

2410 Foothill Boulevard Site in San Bernardino, California

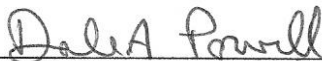
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Focused Survey for the Delhi Sands Flower-loving Fly

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TE-006559-8

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2410 Foothill Boulevard site in San Bernardino, California

Focused Survey for the Delhi Sands Flower-loving Fly

October 26, 2023

Introduction

This report presents the results of a focused survey for the Delhi Sands Flower-loving Fly (*Rhaphiomidas terminatus abdominalis*) on an 11-acre site located in the City of San Bernardino, San Bernardino County. This property is under consideration for development in the future. The County of San Bernardino and the U.S. Fish and Wildlife Service require that focused surveys be conducted to determine whether this proposed development would impact this federally endangered insect. Surveys were conducted by Powell Environmental Consultants upon the site in 2020, 2021, and 2022. The surveys resulted in negative findings. This survey, conducted by Powell Environmental Consulting, also resulted in negative findings.

(NOTE: Only the southwestern area (approximately 3.4-acres of the property – see the Map of Soils), which possessed Delhi fine sand was surveyed. A small adjacent area outside of the 3.4-acres was also surveyed.)

Site Description

The approximately 11-acre site is located near the city of San Bernardino, on a portion of the southwest area of Section 6, Township 1 South, Range 5 West; San Bernardino Baseline and Meridian; USGS 7.5' San Bernardino South Quad (See Maps 1 & 2). The site sits on the north of Foothill Blvd. and west of North Macy Street). The principal vegetative type is ruderal mixed with native vegetation typically found on loamy and sandy soils of the area. There was small area in the northwestern area of the site devoted to ornamentals. No one type of vegetation predominated upon the site. No shrubs or trees existed upon the site except for a few rogue lantana bushes and tree of heaven trees in the south-central area of the site. Upon the south-central area of the site is a residence with a small commercial development. There was a relatively small fenced off area in the north-western corner of the site that was covered with concrete pad and vegetation similar to that found upon the rest of the site. The site is surrounded by residential development to the north and south (across Foothill Blvd.). To the west (northern portion) across a wall there is a field with vegetation similar to the vegetation found upon the site. To the west (southern portion) across the wall there is the foundation of a former development. East of the site, across North Macy Street, is a field with vegetation similar to that found growing upon the site. Approximately 600 feet, across the field, is a residence and beyond the residence approximately 1,100 feet from the site is the south end of Lytle Creek wash and a flood control basin. (See Maps, Photographs).

Approximately 31.4 percent of the site consists of Delhi fine sand (Db), 17.3 percent of the site consists of Hanford sandy loam, 0 to 2 percent slopes (Hba), and 51.3 percent Tujunga loamy sand, 0 to 5 percent slopes (TuB), (According to the Web Soil Survey (USDA, NRCS)). The Delhi series consists of very deep, somewhat excessively drained soils. They formed in wind modified material weathered from granitic rock sources. Delhi soils are on floodplains, alluvial fans and terraces. Slopes are 0 to 15 percent. Used for growing grapes, peaches, truck crops, alfalfa and for home sites. Principal native plants are buckwheat and a few shrubs and trees. Typical vegetation is annual grasses and forbs. The Hanford series consists of very deep, well drained soils that formed in moderately coarse textured alluvium dominantly from granite. Hanford soils are on stream bottoms, floodplains and alluvial fans and have slopes of 0 to 15 percent. Hanford soils are used for growing a wide range of fruits, vegetables, and general farm crops. They are also used for urban development and dairies. Vegetation in uncultivated areas is mainly annual grasses and associated herbaceous plants. The Tujunga series consists of very deep, somewhat excessively drained soils that formed in alluvium from granitic sources. Tujunga soils are on alluvial fans and floodplains, including urban areas. Slopes range from 0 to 12 percent. This soil is used for grazing, citrus, grapes, other fruits, and urban residential or commercial development. Uncultivated areas have a cover of shrubs, annual grasses and forbs. In urban areas ornamentals and turf-grass are common.

Most of the surveyed area of the site (approximately 3.4-acres) is covered by exposed Delhi fine sand. There is very little vegetation growing upon the site – under 5% of the soil was covered by vegetation.

Of the Delhi Sands Flower-loving Fly “indicator” plants only a small number of annual bursages (*Ambrosia acanthicarpa*) and telegraph weeds (*Heterotheca grandiflora*) were observed growing upon the site. Disturbances observed on the site include disking, the invasion of non-native plant and animal species, and minor trash dumping.

Delhi Sands Flower-loving Fly Background Information

The Delhi Sands Flower-loving Fly (*Rhaphiomidas terminatus abdominalis*) (family Mydidae) was listed as an endangered species under the Endangered Species Act, as amended on September 23, 1993. The California Natural Diversity Data Base lists the DSFLF rank as being: G1T1S1 - Federally listed as being extremely endangered (G1); found only in California (T1); and as being extremely endangered in California (S1).

The Delhi Sands Flower-loving Fly is considered to be endangered primarily because of the loss of its habitat, mainly due to the habitat’s conversion to agricultural, residential, and industrial uses. Its historic range has been reduced by over approximately 97% (USFWS, 1993). The fly is known only to inhabit areas where Delhi series soils are located. These soils consist of fine, sandy soils, often forming wholly or partially consolidated dunes, located in an irregular 40 square mile area, in southwestern San Bernardino and northwestern Riverside Counties (Soil Conservation Service, 1980).

Fine unconsolidated soils are required for oviposition. The female fly inserts the end of her abdomen deep into the soil to lay her eggs (Rogers and Mattoni, 1993). The life history of the larval stages is largely unknown. The larvae develop underground. It not known whether the early stages of the fly are herbivorous, detritivorous, or carnivorous. The Delhi Sands Flower-loving Fly's adult flight period lasts approximately six weeks from late June through mid-September. The adult is approximately 1 inch long, tan to orange-brown in color, with dark brown bands and spots upon its abdomen. Its wings are hyaline. It has large green eyes and a long slender proboscis, which it has been seen to use to feed upon nectar from California buckwheat and telegraph weed. The adults frequent open areas, usually near unconsolidated soil. The adult males patrol open areas looking for females to mate with. The females are more sedentary and perch upon plants or sit upon the ground for long periods. Adults are most often observed from 9 or 10 AM until 3 or 4 PM.

The DSFLF is frequently associated with certain plants: California buckwheat (*Eriogonum fasciculatum*), California croton (*Croton californicus*), annual bursage (*Ambrosia acanthicarpa*), and telegraph weed (*Heterotheca grandiflora*), are sometimes called "indicator plants". Other native plant species also occur in DSFLF habitat: California evening primrose (*Oenothera californica*), deerweed (*Lotus scoparius*), lessinga (*Lessingia glandulifera*), rancher's fiddleneck (*Amsinckia menziesii*), sapphire woolly-star (*Eriastrum sapphirinum*), and Thurber's buckwheat (*Eriogonum thurberi*)

Delhi Sands Flower-loving Fly Recovery Plan

In 1997 the U.S. Fish and Wildlife Service issued the final recovery plan for the Delhi Sands Flower-loving Fly (USFWS, 1997). The plan establishes three recovery units: the Colton, Jurupa, and Ontario Recovery Units. The Colton Recovery Unit contains the most known habitat, followed by the Jurupa Recovery Unit. Of the three recovery units, the Ontario Recovery Unit contains the least suitable habitat. Most of the Ontario Recovery Unit's habitat has been degraded by long-term agricultural use and much of the remainder of "suitable" habitat is highly fragmented and is in very close proximity to residential, commercial, or industrial development. While the fly is known to occur in the Ontario Recovery Unit, the possibility of using the Ontario Recovery Unit to protect the Delhi Sands Flower-loving Fly is limited because of its prior history and fragmented nature.

The 2410 Foothill Boulevard Project site is located within the Colton Recovery Unit.

Methods

Prior to the initiation of the focused survey, the Carlsbad Field Office of the USFWS was notified on June 14, 2023 of Powell Environmental Consultant's intent to perform the survey. This focused survey was initiated on July 2, 2023 and continued with biweekly site surveys until September 18, 2023. All field surveys and activities associated with this study were conducted in accordance with the Interim General Guidelines for the Delhi Sands Flower-loving Fly and conditions set forth in the surveyors 10(a)(1)(A) permits. Surveys were conducted by entomologist Dale Powell PhD and Jun Powell (authorized under permit TE-006559-8). Survey dates and times, ambient air temperatures, wind speed, general weather conditions, insect

families/species detected, and other pertinent field data were recorded on field survey forms and are included in Table 1 and in the Appendices.

Results and Discussion

No Delhi Sands Flower-loving Flies were observed on the project site during the focused survey. Members of the family Mydidae, to which the Delhi Sands Flower-loving Fly belongs, were observed on the project site. Other species of the closely related family Asilidae, which is associated with Delhi sands, were observed upon the site. These insects are frequently associated with the Delhi Sands Flower-loving Fly and can be considered indicators that the site may have potential as suitable fly habitat, even though the site has been altered by various disturbances. The site had been cleared of vegetation earlier in the year, before the survey season began, and very few plants were observed growing upon the site. A small number of the Delhi Sands Flower-loving Fly “indicator” plants, telegraph weed (*Heterotheca grandiflora*) and annual bursage (*Ambrosia acanthicarpa*) were observed growing upon the site.

Table 1. Dates, survey times, person hours, and weather conditions.

Delhi Sands Flower-loving Fly Survey Results

Date	Time	Minutes Surveyed	Weather (at start)	Temp (°F)	Wind (mph) aver*/max
7/2/2023 ³	11:15-11:35	40	Clear	91°	4/6
7/4/2023 ³	11:10-11:35	50	Clear	84°	3/5
7/8/2023 ²	11:10-11:35	25	Clear	78°	2/4
7/10/2023 ²	11:05-11:30	25	Clear	85°	1/3
7/15/2023 ³	11:15-11:45	60	Clear	93°	2/4
7/17/2023 ²	11:05-12:30	25	10% Clouds	89°	1/3
7/22/2023 ²	11:05-11:30	25	5% Clouds	91°	1/3
7/24/2023 ²	11:05-11:30	25	Clear	92°	1/3
7/29/2023 ³	11:15-11:40	50	Partly Cloudy	92°	3/5
7/31/2023 ²	11:05-11:30	25	95% Clouds	89°	1/3
8/5/2023 ²	11:15-11:40	25	Clear	86°	1/3
8/7/2023 ²	11:05-11:40	25	Clear	90°	1/3
8/12/2023 ²	11:15-11:40	25	Clear	84°	1/3
8/14/2023 ²	11:10-11:40	30	Clear	84°	1/3
8/19/2023 ¹	12:25-12:45	20	Partly Cloudy	98°	5/8
8/23/2023 ²	11:05-11:35	30	Clear	84°	1/3
8/26/2023 ²	11:05-11:35	30	Clear	85°	1/3
8/28/2023 ²	11:05-11:35	30	Clear	97°	1/3
9/3/2023 ²	10:00-10:30	30	90% Clouds	74°	0/1
9/5/2023 ²	11:05-11:35	30	5% Clouds	75°	1/3
9/9/2023 ²	10:00-10:30	30	Clear	86°	0/1
9/11/2023 ²	11:05-11:35	30	Overcast	83°	1/3
9/16/2023 ²	12:45-13:10	25	Overcast	70°	1/3
9/18/2023 ²	11:05-11:35	30	10% Clouds	71°	1/3

¹ Dale Powell

² Jun Powell

³ Dale and Jun Powell

* Over a 20 second period.

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- U.S. Fish and Wildlife Service. 1997. Final Recovery Plan for the Delhi Sands Flower-loving Fly (*Rhaphiomidas terminatus abdominalis*). U.S. Fish and Wildlife Service, Portland, OR. 51 pp.

SUBCONTRACTOR CONCURRENCE

I, Dale A. Powell, having performed focused surveys for the Delhi Sands Flower-loving Fly for the 2410 Foothill Boulevard site, San Bernardino, have entirely read and reviewed the final report for the project and concur with the statements and conclusions made.

Dale A Powell

October 6, 2023

SIGNATURE

DATE

I, Jun Rong Powell, having performed focused surveys for the Delhi Sands Flower-loving Fly for the 2410 Foothill Boulevard site, San Bernardino, have entirely read and reviewed the final report for the project and concur with the statements and conclusions made.

Jun R. Powell

October 6, 2023

SIGNATURE

DATE

MAP 1. General Location of the Site.




MAP 2. Location of the Site.



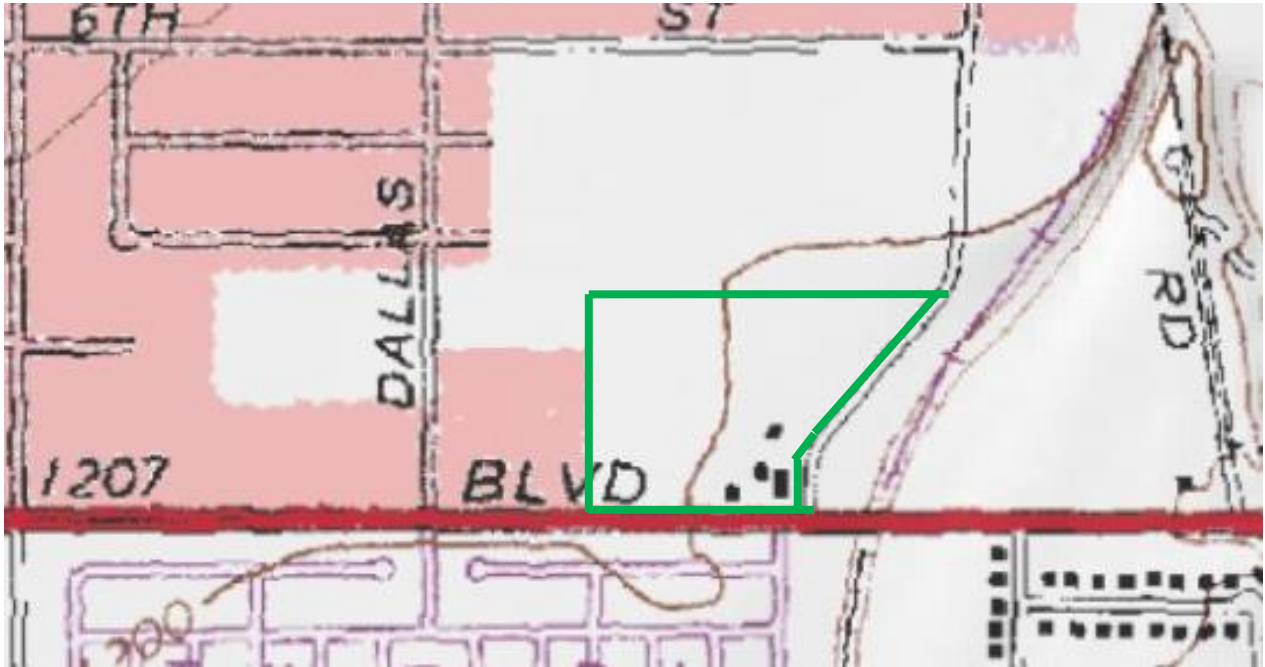
MAP OF SOILS



San Bernardino County Southwestern Part, California (CA677)			
San Bernardino County Southwestern Part, California (CA677) 			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Db	Delhi fine sand	3.4	31.4%
HbA	Hanford sandy loam, 0 to 2 percent slopes	1.9	17.3%
TuB	Tujunga loamy sand, 0 to 5 percent slopes	5.6	51.3%
Totals for Area of Interest		10.9	100.0%

BIOLOGICAL RESOURCES MAP

an



LEGEND



Mixed Ruderal and Native Vegetation

2410 FOOTHILL BOULEVARD PROJECT SITE

Picture 1. Overview of the site facing north from the southwestern corner of the site.



Picture 2. Overview of the site facing northeast from the southwestern corner of the site.



2410 FOOTHILL BOULEVARD PROJECT SITE

Picture 3. Overview of the site facing east from the southwestern corner of the site.



FIELD NOTES

Delhi Sands Flower-loving Fly

Dale and Jun Rong Powell

Site: *Foothill Blvd*

Date		9:00	10:00	11:00	NOON	1:00	2:00	3:00
<i>7/2/23</i>	Temp			<i>91°</i>				
	Week			<i>4/6</i>				
	Weath			<i>sun</i>				
<i>7/4</i>	Temp			<i>84°</i>				
	Week			<i>3/5</i>				
<i>1</i>	Weath			<i>sun</i>				
<i>7/8</i>	Temp			<i>78°</i>				
	Week			<i>2/4</i>				
<i>2</i>	Weath			<i>sun</i>				
<i>7/10</i>	Temp			<i>85°</i>				
	Week			<i>1/3</i>				
<i>2</i>	Weath			<i>sun</i>				
<i>7/15</i>	Temp			<i>93°</i>				
	Week			<i>2/4</i>				
<i>3</i>	Weath			<i>sun</i>				
<i>7/17</i>	Temp			<i>89°</i>				
	Week			<i>1/3</i>				
<i>3</i>	Weath			<i>100% clouds</i>				
<i>7/22</i>	Temp			<i>91°</i>				
	Week			<i>1/3</i>				
<i>4</i>	Weath			<i>50% clouds</i>				
<i>7/24</i>	Temp			<i>92°</i>				
	Week			<i>1/3</i>				
<i>4</i>	Weath			<i>sun</i>				
<i>7/29</i>	Temp			<i>92°</i>				
	Week			<i>3/5</i>				
<i>5</i>	Weath			<i>Part. Cloud</i>				
<i>7/31</i>	Temp			<i>89°</i>				
	Week			<i>1/3</i>				
<i>5</i>	Weath			<i>95% clouds</i>				
<i>8/5</i>	Temp			<i>86°</i>				
	Week			<i>1/3</i>				
<i>6</i>	Weath			<i>sun</i>				
<i>8/7</i>	Temp			<i>90°</i>				
	Week			<i>1/3</i>				
<i>6</i>	Weath			<i>sun</i>				
<i>8/12</i>	Temp			<i>84°</i>				
	Week			<i>1/3</i>				
<i>7</i>	Weath			<i>sun</i>				

Wind: First number is average (20 seconds) / second number is maximum.

Delhi Sands Flower-loving Fly

Dale and Jun Rong Powell

Site: *Foothill Blvd*

Date		9:00	10:00	11:00	NOON	1:00	2:00	3:00
<i>8/14/23</i>	Temp			<i>87°</i>				
<i>Week</i>	Wind			<i>1/3</i>				
<i>7</i>	Weath			<i>SUN</i>				
<i>8/19</i>	Temp				<i>98°</i>			
<i>Week</i>	Wind				<i>5/8</i>			
<i>8</i>	Weath				<i>Partly Cloudy</i>			
<i>8/23</i>	Temp			<i>84°</i>				
<i>Week</i>	Wind			<i>1/3</i>				
<i>8</i>	Weath			<i>SUN</i>				
<i>8/26</i>	Temp			<i>85°</i>				
<i>Week</i>	Wind			<i>1/3</i>				
<i>9</i>	Weath			<i>SUN</i>				
<i>8/28</i>	Temp			<i>97°</i>				
<i>Week</i>	Wind			<i>1/3</i>				
<i>9</i>	Weath			<i>SUN</i>				
<i>9/3</i>	Temp		<i>74°</i>					
<i>Week</i>	Wind		<i>0/1</i>					
<i>10</i>	Weath		<i>90% clouds</i>					
<i>9/5</i>	Temp			<i>75°</i>				
<i>Week</i>	Wind			<i>1/3</i>				
<i>10</i>	Weath			<i>5% clouds</i>				
<i>9/9</i>	Temp		<i>86°</i>					
<i>Week</i>	Wind		<i>0/1</i>					
<i>11</i>	Weath		<i>SUN</i>					
<i>9/11</i>	Temp			<i>83°</i>				
<i>Week</i>	Wind			<i>1/3</i>				
<i>11</i>	Weath			<i>overcast</i>				
<i>9/16</i>	Temp				<i>70°</i>			
<i>Week</i>	Wind				<i>1/3</i>			
<i>12</i>	Weath				<i>overcast</i>			
<i>9/18</i>	Temp			<i>71°</i>				
<i>Week</i>	Wind			<i>1/3</i>				
<i>12</i>	Weath			<i>100% cloud</i>				
	Temp							
<i>Week</i>	Wind							
	Weath							
	Temp							
<i>Week</i>	Wind							
	Weath							

Wind: First number is average (20 seconds) / second number is maximum.

