 2.   |
| <b>CameraAnglePhoto2</b>           |                               | The angle that Photo 2 was taken, whether level or at an upward or downward facing angle. Include degree of angle, if possible.  |
| <b>PhotoNumPhoto2</b>              |                               | Number on the camera or other number that observer otherwise records to indicate Photo2  |

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| <b>File_location_Photo2</b> |                                | The file location of Photo2 on the computer of the observer once monitoring photos downloaded and filed   |
| <b>species1</b>             | <b>Deinandra fasciculata</b>   | Scientific name for first plant species listed (Species 1). Includes native and nonnative plant species encountered during sampling, from section III (Associated Species) of the paper data form. See protocol for additional instructions.  |
| <b>cover1</b>               | <b>0.2</b>                     | Estimate of absolute percent cover within the sampling area for Species 1.  |
| <b>species2</b>             | <b>Chlorogalum parviflorum</b> | Scientific name for second plant species listed (Species 2). Includes native and nonnative plant species encountered during sampling, from section III (Associated Species) of the paper data form. See protocol for additional instructions. |
| <b>cover2</b>               | <b>0.2</b>                     | Estimate of absolute percent cover within the sampling area for Species 2.  |
| <b>species3</b>             | <b>Stipa pulchra</b>           | Scientific name for third plant species listed (Species 3). Includes native and nonnative plant species encountered during sampling, from section III (Associated Species) of the paper data form. See protocol for additional instructions.  |
| <b>cover3</b>               | <b>1</b>                       | Estimate of absolute percent cover within the sampling area for Species 3.  |
| <b>species4</b>             | <b>Acmispon glaber</b>         | see species3 above  |
| <b>cover4</b>               | <b>7</b>                       | see cover3 above  |
| <b>species5</b>             | <b>Salsola tragus</b>          | see species3 above  |
| <b>cover5</b>               | <b>0.2</b>                     | see cover3 above  |
| <b>species6</b>             | <b>Salvia mellifera</b>        | see species3 above  |
| <b>cover6</b>               | <b>2</b>                       | see cover3 above  |
| <b>species7</b>             | <b>Ferocactus viridescens</b>  | see species3 above  |
| <b>cover7</b>               | <b>0.2</b>                     | see cover3 above  |
| <b>species8</b>             | <b>Brachypodium distachyon</b> | see species3 above  |
| <b>cover8</b>               | <b>10</b>                      | see cover3 above  |
| <b>species9</b>             | <b>Artemisia californica</b>   | see species3 above  |
| <b>cover9</b>               | <b>0.2</b>                     | see cover3 above  |
| <b>species10</b>            | <b>Erodium cicutarium</b>      | see species3 above  |
| <b>cover10</b>              | <b>0.2</b>                     | see cover3 above  |
| <b>species11</b>            | <b>Sisyrinchium bellum</b>     | see species3 above  |
| <b>cover11</b>              | <b>1</b>                       | see cover3 above  |
| <b>species12</b>            | <b>Dichondra occidentalis</b>  | see species3 above  |

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| <b>cover12</b>                     | <b>0.2</b>                   | see cover3 above   |
| <b>species13</b>                   | <b>Erognium fasciculatum</b> | see species3 above   |
| <b>cover13</b>                     | <b>0.2</b>                   | see cover3 above   |
| <b>species14</b>                   | <b>Calochortus splendens</b> | see species3 above   |
| <b>cover14</b>                     | <b>0.2</b>                   | see cover3 above   |
| <b>species15</b>                   | <b>Solanum sp.</b>           | see species3 above   |
| <b>cover15</b>                     | <b>0.2</b>                   | see cover3 above   |
| <b>coll_num1</b>                   |                              | If a specimen of Species 1 is submitted to a herbarium, indicate the collection number for that specimen and the herbarium name  |
| <b>BareGround</b>                  | <b>25</b>                    | Estimate of % cover of bare ground   |
| <b>Rock</b>                        | <b>2</b>                     | Estimate of % of rock  |
| <b>Litter</b>                      | <b>1</b>                     | Estimate of % of litter  |
| <b>TotalPercCover</b>              | <b>20.8</b>                  | Estimate of % total cover  |
| <b>PercHerbCover</b>               | <b>20.6</b>                  | Estimate of % herbaceous cover   |
| <b>PercShrubCover</b>              | <b>0.2</b>                   | Estimate of % shrub cover  |
| <b>PercTreeCover</b>               |                              | Estimate of % tree cover.  |
| <b>SANDAG2012_VegAllianceAssoc</b> | <b>Stipa pulchra</b>         | At the sampling point, the vegetation alliance/association based upon the data collected in "Associated Species" and using the vegetation key posted on the SDMMMP Rare Plant Monitoring website and/or the CDROM in the "Vegetation Classification Manual for Western San Diego County"   |
| <b>CryptogamicCrustCover</b>       | <b>2</b>                     | % cover class for cryptogamic crust cover within the sampling area. Cover classes: 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)   |
| <b>ThatchCover</b>                 | <b>3</b>                     | % cover class for thatch cover within the sampling area. Cover classes: 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)  |
| <b>ThatchDepthAverageCateg</b>     | <b>2</b>                     | Estimate of average thatch depth within the sampling area. Thatch Depth categories (new for 2016): 1 (no thatch); 2 (<1 cm); 3 (1 to <5 cm); 4 (5 to <10 cm); 5 (10 to <15 cm); 6 (15 to < 20 cm); 7 (≥ to 25 cm). Thatch consists of dead dry grass that lays over on the ground or is not attached, and can build up over years. |
| <b>ThatchDepthMax</b>              | <b>1cm</b>                   | Estimate of maximum thatch depth in cm within the sampling area. Thatch consists of dead dry grass that lays over on the ground or is not attached, and can build up over years.   |

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| <b>DeadStandingBiomass_Presence</b>                     | <b>yes</b>   | Presence of dead standing biomass (yes/no). Standing biomass is typically larger dead forbs, such as fennel, mustard, dock, and even taller oats ( <i>Avena</i> spp.).  |
| <b>DeadStanding_CoverSpeciesClass</b>                   |              | <b>2</b> The dominant species and cover class of dead standing biomass. Cover classes: 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%).   |
| <b>DeadStandingHeightAverage</b>                        | <b>50 cm</b> | average height in cm of dead standing biomass. Standing biomass is typically larger dead forbs, such as fennel, mustard, dock, and even taller oats .   |
| <b>FeralPigActivity</b>                                 | <b>1</b>     | Feral pig activity within sampling area. 1 = No feral pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) detected; 2 = Signs of pig activity (rooting, wallowing, vegetation destruction) in sampling area appear months old; 3 = Signs of recent pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) in adjacent area but not within sampling area; 4 = Recent signs of pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pigs) within sampling area. |
| <b>GroundSquirrelActivity</b>                           | <b>1</b>     | Ground squirrel activity within sampling area. 1 = No ground squirrel burrows detected; 2 = Burrows and/or ground squirrels observed adjacent to sampling area but not within sampling area; 3 = Single squirrel or burrow seen within sampling area; 4 = Multiple burrows and/or squirrels seen within sampling area.  |
| <b>GopherActivity</b>                                   | <b>1</b>     | Gopher activity within sampling area. 1 = No pocket gopher mounds detected; 2 = Mounds or gophers observed adjacent to sampling area but not within sampling area; 3 = <10 mounds observed within sampling area; 4 = ≥10 mounds or one or more gophers seen within sampling area.   |
| <b>SamplingAreaRepresent_of_mapped_occurr</b>           | <b>Yes</b>   | Indicate whether the sampling area appears representative of the maximum extent (yes/no). If "no" (ie, the sampling area appears to differ substantially from the maximum extent), then note the differences in the Notes field (last row of this form) or in the field below ("SamplingArea_diffs_from_mapped_occurr"); please specify which covariates differ and how they differ.  |
| <b>SamplingArea_diffs_from_mapped_occurr</b>            |              | If the sampling area appears to differ substantially from the maximum extent, then differences would be noted here or in Notes field.   |
| <b>SurroundingLandUse&amp;Activity_Adjacent_to_Site</b> |              | Land use surrounding the observation area (e.g., residential, road, open space, etc),and indicate distance to the sampling area.  |

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| <p><b>NonnativeForbs</b></p>     | <p><b>3</b></p> | <p>Disturbance from non-native forbs within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>        |
| <p><b>NonnativeGrasses</b></p>   | <p><b>3</b></p> | <p>Disturbance from non-native grasses within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>      |
| <p><b>NonnativeWoodyPlts</b></p> | <p><b>1</b></p> | <p>Disturbance from non-native woody plants within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p> |

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| CompetitiveNativePlts | 1 | Disturbance from competitive native plants within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent. |
| Dumping&trash         | 1 | Disturbance from dumping and trash within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.         |
| Encampments           | 1 | Disturbance from encampments within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.               |

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| <p><b>FeralPigActivity</b> 1</p> |  | <p>Disturbance from feral pig activity within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p> |
| <p><b>Trampling</b> 3</p>        |  | <p>Disturbance from trampling within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p>          |
| <p><b>Vandalism</b> 1</p>        |  | <p>Disturbance from vandalism within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p>          |

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| <p><b>CurrentGrazing</b> 1</p>      |  | <p>Disturbance from current grazing within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>      |
| <p><b>HistoricGrazing</b> 1</p>     |  | <p>Disturbance from historic grazing within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>     |
| <p><b>HistoricAgriculture</b> 1</p> |  | <p>Disturbance from historic agriculture within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p> |

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| <p>AlteredHydrology</p> | <p>1</p> | <p>Disturbance from altered hydrology within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p> |
| <p>Erosion</p>          | <p>1</p> | <p>Disturbance from erosion within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>           |
| <p>UrbanRunoff</p>      | <p>1</p> | <p>Disturbance from urban runoff within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>      |

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| <p><b>SlopeMovement</b></p>         | <p>1</p> | <p>Disturbance from soil movement within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs 75% of area within maximum extent.</p>                       |
| <p><b>SoilCompaction</b></p>        | <p>1</p> | <p>Disturbance from soil compaction within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>                   |
| <p><b>FuelModZone_FireBreak</b></p> | <p>1</p> | <p>Disturbance from fuel modification zone/fire break within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p> |

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| RoadConst&Mainten         | 1  | Disturbance from road construction/maintenance within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent. |
| RoadConst&Mainten_descrip |  | If observed, description of disturbance from road construction/maintenance within the maximum extent.  |
| Illegal_Veg_Clearing      | 1  | Disturbance from illegal vegetation clearing within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.   |
| VegClearing_descript      |  | If observed, description of disturbance from vegetation clearing within the maximum extent.  |
| BrushMgmtorRestoration    | 7  | Disturbance from brush management/restoration within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.  |
| BrushMgmtorRestoration    | Site has been cleared of most herbaceous vegetation to allow DUVA to grow. | If observed, description of disturbance from brush management/restoration within the maximum extent.   |

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| <b>ORVActivity</b>               | <b>1</b>  | Disturbance from ORV activity within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent. |
| <b>ORVActivity_type</b>          |           | If observed, description of disturbance from ORV activity within the maximum extent.  |
| <b>EvidenceRecentFire</b>        | <b>1</b>  | Disturbance from recent fire within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.  |
| <b>YearBurned</b>                |           | year burned if sign of recent fire; if unknown year indicate "unknown"  |
| <b>Trails_authorized</b>         | <b>no</b> | If trails are present whether they are authorized (yes/no)  |
| <b>TrailUse_Hiking</b>           | <b>no</b> | if trails are present, whether they are used for hiking (yes/no)  |
| <b>TrailUse_Biking</b>           | <b>no</b> | if trails are present, whether they are used for biking (yes/no)  |
| <b>TrailUse_Equestrian</b>       | <b>no</b> | if trails are present, whether they are used for equestrian activities (yes/no)   |
| <b>TrailUse_Dog</b>              | <b>no</b> | if trails are present, whether they are used for dogs (yes/no)  |
| <b>TrailUse_ServiceVehicles</b>  | <b>no</b> | if trails are present, whether they are used by service vehicles (yes/no)   |
| <b>TrailUse_illegal</b>          | <b>no</b> | if trails are present, whether they are illegal trails (yes/no)   |
| <b>TrailUse_illegal_descript</b> |           | if illegal trails are present, provide description  |

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| <b>OtherDisturbance_rank</b>     | 1  | Other disturbances within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent. |
| <b>OtherDisturbance_descript</b> |  | describe disturbances not listed elsewhere   |
| <b>ManageRecomm</b>              | Control Brachypodium distachyon.                                 | management recommendations for the site based on disturbances and threats noted previously   |
| <b>ManageActions_PastYr</b>      | None   | any known management actions that have been implemented at the rare plant occurrence over the last year  |
| <b>CNDDB_SppDetected</b>         | <i>Ferocactus viridescens</i> ,<br><i>Dichondra occidentalis</i> | list any plant or animal species to add to the CNDDB   |
| <b>Notes</b>                     |  | additional notes (any other useful field comments that have not been previously addressed)   |

| MSP Rare Monitoring 2018       |  |   |
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| Field_name                     | Entry  | definition  |
| <b>Date</b>                    | 7/13/2018  | date the survey was conducted (mm/dd/yyyy)  |
| <b>TimeStart</b>               | 7:52   | time the plant field survey began (24 hour time)  |
| <b>TimeFinish</b>              | 10:45  | time the plant field survey ended (24 hour time)  |
| <b>ScientificName</b>          | Monardella viminea                                     | Record the monitored species' scientific name, including subspecies or variety, if applicable. Reminder: Drop-down list. (Current scientific names are also provided in MOM in the column "SName" field).   |
| <b>CommonName</b>              | Willowy monardella                                     | Reminder: Drop-down list. (The species common name can also be obtained from the column "CName" in MOM.)  |
| <b>Existing MSP Occurrence</b> | yes  | Indicate whether this is an existing occurrence in MOM or a new occurrence . If you are unsure, enter "unknown".  |
| <b>MSPOccurrenceID</b>         | MOLIV_4SYCA006   | The occurrence ID can be obtained from the "OccID" column in MOM (see protocol for a description of the Occurrence ID code).  |
| <b>CNDDDB_EO_num</b>           |  | If the occurrence has a CNDDDB EO#, this will be listed in the "OtherID" column in MOM as "EOXX" (e.g., EO4, EO15).   |
| <b>Translocated_occure</b>     | no   | Enter whether the occurrence is translocated or not. MOM has a "Transloc" field that can help to complete this field.   |
| <b>Preserve</b>                | SYCAMORE CANYON AND GOODAN RANCH PRESERVES             | Name of Preserve. This information can also be found in MOM   |
| <b>LandOwner</b>               | County San Diego Department of Parks and Recreation    | Land Owner. This information can also be found in MOM   |
| <b>LandMangr</b>               | County of San Diego Department of Parks and Recreation | Land Manager. This information can also be found in MOM   |
| <b>OccurrenceName</b>          | Sycamore Canyon East-MOLIV                             | Record the occurrence name from the "OccName" field in MOM.   |
| <b>SamplePointNum</b>          | SYC201501  | There can be multiple sampling areas that are part of the same occurrence. These are designated in the occurrence name as "-Obs. #X" (e.g., Carmel Mountain - Obs. #1, Carmel Mountain - Obs. #2) or as unique names (e.g., Crest Canyon North, Crest Canyon South). For the sample point, enter an observation number or name only if there are multiple sampling areas for that occurrence. |

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| <b>Surveyors</b>                       | James Hickman, Nicole Salas | Record names all field personnel (use full names)   |
| <b>Affiliation</b>                     | ICF                         | Record agencies of all field personnel (use full names)   |
| <b>NumPlantsperCurrentMappedExtent</b> | 283                         | If the mapped occurrence perimeter falls entirely within the sampling area, then this number is the same as that entered for "# Plants/Sampling Area". If the occurrence perimeter is larger than the sampling area, then count or estimate the number of plants within the entire occurrence perimeter. See protocol for additional information. |
| <b>ExactCountorEstimate1</b>           | estimate                    | "exact/estimate"; indication of whether "Number of plants per current mapped extent" was an exact count of plants or an estimate of plant number  |
| <b>uncertainty1</b>                    | medium                      | uncertainty associated with "Number of plants per current mapped extent"; categories: very high, high, medium, low, very low  |
| <b>Count_type1</b>                     | clusters                    | For both exact counts and estimates of "Number of plants per Current Mapped Extent" indicate whether you counted individual plants or clusters, of plants ("individual plants" or "clusters of plants"  |
| <b>Flower_Veget1</b>                   | flowering                   | For both exact counts and estimates of "Number of plants per Current Mapped Extent", indicate whether the count was of flowering individuals or of vegetative individuals (latter applies primarily to geophytes)   |
| <b>AreaCurrentMappedExtent</b>         | 0.77                        | The size of the area based on GPS'ing the perimeter of the occurrence.  |
| <b>Area_units</b>                      | Acres                       | units (e.g., square meters, square feet) of "AreaCurrentMappedExtent"   |
| <b>Area_exact_or_estim</b>             | exact (GPS mapping)         | "exact/estimate"; refers to uncertainty associated with "AreaCurrentMappedExtent"   |
| <b>CurrentExtentPerimMethod</b>        | walking                     | Indicate whether the perimeter of the current extent was determined by (a) walking it and delineating with a GPS or smartphone, or (b) whether the extent was determined by another means, such as GIS, aerial photographs, etc. ("walking"; "other"). If other, indicate in Notes section  |
| <b>SpeciesLocated_in_MaximumExtent</b> | yes                         | Yes/no to indicate whether the species was found within the maximum extent.   |
| <b>Reason_IfNotFound</b>               |                             | If the species was not found, note any potential explanations for why the species wasn't detected.  |
| <b>NumPlantsperSamplArea</b>           | 63                          | Count or estimate of the total number of plants in the sampling area.   |

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| <b>ExactCountorEstimate2</b>          | <b>estimate</b>  | "exact/estimate"; refers to whether "Number of plants per sample area" was an exact count of plants or an estimate of plant number   |
| <b>uncertainty2</b>                   | <b>low</b>       | uncertainty associated with "Number of plants per sample area"; categories: very high, high, medium, low, very low   |
| <b>SampleAreaRadius(m)</b>            | <b>10</b>        | enter the radius of the sampling area in meters  |
| <b>Count_type2</b>                    | <b>clusters</b>  | For both exact counts and estimates of "Number of plants per Sample Area" indicate whether you counted individual plants or clusters, of plants ("individual plants" or "clusters of plants")                                  |
| <b>Flower_Veget2</b>                  | <b>flowering</b> | For both exact counts and estimates of "Number of plants per Sample Area", indicate whether the count was of flowering individuals or of vegetative individuals (latter applies primarily to geophytes)                        |
| <b>Vegetative_percent</b>             | <b>2</b>         | Phenology in sampling area. Category representing the % of plants in the vegetative stage in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                            |
| <b>Flowering_percent</b>              | <b>2</b>         | Phenology in sampling area. Category representing the % of plants in the flowering stage in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                             |
| <b>Fruiting_percent</b>               | <b>2</b>         | Phenology in sampling area. Category representing the % of plants in the fruiting stage in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                              |
| <b>Flowering&amp;Fruiting_percent</b> | <b>6</b>         | Phenology in sampling area. Category representing the % of plants in the fruiting and flowering stage in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                |
| <b>Dead_percent</b>                   | <b>2</b>         | Phenology in sampling area. Category representing the % of plants dead in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)   |
| <b>Herbivory_percent</b>              | <b>2</b>         | Applies to sampling area. Category representing the % of plants showing signs of herbivory in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                           |
| <b>Disease_percent</b>                | <b>1</b>         | Applies to sampling area. Category representing the % of plants showing signs of disease in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)                             |
| <b>StuntedGrowth_percent</b>          | <b>1</b>         | Applies to sampling area. Category representing the % of plants showing signs of stunted growth in the sampling area in the sampling area. 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%) |

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| <b>SamplingArea_within_CurrentMappedExtent</b> | <b>yes</b>         | Yes/no to indicate whether the current distribution of the plant is outside of the sampling area.   |
| <b>Collection</b>                              | <b>no</b>          | Indicate whether a collection of plants within the sampling area was taken or has previously been done ("yes/no/collected previously")  |
| <b>Collector</b>                               |                    | If there is a collection, indicate name of person who collected.  |
| <b>Collection_Num</b>                          |                    | If there is a collection, indicate a number for collection.   |
| <b>Museum_Herbarium</b>                        |                    | If there is a collection, where collected specimen was submitted.   |
| <b>GPSAccuracy</b>                             | <b>1</b>           | accuracy of the GPS unit or smartphone you are using (a number without units)   |
| <b>GPSAccuracyUnits</b>                        | <b>meters</b>      | The units associated with the accuracy of the GPS unit or smartphone you are using (choices: meters, feet).   |
| <b>Datum</b>                                   | <b>NAD83</b>       | Datum setting for the GPS unit (e.g., NAD83, WGS84).  |
| <b>CoordSystem</b>                             | <b>UTM (m)</b>     | The coordinate system used (e.g., UTM, State Plane, Latitude-Long)  |
| <b>PlotCenterCoordReason</b>                   | <b>no change</b>   | Check your location of the Plot Center against the location provided as the sampling location in MOM or other SDMMP source (e.g, Rare Plant Viewer). Indicate "no change" if Plot Center coordinates where you are sampling match those provided in MOM or other SDMMP source. Otherwise indicate "new location" (if location has not been monitored previously) or "correction" (if coordinates in SDMMP source are incorrect) and enter coordinates below.      |
| <b>PlotCenterCoordinates_E</b>                 | <b>502411.6024</b> | Based on the GPS/smartphone reading, the easting coordinate at the center of the sampling area.   |
| <b>PlotCenterCoordinates_N</b>                 | <b>3642217.501</b> | Based on the GPS/smartphone reading, the northing coordinate at the center of the sampling area.  |
| <b>PhotoLoc1CoordReason</b>                    | <b>no change</b>   | Check your location of the Photo Location 1 against the location provided as the photo location in MOM or other SDMMP source (e.g, Rare Plant Viewer). Indicate "no change" if Photo Location coordinates where you are sampling match those provided in MOM or other SDMMP source. Otherwise indicate "new location" (if location has not been monitored previously) or "correction" (if coordinates in SDMMP source are incorrect) and enter coordinates below. |
| <b>CameraType</b>                              | <b>iphone 6</b>    | the type of camera being used for photo monitoring, including make, model, and lens type.   |
| <b>PhotoLocationCoord_E_Photo1</b>             | <b>502417.1164</b> | Based on the GPS/smartphone reading, the easting coordinate of the photopoint at the sampling area. Typically, this location is at the edge of the sampling area looking toward the rare plant population.  |

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| <b>PhotoLocationCoord_N_Photo1</b> | <b>3642228.367</b> | Based on the GPS/smartphone reading, the northing coordinate of the photopoint at the sampling area. Typically, this location is at the edge of the sampling area looking toward the rare plant population.   |
| <b>DirectionFacingPhoto1</b>       | <b>Southwest</b>   | The direction that Photo 1 was taken using either cardinal directions and/or degrees using a compass  |
| <b>CameraHeightPhoto1</b>          | <b>4 Feet</b>      | The height of the camera in meters (taken from the ground to the bottom of the camera body, unless otherwise noted) for Photo 1.  |
| <b>CameraAnglePhoto1</b>           | <b>3 Degrees</b>   | The angle that Photo 1 was taken, whether level or at an upward or downward facing angle. Include degree of angle, if possible.   |
| <b>PhotoNumPhoto1</b>              |                    | Number on the camera or number that observer otherwise records to indicate Photo1   |
| <b>File_location_Photo1</b>        |                    | The file location of Photo1 on the computer of the observer once monitoring photos downloaded and filed   |
| <b>PhotoLoc2CoordReason</b>        | <b>no change</b>   | Check your location of the Photo Location 2 against the location provided as the photo location in MOM or other SDMMP source (e.g, Rare Plant Viewer). Indicate "no change" if Photo Location coordinates where you are sampling match those provided in MOM or other SDMMP source. Otherwise indicate "new location" (if location has not been monitored previously) or "correction" (if coordinates in SDMMP source are incorrect) and enter coordinates below. |
| <b>PhotoLocationCoord_E_Photo2</b> |                    | If a photo is taken at a second location (Photo2), record the easting coordinate of that location based on the GPS reading.   |
| <b>PhotoLocationCoord_N_Photo2</b> |                    | If a photo is taken at a second location (Photo2), record the northing coordinate of that location based on the GPS reading.  |
| <b>DirectionFacingPhoto2</b>       | <b>Southwest</b>   | The direction that Photo 2 was taken using either cardinal directions and/or degrees using a compass  |
| <b>CameraHeightPhoto2</b>          | <b>4 Feet</b>      | The height of the camera in meters (taken from the ground to the bottom of the camera body, unless otherwise noted) for Photo 2.  |
| <b>CameraAnglePhoto2</b>           | <b>6 Degrees</b>   | The angle that Photo 2 was taken, whether level or at an upward or downward facing angle. Include degree of angle, if possible.   |
| <b>PhotoNumPhoto2</b>              |                    | Number on the camera or other number that observer otherwise records to indicate Photo2   |
| <b>File_location_Photo2</b>        |                    | The file location of Photo2 on the computer of the observer once monitoring photos downloaded and filed   |

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| <b>species1</b>  | <b>Eriogonum fasciculatum</b>         | Scientific name for first plant species listed (Species 1). Includes native and nonnative plant species encountered during sampling, from section III (Associated Species) of the paper data form. See protocol for additional instructions.  |
| <b>cover1</b>    | <b>17</b>                             | Estimate of absolute percent cover within the sampling area for Species 1.  |
| <b>species2</b>  | <b>Malosma laurina</b>                | Scientific name for second plant species listed (Species 2). Includes native and nonnative plant species encountered during sampling, from section III (Associated Species) of the paper data form. See protocol for additional instructions. |
| <b>cover2</b>    | <b>2</b>                              | Estimate of absolute percent cover within the sampling area for Species 2.  |
| <b>species3</b>  | <b>Prunus ilicifolia</b>              | Scientific name for third plant species listed (Species 3). Includes native and nonnative plant species encountered during sampling, from section III (Associated Species) of the paper data form. See protocol for additional instructions.  |
| <b>cover3</b>    | <b>1</b>                              | Estimate of absolute percent cover within the sampling area for Species 3.  |
| <b>species4</b>  | <b>Rhamnus crocea</b>                 | see species3 above  |
| <b>cover4</b>    | <b>5</b>                              | see cover3 above  |
| <b>species5</b>  | <b>Centaurea melitensis</b>           | see species3 above  |
| <b>cover5</b>    | <b>0.2</b>                            | see cover3 above  |
| <b>species6</b>  | <b>Avena fatua</b>                    | see species3 above  |
| <b>cover6</b>    | <b>1</b>                              | see cover3 above  |
| <b>species7</b>  | <b>Artemisia californica</b>          | see species3 above  |
| <b>cover7</b>    | <b>0.2</b>                            | see cover3 above  |
| <b>species8</b>  | <b>Bromus diandrus</b>                | see species3 above  |
| <b>cover8</b>    | <b>3</b>                              | see cover3 above  |
| <b>species9</b>  | <b>Bromus madritensis ssp. rubens</b> | see species3 above  |
| <b>cover9</b>    | <b>10</b>                             | see cover3 above  |
| <b>species10</b> | <b>Salvia apiana</b>                  | see species3 above  |
| <b>cover10</b>   | <b>0.2</b>                            | see cover3 above  |
| <b>species11</b> | <b>Salvia mellifera</b>               | see species3 above  |
| <b>cover11</b>   | <b>1</b>                              | see cover3 above  |
| <b>species12</b> | <b>Cirsium occidentale</b>            | see species3 above  |
| <b>cover12</b>   | <b>0.2</b>                            | see cover3 above  |
| <b>species13</b> | <b>Bromus hordeaceus</b>              | see species3 above  |
| <b>cover13</b>   | <b>2</b>                              | see cover3 above  |
| <b>species14</b> | <b>Festuca myuros</b>                 | see species3 above  |
| <b>cover14</b>   | <b>0.2</b>                            | see cover3 above  |

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| <b>species15</b>                   | <b>Calystegia macrostegia</b>          | see species3 above   |
| <b>cover15</b>                     | <b>0.2</b>                             | see cover3 above   |
| <b>species16</b>                   | <b>Acmispon glaber</b>                 | see species3 above   |
| <b>cover16</b>                     | <b>0.2</b>                             | see cover3 above   |
| <b>species17</b>                   | <b>Monardella viminea</b>              | see species3 above   |
| <b>cover17</b>                     | <b>17</b>                              | see cover3 above   |
| <b>species18</b>                   | <b>Brachypodium distachyon</b>         | see species3 above   |
| <b>cover18</b>                     | <b>0.2</b>                             | see cover3 above   |
| <b>coll_num1</b>                   |  | If a specimen of Species 1 is submitted to a herbarium, indicate the collection number for that specimen and the herbarium name  |
| <b>BareGround</b>                  | <b>5</b>                               | Estimate of % cover of bare ground   |
| <b>Rock</b>                        | <b>25</b>                              | Estimate of % of rock  |
| <b>Litter</b>                      | <b>3</b>                               | Estimate of % of litter  |
| <b>TotalPercCover</b>              | <b>60.6</b>                            | Estimate of % total cover  |
| <b>PercHerbCover</b>               | <b>36.6</b>                            | Estimate of % herbaceous cover   |
| <b>PercShrubCover</b>              | <b>24</b>                              | Estimate of % shrub cover  |
| <b>PercTreeCover</b>               |  | Estimate of % tree cover.  |
| <b>SANDAG2012_VegAllianceAssoc</b> | <b>Eriogonum fasciculatum Alliance</b> | At the sampling point, the vegetation alliance/association based upon the data collected in "Associated Species" and using the vegetation key posted on the SDMMMP Rare Plant Monitoring website and/or the CDROM in the "Vegetation Classification Manual for Western San Diego County"   |
| <b>CryptogamicCrustCover</b>       | <b>1</b>                               | % cover class for cryptogamic crust cover within the sampling area. Cover classes: 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)   |
| <b>ThatchCover</b>                 | <b>3</b>                               | % cover class for thatch cover within the sampling area. Cover classes: 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%)  |
| <b>ThatchDepthAverageCateg</b>     | <b>3</b>                               | Estimate of average thatch depth within the sampling area. Thatch Depth categories (new for 2016): 1 (no thatch); 2 (<1 cm); 3 (1 to <5 cm); 4 (5 to <10 cm); 5 (10 to <15 cm); 6 (15 to < 20 cm); 7 (≥ to 25 cm). Thatch consists of dead dry grass that lays over on the ground or is not attached, and can build up over years. |
| <b>ThatchDepthMax</b>              | <b>10</b>                              | Estimate of maximum thatch depth in cm within the sampling area. Thatch consists of dead dry grass that lays over on the ground or is not attached, and can build up over years.   |

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| <b>DeadStandingBiomass_Presence</b>                     | <b>yes</b>          | Presence of dead standing biomass (yes/no). Standing biomass is typically larger dead forbs, such as fennel, mustard, dock, and even taller oats ( <i>Avena</i> spp.).  |
| <b>DeadStanding_CoverSpeciesClass</b>                   | <b>Bromus sp. 3</b> | The dominant species and cover class of dead standing biomass. Cover classes: 1 (0%), 2 (>0% to <10%), 3 (10% to <25%), 4 (25 to <50%), 5 (≥50 to <75%), 6 (≥75%).  |
| <b>DeadStandingHeightAverage</b>                        | <b>6</b>            | average height in cm of dead standing biomass. Standing biomass is typically larger dead forbs, such as fennel, mustard, dock, and even taller oats .   |
| <b>FeralPigActivity</b>                                 | <b>1</b>            | Feral pig activity within sampling area. 1 = No feral pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) detected; 2 = Signs of pig activity (rooting, wallowing, vegetation destruction) in sampling area appear months old; 3 = Signs of recent pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pig) in adjacent area but not within sampling area; 4 = Recent signs of pig activity (rooting, wallowing, vegetation destruction, tracks, scat, pigs) within sampling area. |
| <b>GroundSquirrelActivity</b>                           | <b>1</b>            | Ground squirrel activity within sampling area. 1 = No ground squirrel burrows detected; 2 = Burrows and/or ground squirrels observed adjacent to sampling area but not within sampling area; 3 = Single squirrel or burrow seen within sampling area; 4 = Multiple burrows and/or squirrels seen within sampling area.  |
| <b>GopherActivity</b>                                   | <b>1</b>            | Gopher activity within sampling area. 1 = No pocket gopher mounds detected; 2 = Mounds or gophers observed adjacent to sampling area but not within sampling area; 3 = <10 mounds observed within sampling area; 4 = ≥10 mounds or one or more gophers seen within sampling area.   |
| <b>SamplingAreaRepresent_of_mapped_occurr</b>           | <b>Yes</b>          | Indicate whether the sampling area appears representative of the maximum extent (yes/no). If "no" (ie, the sampling area appears to differ substantially from the maximum extent), then note the differences in the Notes field (last row of this form) or in the field below ("SamplingArea_diffs_from_mapped_occurr"); please specify which covariates differ and how they differ.  |
| <b>SamplingArea_diffs_from_mapped_occurr</b>            |                     | If the sampling area appears to differ substantially from the maximum extent, then differences would be noted here or in Notes field.   |
| <b>SurroundingLandUse&amp;Activity_Adjacent_to_Site</b> | <b>Open space</b>   | Land use surrounding the observation area (e.g., residential, road, open space, etc),and indicate distance to the sampling area.  |

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| <p><b>NonnativeForbs</b></p>        | <p><b>1</b></p> | <p>Disturbance from non-native forbs within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>          |
| <p><b>NonnativeGrasses</b></p>      | <p><b>4</b></p> | <p>Disturbance from non-native grasses within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>        |
| <p><b>NonnativeWoodyPlts</b></p>    | <p><b>1</b></p> | <p>Disturbance from non-native woody plants within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>   |
| <p><b>CompetitiveNativePlts</b></p> | <p><b>1</b></p> | <p>Disturbance from competitive native plants within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p> |

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| <p><b>Dumping&amp;trash</b> 1</p> | <p>1</p> | <p>Disturbance from dumping and trash within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>  |
| <p><b>Encampments</b> 1</p>       | <p>1</p> | <p>Disturbance from encampments within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>        |
| <p><b>FeralPigActivity</b> 1</p>  | <p>1</p> | <p>Disturbance from feral pig activity within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p> |
| <p><b>Trampling</b> 1</p>         | <p>1</p> | <p>Disturbance from trampling within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.</p>          |

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| <p><b>Vandalism</b> 1</p>         | <p>1</p> | <p>Disturbance from vandalism within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p>            |
| <p><b>CurrentGrazing</b> 1</p>    | <p>1</p> | <p>Disturbance from current grazing within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p>      |
| <p><b>HistoricGrazing</b> 1</p>   | <p>1</p> | <p>Disturbance from historic grazing within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p>     |
| <p><b>HistoricAgriculture</b></p> | <p>1</p> | <p>Disturbance from historic agriculture within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p> |

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| <p>AlteredHydrology 1</p> | <p>Disturbance from altered hydrology within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p> |
| <p>Erosion 1</p>          | <p>Disturbance from erosion within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p>           |
| <p>UrbanRunoff 1</p>      | <p>Disturbance from urban runoff within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs <math>\geq</math> 75% of area within maximum extent.</p>      |
| <p>SlopeMovement 1</p>    | <p>Disturbance from soil movement within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in &gt;0% to &lt;10% of area within maximum extent; 4 = Disturbance occurs in 10% to &lt;25% of area within maximum extent; 5 = Disturbance occurs in 25% to &lt;50% of area within maximum extent; 6 = Disturbance occurs 50% to &lt;75% of area within maximum extent. 7 = Disturbance occurs 75% of area within maximum extent.</p>                       |

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| SoilCompaction            | 1 | Disturbance from soil compaction within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.                   |
| FuelModZone_FireBreak     | 1 | Disturbance from fuel modification zone/fire break within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent. |
| RoadConst&Mainten         | 1 | Disturbance from road construction/maintenance within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.     |
| RoadConst&Mainten_descrip |   | If observed, description of disturbance from road construction/maintenance within the maximum extent.  |
| Illegal_Veg_Clearing      | 1 | Disturbance from illegal vegetation clearing within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.       |

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| <b>VegClearing_descript</b>   |  | If observed, description of disturbance from vegetation clearing within the maximum extent.   |
| <b>BrushMgmtorRestoration</b> | <b>1</b>   | Disturbance from brush management/restoration within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent. |
| <b>BrushMgmtorRestoration</b> |  | If observed, description of disturbance from brush management/restoration within the maximum extent.  |
| <b>ORVActivity</b>            | <b>3</b>   | Disturbance from ORV activity within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.                 |
| <b>ORVActivity_type</b>       | <b>Historic ORV activity along illegal trail</b> | If observed, description of disturbance from ORV activity within the maximum extent.  |
| <b>EvidenceRecentFire</b>     | <b>1</b>   | Disturbance from recent fire within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent.                  |
| <b>YearBurned</b>             |  | year burned if sign of recent fire; if unknown year indicate "unknown"  |
| <b>Trails_authorized</b>      | <b>no</b>  | If trails are present whether they are authorized (yes/no)  |

|                                  |   |  |
|----------------------------------|---|--|
| <b>TrailUse_Hiking</b>           | <b>yes</b>  | if trails are present, whether they are used for hiking (yes/no)   |
| <b>TrailUse_Biking</b>           | <b>yes</b>  | if trails are present, whether they are used for biking (yes/no)   |
| <b>TrailUse_Equestrian</b>       | <b>no</b>   | if trails are present, whether they are used for equestrian activities (yes/no)  |
| <b>TrailUse_Dog</b>              | <b>no</b>   | if trails are present, whether they are used for dogs (yes/no)   |
| <b>TrailUse_ServiceVehicles</b>  | <b>no</b>   | if trails are present, whether they are used by service vehicles (yes/no)  |
| <b>TrailUse_illegal</b>          | <b>yes</b>  | if trails are present, whether they are illegal trails (yes/no)  |
| <b>TrailUse_illegal_descript</b> | <b>Trail from Santee lakes to staging area</b>  | if illegal trails are present, provide description   |
| <b>OtherDisturbance_rank</b>     | <b>1</b>  | Other disturbances within the maximum extent. Categories: 1 = No sign of disturbance within maximum extent or in adjacent 10 m buffer; 2 = Disturbance does not occur within maximum extent but is detected within the surrounding 10 m buffer area; 3 = Disturbance present in >0% to <10% of area within maximum extent; 4 = Disturbance occurs in 10% to <25% of area within maximum extent; 5 = Disturbance occurs in 25% to <50% of area within maximum extent; 6 = Disturbance occurs 50% to <75% of area within maximum extent. 7 = Disturbance occurs ≥ 75% of area within maximum extent. |
| <b>OtherDisturbance_descript</b> |   | describe disturbances not listed elsewhere   |
| <b>ManageRecomm</b>              | Manage nonnative grasses and forbs. Continue to keep illegal trail closed. Add more trail barriers. | management recommendations for the site based on disturbances and threats noted previously   |
| <b>ManageActions_PastYr</b>      |   | any known management actions that have been implemented at the rare plant occurrence over the last year  |
| <b>CNDDDB_SppDetected</b>        |   | list any plant or animal species to add to the CNDDDB  |
| <b>Notes</b>                     | The maximum extent of the population extends well south of the Sycamore Canyon Preserve Boundary.   | additional notes (any other useful field comments that have not been previously addressed)   |

Appendix D

## **Stephens' Kangaroo Rat Monitoring Report**

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January 15, 2018

Jennifer Price  
County of San Diego Department of Parks and Recreation  
Resource Management Division  
5500 Overland Avenue, Suite 410  
San Diego, California 92123

**Subject: Winter 2017-2018 Stephens' Kangaroo Rat Monitoring at the Ramona Grasslands Preserve, Ramona, San Diego County, California**

Dear Ms. Price:

This letter report summarizes the findings of the winter 2017-2018 Resource-Specific Monitoring effort for Stephens' kangaroo rat (*Dipodomys stephensi*) (SKR) in support of DPR's CMP monitoring efforts for SKR at the Preserve. This monitoring effort did not involve confirmation trapping; however, did include a habitat assessment of the 28 plots established during the 2016 SKR monitoring effort (ICF 2017).

## Introduction

The Ramona Grasslands Preserve (Preserve) consists of approximately 3,490 acres located in the Santa Maria Valley west of the community of Ramona in San Diego County, California. The Preserve was acquired in sections starting in 2003 for inclusion in the Draft North County Plan preserve system.

As a participant in the Multiple Species Conservation Program (MSCP) and South County MSCP Subarea Plan, the County of San Diego 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 of San Diego Department of Parks and Recreation (DPR) has prepared a Comprehensive Monitoring Plan (CMP) to provide detailed specifications for implementation of adaptive management and monitoring within County-owned and managed conserved lands (open space parks and preserves) that DPR oversees. The CMP is an adaptive management plan that includes both focused goals and objectives for target resources and detailed monitoring protocols. The CMP is intended to achieve the area-specific management directives (ASMDs) for species per the adopted South County MSCP Framework Management Plan (FMP). The regional framework that guides monitoring at the preserve level has been refined over time and is still evolving through a collaborative effort among wildlife agencies, MSCP jurisdictions, and outside experts. Stakeholders (e.g., state and federal resource agencies, municipal and county agencies, land managers) understand that adaptive management is an iterative process in which lessons are learned and used to further refine priorities, goals, objectives, and monitoring methods. Currently, this CMP includes the following ten open space parks and preserves: Lusardi Creek Preserve, Lakeside Linkage Preserve, Sycamore Canyon/Goodan Ranch Preserve, Ramona Grasslands Preserve, Boulder Oaks Preserve, Del Dios Highlands Preserve, El Capitan Preserve, El Monte Regional Park, Oakoasis Preserve, and Stelzer Regional Park.

All of these 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 and the northern half of Del Dios Highlands 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.

## **Ramona Grasslands Preserve**

The Preserve is located within the western portion of the Valle de Pamo (or Santa Maria Valley), part of the historic Santa María Rancho, 6 miles east of Interstate 15 (I-15), approximately 1.5 miles south of State Route 78 (SR-78), approximately 1.4 miles north of SR-67, and approximately 2.0 miles west of downtown Ramona, California (Figure 1). The Preserve is located in Township 13 South, Range 1 East, and Range 1 West as depicted on the United States Geological Survey (USGS) 7.5-minute San Pasqual, California quadrangle (Figure 2).

The Preserve is within the Santa Maria Valley, which consists of a broad basin surrounded by gentle hills and rocky rises ranging in elevation from approximately 410 meters (1,350 feet) above mean sea level (MSL) along the valley floor to over 518 meters (1,700 feet) above MSL in the rocky hills of the northern sections of the Preserve.

Historically, most of the Preserve has been ranched, and there is an existing network of dirt roads and trails. The dirt roads are well maintained and are used primarily for maintenance and care of livestock that graze on portions of the Preserve. Cattle grazing is generally confined to lowland areas within the Preserve and consists year-round without formalized rotation or rest periods. Stocking rates are established on an annual basis, primarily based on weather and forage conditions.

West of Rangeland Road and generally north of the Ramona Municipal Water District (RMWD) (which borders the Preserve), the property is characterized by rocky hills bisected by Bandy Canyon, through which the Santa Maria Creek flows. South and west of RMWD, the property consists of rolling hills with rocky outcrops and areas of oak woodlands that transition into the lower topography grasslands to the south. The area east of Rangeland Road and north of Ramona Airport (which also borders the Preserve) is characterized by rocky chaparral-covered hillsides in the north and lower topography grasslands in the south. East of Rangeland Road the lands south of the Ramona Airport consist of low, rolling hills supporting grasslands and rocky outcrops.

RMWD utilizes land west of Rangeland Road for storage and infiltration of treated sewage effluent. Treated effluent is piped from a treatment facility to two storage reservoirs that exist on its property. Treated effluent is disposed of on RMWD property and on ranchland east of Rangeland Road through infiltration in a series of spray fields. The irrigated spray fields are an important year-round source of green forage for cattle grazing. The RMWD property is located west of Rangeland Road and is bordered by the Preserve to the north, south, and west.

The Ramona Airport is located east of Rangeland Road and borders the Preserve to the north and south. Low-density residential uses are present to the north of the Preserve (accessible by Rangeland Road), adjacent to the Preserve's southern boundary, and along much of the Preserve's western and boundary. Other areas around the periphery of the Preserve are used for dry farming and small citrus and avocado orchards.

## SKR Monitoring Area

As depicted in Figure 3, DPR has developed management areas within the Preserve referred to as *Grazing Management Units* (i.e., 1A, 1B, 1C, 2A, 2B, 3A, 3B, 3C, 3D, 3E, 4A, 4B, 4C, and 5) and *SKR Management Areas* (i.e., 1, 2, and 3). Since not all portions of the three SKR management areas encompassed potentially suitable habitat for SKR, the current SKR monitoring area focuses on Grazing Management Units 2A (portions of Management Area 1), 2B (portions of Management Area 1 and 2), and 3A and SKR Management Area 3 (portion of Grazing Management Unit 3B). These grazing management units are located within the southern half of the Preserve and generally consist of relatively flat to gently sloping areas supporting open grasslands, which comprise generally highly suitable habitat for SKR.

## Methods

The following methodology represents the implementation of DPR's CMP specifically for SKR monitoring at the Preserve. This methodology resembles that used by Cheryl Brehme in her SKR monitoring at Camp Pendleton (Brehme et al. 2016) and is used as a template for the monitoring plan for the Preserve.

- CMP selected SKR monitoring areas, included Grazing Management Units 2A, 2B, and 3A and the 3-acre SKR Management Area 3; 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 contained therein. As depicted in Figure 3, SKR Management Area 1 is located at 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, this entire management unit was included in the monitoring effort.
- Within the selected monitoring areas, a 50 x 50-meter grid pattern was overlaid onto a georeferenced aerial photograph. A total of 25 of these sample plots were randomly selected with this grid overlay. In addition, 3 sample plots were selected within SKR Management Area 3. Figure 4 depicts the current SKR monitoring areas, the 50 x 50-meter grid overlay, and the randomly selected 28 sample plots (established during the 2016 SKR monitoring effort and used again for the winter 2017-2018 SKR Monitoring effort).
- On December 21, 2017 and January 4, 2018, ICF biologists Phil Richards (USFWS permit # TE-095896) and Nicole Salas navigated to all 28 sample plots using Avenza Maps 3.0.3 app on an iPhone. Upon arrival at each sample plot, all four corners of the plot were flagged, and a photograph was taken from the southeast corner facing northwest (Appendix A). The sample plot was then systematically traversed on foot in search of active kangaroo rat sign (e.g., burrows, tracks, dust bathing sites, scat, and runways).

For each sample plot, a habitat assessment form was populated to document habitat variables and related information. Habitat assessment forms were modeled after the field forms used by Brehme et al. 2016 (adapted from a field form in Montgomery et al. 2008), which 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; potential for SKR, and comments. Completed habitat assessment forms are provided in Appendix B.

## Results

Table 1 summarizes dates and weather conditions during the survey effort.

**Table 1. Dates and Weather Conditions**

| Date       | Temperature Range<br>(Fahrenheit) | Cloud Cover Range<br>(%) | Wind Range<br>(miles per hour) |
|------------|-----------------------------------|--------------------------|--------------------------------|
| 12/21/2017 | 50–65                             | 0                        | 2–10                           |
| 01/04/2018 | 48–73                             | 0                        | 1–5                            |

Of the 28 sample plots receiving an SKR habitat assessment in the winter 2017 – 2018, 14 were deemed occupied and 14 were considered not occupied with SKR based solely on the presence or absence of likely SKR sign (see Table 2). Plots were also assigned a general SKR potential rating based on the quality of potentially suitable SKR habitat and the density of apparent kangaroo rat sign. Eleven were characterized as having a high potential for SKR, 5 were characterized as having a moderate potential, 7 were assigned a low potential rating, and 5 were characterized as having no potential (see Table 2). Rating associated with SKR potential was estimated using the following criteria.

- High Potential
  - Readily apparent potential SKR sign (particularly scat and burrows).
  - Relatively flat to gently sloping topography.
  - Presence of bare ground common.
  - Relatively low living herb density.
  - Extremely low to no shrub cover.
  - Relatively low obstruction factor (O.F.).<sup>1</sup>
- Moderate Potential
  - Some potential SKR sign (particularly scat and burrows) observed, but infrequent and/or appearing dated or inactive.
  - Gently to moderately sloping topography.
  - Presence of bare ground moderate.
  - Low shrub percent cover.
  - Relatively low herb cover.
  - Low to moderate O.F.

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<sup>1</sup> 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.

- Low Potential
  - Trace to no apparent potential SKR sign.
  - Moderately sloping topography.
  - Minimal bare ground.
  - Moderate to high shrub percent cover.
  - Moderate to very high living herb density.
  - Moderate to high O.F.
- No Potential
  - No apparent potential SKR sign.
  - Moderate to steep sloping topography.
  - No bare ground.
  - High shrub percent cover.
  - High living herb density.
  - High O.F.

Table 2 summarizes the results of the habitat assessment for each sample plot. In addition, Table 2 compares the overall plot rating between the winter 2017-2018 sampling effort and the 2016 sampling effort.

**Table 2. SKR Habitat Assessment Summary**

| Plot ID | Winter 2017-2018 |                     |                        |                         |                                |                    |                       |                             |          | 2016    |
|---------|------------------|---------------------|------------------------|-------------------------|--------------------------------|--------------------|-----------------------|-----------------------------|----------|---------|
|         | % Bare Ground    | Living Herb Density | Shrub/Tree Density (%) | Plant Litter (Dead) (%) | Gopher/Ground Squirrel Density | Obstruction Factor | *Potential K-Rat Sign | SKR Occupancy Determination | Rating†  | Rating† |
| A1-1    | 5-25             | Low                 | 0                      | 50-75                   | Low/High                       | Low                | B, S                  | Occupied                    | High**   | High**  |
| A1-2    | 0-5              | Low                 | 0                      | 75-95                   | Low/Low                        | Medium             | None                  | Not Occupied                | Medium   | High**  |
| A1-3    | 5-25             | Low                 | 0                      | 75-95                   | Low/Medium                     | Low                | B, S                  | Occupied                    | High**   | High**  |
| A1-4    | 0-5              | Low                 | 0                      | 75-95                   | Low/Low                        | Medium             | B, S                  | Occupied                    | High**   | High**  |
| A1-5    | 5-25             | Low                 | 0-5                    | 75-95                   | Low/Low                        | Medium             | B, S, T               | Occupied                    | High**   | None    |
| A1-6    | 5-25             | Low                 | 0                      | 75-95                   | Low/Low                        | Low                | B                     | Occupied                    | High**   | Medium  |
| A1-7    | 5-25             | Low                 | 0                      | 75-95                   | Low/Low                        | Low                | None                  | Not Occupied                | None     | None    |
| A1-8    | 0-5              | Low                 | 0                      | 75-95                   | Low/Low                        | Low                | None                  | Not Occupied                | None     | None    |
| A1-9    | 5-25             | Low                 | 0-5                    | 50-75                   | Medium/Medium                  | Medium             | B                     | Occupied                    | Medium** | None    |
| A1-10   | 0-5              | Low                 | 0                      | 75-95                   | Low/Low                        | Medium             | None                  | Not Occupied                | None     | None    |
| A2-1    | 5-25             | Low                 | 5-25                   | 50-75                   | Low/High                       | Low                | B, S                  | Occupied                    | Medium** | High    |
| A2-2    | 5-25             | Low                 | 0-5                    | 75-95                   | Low/High                       | Low                | None                  | Not Occupied                | Low      | Medium  |
| A2-3    | 0-5              | Low                 | 25-50                  | 25-50                   | Low/Low                        | Medium             | B, S                  | Not Occupied                | Low      | Low     |
| A2-4    | 0-5              | Low                 | 25-50                  | 25-50                   | Low/Low                        | Medium             | B, S                  | Not Occupied                | Low      | Low     |
| A2-5    | 25-50            | Low                 | 5-25                   | 50-75                   | Low/Medium                     | Medium             | B                     | Not Occupied                | Low      | Low     |
| A2-6    | 5-25             | Low                 | 0                      | 75-95                   | Low/Low                        | Medium             | B, S                  | Occupied                    | High**   | High    |
| A2-7    | 5-25             | Low                 | 0                      | 50-75                   | Low/Low                        | Low                | B, S                  | Occupied                    | High**   | High    |
| A3-1    | 25-50            | Low                 | 0                      | 50-75                   | Low/High                       | Low                | B                     | Occupied                    | High**   | High    |
| A3-2    | 25-50            | Low                 | 0                      | 50-75                   | Low/Medium                     | Low                | None                  | Not Occupied                | Low      | High    |
| A3-3    | 25-50            | Low                 | 0                      | 50-75                   | Low/Medium                     | Low                | None                  | Not Occupied                | Low      | High    |
| 3A-1    | 0-5              | Low                 | 0                      | 75-95                   | Low/Low                        | Medium             | B                     | Occupied                    | Medium** | High    |
| 3A-2    | 0-5              | Low                 | 0                      | 75-95                   | Low/Low                        | High               | None                  | Not Occupied                | None     | None    |
| 3A-3    | 0-5              | Low                 | 0                      | 75-95                   | Low/Low                        | Medium             | None                  | Not Occupied                | Low      | Low     |
| 3A-4    | 5-25             | Low                 | 0                      | 75-95                   | Low/Low                        | Medium             | None                  | Not Occupied                | None     | None    |
| 3A-5    | 0-5              | Low                 | 0                      | 75-95                   | Low/Low                        | Low                | None                  | Not Occupied                | Medium   | High    |
| 3A-6    | 5-25             | Low                 | 0                      | 75-95                   | Low/High                       | Low                | B                     | Occupied                    | High**   | High    |
| 3A-7    | 25-50            | Low                 | 0                      | 25-50                   | Low/Low                        | Low                | B, S                  | Occupied                    | High**   | High    |
| 3A-8    | 5-25             | Low                 | 0                      | 50-75                   | Low/High                       | Low                | B                     | Occupied                    | High**   | High**  |

\* = 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.

† = Estimated potential for SKR occupancy based on habitat community condition and observed kangaroo rat sign.

In general, sample plot conditions appeared similar in the winter of 2017-2018 to the conditions reported in 2016. Eighteen plots showed no change in the rating of SKR potential. Of the 10 plots that did show a change in the rating, 3 had an improved rating and 7 had a declined rating. Rating improvements are mainly based on an increase in observed potential SKR sign. Rating declines are based on the lack of potential SKR sign and/or a reduction in the overall quality of the SKR habitat within the sample plot (mainly due to an increase in biomass).

Appendix A provides photographs showing conditions at each sample plot during the winter 2017-2018 SKR Monitoring survey. Appendix B includes a copy of the habitat assessment forms populated in the field.

Sincerely,



Phillip C. Richards  
ICF Staff Biologist

**Enclosed:**

- Figure 1: Regional Vicinity
- Figure 2: Project Location
- Figure 3: Preserve Management Areas
- Figure 4: Results

Appendix A: Photographic Log

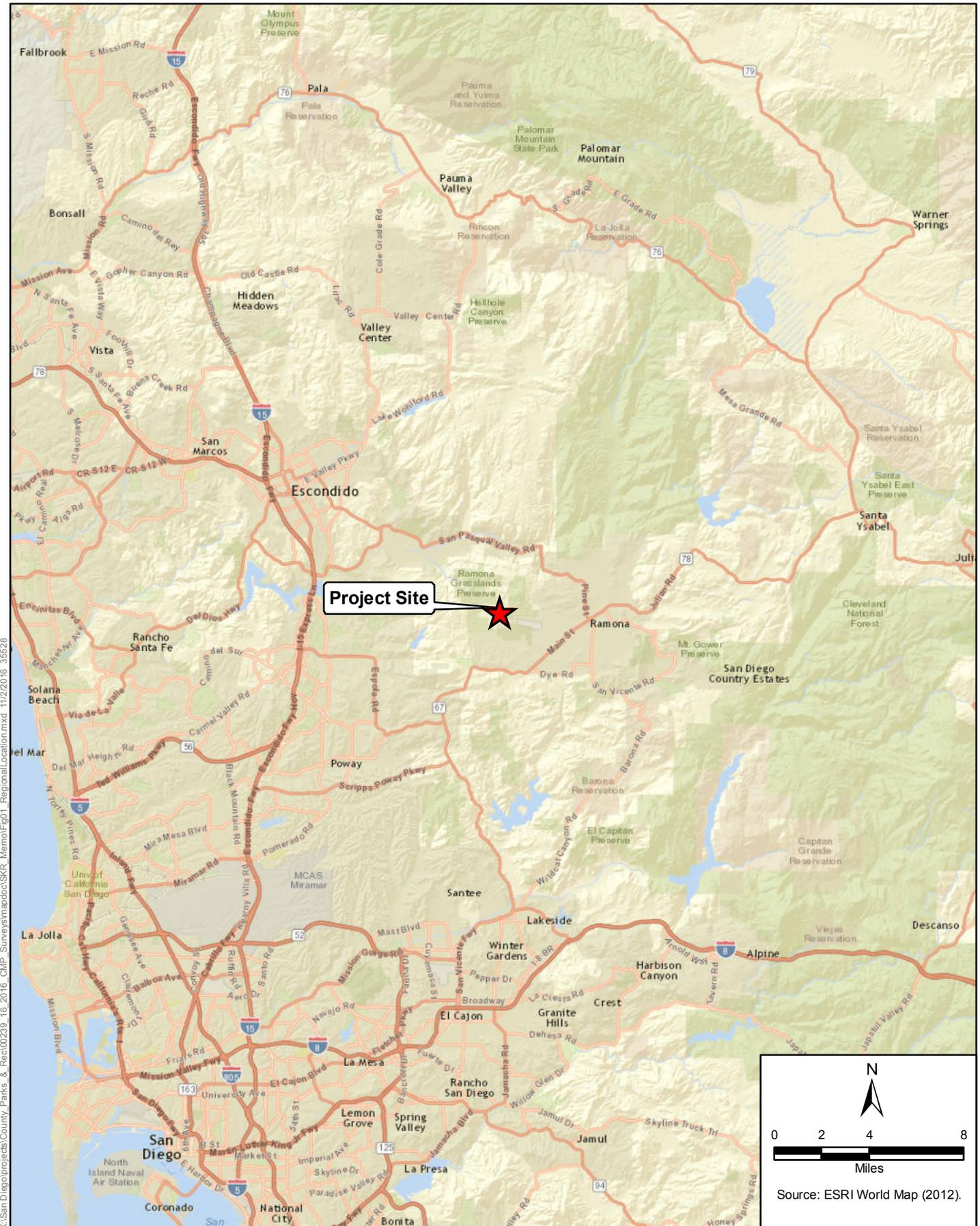
Appendix B: Completed Habitat Assessment Form

## References

- Brehme, C. S., D. R. Clark, and R. N. Fisher. 2016. *Stephens' Kangaroo Rat Monitoring on MCB Camp Pendleton, Results and Trends Analyses for Fall-Winter 2014*. Prepared for Wildlife Management Branch, AC/S Environmental Security, Marine Corps Base Camp Pendleton. 52pp.
- County of San Diego. 1998. *Implementing Agreement by and between United States Fish and Wildlife Service, California Department of Fish and Game, County of San Diego*. County of San Diego Multiple Species Conservation Program. March 17.
- ICF. 2017. *2016 Stephens' Kangaroo Rat Monitoring at the Ramona Grasslands Preserve, Ramona, San Diego County, California*. Prepared for the County of San Diego Department of Parks and Recreation.
- Montgomery, S. J., D. J. Grout, C. M. Wolf, V. M. Shoblock, A. Davenport, and R. N. Knight. 2008. *Stephens' kangaroo rat monitoring program, and results of annual monitoring sessions between spring 2002 and fall 2004, at Naval Weapons Station Seal Beach Detachment Fallbrook*. Unpublished report submitted by SJM Biological Consultants to the Environmental Programs and Services Office, Naval Weapons Station Seal Beach Detachment Fallbrook, Fallbrook, CA.

## Figures

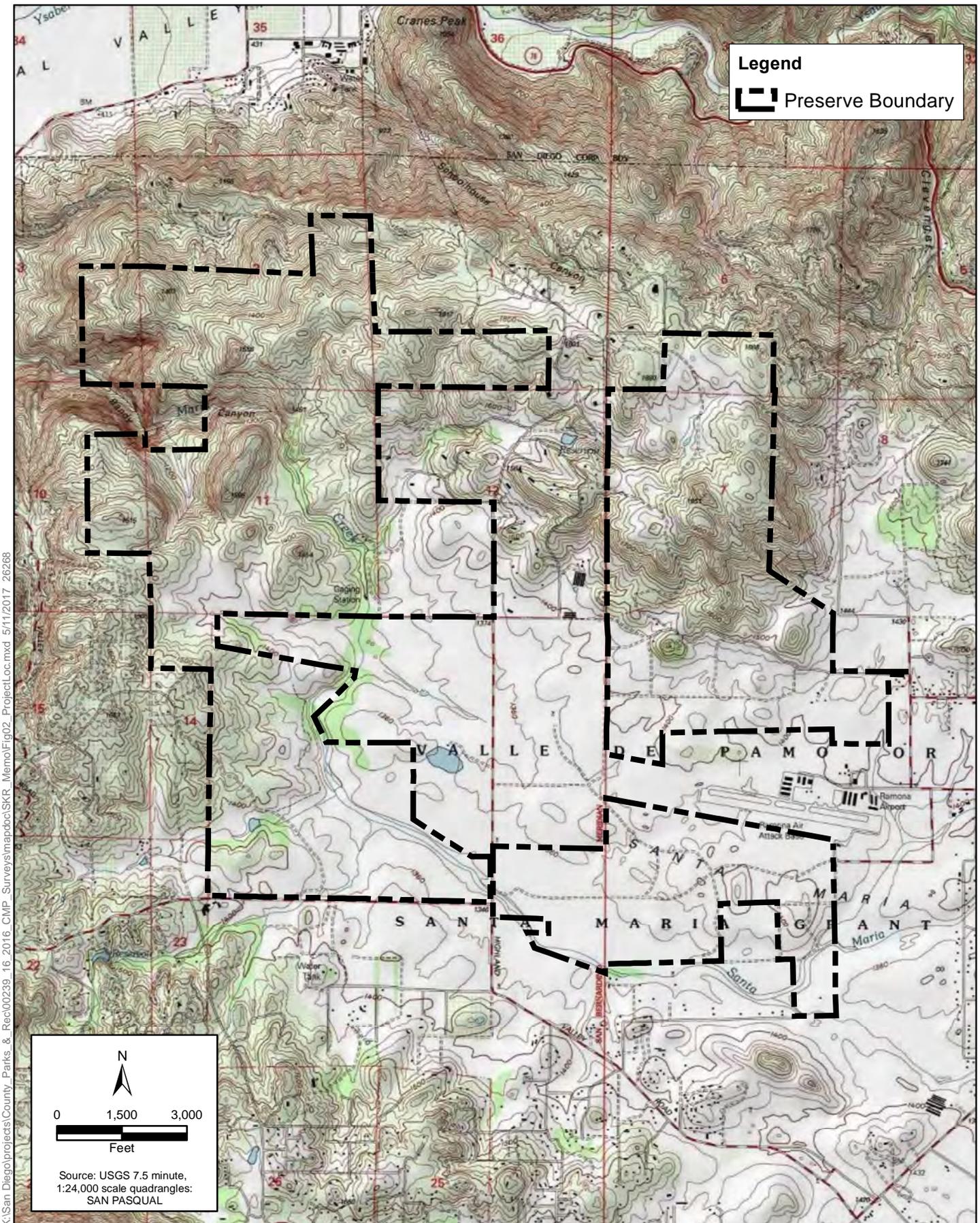
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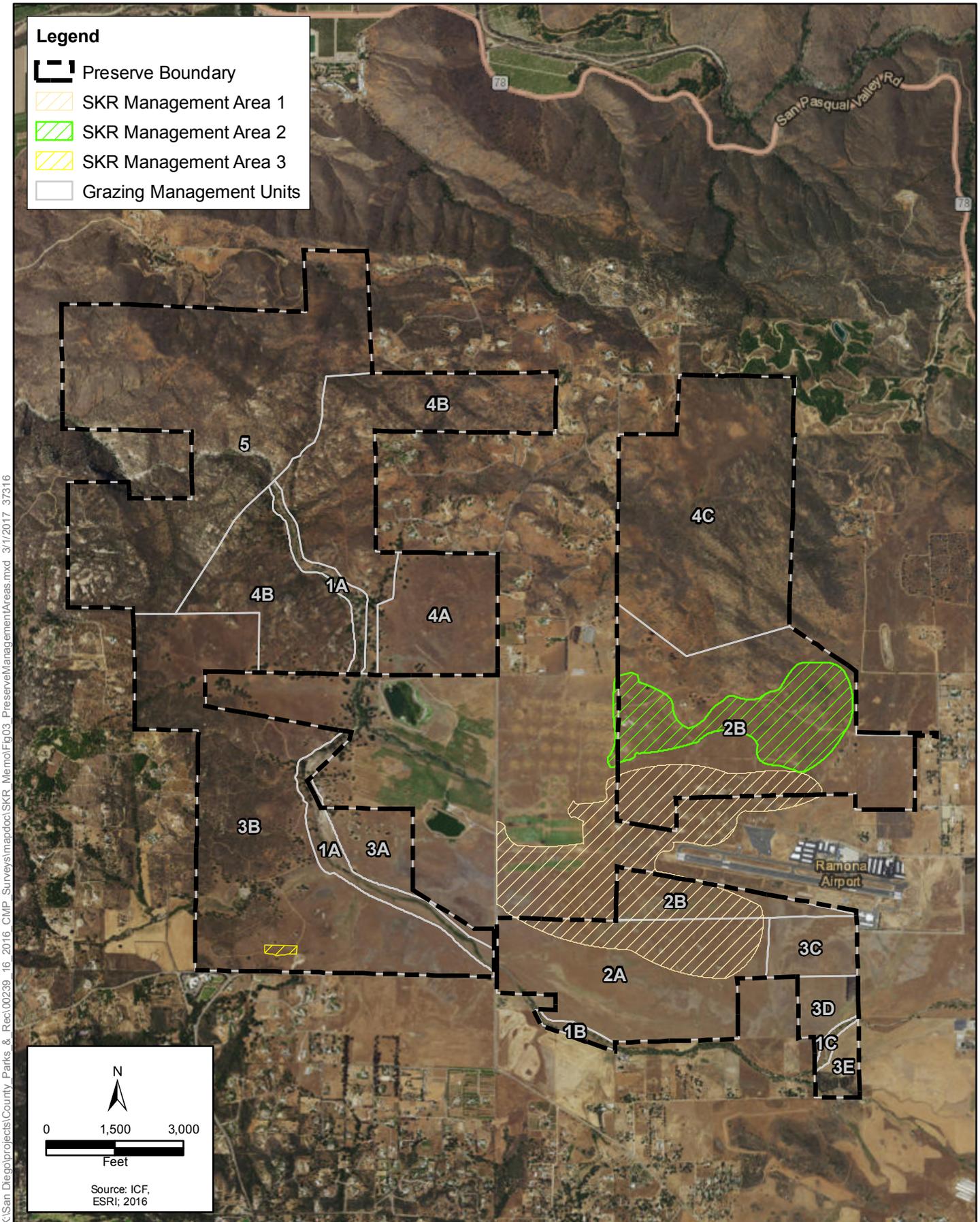
**Figure 1**  
**Regional Vicinity**  
**Ramona Grassland Preserve – SKR Monitoring**



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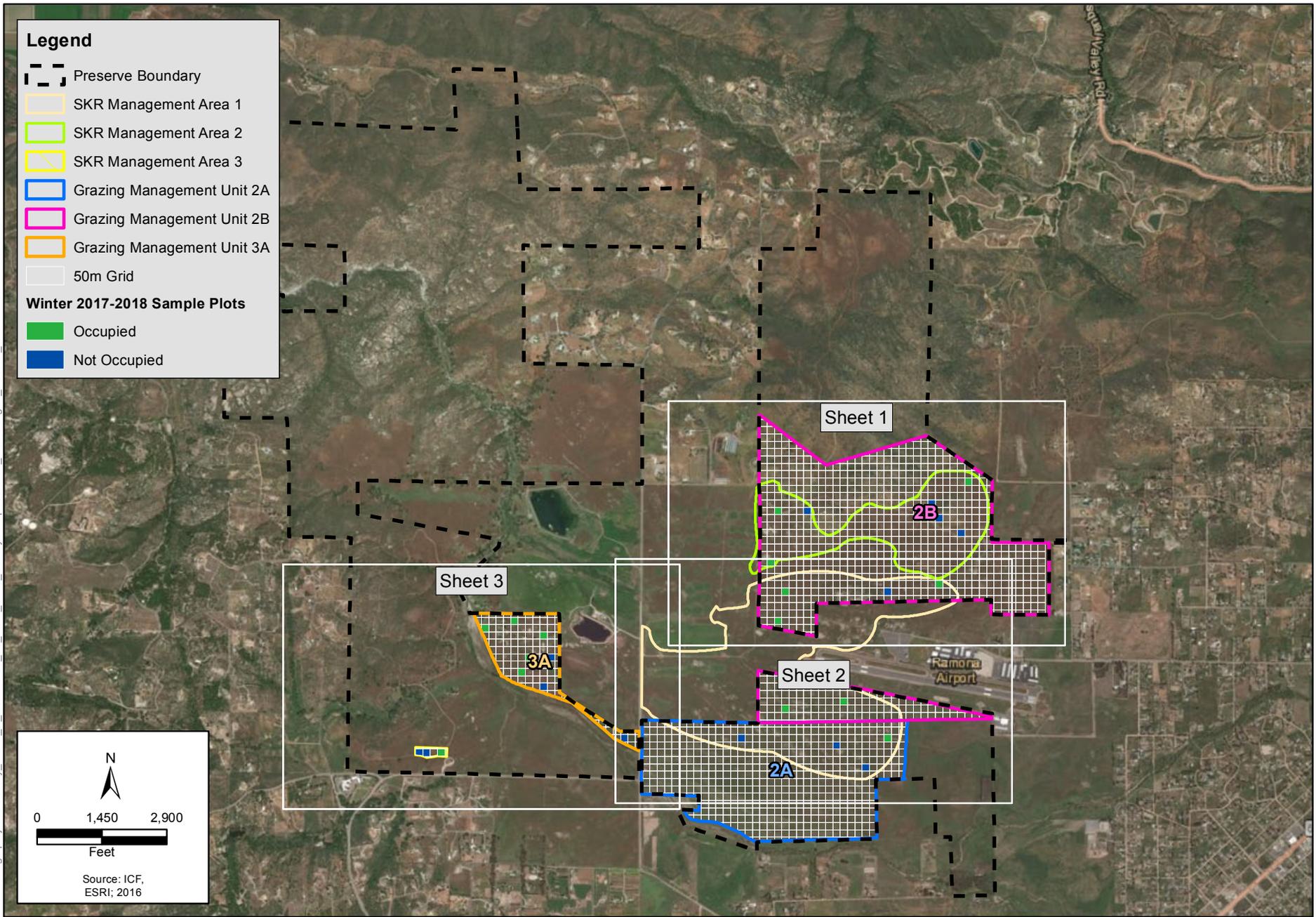
**Figure 2**  
**Project Location**  
**Ramona Grassland Preserve – SKR Monitoring**



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**Figure 3**  
**Preserve Management Areas**  
**Ramona Grassland Preserve – SKR Monitoring**





**Figure 4**  
**Results Index**  
**Ramona Grassland Preserve – SKR Monitoring**

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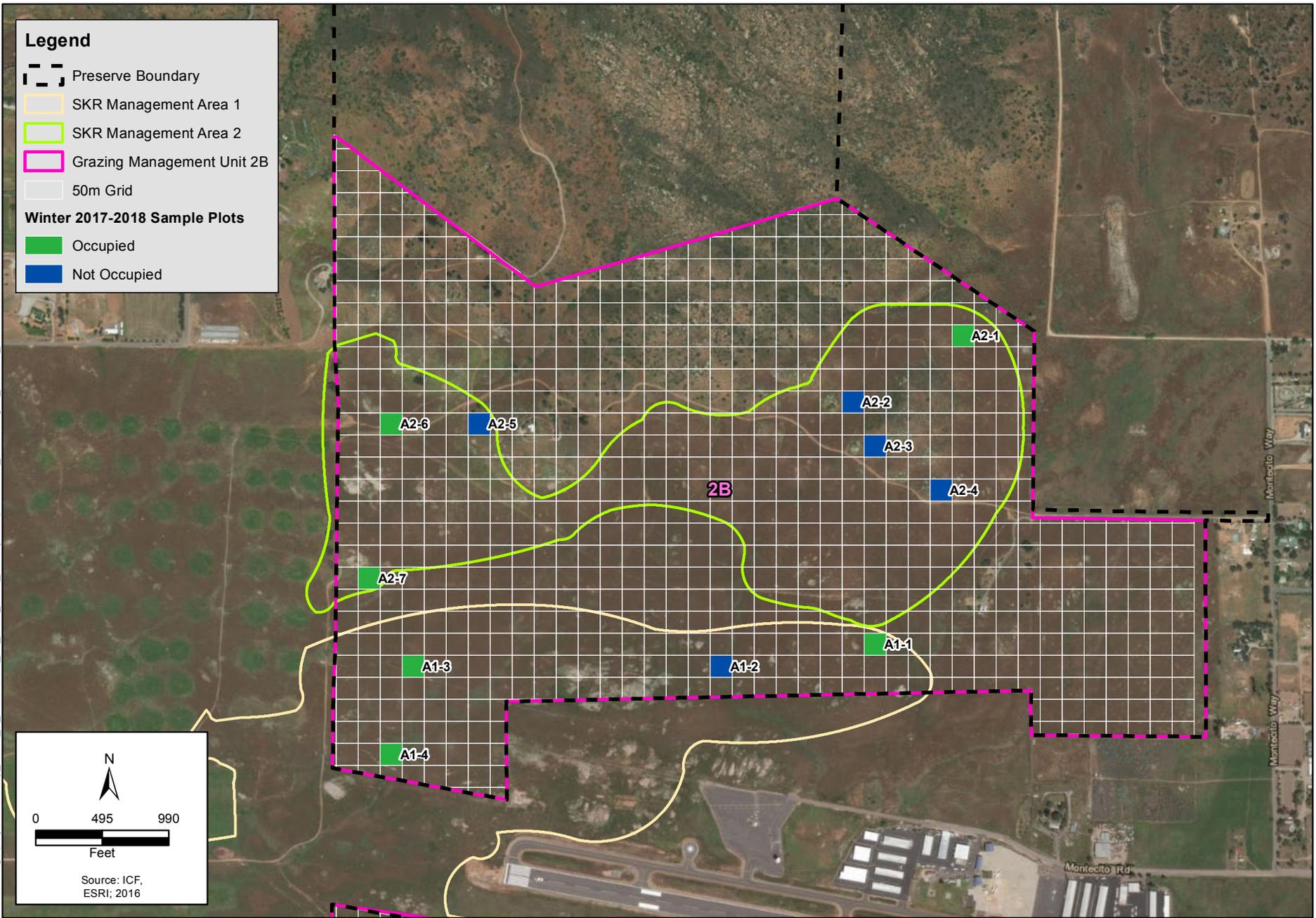


Figure 4  
Results Sheet 1  
Ramona Grassland Preserve – SKR Monitoring

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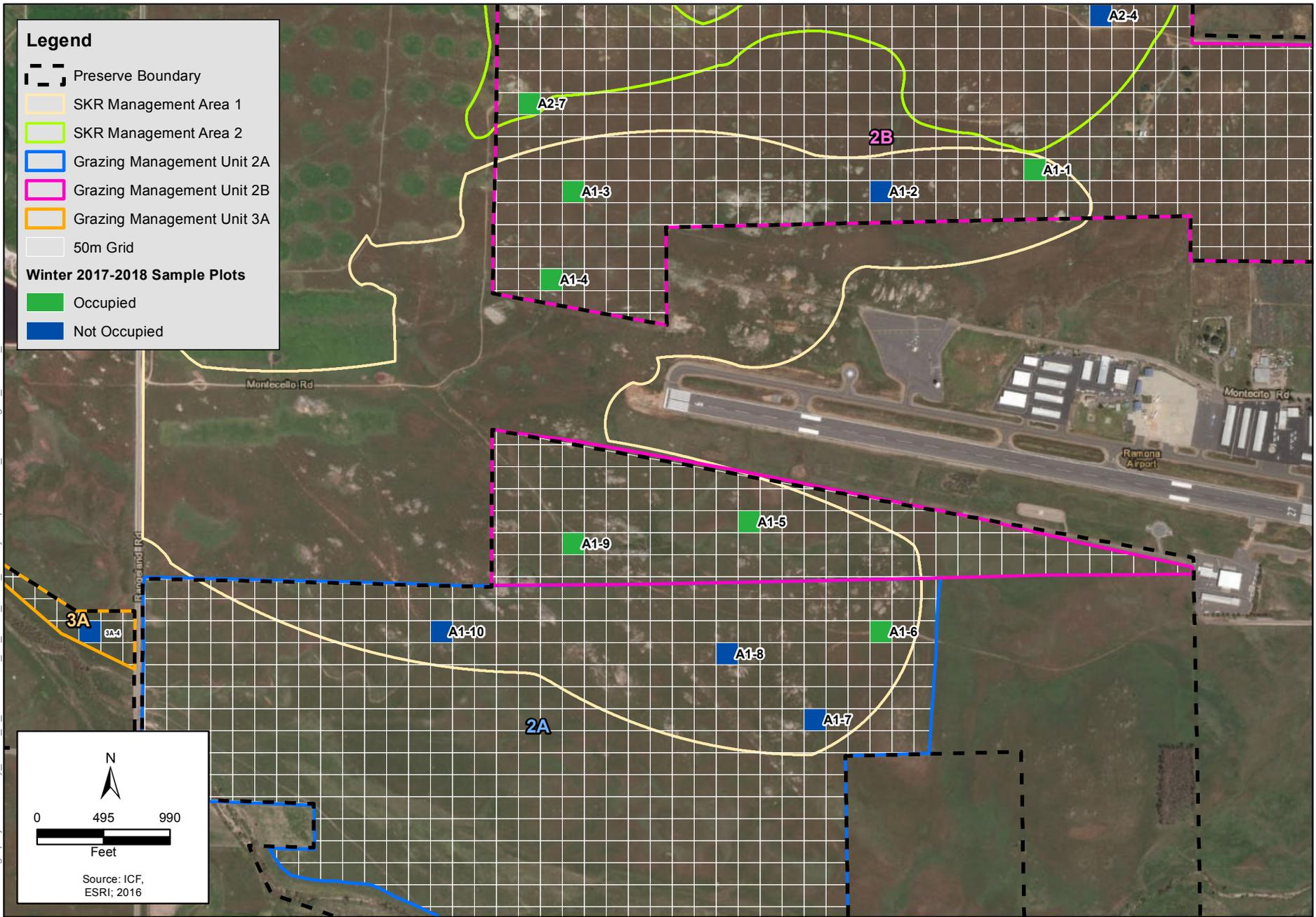


Figure 4  
Results Sheet 2  
Ramona Grassland Preserve – SKR Monitoring

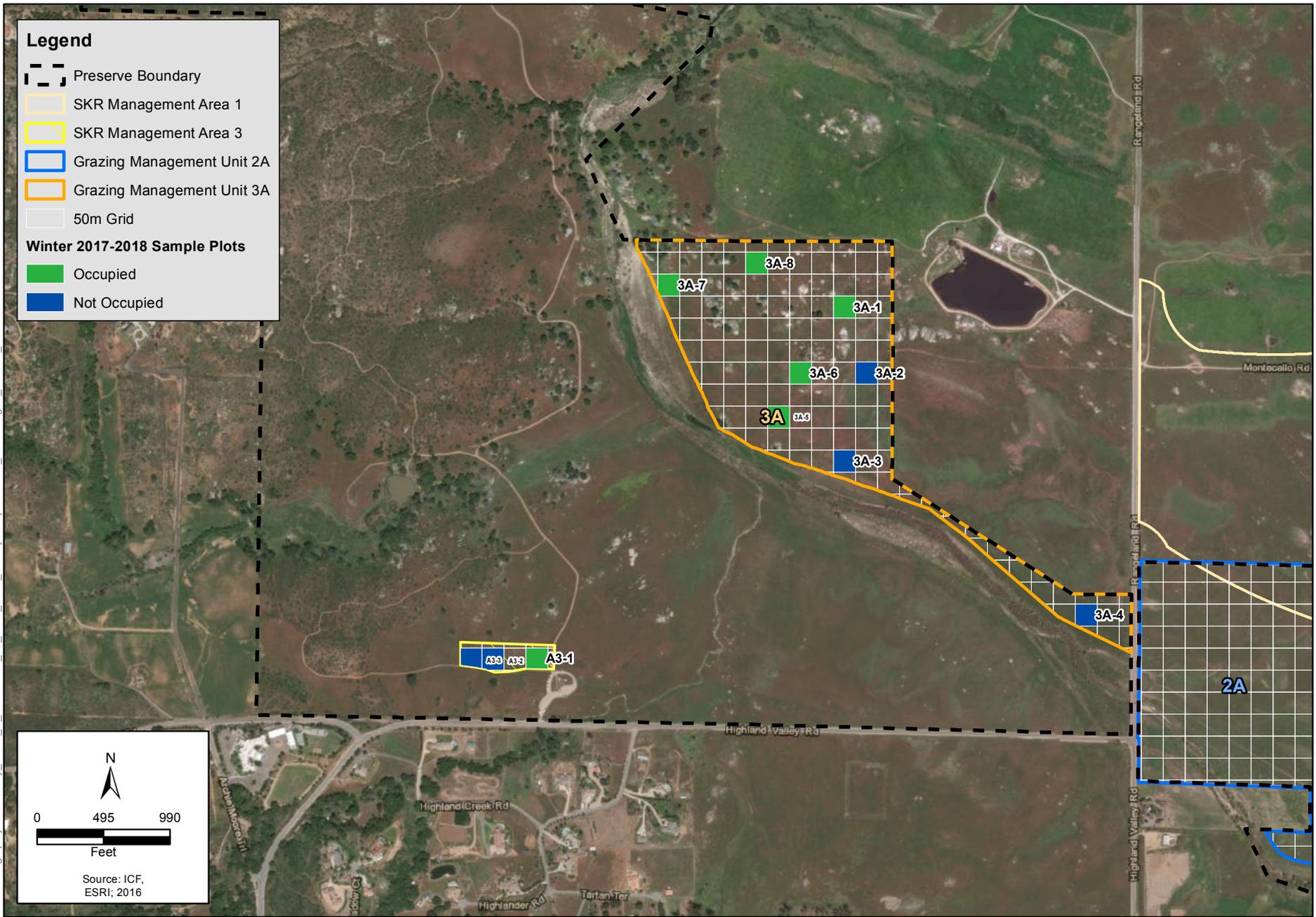


Figure 4  
Results Sheet 3  
Ramona Grassland Preserve – SKR Monitoring

Appendix A  
**Site Photographs**

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|   |  |
|---|--|
|    | <p><b>Photograph:</b> 1</p> <p><b>Plot ID:</b> A1-1</p> <p><b>Date:</b> January 4, 2018</p> <p><b>Direction:</b> View facing northwest</p> |
|   | <p><b>Photograph:</b> 2</p> <p><b>Plot ID:</b> A1-2</p> <p><b>Date:</b> January 4, 2018</p> <p><b>Direction:</b> View facing northwest</p> |
|  | <p><b>Photograph:</b> 3</p> <p><b>Plot ID:</b> A1-3</p> <p><b>Date:</b> January 4, 2018</p> <p><b>Direction:</b> View facing northwest</p> |

|   |  |
|---|--|
|    | <p><b>Photograph:</b> 4</p> <p><b>Plot ID:</b> A1-4</p> <p><b>Date:</b> January 4, 2018</p> <p><b>Direction:</b> View facing northwest</p>   |
|   | <p><b>Photograph:</b> 5</p> <p><b>Plot ID:</b> A1-5</p> <p><b>Date:</b> January 4, 2018</p> <p><b>Direction:</b> View facing northwest</p>   |
|  | <p><b>Photograph:</b> 6</p> <p><b>Plot ID:</b> A1-6</p> <p><b>Date:</b> December 21, 2017</p> <p><b>Direction:</b> View facing northwest</p> |



**Photograph:** 7  
**Plot ID:** A1-7  
**Date:** December 21, 2017  
**Direction:** View facing northwest

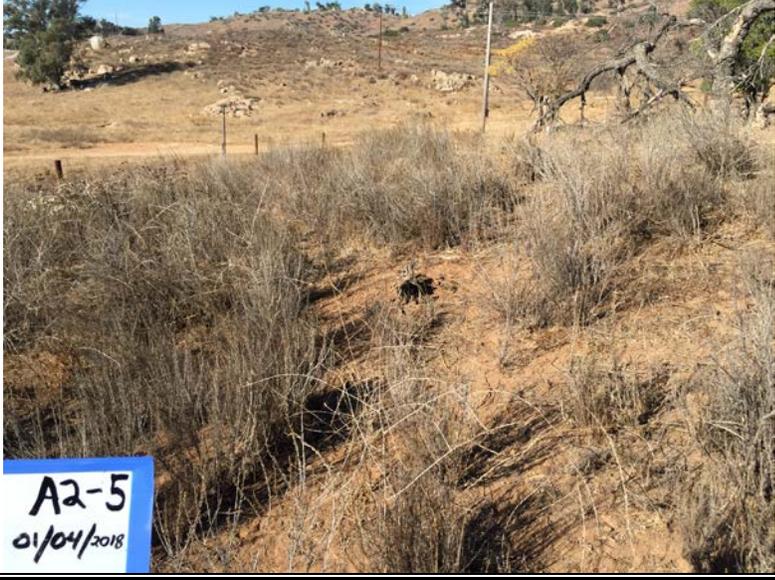


**Photograph:** 8  
**Plot ID:** A1-8  
**Date:** December 21, 2017  
**Direction:** View facing northwest



**Photograph:** 9  
**Plot ID:** A1-9  
**Date:** January 4, 2018  
**Direction:** View facing northwest

|   |  |
|---|--|
|    | <p><b>Photograph:</b> 10</p> <p><b>Plot ID:</b> A1-10</p> <p><b>Date:</b> January 4, 2018</p> <p><b>Direction:</b> View facing northwest</p> |
|   | <p><b>Photograph:</b> 11</p> <p><b>Plot ID:</b> A2-1</p> <p><b>Date:</b> January 4, 2018</p> <p><b>Direction:</b> View facing northwest</p>  |
|  | <p><b>Photograph:</b> 12</p> <p><b>Plot ID:</b> A2-2</p> <p><b>Date:</b> January 4, 2018</p> <p><b>Direction:</b> View facing northwest</p>  |

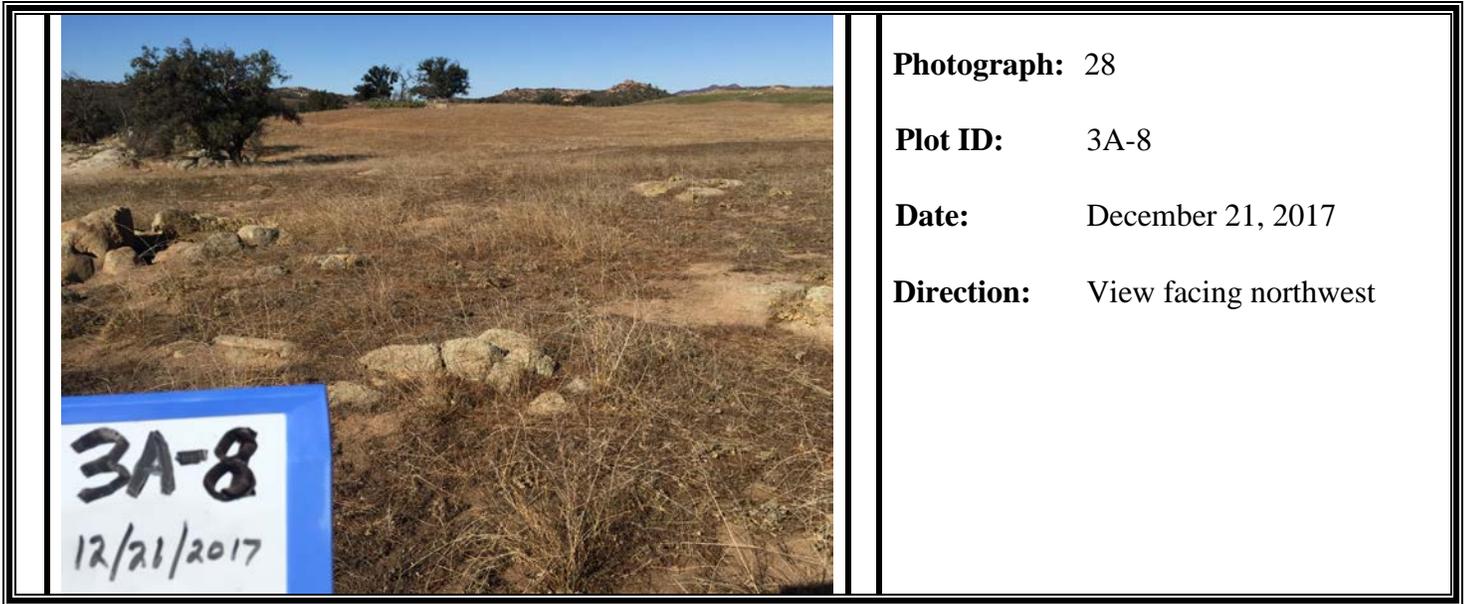
|   |   |
|---|---|
|    | <p><b>Photograph:</b> 13</p> <p><b>Plot ID:</b> A2-3</p> <p><b>Date:</b> January 4, 2018</p> <p><b>Direction:</b> View facing northwest</p> |
|   | <p><b>Photograph:</b> 14</p> <p><b>Plot ID:</b> A2-4</p> <p><b>Date:</b> January 4, 2018</p> <p><b>Direction:</b> View facing northwest</p> |
|  | <p><b>Photograph:</b> 15</p> <p><b>Plot ID:</b> A2-5</p> <p><b>Date:</b> January 4, 2018</p> <p><b>Direction:</b> View facing northwest</p> |

|   |   |
|---|---|
|    | <p><b>Photograph:</b> 16</p> <p><b>Plot ID:</b> A2-6</p> <p><b>Date:</b> January 4, 2018</p> <p><b>Direction:</b> View facing northwest</p>   |
|   | <p><b>Photograph:</b> 17</p> <p><b>Plot ID:</b> A2-7</p> <p><b>Date:</b> January 4, 2018</p> <p><b>Direction:</b> View facing northwest</p>   |
|  | <p><b>Photograph:</b> 18</p> <p><b>Plot ID:</b> A3-1</p> <p><b>Date:</b> December 21, 2017</p> <p><b>Direction:</b> View facing northwest</p> |

|   |   |
|---|---|
|    | <p><b>Photograph:</b> 19</p> <p><b>Plot ID:</b> A3-2</p> <p><b>Date:</b> December 21, 2017</p> <p><b>Direction:</b> View facing northwest</p> |
|   | <p><b>Photograph:</b> 20</p> <p><b>Plot ID:</b> A3-3</p> <p><b>Date:</b> December 21, 2017</p> <p><b>Direction:</b> View facing northwest</p> |
|  | <p><b>Photograph:</b> 21</p> <p><b>Plot ID:</b> 3A-1</p> <p><b>Date:</b> December 21, 2017</p> <p><b>Direction:</b> View facing northwest</p> |

|   |   |
|---|---|
|    | <p><b>Photograph:</b> 22</p> <p><b>Plot ID:</b> 3A-2</p> <p><b>Date:</b> December 21, 2017</p> <p><b>Direction:</b> View facing northwest</p> |
|   | <p><b>Photograph:</b> 23</p> <p><b>Plot ID:</b> 3A-3</p> <p><b>Date:</b> December 21, 2017</p> <p><b>Direction:</b> View facing northwest</p> |
|  | <p><b>Photograph:</b> 24</p> <p><b>Plot ID:</b> 3A-4</p> <p><b>Date:</b> December 21, 2017</p> <p><b>Direction:</b> View facing northwest</p> |

|   |   |
|---|---|
|    | <p><b>Photograph:</b> 25</p> <p><b>Plot ID:</b> 3A-5</p> <p><b>Date:</b> December 21, 2017</p> <p><b>Direction:</b> View facing northwest</p> |
|   | <p><b>Photograph:</b> 26</p> <p><b>Plot ID:</b> 3A-6</p> <p><b>Date:</b> December 21, 2017</p> <p><b>Direction:</b> View facing northwest</p> |
|  | <p><b>Photograph:</b> 27</p> <p><b>Plot ID:</b> 3A-7</p> <p><b>Date:</b> December 21, 2017</p> <p><b>Direction:</b> View facing northwest</p> |



Appendix B

## **Completed Habitat Assessment Forms**

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# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A3-1 Date: 12/21/2017 Time: 0850

Grazing Management Unit: (circle one) – 2A, 2B, 3A, 3B SKR Management Area: (circle one) – 1, 2, 3, None

Digital Photographs taken @ SE Corner of Plot? Yes or No

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

Trapping needed to confirm SKR vs DKR? Yes / No

Overall SKR Potential (circle one): High, Medium, Low, None

Comments: Few pot k-rat burrows; assume occupied

## Plot Habitat Descriptors

Describe Current Land Use: grazing X, open space X, Other (describe) \_\_\_\_\_

**SOIL SURFACE HARDNESS:** Hard \_\_\_\_\_, Medium X, Soft \_\_\_\_\_ **LIVING/STANDING HERB DENSITY:** High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

**OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation):** High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

**BARE GROUND:** 0-5% \_\_\_\_\_, >5-25% \_\_\_\_\_, >25-50% X, >50-75% \_\_\_\_\_, >75-95% \_\_\_\_\_, >95-100% \_\_\_\_\_

**PLANT LITTER (Dead):** 0-5% \_\_\_\_\_, >5-25% \_\_\_\_\_, >25-50% X, >50-75% X, >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:** Erodium sp, Croton setig, \_\_\_\_\_

**GRASSES - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**SHRUBS - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**TREES - Dominant species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**Abundance of Gopher EXCAVATIONS:** ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

**Abundance of ground squirrel burrows:** High X, Moderate \_\_\_\_\_, Low \_\_\_\_\_

**Substrate Disturbance:** None \_\_\_\_\_ Grazing X 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

**Potential Kangaroo Rat Sign??** (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: A3-2      Date: 12/21/2017      Time: 0920

Grazing Management Unit: (circle one) – 2A, 2B, 3A, **(3B)**      SKR Management Area: (circle one) – 1, 2, **(3)**, None

Digital Photographs taken @ SE Corner of Plot? **(Yes)** or No

Observer(s): SJM, **(PR)** other N. Salas (write in)

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

Overall SKR Potential (circle one): High, Medium, **(Low)**, None

Comments: No pot K-rat burrows/scat observed - Assume Not occupied at this time

## Plot Habitat Descriptors

Describe Current Land Use: grazing X, open space X, Other (describe) \_\_\_\_\_

**SOIL SURFACE HARDNESS:** Hard \_\_\_\_\_, Medium X, Soft \_\_\_\_\_      **LIVING/STANDING HERB DENSITY:** High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

**OBSTRUCTION FACTOR** (perceived difficulty for SKR to move through herbaceous vegetation): High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

**BARE GROUND:** 0-5% \_\_\_\_\_, >5-25% \_\_\_\_\_, >25-50% X, >50-75% \_\_\_\_\_, >75-95% \_\_\_\_\_, >95-100% \_\_\_\_\_

**PLANT LITTER (Dead):** 0-5% \_\_\_\_\_, >5-25% \_\_\_\_\_, >25-50% M, >50-75% X, >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:** Erodium sp, Croton setig, \_\_\_\_\_

**GRASSES - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**SHRUBS - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**TREES - Dominant species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**Abundance of Gopher EXCAVATIONS:** ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X      INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

**Abundance of ground squirrel burrows:** High X, Moderate X, Low \_\_\_\_\_

**Substrate Disturbance:** None \_\_\_\_\_ Grazing X 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

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

Trails in Vegetation, Other (describe) None observed

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A3-3 Date: 12/21/2017 Time: 0920

Grazing Management Unit: (circle one) – 2A, 2B, 3A, **(3B)** SKR Management Area: (circle one) – 1, 2, **(3)**, None

Digital Photographs taken @ SE Corner of Plot? **(Yes)** or No

Observer(s): SJM, **(PR)** other N. Salas (write in)

Trapping needed to confirm SKR vs DKR? **(No)**

Overall SKR Potential (circle one): High, Medium, **(Low)**, None

Comments: Conditions look good, but no sign - Assume not occupied at this time

## Plot Habitat Descriptors

Describe Current Land Use: grazing **X**, open space **X**, Other (describe) \_\_\_\_\_

SOIL SURFACE HARDNESS: Hard \_\_\_\_\_, Medium **X**, Soft \_\_\_\_\_ LIVING/STANDING HERB DENSITY: High \_\_\_\_\_, Medium \_\_\_\_\_, Low **X**

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High \_\_\_\_\_, Medium \_\_\_\_\_, Low **X**

**BARE GROUND:** 0-5% \_\_\_\_\_, >5-25% \_\_\_\_\_, >25-50% **X**, >50-75% \_\_\_\_\_, >75-95% \_\_\_\_\_, >95-100% \_\_\_\_\_

**PLANT LITTER (Dead):** 0-5% \_\_\_\_\_, >5-25% \_\_\_\_\_, >25-50% **X**, >50-75% **X**, >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:** Erodium sp, Croton setig, Hirschfeldia incana

**GRASSES - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**SHRUBS - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**TREES - Dominant species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Abundance of Gopher EXCAVATIONS: ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low **X** INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low **X**

Abundance of ground squirrel burrows: High **X**, Moderate **X**, Low \_\_\_\_\_

Substrate Disturbance: None \_\_\_\_\_ Grazing **X** 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

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

Trails in Vegetation, Other (describe) None Observed

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: 3A-1 Date: 12/21/2017 Time: 1034

Grazing Management Unit: (circle one) – 2A, 2B, 3A, 3B

SKR Management Area: (circle one) – 1, 2, 3, None

Digital Photographs taken @ SE Corner of Plot? Yes or No

Observer(s): SJM, PR other N. Salas (write in)

Trapping needed to confirm SKR vs DKR? Yes/ No

Overall SKR Potential (circle one): High, Medium, Low, None

Comments: Only SE corner w/ okay conditions, rest w/ dense grasses; Assume occupied

## Plot Habitat Descriptors

Describe Current Land Use: grazing X, open space X, Other (describe) \_\_\_\_\_

SOIL SURFACE HARDNESS: Hard \_\_\_\_\_, Medium X, Soft \_\_\_\_\_ LIVING/STANDING HERB DENSITY: High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High \_\_\_\_\_, Medium X, Low \_\_\_\_\_

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

PLANT LITTER (Dead): 0-5% \_\_\_\_\_, >5-25% \_\_\_\_\_, >25-50% \_\_\_\_\_, >50-75% \_\_\_\_\_, >75-95% X, >95-100% ERODIUM + GRASSES

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

GRASS cover: 0-5% X, Not much alive >5-25% XXXX, >25-50% XXXX, >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: Hirsch incana, Ambrosia psilo., Erodium sp

GRASSES - 3 Dominant Species: Dist. spicata, Lolium / Bromus sp.

SHRUBS - 3 Dominant Species: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

TREES - Dominant species: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Abundance of Gopher EXCAVATIONS: ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

Abundance of ground squirrel burrows: High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

Substrate Disturbance: None \_\_\_\_\_ Grazing X 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

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

Trails in Vegetation, Other (describe) Few pot k-rat burrows in SE corner

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: 3A-2 Date: 12/21/2017 Time: 1100

Grazing Management Unit: (circle one) – 2A, 2B, 3A, 3B

SKR Management Area: (circle one) – 1, 2, 3, None

Digital Photographs taken @ SE Corner of Plot? Yes or No

Observer(s): SJM, PR other N. Salas (write in)

Trapping needed to confirm SKR vs DKR? Yes No

Overall SKR Potential (circle one): High, Medium, Low, None

Comments: Dark clay soils; Assume not occupied at this time

## Plot Habitat Descriptors

Describe Current Land Use: grazing X, open space X, Other (describe) \_\_\_\_\_

SOIL SURFACE HARDNESS: Hard X, Medium \_\_\_\_\_, Soft \_\_\_\_\_ LIVING/STANDING HERB DENSITY: High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High X, Medium \_\_\_\_\_, Low \_\_\_\_\_

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

PLANT LITTER (Dead): 0-5% \_\_\_\_\_, >5-25% \_\_\_\_\_, >25-50% \_\_\_\_\_, >50-75% \_\_\_\_\_, >75-95% X, >95-100% \_\_\_\_\_ *Erodium + Grasses*

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

GRASS cover: 0-5% X *mostly dead*, >5-25% \_\_\_\_\_, >25-50% X, >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: Tarplant, Brassica sp?, Ambr psilo

GRASSES - 3 Dominant Species: Bromus?, Hordeum?, \_\_\_\_\_

SHRUBS - 3 Dominant Species: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

TREES - Dominant species: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Abundance of Gopher EXCAVATIONS: ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

Abundance of ground squirrel burrows: High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

Substrate Disturbance: None \_\_\_\_\_ Grazing X 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

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

Trails in Vegetation, Other (describe) NW corner w/ less D.P., but no sign still

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: 3A-3 Date: 12/21/2017 Time: 1155

Grazing Management Unit: (circle one) – 2A, 2B, **(3A)** 3B SKR Management Area: (circle one) – 1, 2, 3, **(None)**

Digital Photographs taken @ SE Corner of Plot? **(Yes)** or No

Observer(s): SJM, **(PR)** other N. Salas (write in)

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

Overall SKR Potential (circle one): High, Medium, **(Low)**, None

Comments: South half w/ dense tall grasses; assume not occupied at this time

## Plot Habitat Descriptors

Describe Current Land Use: grazing **X**, open space **X**, Other (describe) \_\_\_\_\_

**SOIL SURFACE HARDNESS:** Hard \_\_\_\_\_, Medium **X**, Soft \_\_\_\_\_ **LIVING/STANDING HERB DENSITY:** High \_\_\_\_\_, Medium \_\_\_\_\_, Low **X**

**OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation):** High \_\_\_\_\_, Medium **X**, 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% **X** <sup>grasses</sup>, >95-100% \_\_\_\_\_

**FORB cover:** 0-5% **X**, >5-25% ~~X~~, >25-50% \_\_\_\_\_, >50-75% \_\_\_\_\_, >75-95% \_\_\_\_\_, >95-100% \_\_\_\_\_

**GRASS cover:** 0-5% **X**, >5-25% ~~X~~, >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:** ~~Avena sp~~ <sup>Ambros. psilo; Erod. sp</sup>, Croton setig., <sup>(Trich. lanx)</sup> Vinesar weed, Tarplant

**GRASSES - 3 Dominant Species:** Bromus, Avena, Dist. spicata

**SHRUBS - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**TREES - Dominant species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**Abundance of Gopher EXCAVATIONS:** ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low **X** INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low **X**

**Abundance of ground squirrel burrows:** High \_\_\_\_\_, Moderate \_\_\_\_\_, Low **X**

**Substrate Disturbance:** None \_\_\_\_\_ Grazing **X** Grading \_\_\_\_\_ Discing \_\_\_\_\_ Furrows **X** 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

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

Trails in Vegetation, Other (describe) No observed sign

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: 3A-4 Date: 12/21/2017 Time: 1312

Grazing Management Unit: (circle one) – 2A, 2B, 3A, 3B SKR Management Area: (circle one) – 1, 2, 3, None

Digital Photographs taken @ SE Corner of Plot? Yes or No

Observer(s): SJM, (PR) other N. Salas (write in)

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

Overall SKR Potential (circle one): High, Medium, Low, None

Comments: Heavily grazed; assume not occupied at this time

### Plot Habitat Descriptors

Describe Current Land Use: grazing X, open space X, Other (describe) \_\_\_\_\_

SOIL SURFACE HARDNESS: Hard \_\_\_\_\_, Medium X, Soft \_\_\_\_\_ LIVING/STANDING HERB DENSITY: High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High \_\_\_\_\_, Medium X, Low W

|                              |               |                 |               |               |                  |                |
|------------------------------|---------------|-----------------|---------------|---------------|------------------|----------------|
| <u>BARE GROUND</u> :         | 0-5% _____    | >5-25% <u>X</u> | >25-50% _____ | >50-75% _____ | >75-95% _____    | >95-100% _____ |
| <u>PLANT LITTER (Dead)</u> : | 0-5% _____    | >5-25% _____    | >25-50% _____ | >50-75% _____ | >75-95% <u>X</u> | >95-100% _____ |
| <u>FORB cover</u> :          | 0-5% <u>X</u> | >5-25% <u>W</u> | >25-50% _____ | >50-75% _____ | >75-95% _____    | >95-100% _____ |
| <u>GRASS cover</u> :         | 0-5% <u>X</u> | >5-25% <u>W</u> | >25-50% _____ | >50-75% _____ | >75-95% _____    | >95-100% _____ |
| <u>SHRUB cover</u> :         | 0% <u>X</u>   | >0-5% _____     | >5-25% _____  | >25-50% _____ | >50-75% _____    | >75-95% _____  |

FORBS - 3 Dominant Species: Erod sp, Croton setig, \_\_\_\_\_

GRASSES - 3 Dominant Species: Dist. spicata, Avena sp., \_\_\_\_\_

SHRUBS - 3 Dominant Species: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

TREES - Dominant species: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Abundance of Gopher EXCAVATIONS: ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low V

Abundance of ground squirrel burrows: High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

Substrate Disturbance: None \_\_\_\_\_ Grazing X 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

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

Trails in Vegetation, Other (describe) No sign observe

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: 3A-5 Date: 12/21/2017 Time: 11:31

Grazing Management Unit: (circle one) – 2A, 2B, 3A, 3B SKR Management Area: (circle one) – 1, 2, 3, None

Digital Photographs taken @ SE Corner of Plot? Yes or No

Observer(s): SJM, PR other N. Salas (write in)

Trapping needed to confirm SKR vs DKR? Yes / No

Overall SKR Potential (circle one): High, Medium, Low, None

Comments: looks good, just not seeing any sign; assume not occupied at this time

## Plot Habitat Descriptors

Describe Current Land Use: grazing X, open space X, Other (describe) \_\_\_\_\_

**SOIL SURFACE HARDNESS:** Hard \_\_\_\_\_, Medium X, Soft \_\_\_\_\_ **LIVING/STANDING HERB DENSITY:** High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

**OBSTRUCTION FACTOR** (perceived difficulty for SKR to move through herbaceous vegetation): High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

**BARE GROUND:** 0-5% X, >5-25% \_\_\_\_\_, >25-50% \_\_\_\_\_, >50-75% \_\_\_\_\_, >75-95% \_\_\_\_\_, >95-100% \_\_\_\_\_

**PLANT LITTER (Dead):** 0-5% \_\_\_\_\_, >5-25% \_\_\_\_\_, >25-50% \_\_\_\_\_, >50-75% \_\_\_\_\_, >75-95% X, >95-100% \_\_\_\_\_

**FORB cover:** 0-5% X, >5-25% 1, >25-50% low-croton, >50-75% \_\_\_\_\_, >75-95% \_\_\_\_\_, >95-100% \_\_\_\_\_

**GRASS cover:** 0-5% Dead 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:** Erodium sp, Croton setig, Tarplant

**GRASSES - 3 Dominant Species:** Bromus sp, \_\_\_\_\_, \_\_\_\_\_

**SHRUBS - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**TREES - Dominant species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**Abundance of Gopher EXCAVATIONS:** ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

**Abundance of ground squirrel burrows:** High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

**Substrate Disturbance:** None \_\_\_\_\_ Grazing X Grading \_\_\_\_\_ Discing \_\_\_\_\_ Furrows pld 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

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

Trails in Vegetation, Other (describe) No observed sign

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: 3A-6 Date: 12/21/2017 Time: 1117

Grazing Management Unit: (circle one) – 2A, 2B, 3A, 3B

SKR Management Area: (circle one) – 1, 2, 3, None

Digital Photographs taken @ SE Corner of Plot? Yes or No

Observer(s): SJM, PR other N. Salas (write in)

Trapping needed to confirm SKR vs DKR? Yes/ No

Overall SKR Potential (circle one): High, ~~Medium~~, Low, None

Comments: assume occupied

## 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

|                              |   |  |                          |                          |   |                |
|------------------------------|---|--|--------------------------|--------------------------|---|----------------|
| <u>BARE GROUND</u> :         | 0-5% _____  | >5-25% <input checked="" type="checkbox"/> | >25-50% _____            | >50-75% _____            | >75-95% _____                               | >95-100% _____ |
| <u>PLANT LITTER (Dead)</u> : | 0-5% _____  | >5-25% _____                               | >25-50% _____            | >50-75% <del>_____</del> | >75-95% <input checked="" type="checkbox"/> | >95-100% _____ |
| <u>FORB cover</u> :          | 0-5% <input checked="" type="checkbox"/>                            | >5-25% _____                               | >25-50% <del>_____</del> | >50-75% _____            | >75-95% _____                               | >95-100% _____ |
| <u>GRASS cover</u> :         | 0-5% <input checked="" type="checkbox"/> <small>mostly dead</small> | >5-25% <del>_____</del>                    | >25-50% _____            | >50-75% _____            | >75-95% _____                               | >95-100% _____ |
| <u>SHRUB cover</u> :         | 0% <input checked="" type="checkbox"/>                              | >0-5% _____                                | >5-25% _____             | >25-50% _____            | >50-75% _____                               | >75-95% _____  |

FORBS - 3 Dominant Species: Erodium sp, Croton setig, Ambr psilo, Hirschmea

GRASSES - 3 Dominant Species: Bromus sp, \_\_\_\_\_, \_\_\_\_\_

SHRUBS - 3 Dominant Species: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

TREES - 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

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

Trails in Vegetation, Other (describe) few burrow along NE corner

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: 3A-7 Date: 12/21/2017 Time: 0957

Grazing Management Unit: (circle one) – 2A, 2B, 3A, 3B SKR Management Area: (circle one) – 1, 2, 3, None

Digital Photographs taken @ SE Corner of Plot? Yes or No

Observer(s): SJM, PR other N. Salas (write in)

Trapping needed to confirm SKR vs DKR? Yes No

Overall SKR Potential (circle one): High, Medium, Low, None

Comments: Assume occupied

## Plot Habitat Descriptors

Describe Current Land Use: grazing X, open space X, Other (describe) \_\_\_\_\_

SOIL SURFACE HARDNESS: Hard \_\_\_\_\_, Medium Sandy to Soft X LIVING/STANDING HERB DENSITY: High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High \_\_\_\_\_, Medium to X, Low X

**BARE GROUND:** 0-5% \_\_\_\_\_, >5-25% \_\_\_\_\_, >25-50% X, >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% X, >5-25% X, >25-50% \_\_\_\_\_, >50-75% \_\_\_\_\_, >75-95% \_\_\_\_\_, >95-100% \_\_\_\_\_

**GRASS cover:** 0-5% X, mostly dead >5-25% X, >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:** Erodium sp, Croton setig, Ambrosia psilo

**GRASSES - 3 Dominant Species:** Dist. spicata, \_\_\_\_\_, \_\_\_\_\_

**SHRUBS - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**TREES - Dominant species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**Abundance of Gopher EXCAVATIONS:** ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

**Abundance of ground squirrel burrows:** High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

**Substrate Disturbance:** None \_\_\_\_\_ Grazing X 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

**Potential Kangaroo Rat Sign??** (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: 12/21/2017 Time: 1017

Grazing Management Unit: (circle one) – 2A, 2B, 3A, 3B SKR Management Area: (circle one) – 1, 2, 3, None

Digital Photographs taken @ SE Corner of Plot? Yes or No

Observer(s): SJM, (PR) other N. Salas (write in)

Trapping needed to confirm SKR vs DKR? Yes / No

Overall SKR Potential (circle one): High, Medium, Low, None

Comments: Assume occupied

## Plot Habitat Descriptors

Describe Current Land Use: grazing X, open space X, Other (describe) \_\_\_\_\_

SOIL SURFACE HARDNESS: Hard \_\_\_\_\_, Medium X, Soft \_\_\_\_\_ LIVING/STANDING HERB DENSITY: High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

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% X, >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: Erodium sp, Croton setig, Hirsch. incans

GRASSES - 3 Dominant Species: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

SHRUBS - 3 Dominant Species: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

TREES - Dominant species: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Abundance of Gopher EXCAVATIONS: ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

Abundance of ground squirrel burrows: High X, Moderate \_\_\_\_\_, Low \_\_\_\_\_

Substrate Disturbance: None \_\_\_\_\_ Grazing X 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

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

Trails in Vegetation, Other (describe) only a couple burrows

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A21 Date: 01/04/2018 Time: 1400

Grazing Management Unit: (circle one) ~~1A~~ **2B**, 3A, 3B SKR Management Area: (circle one) ~~1~~ **2**, 3, None

Digital Photographs taken @ SE Corner of Plot? **Yes** or No

Observer(s): SJM, **PR** other N. Salas (write in)

Trapping needed to confirm SKR vs DKR? **Yes**/ No

Overall SKR Potential (circle one): High, **Medium**, Low, None

Comments: Ecotone of grassland + scrub; K-rat sign present; Assumed occupied, but DKR pot. too

## 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 sp, Croton setig, Hirsch. incan

**GRASSES - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**SHRUBS - 3 Dominant Species:** Art cul, Eriog face, Coreth. filag

**TREES - 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

**Potential Kangaroo Rat Sign??** (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: 01/09/2018 Time: 1415

Grazing Management Unit: (circle one) – 2A, (2B), 3A, 3B SKR Management Area: (circle one) – 1, (2), 3, None

Digital Photographs taken @ SE Corner of Plot? Yes or No

Observer(s): SJM, PR other N. Salas (write in)

Trapping needed to confirm SKR vs DKR? Yes/No

Overall SKR Potential (circle one): High, Medium, Low, None

Comments: Small valley grassland w/ scrub to sides; Assume not occupied at this time

## Plot Habitat Descriptors

Describe Current Land Use: grazing X, open space X, Other (describe) \_\_\_\_\_

SOIL SURFACE HARDNESS: Hard \_\_\_\_\_, Medium X, Soft \_\_\_\_\_ LIVING/STANDING HERB DENSITY: High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

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

FORBS - 3 Dominant Species: Erod. sp, Croton stig., Hirsch. incans

GRASSES - 3 Dominant Species: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

SHRUBS - 3 Dominant Species: Eriog. fasc, Art cal, \_\_\_\_\_

TREES - Dominant species: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Abundance of Gopher EXCAVATIONS: ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

Abundance of ground squirrel burrows: High X, 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

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

Trails in Vegetation, Other (describe) No pot k-rat sign observed

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A2-3 Date: 01/04/2018 Time: 1427

Grazing Management Unit: (circle one) – 2A, **(2B)**, 3A, 3B SKR Management Area: (circle one) – 1, **(2)**, 3, None

Digital Photographs taken @ SE Corner of Plot? **(Yes)** or No

Observer(s): SJM, **(PR)** other N. Salas (write in)

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

Overall SKR Potential (circle one): High, Medium, **(Low)** None

Comments: Slope w/ shrubs; K-rat sign present, but not great for SKR; Assuming not occupied based on setting

## 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 \_\_\_\_\_

|                             |  |              |   |   |               |                |                |
|-----------------------------|--|--------------|---|---|---------------|----------------|----------------|
| <b>BARE GROUND:</b>         | 0-5% <input checked="" type="checkbox"/> | >5-25% _____ | >25-50% _____                               | >50-75% _____                               | >75-95% _____ | >95-100% _____ |                |
| <b>PLANT LITTER (Dead):</b> | 0-5% _____                               | >5-25% _____ | >25-50% <input checked="" type="checkbox"/> | >50-75% _____                               | >75-95% _____ | >95-100% _____ |                |
| <b>FORB cover:</b>          | 0-5% <input checked="" type="checkbox"/> | >5-25% _____ | >25-50% _____                               | >50-75% _____                               | >75-95% _____ | >95-100% _____ |                |
| <b>GRASS cover:</b>         | 0-5% <input checked="" type="checkbox"/> | >5-25% _____ | >25-50% _____                               | >50-75% _____                               | >75-95% _____ | >95-100% _____ |                |
| <b>SHRUB cover:</b>         | 0% _____                                 | >0-5% _____  | >5-25% _____                                | >25-50% <input checked="" type="checkbox"/> | >50-75% _____ | >75-95% _____  | >95-100% _____ |

**FORBS** - 3 Dominant Species: Erod sp., Croton setis, \_\_\_\_\_

**GRASSES** - 3 Dominant Species: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**SHRUBS** - 3 Dominant Species: Art cal, Eriog fasc, Salv apians

**TREES** - 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

Potential Kangaroo Rat Sign?? (Circle type of sign observed) **(Scat)**, **(Burrow)**, Tracks, Tail drag, Caching/foraging craters,

Trails in Vegetation, Other (describe) ↳ DKR?

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A2-4 Date: 01/04/2018 Time: 1438

Grazing Management Unit: (circle one) – 2A, **(2B)**, 3A, 3B SKR Management Area: (circle one) – 1, **(2)**, 3, None

Digital Photographs taken @ SE Corner of Plot? **(Yes)** or No

Observer(s): SJM, **(PR)** other N. Sullivan (write in)

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

Overall SKR Potential (circle one): High, Medium, **(Low)**, None

Comments: slope w/ shrubs; K-rat sign present, but not great for SKR; Assuming Not occupied based on setting

## 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 sp, croton setig, \_\_\_\_\_

**GRASSES - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**SHRUBS - 3 Dominant Species:** Salvia spina, Art cal, Eriog fasc

**TREES - 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

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

Trails in Vegetation, Other (describe) ↳ DKR?

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A2-5 Date: 01/04/2018 Time: 1334

Grazing Management Unit: (circle one) – 2A, **2B**, 3A, 3B SKR Management Area: (circle one) – 1, **2**, 3, None

Digital Photographs taken @ SE Corner of Plot? **Yes** or No

Observer(s): SJM, **PK** other N. Salas (write in)

Trapping needed to confirm SKR vs DKR? **Yes** No

Overall SKR Potential (circle one): High, Medium, **Low**, None

Comments: Mostly slope w/ scrub, but parts w/ open grassland top; NOT great SKR, but SW corner w/ pot; however no sign here assume NOT occupied due to conditions + likely DKR

### 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 \_\_\_\_\_

|                             |  |              |   |   |               |                |
|-----------------------------|--|--------------|---|---|---------------|----------------|
| <b>BARE GROUND:</b>         | 0-5% _____                               | >5-25% _____ | >25-50% <input checked="" type="checkbox"/> | >50-75% _____                               | >75-95% _____ | >95-100% _____ |
| <b>PLANT LITTER (Dead):</b> | 0-5% _____                               | >5-25% _____ | >25-50% _____                               | >50-75% <input checked="" type="checkbox"/> | >75-95% _____ | >95-100% _____ |
| <b>FORB cover:</b>          | 0-5% <input checked="" type="checkbox"/> | >5-25% _____ | >25-50% _____                               | >50-75% _____                               | >75-95% _____ | >95-100% _____ |
| <b>GRASS cover:</b>         | 0-5% <input checked="" type="checkbox"/> | >5-25% _____ | >25-50% _____                               | >50-75% _____                               | >75-95% _____ | >95-100% _____ |
| <b>SHRUB cover:</b>         | 0% _____                                 | >0-5% _____  | >5-25% <input checked="" type="checkbox"/>  | >25-50% _____                               | >50-75% _____ | >75-95% _____  |

**FORBS** - 3 Dominant Species: Hirsch. incane, Erodium sp., \_\_\_\_\_

**GRASSES** - 3 Dominant Species: Bromus, Schizos, \_\_\_\_\_

**SHRUBS** - 3 Dominant Species: Art. cal, Eriog fasc, Salv apians

**TREES** - Dominant species: \_\_\_\_\_

Abundance of Gopher EXCAVATIONS: ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low  INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low

Abundance of ground squirrel burrows: High \_\_\_\_\_, Moderate  <sup>to</sup> 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

Potential Kangaroo Rat Sign?? (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: 01.04.2018      Time: 1316

Grazing Management Unit: (circle one) – 2A, **(2B)**, 3A, 3B      SKR Management Area: (circle one) – 1, **(2)**, 3, None

Digital Photographs taken @ SE Corner of Plot? **(Yes)** or No

Observer(s): SJM, **(PR)** other N. Salas (write in)

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

Overall SKR Potential (circle one): **(High)**, Medium, Low, None

Comments: Narrow drainage cutting thru; NE corner thick w/ Hirsch. litter; dirt road to south; Assume Occupied

## 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:** Hirsch. incana, Erodium sp., Crotan setig.

**GRASSES - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**SHRUBS - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**TREES - 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

**Potential Kangaroo Rat Sign??** (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: 01/04/2018 Time: 1300

Grazing Management Unit: (circle one) – 2A, 2B, 3A, 3B SKR Management Area: (circle one) – 1, 2, 3, None

Digital Photographs taken @ SE Corner of Plot? (Yes) or No

Observer(s): SJM, (PR) other N. Salas (write in)

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

Overall SKR Potential (circle one): (High), Medium, Low, None

Comments: Assume Occupied

## Plot Habitat Descriptors

Describe Current Land Use: grazing X, open space X, Other (describe) \_\_\_\_\_

SOIL SURFACE HARDNESS: Hard \_\_\_\_\_, Medium X, Soft \_\_\_\_\_ LIVING/STANDING HERB DENSITY: High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

**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% X, >75-95% \_\_\_\_\_, >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:** Hirsch. incans, Croton, Erad. sp, Ambro. psilo

**GRASSES - 3 Dominant Species:** Dist. spicata, \_\_\_\_\_, \_\_\_\_\_

**SHRUBS - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**TREES - Dominant species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Abundance of Gopher EXCAVATIONS: ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

Abundance of ground squirrel burrows: High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

Substrate Disturbance: None \_\_\_\_\_ Grazing X 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

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

Trails in Vegetation, Other (describe) ↳ NE corner w/ numerous, but also elsewhere

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: AI-1 Date: 01/04/2018 Time: 1132

Grazing Management Unit: (circle one) – 2A, **2B**, 3A, 3B SKR Management Area: (circle one) – **1**, 2, 3, None

Digital Photographs taken @ SE Corner of Plot? **Yes** or No

Observer(s): SJM, **PR** other N. Salas (write in)

Trapping needed to confirm SKR vs DKR? **Yes** / No

Overall SKR Potential (circle one): **High**, Medium, Low, None

Comments: Assume occupied

## 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. sp, Croton setig., Hirsch. incans

**GRASSES - 3 Dominant Species:** Bromus sp, \_\_\_\_\_, \_\_\_\_\_

**SHRUBS - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**TREES - 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

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

Trails in Vegetation, Other (describe) lots of squirrel, but only few k-rat burrow

BUOW

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: Al-2 Date: 01/04/2018 Time: 1114

Grazing Management Unit: (circle one) – 2A, 2B, 3A, 3B SKR Management Area: (circle one) – 1, 2, 3, None

Digital Photographs taken @ SE Corner of Plot? Yes or No

Observer(s): SJM, PR other N. Salas (write in)

Trapping needed to confirm SKR vs DKR? Yes / No

Overall SKR Potential (circle one): High, Medium, Low, None

Comments: shallow swale cut thru (NE→SW); very dense litter; Assume not occupied at this time

## Plot Habitat Descriptors

Describe Current Land Use: grazing X, open space X, Other (describe) \_\_\_\_\_

SOIL SURFACE HARDNESS: Hard \_\_\_\_\_, Medium X, Soft \_\_\_\_\_ LIVING/STANDING HERB DENSITY: High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High \_\_\_\_\_, Medium X, Low \_\_\_\_\_

**BARE GROUND:** 0-5% X, >5-25% \_\_\_\_\_, >25-50% \_\_\_\_\_, >50-75% \_\_\_\_\_, >75-95% \_\_\_\_\_, >95-100% \_\_\_\_\_

**PLANT LITTER (Dead):** 0-5% \_\_\_\_\_, >5-25% \_\_\_\_\_, >25-50% \_\_\_\_\_, >50-75% \_\_\_\_\_, >75-95% X, >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:** Ambro psilo, Tarplant, Croton setig, Hirschmianag

**GRASSES - 3 Dominant Species:** Bromus sp, Dist. spicata, Avena

**SHRUBS - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**TREES - Dominant species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Abundance of Gopher EXCAVATIONS: ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

Abundance of ground squirrel burrows: High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

Substrate Disturbance: None \_\_\_\_\_ Grazing X 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

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

Trails in Vegetation, Other (describe) No potential K-rat sign

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A1-3 Date: 01/04/2018 Time: 1243

Grazing Management Unit: (circle one) – 2A, **2B**, 3A, 3B SKR Management Area: (circle one) **1**, 2, 3, None

Digital Photographs taken @ SE Corner of Plot? **Yes** or No

Observer(s): SJM, **PR** other N. Salas (write in)

Trapping needed to confirm SKR vs DKR? **Yes**/ No

Overall SKR Potential (circle one): **High**, Medium, Low, None

Comments: Assume occupied

## 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 sp, Croton setig, \_\_\_\_\_

**GRASSES - 3 Dominant Species:** Dist. spicata, \_\_\_\_\_, \_\_\_\_\_

**SHRUBS - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**TREES - 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

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

Trails in Vegetation, Other (describe) ↳ North 1/2

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A1-4      Date: 01/04/2018      Time: 1230

Grazing Management Unit: (circle one) – 2A, (2B), 3A, 3B      SKR Management Area: (circle one) – (1), 2, 3, None

Digital Photographs taken @ SE Corner of Plot? (Yes) or No

Observer(s): SJM, (PR) other N. Salas (write in)

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

Overall SKR Potential (circle one): (High), Medium, Low, None

Comments: Assume occupied

## Plot Habitat Descriptors

Describe Current Land Use: grazing X, open space X, Other (describe) \_\_\_\_\_

SOIL SURFACE HARDNESS: Hard \_\_\_\_\_, Medium X, Soft \_\_\_\_\_      LIVING/STANDING HERB DENSITY: High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High \_\_\_\_\_, Medium X, Low \_\_\_\_\_

**BARE GROUND:**      0-5% X,      >5-25% \_\_\_\_\_,      >25-50% \_\_\_\_\_,      >50-75% \_\_\_\_\_,      >75-95% \_\_\_\_\_,      >95-100% \_\_\_\_\_

**PLANT LITTER (Dead):**      0-5% \_\_\_\_\_,      >5-25% \_\_\_\_\_,      >25-50% \_\_\_\_\_,      >50-75% \_\_\_\_\_,      >75-95% X,      >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, \_\_\_\_\_, Croton setig., Ambro. psilo, tauplav

**GRASSES - 3 Dominant Species:** Dist. spicata, \_\_\_\_\_, Bromus sp, \_\_\_\_\_

**SHRUBS - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**TREES - Dominant species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Abundance of Gopher EXCAVATIONS: ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X      INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

Abundance of ground squirrel burrows: High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

Substrate Disturbance: None \_\_\_\_\_ Grazing X 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

Potential Kangaroo Rat Sign?? (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: 01/04/2018      Time: 1013

Grazing Management Unit: (circle one) – 2A, **(2B)**, 3A, 3B      SKR Management Area: (circle one) – **(1)**, 2, 3, None

Digital Photographs taken @ SE Corner of Plot? **(Yes)** or No

Observer(s): SJM, **(PR)** other N. Salas (write in)

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

Overall SKR Potential (circle one): **(High)** Medium, Low, None

Comments: High density of likely krat/SKR burrows + scat; assume occupied

### 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 \_\_\_\_\_

|                             |  |  |               |               |   |                |
|-----------------------------|--|--|---------------|---------------|---|----------------|
| <b>BARE GROUND:</b>         | 0-5% _____                               | >5-25% <input checked="" type="checkbox"/> | >25-50% _____ | >50-75% _____ | >75-95% _____                               | >95-100% _____ |
| <b>PLANT LITTER (Dead):</b> | 0-5% _____                               | >5-25% _____                               | >25-50% _____ | >50-75% _____ | >75-95% <input checked="" type="checkbox"/> | >95-100% _____ |
| <b>FORB cover:</b>          | 0-5% <input checked="" type="checkbox"/> | >5-25% _____                               | >25-50% _____ | >50-75% _____ | >75-95% _____                               | >95-100% _____ |
| <b>GRASS cover:</b>         | 0-5% <input checked="" type="checkbox"/> | >5-25% _____                               | >25-50% _____ | >50-75% _____ | >75-95% _____                               | >95-100% _____ |
| <b>SHRUB cover:</b>         | 0% _____                                 | >0-5% <input checked="" type="checkbox"/>  | >5-25% _____  | >25-50% _____ | >50-75% _____                               | >75-95% _____  |

**FORBS** - 3 Dominant Species: Erod. sp, croton setig., Ambro psilo.

**GRASSES** - 3 Dominant Species: Avena, Dist. spicula, \_\_\_\_\_

**SHRUBS** - 3 Dominant Species: Isocoma menz., Croton, filag., \_\_\_\_\_

**TREES** - 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

**Potential Kangaroo Rat Sign??** (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: A1-6 Date: 12/21/2017 Time: 1358

Grazing Management Unit: (circle one) - 2A, 2B, 3A, 3B SKR Management Area: (circle one) - 1, 2, 3, None

Digital Photographs taken @ SE Corner of Plot? (Yes) or No

Observer(s): SJM, (PR) other N. Salas (write in)

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

Overall SKR Potential (circle one): (High), Medium, Low, None

Comments: dirt road in plot; Assume occupied

## Plot Habitat Descriptors

Describe Current Land Use: grazing X, open space X, Other (describe) \_\_\_\_\_

**SOIL SURFACE HARDNESS:** Hard \_\_\_\_\_, Medium X, Soft \_\_\_\_\_ **LIVING/STANDING HERB DENSITY:** High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

**OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation):** High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

**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% X, >95-100% \_\_\_\_\_

**FORB cover:** 0-5% X, >5-25% \_\_\_\_\_, >25-50% \_\_\_\_\_, >50-75% \_\_\_\_\_, >75-95% \_\_\_\_\_, >95-100% \_\_\_\_\_

**GRASS cover:** 0-5% \_\_\_\_\_, >5-25% X, <sup>mostly dead</sup> >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:** Erodium sp, Croton, \_\_\_\_\_

**GRASSES - 3 Dominant Species:** Avena sp, Dist spicata, \_\_\_\_\_

**SHRUBS - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**TREES - Dominant species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**Abundance of Gopher EXCAVATIONS:** ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

**Abundance of ground squirrel burrows:** High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

**Substrate Disturbance:** None \_\_\_\_\_ Grazing X Grading \_\_\_\_\_ Discing \_\_\_\_\_ Furrows \_\_\_\_\_ Mowing \_\_\_\_\_ Other?? Dirt Road

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

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

Trails in Vegetation, Other (describe) several good looking K-Rat burrows

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A1-7 Date: 12/21/2017 Time: 1412

Grazing Management Unit: (circle one) 2A, 2B, 3A, 3B SKR Management Area: (circle one) 1, 2, 3, None

Digital Photographs taken @ SE Corner of Plot? Yes or No

Observer(s): SJM, PR other N Salas (write in)

Trapping needed to confirm SKR vs DKR? Yes / No

Overall SKR Potential (circle one): High, Medium, Low, None

Comments: Assume not occupied at this time

## Plot Habitat Descriptors

Describe Current Land Use: grazing X, open space \_\_\_\_\_, Other (describe) \_\_\_\_\_

**SOIL SURFACE HARDNESS:** Hard \_\_\_\_\_, Medium X, Soft \_\_\_\_\_ **LIVING/STANDING HERB DENSITY:** High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

**OBSTRUCTION FACTOR** (perceived difficulty for SKR to move through herbaceous vegetation): High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

**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% X, >95-100% \_\_\_\_\_

**FORB cover:** 0-5% X, >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% X, >0-5% \_\_\_\_\_, >5-25% \_\_\_\_\_, >25-50% \_\_\_\_\_, >50-75% \_\_\_\_\_, >75-95% \_\_\_\_\_, >95-100% \_\_\_\_\_

**FORBS - 3 Dominant Species:** Erodium sp, Croton setosus, Ambrosia psilota

**GRASSES - 3 Dominant Species:** Avena sp, Dist. spicatus, \_\_\_\_\_

**SHRUBS - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**TREES - Dominant species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**Abundance of Gopher EXCAVATIONS:** ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

**Abundance of ground squirrel burrows:** High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

**Substrate Disturbance:** None \_\_\_\_\_ Grazing X 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

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

Trails in Vegetation, Other (describe) Feces, gopher, No pot. k-rat sign

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A1-8 Date: 12/21/2017 Time: 1426

Grazing Management Unit: (circle one) 2A, 2B, 3A, 3B SKR Management Area: (circle one) 1, 2, 3, None

Digital Photographs taken @ SE Corner of Plot? Yes or No

Observer(s): SJM, PR other N. Salas (write in)

Trapping needed to confirm SKR vs DKR? Yes / No

Overall SKR Potential (circle one): High, Medium, Low, None

Comments: Assume not occupied at this time

## Plot Habitat Descriptors

Describe Current Land Use: grazing X, open space X, Other (describe) \_\_\_\_\_

SOIL SURFACE HARDNESS: Hard \_\_\_\_\_, Medium X, Soft \_\_\_\_\_ LIVING/STANDING HERB DENSITY: High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

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

PLANT LITTER (Dead): 0-5% \_\_\_\_\_, >5-25% \_\_\_\_\_, >25-50% \_\_\_\_\_, >50-75% \_\_\_\_\_, >75-95% X, >95-100% \_\_\_\_\_ <sup>Erodium</sup>

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

GRASS cover: 0-5% X, <sup>mostly dead</sup> >5-25% W, >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: Erodium sp, Croton setig, Ambrosia psilo

GRASSES - 3 Dominant Species: Avena sp, Dist. spicata, \_\_\_\_\_

SHRUBS - 3 Dominant Species: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

TREES - Dominant species: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Abundance of Gopher EXCAVATIONS: ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

Abundance of ground squirrel burrows: High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

Substrate Disturbance: None \_\_\_\_\_ Grazing X 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

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

Trails in Vegetation, Other (describe) No pot K-Rat sign

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A1-9 Date: 01/04/2018 Time: 0927

Grazing Management Unit: (circle one) – 2A, **2B**, 3A, 3B SKR Management Area: (circle one) – **1**, 2, 3, None

Digital Photographs taken @ SE Corner of Plot? **Yes** or No

Observer(s): SJM, **PR** other N. Salas (write in)

Trapping needed to confirm SKR vs DKR? **Yes** / No

Overall SKR Potential (circle one): High, **Medium**, Low, None

Comments: Rock outcrop along East 1/2; cattle trail cutting thru; thick litter on West edge  
Assume occupying

### 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 \_\_\_\_\_

|                             |  |  |  |   |               |                |
|-----------------------------|--|--|--|---|---------------|----------------|
| <b>BARE GROUND:</b>         | 0-5% _____                               | >5-25% <input checked="" type="checkbox"/> | >25-50% <del><input checked="" type="checkbox"/></del> | >50-75% _____                               | >75-95% _____ | >95-100% _____ |
| <b>PLANT LITTER (Dead):</b> | 0-5% _____                               | >5-25% _____                               | >25-50% _____  | >50-75% <input checked="" type="checkbox"/> | >75-95% _____ | >95-100% _____ |
| <b>FORB cover:</b>          | 0-5% <input checked="" type="checkbox"/> | >5-25% _____                               | >25-50% _____  | >50-75% _____                               | >75-95% _____ | >95-100% _____ |
| <b>GRASS cover:</b>         | 0-5% <input checked="" type="checkbox"/> | >5-25% _____                               | >25-50% _____  | >50-75% _____                               | >75-95% _____ | >95-100% _____ |
| <b>SHRUB cover:</b>         | 0% _____                                 | >0-5% <input checked="" type="checkbox"/>  | >5-25% _____   | >25-50% _____                               | >50-75% _____ | >75-95% _____  |

**FORBS** - 3 Dominant Species: Erod. sp, Ambro psila, Croton setigi, Hirsch. incans

**GRASSES** - 3 Dominant Species: Dist. spicata, Avena sp

**SHRUBS** - 3 Dominant Species: Isocoma menz, Brickellia calif.

**TREES** - 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

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

Trails in Vegetation, Other (describe) ↳ SE corner only

# Ramona Grassland SKR Monitoring – Habitat Assessment Form

Plot Number: A1-10 Date: 01/04/2018 Time: 0857

Grazing Management Unit: (circle one) (2A) 2B, 3A, 3B SKR Management Area: (circle one) (1) 2, 3, None

Digital Photographs taken @ SE Corner of Plot? (Yes) or No

Observer(s): SJM, (PR) other N. Salas (write in)

Trapping needed to confirm SKR vs DKR? Yes / No

Overall SKR Potential (circle one): High, Medium, (Low) None

Comments: Narrow channel through plot, assume not occupied at this time

## Plot Habitat Descriptors

Describe Current Land Use: grazing X, open space X, Other (describe) \_\_\_\_\_

SOIL SURFACE HARDNESS: Hard \_\_\_\_\_, Medium X, Soft \_\_\_\_\_ LIVING/STANDING HERB DENSITY: High \_\_\_\_\_, Medium \_\_\_\_\_, Low X

OBSTRUCTION FACTOR (perceived difficulty for SKR to move through herbaceous vegetation): High \_\_\_\_\_, Medium X, Low \_\_\_\_\_

**BARE GROUND:** 0-5% X, >5-25% \_\_\_\_\_, >25-50% \_\_\_\_\_, >50-75% \_\_\_\_\_, >75-95% \_\_\_\_\_, >95-100% ~~X~~

**PLANT LITTER (Dead):** 0-5% \_\_\_\_\_, >5-25% \_\_\_\_\_, >25-50% \_\_\_\_\_, >50-75% \_\_\_\_\_, >75-95% X <sup>forbs</sup> ~~X~~, >95-100% ~~X~~

**FORB cover:** 0-5% X <sup>mostly dead</sup>, >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% X, >0-5% \_\_\_\_\_, >5-25% \_\_\_\_\_, >25-50% \_\_\_\_\_, >50-75% \_\_\_\_\_, >75-95% \_\_\_\_\_, >95-100% \_\_\_\_\_

**FORBS - 3 Dominant Species:** Evod. sp, Croton setig., Ambros. psila, Tarplant

**GRASSES - 3 Dominant Species:** Dist. spicata, Avena sp, Bromus sp

**SHRUBS - 3 Dominant Species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**TREES - Dominant species:** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Abundance of Gopher EXCAVATIONS: ACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X INACTIVE - High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

Abundance of ground squirrel burrows: High \_\_\_\_\_, Moderate \_\_\_\_\_, Low X

Substrate Disturbance: None \_\_\_\_\_ Grazing X 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

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

Trails in Vegetation, Other (describe) No pot k-rat sign observed

Appendix E

**Cactus Wren Threats Assessment Forms**

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Scientific Name: \_\_\_\_\_ MSP Occurrence ID: \_\_\_\_\_

Preserve: Lakeside Occurrence Name: Northern Plot

Date: 7-13-18 Surveyors & Affiliation/Agency: W. I. Kohn / ICEF

**V. CURRENT MAPPED EXTENT INFORMATION.** Count or estimate number of plants in mapped extent. Area can be calculated based on GIS perimeter mapping or visual mapping on aerial photo in the office.

# Plants/Current Mapped Extent: \_\_\_\_\_, Exact Count: \_\_\_\_\_, Estimate (1000s, 10k): \_\_\_\_\_, Uncertainty? \_\_\_\_\_  
 For both exact counts and estimates, indicate: Counted/estimated individual plants: \_\_\_\_\_ OR Counted/estimated clusters of plants: \_\_\_\_\_  
 For geophytes: are counts of flowering or vegetative individuals? Flowering: \_\_\_\_\_ Vegetative: \_\_\_\_\_  
 Area of Current Mapped Extent: \_\_\_\_\_ Units: \_\_\_\_\_ Exact (GPS mapping): \_\_\_\_\_ Estimate: \_\_\_\_\_  
 Perimeter of current extent determined by walking it or estimated by other means (mapped on aerials)? Walked: \_\_\_\_\_ Other (describe p. 3): \_\_\_\_\_  
 Species in Maximum Extent? Yes: \_\_\_\_\_ No: \_\_\_\_\_ If not, why: \_\_\_\_\_

**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**. Record notes on p. 3.

Surrounding Land Use/Activity at or Adjacent to Site: Preserve

Disturbance Classes (rank each threat as 1-7): 1 = no sign of disturbance, 2 = disturbance in 10m surrounding buffer but not within maximum extent, 3 = disturbance occurs in >0 % to <10% of area within maximum extent, 4 = disturbance in 10% to <25% of maximum extent, 5 = disturbance in 25 to <50% of maximum extent, 6 = disturbance occurs within 50 to <75% of maximum extent, and 7 = disturbance occurs within ≥75% of maximum extent.

|                           |          |                                |          |                 |          |
|---------------------------|----------|--------------------------------|----------|-----------------|----------|
| Non-Native Forbs          | <u>3</u> | Feral Pig Activity             | <u>1</u> | Erosion         | <u>1</u> |
| Non-Native Grasses        | <u>1</u> | Trampling                      | <u>1</u> | Urban Runoff    | <u>1</u> |
| Non-Native Woody Plants   | <u>1</u> | Vandalism                      | <u>1</u> | Slope Movement  | <u>1</u> |
| Competitive Native Plants | <u>3</u> | Grazing (Y/N/UNK)              | <u>N</u> | Soil Compaction | <u>1</u> |
| Dumping/Trash             | <u>1</u> | Historic Agriculture (Y/N/Unk) | <u>N</u> |                 |          |
| Encampments               | <u>1</u> | Altered Hydrology              | <u>1</u> |                 |          |

Fuel Modification Zone/Fire Break 1  
 Road Construction/Maintenance 1 If Observed, Briefly Describe: \_\_\_\_\_  
 Vegetation Clearing 1 If Observed, Briefly Describe: \_\_\_\_\_  
 Brush Management/Restoration 1 If Observed, Briefly Describe: \_\_\_\_\_  
 ORV Activity 1 If Observed, List Type(s) of ORV Activity: \_\_\_\_\_  
 Evidence of Recent Fire 1 If Sign of Recent Fire: Year Burned? \_\_\_\_\_ OR Unknown Burn Year? \_\_\_\_\_  
 Disturbance from Trails (authorized & unauthorized) 1 If Trails are Present, are they Authorized (circle one)? Yes / No / Both / Unknown  
 Type of Trail Use (Yes/No)? Hiking: \_\_\_\_\_ Biking: \_\_\_\_\_ Equestrian: \_\_\_\_\_ Dog: \_\_\_\_\_ Service Vehicles: \_\_\_\_\_  
 Other (Describe): \_\_\_\_\_  
 Illegal Trail Use? Yes: \_\_\_\_\_ No: \_\_\_\_\_ Unknown: \_\_\_\_\_ Describe: \_\_\_\_\_

Other Disturbance? List & Rank: Some sage, buckwheat, and mustard growing among cacti? a tch's creates a ladder for potential CAW predators

Collection? Yes: \_\_\_\_\_ No: \_\_\_\_\_ Collector: \_\_\_\_\_

Collection #: \_\_\_\_\_ Herbarium: \_\_\_\_\_ Species Collected: \_\_\_\_\_

Collection 2, Collector: \_\_\_\_\_ (enter additional collections on p. 3)

Collection #: \_\_\_\_\_ Herbarium: \_\_\_\_\_ Species Collected: \_\_\_\_\_

Scientific Name: \_\_\_\_\_ MSP Occurrence ID: \_\_\_\_\_

Preserve: Lakeside Occurrence Name: Southern Patch

Date: 7-13-18 Surveyors & Affiliation/Agency: Will Kohn / ICF

**V. CURRENT MAPPED EXTENT INFORMATION.** Count or estimate number of plants in mapped extent. Area can be calculated based on GIS perimeter mapping or visual mapping on aerial photo in the office.

# Plants/Current Mapped Extent: \_\_\_\_\_, Exact Count: \_\_\_\_\_, Estimate (1000s, 10k): \_\_\_\_\_, Uncertainty? \_\_\_\_\_

For both exact counts and estimates, indicate: Counted/estimated individual plants: \_\_\_\_\_ OR Counted/estimated clusters of plants: \_\_\_\_\_

For geophytes: are counts of flowering or vegetative individuals? Flowering: \_\_\_\_\_ Vegetative: \_\_\_\_\_

Area of Current Mapped Extent: \_\_\_\_\_ Units: \_\_\_\_\_ Exact (GPS mapping): \_\_\_\_\_ Estimate: \_\_\_\_\_

Perimeter of current extent determined by walking it or estimated by other means (mapped on aerials)? Walked: \_\_\_\_\_ Other (describe p. 3): \_\_\_\_\_

Species in Maximum Extent? Yes: \_\_\_\_\_ No: \_\_\_\_\_ If not, why: \_\_\_\_\_

**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. Record notes on p. 3.

Surrounding Land Use/Activity at or Adjacent to Site: \_\_\_\_\_

Disturbance Classes (rank each threat as 1-7): 1 = no sign of disturbance, 2 = disturbance in 10m surrounding buffer but not within maximum extent, 3 = disturbance occurs in >0 % to <10% of area within maximum extent, 4 = disturbance in 10% to <25% of maximum extent, 5 = disturbance in 25 to <50% of maximum extent, 6 = disturbance occurs within 50 to <75% of maximum extent, and 7 = disturbance occurs within ≥75% of maximum extent.

|                           |          |                                |          |                 |          |
|---------------------------|----------|--------------------------------|----------|-----------------|----------|
| Non-Native Forbs          | <u>3</u> | Feral Pig Activity             | <u>1</u> | Erosion         | <u>1</u> |
| Non-Native Grasses        | <u>1</u> | Trampling                      | <u>1</u> | Urban Runoff    | <u>1</u> |
| Non-Native Woody Plants   | <u>1</u> | Vandalism                      | <u>1</u> | Slope Movement  | <u>1</u> |
| Competitive Native Plants | <u>4</u> | Grazing (Y/N/UNK)              | <u>2</u> | Soil Compaction | <u>1</u> |
| Dumping/Trash             | <u>1</u> | Historic Agriculture (Y/N/Unk) | <u>2</u> |                 |          |
| Encampments               | <u>1</u> | Altered Hydrology              | <u>1</u> |                 |          |

Fuel Modification Zone/Fire Break 1

Road Construction/Maintenance 1 If Observed, Briefly Describe: \_\_\_\_\_

Vegetation Clearing 1 If Observed, Briefly Describe: \_\_\_\_\_

Brush Management/Restoration 1 If Observed, Briefly Describe: \_\_\_\_\_

ORV Activity 2 If Observed, List Type(s) of ORV Activity: Dirt bike

Evidence of Recent Fire 1 If Sign of Recent Fire: Year Burned? \_\_\_\_\_ OR Unknown Burn Year? \_\_\_\_\_

Disturbance from Trails (authorized & unauthorized) 2 If Trails are Present, are they Authorized (circle one)? Yes / No / Both / Unknown

Type of Trail Use (Yes/No)? Hiking: Yes Biking: Yes Equestrian: No Dog: Yes Service Vehicles: Yes

Other (Describe): \_\_\_\_\_

Illegal Trail Use? Yes: \_\_\_\_\_ No: \_\_\_\_\_ Unknown: x Describe: some smaller trails off main trail observed

Other Disturbance? List & Rank: Buckwheat, Baccharis, and mustard growing up among and adjacent to cactus patches, creating a ladder for potential TACH predators

Collection? Yes: \_\_\_\_\_ No: \_\_\_\_\_ Collector: \_\_\_\_\_

Collection #: \_\_\_\_\_ Herbarium: \_\_\_\_\_ Species Collected: \_\_\_\_\_

Collection 2, Collector: \_\_\_\_\_ (enter additional collections on p. 3)

Collection #: \_\_\_\_\_ Herbarium: \_\_\_\_\_ Species Collected: \_\_\_\_\_