Bob Powers Gateway Preserve

Alkali Mariposa Lily Survey

Prepared for:

Kern River Valley Heritage Foundation

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Introduction

An alkali mariposa lily (*Calochortus striatus*) survey was completed at the Bob Powers Gateway to Lake Isabella Preserve immediately south of Lake Isabella in eastern Kern County, California (Figures 1 & 2). The project was conducted at the request of the Kern River Valley Heritage Foundation. This report summarizes the results of the survey conducted on May 21 and 22, 2016. This is the second consecutive year and the third year overall of surveys following the methods described in this report. Surveys were also conducted in 2011 and 2015.

Project Area

The Gateway to Lake Isabella Preserve covers approximately 19 acres located at the southwest corner of the junction of Highway 178 and Highway 155 immediately west of Lake Isabella in eastern Kern County, California. The property is owned by Kern County, which is a partner in the wetland improvement project through a 2002 Wildlife Extension Agreement with the United States Fish and Wildlife Service (USFWS).

Methods

During the initial survey in 2011, the entire property was scanned for any evidence of flowering alkali mariposa lily. Once each area containing this species was identified, a grid system was established to facilitate counting individual mariposa lilies in various stages of development. In 2015 and 2016, the property was similarly scanned and if new areas containing alkali mariposa lily were found, they were added to the count. The 2016 field survey was conducted on May 21 and 22, 2016, by walking line transects within predefined plots and scanning the remainder of the property for plants not already included in plots. Counts were recorded of individual mariposa lily plants, buds, flowers, and fruits per plant. Representative photos were taken of areas with blooming plants, and incidental observations of wildlife were recorded during the survey.

Results and Discussion

A total of 2909 individual alkali mariposa lily plants were found inside the preserve, which was a substantial increase from the previous survey total of 1255 plants counted in 2015 (Table 1). Nine of the 14 plots (including the transplant exclusion) contained more plants than in 2015. Plot 2A contained the most plants (1189), an increase from 252 counted in 2015. Plot 3B had no mariposa lilies for the second year in a row. The southwest corner of the preserve had a total of 334 plants; approximately 40 more than were observed in the area during 2015. The areas containing smaller groups of lilies that were recorded along the southern end of the preserve in 2015, showed a slight overall increase from 120 to 130, with three additional mariposa lilies found in two locations.

Three of the four plots that had fewer mariposa lilies in 2016 had been mowed along the edge of the plot prior to the survey (5B, 6A, and 6B). Mowing prior to the survey possibly explains the decrease in plants when most plots increased.

A satellite photo of the project site and map of counted areas for the survey are shown in Figure 1. Representative photographs are included in Figures 2 through 4. Wildlife observed during the surveys included primarily bird species; however, an extensive inventory was not conducted (Table 2).

Although rainfall between January and May 2015 was more than two inches greater than rainfall for the same period in 2016 (5.65 inches compared to 3.26 inches), the total number of alkali mariposa lilies found on the preserve during 2016 surveys was more than double that of 2015. Rainfall data does show a significant increase in total precipitation during March 2016 compared to March 2015 (1.22 inches compared to 0.18 inches) which may account for the increase in number of plants recorded during 2016 surveys.

Recommendations

Continue to monitor the plant community in the Bob Powers Gateway to Lake Isabella Wetlands Preserve; the recommendation for annual surveys continues. Cursory surveys of productivity at the KVLI site which appears to bloom first in the region can help determine the best time to survey. Generally the survey period should fall in the window between the third week in May and the first week in June.

If mowing along the property is required for property maintenance, it would affect the mariposa lily success less if it occurred after seed set and before the onset of growth in the early spring. Therefore, it is recommended that mowing be conducted between August and December.

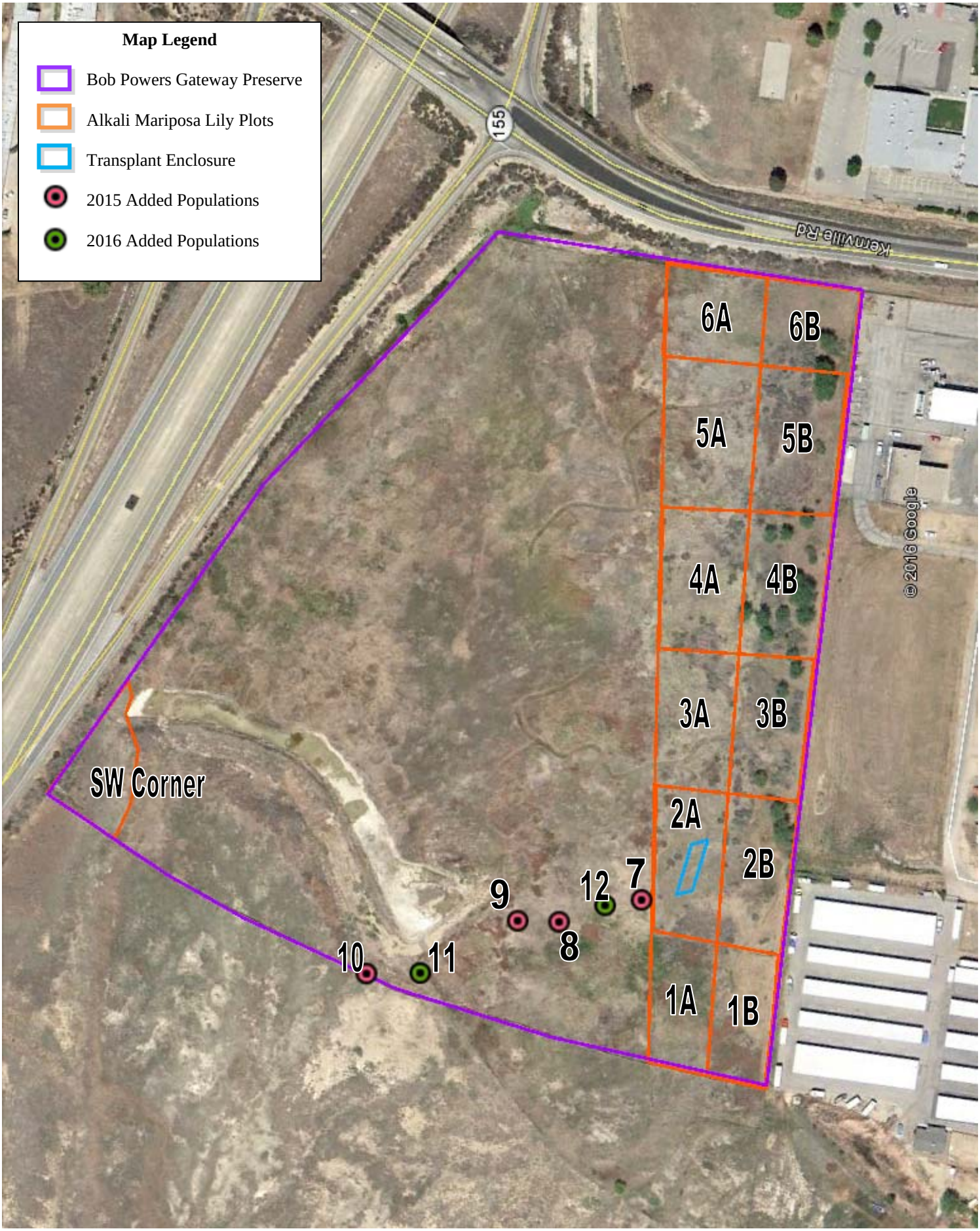

Figure 1. Aerial Map of Preserve Plots and Additional Alkali Mariposa Lily Populations

Table 1. 2016 Bob Powers Gateway Preserve Alkali Mariposa Lily Plot Data

Plot	Total Plants	Total Buds	Total Flowers	Total Fruit
1A	164	257	194	245
1B	19	76	32	25
2A	1189	1206	1464	1633
2B	705	689	685	830
3A	88	91	86	103
3B	0	0	0	0
4A	131	124	109	101
4B	14	20	14	18
5A	84	127	88	73
5B	9	6	7	10
6A	155	220	125	110
6B	0	0	0	0
SW Corner	334	429	314	702
Transplant Exclusion	17	15	15	19
Total	**2909**	**3260**	**3133**	**3869**

Additional Areas	Number of Plants
7	8
8	88
9	23
10	11
11	2
12	1

Table 2. Wildlife Observed During Surveys Conducted for Bob Powers Gateway Preserve 2016

BIRDS	
Buteo lineatus	Red-shouldered hawk
Melanerpes formicivorus	Acorn woodpecker
Contopus sordidulus	Western wood pewee
Corvus corax	Common raven
Sialia mexicana	Western bluebird
Petrochelidon pyrrhonota	Cliff swallow
Tyrannus verticalis	Western kingbird
Agelaius phoeniceus	Red-winged blackbird

OTHER WILDLIFE	
Uta stansburiana	Side-blotched lizard

Figure 2: Photo looking south across the Preserve

Figure 3: Photo looking east across the Preserve

Figure 4: Photo of an alkali mariposa lily on the Preserve