

**APPENDIX H-1. 2022 QUINO CHECKERSPOT BUTTERFLY REPORT,
ROCKS BIOLOGICAL CONSULTING**



STARLIGHT SOLAR PROJECT
QUINO CHECKERSPOT BUTTERFLY
(*Euphydryas editha quino*)
PRESENCE/ABSENCE SURVEYS

San Diego County, California

June 2022

Prepared for:
SWCA Environmental Consultants
1455 Frazee Road, Suite 500
San Diego, CA 92108

Prepared by:
Rocks Biological Consulting
4312 Rialto Street
San Diego, CA 92107
(619) 701-6798

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1. Summary

This report is a summary of the results of the habitat assessment and protocol presence/absence Quino checkerspot butterfly (*Euphydryas editha quino*; QCB) surveys conducted by Rocks Biological Consulting (RBC) for the Starlight Solar Project (project) during the 2022 QCB flight season.

RBC conducted surveys between February 28 and May 14, 2022, in accordance with the United States Fish and Wildlife Service (USFWS) QCB survey guidelines dated December 15, 2014 (guidelines). RBC biologists documented the QCB's larval food plants purple owl's-clover (*Castilleja exserta*), Chinese houses (*Collinsia concolor*), and dot-seed plantain (*Plantago erecta*) during protocol surveys; however, QCB was not documented during the 2022 flight season.

2. Introduction

2.1. Project Description and Background

Starlight Solar, LLC is requesting a Major Use Permit from the County of San Diego (County) to develop, finance, construct, and operate an unmanned renewable energy solar and battery storage project in southeastern San Diego County. The County's General Plan designates the project site as Rural Lands 80 (RL-80) and the County's Zoning Ordinance identifies the site as General Rural (S92). The County's General Regulation states that solar power plant projects are considered Major Impact Service and Utility in all zones and thus require the approval of a Major Use Permit.

The Starlight Solar Project would utilize photovoltaic (PV) electric generation system technology to produce up to 100 MW of AC of solar energy at the utility scale. The project would also include an 868 MWh (217MW 4-hour batteries) battery energy storage system (BESS). The project would be constructed in two phases, the first of 20 MW solar energy generation and 17 MW of battery storage and the second of 80 MW solar energy generation and 200 MW of battery storage.

2.2. Project Location

The proposed project site encompasses a total of approximately 583 acres within the Mountain Empire Subregional Plan area in unincorporated San Diego County within the United States Geological Survey 7.5-minute Live Oak Springs and Tierra Del Sol quadrangle maps (Figure 1). The Mountain Empire Subregional Plan area contains five subregional group areas. The project is in the Boulevard Subregional Planning Area and is located south of Interstate 8 (I-8) and Old Highway 80, and east of Tierra Del Sol Road (Figure 2). Regional access to the project is provided by State Route 94 and I-8, respectively. Access to the project site is provided by Jewel Valley Road and Tule Jim Lane, which each connect to Old Highway 80 in the town of Boulevard. The proposed project site would be divided into eight solar array areas. An underground generation tie-line (gen-tie) would be located on the east side of Tule Jim Lane and connect into the southeastern corner of the Boulevard Substation.

2.4. QCB Natural History

QCB is a member of the brush-footed butterfly family (Nymphalidae) and was federally listed as endangered in January 1997. QCB is one of 12 subspecies of the *Euphydryas editha* checkerspot (USFWS 2003).

Historically, QCB ranged from Los Angeles County and western San Bernardino County south through Orange County, western Riverside County, and San Diego County into northern Baja California, Mexico. Currently, QCB are only known to occur in portions of southwestern Riverside County, San Diego County, and northern Baja California (Mattoni et al. 1997). The dramatic decline of the species has been caused primarily by habitat loss and degradation. Both the larval and adult stages have specific habitat requirements that have been impacted by development, invasive non-native vegetation, overgrazing, fire management practices, drought conditions, over-collection by butterfly collectors, and off-road vehicles (USFWS 1997).

QCB adults use a variety of sparsely vegetated habitats including open coastal sage scrub and chaparral, vernal pool complexes, oak woodland, and desert pinyon-juniper woodland. Densely vegetated areas and extensive open grasslands are not known to support QCB (Mattoni et al. 1997, USFWS 2014). The distribution of QCB is defined primarily by the location of its most common larval food plant, dot-seed plantain. Other potential larval food plants include Chinese houses, dark-tipped bird's-beak (*Cordylanthus rigidus*), desert plantain (*Plantago ovata*), purple owl's-clover, and Coulter's snapdragon (*Antirrhinum coulterianum*) (USFWS 2014).

QCB primarily feed on the nectar of small annual plant species that flower concurrently with the adult flight season. Although most perennial plant species are not in flower during the flight period, some may be used for nectar sources later in the season (Mattoni et al. 1997). QCB have a short tongue and therefore cannot feed on flowers with deep corolla tubes. In addition, they prefer to nectar on flowers that have a platform-like surface, which they use to remain upright while feeding (USFWS 2003).

Typically, there is one adult generation of QCB per year, with a four-to-six-week flight period beginning in late February and continuing through May (Emmel and Emmel 1973), although the timing of the flight period may vary considerably from year to year depending on rainfall and temperature patterns. The life span of adult QCB averages from 10 to 14 days with staggered emergence (USFWS 2002). The full life cycle of a QCB includes egg, larva, pupa, and adult with larval stages divided into five to seven instars. Adult QCB spend their time searching for mates, feeding on nectar, defending territories, basking in the sun, and, in the case of females, searching for sites to deposit eggs (USFWS 2002).

3. Methods

3.1. Habitat Assessment

On January 31, 2022, RBC sent a 15-day pre-survey notification letter to the USFWS stating the intent to conduct protocol QCB surveys within the project site. RBC biologists Jim Rocks (TE-063230-5.7), Ian Hirschler (TE-063230-5.7), Brian Lohstroh (TE-063608-6), Ryan Meszaros (TE-20186A-3.1), David Faulkner (TE-838743-7), and Brenda Bennett (TE-063230-5.7) were included

in the list of permitted surveyors. RBC sent an amended request to add Melanie Rocks (#00354040) to the list of surveyors on March 27, 2022.

On February 2, 2022, Jim Rocks conducted a QCB habitat assessment on the approximately 583-acre project site plus a 150-foot buffer for a total of approximately 824 acres. Habitat was determined to be suitable or non-suitable in accordance with QCB survey guidelines (USFWS 2014). Non-suitable habitat was excluded from future protocol surveys. The non-excluded habitat is hereafter referred to as the QCB Survey Area, which consists of approximately 637 acres of suitable QCB habitat.

3.2. *Protocol Surveys*

The QCB Survey Area was surveyed weekly beginning the last week of February and ending the second week of May in accordance with QCB survey guidelines (USFWS 2014). The QCB Survey Area was broken into ten survey areas each with approximately the same acreage of QCB suitable habitat to ensure that the appropriate acreage was surveyed on each survey day (Figure 2). RBC biologists conducted surveys between February 28 and May 14, 2022. RBC attempted to begin surveys during the third week of February 2022, but protocol surveys conditions were unable to be met due to inclement weather. If non-protocol weather conditions prohibited survey activities, a makeup survey was conducted in accordance with the guidelines. Multiple surveyors or survey teams frequently conducted concurrent surveys on the same day in separate survey areas. Survey dates, conditions, and personnel for each survey area are presented in Appendix A.

RBC conducted protocol surveys by walking slowly through the QCB Survey Area at an approximate rate of 10 acres per person hour and identifying butterflies in hand or with the aid of binoculars. RBC conducted all surveys on clear sunny days (less than 50% cloud cover) when ground temperatures were above 60 degrees Fahrenheit or on overcast days (greater than 50 % cloud cover) when ground temperatures were above 70 degrees Fahrenheit. Ground temperatures were measured in the shade prior to starting surveys and at the end of each survey. Surveys were not conducted in sustained winds greater than 15 miles per hour. RBC generally conducted surveys between the hours of 0830 and 1745.

3.3. *Larval Food Plants and Nectar Sources*

RBC recorded QCB larval food plant locations in the field using the Geographic Information System (GIS) program ArcGIS Collector. For each occurrence, surveyors noted the larval food plant species, the approximate diameter of the larval food plant patch, and the density of the patch as low, medium, or high. Low density is defined as less than 20 cover (less than 40 plants per square meter), medium density is defined as 20 to 50 cover (40 to 100 plants per square meter), and high density is defined as greater than 50 cover (greater than 100 plants per square meter). Each surveyor noted nectar sources present during the survey on QCB survey forms. Plant taxonomy follows Rebman and Simpson (2014).

4. Results

4.1. Suitable Habitat and Vegetation Communities

During the habitat assessment conducted on February 2, 2022, approximately 187 acres of non-suitable QCB habitat were excluded from the surveys. Excluded areas consisted of developed areas of Empire Ranch and other private property, closed-canopy mixed chaparral, closed-canopy redshank (*Adenostoma sparsifolium*) chaparral, closed-canopy chamise (*Adenostoma fasciculatum*) chaparral, and closed-canopy big sagebrush (*Artemisia tridentata*) scrub. Suitable habitat in the QCB Survey Area totaled approximately 637 acres. Representative site photos are included in Appendix B. Suitable habitat within the QCB Survey Area occurred within several vegetation communities, including:

- Coastal sage scrub dominated by California buckwheat (*Eriogonum fasciculatum*), California cholla (*Cylindropuntia californica* var. *parkeri*), and interior goldenbush (*Ericameria linearifolia*);
- Buckwheat scrub dominated by California buckwheat, broom matchweed (*Gutierrezia sarothrae*), and deerweed (*Acmispon glaber* var. *brevialatus*)
- Upland mustards dominated by short-pod mustard (*Hirschfeldia incana*), tarweeds (*Deinandra* spp.) and non-native grasses
- Southern mixed chaparral dominated by chamise, redshank, mountain mahogany (*Cercocarpus betuloides*), cup-leaf lilac (*Ceanothus perplexans*), and sugarbush (*Rhus ovata*)

4.2. Larval Food Plants and Nectar Sources

RBC documented four larval food plants in the QCB Survey Area, including purple owl's-clover, Chinese houses, dark-tipped bird's-beak, and dot-seed plantain (Figure 3). RBC documented three occurrences of dark-tipped bird's-beak within the QCB Survey Area; however, these were senesced individuals from the 2021 season. Dark-tipped bird's-beak new growth is typically not visible until late May or early June after the typical QCB survey season. The larval food plants were scattered throughout the QCB Survey Area and tended to be concentrated in more open areas.

Table 1, below, outlines the number of occurrences for each species observed within the QCB Survey Area and the density reported for those occurrences.

Table 1. QCB Larval Food Plant Occurrences by Density, February-May 2022

Scientific Name	Common Name	Low Density	Medium Density	High Density	Total
<i>Castilleja exserta</i> ssp. <i>exserta</i>	purple owl's-clover	99	-	-	99
<i>Collinsia concolor</i>	Chinese houses	14	3	-	17
<i>Cordylanthus rigidus</i> ssp. <i>setigerus</i> *	dark-tipped bird's-beak	3	-	-	3
<i>Plantago erecta</i>	dot-seed plantain	1	-	-	1
*Senesced individuals from 2021					

Nectar sources were present throughout the QCB Survey Area. RBC biologists observed 78 potential nectar sources within the QCB Survey Area during the protocol surveys. A compiled list of potential nectar sources observed within the QCB Survey Area is presented in Appendix C.

4.3. QCB Observations

QCB was not observed within the QCB Survey Area during the 2022 protocol surveys.

4.4. Butterfly Species Diversity

The QCB Survey Area supported a high diversity of butterfly species, with a total of 55 species observed during the surveys. Butterfly species observed during protocol surveys represent approximately 36 percent of the documented butterfly species in San Diego County (Shiraiwa 2010). The number of butterfly species observed varied during each survey. An average of nine species was observed per survey with a high of 19 species on March 30, 2022. Species most frequently observed during surveys included funereal duskywing (*Erynnis funeralis*) (94 surveys), Behr's metalmark (*Apodemia virgulti*) (90 surveys), Sara orangetip (*Anthocharis sara*) (80 surveys), perplexing hairstreak (*Callophrys perplexa*) (70 surveys), and checkered white (*Pontia protodice*) (66 surveys). A compiled list of butterflies observed during each survey is presented in Appendix D and surveyor field notes are included in Appendix E. Butterfly taxonomy follows *The Butterflies of San Diego County* (Shiraiwa 2010).

5. Conclusion

RBC documented QCB larval food plants and numerous nectar sources in the QCB survey area; however, QCB was not observed within the QCB Survey Area during the 2022 flight season.

6. Certification

We certify that the information in this survey report and attached figures fully and accurately represent our work.



Jim Rocks, TE-063230-5.7



Ian Hirschler, TE-063230-5.7



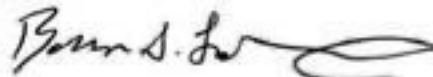
Melanie Rocks, #00354040



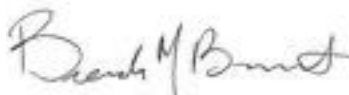
Ryan Meszaros, TE-20186A-3.1



David Faulkner, TE-838743-7



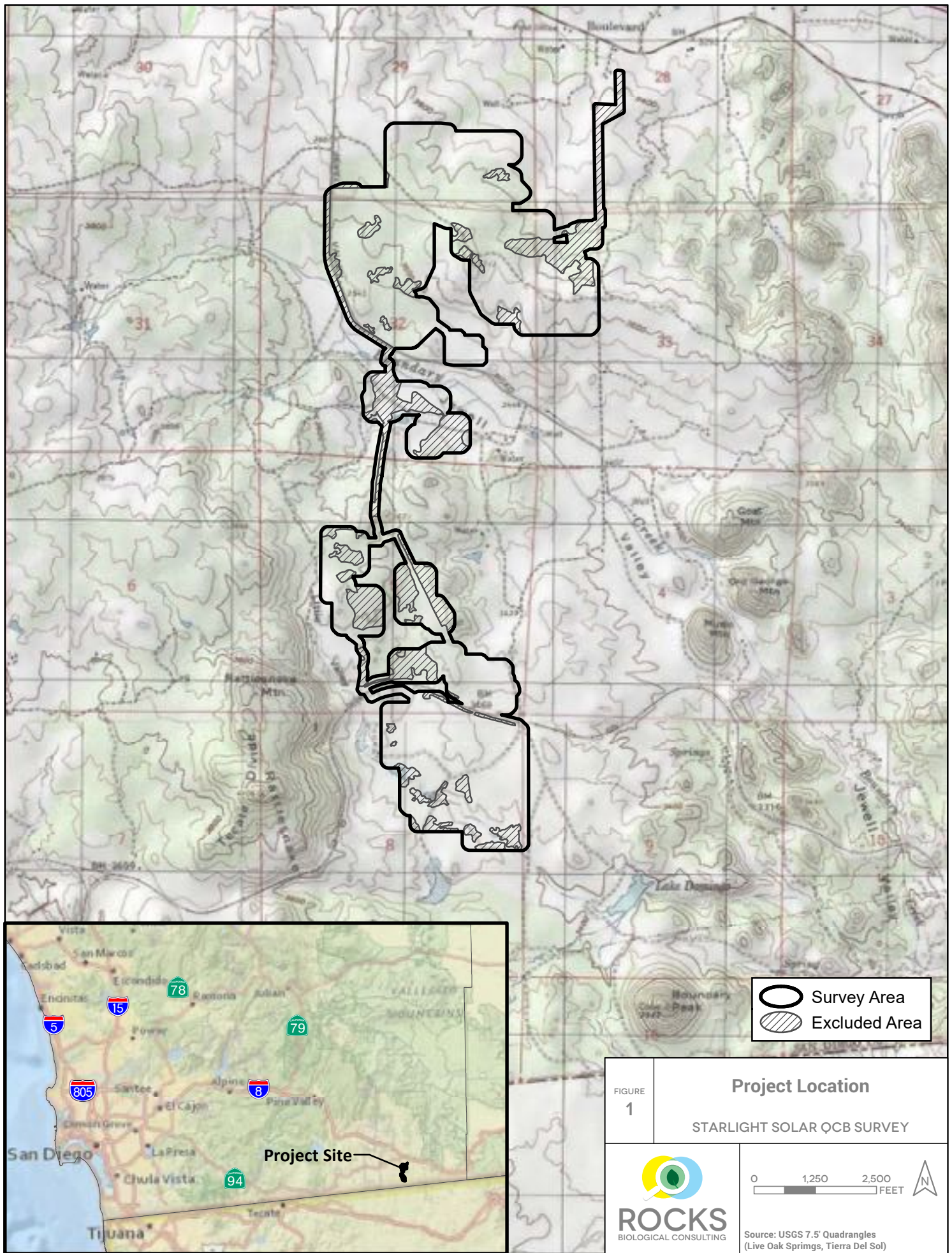
Brian Lohstroh, TE-063608-6

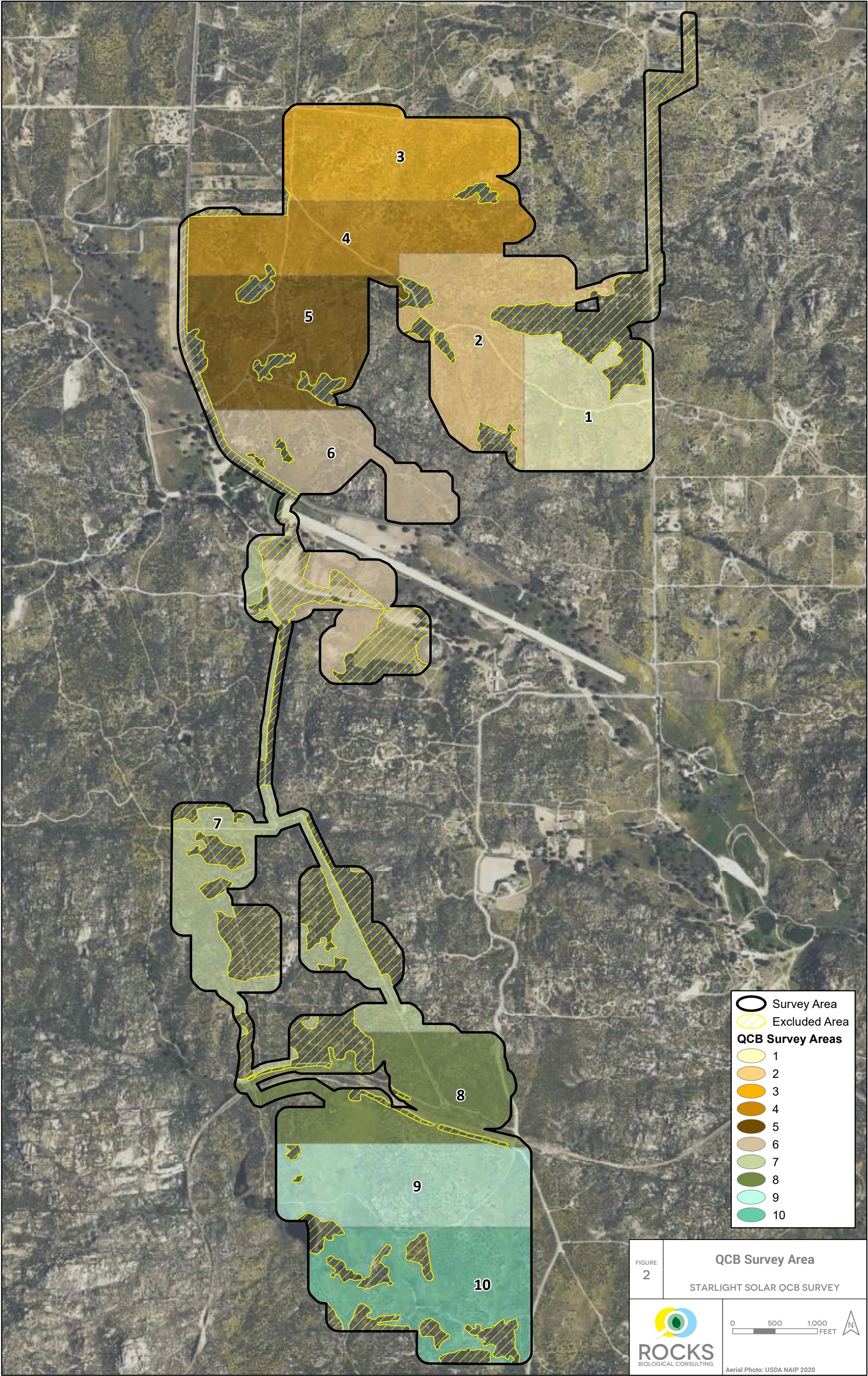


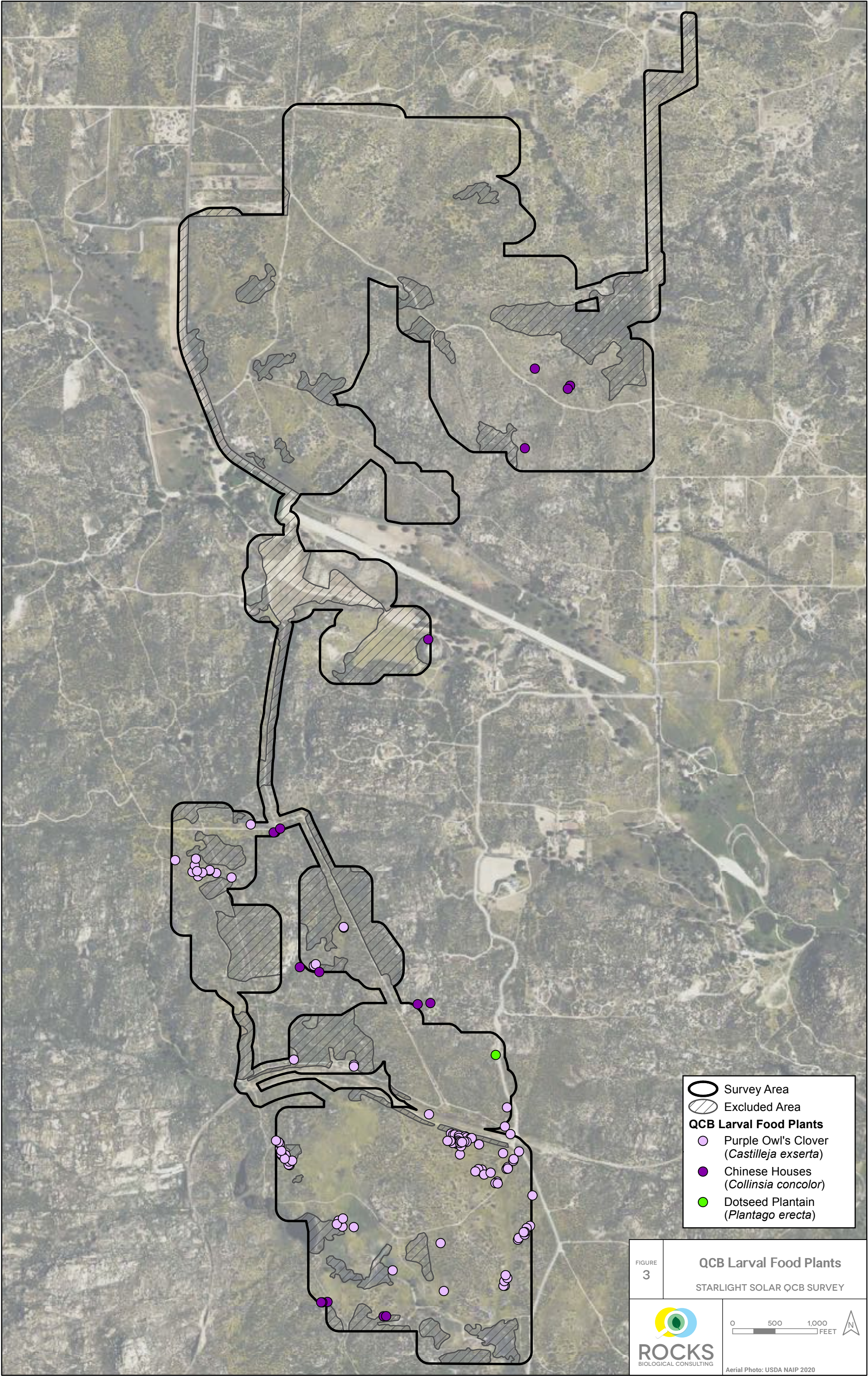
Brenda Bennett, TE-063230-5.7

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Appendix A

Survey Dates and Conditions

Appendix A

Starlight Solar Project Survey Dates and Conditions

Date	Survey Area (s)	Surveyor(s)	Time (Start-End)	Temp F (Start-End)	Cloud Cover % (Start-End)	Wind Range in mph (Start; End) ¹
2/28/22	1,2	IH	1000-1700	60-64	0-0	4-9; 2-6
2/28/22	3	BB	1000-1700	60-61	0-0	4-9; 0-2
2/28/22	4	RM	1000-1700	60-61	0-0	4-9; 0-2
3/1/22	5	RM, BB	0915-1615	66-70	0-0	2-6; 1-4
3/1/22	6	BB	0915-1615	66-70	0-0	2-6; 1-4
3/1/22	7	JR	0920-1615	67-69	0-0	5-9(12); 1-3
3/2/22	8	BB	0945-1645	72-71	40-60	2-6; 0-2
3/2/22	9	RM, BB	0945-1645	72-71	40-60	2-6; 0-2
3/2/22	10	IH	0930-1615	67-73	40-70	1-5; 2-5
3/3/22	2	IH	0815-1315	60-78	15-70	3-7; 2-6
3/3/22	6	BL	0830-1530	62-64	5-20	2-6; 6-12
3/3/22	7	RM	0900-1515	64-66	15-10	3-10; 5-9
3/9/22	1	RM	1045-1600	60-60	0-0	3-7; 2-7
3/9/22	2	BB	1030-1600	60-62	0-0	2-14; 2-9
3/9/22	3	BL	1015-1645	60-60	0-0	7-12; 5-14
3/9/22	4	JR	1000-1645	60-60	0-0	2-8; 5-12
3/9/22	5	IH	1000-1630	62-62	0-0	1-5; 1-4
3/14/22	6	IH	0900-1530	61-69	0-0	2-5; 3-7
3/14/22	7	BB	0945-1630	64-69	0-0	4-6; 2-7
3/14/22	8	RM	1000-1700	64-72	0-0	5-9; 1-4
3/15/22	10	RM	0900-1600	63-75	0-0	0-2; 3-7
3/15/22	1	JR	0930-1600	65-77	0-0	0-3; 3-6
3/15/22	2	BB	1000-1645	68-74	0-10	0-2; 2-9
3/15/22	9	IH	0915-1600	64-80	0-0	0-2; 3-6
3/17/22	3	IH	0915-1515	60-76	0-0	4-8; 5-8
3/17/22	4	BL	0910-1545	62-67	0-0	4-8; 2-6
3/17/22	5	BB	0945-1630	63-69	0-0	2-12; 1-4
3/18/22	6	RM	0915-1615	62-78	0-0	0-1; 0-2
3/18/22	7	IH	0930-1530	66-1530	0-0	2-5; 0-3
3/21/22	8	BB	1000-1645	61-70	15-35	0-2; 8-2
3/21/22	9	RM	1000-1645	61-70	5-35	0-2; 0-2
3/22/22	2	RM	0900-1600	62-70	0-10	6-10; 1-7
3/22/22	10	BB	1030-1715	64-73	0-0	3-11; 1-5
3/23/22	3	DF	0940-1550	68-70	0-0	6; 2-3
3/23/22	4	IH	0900-1545	60-71	0-0	4-8(12); 2-7
3/23/22	5	RM	0850-1550	60-70	0-0	3-14; 1-6
3/23/22	6	BB	0900-1545	60-70	0-0	3-14; 1-6
3/24/22	1	IH	0945-1415	65-87	0-0	2-5; 3-9
3/24/22	7	BL	0900-1600	72-77	2-0	3-7; 3-9
3/25/22	8	IH	0930-1600	76-84	2-2	1-3; 0-3
3/27/22	9	BB	1100-1745	72-70	5-0	3-9; 3-6

¹ Wind speed numbers in parentheses indicate maximum gust speed.

3/30/22	2	RM	1000-1645	66-73	0-0	0-1; 2-7
3/30/22	10	IH	0930-1600	60-80	0-0	1-3; 1-3
3/31/22	3	DF	1300-1600	68-70	40-0	5; 2
3/31/22	4	RM	1200-1645	61-59	25-15	3-7; 2-6
4/1/22	1,4	IH	0900-1530	60-77	5-0	2-4; 4-7
4/2/22	5	BB	1100-1745	73-60	0-20	1-4; 2-6
4/4/22	6	RM	0930-1615	62-77	0-5	1-3; 2-6
4/5/22	3	DF	0945-1400	71-84	0-0	6; 3-4
4/5/22	7	IH	0900-1530	65-81	0-0	3-7; 2-5
4/6/22	8	BB	0915-1600	72-79	0-0	4-11; 4-12
4/7/22	2	RM	0830-1515	68-76	0-0	8-14; 5-12
4/7/22	4	DF	0900-1600	71-76	0-0	8; 6
4/7/22	9	IH	0900-1530	72-80	0-0	5-10(13); 8-12(14)
4/7/22	10	BB	1015-1700	71-80	0-0	4-11; 2-10
4/8/22	1	IH	0900-1330	66-81	0-0	4-8; 5-9(12)
4/14/22	1	JR, MR	1015-1630	64-68	1-0	3-8; 7-12(15)
4/14/22	2	JR, MR	1015-1630	64-68	1-0	3-8; 7-12(15)
4/14/22	3	DF	0900-1530	65-68	0-0	2; 7
4/14/22	5	IH	0930-1600	69-72	0-0	2-5; 3-7
4/14/22	8	BB	1030-1715	68-72	0-0	1-4; 1-4
4/14/22	9	BL	0945-1616	68-67	0-0	0-3; 3-12
4/15/22	4	DF	0900-1600	61-74	10-20	5; 3
4/15/22	6	IH	0900-1530	62-71	40-15	4-7; 6-11
4/15/22	10	RM	0900-1545	60-73	20-30	3-8; 2-7
4/17/22	7	BB	1030-1715	70-84	0-0	1-4; 1-2
4/18/22	3	DF	1230-1330	83-84	20-20	5; 6
4/18/22	8	IH	0900-1530	70-83	2-2	3-6; 7-11
4/18/22	9	RM	0900-1545	72-80	10-10	0-4; 3-12
4/19/22	4	DF	0900-1600	66-70	20-0	7; 10
4/19/22	6	IH	0900-1530	68-69	0-0	7-11; 10-13
4/19/22	10	BL	0915-1545	66-72	20-2	6-13; 11-15(17)
4/20/22	5	BB	0945-1630	60-66	0-0	8-12; 6-12
4/21/22	1	JR, MR	1030-1600	66-70	0-0	2-8; 4-12
4/21/22	2	JR, MR	1030-1600	66-70	0-0	2-8; 4-12
4/21/22	3	DF	0900-1600	64-70	0-0	5; 6
4/21/22	7	IH	0900-1530	61-72	0-0	3-8; 4-10
4/21/22	8	RM	0900-1545	61-71	0-0	2-10; 3-8
4/21/22	9	BB	1030-1715	70-65	0-0	1-4; 2-7
4/23/22	1	IH	0900-1330	61-70	0-0	6-10(12); 4-7
4/24/22	5	IH	0845-1515	61-76	0-0	3-6; 5-10
4/25/22	7	IH	0815-1445	64-76	0-0	2-6; 2-6
4/26/22	6	RM	0930-1615	73-75	20-20	1-4; 2-6
4/26/22	8	BL	0915-1545	73-79	10-15	3-6; 5-13
4/27/22	2	JR	1035-1630	65-77	10-20	2-9; 5-12
4/27/22	4	DF	0900-1600	63-70	0-0	4; 4
4/27/22	9	RM	0900-1545	67-69	0-0	2-8; 2-7
4/27/22	10	BB	1000-1645	66-68	0-0	2-4; 6-11

4/28/22	1	JR	1125-1550	61-62	0-0	3-8;8-12(15)
4/28/22	3	DF	1100-1500	62-66	10-0	3; 12
4/28/22	5	BB	1030-1715	61-61	0-0	2-9; 7-13
4/28/22	7	IH	1000-1630	63-66	40-0	3-7; 9-13(16)
4/28/22	8	RM	1000-1645	60-62	20-0	3-10; 8-13
4/29/22	3	DF	0900-1200	66-74	0-0	1; 4
5/2/22	4	DF	0900-1600	74-76	0-0	2; 5
5/2/22	6	IH	0900-1530	68-73	0-0	2-5; 6-10
5/2/22	7	RM	0915-1600	70-75	0-0	0-4; 2-6
5/3/22	3	DF	0900-1600	61-73	0-0	1; 2
5/3/22	10	IH	0900-1530	65-81	0-0	3-7; 2-5
5/4/22	1	JR, MR	0945-1530	70-80	0-2	3-8; 2-6
5/4/22	2	JR, MR	0945-1530	70-80	0-2	3-8; 2-6
5/4/22	5	BL	0845-1515	69-77	0-0	3-7; 2-6
5/4/22	8	BB	0915-1600	70-84	0-0	2-10; 2-6
5/5/22	6	RM	0845-1545	73-82	0-5	0-1; 5-12
5/5/22	9	IH	0900-1530	72-90	0-0	1-4; 2-6
5/5/22	10	BB	1000-1645	80-84	0-0	3-8; 3-11
5/6/22	2	BL	0845-1515	75-93	0-0	0-7; 2-7
5/6/22	3	IH, JR	0830-1500	68-87	0-0	2-5; 2-8
5/6/22	4	IH, JR	0830-1500	68-87	0-0	2-5; 2-8
5/7/22	5	IH	0815-1445	66-84	0-0	3-7; 6-12(14)
5/9/22	2	IH	0930-1600	63-66	0-0	5-9; 9-13(18)
5/9/22	9	RM	1000-1645	63-63	0-0	2-6; 2-8
5/10/22	1	IH	0915-1400	61-68	0-0	1-5(8); 4-11
5/12/22	4	DF	0900-1600	64-64	0-0	6; 6
5/12/22	6	BB	1015-1700	66-80	0-0	3-9; 2-3
5/12/22	8	BL	0915-1600	61-73	0-0	3-13; 2-7
5/12/22	9,10	JR	0930-1545	61-76	0-0	2-8; 2-5
5/13/22	3	DF	0900-1600	76-82	0-0	1; 2
5/13/22	5	JR	0950-1550	68-80	0-0	2-7; 2-6
5/13/22	7	BB	0945-1630	75-84	0-0	1-2; 2-7
5/14/22	10	RM	0900-1545	83-86	0-5	1-3; 1-3

Surveyors: BB=Brenda Bennett, BL=Brian Lohstroh, DF=David Faulkner, IH=Ian Hirschler, JR=Jim Rocks, MR=Melanie Rocks, RM=Ryan Meszaros

Appendix B

Site Photographs

Appendix B
Site Photographs



Photo 1. View of Area 1 facing east. February 28, 2022.



Photo 2. View of Area 1 facing southwest. February 28, 2022.



Photo 3. View of Area 2 facing north. March 3, 2022.



Photo 4. View of Area 2 facing May 9, 2022.



Photo 5. View of Area 3, facing east. March 17, 2022.



Photo 6. View of Area 3, facing east. May 6, 2022.



Photo 7. View of Area 4, facing south. May 6, 2022.



Photo 8. View of Area 4, facing south. May 6, 2022.



Photo 9. View of Area 5, facing south. March 9, 2022



Photo 10. View of Area 5, facing north. April 14, 2022.



Photo 11. View of Area 6, facing south. April 15, 2022.



Photo 12. View of Area 6, facing west. April 15, 2022.



Photo 13. View of Area 7, facing east. April 5, 2022.



Photo 14. View of Area 7, facing southeast. April 5, 2022.



Photo 15. View of Area 8, facing west. March 25, 2022.



Photo 16. View of Area 8, facing north. April 14, 2022



Photo 17. View of Area 9, facing southwest. March 15, 2022.



Photo 18. View of Area 9, facing west. May 5, 2022.



Photo 19. View of Area 10, facing east. March 2, 2022.



Photo 20. View of Area 10, facing north. March 30, 2022.

Appendix C

Observed Potential Nectar Sources

Attachment C
Observed Potential Nectar Sources

Family	Scientific Name	Common Name	Status
Adoxaceae	<i>Sambucus nigra</i> ssp. <i>caerulea</i>	blue elderberry	
Agavaceae	<i>Hesperoyucca whipplei</i>	chaparral candle	
Agavaceae	<i>Yucca schidigera</i>	Mohave yucca	
Anacardiaceae	<i>Rhus aromatica</i>	skunkbrush	
Anacardiaceae	<i>Rhus ovata</i>	sugar bush	
Apiaceae	<i>Lomatium</i> spp.	Lomatium	
Apiaceae	<i>Tauschia arguta</i>	southern tauschia	
Asteraceae	<i>Artemisia californica</i>	coastal sagebrush	
Asteraceae	<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>	yellow pincushion	
Asteraceae	<i>Corethrogyne filaginifolia</i> var. <i>filaginifolia</i>	common sand aster	
Asteraceae	<i>Deinandra</i> spp.	tarplant	
Asteraceae	<i>Ericameria linearifolia</i>	interior goldenbush	
Asteraceae	<i>Eriophyllum confertiflorum</i> var. <i>confertiflorum</i>	long-stem-golden-yarrow	
Asteraceae	<i>Geraea viscida</i>	sticky geraea	CRPR 2B.3
Asteraceae	<i>Gutierrezia sarothrae</i>	broom matchweed	
Asteraceae	<i>Lasthenia gracilis</i>	goldfields	
Asteraceae	<i>Layia platyglossa</i>	tidy tips	
Boraginaceae	<i>Amsinckia menziesii</i> var. <i>intermedia</i>	rigid fiddleneck	
Boraginaceae	<i>Cryptantha intermedia</i>	popcorn flower	
Boraginaceae	<i>Pectocarya linearis</i>	sagebrush combseed	
Boraginaceae	<i>Phacelia distans</i>	common phacelia	
Brassicaceae	<i>Boechera</i> sp.	rockcress	
Brassicaceae	<i>Brassica tournefortii</i> *	Saharan mustard	
Brassicaceae	<i>Descurainia pinnata</i>	tansy mustard	
Brassicaceae	<i>Hirschfeldia incana</i> *	short-pod mustard	
Brassicaceae	<i>Sisymbrium altissimum</i> *	tumble mustard	
Brassicaceae	<i>Sisymbrium irio</i>	London rocket	
Brassicaceae	<i>Thysanocarpus</i> sp.	lacepod	
Brassicaceae	<i>Tropidocarpum gracile</i>	dobie pod	
Cactacea	<i>Opuntia littoralis</i>	prickly pear	
Cactaceae	<i>Cylindropuntia californica</i>	California cholla	
Caprifoliaceae	<i>Lonicera subspicata</i>	Southern honeysuckle	
Cucurbitaceae	<i>Marah macrocarpa</i>	wild-cucumber	
Ericaceae	<i>Arctostaphylos pungens</i>	Mexican manzanita	
Fabaceae	<i>Acmispon argophyllus</i> var. <i>argophyllus</i>	silver-leaf lotus	
Fabaceae	<i>Acmispon glaber</i> var. <i>brevialatus</i>	deerweed	
Fabaceae	<i>Astragalus douglasii</i> var. <i>perstrictus</i>	Jacumba milk vetch	CRPR 1B.2
Fabaceae	<i>Lathyrus splendens</i>	Pride of California	CRPR 4.3
Fabaceae	<i>Lupinus</i> spp.	lupine	

Garryaceae	<i>Garrya</i> sp.	silk tassel	
Geraniaceae	<i>Erodium cicutarium</i> *	red-stem filaree	
Grossulariaceae	<i>Ribes quercetorum</i>	oak gooseberry	
Iridaceae	<i>Sisyrinchium bellum</i>	blue-eyed-grass	
Lamiaceae	<i>Salvia columbariae</i>	chia	
Lamiaceae	<i>Trichostema lanatum</i>	woolly bluecurls	
Malvaceae	<i>Sphaeralcea ambigua</i>	desert mallow	
Montiaceae	<i>Calandrinia menziesii</i>	redmaids	
Namaceae	<i>Eriodictyon trichocalyx</i>	yerba santa	
Nyctaginaceae	<i>Mirabilis laevis</i>	wishbone bush	
Onagraceae	<i>Clarkia purpurea</i>	clarkia	
Orobanchaceae	<i>Castilleja exserta</i>	purple owl's clover	
Orobanchaceae	<i>Castilleja foliolosa</i>	woolly Indian paintbrush	
Paeoniaceae	<i>Paeonia californica</i>	California peony	
Papaveraceae	<i>Dendromecon rigida</i>	bush poppy	
Papaveraceae	<i>Eschscholzia californica</i>	California poppy	
Papaveraceae	<i>Platystemon californicus</i>	cream cups	
Phrymaceae	<i>Diplacus aridus</i>	Jacumba monkeyflower	CRPR 4.3
Plantaginaceae	<i>Collinsia heterophylla</i>	Chinese houses	
Plantaginaceae	<i>Keckiella antirrhinoides</i>	yellow bush penstemon	
Plantaginaceae	<i>Penstemon centranthifolius</i>	scarlet bugler	
Plantaginaceae	<i>Penstemon clevelandii</i>	Cleveland's beardtongue	
Plantaginaceae	<i>Plantago erecta</i>	dot-see plantain	
Polemoniaceae	<i>Leptosiphon lemmonii</i>	Lemmon's linanthus	
Polemoniaceae	<i>Linanthus bellus</i>	desert beauty	CRPR 2B.3
Polemoniaceae	<i>Linanthus dianthiflorus</i>	farinose ground pink	
Polygonaceae	<i>Chorizanthe fimbriata</i> var. <i>fimbriata</i>	fringed spineflower	
Polygonaceae	<i>Chorizanthe polygonoides</i> var. <i>longispina</i>	long spined spineflower	
Polygonaceae	<i>Eriogonum fasciculatum</i> var. <i>fasciculatum</i>	coast California buckwheat	
Polygonaceae	<i>Eriogonum wrightii</i> var. <i>membranaceum</i>	Wright's buckwheat	
Polymoneaceae	<i>Eriastrum sapphirinum</i>	sapphire eriastrum	
Ranunculaceae	<i>Delphinium parishii</i> ssp. <i>subglobosum</i>	Intermediate larkspur	CRPR 4.3
Rhamnaceae	<i>Ceanothus leucodermis</i>	chaparral whitethorn	
Rhamnaceae	<i>Rhamnus ilicifolia</i>	holly-leaf redberry	
Rhamnaceae	<i>Ceanothus perplexans</i>	cup-leaf-lilac	
Rosaceae	<i>Adenostoma fasciculatum</i> var. <i>fasciculatum</i>	chamise	
Rosaceae	<i>Adenostoma sparsifolium</i>	red shank	
Rosaceae	<i>Cercocarpus betuloides</i>	mountain mahogany	
Themidaceae	<i>Dichelostemma capitatum</i>	blue dicks	
CRPR: California Rare Plant Rank			
*non-native species			

Appendix D

Butterfly Species Observed

Appendix D

Butterfly Species Observed

Date	2/28/22	2/28/22	2/28/22	3/1/22	3/1/22	3/1/22	3/2/22	3/2/22	3/2/22	3/3/22	3/3/22	3/3/22
Surveyors	IH	BB	RM	RM, BB	BB	JR	BB	RM, BB	IH	BL	RM	IH
Nymphalidae (Brush Footed Butterflies)												
<i>Vanessa cardui</i> (Painted lady)			1		2		1	1		1		2
Hesperiidae (Skippers)												
<i>Erynnis funeralis</i> (Funereal duskywing)	2	5	2	4		2	4	1		7	3	
<i>Erynnis propertius</i> (Propertius duskywing)											2	2
Lycaenidae (Gossamer-wing Butterflies)												
<i>Callophrys augustinus iroides</i> (Western elfin)	6	1	2	3	3		4	1		1		2
<i>Callophrys perplexa</i> (Perplexing hairstreak)	1	1			3					3	2	8
<i>Celastrina echo</i> (Echo azure)						3						1
<i>Glaucopsyche lygdamus australis</i> (Southern Silvery blue)	1										6	
Unidentified blue	1						1			1		
Riodinidae (Metalmarks)												
<i>Apodemia virgulti</i> (Behr's metalmark)									3			
Pieridae (Whites and Sulphurs)												
<i>Anthocharis sara</i> (Sara orangetip)	5	1	2	4	8	5	3	2	3	5	3	4
<i>Euchloe hyantis</i> (California marble)				1							1	
Unidentified White									1	1		
Total Butterfly Individuals Observed	16	8	7	12	16	10	13	5	6	18	17	19

Date	3/9/22	3/9/22	3/9/22	3/9/22	3/9/22
Surveyors	RM	BB	BL	JR	IH
Nymphalidae (Brush Footed Butterflies)					
<i>Vanessa cardui</i> (Painted lady)		8	1	2	3
Unidentified Lady	6				
Hesperiidae (Skippers)					
<i>Erynnis afranius</i> (Afranius duskywing)			1		
<i>Erynnis funeralis</i> (Funereal duskywing)	3	8	4	8	2
<i>Erynnis propertius</i> (Propertius duskywing)	3		1	1	
Lycaenidae (Gossamer-wing Butterflies)					
<i>Callophrys augustinus iroides</i> (Western elfin)	5	9		2	2
<i>Callophrys perplexa</i> (Perplexing hairstreak)	1	5	3		1
<i>Celastrina echo</i> (Echo azure)		3			
Unidentified blue			1		
Riodinidae (Metalmarks)					
<i>Apodemia virgulti</i> (Behr's metalmark)	1				1
Pieridae (Whites and Sulphurs)					
<i>Anthocharis sara</i> (Sara orangetip)	10	3	6	3	2
<i>Pontia sisymbrii</i> (Spring white)	1				
Total Butterfly Individuals Observed	29	36	17	16	11

Date	3/14/22	3/14/22	3/14/22	3/15/22	3/15/22	3/15/22	3/15/22	3/17/22	3/17/22	3/17/22	3/18/22	3/18/22
Surveyors	IH	BB	RM	JR	BB	IH	RM	IH	BL	BB	RM	IH
Nymphalidae (Brush Footed Butterflies)												
<i>Vanessa cardui</i> (Painted lady)		2		3	7	1		1	2	3	3	2
Unidentified Lady							4					
Hesperiidae (Skippers)												
<i>Erynnis funeralis</i> (Funereal duskywing)	1		1	11	14	2	9	2	4	7	4	1
<i>Erynnis propertius</i> (Propertius duskywing)							1	3	6		3	
<i>Erynnis tristis</i> (Mournful duskywing)				2	10				2			
Unidentified Duskywing									4			
Lycaenidae (Gossamer-wing Butterflies)												
<i>Atlides halesus corcorani</i> (Western great purple hairstreak)					1							
<i>Callophrys augustinus iroides</i> (Western elfin)	3		1	5	6		1	3	6	1	2	
<i>Callophrys perplexa</i> (Perplexing hairstreak)	5	10	3	14	31	2		1	16	3	13	3
<i>Celastrina echo</i> (Echo azure)	2	5		3	2					1	1	2
<i>Glauropsyche lygdamus australis</i> (Southern Silvery blue)							1		3			
<i>Plebejus acmon</i> (Acmon blue)						1						
<i>Plebejus lupini monticola</i> (Clemence's blue)				1							7	
<i>Strymon melinus pudica</i> (Common gray hairstreak)						1						
Unidentified blue	1		1			1	6					
Riodinidae (Metalmarks)												
<i>Apodemia virgulti</i> (Behr's metalmark)	2			3	4	6			6	5	10	2
Pieridae (Whites and Sulphurs)												
<i>Anthocharis cethura</i> (Desert orangetip)		2			2							
<i>Anthocharis sara</i> (Sara orangetip)	5	14	2	18	13	4	1	6	8	16	9	5
<i>Euchloe hyantis</i> (California marble)				2	17				2	4	1	
<i>Pontia protodice</i> (Checkered White)				1				2	1			
<i>Pontia sisymbrii</i> (Spring white)						1	2			3	1	
Unidentified White						2		1				2
Total Butterfly Individuals Observed	19	33	8	63	107	18	23	18	60	40	53	15

Date	3/21/22	3/21/22	3/22/22	3/22/22	3/23/22	3/23/22	3/23/22	3/23/22	3/24/22	3/24/22	3/25/22
Surveyors	BB	RM	RM	BB	DF	IH	RM	BB	IH	BL	IH
Nymphalidae (Brush Footed Butterflies)											
<i>Vanessa cardui</i> (Painted lady)	2	2	2	4	1				2	1	1
Hesperiidae (Skippers)											
<i>Erynnis brizo lacustra</i> (Lacustra duskywing)			1								
<i>Erynnis funeralis</i> (Funereal duskywing)	6	2	7				6		8	17	6
<i>Erynnis propertius</i> (Propertius duskywing)		1	6	1	4	3	9		4		3
<i>Erynnis tristis</i> (Mournful duskywing)				2				4		2	
Unidentified Duskywing										2	2
Lycaenidae (Gossamer-wing Butterflies)											
<i>Callophrys augustinus iroides</i> (Western elfin)			5		6	3	4		3	1	3
<i>Callophrys perplexa</i> (Perplexing hairstreak)	7	6	35	17	11	7	7	18	25	23	9
<i>Glaucopsyche lygdamus australis</i> (Southern Silvery blue)	7		3	3				1	5	13	10
<i>Plebejus acmon</i> (Acmon blue)								6			2
<i>Plebejus lupini monticola</i> (Clemence's blue)		4		2							2
Unidentified blue							3			3	
Riodinidae (Metalmarks)											
<i>Apodemia virgulti</i> (Behr's metalmark)		3	5	6	5	6	10	12	7	8	5
Papilionidae (Swallowtails)											
<i>Papilio eurymedon</i> (Pale swallowtail)			1								1
Pieridae (Whites and Sulphurs)											
<i>Anthocharis cethura</i> (Desert orangetip)										5	
<i>Anthocharis lanceolata</i> (Gray marble)					2						
<i>Anthocharis sara</i> (Sara orangetip)	1		3		3	5	6	7	5	3	2
<i>Colias eurytheme</i> (Orange sulphur)									1		
<i>Colias harfordii</i> (Harford's sulphur)		1									1
<i>Euchloe hyantis</i> (California marble)	1	9	12		12	1	9	10	15	1	6
<i>Pontia protodice</i> (Checkered White)			1		1					1	
<i>Pontia sisymbrii</i> (Spring white)	2		8	2			3	1			
Unidentified White						3					3
Total Butterfly Individuals Observed	24	28	81	35	45	25	54	58	75	80	53

Date	3/27/22	3/30/22	3/30/22	3/31/22	3/31/22	4/1/22	4/2/22
Surveyors	BB	RM	IH	DF	RM	IH	BB
Nymphalidae (Brush Footed Butterflies)							
<i>Vanessa annabella</i> (West coast lady)		1					1
<i>Vanessa atalanta rubria</i> (American red admiral)		1					1
<i>Vanessa cardui</i> (Painted lady)	2	3	3		2		3
Hesperiidae (Skippers)							
<i>Erynnis brizo lacustra</i> (Lacustra duskywing)		4					
<i>Erynnis funeralis</i> (Funereal duskywing)	14	7	2		4	10	19
<i>Erynnis propertius</i> (Propertius duskywing)	2	3		6	2	2	
<i>Erynnis tristis</i> (Mournful duskywing)						1	
Lycaenidae (Gossamer-wing Butterflies)							
<i>Atlides halesus corcorani</i> (Western great purple hairstreak)		2			1		
<i>Callophrys augustinus iroides</i> (Western elfin)		2		2	1		
<i>Callophrys perplexa</i> (Perplexing hairstreak)	8	48	1	20	19	37	21
<i>Glaucopsyche lygdamus australis</i> (Southern Silvery blue)	1	7				8	5
<i>Plebejus acmon</i> (Acmon blue)			6				4
<i>Plebejus lupini monticola</i> (Clemence's blue)			1		4		
Riodinidae (Metalmarks)							
<i>Apodemia virgulti</i> (Behr's metalmark)	16	15	10	20	12	30	19
Papilionidae (Swallowtails)							
<i>Papilio eurymedon</i> (Pale swallowtail)		5			2		1
Pieridae (Whites and Sulphurs)							
<i>Anthocharis cethura</i> (Desert orangetip)		3					
<i>Anthocharis sara</i> (Sara orangetip)		3	5			13	2
<i>Colias eurytheme</i> (Orange sulphur)	3		1				1
<i>Colias harfordii</i> (Harford's sulphur)		2	1			1	
<i>Euchloe hyantis</i> (California marble)	13	34	3	9	8	15	30
<i>Pontia protodice</i> (Checkered White)		1	1		1		6
<i>Pontia sisymbrii</i> (Spring white)	3	3			2		
Unidentified White		7					
Total Butterfly Individuals Observed	59	141	34	57	56	117	113

Date	4/4/22	4/5/22	4/5/22	4/6/22	4/7/22	4/7/22	4/7/22	4/7/22	4/8/22
Surveyors	RM	DF	IH	BB	RM	DF	IH	BB	IH
Nymphalidae (Brush Footed Butterflies)									
<i>Junonia coenia grisea</i> (Gray buckeye)						1			
<i>Vanessa cardui</i> (Painted lady)	3			1	3		2	3	1
Hesperiidae (Skippers)									
<i>Erynnis afranius</i> (Afranius duskywing)									
<i>Erynnis brizo lacustra</i> (Lacustra duskywing)					1				
<i>Erynnis funeralis</i> (Funereal duskywing)	7	3	3	13	9	6	3	12	2
<i>Erynnis propertius</i> (Propertius duskywing)	4	5			2	3			3
<i>Erynnis tristis</i> (Mournful duskywing)				1					
<i>Hesperia juba</i> (Juba skipper)								1	
<i>Hylephila phyleus</i> (Fiery skipper)							1		
Unidentified Duskywing						7			1
Lycaenidae (Gossamer-wing Butterflies)									
<i>Callophrys augustinus iroides</i> (Western elfin)	2	3	3		1				1
<i>Callophrys perplexa</i> (Perplexing hairstreak)	23	11	3	8	15	13	3	9	8
<i>Glaucopsyche lygdamus australis</i> (Southern Silvery blue)	4	2	11	7	3	2		6	5
<i>Plebejus acmon</i> (Acmon blue)								5	
<i>Plebejus lupini monticola</i> (Clemence's blue)	2				1		4		
Riodinidae (Metalmarks)									
<i>Apodemia virgulti</i> (Behr's metalmark)	24	15	11	8	37	14	28	16	25
Papilionidae (Swallowtails)									
<i>Papilio eurymedon</i> (Pale swallowtail)			1		1				
Pieridae (Whites and Sulphurs)									
<i>Abaeis nicippe</i> (Sleepy orange)			1						
<i>Anthocharis cethura</i> (Desert orangetip)					1	1			
<i>Anthocharis sara</i> (Sara orangetip)	3	4	5		2	3		1	
<i>Colias harfordii</i> (Harford's sulphur)			2						
<i>Euchloe hyantis</i> (California marble)	35	12	7	7	3	12	2	11	12
<i>Nathalis iole</i> (Dainty sulphur)	1				1				
<i>Pontia protodice</i> (Checkered White)	4		1					4	
<i>Pontia sisymbrii</i> (Spring white)					1				
Unidentified White		5	1			11			
Total Butterfly Individuals Observed	112	55	48	45	80	62	43	68	58

Date	4/14/22	4/14/22	4/14/22	4/14/22	4/14/22	4/15/22	4/15/22	4/15/22
Surveyors	JR, MR	DF	IH	BB	BL	DF	IH	RM
Nymphalidae (Brush Footed Butterflies)								
<i>Vanessa cardui</i> (Painted lady)				1	1			3
Unidentified Lady	2							
Hesperiidae (Skippers)								
<i>Erynnis afranius</i> (Afranius duskywing)							1	
<i>Erynnis funeralis</i> (Funereal duskywing)	3	4	2	13	8	3	1	8
<i>Erynnis propertius</i> (Propertius duskywing)		3	2			1		2
<i>Pholisora catallus</i> (Common sootywing)		1						
Unidentified Duskywing	3					3		
Lycaenidae (Gossamer-wing Butterflies)								
<i>Atlides halesus corcorani</i> (Western great purple hairstreak)				1				
<i>Callophrys augustinus iroides</i> (Western elfin)				3				
<i>Callophrys perplexa</i> (Perplexing hairstreak)	10	15		7		2	1	3
<i>Glaucopsyche lygdamus australis</i> (Southern Silvery blue)	1	2	2	10	4	2		3
<i>Glaucopsyche piasus umbrosa</i> (Smoky arrowhead blue)							2	1
<i>Plebejus acmon</i> (Acmon blue)			1					
<i>Plebejus lupini monticola</i> (Clemence's blue)					1			8
Riodinidae (Metalmarks)								
<i>Apodemia virgulti</i> (Behr's metalmark)	26	38	30	4	38	31	15	11
Papilionidae (Swallowtails)								
<i>Papilio eurymedon</i> (Pale swallowtail)	1							1
Pieridae (Whites and Sulphurs)								
<i>Anthocharis sara</i> (Sara orangetip)	2	2		1				
<i>Colias eurytheme</i> (Orange sulphur)		1		1				4
<i>Colias harfordii</i> (Harford's sulphur)					2			1
<i>Euchloe hyantis</i> (California marble)		5	2	10	5	3		1
<i>Pontia protodice</i> (Checkered White)			5	10	13		5	2
<i>Pontia sisymbrii</i> (Spring white)								2
Unidentified White	11	2				2		
Total Butterfly Individuals Observed	48	71	44	61	72	45	25	48

Date	4/17/22	4/18/22	4/18/22	4/18/22	4/19/22	4/19/22	4/19/22	4/20/22	4/21/22	4/21/22	4/21/22	4/21/22	4/21/22	4/23/22
Surveyors	BB	DF	IH	RM	DF	IH	BL	BB	BB	RM	IH	JR, MR	DF	IH
Nymphalidae (Brush Footed Butterflies)														
<i>Euphydryas chalcedona hennei</i> (Henne's checkerspot)										2				
<i>Vanessa annabella</i> (West coast lady)	1												1	
<i>Vanessa cardui</i> (Painted lady)				3					1	4				
Unidentified Lady												1		
Hesperiidae (Skippers)														
<i>Erynnis afraninus</i> (Afraninus duskywing)											2			
<i>Erynnis funeralis</i> (Funereal duskywing)	18		3	3			6	7	4	3	2	2	2	
<i>Erynnis propertius</i> (Propertius duskywing)					5								3	2
<i>Erynnis tristis</i> (Mournful duskywing)	1													1
<i>Hesperia juba</i> (Juba skipper)				1										
<i>Pholisora catallus</i> (Common sootywing)													1	
<i>Pyrgus albescens</i> (White checkered skipper)							1							
Unidentified Duskywing		2										1		
Lycaenidae (Gossamer-wing Butterflies)														
<i>Callophrys augustinus iroides</i> (Western elfin)									1	1		1		
<i>Callophrys perplexa</i> (Perplexing hairstreak)	9	2	2		1	1			3	5	3			
<i>Celastrina echo</i> (Echo azure)											1	1		
<i>Glaucopsyche lygdamus australis</i> (Southern Silvery blue)	9		2		1		1	1	2	3	3		4	
<i>Glaucopsyche piasus umbrosa</i> (Smoky arrowhead blue)	1													
<i>Plebejus acmon</i> (Acmon blue)				2		2	2			1				
<i>Plebejus lupini monticola</i> (Clemence's blue)				2					1	1				
Unidentified blue												2	1	
Riodinidae (Metalmarks)														
<i>Apodemia virgulti</i> (Behr's metalmark)	12	6	10	33	7	5	25	6	26	4	3	28	51	8
Papilionidae (Swallowtails)														
<i>Papilio eurymedon</i> (Pale swallowtail)										1				
Pieridae (Whites and Sulphurs)														
<i>Anthocharis cethura</i> (Desert orangetip)													1	
<i>Anthocharis sara</i> (Sara orangetip)		2						3		3			2	
<i>Colias eurytheme</i> (Orange sulphur)	2			7					1					1
<i>Colias harfordii</i> (Harford's sulphur)										7				
<i>Euchloe hyantis</i> (California marble)	3			1	1				5	1	1	1	3	
<i>Nathalis iole</i> (Dainty sulphur)	2			1					2					
<i>Pontia protodice</i> (Checkered White)	4		5	11		2	5		10	5	1			3
<i>Pontia sisymbrii</i> (Spring white)				1										
Unidentified White		2										1	1	
Total Butterfly Individuals Observed	62	12	22	64	15	10	40	17	56	41	16	37	69	15

Date	4/24/22	4/25/22	4/26/22	4/26/22	4/27/22	4/27/22	4/27/22	4/27/22	4/28/22	4/28/22	4/28/22	4/28/22	4/28/22	4/29/22
Surveyors	IH	IH	RM	BL	JR	DF	RM	BB	RM	BB	IH	JR	DF	DF
Nymphalidae (Brush Footed Butterflies)														
<i>Junonia coenia grisea</i> (Gray buckeye)			1						1					
<i>Vanessa cardui</i> (Painted lady)			1									1		
Hesperiidae (Skippers)														
<i>Erynnis funeralis</i> (Funereal duskywing)	1	5	3	6	5	3	4	4	1	7	1			
<i>Erynnis propertius</i> (Propertius duskywing)		1				2							2	3
Lycaenidae (Gossamer-wing Butterflies)														
<i>Callophrys augustinus iroides</i> (Western elfin)					2									
<i>Callophrys perplexa</i> (Perplexing hairstreak)	2					1		1			1			
<i>Celastrina echo</i> (Echo azure)					2	1						2		
<i>Glauropsyche lygdamus australis</i> (Southern Silvery blue)		1			3	1	1	2			1			
<i>Lycaena gorgon</i> (Gorgon copper)			1											
<i>Plebejus acmon</i> (Acmon blue)	1			9				7						
<i>Plebejus lupini monticola</i> (Clemence's blue)							3							
<i>Satyrus saepium chalcis</i> (Bronzed hedgerow hairstreak)													1	
<i>Strymon istapa clenchi</i> (Mallow hairstreak)						1								
Riodinidae (Metalmarks)														
<i>Apodemia virgulti</i> (Behr's metalmark)	15		20	7	9	8	13	19	3	9		1	10	11
Pieridae (Whites and Sulphurs)														
<i>Anthocharis sara</i> (Sara orangetip)		1	1	1	3	2	1	1	7	1		2	1	2
<i>Colias eurytheme</i> (Orange sulphur)		1				1	4	1	1					
<i>Colias harfordii</i> (Harford's sulphur)			1	9			2		1		1		1	
<i>Euchloe hyantis</i> (California marble)				2										
<i>Nathalis iole</i> (Dainty sulphur)	1													
<i>Pontia beckeri</i> (Becker's white)									1					
<i>Pontia protodice</i> (Checkered White)	5	3	18	15	5	15	31	16	4	2	4	6	1	5
<i>Pontia sisymbrii</i> (Spring white)		1												
Unidentified White													6	
Total Butterfly Individuals Observed	25	12	46	49	29	35	59	51	19	19	8	12	16	21

Date	5/2/22	5/2/22	5/2/22	5/3/22	5/3/22	5/4/22	5/4/22	5/4/22	5/5/22	5/5/22	5/5/22	5/6/22	5/6/22	5/7/22
Surveyors	DF	IH	RM	DF	IH	JR, MR	BL	BB	BB	RM	IH	BL	IH, JR	IH
Nymphalidae (Brush Footed Butterflies)														
<i>Adelpha californica</i> (California sister)			1										1	
<i>Junonia coenia grisea</i> (Gray buckeye)			2								1			
<i>Vanessa cardui</i> (Painted lady)			2	1			1			1				
Unidentified Lady								1						
Hesperiidae (Skippers)														
<i>Erynnis funeralis</i> (Funereal duskywing)		2	4	1	3		4	12	2	3	1		6	2
<i>Erynnis propertius</i> (Propertius duskywing)	2			1								7		
<i>Erynnis tristis</i> (Mournful duskywing)						2						1	1	
<i>Hesperia juba</i> (Juba skipper)			1											
<i>Ochlodes agricola</i> (Rural skipper)			1					1						
<i>Pyrgus albescens</i> (White checkered skipper)									1					
Unidentified Duskywing				3										
Lycaenidae (Gossamer-wing Butterflies)														
<i>Atlides halesus corcorani</i> (Western great purple hairstreak)												1		
<i>Callophrys augustinus iroides</i> (Western elfin)						1	1			2		9		
<i>Callophrys perplexa</i> (Perplexing hairstreak)			2			2				1		3		
<i>Celastrina echo</i> (Echo azure)	3		3	2		1	4	1		6		9	2	
<i>Cupido amyntula</i> (Western tailed blue)				1										
<i>Glauropsyche lygdamus australis</i> (Southern Silvery blue)		5			1									
<i>Leptotes marina</i> (Marine blue)	1			1			1	2	1			1	1	
<i>Lycaena gorgon</i> (Gorgon copper)		7	6			4	4	2	8	24	3	10		
<i>Plebejus acmon</i> (Acmon blue)		2	2			3		5	23	1	30	2	7	1
<i>Plebejus lupini monticola</i> (Clemence's blue)	1		3		1		2			6				
<i>Satyrium saepium chalcis</i> (Bronzed hedgerow hairstreak)												1		
<i>Satyrium saepium chlorophora</i> (Purplish hedgerow hairstreak)										1				
<i>Strymon melinus pudica</i> (Common gray hairstreak)										18				
Unidentified blue						2							2	
Riodinidae (Metalmarks)														
<i>Apodemia virgulti</i> (Behr's metalmark)	6	10	3	9	1	6	2	1	4	4	5	2	7	
Papilionidae (Swallowtails)														
<i>Papilio eurymedon</i> (Pale swallowtail)	1									1		2		
<i>Papilio polyxenes coloro</i> (Desert swallowtail)												1		
Pieridae (Whites and Sulphurs)														
<i>Anthocharis cethura</i> (Desert orangetip)							1				2	1		
<i>Anthocharis sara</i> (Sara orangetip)	6	4	13	1	5	2		1	11	4	4		7	3

<i>Colias eurytheme</i> (Orange sulphur)		1	4					1		4	1	1		1
<i>Colias harfordii</i> (Harford's sulphur)		10	4	4	5	1	5	2	2	6	2	2	6	12
<i>Euchloe hyantis</i> (California marble)	1													
<i>Nathalis iole</i> (Dainty sulphur)		1	1					1			4			
<i>Phoebus sennae marcellina</i> (Southwestern cloudless sulphur)												2		
<i>Pontia beckeri</i> (Becker's white)			1				1				2			
<i>Pontia protodice</i> (Checkered White)	21	20	13	27	15	4	25	17	27	37	30	22	30	20
Unidentified Sulphur	3			1									1	
Unidentified White						11							2	
Total Butterfly Individuals Observed	42	62	66	51	31	28	51	47	79	119	85	77	70	39

Date	5/9/22	5/9/22	5/10/22	5/12/22	5/12/22	5/12/22	5/12/22	5/13/22	5/13/22	5/13/22	5/14/22
Surveyors	IH	RM	IH	JR	DF	BB	BL	DF	JR	BB	RM
Nymphalidae (Brush Footed Butterflies)											
<i>Vanessa cardui</i> (Painted lady)	2			2					3		1
Unidentified Lady								1		1	
Hesperiidae (Skippers)											
<i>Erynnis funeralis</i> (Funereal duskywing)	1	3		3	1		1	2			2
<i>Ochlodes agricola</i> (Rural skipper)										1	
Lycaenidae (Gossamer-wing Butterflies)											
<i>Atlides halesus corcorani</i> (Western great purple hairstreak)											
<i>Callophrys augustinus iroides</i> (Western elfin)	2		5		3	1		2			
<i>Callophrys perplexa</i> (Perplexing hairstreak)											
<i>Celastrina echo</i> (Echo azure)	2				6						1
<i>Cupido amyntula</i> (Western tailed blue)				2				3			
<i>Euphilotes bernardino</i> (San Bernardino blue)		2	1	2	1		3	26	4	10	9
<i>Leptotes marina</i> (Marine blue)		2									1
<i>Lycaena gorgon gorgon</i> (Gorgon copper)	2	10	6	10		9	7		10	21	24
<i>Plebejus acmon</i> (Acmon blue)		18	8	7	1	48	30	5	4	11	75
<i>Plebejus icarioides evius</i> (Evius blue)									2		
<i>Plebejus lupini monticola</i> (Clemence's blue)		19		7					5		15
<i>Satyrrium saepium chalcis</i> (Bronzed hedgerow hairstreak)	5				1			2	2		
Riodinidae (Metalmarks)											
<i>Apodemia virgulti</i> (Behr's metalmark)	2	1		2	2			1			1
Papilionidae (Swallowtails)											
<i>Papilio eurymedon</i> (Pale swallowtail)					1						
<i>Papilio polyxenes coloro</i> (Desert swallowtail)							1				
<i>Papilio rutulus</i> (Western Tiger swallowtail)	1										
Pieridae (Whites and Sulphurs)											
<i>Anthocharis sara</i> (Sara orangetip)								1			
<i>Colias eurytheme</i> (Orange sulphur)		4				2				6	5
<i>Colias harfordii</i> (Harford's sulphur)		1	2	3	3	1		9	3		
<i>Pontia beckeri</i> (Becker's white)				3					3		1
<i>Pontia protodice</i> (Checkered White)	16	28	15	30	64	23	14	37	20	28	25
Total Butterfly Individuals Observed	33	88	37	71	83	84	56	89	56	78	160

Appendix E

Surveyor Data Sheets

Surveyor: I. Hirschler Date: 2/28/22
 Site Name: Starlight Solar Survey No: 1
 Additional Surveyors Present: S. Durzi

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Area (Circle One):										1	2	3	4	5	6	7	8	9	10
Field Conditions																			
	Time (24 hr)				Temperature (°F)				Wind Speed (mph)				Cloud Cover						
Start	1000				60.2				4-9				0%						
Mid	1330				67.4				8-13				0%						
End	1700				64.2				2-6				0%						

Vegetation Communities Surveyed (include dominant spp.) CSS : CYLCAL, ERIFAS, YUCSCH, RHUOVA, RIBQUE, CERBET,

ACMGLA

ARCPUN (flowering)

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)			Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	5	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	6
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	1
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa sp.</i>)		Atranius duskywing (<i>Erynnis atranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)		Funereal duskywing (<i>Erynnis funeralis</i>)	2
Western tailed blue (<i>Evers amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	1	Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue	1			Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	2	Column Total	5	Column Total		Column Total	9
							Total 16

Surveyor: Brenda Bennett Date: Feb. 28, 2022
 Site Name: Starlight Solar Survey No: 1
 Additional Surveyors Present: N/A
 Check-In Time: 900 Check-Out Time: 1715 Map Synced (Circle One): Yes No

Area (Circle One):					1	2	3	4	5	6	7	8	9	10
Field Conditions														
	Time (24 hr)	Temperature (F)	Wind Speed (mph)	Cloud Cover										
Start	1000	60.2	4-9	0%										
Mid														
End	1700	61.2	0-2	0%										

Chaparral; *Rhus ovata*, *Arctostaphylos pungens*, *Ribes guercifolium*
Adenostoma sparsifolia

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
Bush groundsel (<i>Senecio flecidus</i> var. <i>douglasii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckia antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)	<i>Ribes guerretorum</i>	X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Pagobothrys</i> spp.)			Redmaids (<i>Calandrinia menziesii</i>)	
Yellow pincushion	<i>Arctostaphylos uva-ursi</i>	X	Sugar bush (<i>Rhus ovata</i>)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Adminis		Hairstreaks	
California patch (<i>Chlorone californica</i>)		Santa orangelet (<i>Glycyphana sara sara</i>)	1	California sister (<i>Acopha bewicki californica</i>)		Great purple hairstreak (<i>glaucus heurys</i>)	
Gabb's checkerspot (<i>C. gabbi</i>)		Desert Gabb's orangelet (<i>G. californica</i>)		Longwing admiral (<i>limenitis longus</i>)		Brown elf (<i>Callophrys augustinus</i>)	1
Green checkerspot (<i>g. polytypus admet</i>)		Common California ringlet (<i>Junonia ocyropsis californica</i>)		West coast lady (<i>manisius amabilis</i>)		Pinkwinged hairstreak (<i>C. dardanus</i>)	1
Chacoan checkerspot (<i>C. chacoensis</i>)		Pearly marbled (<i>Euchloe hyantis</i>)		Red admiral (<i>M. astoriae rubra</i>)		Link purple hairstreak (<i>Callophrys lymanus</i>)	
Esperio checkerspot (<i>Phacelia esperio</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>P. cardui</i>)		Gray hairstreak (<i>Styphodon melius pacificus</i>)	
Mytila crescent (<i>Thyclydes mytila</i>)		Becker's white (<i>Pieris beckeri</i>)		American migrant lady (<i>P. virginica</i>)		Skippers	
Blues		Checkered common white (<i>Pieris protodice</i>)		Unidentified lady (<i>Vanessa sp.</i>)		Atlantic duskywing (<i>Gynnis alba</i>)	
Western pygmy blue (<i>Strophodonta exilis</i>)		Spring white (<i>P. sayi</i>)		Metamarks		Sleepy duskywing (<i>Gynnis selenis</i>)	
Domance's blue (<i>Heliois lupis monticola</i>)		Unidentified white		Baker's metamark (<i>Apocrita montana</i>)		Funeral duskywing (<i>Gynnis funeralis</i>)	5
Western talus blue (<i>Eversia amyntula</i>)		Sulphurs		Wing's metamark (<i>Callophrys wingi</i>)		Proteropus duskywing (<i>Gynnis proteropus</i>)	
Southern blue (<i>Leucophaea appennina</i>)		Hanford's sulphur (<i>Colias alexandra</i>)		Swallowtails		Mountain duskywing (<i>Gynnis montana</i>)	
Edward's blue (<i>glaucus edwardsi</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliois ericetorum</i>)	
Rocket's blue (<i>Amerisus borealis</i>)		Sleepy orange (<i>Eurytheme</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Pink skipper (<i>Lyphidippe phylus</i>)	
Acron blue (<i>Acrone acron acron</i>)		Dainty sulphur (<i>Nathalis ides</i>)		Asian swallowtail (<i>P. decaus</i>)		Savannah skipper (<i>Phaenocarpa</i>)	
Melroe blue (<i>Euphyas melroe</i>)		Cloudless sulfur (<i>Phoebastria sericea</i>)		Miscellaneous		White common checkered skipper (<i>Pygma</i>)	
False arrow (<i>Colias yarrowi</i>)		Unidentified sulphur		Mourner (<i>Deus phlegon</i>)		Other	
Sonoran blue (<i>Phaetusa sonoranensis</i>)		Other		Common buckeye (<i>Limenitis comita</i>)			
Unidentified blue				Mourning dove (<i>Strophodonta</i>)			
				California tortoiseshell (<i>Junonia californica</i>)			
Column Total	0	Column Total	1	Column Total	0	Column Total	7

Surveyor: Ryan Meszaros Date: 2/28/2022
 Site Name: Starlight Survey No: 1
 Additional Surveyors Present: Brenda Bennet
 Check In Time: 1000 Check Out Time: 1700 Map Synced: Yes No

Area (Circle One):					1	2	3	4	5	6	7	8	9	10
Field Conditions														
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover										
Start	1000	60.2	4-9	0%										
Mid	1300	67.8	3-6	0%										
End	1700	61.2	0-2	0%										
Vegetation Communities Surveyed (include dominant spp.)														
Chaparral: Chamise, Mexican manzanita, Sugar bush, Scrub-oak														
Host Plants		Diameter and Density (see note below)	Obs	Nectar Plants Continued				Obs						
Dwarf plantain (<i>Plantago erecta</i>)				Buckwheat (<i>Eriogonum fasciculatum</i>)										
Purple owl's clover (<i>Castilleja exserta</i>)				Ground pink (<i>Linanthus dianthiflorus</i>)										
Snapdragon (<i>Antirrhinum coulterianum</i>)				Oak gooseberry (<i>Ribes quercetorum</i>)				X						
Birds-beak (<i>Cordylanthus rigidus</i>)				Sage (<i>Salvia</i> spp.)										
Chinese houses (<i>Collinsia</i> spp.)				Lotus (<i>Acmispon</i> spp.)										
Woolly plantain (<i>Plantago patagonica</i>)				Yerba santa (<i>Eriodictyon</i> spp.)										
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)				Lomatium (<i>Lomatium</i> spp.)				X						
				Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)										
Nectar Plants			Obs	Phacelia (<i>Phacelia</i> spp.)										
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)				Blue dicks (<i>Dichelostemma capitatum</i>)										
Ceanothus (<i>Ceanothus</i> spp.)				Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)										
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)				Tidy tips (<i>Layia</i> spp.)										
Goldenbush (<i>Isocoma/Ericameria</i> spp.)				Long-stemmed yarrow (<i>Eriophyllum</i> spp.)										
Goldfields (<i>Lasthenia</i> spp.)				Mexican manzanita (<i>Arctostaphylos pungens</i>)				X						
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)				Redmaids (<i>Calandrinia menziesii</i>)										
Tarplants (<i>Deinandra</i> spp.)				Sugar bush (<i>Rhus ovate</i>)										
Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.							
Checkerspots		Whites		Ladies/Admirals		Hairstreaks								
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	2	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)								
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	2							
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)								
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrys gryneus loki</i>)								
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	1	Gray hairstreak (<i>Strymon melinus pudica</i>)								
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers								
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)								
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)								
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)		Funereal duskywing (<i>Erynnis funeralis</i>)	2							
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)								
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)								
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)								
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)								
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)								
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)								
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other								
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)										
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)										
				California tortoiseshell (<i>Nymphalis californica</i>)										
Column Total		Column Total	2	Column Total	1	Column Total	4							
							Total	7						

Surveyor: Ryan Meszaros Date: 3/12/2022
 Site Name: Starlight Survey No: 1
 Additional Surveyors Present: Brenda Bennet
 Check In Time: 0915 Check Out Time: 1615 Map Synced: Yes No

Area (Circle One):															1	2	3	4	5	6	7	8	9	10
Field Conditions																								
	Time (24 hr)				Temperature (°F)				Wind Speed (mph)				Cloud Cover											
Start	0915				65.5				2-6				0%											
Mid																								
End	1615				70.4				1-4				0%											

Vegetation Communities Surveyed (include dominant spp.)

Chaparral: Chamise, Mexican manzanita, Sugar bush, Scrub-oak, Redshank

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	X
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocomal</i> / <i>Ericameria</i> spp.)			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)			Mexican manzanita (<i>Arctostaphylos pungens</i>)	X
Popcorn flower (<i>Cryptantha</i> / <i>Plagiobothrys</i> spp.)			Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	

[illegible]

2022 Starlight Solar Project: Quino Checkerspot Butterfly Survey Form

Surveyor: Brenda Bennett Date: March 1, 2022
Site Name: Starlight Solar Survey No: 1
Additional Surveyors Present: N/A
Check-In Time: 0900 Check-Out Time: 1030 Map Synced (Circle One): (Yes) No

Ang (Circle One): 1 2 3 4 5 6 7 8 9 10

Field Conditions

	Time (24 hr)	Temperature (F)	Wind Speed (mph)	Cloud Cover
Start	0915	65.5	2-6	0%
Mid				
End	1615	70.4	1-4	0%

Vegetation Communities Surveyed (include dominant spp.)

Chaparral: *Rhus ovata*, *Adenostema sparsifolia*.
Sagebrush: *Artemisia tridentata* + *Eriogonum* spp

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linantus danthiflorus</i>)	
Snopdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
Nectar Plants		Obs	Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
			Phacelia (<i>Phacelia</i> spp.)	
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglasii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)			Snopdragon penstemon (<i>Keckelia antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			Tidy top (<i>Laya</i> spp.)	
Goldenbush (<i>Isocoma/Encarnia</i> spp.)			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)			Yarrow (<i>Achillea millefolium</i>)	
Poppy flower (<i>Argemone</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	
Trillium (<i>Trillium</i> spp.)		X	Sugar bush (<i>Rhus ovata</i>)	

[illegible]

Surveyor: Jim Rocks Date: 3/01/22
Site Name: Starlight Solar Survey No: 1

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Vegetation Communities Surveyed (include dominant spp.)	Mixed Chaparral and rock outcrops: ADESPA, ADEFAS, ERIFAS, RHUOVA, CYLCAL, CEAPER
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Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	5	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki* juniper hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myllitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)		Funereal duskywing (<i>Erynnis funeralis</i>)	2
Western tailed blue (<i>Evers amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Properthus duskywing (<i>Erynnis properthus</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albesens</i>)	
Echo azure (<i>Celastrina echo</i>)	3	unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	3	Column Total	5	Column Total		Column Total	2
Total							10

Surveyor: Brenda Bennett Date: March 2, 2022
 Site Name: Sterlight solar Survey No: 1
 Additional Surveyors Present: Sharif Durzi
 Check-In Time: _____ Check-Out Time: _____ Map Symbol (Circle Check) 1

Check-In Time: _____ Check-Out Time: _____ Map Synced (Circle One): Yes No

Area (Circle One): 1 2 3 4 5 6 7 8 9 10

Field Conditions

	Time (24 hr)	Temperature (F)	Wind Speed (mph)	Cloud Cover
Start	0945	71.5	2-6	40%
Mid				
End	1645	70.9	0-2	60%

Chaparral: *Adenostoma sparsifolia*, *Rhus ovata*, *Cylindropuntia cal.*
+ *Eriogonum* spp.

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White snapdragons (<i>Antirrhinum</i>) RIB QUE	X
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Erodicion</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)				
			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
Bushy roundleaf Eriogonum fasciculatum var. douglasii EROIC		X	Blue dicks (<i>Dichelostemma capitatum</i>)	
Common groundsel Senecio jacobaea ARC DUN		X	Snapdragon penstemon (<i>Keckia antirrhinoides</i>)	
Erigeron annuus (daisy) GUT SP.		X	Tidy tips (<i>Layia</i> spp.)	
Grayish yellow flowered Erigeron annuus PECTRAMA SP.		X	Long-stemmed yarrow (<i>Enophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)			Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Pagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovata</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hainstreaks	
California patch (<i>G. iothyris californici</i>)		Sara orange tip (<i>Anthracaris sara sara</i>)	3	California sater (<i>Metippe boudow californici</i>)		Great purple hainstreak (<i>Yficles hainstrei californici</i>)	
Calif's checkerspot (<i>G. pado</i>)		Dusky (<i>Fidula's</i>) orange tip (<i>A. californici</i>)		Longie's admiral (<i>Linaria longie's</i>)		Brown ulin (<i>Calophrys augustus</i>)	4
Upland checkerspot (<i>Euphydryas asiter</i>)		Common California angel (<i>Coenonympha californici</i>)		West coast lady (<i>Vanessa annabella</i>)		Porpoising hainstreak (<i>E. comestris</i>)	
Franklin checkerspot (<i>E. chabedoni chabedoni</i>)		Pearly methio (<i>E. lucibe hysini</i>)		Red admiral (<i>M. atalanta rubrig</i>)		Low jumper hainstreak (<i>Calophrys cynereus</i>)	
Luna checkerspot (<i>Phenacis Arana arana</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>P. cardui</i>)	1	Gray hainstreak (<i>Stymon melaenoides</i>)	
Melba crescent (<i>Phycodes mytila</i>)		Duck's white (<i>Pieris duck</i>)		American virginia lady (<i>M. virginia</i>)		Skippers	
Blues		Checkered common white (<i>Pieris erastus</i>)		Unidentified lady (<i>Vanessa sp.</i>)		African daisywing (<i>Erynnis alfredi</i>)	
Western pygmy blue (<i>Gnaphalium mela</i>)		Spring white (<i>P. sylvia</i>)		Metamorphosis		Sleepy daisywing (<i>Erynnis alfredi</i>)	
Gambel's blue (<i>Polygus lupini maritimi</i>)		Unidentified white		Edin's metamorphosis (<i>Podonema mona argus</i>)		Turner's daisywing (<i>Erynnis turneri</i>)	4
Western tailed blue (<i>Eures amynta</i>)		Sulphur		Wright's metamorphosis (<i>Calophrys wrighti</i>)		Proterius daisywing (<i>Erynnis proterius</i>)	
Southern blue (<i>Glaucopsyche lygdamus aurata</i>)		Hanford's sulphur (<i>Colias Alexandra hantfordi</i>)		Swallowtails		Mormon daisywing (<i>Erynnis mormo</i>)	
Edward's blue (<i>Phemias eximius gress</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		North white skipper (<i>Helioptis erichsoni</i>)	
Hawthorn's blue (<i>Phemias aurata</i>)		Sooty orange (<i>Eurenia ricci</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fairy skipper (<i>Lykophis phylax</i>)	
Arion blue (<i>Pieris arion arion</i>)		Dainty sulphur (<i>Neothys id</i>)		Arise swallowtail (<i>P. arise</i>)		Sandwich skipper (<i>Polites sabaeus</i>)	
Melba blue (<i>G. asiter mela</i>)		Cloudless sulfur (<i>Phoebast senilis mela</i>)		Miscellaneous		White common checkered skipper (<i>Erynnis alfredi</i>)	
Edin's blue (<i>Colias edin</i>)		Unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Neon blue (<i>Phaetusa neonensis</i>)		Other		Common buckeye (<i>Lunania corni phed</i>)			
Unidentified blue	1			Mormon duke (<i>Erynnis mormo</i>)			
				California tortoiseshell (<i>Gynonympha californici</i>)			
Column Total		Column Total	3	Column Total	1	Column Total	

Total L

Check In Time: 0900 Check Out Time: 1700 Map Synced: Yes No

Area (Circle One):					1	2	3	4	5	6	7	8	9	10
Field Conditions														
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover										
Start	0945	71.5	2-6	40%										
Mid														
End	1645	70.9	0-2	60%										

Vegetation Communities Surveyed (include dominant spp.)
Chaparral: Chamise, Mexican manzanita, Sugar bush, Scrub-oak, Redshank

Chaparral: Chamise, Mexican manzanita, Sugar bush, Scrub-oak, Redshank
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Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	X
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			Tidy tips (<i>Layia</i> spp.)	X
Goldenbush (<i>Isocoma/Ericameria</i> spp.)			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)			Mexican manzanita (<i>Arctostaphylos pungens</i>)	X
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)			Red stemmed filaree (<i>Erodium cicutarium</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	

[illegible]

Surveyor: I. Hirschler Date: 3/2/22
Site Name: Starlight Solar Survey No: 1

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Area (Circle One):											1	2	3	4	5	6	7	8	9	10
Field Conditions																				
	Time (24 hr)		Temperature (°F)		Wind Speed (mph)		Cloud Cover													
Start	0930		67.1		1-5		40%													
Mid	1300		75.7		3-6		40%													
End	1615		73.3		2-5		70% thin													

Vegetation Communities Surveyed (include dominant spp.)	Redshank chaparral, chamise chaparral, coastal sage scrub, artemisia tridentata scrub,

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>) Not flowering	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.) Not flowering	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.) Not flowering	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.) Not flowering			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)			Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)			Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>) Arctostaphylos pungens	X

[illegible]

Surveyor: I. Hirschler Date: 3/3/22
 Site Name: Starlight Solar Survey No: 1
 Additional Surveyors Present: S. Durzi

Check-In Time: _____ Check-Out Time _____ Map Synched (Circle One): Yes No

Area (Circle One):											1	2	3	4	5	6	7	8	9	10
Field Conditions																				
	Time (24 hr)				Temperature (F)				Wind Speed (mph)				Cloud Cover							
Start	0815				60.4				3-7				15%							
Mid	1110				73.9				3-6				5%							
End	1315				78.1				2-6				70%							

Vegetation Communities Surveyed (include dominant spp.)	CSS : CYLCAL, ERIFAS, YUCSCH, RHUOVA, RIBQUE, CERBET, ACMGLA

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	Ribes quercetorum
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)			Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	Erodium
				X

[illegible]

Surveyor: Brian Lohstroh Date: 3/3/2022
 Site Name: Starlight Solar Survey No: 2

Check-In Time: 0830 Check-Out Time 1530 Map Synched (Circle One): ☒ Yes ☐ No

Vegetation Communities Surveyed (include dominant spp.)	Red-shank/southern mixed chap,Great Basin sagebrush scrub
	<i>Adenostema sparsifolium</i> , <i>A. fasciculatum</i> , <i>Artemisia tridentata</i>

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	5	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	1
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	3
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	1	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa sp.</i>)		Atranius duskywing (<i>Erynnis atranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white	1	Behr's metalmark (<i>Apodemia mormo virgulti</i>)		Funereal duskywing (<i>Erynnis funeralis</i>)	7
Western tailed blue (<i>Evers amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue	1			Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	1	Column Total	6	Column Total	1	Column Total	11
Total							19

Surveyor: Ryan Meszaros Date: 3/3/2022
 Site Name: Starlight Survey No: 2
 Additional Surveyors Present: _____
 Check In Time: 0845 Check Out Time: 1530 Map Synced: Yes No

Area (Circle One):					1	2	3	4	5	6	7	8	9	10
Field Conditions														
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover										
Start	0900	64.2	3-10	15%										
Mid	1245	70.4	2-5	50%										
End	1515	65.9	5-9	10%										
Vegetation Communities Surveyed (include dominant spp.)														
Chaparral: Chamise, Mexican manzanita, Sugar bush, Scrub-oak, Redshank														
Host Plants		Diameter and Density (see note below)	Obs	Nectar Plants Continued				Obs						
Dwarf plantain (<i>Plantago erecta</i>)				Buckwheat (<i>Eriogonum fasciculatum</i>)										
Purple owl's clover (<i>Castilleja exserta</i>)				Ground pink (<i>Linanthus dianthiflorus</i>)										
Snapdragon (<i>Antirrhinum coulterianum</i>)				Oak gooseberry (<i>Ribes quercetorum</i>)				X						
Birds-beak (<i>Cordylanthus rigidus</i>)				Red maids (<i>Calandrinia menziesii</i>)				X						
Chinese houses (<i>Collinsia</i> spp.)				Lotus (<i>Acmispon</i> spp.)										
Woolly plantain (<i>Plantago patagonica</i>)				Yerba santa (<i>Eriodictyon</i> spp.)										
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)				Lomatium (<i>Lomatium</i> spp.)				X						
				Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)										
Nectar Plants			Obs	Phacelia (<i>Phacelia</i> spp.)										
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)				Blue dicks (<i>Dichelostemma capitatum</i>)										
Ceanothus (<i>Ceanothus</i> spp.)				Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)										
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)				Tidy tips (<i>Layia</i> spp.)										
Goldenbush (<i>Isocoma/Ericameria</i> spp.)				Long-stemmed yarrow (<i>Eriophyllum</i> spp.)										
Goldfields (<i>Lasthenia</i> spp.)				Mexican manzanita (<i>Arctostaphylos pungens</i>)				X						
Popcorn flower (<i>Cryptantha/Plagiobothrys/Pectocarya</i> spp.)			X	Red stemmed filaree (<i>Erodium cicutarium</i>)										
Tarplants (<i>Deinandra</i> spp.)				Sugar bush (<i>Rhus ovate</i>)										
Butterfly Species		No.	Butterfly Species		No.	Butterfly Species		No.	Butterfly Species		No.			
Checkerspots			Whites			Ladies/Admirals			Hairstreaks					
California patch (<i>Chlosyne californica</i>)			Sara orangetip (<i>Anthocharis sara sara</i>)		3	California sister (<i>Adelpha bredowii californica</i>)			Great purple hairstreak (<i>Atlides halesus corcorani</i>)					
Gabb's checkerspot (<i>C. gabbii</i>)			Desert (Felder's) orangetip (<i>A. cethura</i>)			Lorquin's admiral (<i>Limenitis lorquini</i>)			Brown elfin (<i>Callophrys augustinus</i>)					
Quino checkerspot (<i>Euphydryas editha quino</i>)			Common California ringlet (<i>Coenonympha californica</i>)			West coast lady (<i>Vanessa annabella</i>)			Perplexing hairstreak (<i>C. dumetorum affinis</i>)		2			
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)			Pearly marble (<i>Euchloe hyantis</i>)		1	Red admiral (<i>V. atalanta rubria</i>)			Loki' juniper hairstreak (<i>Callophrys gryneus loki</i>)					
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)			Cabbage white (<i>Pieris rapae</i>)			Painted lady (<i>V. cardui</i>)			Gray hairstreak (<i>Strymon melinus pudica</i>)					
Mylitta crescent (<i>Phyciodes mylitta</i>)			Becker's white (<i>Pontia beckeri</i>)			American (Virginia) lady (<i>V. virginensis</i>)			Skippers					
Blues			Checkered (common) white (<i>Pontia protodice</i>)			Unidentified lady (<i>Vanessa</i> sp.)			Afranius duskywing (<i>Erynnis afranius</i>)					
Western pygmy-blue (<i>Brephidium exile</i>)			Spring white (<i>P. sisymbrii</i>)			Metalmarks			Sleepy duskywing (<i>Erynnis brizo</i>)					
Clemence's blue (<i>Plebejus lupini monticola</i>)			unidentified white			Behr's metalmark (<i>Apodemia mormo virgulti</i>)			Funereal duskywing (<i>Erynnis funeralis</i>)		3			
Western tailed blue (<i>Everes amyntula</i>)			Sulphurs			Wright's metalmark (<i>Calephelis wrighti</i>)			Propertius duskywing (<i>Erynnis propertius</i>)		2			
southern blue (<i>Glaucopsyche lygdamus australis</i>)		6	Harford's sulphur (<i>Colias Alexandra hartfordii</i>)			Swallowtails			Mournful duskywing (<i>Erynnis tristis</i>)					
Edward's blue (<i>Hemiargus ceraunus gyas</i>)			Orange sulphur (<i>Colias eurytheme</i>)			Pale swallowtail (<i>Papilio eurymedon</i>)			Northern white skipper (<i>Heliopterus ericetorum</i>)					
Reakirt's blue (<i>Hemiargus isola</i>)			Sleepy orange (<i>Eurema nicippe</i>)			Western tiger swallowtail (<i>P. rutulus</i>)			Fiery skipper (<i>Hylephila phyleus</i>)					
Acmon blue (<i>Icaricia acmon acmon</i>)			Dainty sulphur (<i>Nathalis iole</i>)			Anise swallowtail (<i>P. zelicaon</i>)			Sandhill skipper (<i>Polites sabuleti</i>)					
Marine blue (<i>Leptotes marina</i>)			Cloudless sulfur (<i>Phoebus sennae marcellina</i>)			Miscellaneous			White (common) checkered-skipper (<i>Pyrgus albescens</i>)					
Echo azure (<i>Celastrina echo</i>)			unidentified sulphur			Monarch (<i>Danaus plexippus</i>)			Other					
Sonoran blue (<i>Philotes sonorensis</i>)			Other			Common buckeye (<i>Junonia coenia grisea</i>)								
Unidentified blue						Mourning cloak (<i>Nymphalis antiopa</i>)								
						California tortoiseshell (<i>Nymphalis californica</i>)								
Column Total		6	Column Total		4	Column Total		0	Column Total		7			
											Total	17		

Surveyor: Ryan Meszaros Date: 3/9/2022
 Site Name: Starlight Survey No: 2
 Additional Surveyors Present: _____
 Check In Time: 1000 Check Out Time: 1630 Map Synced: Yes No

Area (Circle One): <u>1</u> 2 3 4 5 6 7 8 9 10							
Field Conditions							
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover			
Start	1045	60.4	3-7	0%			
Mid	1345	61.4	1-3	0%			
End	1600	60.2	2-7	0%			
Vegetation Communities Surveyed (include dominant spp.)							
Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,							
Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs			
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)				
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)				
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	X			
Birds-beak (<i>Cordylanthus rigidus</i>)			Red maids (<i>Calandrinia menziesii</i>)	X			
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)				
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)				
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X			
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)				
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)				
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglasii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)				
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)				
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			Tidy tips (<i>Layia</i> spp.)				
Goldenbush (<i>Isocoma/Ericameria</i> spp.)			Tansy mustard (<i>Descurainia pinnata</i>)	X			
Goldfields (<i>Lasthenia</i> spp.)		X	Mexican manzanita (<i>Arctostaphylos pungens</i>)	X			
Popcorn flower (<i>Cryptantha/Plagiobothrys/Pectocarya</i> spp.)		X	Red stemmed filaree (<i>Erodium cicutarium</i>)	X			
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)				
Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	10	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	5
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	1
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa</i> sp.)	6	Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)	1	Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	1	Funereal duskywing (<i>Erynnis funeralis</i>)	3
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	3
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopterus ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total		Column Total	11	Column Total	7	Column Total	12
						Total	30

Surveyor: Brian Lohstroh Date: 3/9/2022
 Site Name: Starlight Solar Survey No: 3

Check-In Time: 1015 Check-Out Time 1645 Map Synched (Circle One): **Yes** No

Vegetation Communities Surveyed (include dominant spp.)	Red-shank/southern mixed chap,buckwheat scrub
Adenostema sparsifolium, A. fasciculatum, Eriogonum fasciculatum	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspot		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	6	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	3
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki's juniper hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	1	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myiitta crescent (<i>Phyciodes myiitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	1
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)		Funereal duskywing (<i>Erynnis funeralis</i>)	4
Western tailed blue (<i>Evers amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	1
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes erictorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicæon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albesens</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue	1			Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	1	Column Total	6	Column Total	1	Column Total	9
							Total 17

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	3	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	2
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	2	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mytilta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)		Funereal duskywing (<i>Erynnis funeralis</i>)	8
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	1
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescent</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total		Column Total	3	Column Total	2	Column Total	11
Total							16

Surveyor: Ian Hirschler Date: 3/9/22
Site Name: Starlight Solar Survey No: 3

Check-In Time: _____ Check-Out Time _____ Map Synched (Circle One): Yes No

Area (Circle One):											1	2	3	4	5	6	7	8	9	10
Field Conditions																				
	Time (24 hr)				Temperature (°F)				Wind Speed (mph)				Cloud Cover							
Start	1000				61.7				1-5				0							
Mid	1330				68.0				2-6				0							
End	1630				62.0				1-4				0							

Vegetation Communities Surveyed (include dominant spp.)	CSS: ERIFAS, ACMGLA, CYLCAL; CHAP: ADESPA, RHUOVA

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	X
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			Tidy tips (<i>Lavie</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)			Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	Erodium cicutarium	X	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	Arctostaphylos pungens
				X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	2	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	2
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	1
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	3	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa sp.</i>)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	1	Funereal duskywing (<i>Erynnis funeralis</i>)	2
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Properthus duskywing (<i>Erynnis properthus</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes erictorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total		Column Total	2	Column Total	4	Column Total	5
Total							11

Surveyor: Ian Hirschler Date: 3/14/22
Site Name: Starlight Solar Survey No: 4

Check-In Time: _____ Check-Out Time _____ Map Synched (Circle One): Yes No

Area (Circle One):											1	2	3	4	5	6	7	8	9	10
Field Conditions																				
	Time (24 hr)				Temperature (F)				Wind Speed (mph)				Cloud Cover							
Start	0900				60.9				2-5				0							
Mid	1230				71.7				3-7				0							
End	1530				69.2				3-7				0							

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	X
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)			Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)			Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)		X	Sugar bush (<i>Rhus ovate</i>)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	5	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	3
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	5
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mytilta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginiensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	2	Funereal duskywing (<i>Erynnis funeralis</i>)	1
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescent</i>)	
Echo azure (<i>Celastrina echo</i>)	2	unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue	1			Mourning cloak (<i>Nymphalis antiopa</i>)			
Smoky arrowhead blue				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	3	Column Total	5	Column Total	2	Column Total	9

Smoky arrowhead blue

Total	19
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2022 Starlight Solar Project: Quino Checkerspot Butterfly Survey Form

Surveyor:

Brenda Bennett

Date:

March 14, 2022

Site Name:

Survey No:

3

Additional Surveyors Present:

Check-In Time:

Check-Out Time

Map Synched (Circle One): Yes No

Area (Circle One): 1 2 3 4 5 6 7 8 9 10

Field Conditions

	Time (24 hr)	Temperature (F)	Wind Speed (mph)	Cloud Cover
Start	0945	64	46	0%
Mid				
End	1630	68.4	27	0%

Vegetation Communities Surveyed (include dominant spp.)

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Blueberry (<i>Eriogonum fasciculatum</i>)	X
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Gratiola densiflora</i>)	X
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower (<i>Gratiola densiflora</i>)	X
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pin cushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
			Phacelia (<i>Phacelia</i> spp.)	
			Blue dicks (<i>Dichelostemma capitatum</i>)	
			Snapdragon penstemon (<i>Keckia antirrhinoides</i>)	
			Tidy tips (<i>Layia</i> spp.)	
			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
			Yarrow (<i>Achillea millefolium</i>)	
			Redmaids (<i>Calandrinia menziesii</i>)	X
			Sugar bush (<i>Rhus ovata</i>)	
Nectar Plants		Obs		
Beef-tongue (<i>Oenothera biennis</i>)	<i>Erodium</i>	X		
Ceanothus (<i>Ceanothus</i> spp.)		X		
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X		
Goldenbush (<i>Sarcocolla</i> spp.)		X		
Goldfields (<i>Lasthenia</i> spp.)		X		
Popcorn flower (<i>Cryptantha</i> spp.)		X		
Terpenia (<i>Terpenia</i> spp.)	<i>Descurainia pinnata</i>	X		

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Heinstocks	
California patch (<i>Thelypoda californica</i>)		Santa orange (<i>Anthochloris santa ana</i>)	14	California white (<i>Adelpha brydoni californica</i>)		Great purple hairstreak (<i>Phycodes helius</i>)	
California checkerspot (<i>C. palola</i>)		Desert (<i>Adelpha brydoni</i>)	2	Longwing admiral (<i>Adelpha brydoni</i>)		Brown elf (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Comanophila californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Poppywing hairstreak (<i>Callophrys</i>)	
California checkerspot (<i>E. editha</i>)		Pearly mottled (<i>Euphydryas</i>)		Red admiral (<i>V. annabella</i>)		Loa loa (<i>Callophrys</i>)	10
Everett checkerspot (<i>E. editha everetti</i>)		California white (<i>Phycodes</i>)		Pinked lady (<i>V. annabella</i>)	2	Gray hairstreak (<i>Callophrys</i>)	
Mutter checkerspot (<i>E. editha mutter</i>)		Black's white (<i>Phycodes</i>)		Amazon (<i>Adelpha brydoni</i>)		Skippers	
Blues		Checkered (common) white (<i>Phycodes</i>)		Unidentified lady (<i>Vanessa</i> sp.)		Albino duskywing (<i>Erynnis albus</i>)	
Western purple blue (<i>Phycodes</i>)		Spring white (<i>Phycodes</i>)		Metamorphs		Sage duskywing (<i>Erynnis albus</i>)	
Common blue (<i>Phycodes</i>)		Unidentified white		Edith's metamorph (<i>Phycodes</i>)		Funeral duskywing (<i>Erynnis funeralis</i>)	
Western black blue (<i>Phycodes</i>)		Sulphurs		Edith's metamorph (<i>Phycodes</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	
Southern blue (<i>Phycodes</i>)		Hartford's sulphur (<i>Phycodes</i>)		Swallowtails		Mourner's duskywing (<i>Erynnis mourneri</i>)	
Edward's blue (<i>Phycodes</i>)		Orange sulphur (<i>Phycodes</i>)		Pale swallowtail (<i>Phycodes</i>)		Northern white skipper (<i>Phycodes</i>)	
Franklin's blue (<i>Phycodes</i>)		Sage orange (<i>Phycodes</i>)		Western tiger swallowtail (<i>Phycodes</i>)		Fairy skipper (<i>Phycodes</i>)	
Pacific blue (<i>Phycodes</i>)		Dairy sulphur (<i>Phycodes</i>)		Arctic swallowtail (<i>Phycodes</i>)		Sandhill skipper (<i>Phycodes</i>)	
Mexican blue (<i>Phycodes</i>)		Cloudless sulfur (<i>Phycodes</i>)		Miscellaneous		White common checkered skipper (<i>Phycodes</i>)	
Edith's blue (<i>Phycodes</i>)	5	Unidentified sulphur		Mourner's (<i>Phycodes</i>)		Other	
San Juan blue (<i>Phycodes</i>)		Other		Common dusky (<i>Phycodes</i>)			
Unidentified blue				Mourner's (<i>Phycodes</i>)			
				California (<i>Phycodes</i>)			
Column Total	5	Column Total	16	Column Total	2	Column Total	10

Total 33

Surveyor: Ryan Meszaros Date: 3/14/2022
 Site Name: Starlight Survey No: 2
 Additional Surveyors Present: _____
 Check In Time: 945 Check Out Time: 1715 Map Synced: Yes No

Area (Circle One):					1	2	3	4	5	6	7	8	9	10
Field Conditions														
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover										
Start	1000	64.2	5-9	0%										
Mid	1345	68.9	2-5	0%										
End	1700	71.5	1-4	0%										
Vegetation Communities Surveyed (include dominant spp.)														
Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,														
Host Plants		Diameter and Density (see note below)	Obs	Nectar Plants Continued				Obs						
Dwarf plantain (<i>Plantago erecta</i>)				Buckwheat (<i>Eriogonum fasciculatum</i>)										
Purple owl's clover (<i>Castilleja exserta</i>)				Ground pink (<i>Linanthus dianthiflorus</i>)										
Snapdragon (<i>Antirrhinum coulterianum</i>)				Oak gooseberry (<i>Ribes quercetorum</i>)				X						
Birds-beak (<i>Cordylanthus rigidus</i>)				Red maids (<i>Calandrinia menziesii</i>)				X						
Chinese houses (<i>Collinsia</i> spp.)				Lotus (<i>Acmispon</i> spp.)										
Woolly plantain (<i>Plantago patagonica</i>)				Yerba santa (<i>Eriodictyon</i> spp.)										
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)				Lomatium (<i>Lomatium</i> spp.)				X						
				Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)										
Nectar Plants			Obs											
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)				Blue dicks (<i>Dichelostemma capitatum</i>)										
Ceanothus (<i>Ceanothus</i> spp.)			X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)										
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			X	Tidy tips (<i>Layia</i> spp.)										
Goldenbush (<i>Isocoma/Ericameria</i> spp.)				Tansy mustard (<i>Descurainia pinnata</i>)					X					
Goldfields (<i>Lasthenia</i> spp.)			X	Mexican manzanita (<i>Arctostaphylos pungens</i>)					X					
Popcorn flower (<i>Cryptantha/Plagiobothrys/Pectocarya</i> spp.)			X	Red stemmed filaree (<i>Erodium cicutarium</i>)					X					
Tarplants (<i>Deinandra</i> spp.)				Sugar bush (<i>Rhus ovate</i>)										
Dobie pod (<i>Trapidocarpum gracile</i>)			X	Southern tauschia (<i>Tauschia arguta</i>)					X					
Mountain mohogany (<i>Cercocarpus betuloides</i>)			X											
Lacepod (<i>Thysanocarpus</i> sp.)			X											
Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.							
Checkerspots		Whites		Ladies/Admirals		Hairstreaks								
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	2	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)								
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	1							
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	3							
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrys gryneus loki</i>)								
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)								
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers								
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)								
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)								
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)		Funereal duskywing (<i>Erynnis funeralis</i>)	1							
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrightii</i>)		Propertius duskywing (<i>Erynnis propertius</i>)								
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)								
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)								
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)								
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)								
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)								
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other								
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)										
Unidentified blue	1			Mourning cloak (<i>Nymphalis antiopa</i>)										
				California tortoiseshell (<i>Nymphalis californica</i>)										
Column Total	1	Column Total	2	Column Total		Column Total	5							
						Total	8							

Surveyor: Ryan Meszaros Date: 3/15/2
 Site Name: Starlight Survey No: 2
 Additional Surveyors Present: _____
 Check In Time: 845 Check Out Time: 1615 Map Synced: Yes No

Area (Circle One):										1	2	3	4	5	6	7	8	9	10
Field Conditions																			
	Time (24 hr)				Temperature (°F)				Wind Speed (mph)				Cloud Cover						
Start	0900				62.7				0-2				0%						
Mid	1345				74.1				3-8				0%						
End	1600				75.2				3-7				0%						

Vegetation Communities Surveyed (include dominant spp.)

Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Red maids (<i>Calandrinia menziesii</i>)	X
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma</i> / <i>Ericameria</i> spp.)			Tansy mustard (<i>Descurainia pinnata</i>)	
Goldfields (<i>Lasthenia</i> spp.)		X	Mexican manzanita (<i>Arctostaphylos pungens</i>)	X
Popcorn flower (<i>Cryptantha</i> / <i>Plagiobothrys</i> / <i>Pectocarya</i> spp.)		X	Red stemmed filaree (<i>Erodium cicutarium</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	
Dobie pod (<i>Trapidocarpum gracile</i>)		X	Southern tauschia (<i>Tauschia arguta</i>)	
Mountain mohagany (<i>Cercocarpus betuloides</i>)			London rocket (<i>Sisymbrium irio</i>)	X
Lacepod (<i>Thysanocarpus</i> sp.)				

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	1	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	1
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa</i> sp.)	4	Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)	2	Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)		Funereal duskywing (<i>Erynnis funeralis</i>)	9
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Properitius duskywing (<i>Erynnis properitius</i>)	1
southern blue (<i>Glaucopsyche lygdamus australis</i>)	1	Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue	6			Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	7	Column Total	3	Column Total		Column Total	11
Total							21

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	
Checkerspots		Whites		Ladies/Admirals		Hairstreaks		
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	1	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)		
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)	8	Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	5	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	14	
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrys gryneus loki</i>)		
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	3	Gray hairstreak (<i>Strymon melinus pudica</i>)		
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers		
Blues		Checkered (common) white (<i>Pontia protodice</i>)	1	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)		
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)		
Clemence's blue (<i>Plebejus lupini monticola</i>)	1	unidentified white	2	Behr's metalmark (<i>Apodemia mormo virgulti</i>)	3	Funereal duskywing (<i>Erynnis funeralis</i>)	11	
Western tailed blue (<i>Evers amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)		
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	2	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes erictorum</i>)		
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)		
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)		
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albesens</i>)		
Echo azure (<i>Celastrina echo</i>)	3	unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other		
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)				
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)				
				California tortoiseshell (<i>Nymphalis californica</i>)				
Column Total	4	Column Total	21	Column Total	6	Column Total	32	
							Total	63

2022 Starlight Solar Project: Quino Checkerspot Butterfly Survey Form

Surveyor: Brenda Bennett

Date: 3/15/2022

Site Name: Starlight Solar

Survey No: 3

Additional Surveyors Present:

Check-In Time: 4:00

Check-Out Time

Map Synched (Circle One) Yes No

Area (Circle One): 1 2 3 4 5 6 7 8 9 10

Field Conditions

	Time (24 hr)	Temperature (F)	Wind Speed (mph)	Cloud Cover
Start	<u>1000</u>	<u>67.5</u>	<u>0-2</u>	<u>0%</u>
Mid				
End	<u>1645</u>	<u>74.0</u>	<u>2-9</u>	<u>10%</u>

Vegetation Communities Surveyed (include dominant spp.) Buckwheat scrub (Eriogonum spp.)
Chaparral (Adenostoma spp., Quercus spp., Ceanothus spp.)

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
			Phacelia (<i>Phacelia</i> spp.)	
			Blue dicks (<i>Dichelostemma capitatum</i>)	
Bush groundsel (<i>Senecio flaccidus</i> var. <i>douglasii</i>)			Snapdragon penstemon (<i>Keckia antirrhinoides</i>)	
Ceanothus (<i>Ceanothus</i> spp.)		X	Tidy tips (<i>Layia</i> spp.)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldenbush (<i>Sarcocoma/Ericameria</i> spp.)			Yarrow (<i>Achillea millefolium</i>)	
Goldfields (<i>Lasthenia</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	
Poppoorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Sugar bush (<i>Rhus ovata</i>)	
Tarplant (<i>Desmodium</i> spp.)		X		

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspot		Whites		Ladies/Admirals		Heliconians	
California patch (<i>Chrysippe californica</i>)		Sera orange (<i>Anthocharis sera</i> ssp.)	13	California sage (Apostrophe broidwellii californica)		Great purple hairstreak (<i>Polyommatus coridon</i>)	
Gold's checkerspot (<i>C. californica</i>)		Desert Frit (<i>Isotria medeolae</i> ssp. <i>californica</i>)	2	Longtail's admiral (<i>Junonia longtail</i>)		Green elf (<i>Calophrys augustus</i>)	
Queen checkerspot (<i>Euphydryas editha</i> ssp.)		Common California reget (<i>Coenonympha californica</i>)		West coast lady (<i>Minotaura amabilis</i>)		Periphrase hairstreak (<i>St. gurneyi</i>)	
Chico checkerspot (<i>C. chrysippe</i>)		Pearly marble (<i>Euclyptus</i> spp.)	17	Red admiral (<i>Vanessa atalanta</i>)		Lower juniper hairstreak (<i>Calophrys phrynos</i>)	
Lower juniper checkerspot (<i>Chrysippe leucis</i> ssp.)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>Pieris</i> spp.)	7	Gray hairstreak (<i>Glyptotendipes pectus</i>)	
Myrtle woodrat (<i>Phycodes myrtus</i>)		Decker's white (<i>Pieris</i> ssp.)		Amazilia (<i>Amazilia</i> spp.)		Skippers	
Blues		Checkered grasshopper white (<i>Pieris</i> ssp.)		Unidentified lady (<i>Vanessa</i> spp.)		Atlantic duskywing (<i>Erynnis atalanta</i>)	
Viceroy's blue (<i>Phycodes myrtus</i>)		Spring white (<i>Pieris</i> ssp.)		Metalmarks		Sleepy duskywing (<i>Erynnis atalanta</i>)	
Queen's blue (<i>Phycodes myrtus</i>)		Unidentified white		Ida's metalmark (<i>Prodenia ornata</i> ssp.)	4	Funeral duskywing (<i>Erynnis funeralis</i>)	14
Viceroy's blue (<i>Phycodes myrtus</i>)		Sulphurs		Wright's metalmark (<i>Calophrys wrighti</i>)		Proterops duskywing (<i>Erynnis proterops</i>)	
San Joaquin blue (<i>Phycodes myrtus</i>)		Harford's sulphur (<i>Colias alexandria</i> ssp.)		Swallowtails		Mountain duskywing (<i>Erynnis montana</i>)	10
Lower juniper blue (<i>Phycodes myrtus</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Thymelicus lineator</i>)	
Butterfly's blue (<i>Phycodes myrtus</i>)		Sleepy orange (<i>Eumitis nicippe</i>)		Western tiger swallowtail (<i>P. n. n. n.</i>)		Fairy skipper (<i>Hyphantid</i> spp.)	
Acron blue (<i>Phycodes myrtus</i>)		Daisy sulphur (<i>Colias</i> spp.)		Pale swallowtail (<i>P. n. n. n.</i>)		Scout skipper (<i>Thymelicus</i> spp.)	
Mary's blue (<i>Phycodes myrtus</i>)		Unidentified sulphur		Miscellaneous		White-crowned checkerspot (<i>Phycodes</i> spp.)	
Echo blue (<i>Phycodes myrtus</i>)	2	Other		Monarch (<i>Danaus plexippus</i>)		Other	
Southern blue (<i>Phycodes myrtus</i>)				Common buckeye (<i>Burtonia cornuta</i> ssp.)			
Unidentified blue				Mourning dove (<i>Paraphaenocarpa</i> spp.)			
				California tortoiseshell (<i>Glyptotendipes californicus</i>)			
Column Total	2	Column Total	32	Column Total	11	Column Total	02

Total 107

Surveyor: Ian Hirschler Date: 3/15/22
 Site Name: Starlight Solar Survey No: 4
 Additional Surveyors Present: Alec Goodman

Check-In Time: _____ Check-Out Time _____ Map Synched (Circle One): Yes No

Area (Circle One):											1	2	3	4	5	6	7	8	9	10
Field Conditions																				
	Time (24 hr)				Temperature (F)				Wind Speed (mph)				Cloud Cover							
Start	0915				64.1				0-2				0							
Mid	1300				82.5				4-8				0							
End	1600				79.5				3-6				0							

Vegetation Communities Surveyed (include dominant spp.)	Redshank chaparral, buckwheat scrub, non native grassland

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	

[illegible]

Surveyor: Ian Hirschler Date: 3/17/22
Site Name: Starlight Solar Survey No: _____

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Vegetation Communities Surveyed (include dominant spp.)

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	6	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	3
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	1
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	1	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	2	Unidentified lady (<i>Vanessa sp.</i>)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white	1	Behr's metalmark (<i>Apodemia mormo virgulti</i>)		Funereal duskywing (<i>Erynnis funeralis</i>)	2
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Properthus duskywing (<i>Erynnis properthus</i>)	3
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zeliccaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total		Column Total	9	Column Total	1	Column Total	9
							Total 19

Surveyor: Brian Lohstroh Date: 3/17/2022
 Site Name: Starlight Solar Survey No: 4
 Additional Surveyors Present: None

Check-In Time: 0910 Check-Out Time 1545 Map Synched (Circle One): ☒ Yes ☐ No

Area (Circle One):											1	2	3	4	5	6	7	8	9	10
Field Conditions																				
	Time (24 hr)	Temperature (°F)			Wind Speed (mph)			Cloud Cover												
Start	910	62			4-8			0%												
Mid	1230	70			4-8			0%												
End	1545	67			2-6			0%												

Vegetation Communities Surveyed (include dominant spp.)	Red-shank/southern mixed chap,buckwheat scrub
Adenostema sparsifolium, A. fasciculatum, Eriogonum fasciculatum	

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	X
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indocorum quercitorum</i>)	X
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	
Checkerspots		Whites		Ladies/Admirals		Hairstreaks		
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	8	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)		
Gabb's checkerspot (<i>C. gabbi</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	6	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	16	
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)	2	Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrys gryneus loki</i>)		
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	2	Gray hairstreak (<i>Strymon melinus pudica</i>)		
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers		
Blues		Checkered (common) white (<i>Pontia protodice</i>)	1	Unidentified lady (<i>Vanessa sp.</i>)		Afranius duskywing (<i>Erynnis afranius</i>)		
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)		
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	6	Funereal duskywing (<i>Erynnis funeralis</i>)	4	
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Properthus duskywing (<i>Erynnis properthus</i>)	6	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	3	Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	2	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)		
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)		
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)		
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)		
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other Dusky sp.	4	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)				
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)				
				California tortoiseshell (<i>Nymphalis californica</i>)				
Column Total	3	Column Total	11	Column Total	8	Column Total	36	
							Total	58

2022 Starlight Solar Project: Quino Checkerspot Butterfly Survey Form

Surveyor: Brenda Bennett Date: 3/17/2022
 Site Name: _____ Survey No: 3
 Additional Surveyors Present: NA
 Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Area (Circle One):											1	2	3	4	5	6	7	8	9	10
Field Conditions																				
	Time (24 hr)		Temperature (F)			Wind Speed (mph)			Cloud Cover											
Start	0945		63.0			2-12			0%											
Mid																				
End	1630		68.4			1-4			0%											

Vegetation Communities Surveyed (include dominant spp.) Buckwheat scrub: Eriogonum spp.
Chaparral: Adenostoma spp. Quercus spp.

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes malacocarpum</i>) <i>querzetrinum</i>	X
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
Bush groundcover (<i>Sarcocolla fasciculata</i> var. <i>drummondii</i>)	<i>Eriodictyon</i>	X	Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)		X	Snaptail peristemon (<i>Keckia antirrhinoides</i>)	
Adenostoma (<i>Adenostoma</i> spp.)	<i>DES PIN</i>	X	Tidy tips (<i>Layia</i> spp.)	
Chrysothamnus (<i>Chrysothamnus</i> spp.)	<i>Nemophila</i>	X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	
Arctostaphylos (<i>Arctostaphylos</i> spp.)	<i>Arctostaphylos</i>	X	Sugar bush (<i>Rhus ovata</i>)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Haintrees	
California patch (<i>Zabryne californica</i>)		Santa orange tip (<i>Anthochaera sara sara</i>)	16	California aster blue (<i>Hecla californica</i>)		Great purple haintree (<i>Lythra haintree</i>)	
Gabb's checkerspot (<i>C. gabbi</i>)		Desert folden's orange tip (<i>A. californica</i>)		Longin's admiral (<i>Junonia longini</i>)		Brown elf (<i>Colophaea augusta</i>)	1
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California night (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa atalanta</i>)		Porpoise haintree (<i>C. curvicauda</i>)	3
Chalked checkerspot (<i>E. chalcidius</i>)		Pearly marble (<i>Pieris hyzantis</i>)	4	Red admiral (<i>Vanessa atalanta</i>)		Red juniper haintree (<i>Colophaea gynaecis</i>)	
Lesser checkerspot (<i>Euphydryas editha</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>Pieris cardui</i>)	3	Gray haintree (<i>Styphodon melius pudica</i>)	
Myrtle crescent (<i>Thysanotus myrtus</i>)		Black's white (<i>Pieris buckleyi</i>)		American Virginian lady (<i>V. virginiana</i>)		Skippers	
Blues		Checkered (common) white (<i>Pieris proteropus</i>)		Unidentified lady (<i>Vanessa</i> sp.)		African daisywing (<i>Erynnis atalanta</i>)	
Western pygmy blue (<i>Diaparsis nola</i>)		Spring white (<i>Pieris</i> spp.)	3	Mormons		Slender daisywing (<i>Erynnis atalanta</i>)	
Gemstone's blue (<i>Diaparsis nola</i>)		Unidentified white		Burn's mormon (<i>Diaparsis nola</i>)	5	Faded daisywing (<i>Erynnis atalanta</i>)	7
Western tailed blue (<i>Diaparsis nola</i>)		Sulphurs		Wright's mormon (<i>Diaparsis nola</i>)		Proteropis daisywing (<i>Erynnis proteropis</i>)	
Southern blue (<i>Diaparsis nola</i>)		Hartford's sulphur (<i>Colias alexandria</i>)		Swallowtails		Mourning daisywing (<i>Erynnis atalanta</i>)	
Flower's blue (<i>Diaparsis nola</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pink swallowtail (<i>Pieris eurytheme</i>)		Northern white skipper (<i>Heliothis</i>)	
Flower's blue (<i>Diaparsis nola</i>)		Slender orange (<i>Diaparsis nola</i>)		Western blue swallowtail (<i>Pieris eurytheme</i>)		Fairy skipper (<i>Lythra phylax</i>)	
Arctic blue (<i>Diaparsis nola</i>)		Dainty sulphur (<i>Diaparsis nola</i>)		Arctic swallowtail (<i>Pieris eurytheme</i>)		Sandhill skipper (<i>Diaparsis nola</i>)	
Maria blue (<i>Diaparsis nola</i>)		Greenish sulphur (<i>Diaparsis nola</i>)		Miscellaneous		White common checkered skipper (<i>Erynnis atalanta</i>)	
Flower's blue (<i>Diaparsis nola</i>)	1	Unidentified sulphur		Mourning daisy (<i>Diaparsis nola</i>)		Other	
Sonoran blue (<i>Diaparsis nola</i>)		Other		Common buckeye (<i>Junonia coenia</i>)			
Unidentified blue				Mourning dove (<i>Nymphalis</i>)			
				California tortoiseshell (<i>Amphipha californica</i>)			
Column Total	1	Column Total	23	Column Total	8	Column Total	11
							Total

Total 43

Check In Time: 900 Check Out Time: 1630 Map Synced: Yes No

Area (Circle One):											1	2	3	4	5	6	7	8	9	10
Field Conditions																				
	Time (24 hr)				Temperature (°F)				Wind Speed (mph)				Cloud Cover							
Start	0915				61.9				0-1				0%							
Mid																				
End	1615				77.9				0-2				0%							

Vegetation Communities Surveyed (include dominant spp.)	
1	1
2	2
3	3
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7	7
8	8
9	9
10	10
11	11
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96	96
97	97
98	98
99	99
100	100

Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	X
Birds-beak (<i>Cordylanthus rigidus</i>)			Red maids (<i>Calandrinia menziesii</i>)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma</i> / <i>Ericameria</i> spp.)			Tansy mustard (<i>Descurainia pinnata</i>)	
Goldfields (<i>Lasthenia</i> spp.)		X	Mexican manzanita (<i>Arctostaphylos pungens</i>)	X
Popcorn flower (<i>Cryptantha</i> / <i>Plagiobothrys</i> / <i>Pectocarya</i> spp.)		X	Red stemmed filaree (<i>Erodium cicutarium</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	
Dobie pod (<i>Trapidocarpum gracile</i>)			Southern tauschia (<i>Tauschia arguta</i>)	
Mountain mohagany (<i>Cercocarpus betuloides</i>)		X	London rocket (<i>Sisymbrium irio</i>)	
Lacepod (<i>Thysanocarpus</i> sp.)		X	California poppy (<i>Eschscholzia californica</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspot		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	9	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	2
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	13
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)	1	Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	3	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)	1	Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)	7	unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	10	Funereal duskywing (<i>Erynnis funeralis</i>)	4
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Properitius duskywing (<i>Erynnis properitius</i>)	3
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordi</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Celastrina echo</i>)	1	unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	8	Column Total	11	Column Total	13	Column Total	22
Total							54

Surveyor: Ian Hirschler Date: 3/18/22
Site Name: Starlight Solar Survey No: 4

Check-In Time: _____ Check-Out Time _____ Map Synched (Circle One): Yes No

Area (Circle One):											1	2	3	4	5	6	7	8	9	10
Field Conditions																				
	Time (24 hr)				Temperature (F)				Wind Speed (mph)				Cloud Cover							
Start	0930				65.8				2-5				0							
Mid	1300				76.3				0-3				0							
End	1530				74.2				0-3				0							

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	CA
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	poppy
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	5	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	3
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	2	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white	2	Behr's metalmark (<i>Apodemia mormo virgulti</i>)	2	Funereal duskywing (<i>Erynnis funeralis</i>)	1
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescent</i>)	
Echo azure (<i>Celastrina echo</i>)	2	unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	2	Column Total	7	Column Total	4	Column Total	4
Total							17

Surveyor: Brenda Bennett

Site Name:

Date: 3/21/2022

Survey No:

Additional Surveyors Present:

Check-In Time:

Check-Out Time

Map Sync'd (Circle One): ☒ Yes ☐ No

Area (Circle One): 1 2 3 4 5 6 7 8 9 10

Field Conditions

Field Conditions				
	Time (24 hr)	Temperature (F)	Wind Speed (mph)	Cloud Cover
Start	1000	61.1	0-2	15%
Mid				
End	1445	69.5	8-2	35%

Vegetation Communities Surveyed (include dominant spp.) Chaparral: ADE FAS, RHU OA
BUCKwheat Scrub: ER FAS, ER M M

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			<i>Thymocarpus</i> sp.	X
Purple owl's clover (<i>Castilleja exserta</i>)			Cas FOL	X
Snappedragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordyallanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Colekia</i> spp.)			Lotus (<i>Adonis</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Erodium</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
Bush groundsel (<i>Senecio</i> spp.)		X	Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)		X	Snappedragon penstemon (<i>Keckelia antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Laya</i> spp.)	
Goldenbush (<i>Isocoma Encarnina</i> spp.)		X	Long-stemmed yarrow (<i>Erigeron</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha flagellifera</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	X
Yucca (<i>Yucca</i> spp.)			Sugar bush (<i>Rhus ovata</i>)	

[illegible]

Check In Time: 945 Check Out Time: 1700 Map Synced: Yes No

Area (Circle One): 1 2 3 4 5 6 7 8 9 10

Field Conditions

	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	1000	61.1	0-2	5%
Mid				
End	1645	69.5	0-2	35%

Vegetation Communities Surveyed (include dominant spp.)

Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	X
Birds-beak (<i>Cordylanthus rigidus</i>)			Red maids (<i>Calandrinia menziesii</i>)	X
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)	X		Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	X		Tidy tips (<i>Layia</i> spp.)	X
Goldenbush (<i>Isocoma/Ericameria</i> spp.)	X		Tansy mustard (<i>Descurainia pinnata</i>)	X
Goldfields (<i>Lasthenia</i> spp.)	X		Mexican manzanita (<i>Arctostaphylos pungens</i>)	X
Popcorn flower (<i>Cryptantha/Plagiobothrys/Pectocarya</i> spp.)	X		Red stemmed filaree (<i>Erodium cicutarium</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	X
Dobie pod (<i>Trapidocarpum gracile</i>)	X		Southern tauschia (<i>Tauschia arguta</i>)	
Mountain mohagany (<i>Cercocarpus betuloides</i>)	X		London rocket (<i>Sisymbrium irio</i>)	X
Lacepod (<i>Thysanocarpus</i> sp.)	X		California poppy (<i>Eschscholzia californica</i>)	X

[illegible]

Check In Time: 845 Check Out Time: 1615 Map Synced: Yes No

Area (Circle One):					1	2	3	4	5	6	7	8	9	10
Field Conditions														
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover										
Start	0900	62.1	6-10	0%										
Mid														
End	1600	69.7	1-7	10%										

Vegetation Communities Surveyed (include dominant spp.)	
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Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	X
Birds-beak (<i>Cordylanthus rigidus</i>)			Red maids (<i>Calandrinia menziesii</i>)	X
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Rockcress (<i>Boechera</i> sp.)		X	Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma</i> / <i>Ericameria</i> spp.)		X	Tansy mustard (<i>Descurainia pinnata</i>)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Mexican manzanita (<i>Arctostaphylos pungens</i>)	X
Popcorn flower (<i>Cryptantha</i> / <i>Plagiobothrys</i> / <i>Pectocarya</i> spp.)		X	Red stemmed filaree (<i>Erodium cicutarium</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	X
Dobie pod (<i>Trapidocarpum gracile</i>)			Southern tauschia (<i>Tauschia arguta</i>)	
Mountain mohagany (<i>Cercocarpus betuloides</i>)		X	London rocket (<i>Sisymbrium irio</i>)	
Lacepod (<i>Thysanocarpus</i> sp.)		X	California poppy (<i>Eschscholzia californica</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	3	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	5
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	35
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)	12	Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	2	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	1	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)	8	Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	1
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	5	Funereal duskywing (<i>Erynnis funeralis</i>)	7
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Properitius duskywing (<i>Erynnis properitius</i>)	6
southern blue (<i>Glaucopsyche lygdamus australis</i>)	3	Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)	1	Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	3	Column Total	24	Column Total	8	Column Total	54
Total							89

Surveyor: DAVID K. FAULKNER Date: 23 MARCH 2022
Site Name: Starlight Solar Survey No: ~~2022~~ 1
Additional Surveyors Present: _____
Check-In Time: 0900 Check-Out Time: 1550 Map Synched (Circle One): Yes No

Area (Circle One):											1	2	3	4	5	6	7	8	9	10
											Field Conditions									
	Time (24 hr)			Temperature (F)			Wind Speed (mph)			Cloud Cover										
Start	0940			68° F			6 mph			Clear										
Mid	1300			73°			4-5			Clear										
End	1550			70°			2-3			Clear										

Vegetation Communities Surveyed (include dominant spp.) Chaparral

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	Not flowering ✓
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Lithanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	✓
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	✓
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	✓
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	✓
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	✓
			Yellow pin cushion (<i>Chenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	✓
Bush groundsel (<i>Senecio fascidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)	Not flowering	✓	Snapdragon penstemon (<i>Keckia antirrhinoides</i>)	
Fiddleneck (<i>Amisnokia menziesii</i> var. <i>intermedia</i>)		✓	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Sarcocolla/Eriocameria</i> spp.)		✓	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		✓	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		✓	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovata</i>)	✓

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hainbreaks	
California patch (<i>Dibasyne californica</i>)		Sara orange tip (<i>Anthocharis sara sara</i>)	3	California sister (<i>Adelpha brodewii californica</i>)		Great purple hainbreak (<i>Aidesia heliosus concolor</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert Felder's orange tip (<i>A. oethusa</i>)		Lorquin's admiral (<i>Eumitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	6
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Periplexing hainbreak (<i>C. dumetorum affinis</i>)	11
Chlorodan checkerspot (<i>E. chlorodana chlorodana</i>)		Pearly marble (<i>Euchloe hyantis</i>)	12+	Red admiral (<i>V. atalanta rubris</i>)		Loke juniper hainbreak (<i>Callophrys gryneus loki</i>)	
Lacinia checkerspot (<i>Thessalia lacinia arctifolia</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	1	Gray hainbreak (<i>Stymon malisus pudica</i>)	
Mytila crescent (<i>Phycodes mytila</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginica</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	1	Unidentified lady (<i>Vanessa</i> sp.)		Athanas duskywing (<i>Erynnis athanas</i>)	
Western pygmy-blue (<i>Euphydryas editha</i>)		Spring white (<i>P. silymbis</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis biter</i>)	
Damocles's blue (<i>Phaeobus lupini monticola</i>)		Unidentified white <i>A. J. J. J. J.</i>	2	Burr's metalmark (<i>Apodemia mormo virgata</i>)	5	Funeral duskywing (<i>Erynnis funeralis</i>)	
Western tailed blue (<i>Eversia amylae</i>)		Sulphurs		Wright's metalmark (<i>Calophrys wrighti</i>)		Proterius duskywing (<i>Erynnis proterius</i>)	4
Southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra harfordi</i>)		Swallowtails		Mourning duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiaris conus gies</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopterus ericetorum</i>)	
Raskoff's blue (<i>Hemiaris kola</i>)		Sleepy orange (<i>Eurymis nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Pale skipper (<i>Hyalephila phylus</i>)	
Aconit blue (<i>Parica aconit aconit</i>)		Daunt sulphur (<i>Helthis ike</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Poimene sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebastria semiothis marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Coliasine echo</i>)		Unidentified sulphur		Monarch (<i>Danais plexippus</i>)		Other	
Sonoran blue (<i>Phloxis sonoriensis</i>)		Other		Common buckeye (<i>Lunonia coenia graesi</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	0	Column Total	18	Column Total	6	Column Total	21
				Total			

Surveyor: Ian Hirschler Date: 3/23/22
Site Name: Starlight Solar Survey No: 4

Check-In Time: _____ Check-Out Time _____ Map Synched (Circle One): Yes No

Area (Circle One): 1 2 3 4 5 6 7 8 9 10										
Field Conditions										
	Time (24 hr)	Temperature (F)	Wind Speed (mph)	Cloud Cover						
Start	0900	60.4	4-8(12)	0						
Mid	1200	72.1	5-10	0						
End	1545	70.8	2-7	0						

Vegetation Communities Surveyed (include dominant spp.)	Redshank chaparral,
	buckwheat scrub

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			Tidy tips (<i>Layia</i> spp.)	Lupinus sp
Goldenbush (<i>Isocoma/Ericameria</i> spp.)			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	Cream cups

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	5	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	3
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	7
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)	1	Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa sp.</i>)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white	3	Behr's metalmark (<i>Apodemia mormo virgulti</i>)	6	Funereal duskywing (<i>Erynnis funeralis</i>)	
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	3
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes erictorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albesens</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total		Column Total	8	Column Total	6	Column Total	13
Total							27

Check In Time: 845 Check Out Time: 1615 Map Synced: Yes No

Area (Circle One):															1	2	3	4	5	6	7	8	9	10
Field Conditions																								
	Time (24 hr)				Temperature (°F)				Wind Speed (mph)				Cloud Cover											
Start	0850				60.2				3-14				0%											
Mid																								
End	1550				70.2				1-6				0%											

Vegetation Communities Surveyed (include dominant spp.)

Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	X
Birds-beak (<i>Cordylanthus rigidus</i>)			Red maids (<i>Calandrinia menziesii</i>)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
Rockcress (<i>Boechera</i> sp.)		X	Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma</i> / <i>Ericameria</i> spp.)		X	Tansy mustard (<i>Descurainia pinnata</i>)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Mexican manzanita (<i>Arctostaphylos pungens</i>)	X
Popcorn flower (<i>Cryptantha</i> / <i>Plagiobothrys</i> / <i>Pectocarya</i> spp.)		X	Red stemmed filaree (<i>Erodium cicutarium</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	
Dobie pod (<i>Trapidocarpum gracile</i>)			Southern tauschia (<i>Tauschia arguta</i>)	
Mountain mohagany (<i>Cercocarpus betuloides</i>)		X	London rocket (<i>Sisymbrium irio</i>)	
Lacepod (<i>Thysanocarpus</i> sp.)			California poppy (<i>Eschscholzia californica</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	6	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	4
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	7
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)	9	Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)	3	Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	10	Funereal duskywing (<i>Erynnis funeralis</i>)	6
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	9
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordi</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue	3			Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	3	Column Total	18	Column Total	10	Column Total	26
Total							57

Surveyor: Ian Hirschler Date: 3/24/22
 Site Name: Starlight Survey No: 4
 Additional Surveyors Present: Solar Sharif Durzi

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Area (Circle One):											1	2	3	4	5	6	7	8	9	10
Field Conditions																				
	Time (24 hr)		Temperature (°F)			Wind Speed (mph)			Cloud Cover											
Start	0945		64.9			2-5			0											
Mid	1200		85.6			2-7			0											
End	1415		86.9			3-9			0											

Vegetation Communities Surveyed (include dominant spp.)	Redshank chaparral, buckwheat scrub, non native grassland
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Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	Lupinus sp X
Goldenbush (<i>Isocoma/Ericameria</i> spp.)			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	Cream cups x

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	
Checkerspots		Whites		Ladies/Admirals		Hairstreaks		
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	5	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)		
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	3	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	2	
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)	15	Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	5	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	2	Gray hairstreak (<i>Strymon melinus pudica</i>)		
Myiitta crescent (<i>Phyciodes myiitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers		
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)		
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)		
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	7	Funereal duskywing (<i>Erynnis funeralis</i>)	8	
Western tailed blue (<i>Evers amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	4	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	5	Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)		
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)	1	Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)		
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)		
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)		
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescent</i>)		
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other		
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)				
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)				
				California tortoiseshell (<i>Nymphalis californica</i>)				
Column Total	5	Column Total	21	Column Total	9	Column Total	40	
							Total	75

Surveyor: Brian Lohstroh Date: 3/24/2022
 Site Name: Starlight Solar Survey No: 5
 Additional Surveyors Present: None

Check-In Time: 0900 Check-Out Time 1600 Map Synched (Circle One): ☒ Yes No

Area (Circle One): 1 2 3 4 5 6 **7** 8 9 10

Field Conditions	
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	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	900	72	3-7	2%
Mid	1230	75	4-6	0%
End	1600	77	3-9	0%

Vegetation Communities Surveyed (include dominant spp.)	Red-shank/southern mixed chap,buckwheat scrub
Adenostema sparsifolium, A. fasciculatum, Eriogonum fasciculatum	

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	X
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)	Dead stalks	X	Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglasii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	3	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)	5	Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	1
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	23
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)	1	Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	1	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	1	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	8	Funereal duskywing (<i>Erynnis funeralis</i>)	17
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Properthus duskywing (<i>Erynnis properthus</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	13	Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	2
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes erictorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albesens</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other Dusky sp.	2
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue	3			Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	16	Column Total	10	Column Total	9	Column Total	45
							Total 80

Surveyor: Ian Hirschler Date: 3/25/22
 Site Name: Starlight Solar Survey No: 4
 Additional Surveyors Present: Hannah Swarhout

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Area (Circle One):										1	2	3	4	5	6	7	8	9	10
Field Conditions																			
	Time (24 hr)				Temperature (°F)				Wind Speed (mph)				Cloud Cover						
Start	0930				75.9				1-3				2						
Mid	1300				84.2				3-7				10						
End	1600				83.5				0-3				2						

Vegetation Communities Surveyed (include dominant spp.)	Redshank chaparral, buckwheat scrub

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	
Checkerspots		Whites		Ladies/Admirals		Hairstreaks		
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	2	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atides halesus corcorani</i>)		
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	3	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	9	
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)	6	Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrys gryneus loki</i>)		
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	1	Gray hairstreak (<i>Strymon melinus pudica</i>)		
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers		
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa sp.</i>)		Afranius duskywing (<i>Erynnis afranius</i>)		
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)		
Clemence's blue (<i>Plebejus lupini monticola</i>)	2	unidentified white	3	Behr's metalmark (<i>Apodemia mormo virgulti</i>)	5	Funereal duskywing (<i>Erynnis funeralis</i>)	6	
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Properthus duskywing (<i>Erynnis properthus</i>)	3	
southern blue (<i>Glaucopteryx lygdamus australis</i>)	10	Harford's sulphur (<i>Colias Alexandra hartfordii</i>)	1	Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)		
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)	1	Northern white skipper (<i>Heliopetes ericetorum</i>)		
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)		
Acmon blue (<i>Icaricia acmon acmon</i>)	2	Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)		
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albesens</i>)		
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other		
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)		Unidentified	2	
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)		duskywing		
				California tortoiseshell (<i>Nymphalis californica</i>)				
Column Total	14	Column Total	12	Column Total	7	Column Total	23	
							Total	56

2022 Starlight Solar Project: Quino Checkerspot Butterfly Survey Form

Surveyor:

Brenda Bennett

Date:

3/27/22

Site Name:

Survey No:

4

Additional Surveyors Present:

Check-In Time:

Check-Out Time:

Map Synched (Circle One): Yes No

Area (Circle One): 1 2 3 4 5 6 7 8 9 10

Field Conditions

	Time (24 hr)	Temperature (F)	Wind Speed (mph)	Cloud Cover
Start	1100	72.4	3-4	5%
Mid				
End	1745	69.8	3-6	0%

Vegetation Communities Surveyed (include dominant spp.) Buckwheat scrub: ERI PAS + ERI MEM
Chaparral: ADE PAS + ADE SPA

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf daisy (Eriogonum fasciculatum)			Buckwheat (Eriogonum fasciculatum)	
Purple owl's clover (Castilleja exserta)			Ground pink (Lupinus albus)	
Shrubby sagebrush (Artemisia tridentata)			White flower currant (Ribes indecorum)	
Bird's beak (Ceanothus velutinus)			Sage (Salvia spp.)	
Chinese houses (Celastrus spp.)			Lotus (Acmispon <u>aegeophytos</u>)	X
Woolly daisy (Eriogonum fasciculatum)			Yerba santa (Eriodictyon spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (Lomatium spp.)	X
			Yellow pin cushion (Chaenactis glabriuscula var. glabriuscula)	X
			Phacelia (Phacelia spp.)	X
			Blue dicks (Dichelostemma capitatum)	
			Shrubby penstemon (Keckelia antirrhinoides)	
			Tidy tips (Layia spp.)	X
			Long-stemmed yarrow (Eriophyllum spp.)	X
			Yarrow (Achillea millefolium)	X
			Redmaids (Calandrinia menziesii)	X
			Sugar bush (Rhus ovata)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Haintrees	
California patch (Euphydryas californica)		Santa orange tip (Anthracinus sara sara)		California lady (Alopecurus beccowii californica)		Great purple haintree (Glyptotendipes haintree)	
California checkerspot (E. californica)		Desert of older's orange tip (A. californica)		Longhorn's admiral (E. menziesii longhorn)		Brown elfin (Glyptotendipes augustus)	
Common checkerspot (Euphydryas editha)		Common California angel (Euphydryas editha)		West coast lady (Vanessa annabella)		Periphrase haintree (Glyptotendipes editha)	8
Common checkerspot (Euphydryas editha)		Pearly marble (Euphydryas editha)	13	Red admiral (E. menziesii rubra)		Low purple haintree (Glyptotendipes editha)	
Common checkerspot (Euphydryas editha)		California white (Euphydryas editha)		Painted lady (E. menziesii)	2	Gray haintree (Glyptotendipes editha)	
Common checkerspot (Euphydryas editha)		Desert of older's white (Euphydryas editha)		American Virginia lady (E. menziesii virginica)		Skippers	
Common checkerspot (Euphydryas editha)		Common California angel (Euphydryas editha)		Underfoot lady (Vanessa annabella)		Albino duskywing (Glyptotendipes editha)	
Common checkerspot (Euphydryas editha)		Spring white (Euphydryas editha)	3	Metalmarks		Slender duskywing (Glyptotendipes editha)	
Common checkerspot (Euphydryas editha)		Unidentified white		Baird's metalmark (Glyptotendipes editha)	16	Funeral duskywing (Glyptotendipes editha)	14
Common checkerspot (Euphydryas editha)		Suphurs		Wright's metalmark (Glyptotendipes editha)		Propertus duskywing (Glyptotendipes editha)	2
Common checkerspot (Euphydryas editha)		Harbison's sulfur (Euphydryas editha)		Swallowtails		Mountain duskywing (Glyptotendipes editha)	
Common checkerspot (Euphydryas editha)		Orange sulfur (Euphydryas editha)	3	Pale swallowtail (Papilio eurymedon)		Ranchman white skipper (Papilio eurymedon)	
Common checkerspot (Euphydryas editha)		Slender orange (Euphydryas editha)		Western tiger swallowtail (Papilio eurymedon)		Fluffy skipper (Papilio eurymedon)	
Common checkerspot (Euphydryas editha)		Slender white (Euphydryas editha)		Asian swallowtail (Papilio eurymedon)		Ranchman white skipper (Papilio eurymedon)	
Common checkerspot (Euphydryas editha)		Flax flower sulfur (Euphydryas editha)		Miscellaneous		White checkered skipper (Papilio eurymedon)	
Common checkerspot (Euphydryas editha)		Unidentified sulfur		Monarch (Danaus plexippus)		Other	
Common checkerspot (Euphydryas editha)		Other		Common buckeye (Buccella caryocera)			
Common checkerspot (Euphydryas editha)				Mountain blue (Glyptotendipes editha)			
Common checkerspot (Euphydryas editha)				California tortoiseshell (Glyptotendipes editha)			
Column Total	1	Column Total	19	Column Total	18	Column Total	24

Total 102

Check In Time: 945 Check Out Time: 1700 Map Synced: Yes No

Area (Circle One):															1	2	3	4	5	6	7	8	9	10
Field Conditions																								
	Time (24 hr)				Temperature (°F)				Wind Speed (mph)				Cloud Cover											
Start	1000				66.2				0-1				0%											
Mid																								
End	1645				73.1				2-7				0%											

Vegetation Communities Surveyed (include dominant spp.)

Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	X
Birds-beak (<i>Cordylanthus rigidus</i>)			Red maids (<i>Calandrinia menziesii</i>)	X
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Rockcress (<i>Boechera</i> sp.)		X	Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma</i> / <i>Ericameria</i> spp.)		X	Tansy mustard (<i>Descurainia pinnata</i>)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Mexican manzanita (<i>Arctostaphylos pungens</i>)	
Popcorn flower (<i>Cryptantha</i> / <i>Plagiobothrys</i> / <i>Pectocarya</i> spp.)		X	Red stemmed filaree (<i>Erodium cicutarium</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	X
Dobie pod (<i>Trapidocarpum gracile</i>)			Southern tauschia (<i>Tauschia arguta</i>)	
Mountain mohogany (<i>Cercocarpus betuloides</i>)		X	London rocket (<i>Sisymbrium irio</i>)	
Lacepod (<i>Thysanocarpus</i> sp.)		X	California poppy (<i>Eschscholzia californica</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	3	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	2
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)	3	Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	2
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)	1	Perplexing hairstreak (<i>C. dumetorum affinis</i>)	48
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)	34	Red admiral (<i>V. atalanta rubria</i>)	1	Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	3	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	1	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)	3	Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	4
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white	7	Behr's metalmark (<i>Apodemia mormo virgulti</i>)	15	Funereal duskywing (<i>Erynnis funeralis</i>)	7
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	3
southern blue (<i>Glaucopsyche lygdamus australis</i>)	7	Harford's sulphur (<i>Colias Alexandra hartfordi</i>)	2	Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)	5	Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	7	Column Total	53	Column Total	25	Column Total	66
Total							151

Surveyor: Ian Hirschler Date: 3/30/22
Site Name: Starlight Solar Survey No: 4

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Vegetation Communities Surveyed (include dominant spp.)	Redshank Chaparral, buckwheat scrub, big sagebrush scrub, upland mustards
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Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	
Checkerspots		Whites		Ladies/Admirals		Hairstreaks		
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	5	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)		
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)		
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	1	
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)	3	Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrys gryneus loki</i>)		
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	3	Gray hairstreak (<i>Strymon melinus pudica</i>)		
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers		
Blues		Checkered (common) white (<i>Pontia protodice</i>)	1	Unidentified lady (<i>Vanessa sp.</i>)		Afranius duskywing (<i>Erynnis afranius</i>)		
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)		
Clemence's blue (<i>Plebejus lupini monticola</i>)	1	unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	1	Funereal duskywing (<i>Erynnis funeralis</i>)	2	
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)	0	Properthus duskywing (<i>Erynnis properthus</i>)		
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)	1	Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)		
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)	1	Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)		
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)		
Acmon blue (<i>Icaricia acmon acmon</i>)	6	Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)		
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albesens</i>)	1	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other		
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)				
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)				
				California tortoiseshell (<i>Nymphalis californica</i>)				
Column Total	7	Column Total	11	Column Total	13	Column Total	4	
							Total	35

Surveyor: DAVID K. FAULKNER Date: 31 MARCH 2022
 Site Name: STARLIGHT SALON Survey No: ~~3101~~ 2
 Additional Surveyors Present: _____
 Check-In Time: 0900 Check-Out Time: 1600 Map Synched (Circle One): Yes ☒ No ☐

Vegetation Communities Surveyed (include dominant spp.) Chaparral

[illegible]

Area (Circle One):		1	2	3	4	5	6	7	8	9	10
Field Conditions											
	Time (24 hr)	Temperature (°F)		Wind Speed (mph)		Cloud Cover					
Start	1200	60.7		3-7		25%					
Mid											
End	1645	59.3		2-6		15%					
Vegetation Communities Surveyed (include dominant spp.)											
Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,											
Host Plants		Diameter and Density (see note below)		Obs	Nectar Plants Continued						Obs
Dwarf plantain (<i>Plantago erecta</i>)					Buckwheat (<i>Eriogonum fasciculatum</i>)						
Purple owl's clover (<i>Castilleja exserta</i>)					Ground pink (<i>Linanthus dianthiflorus</i>)						
Snapdragon (<i>Antirrhinum coulterianum</i>)					Oak gooseberry (<i>Ribes quercetorum</i>)						
Birds-beak (<i>Cordylanthus rigidus</i>)					Red maids (<i>Calandrinia menziesii</i>)						X
Chinese houses (<i>Collinsia</i> spp.)					Lotus (<i>Acmispon</i> spp.)						
Woolly plantain (<i>Plantago patagonica</i>)					Yerba santa (<i>Eriodictyon</i> spp.)						
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)					Lomatium (<i>Lomatium</i> spp.)						X
					Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)						
Nectar Plants				Obs	Phacelia (<i>Phacelia</i> spp.)						X
Rockcress (<i>Boechera</i> sp.)				X	Blue dicks (<i>Dichelostemma capitatum</i>)						
Ceanothus (<i>Ceanothus</i> spp.)				X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)						
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)				X	Tidy tips (<i>Layia</i> spp.)						
Goldenbush (<i>Isocoma/Ericameria</i> spp.)				X	Tansy mustard (<i>Descurainia pinnata</i>)						X
Goldfields (<i>Lasthenia</i> spp.)				X	Mexican manzanita (<i>Arctostaphylos pungens</i>)						
Popcorn flower (<i>Cryptantha/Plagiobothrys/Pectocarya</i> spp.)				X	Red stemmed filaree (<i>Erodium cicutarium</i>)						X
Tarplants (<i>Deinandra</i> spp.)					Sugar bush (<i>Rhus ovate</i>)						X
Dobie pod (<i>Trapidocarpum gracile</i>)					Southern tauschia (<i>Tauschia arguta</i>)						
Mountain mohogany (<i>Cercocarpus betuloides</i>)				X	London rocket (<i>Sisymbrium irio</i>)						
Lacepod (<i>Thysanocarpus</i> sp.)				X	California poppy (<i>Eschscholzia californica</i>)						X
Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.		
Checkerspot		Whites		Ladies/Admirals		Hairstreaks					
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)		California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)		1			
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)		1			
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)		19			
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)	8	Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)					
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	2	Gray hairstreak (<i>Strymon melinus pudica</i>)					
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers					
Blues		Checkered (common) white (<i>Pontia protodice</i>)	1	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)					
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)	2	Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)					
Clemence's blue (<i>Plebejus lupini monticola</i>)	4	unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	12	Funereal duskywing (<i>Erynnis funeralis</i>)		4			
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)		2			
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordi</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)					
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)	2	Northern white skipper (<i>Heliopetes ericetorum</i>)					
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)					
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)					
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescent</i>)					
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other					
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)							
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)							
				California tortoiseshell (<i>Nymphalis californica</i>)							

Total	117
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Check In Time: 930 Check Out Time: 1630 Map Synced: Yes No

Area (Circle One):					1	2	3	4	5	6	7	8	9	10
Field Conditions														
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover										
Start	0930	62.0	1-3	0%										
Mid														
End	1615	77.1	2-6	5%										

Vegetation Communities Surveyed (include dominant spp.)	
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Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Red maids (<i>Calandrinia menziesii</i>)	X
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Rockcress (<i>Boechera</i> sp.)		X	Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma</i> / <i>Ericameria</i> spp.)		X	Tansy mustard (<i>Descurainia pinnata</i>)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Mexican manzanita (<i>Arctostaphylos pungens</i>)	
Popcorn flower (<i>Cryptantha</i> / <i>Plagiobothrys</i> / <i>Pectocarya</i> spp.)		X	Red stemmed filaree (<i>Erodium cicutarium</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	X
Dobie pod (<i>Trapidocarpum gracile</i>)			Southern tauschia (<i>Tauschia arguta</i>)	
Mountain mohagany (<i>Cercocarpus betuloides</i>)		X	London rocket (<i>Sisymbrium irio</i>)	X
Lacepod (<i>Thysanocarpus</i> sp.)			California poppy (<i>Eschscholzia californica</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	3	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	2
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	23
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)	35	Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	3	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	4	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)	2	unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	24	Funereal duskywing (<i>Erynnis funeralis</i>)	7
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Properitius duskywing (<i>Erynnis properitius</i>)	4
southern blue (<i>Glaucopsyche lygdamus australis</i>)	4	Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)	1	Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	6	Column Total	43	Column Total	27	Column Total	36
Total							112

Surveyor: DAVID M. FAULKNER Date: 5 APRIL 2022
 Site Name: Starlight Solar Survey No: ~~52~~ 3
 Additional Surveyors Present: —
 Check-In Time: 0900 (63°F) Check-Out Time: 1400 Map Synched (Circle One): Yes No

Area (Circle One):					1	2	3	4	5	6	7	8	9	10
Field Conditions														
	Time (24 hr)	Temperature (F)	Wind Speed (mph)	Cloud Cover										
Start	0945	71°	6 mph	clear										
Mid	1200	83°	2 mph	clear										
End	1400	84°	3-4 mph	clear										

Vegetation Communities Surveyed (include dominant spp.) Chaparral

Flowering - Plant Growth, China, Lupines

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	Not flowering ✓
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Lianthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	not flowering ✓
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	✓
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	✓
Bush groundsel (<i>Senecio flaccidus</i> var. <i>douglasii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)	not flowering	✓	Snapdragon penstemon (<i>Koeckia antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		✓	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Sarcocolla/Eriogonum</i> spp.)		✓	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		✓	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		✓	Redmaids (<i>Calandrinia menziesii</i>)	
Tamplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovata</i>)	

[illegible]

Surveyor: Ian Hirschler Date: 4/5/22
Site Name: Starlight Solar Survey No: 6

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Vegetation Communities Surveyed (include dominant spp.)	Mixed chaparral and buckwheat scrub

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara</i>)	5	California sister (<i>Adelpha californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>Chlosyne gabbii</i>)		Desert orangetip (<i>Anthocharis cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Western elfin (<i>Callophrys augustinus iroides</i>)	3
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (C. <i>perplexa</i>)	3
Chalcedon checkerspot (<i>Euphydryas chalcedona chalcedona</i>)		California marble (<i>Euchloe hyantis</i>)	7	Red admiral (<i>Vanessa atalanta</i>)		Loki hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>Vanessa cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American lady (<i>Vanessa virginiensis</i>)		Skippers	
Blues		Checkered white (<i>Pontia protodice</i>)	1	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exilis</i>)		Spring white (<i>Pontia sisymbrii</i>)		Metalmarks		Funereal duskywing (<i>Erynnis funeralis</i>)	3
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white	1	Behr's metalmark (<i>Apodemia virgulti</i>)	1	Properthus duskywing (<i>Erynnis properthus</i>)	
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)	1	Mournful duskywing (<i>Erynnis tristis</i>)	
Southern silvery blue (<i>Glaucopteryx ixdamus australis</i>)	11	Harford's sulphur (<i>Colias harfordii</i>)	2	Swallowtails		White checkered-skipper (<i>Pyrgus albescens</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)	1	Northern white skipper (<i>Heliopetes erictorum</i>)	
San Bernardino blue (<i>Euphyllotes bernardino</i>)		Sleepy orange (<i>Eurema nicippe</i>)	1	Western tiger swallowtail (<i>Papilio rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Plebejus acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>Papilio zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		California dogface (<i>Zerene eurydice</i>)		Miscellaneous		Rural skipper (<i>Ochlodes agricola</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Phylotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia</i>)			
Smoky arrowhead blue (<i>Glaucopteryx piasus umbrus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)			
Unidentified blue				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	11	Column Total	17	Column Total	12	Column Total	9
Total							49

2022 Starlight Solar Project: Quino Checkerspot Butterfly Survey Form

Surveyor:

Brenda Bennett

Date:

4/6/22

Site Name:

Survey No:

5

Additional Surveyors Present:

Check-In Time:

Check-Out Time:

Map Synched (Circle One): Yes No

Area (Circle One): 1 2 3 4 5 6 7 8 9 10

Field Conditions

	Time (24 hr)	Temperature (F)	Wind Speed (mph)	Cloud Cover
Start	0915	72.4	4-11	0%
Mid				
End	1600	79.4	4-12	0%

Vegetation Communities Surveyed (include dominant spp.)

Chaparral + Palo Verde scrub

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (Plantago erecta)			White flower currant (Ribes indecorum)	
Purple owl's clover (Castilleja exserta)			Sage (Salvia spp.)	Columbiana
Shardragon (Antirrhinum coulterianum)			Lotus (Acmispon spp.)	
Birds-beak (Cordylanthus rigidus)			Yerba santa (Erodium spp.)	trichocalyx
Chinese houses (Collinsia spp.)			Lomatium (Lomatium spp.)	
Woolly plantain (Plantago patagonica)			Yellow pincushion (Chaenactis glabriuscula var. glabriuscula)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Phacelia (Phacelia spp.)	
Nectar Plants		Obs		
Bush groundsel (Senecio californicus)		X	Blue dicks (Dichelostemma capitatum)	
Ceanothus (Ceanothus spp.)		X	Shardragon perstemon (Keckelia antirrhinoides)	
Fiddleneck (Amsinckia menziesii var. intermedia)		X	Tidy tips (Layia spp.)	
Goldenbush (Isocoma Encarnaria spp.)		X	Long-stemmed yarrow (Eriophyllum spp.)	
Goldfields (Lasthenia spp.)		X	Yarrow (Achillea millefolium)	
Pocom flower (Cryptantha Papobothrys spp.)		X	Redmaids (Calandrinia menziesii)	X
Caulanthus hetero.		X	Sugar bush (Rhus ovata)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hearts	
California checkerspot (Euphydryas californica)		Santa orange (Glyptotendipes californicus)		California lady (Apostrophe bedford californica)		Small purple heart (Euphydryas editha)	
Black checkerspot (E. editha)		Desert (Glyptotendipes californicus)		Longhorn's admiral (Glyptotendipes californicus)		Brown elfin (Glyptotendipes californicus)	
Queen checkerspot (Euphydryas editha)		Common California (Glyptotendipes californicus)		West coast lady (Glyptotendipes californicus)		Poppywing heart (Euphydryas editha)	8
California checkerspot (E. editha)		Peary (Glyptotendipes californicus)	7	Red admiral (Glyptotendipes californicus)		Large purple heart (Euphydryas editha)	
Queen checkerspot (Euphydryas editha)		Cabbage white (Pieris rapae)		Parula (Glyptotendipes californicus)	1	Gray heart (Euphydryas editha)	
Black checkerspot (Euphydryas editha)		Black & white (Pieris rapae)		Arctic (Glyptotendipes californicus)		Skippers	
Black checkerspot (Euphydryas editha)		Black & white (Pieris rapae)		Unidentified lady (Glyptotendipes californicus)		Arctic daisywing (Glyptotendipes californicus)	
Blues		Spring white (Pieris rapae)		Metamorphs		Sluggish daisywing (Glyptotendipes californicus)	
Western purple blue (Glyptotendipes californicus)		Unidentified white		Blue & white (Glyptotendipes californicus)	8	European daisywing (Glyptotendipes californicus)	
Common blue (Glyptotendipes californicus)		Sulphurs		White & black (Glyptotendipes californicus)		Propagator daisywing (Glyptotendipes californicus)	4
Arctic blue (Glyptotendipes californicus)	7	Harvest's sulphur (Glyptotendipes californicus)		Swallowtails		Mountain daisywing (Glyptotendipes californicus)	10
Black & white (Glyptotendipes californicus)		Orange sulphur (Glyptotendipes californicus)		Pale swallowtail (Papilio eurymedon)		Common white skipper (Glyptotendipes californicus)	
Black & white (Glyptotendipes californicus)		Sluggish orange (Glyptotendipes californicus)		Western light swallowtail (P. eurymedon)		Early skipper (Glyptotendipes californicus)	
Black & white (Glyptotendipes californicus)		Early sulphur (Glyptotendipes californicus)		Arctic swallowtail (P. eurymedon)		Small skipper (Glyptotendipes californicus)	
Black & white (Glyptotendipes californicus)		Early blue (Glyptotendipes californicus)		Miscellaneous		Yellow & black (Glyptotendipes californicus)	
Black & white (Glyptotendipes californicus)		Unidentified white		Mountain (Glyptotendipes californicus)		Other	
Black & white (Glyptotendipes californicus)		Other		Common blue (Glyptotendipes californicus)			
Black & white (Glyptotendipes californicus)				Mountain (Glyptotendipes californicus)			
Black & white (Glyptotendipes californicus)				California (Glyptotendipes californicus)			
Column Total	7	Column Total	7	Column Total	9	Column Total	22

Total 45

Area (Circle One):		1	2	3	4	5	6	7	8	9	10
Field Conditions											
	Time (24 hr)	Temperature (°F)		Wind Speed (mph)		Cloud Cover					
Start	0830	67.5		8-14		0%					
Mid											
End	1515	76.1		5-12		0%					
Vegetation Communities Surveyed (include dominant spp.)											
Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,											
Host Plants		Diameter and Density (see note below)		Obs	Nectar Plants Continued						Obs
Dwarf plantain (<i>Plantago erecta</i>)					Buckwheat (<i>Eriogonum fasciculatum</i>)						
Purple owl's clover (<i>Castilleja exserta</i>)					Ground pink (<i>Linanthus dianthiflorus</i>)						
Snapdragon (<i>Antirrhinum coulterianum</i>)					Oak gooseberry (<i>Ribes quercetorum</i>)						
Birds-beak (<i>Cordylanthus rigidus</i>)					Red maids (<i>Calandrinia menziesii</i>)						
Chinese houses (<i>Collinsia</i> spp.)					Lotus (<i>Acmispon</i> spp.)						X
Woolly plantain (<i>Plantago patagonica</i>)					Yerba santa (<i>Eriodictyon</i> spp.)						
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)					Lomatium (<i>Lomatium</i> spp.)						X
					Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)						
Nectar Plants				Obs	Phacelia (<i>Phacelia</i> spp.)						X
Rockcress (<i>Boechera</i> sp.)				X	Blue dicks (<i>Dichelostemma capitatum</i>)						
Ceanothus (<i>Ceanothus</i> spp.)				X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)						
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)				X	Tidy tips (<i>Layia</i> spp.)						X
Goldenbush (<i>Isocoma/Ericameria</i> spp.)				X	Tansy mustard (<i>Descurainia pinnata</i>)						X
Goldfields (<i>Lasthenia</i> spp.)				X	Mexican manzanita (<i>Arctostaphylos pungens</i>)						
Popcorn flower (<i>Cryptanthal/Plagiobothrys/Pectocarya</i> spp.)				X	Red stemmed filaree (<i>Erodium cicutarium</i>)						X
Tarplants (<i>Deinandra</i> spp.)					Sugar bush (<i>Rhus ovate</i>)						X
Dobie pod (<i>Trapidocarpum gracile</i>)				X	Southern tauschia (<i>Tauschia arguta</i>)						
Mountain mohogany (<i>Cercocarpus betuloides</i>)				X	London rocket (<i>Sisymbrium irio</i>)						X
Lacepod (<i>Thysanocarpus</i> sp.)					California poppy (<i>Eschscholzia californica</i>)						X
Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.		
Checkerspot		Whites		Ladies/Admirals		Hairstreaks					
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	2	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)					
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)	1	Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)		1			
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)		15			
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)	3	Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrys gryneus loki</i>)					
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	3	Gray hairstreak (<i>Strymon melinus pudica</i>)					
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers					
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)					
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)	1	Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)		1			
Clemence's blue (<i>Plebejus lupini monticola</i>)	1	unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	37	Funereal duskywing (<i>Erynnis funeralis</i>)		9			
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)		2			
southern blue (<i>Glaucopsyche lygdamus australis</i>)	3	Harford's sulphur (<i>Colias Alexandra hartfordi</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)					
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)	1	Northern white skipper (<i>Heliopetes ericetorum</i>)					
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)					
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)	1	Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)					
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)					
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other					
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)							
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)							
				California tortoiseshell (<i>Nymphalis californica</i>)</							

Surveyor: Ian Hirschler Date: 4/7/22
Site Name: Starlight Solar Survey No: _____

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Vegetation Communities Surveyed (include dominant spp.)	Redshank chaparral, upland mustards
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Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara</i>)		California sister (<i>Adelpha californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>Chlosyne gabbii</i>)		Desert orangetip (<i>Anthocharis cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Western elfin (<i>Callophrys augustinus iroides</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (C. <i>perplexa</i>)	3
Chalcedon checkerspot (<i>Euphydryas chalcedona chalcedona</i>)		California marble (<i>Euchloe hyantis</i>)	2	Red admiral (<i>Vanessa atalanta</i>)		Loki hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>Vanessa cardui</i>)	2	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American lady (<i>Vanessa virginiensis</i>)		Skippers	
Blues		Checkered white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa sp.</i>)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exilis</i>)		Spring white (<i>Pontia sisymbrii</i>)		Metalmarks		Funereal duskywing (<i>Erynnis funeralis</i>)	3
Clemence's blue (<i>Plebejus lupini monticola</i>)	4	unidentified white		Behr's metalmark (<i>Apodemia virgulti</i>)	28	Proterpius duskywing (<i>Erynnis proterpius</i>)	
Western tailed blue (<i>Evers amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Mournful duskywing (<i>Erynnis tristis</i>)	
Southern silvery blue (<i>Glaucopteryx lygdamus australis</i>)		Harford's sulphur (<i>Colias harfordii</i>)		Swallowtails		White checkered-skipper (<i>Pyrgus albescens</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopterus erictorum</i>)	
San Bernardino blue (<i>Euphilotes bernardino</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>Papilio rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	1
Acmon blue (<i>Plebejus acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>Papilio zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		California dogface (<i>Zerene eurydice</i>)		Miscellaneous		Rural skipper (<i>Ochlodes agricola</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia</i>)			
Smoky arrowhead blue (<i>Glaucopteryx piasus imbrus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)			
Unidentified blue				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	4	Column Total	2	Column Total	30	Column Total	7
Total							43

Surveyor: Ian Hirschler Date: 4/8/22
Site Name: Starlight Solar Survey No: 7

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Vegetation Communities Surveyed (include dominant spp.)	Redshank chaparral and coastal sage scrub

Butterfly Species		No.	Butterfly Species		No.	Butterfly Species		No.	Butterfly Species		No.	
Checkerspots			Whites			Ladies/Admirals			Hairstreaks			
California patch (<i>Chlosyne californica</i>)			Sara orangetip (<i>Anthocharis sara</i>)			California sister (<i>Adelpha californica</i>)			Great purple hairstreak (<i>Atlides halesus corcorani</i>)			
Gabb's checkerspot (<i>Chlosyne gabbii</i>)			Desert orangetip (<i>Anthocharis cethura</i>)			Lorquin's admiral (<i>Limenitis lorquini</i>)			Western elfin (<i>Callophrys augustinus iroides</i>)		1	
Quino checkerspot (<i>Euphydryas editha quino</i>)			Common California ringlet (<i>Coenonympha californica</i>)			West coast lady (<i>Vanessa annabella</i>)			Perplexing hairstreak (<i>C. perplexa</i>)		8	
Chalcedon checkerspot (<i>Euphydryas. chalcedona chalcedona</i>)			California marble (<i>Euchloe hyantis</i>)		12	Red admiral (<i>Vanessa atalanta</i>)			Loki hairstreak (<i>Callophrus gryneus loki</i>)			
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)			Cabbage white (<i>Pieris rapae</i>)			Painted lady (<i>Vanessa cardui</i>)		1	Gray hairstreak (<i>Strymon melinus pudica</i>)			
Mylitta crescent (<i>Phyciodes mylitta</i>)			Becker's white (<i>Pontia beckeri</i>)			American lady (<i>Vanessa virginiensis</i>)			Skippers			
Blues			Checkered white (<i>Pontia protodice</i>)			Unidentified lady (<i>Vanessa sp.</i>)			Afranius duskywing (<i>Erynnis afranius</i>)			
Western pygmy-blue (<i>Brephidium exilis</i>)			Spring white (<i>Pontia sisymbri</i>)			Metalmarks			Funereal duskywing (<i>Erynnis funeralis</i>)		2	
Clemence's blue (<i>Plebejus lupini monticola</i>)			unidentified white			Behr's metalmark (<i>Apodemia virgulti</i>)		25	Propertius duskywing (<i>Erynnis propertius</i>)		3	
Western tailed blue (<i>Everes amyntula</i>)			Sulphurs			Wright's metalmark (<i>Calephelis wrighti</i>)			Mournful duskywing (<i>Erynnis tristis</i>)			
Southern silvery blue (<i>Glaucopsyche lygdamus australis</i>)		5	Harford's sulphur (<i>Colias harfordii</i>)			Swallowtails			White checkered-skipper (<i>Pyrgus albescentis</i>)			
Edward's blue (<i>Hemiargus ceraunus gyas</i>)			Orange sulphur (<i>Colias eurytheme</i>)			Pale swallowtail (<i>Papilio eurymedon</i>)			Northern white skipper (<i>Heliopetes ericetorum</i>)			
San Bernardino blue (<i>Euphilotes bernardino</i>)			Sleepy orange (<i>Eurema nicippe</i>)			Western tiger swallowtail (<i>Papilio rutulus</i>)			Fiery skipper (<i>Hylephila phyleus</i>)			
Acmon blue (<i>Plebejus acmon</i>)			Dainty sulphur (<i>Nathalis iole</i>)			Anise swallowtail (<i>Papilio zelicaon</i>)			Sandhill skipper (<i>Polites sabuleti</i>)			
Marine blue (<i>Leptotes marina</i>)			California dogface (<i>Zerene eurydice</i>)			Miscellaneous			Rural skipper (<i>Ochlodes agricola</i>)			
Echo azure (<i>Celastrina echo</i>)			unidentified sulphur			Monarch (<i>Danaus plexippus</i>)			Other			
Sonoran blue (<i>Philotes sonorensis</i>)			Other			Common buckeye (<i>Junonia coenia</i>)			Un ID		1	
Smoky arrowhead blue (<i>Glaucopsyche piasus umbrus</i>)						Mourning cloak (<i>Nymphalis antiopa</i>)			duskywing			
Unidentified blue						California tortoiseshell (<i>Nymphalis californica</i>)						
Column Total		5	Column Total		12	Column Total		26	Column Total		15	
											Total	58

2020 Quino Checkerspot Butterfly Survey Form

Surveyor(s): M. Rocks, T. Rocks Date: 4/14/22
 Site Name: Starline Site Visit No: 8
 Area(s) Surveyed: 1+2 Acres Surveyed: _____ Survey Time: 6.25 hr Acres per Hour: _____
 Other Surveyors Present: _____

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	<u>1015</u>	<u>64</u>	<u>3-8</u>	<u>1%</u>
End	<u>1630</u>	<u>68</u>	<u>7-12 (15)</u>	<u>0%</u>

Vegetation Communities Surveyed (inc. dominant spp.) Redshank chaparral / mixed transitional

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)		onion (<i>Allium</i> spp.)	
woolly plantain (<i>Plantago patagonica</i>)		riddleneck (<i>Amelanchier intermedia</i> / <i>A. menziesii</i>)	✓
Coulter's snapdragon (<i>Antirrhinum coulterianum</i>)		goldfaster (<i>Bloomeria</i> spp.)	
purple owl's clover (<i>Castilleja exserta</i>)		popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	✓
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	
birds-beak (<i>Cordylanthus rigidus</i>)		goldfields (<i>Lasthenia</i> ssp. <u>gracilis</u>)	✓
		ground pink (<i>Linanthus dionaeiflorus</i>)	
Host Plant Mapping Updated (circle) Yes No		New Area or Existing Area (circle) New Existing Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Family Papilionidae (Parnassians and Swallowtails)		Family Nymphalidae (Brushfooted Butterflies)	
Pale Swallowtail (<i>Papilio eurymedon</i>) - 1	1	Subfamily Nymphalinae (True Brushfoots)	
Western Tiger Swallowtail (<i>P. rutulus</i>)		Leona Checkerspot (<i>Chlosyne leona</i>)	
Anise Swallowtail (<i>P. zylicoon</i>)		California Patch (<i>C. californica</i>)	
Family Pieridae (Whites and Sulphurs)		Gabb's Checkerspot (<i>C. gabbii</i>)	
Desert Orange-tip (<i>Anthocharis cethura</i>)		Chalcedon Checkerspot (<i>Euphydryas chalcedona</i>)	
Pacific Sara Orange-tip (<i>A. sara sara</i>) - 11	2	Quino Checkerspot (<i>E. editha quino</i>)	
Orange Sulphur (<i>Colias eurytheme</i>)		Common Buckeye (<i>Limenitis coenia</i>)	
Sleepy Orange (<i>Eurema nicippe</i>)		Mourning Cloak (<i>Nymphalis antiopa</i>)	
Cloudless Sulphur (<i>Phoebastria sennae</i>)		California Tortoiseshell (<i>N. californica</i>)	
Cabbage White (<i>Pieris rapae</i>)		Mytila Crescent (<i>Phyciodes mytila</i>)	
Becker's White (<i>Pontia beckeri</i>)		West Coast Lady (<i>Vanessa annabella</i>)	
Checkered (Common) White (<i>P. protodice</i>)		Red Admiral (<i>V. atalanta</i>)	
Spring White (<i>P. alcyon</i>)		Painted Lady (<i>V. cardui</i>)	
unidentified white - <u>MT, HT</u>	11	American (Virginia) Lady (<i>V. virginica</i>)	
unidentified sulphur		unidentified lady (<i>Vanessa</i> sp.) - 11	2
Family Lycaenidae (Gossamer-wing Butterflies)		Subfamily Limenitidinae (Admirals and Relatives)	
Subfamily Theclinae (Hairstreaks)		California Sister (<i>Adelpha bredowii</i>)	
Great Purple Hairstreak (<i>Atlides halesus</i>)		Lorquin's Admiral (<i>Limenitis lorquini</i>)	
Brown Elfin (<i>Callophrys augustinus</i>)		Subfamily Satyrinae (Satyrs)	
Bramble Hairstreak (<i>C. dumetorum</i>) - <u>HT, HT</u>	10	California Common Ringlet (<i>Coenonympha tulia californica</i>)	
Gray Hairstreak (<i>Strymon melinus</i>)		Subfamily Danaeinae (Monarchs)	
Subfamily Polyommastinae (Blues)		Monarch (<i>Danaus plexippus</i>)	
Western Pygmy-Blue (<i>Erephidulum exilis</i>)		Queen (<i>Danaus gilippus</i>)	
Western Tailed Blue (<i>Eversmannia amyntula</i>)		Family Hesperidae (Skippers)	
Silvery Blue (<i>Glaucopsyche lygdamus</i>) - 1	1	Subfamily Pyrginae (Spread-wing Skippers)	
Ceraunus (Edward's) Blue (<i>Hemiarctus ceraunus</i>)		Funeral Duskywing (<i>Erynnis funeralis</i>) - 11	3
Marine Blue (<i>Leptotes marina</i>)		Mourning Duskywing (<i>E. tristis</i>)	
unidentified blue		Fiery Skipper (<i>Hylephila phylus</i>)	
Family Riodinidae (Metalmarks)		White Checkered-Skipper (<i>Pyrgus albescens</i>)	
Behr's Metalmark (<i>Apodemia mormo virgata</i>) - <u>HT</u>	5	unidentified skipper	
Wright's Metalmark (<i>Coleophila wrighti</i>)		Other	
		unidentified butterfly	
Column Subtotal	52	Column Subtotal	8
		Total	60

Behr's - HT HT HT
HT 1 - 21

Duskywing - HT
un ID, maybe - 3

Surveyor: Ian Hirschler Date: 4/14/22
 Site Name: Starlight Solar Survey No: 7

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Area (Circle One):											1	2	3	4	5	6	7	8	9	10
Field Conditions																				
	Time (24 hr)				Temperature (°F)				Wind Speed (mph)				Cloud Cover							
Start	0930				68.8				2-5				0							
Mid	1300				68.9				4-9				0							
End	1600				72.3				3-7				0							

Vegetation Communities Surveyed (include dominant spp.)	Redshank chaparral and buckwheat scrub

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus</i> spp.)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
California butterweed (<i>Senecio californicus</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)			Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		X	Manzanita (<i>Arctostaphylos</i> spp.)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)	Penstemon	X	Sugar bush (<i>Rhus ovata</i>)	

[illegible]

2022 Starlight Solar Project: Quino Checkerspot Butterfly Survey Form

Surveyor:

Brenda Bennett

Date:

4/14/2022

Site Name:

Survey No:

6

Additional Surveyors Present:

NA

Check-In Time:

Check-Out Time:

Map Synched (Circle One): Yes No

Area (Circle One): 1 2 3 4 5 6 7 8 9 10

Field Conditions

	Time (24 hr)	Temperature (F)	Wind Speed (mph)	Cloud Cover
Start	1030	68.4	1-4	0%
Mid				
End	1715	71.8	1-4	0%

Vegetation Communities Surveyed (include dominant spp.)

Buckwheat scrub & chaparral

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)	low, few	X	Ground pink (<i>Linanthus anthinus bellus</i>)	X
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordianthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	X
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Adonis</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Erodium</i> spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	X
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Rush groundsel (<i>Senecio obtusifolius californicus</i>)		X	Blue dicks (<i>Dichostemma capitatum</i>)	X
Scarlet gilia (<i>Scilla</i> spp.)	leucodermis	X	Snapdragon pentstemon (<i>Keckelia antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Laya</i> spp.)	X
Goldenbush (<i>Encarnia</i> spp.)	linearifolia	X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Prickly flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Denandra</i> spp.)			Sugar bush (<i>Rhus ovata</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspot		Whites		Ladies/Admirals		Hainstreets	
California patch (<i>Chrysippe californica</i>)		Sagewing (<i>Anthracinus sara</i>)	1	California sector (<i>Lycaena californica</i>)		Small purple hairstreak (<i>Stictia californica</i>)	1
Black checkerspot (<i>Chrysippe</i>)		Desert (<i>Anthracinus</i>)		Longwing admiral (<i>Lycaena longwing</i>)		Brown elf (<i>Callophrys augustinus</i>)	3
Queen checkerspot (<i>Chrysippe</i>)		Common California (<i>Chrysippe</i>)		West coast lady (<i>Stenobothris</i>)		Peppermint hairstreak (<i>Chrysippe</i>)	7
Chrysippe (<i>Chrysippe</i>)		Flower (<i>Chrysippe</i>)	10	East admiral (<i>Lycaena</i>)		Small purple hairstreak (<i>Chrysippe</i>)	
Florida checkerspot (<i>Chrysippe</i>)		California white (<i>Chrysippe</i>)		Painted lady (<i>Vanessa</i>)	1	Gray hairstreak (<i>Stictia</i>)	
Myrtle checkerspot (<i>Chrysippe</i>)		Black (<i>Chrysippe</i>)		American Virginia lady (<i>Vanessa</i>)		Skippers	
Blues		Flower (<i>Chrysippe</i>)	10	Unidentified lady (<i>Vanessa</i>)		Albino duskywing (<i>Gynnis</i>)	
Western pygmy blue (<i>Gynnis</i>)		Spring white (<i>Chrysippe</i>)		Metamorphs		Sleepy duskywing (<i>Gynnis</i>)	
Common blue (<i>Gynnis</i>)		Unidentified white		Butterfly (<i>Vanessa</i>)	4	Funeral duskywing (<i>Gynnis</i>)	
Western tailed blue (<i>Gynnis</i>)		Sulphurs		Wing (<i>Vanessa</i>)		Propertus duskywing (<i>Gynnis</i>)	6
Southwestern blue (<i>Gynnis</i>)	10	Harvard's sulphur (<i>Gynnis</i>)		Swallowtails		Mountain duskywing (<i>Gynnis</i>)	7
Unidentified blue (<i>Gynnis</i>)		Orange sulphur (<i>Gynnis</i>)	1	Pale swallowtail (<i>Papilio</i>)		Butterfly white skipper (<i>Stictia</i>)	
Florida blue (<i>Gynnis</i>)		Sleepy orange (<i>Gynnis</i>)		Western tiger swallowtail (<i>Papilio</i>)		Butterfly white skipper (<i>Stictia</i>)	
Arizona blue (<i>Gynnis</i>)		Dark sulphur (<i>Gynnis</i>)		Arctic swallowtail (<i>Papilio</i>)		Butterfly white skipper (<i>Stictia</i>)	
Marbled blue (<i>Gynnis</i>)		Orange sulphur (<i>Gynnis</i>)		Miscellaneous		White checkerspot (<i>Stictia</i>)	
Little blue (<i>Gynnis</i>)		Unidentified sulphur		Marbled (<i>Gynnis</i>)		Other	
Seaside blue (<i>Gynnis</i>)		Other		Common butterfly (<i>Gynnis</i>)			
Unidentified blue				Mourning dove (<i>Nymphalis</i>)			
				California butterfly (<i>Gynnis</i>)			
Column Total	10	Column Total	22	Column Total	5	Column Total	24
						Total	61

Surveyor: Brian Lohstroh Date: 4/14/2022
 Site Name: Starlight Solar Survey No: 8
 Additional Surveyors Present: None

Check-In Time: 0945 Check-Out Time 1615 Map Synched (Circle One): ☒ Yes No

Area (Circle One): 1 2 3 4 5 6 7 8 9 10

Field Conditions

	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	945	68	0-3	0%
Mid	1300	70	3-10	0%
End	1615	67	3-12	0%

Vegetation Communities Surveyed (include dominant spp.)	Red-shank/southern mixed chap,buckwheat scrub
Adenostema sparsifolium, A. fasciculatum, Eriogonum fasciculatum	

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	X
Purple owl's clover (<i>Castilleja exserta</i>)		X	Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	X
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	X
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	X
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)		California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atitides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)	5	Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	1	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phycodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	13	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)	1	unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	38	Funereal duskywing (<i>Erynnis funeralis</i>)	8
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Properius duskywing (<i>Erynnis properius</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	4	Harford's sulphur (<i>Colias Alexandra hartfordii</i>)	2	Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescent</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	5	Column Total	20	Column Total	39	Column Total	8
Total							72

2022 Starlight Solar Project: Quino Checkerspot Butterfly Survey Form

Surveyor: David K. Faulkner Date: 15 APRIL 2022
 Site Name: Starlight Solar Project Survey No: 6
 Additional Surveyors Present: 0
 Check-In Time: 0900 Check-Out Time: 1600 Map Synched (Circle One): Yes No

Area (Circle One):					1	2	3	4	5	6	7	8	9	10
Field Conditions														
	Time (24 hr)	Temperature (F)	Wind Speed (mph)	Cloud Cover										
Start	0900	61°	5.4 (Average)	~10% high clds										
Mid	1200	72.7°	2 (")	~50% " "										
End	1600	74°	3.0 (")	~20% " "										

Vegetation Communities Surveyed (include dominant spp.) Chaparral
Erodium, Campobea, nightshade, CUA, Penny

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>) Not flowering	✓
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Lilanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>) Not Flowering	✓
Birds-beak (<i>Cardylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	✓
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	✓
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.) Not Flowering	✓
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	✓
			Yellow pincushion (<i>Cheeractis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	✓
Bush groundsel (<i>Senecio flaccidus</i> var. <i>douglasii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	✓
Ceanothus (<i>Ceanothus</i> spp.)	Not flowering	✓	Snapdragon penstemon (<i>Keckelia antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		✓	Tidy tips (<i>Lysia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		✓	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	✓
Goldfields (<i>Lasthenia</i> spp.)		✓	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		✓	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Desmodium</i> spp.)			Sugar bush (<i>Rhus ovata</i>) QUATA	✓

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hainstrecks	
California patch (<i>Chloroceryle californica</i>)		Sans orange tip (<i>Anthochers sans sans</i>)		California sister (<i>Adelpha bledowii californica</i>)		Great purple hainstreack (<i>Hides hideos coronatus</i>)	
Gabb's checkerspot (<i>G. gabbii</i>)		Desert (red) orange tip (<i>A. oestus</i>)		Lorquin's admiral (<i>Junonia lorquin</i>)		Brown elfin (<i>Calophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hainstreack (<i>C. dunstrum affinis</i>)	2
Chalcedon checkerspot (<i>E. chalcedon chalcedon</i>)		Pearly marble (<i>Euchloe hyantis</i>)	3	Red admiral (<i>V. atalanta rubris</i>)		Loki juniper hainstreack (<i>Calophrys gryneus loki</i>)	
Usinta checkerspot (<i>Thessalia beris wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hainstreack (<i>Stymon melinus pudica</i>)	
Myitta crescent (<i>Phycodes myitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)		Unidentified lady (<i>Vanessa</i> sp.)		Atanus duskywing (<i>Erynnis atanus</i>)	
Western pygmy blue (<i>Brachidum exilis</i>)		Spring white (<i>P. silymbis</i>)		Motmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Oenone's blue (<i>Plebejus lupini monticola</i>)		Unidentified white	2	Behr's metalmark (<i>Apodemia meme-vigult</i>)	31	Funeral duskywing (<i>Erynnis funeralis</i>)	3
Western tailed blue (<i>Evers amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calophyllis wright</i>)		Properius duskywing (<i>Erynnis properius</i>)	1
southern blue (<i>Glaucopsyche pygmaus australis</i>)	2	Hartford's sulphur (<i>Colias alexandra hartfordi</i>)		Swallowtails		Mourning duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemargus edwardsi gyes</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Haliopetes eriborun</i>)	
Reck's blue (<i>Hemargus isole</i>)		Sleepy orange (<i>Euryne skipper</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fairy skipper (<i>Hylephila phylus</i>)	
Aemon blue (<i>Ionides aemon aemon</i>)		Saintly sulphur (<i>Nathalia kik</i>)		Arise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Poies sabule</i>)	
Marine blue (<i>Lupatodes marine</i>)		Cloudless sulfur (<i>Phoebus sennae marcellae</i>)		Miscellaneous		White (common) checkered skipper (<i>Pyrgus abecons</i>)	
Echo azure (<i>Calistina echo</i>)		Unidentified sulphur		Monarch (<i>Danais plexippus</i>)		Other <i>G. p. p. p.</i>	3
Sonoran blue (<i>Philetas sonoranensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	2	Column Total	5	Column Total	31	Column Total	9
				Total			

Surveyor: Ian Hirschler Date: 4/15/22
Site Name: Starlight Solar Survey No: _____

Check-In Time:	Check-Out Time	Map Synched (Circle One):	Yes	No
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Vegetation Communities Surveyed (include dominant spp.)

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)		California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	1
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myllitta crescent (<i>Phycodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	5	Unidentified lady (<i>Vanessa sp.</i>)		Afranius duskywing (<i>Erynnis afranius</i>)	1
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	15	Funereal duskywing (<i>Erynnis funeralis</i>)	1
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Properthus duskywing (<i>Erynnis properthus</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra harfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fieri skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescentis</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
Smoky arrowhead blue ²				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	2	Column Total	5	Column Total	15	Column Total	3
Total							25

Area (Circle One):		1	2	3	4	5	6	7	8	9	10
Field Conditions											
	Time (24 hr)	Temperature (°F)		Wind Speed (mph)		Cloud Cover					
Start	0900	60.2		3-8		20%					
Mid											
End	1545	73.0		2-7		30%					
Vegetation Communities Surveyed (include dominant spp.)											
Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,											
Host Plants		Diameter and Density (see note below)		Obs	Nectar Plants Continued						Obs
Dwarf plantain (<i>Plantago erecta</i>)					Buckwheat (<i>Eriogonum fasciculatum</i>)						
Purple owl's clover (<i>Castilleja exserta</i>)		1 ft diameter, low cover		4	Ground pink (<i>Linanthus dianthiflorus</i>)						
Snapdragon (<i>Antirrhinum coulterianum</i>)					Oak gooseberry (<i>Ribes quercetorum</i>)						
Birds-beak (<i>Cordylanthus rigidus</i>)					Red maids (<i>Calandrinia menziesii</i>)						
Chinese houses (<i>Collinsia</i> spp.)					Lotus (<i>Acmispon</i> spp.)						X
Woolly plantain (<i>Plantago patagonica</i>)					Yerba santa (<i>Eriodictyon</i> spp.)						
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)					Lomatium (<i>Lomatium</i> spp.)						X
					Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)						
Nectar Plants				Obs	Phacelia (<i>Phacelia</i> spp.)						X
Rockcress (<i>Boechera</i> sp.)				X	Blue dicks (<i>Dichelostemma capitatum</i>)						x
Ceanothus (<i>Ceanothus</i> spp.)				X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)						
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)				X	Tidy tips (<i>Layia</i> spp.)						x
Goldenbush (<i>Isocoma/Ericameria</i> spp.)				X	Tansy mustard (<i>Descurainia pinnata</i>)						X
Goldfields (<i>Lasthenia</i> spp.)				X	Mexican manzanita (<i>Arctostaphylos pungens</i>)						
Popcorn flower (<i>Cryptantha/Plagiobothrys/Pectocarya</i> spp.)				X	Red stemmed filaree (<i>Erodium cicutarium</i>)						X
Tarplants (<i>Deinandra</i> spp.)					Sugar bush (<i>Rhus ovate</i>)						X
Dobie pod (<i>Trapidocarpum gracile</i>)					Southern tauschia (<i>Tauschia arguta</i>)						
Mountain mohogany (<i>Cercocarpus betuloides</i>)					London rocket (<i>Sisymbrium irio</i>)						X
Lacepod (<i>Thysanocarpus</i> sp.)					California poppy (<i>Eschscholzia californica</i>)						X
Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.				
Checkerspots		Whites		Ladies/Admirals		Hairstreaks					
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)		California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)					
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)					
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. demetorum affinis</i>)	3				
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)	1	Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrys gryneus loki</i>)					
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	3	Gray hairstreak (<i>Strymon melinus pudica</i>)					
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers					
Blues		Checkered (common) white (<i>Pontia protodice</i>)	2	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)					
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)	2	Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)					
Clemence's blue (<i>Plebejus lupini monticola</i>)	8	unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	11	Funereal duskywing (<i>Erynnis funeralis</i>)	8				
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	2				
southern blue (<i>Glaucopsyche lygdamus australis</i>)	3	Harford's sulphur (<i>Colias Alexandra harfordii</i>)	1	Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)					
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)	4	Pale swallowtail (<i>Papilio eurymedon</i>)	1	Northern white skipper (<i>Heliopetes ericetorum</i>)					
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)					
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)					
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescent</i>)					
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other					
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)							
Smoky arrowhead blue (<i>Glaucopsyche piasus</i>)	1			Mourning cloak (<i>Nymphalis antiopa</i>)							
				California tortoiseshell (<i>Nymphalis californica</i>)							
Column Total	12	Column Total	10	Column Total	15	Column Total	13				
							Total	50			

Surveyor: DAVID K. FAULKNER Date: 18 APRIL 2022
 Site Name: STARLIGHT SOLAR PROJECT Survey No: 3 (make-up from 14 APR)
 Additional Surveyors Present: _____
 Check-In Time: 1230 Check-Out Time: 1330 Map Synched (Circle One): Yes No

Area (Circle One):															1	2	3	4	5	6	7	8	9	10
Field Conditions																								
	Time (24 hr)	Temperature (F)	Wind Speed (mph)	Cloud Cover																				
Start	1230	83°	5.9 (Average)	~20% high clds																				
Mid																								
End	1330	84°	6.1 (Average)	~20% high clds																				

Vegetation Communities Surveyed (include dominant spp.) CHAPARRAL - (See 14 Apr sheet)

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)	/		Buckwheat (<i>Eriogonum fasciculatum</i>) Not flowering	✓
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linenthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>) Not flowering	✓
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	✓
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.) Not flowering	✓
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	✓
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	✓
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	✓
Bush groundsel (<i>Senecio flaccidus</i> var. <i>douglasii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)	Not flowering	✓	Snapdragon penstemon (<i>Keckia antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		✓	Tidy tips (<i>Laysia</i> spp.)	
Goldenbush (<i>Isoetes/Ericameria</i> spp.)		✓	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	✓
Goldfields (<i>Lasthenia</i> spp.)		✓	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		✓	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Delinandra</i> spp.)			Sugar bush (<i>Rhus ovata</i>)	✓

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Adminals		Hainstreaks	
California patch (<i>Glycyne californica</i>)		Sans orange tip (<i>Aniochelis sans sans</i>)	1	California sister (<i>Alethe bledowii californica</i>)		Great purple hairstreak (<i>Atides healesus coronatus</i>)	
Cobb's checkerspot (<i>E. cobbii</i>)		Desert (Fielder's) orange tip (<i>A. colburni</i>)		Lorquin's admiral (<i>Junonia lorquini</i>)		Brown elfin (<i>Calophaeus augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dunstoni affinis</i>)	2
Chalcodon checkerspot (<i>I. chalcodone chalcodone</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubra</i>)		Loki' juniper hairstreak (<i>Calophaeus grynous lokii</i>)	
Leania checkerspot (<i>Thecla kanina wrighti</i>)		Cabbage white (<i>Phlox rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Grymon melius pudice</i>)	
Mylitta crescent (<i>Pyroclodes mylitta</i>)		Becker's white (<i>Fonitis beckeri</i>)		American (Virginis) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checked [common] white (<i>Fonitis probator</i>)		Unidentified lady (<i>Vanessa sp.</i>)		Ahanis duskywing (<i>Erynnis ahanis</i>)	
Western pygmy-blue (<i>Erphidium eddi</i>)		Spring white (<i>P. sibyllae</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Oemene's blue (<i>Pebajus lupri monticola</i>)		unidentified white	2	Behr's metalmark (<i>Apodemis momo virgulata</i>)	6	Funeral duskywing (<i>Erynnis funeralis</i>)	
Western tailed blue (<i>Evers amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calophala wrighti</i>)		Properius duskywing (<i>Erynnis properius</i>)	
southern blue (<i>Glaucopteryx igdrensis australis</i>)		Harford's sulphur (<i>Colias alexandra harfordi</i>)		Swallowtails		Mourning duskywing (<i>Erynnis tristis</i>)	
Eider's blue (<i>Hemiargus olearius gyss</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Halipotus erichsonii</i>)	
Rosart's blue (<i>Hemiargus leoti</i>)		Sleepy orange (<i>Eumecurus nippi</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fairy skipper (<i>Hyphantid phyllus</i>)	
Acron blue (<i>Jarvisia acron acron</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Arise swallowtail (<i>P. arisaean</i>)		Sandhill skipper (<i>Polytes sabuki</i>)	
Manna blue (<i>Epiotes manna</i>)		Cloudless sulfur (<i>Phoxus semae marcellae</i>)		Miscellaneous		White [common] checked skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Delastinia echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other Unidentified Erynnis	2
Sonoran blue (<i>Phlox sonoriensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total		Column Total		Column Total		Column Total	
Total		Total		Total		Total	

Total	1.7
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Surveyor: Ian Hirschler Date: 4/18/22
Site Name: Starlight Solar Survey No: _____

Check-In Time: _____ Check-Out Time _____ Map Synched (Circle One): Yes No

Area (Circle One):										1	2	3	4	5	6	7	8	9	10
Field Conditions																			
	Time (24 hr)				Temperature (°F)				Wind Speed (mph)				Cloud Cover						
Start	0900				70.3				3-6				2						
Mid	1230				81.4				7-10 (12 gusts)				2						
End	1530				82.8				7-11				2						

Vegetation Communities Surveyed (include dominant spp.)	Redshank chaparral, chamise chaparral, upland mustards
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Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs	
Dwarf plantain (<i>Plantago erecta</i>)	Very low	X	Buckwheat (<i>Eriogonum fasciculatum</i>)		
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus</i> spp.)		
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)		
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)		
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)		
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)		
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	Lupinus spp.	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)		
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X	
California butterweed (<i>Senecio californicus</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)		
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)		
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)		
Goldenbush (<i>Isocoma/Ericameria</i> spp.)			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)		
Goldfields (<i>Lasthenia</i> spp.)		X	Manzanita (<i>Arctostaphylos</i> spp.)		
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)		
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovata</i>)		

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	
Checkerspots		Whites		Ladies/Admirals		Hairstreaks		
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara</i>)		California sister (<i>Adelpha californica</i>)		Great purple hairstreak (<i>Atides halesus corcorani</i>)		
Gabb's checkerspot (<i>Chlosyne gabbii</i>)		Desert orangetip (<i>Anthocharis cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Western elfin (<i>Callophrys augustinus iroides</i>)		
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (C. <i>perplexa</i>)	2	
Chalcedon checkerspot (<i>Euphydryas. chalcedona chalcedona</i>)		California marble (<i>Euchloe hyantis</i>)		Red admiral (<i>Vanessa atalanta</i>)		Loki hairstreak (<i>Callophrus gryneus loki</i>)		
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>Vanessa cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)		
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American lady (<i>Vanessa virginiensis</i>)		Skippers		
Blues		Checkered white (<i>Pontia protodice</i>)	5	Unidentified lady (<i>Vanessa sp.</i>)		Afranius duskywing (<i>Erynnis afranius</i>)		
Western pygmy-blue (<i>Brephidium exilis</i>)		Spring white (<i>Pontia sisymbrii</i>)		Metalmarks		Funereal duskywing (<i>Erynnis funeralis</i>)	3	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia virgulti</i>)	10	Properitius duskywing (<i>Erynnis properitius</i>)		
Western tailed blue (<i>Evers amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Mournful duskywing (<i>Erynnis tristis</i>)		
Southern silvery blue (<i>Glaucopsyche lygdamus australis</i>)	2	Harford's sulphur (<i>Colias harfordii</i>)		Swallowtails		White checkered-skipper (<i>Pyrgus albescent</i>)		
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)		
San Bernardino blue (<i>Euphilotes bernardino</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>Papilio rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)		
Acmon blue (<i>Plebejus acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>Papilio zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)		
Marine blue (<i>Leptotes marina</i>)		California dogface (<i>Zerene eurydice</i>)		Miscellaneous		Rural skipper (<i>Ochlodes agricola</i>)		
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other		
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia</i>)				
Smoky arrowhead blue (<i>Glaucopsyche piasus umbrus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)				
Unidentified blue				California tortoiseshell (<i>Nymphalis californica</i>)				
Column Total	2	Column Total	5	Column Total	10	Column Total	5	
							Total	22

Surveyor: Ryan Meszaros Date: 4/18/2022
 Site Name: Starlight Survey No: 6
 Additional Surveyors Present: _____
 Check In Time: 845 Check Out Time: 1600 Map Synced: Yes No _____

Area (Circle One):	1	2	3	4	5	6	7	8	9	10
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Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0900	72.1	0-4	10%
Mid				
End	1545	80.3	3-12	10%

Vegetation Communities Surveyed (include dominant spp.)				
Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,				

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	-
Purple owl's clover (<i>Castilleja exserta</i>)	Multiple points and polygons, all low cover	25	Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Red maids (<i>Calandrinia menziesii</i>)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs		
			Phacelia (<i>Phacelia</i> spp.)	X
Rockcress (<i>Boechera</i> sp.)		X	Blue dicks (<i>Dichelostemma capitatum</i>)	x
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	x
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Tansy mustard (<i>Descurainia pinnata</i>)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Mexican manzanita (<i>Arctostaphylos pungens</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys/Pectocarya</i> spp.)		X	Red stemmed filaree (<i>Erodium cicutarium</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	X
Dobie pod (<i>Trapidocarpum gracile</i>)			Southern tauschia (<i>Tauschia arguta</i>)	
Mountain mohogany (<i>Cercocarpus betuloides</i>)			London rocket (<i>Sisymbrium irio</i>)	X
Lacepod (<i>Thysanocarpus</i> sp.)			California poppy (<i>Eschscholzia californica</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)		California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)	1	Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	3	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	11	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)	1	Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)	2	unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	33	Funereal duskywing (<i>Erynnis funeralis</i>)	3
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)	7	Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)	2	Dainty sulphur (<i>Nathalis iole</i>)	1	Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)		Juba skipper (<i>Hesperia juba</i>)	1
Smoky arrowhead blue (<i>Glaucopsyche piasus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	4	Column Total	21	Column Total	36	Column Total	4

Surveyor: Ian Hirschler Date: 4/19/22
 Site Name: Starlight Solar Survey No: 8

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Vegetation Communities Surveyed (include dominant spp.)	Redshank chaparral, buckwheat scrub, open field

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara</i>)		California sister (<i>Adelpha californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>Chlosyne gabbii</i>)		Desert orangetip (<i>Anthocharis cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Western elfin (<i>Callophrys augustinus iroides</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (C. <i>perplexa</i>)	1
Chalcedon checkerspot (<i>Euphydryas chalcedona chalcedona</i>)		California marble (<i>Euchloe hyantis</i>)		Red admiral (<i>Vanessa atalanta</i>)		Loki hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>Vanessa cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American lady (<i>Vanessa virginiensis</i>)		Skippers	
Blues		Checkered white (<i>Pontia protodice</i>)	2	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exilis</i>)		Spring white (<i>Pontia sisymbrii</i>)		Metalmarks		Funereal duskywing (<i>Erynnis funeralis</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia virgulti</i>)	5	Properitius duskywing (<i>Erynnis properitius</i>)	
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Mournful duskywing (<i>Erynnis tristis</i>)	
Southern silvery blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias harfordii</i>)		Swallowtails		White checkered-skipper (<i>Pyrgus albescent</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
San Bernardino blue (<i>Euphilotes bernardino</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>Papilio rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Plebejus acmon</i>)	2	Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>Papilio zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		California dogface (<i>Zerene eurydice</i>)		Miscellaneous		Rural skipper (<i>Ochlodes agricola</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia</i>)			
Smoky arrowhead blue (<i>Glaucopsyche piasus imbrus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)			
Unidentified blue				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	2	Column Total	2	Column Total	5	Column Total	1
Total							10

Surveyor: Brian Lohstroh Date: 4/19/2022
 Site Name: Starlight Solar Survey No: 9
 Additional Surveyors Present: None

Check-In Time: 0915 Check-Out Time 1545 Map Synched (Circle One): ☒ Yes ☐ No

Area (Circle One):											1	2	3	4	5	6	7	8	9	10
Field Conditions																				
	Time (24 hr)			Temperature (F)			Wind Speed (mph)			Cloud Cover										
Start	915			66			6-13			20%										
Mid	1230			74			10-14 G17			10%										
End	1545			72			11-15 G17			2%										

Vegetation Communities Surveyed (include dominant spp.)	Red-shank/southern mixed chap,buckwheat scrub
Adenostema sparsifolium, A. fasciculatum, Eriogonum fasciculatum	

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	X
Purple owl's clover (<i>Castilleja exserta</i>)		X	Ground pink (<i>Linanthus dianthiflorus</i>)	X
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	X
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)		X	Blue dicks (<i>Dichelostemma capitatum</i>)	X
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	X
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)		California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	5	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	25	Funereal duskywing (<i>Erynnis funeralis</i>)	6
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	1	Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes erictorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)	2	Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	1
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)		Artful duskywing	1
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	3	Column Total	5	Column Total	25	Column Total	8
Total							41

2020 Quino Checkerspot Butterfly Survey Form

Surveyor(s): M. Rocks, J. Rocks (A. Go-dan) Date: 4/21/22
 Site Name: Sawtooth Solar Site Visit No.: _____
 Area(s) Surveyed: 1+2 Acres Surveyed: _____ Survey Time: 5.5 Acres per Hour: _____
 Other Surveyors Present: _____

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	1030	66	2-8	0
End	1600	70	4-12	0

Vegetation Communities Surveyed (inc. dominant spp.)

Transitional chaparral

Host Plants	Obs.	Nectar Plants	Obs.
dwarf plantain (<i>Plantago erecta</i>)		onion (<i>Allium</i> spp.)	
woolly plantain (<i>Plantago patagonica</i>)		fiddleneck (<i>Amaranthus intermedia</i> /A. <i>menziesii</i>)	✓
Coulter's snapdragon (<i>Antirrhinum coulterianum</i>)		goldenstar (<i>Bloomeria</i> spp.)	
purple owl's clover (<i>Castilleja exserta</i>)		popcorn flower (<i>Cryptantha/Pirola</i> spp.)	✓
Chinese houses (<i>Collinsia</i> spp.)		buckwheat (<i>Eriogonum fasciculatum</i>)	
birds-beak (<i>Candyanthus rigidus</i>)		goldfields (<i>Lasthenia</i> spp.)	✓
		ground pink (<i>Linanthus dianthiflorus</i>)	
Host Plant Mapping Updated (circle) Yes ☒ No ☐		New Area or Existing Area (circle) New Existing Both	
Species updated (list)			

Butterfly Species	No.	Butterfly Species	No.
Family Papilionoidea (Parasitians and Swallowtails)		Family Nymphalidae (Brushfooted Butterflies)	
Pale Swallowtail (<i>Papilio eurymedon</i>)		Subfamily Nymphalinae (True Brushfoots)	
Western Tiger Swallowtail (<i>P. rutulus</i>)		Leanira Checkerspot (<i>Chlosyne leanira</i>)	
Anise Swallowtail (<i>P. zelicon</i>)		California Patch (<i>C. californica</i>)	
Family Pieridae (Whites and Sulphurs)		Gabb's Checkerspot (<i>C. gabbii</i>)	
Desert Orange-tip (<i>Anthocharis cethura</i>)		Chalcedon Checkerspot (<i>Euphydryas chalcedona</i>)	
Pacific Sara Orange-tip (<i>A. sara sara</i>)		Quino Checkerspot (<i>E. editha quino</i>)	
Orange Sulphur (<i>Colias eurytheme</i>)		Common Buckeye (<i>Junonia coenia</i>)	
Sleepy Orange (<i>Eurema nicippe</i>)		Mourning Cloak (<i>Nymphalis antiopa</i>)	
Cloudless Sulphur (<i>Phoebastria sennae</i>)		California Tortoiseshell (<i>N. californica</i>)	
Cabbage White (<i>Pieris rapae</i>)		Mytilus Crescent (<i>Phycodes mytilus</i>)	
Becker's White (<i>Pontia beckeri</i>)		West Coast Lady (<i>Vanessa annabella</i>)	
Checkered (Common) White (<i>P. protodice</i>)		Red Admiral (<i>V. atalanta</i>)	
Spring White (<i>P. silybri</i>)		Painted Lady (<i>V. cardui</i>)	
unidentified white	1	American (Virginia) Lady (<i>V. virginensis</i>)	
unidentified sulphur		unidentified lady (<i>Vanessa</i> sp.)	1
Family Lycaenidae (Gossamer-wing Butterflies)		Subfamily Limenitidinae (Admirals and Relatives)	
Subfamily Theclinae (Hairstreaks)		California Sister (<i>Adelpha bredowii</i>)	
Great Purple Hairstreak (<i>Atides holus</i>)		Lorquin's Admiral (<i>Limenitis lorquini</i>)	
Brown Elfin (<i>Callophrys augustinus</i>)	1	Subfamily Satyrinae (Satyrs)	
Bramble Hairstreak (<i>C. dumetorum</i>)		California Common Ringlet (<i>Coenonympha tulia californica</i>)	
Gray Hairstreak (<i>Strymon melinus</i>)		Subfamily Danainae (Monarchs)	
Subfamily Polyommastinae (Blues)		Monarch (<i>Danaus plexippus</i>)	
Western Pygmy-Blue (<i>Glaucopsyche exilis</i>)		Queen (<i>Danaus gilippus</i>)	
Western Tailed Blue (<i>Eversmannia</i>)		Family Hesperidae (Skippers)	
Silvery Blue (<i>Glaucopsyche lydamus</i>)		Subfamily Pyrginae (Spread-wing Skippers)	
Ceraunus (Edward's) Blue (<i>Hemargus ceraunus</i>)		Funeral Duskywing (<i>Erynnis funeralis</i>)	4
Marine Blue (<i>Leptotes marina</i>)	2	Mourning Duskywing (<i>E. tristis</i>)	1
unidentified blue	1	Fiery Skipper (<i>Hylephila phyleus</i>)	
Family Modiolinae (Metalmarks)		White Checkered-Skipper (<i>Pyrgus albescens</i>)	
Behr's Metalmark (<i>Apodemia mormo virgata</i>)	5	unidentified skipper	1
Wright's Metalmark (<i>Colephelis wrighti</i>)		Other	
		unidentified butterfly	
Column Subtotal		Column Subtotal	
		Total	38

Behr's (cont) - HT HT HT HT HT = (23)
 Common / Pearly Marbled (1)

Echo Azure - (1)

(38)

Surveyor: DAVID M. FAULKNER Date: 21 APRIL 2022
 Site Name: Starlight Solar Survey No: _____
 Additional Surveyors Present: 0
 Check-In Time: 0900 Check-Out Time: 1600 Map Synched (Circle One): Yes No

Area (Circle One):															1	2	(3)	4	5	6	7	8	9	10
Field Conditions																								
	Time (24 hr)	Temperature (F)	Wind Speed (mph)	Cloud Cover																				
Start	0900	64°	5-3 mph (Average)	0 clear																				
Mid	1200	73°	0.9 mph (")	0																				
End	1400	70°	6.1 mph (")	0																				

Vegetation Communities Surveyed (include dominant spp.) Chaparral - Shamise / Redwood (red alums)
Baby Blue Eyes, Peony, Lupinus, Scarlet Geyer, Antelope, Paintbrush, Larkspur, Nightshade, Red Crown
Woolly Blue curls, Yucca, Arctostaphylos (musk)

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	Not flowering ✓
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	✓
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	✓
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	✓
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	✓
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	✓
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	✓
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	✓
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglasii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	✓
Ceanothus (<i>Ceanothus</i> spp.)	Not flowering	✓	Snapdragon penstemon (<i>Keckia antirrhinoides</i>)	
Fiddleneck (<i>Amisackia menziesii</i> var. <i>intermedia</i>)		✓	Tidy tips (<i>Layla</i> spp.)	
Goldenbush (<i>Ispocoma/Ericameria</i> spp.)		✓	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	✓
Goldfields (<i>Lasthenia</i> spp.)		✓	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		✓	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Dainendra</i> spp.)			Sugar bush (<i>Rhus ovata</i>)	✓

[illegible]

Surveyor: Ian Hirschler Date: 04/21/22
Site Name: Starlight Solar Survey No: 8

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): (Yes) No

Area (Circle One):											1	2	3	4	5	6	7	8	9	10
Field Conditions																				
	Time (24 hr)		Temperature (F)			Wind Speed (mph)			Cloud Cover											
Start	0900		61.0			3-8			0											
Mid	1230		73.2			3-8			0											
End	1530		72.1			4-10			0											

Vegetation Communities Surveyed (include dominant spp.)	Redshank Chaparral, chamise chaparral

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	CA poppy
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	X
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	X
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	Variable Linanthus
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	Bush poppy
				X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)		California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	3
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)	1	Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mytilta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	1	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	2
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	3	Funereal duskywing (<i>Erynnis funeralis</i>)	2
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	3	Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescent</i>)	
Echo azure (<i>Celastrina echo</i>)	1	unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	4	Column Total	2	Column Total	3	Column Total	7
Total							16

Surveyor: Ryan Meszaros Date: 4/21/2022
 Site Name: Starlight Survey No: 8
 Additional Surveyors Present: _____
 Check In Time: 845 Check Out Time: 1600 Map Synced: Yes No

Area (Circle One):	1	2	3	4	5	6	7	8	9	10
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Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0900	61.6	2-10	0%
Mid				
End	1545	71.2	3-8	0%

Vegetation Communities Surveyed (include dominant spp.)
Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	-
Purple owl's clover (<i>Castilleja exserta</i>)	Multiple points and polygons, all low cover	4	Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Red maids (<i>Calandrinia menziesii</i>)	X
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	X
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs		
Rockcress (<i>Boechera</i> sp.)		X	Phacelia (<i>Phacelia</i> spp.)	X
Ceanothus (<i>Ceanothus</i> spp.)		X	Blue dicks (<i>Dichelostemma capitatum</i>)	x
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Tidy tips (<i>Layia</i> spp.)	x
Goldfields (<i>Lasthenia</i> spp.)		X	Tansy mustard (<i>Descurainia pinnata</i>)	X
Popcorn flower (<i>Cryptantha/Plagiobothrys/Pectocarya</i> spp.)		X	Mexican manzanita (<i>Arctostaphylos pungens</i>)	
Tarplants (<i>Deinandra</i> spp.)			Red stemmed filaree (<i>Erodium cicutarium</i>)	X
Dobie pod (<i>Trapidocarpum gracile</i>)			Sugar bush (<i>Rhus ovate</i>)	X
Mountain mohogany (<i>Cercocarpus betuloides</i>)			Southern tauschia (<i>Tauschia arguta</i>)	
Bush Snapdragon (<i>Keckiella antirrhinoides</i>)		X	London rocket (<i>Sisymbrium irio</i>)	X
			California poppy (<i>Eschscholzia californica</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	3	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	1
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	5
Henne's checkerspot (<i>E. chalcadone hennei</i>)	2	Pearly marble (<i>Euchloe hyantis</i>)	1	Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	4	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	5	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)	1	unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	4	Funereal duskywing (<i>Erynnis funeralis</i>)	3
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	3	Harford's sulphur (<i>Colias Alexandra hartfordii</i>)	7	Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)	1	Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)	1	Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)		Juba skipper (<i>Hesperia juba</i>)	
Smoky arrowhead blue (<i>Glaucopsyche piasus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	7	Column Total	16	Column Total	9	Column Total	9

Surveyor: Ian Hirschler Date: 4/24/22
Site Name: Starlight Solar Survey No: 8

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): (Yes) No

Vegetation Communities Surveyed (include dominant spp.)	Redshank chaparral and buckwheat scrub

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara</i>)		California sister (<i>Adelpha californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>Chlosyne gabbii</i>)		Desert orangetip (<i>Anthocharis cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Western elfin (<i>Callophrys augustinus iroides</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (C. <i>perplexa</i>)	2
Chalcedon checkerspot (<i>Euphydryas. chalcedona chalcedona</i>)		California marble (<i>Euchloe hyantis</i>)		Red admiral (<i>Vanessa atalanta</i>)		Loki hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>Vanessa cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American lady (<i>Vanessa virginiensis</i>)		Skippers	
Blues		Checkered white (<i>Pontia protodice</i>)	5	Unidentified lady (<i>Vanessa sp.</i>)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exilis</i>)		Spring white (<i>Pontia sisymbrii</i>)		Metalmarks		Funereal duskywing (<i>Erynnis funeralis</i>)	1
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia virgulti</i>)	15	Proprotius duskywing (<i>Erynnis proprotius</i>)	
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Mournful duskywing (<i>Erynnis tristis</i>)	
Southern silvery blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias harfordii</i>)		Swallowtails		White checkered-skipper (<i>Pyrgus albescentis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
San Bernardino blue (<i>Euphilotes bernardino</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>Papilio rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Plebejus acmon</i>)	1	Dainty sulphur (<i>Nathalis iole</i>)	1	Anise swallowtail (<i>Papilio zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		California dogface (<i>Zerene eurydice</i>)		Miscellaneous		Rural skipper (<i>Ochlodes agricola</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia</i>)			
Smoky arrowhead blue (<i>Glaucopsyche piasus umbrus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)			
Unidentified blue				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	1	Column Total	6	Column Total	15	Column Total	3
Total							25

Surveyor: Ian Hirschler Date: 04/25/22
Site Name: Starlight Solar Survey No: 9

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Vegetation Communities Surveyed (include dominant spp.)	Redshank Chaparral, chamise chaparral

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	
Checkerspots		Whites		Ladies/Admirals		Hairstreaks		
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	1	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)		
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)		
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)		
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)		
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)		
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginiensis</i>)		Skippers		
Blues		Checkered (common) white (<i>Pontia protodice</i>)	3	Unidentified lady (<i>Vanessa sp.</i>)		Afranius duskywing (<i>Erynnis afranius</i>)		
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)	1	Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)		
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)		Funereal duskywing (<i>Erynnis funeralis</i>)	5	
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	1	
southern blue (<i>Glaucopsyche lygdamus australis</i>)	1	Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)		
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)	1	Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)		
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)		
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)		
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescent</i>)		
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other		
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)				
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)				
				California tortoiseshell (<i>Nymphalis californica</i>)				
Column Total	1	Column Total	6	Column Total		Column Total	6	
							Total	13

Area (Circle One):		1	2	3	4	5	6	7	8	9	10
Field Conditions											
	Time (24 hr)	Temperature (°F)		Wind Speed (mph)		Cloud Cover					
Start	0930	73.2		1-4		20%					
Mid											
End	1615	75.1		2-6		20%					
Vegetation Communities Surveyed (include dominant spp.)											
Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,											
Host Plants		Diameter and Density (see note below)		Obs	Nectar Plants Continued						Obs
Dwarf plantain (<i>Plantago erecta</i>)					Buckwheat (<i>Eriogonum fasciculatum</i>)						-
Purple owl's clover (<i>Castilleja exserta</i>)					Ground pink (<i>Linanthus dianthiflorus</i>)						
Snapdragon (<i>Antirrhinum coulterianum</i>)					Oak gooseberry (<i>Ribes quercetorum</i>)						
Birds-beak (<i>Cordylanthus rigidus</i>)					Red maids (<i>Calandrinia menziesii</i>)						
Chinese houses (<i>Collinsia</i> spp.)		8 individuals in 1 foot diameter		1	Lotus (<i>Acmispon</i> spp.)						X
Woolly plantain (<i>Plantago patagonica</i>)					Yerba santa (<i>Eriodictyon</i> spp.)						X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)					Lomatium (<i>Lomatium</i> spp.)						
					Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)						X
Nectar Plants				Obs	Phacelia (<i>Phacelia</i> spp.)						X
Rockcress (<i>Boechera</i> sp.)				X	Blue dicks (<i>Dichelostemma capitatum</i>)						x
Ceanothus (<i>Ceanothus</i> spp.)				X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)						
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)				X	Tidy tips (<i>Layia</i> spp.)						
Goldenbush (<i>Isocoma/Ericameria</i> spp.)				X	Tansy mustard (<i>Descurainia pinnata</i>)						X
Goldfields (<i>Lasthenia</i> spp.)				X	Mexican manzanita (<i>Arctostaphylos pungens</i>)						
Popcorn flower (<i>Cryptantha/Plagiobothrys/Pectocarya</i> spp.)				X	Red stemmed filaree (<i>Erodium cicutarium</i>)						X
Tarplants (<i>Deinandra</i> spp.)					Sugar bush (<i>Rhus ovate</i>)						X
Dobie pod (<i>Trapidocarpum gracile</i>)					Southern tauschia (<i>Tauschia arguta</i>)						
Mountain mohogany (<i>Cercocarpus betuloides</i>)					London rocket (<i>Sisymbrium irio</i>)						X
Bush Snapdragon (<i>Keckiella antirrhinoides</i>)				X	California poppy (<i>Eschscholzia californica</i>)						X
Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.		
Checkerspot		Whites		Ladies/Admirals		Hairstreaks					
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	1	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)					
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)					
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)					
Henne's checkerspot (<i>E. chalcadona hennei</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrys gryneus loki</i>)					
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	1	Gray hairstreak (<i>Strymon melinus pudica</i>)					
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginienensis</i>)		Skippers					
Blues		Checkered (common) white (<i>Pontia protodice</i>)	18	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)					
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)					
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	20	Funereal duskywing (<i>Erynnis funeralis</i>)			3		
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)					
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra harfordii</i>)	1	Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)					
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)					
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)					
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)					
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)					
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other					
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)	1	Juba skipper (<i>Hesperia juba</i>)					
Smoky arrowhead blue (<i>Glaucopsyche piasus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)		Gorgon copper (<i>Lycaena gorgon gorgon</i>)			1		

Surveyor: Brian Lohstroh Date: 4/26/2022
 Site Name: Starlight Solar Survey No: 10
 Additional Surveyors Present: None

Check-In Time: 0915 Check-Out Time 1545 Map Synched (Circle One): ☒ Yes ☐ No

Area (Circle One): 1 2 3 4 5 6 7 **8** 9 10

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	915	73	3-6	10%
Mid	1230	85	2-8	10%
End	1545	79	5-13	15%

Vegetation Communities Surveyed (include dominant spp.)	Red-shank/southern mixed chap,buckwheat scrub
Adenostema sparsifolium, A. fasciculatum, Eriogonum fasciculatum	

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)		X	Buckwheat (<i>Eriogonum fasciculatum</i>)	X
Purple owl's clover (<i>Castilleja exserta</i>)		X	Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	X
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)		X	Blue dicks (<i>Dichelostemma capitatum</i>)	X
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	X
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	X

[illegible]

Surveyor: Jim Rocks Date: 4/27/22
Site Name: Starlight Solar Survey No: _____

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Vegetation Communities Surveyed (include dominant spp.)	CSS

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	
Checkerspots		Whites		Ladies/Admirals		Hairstreaks		
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara</i>)	3	California sister (<i>Adelpha californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)		
Gabb's checkerspot (<i>Chlosyne gabbii</i>)		Desert orangetip (<i>Anthocharis cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Western elfin (<i>Callophrys augustinus iroides</i>)	2	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. perplexa</i>)		
Chalcedon checkerspot (<i>Euphydryas. chalcedona chalcedona</i>)		California marble (<i>Euchloe hyantis</i>)		Red admiral (<i>Vanessa atalanta</i>)		Loki hairstreak (<i>Callophrys gryneus loki</i>)		
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>Vanessa cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)		
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American lady (<i>Vanessa virginiensis</i>)		Skippers		
Blues		Checkered white (<i>Pontia protodice</i>)	5	Unidentified lady (<i>Vanessa sp.</i>)		Afranius duskywing (<i>Erynnis afranius</i>)		
Western pygmy-blue (<i>Brephidium exilis</i>)		Spring white (<i>Pontia sisymbri</i>)		Metalmarks		Funereal duskywing (<i>Erynnis funeralis</i>)	5	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia virgulti</i>)	9	Properthus duskywing (<i>Erynnis properthus</i>)		
Western tailed blue (<i>Evers amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Mournful duskywing (<i>Erynnis tristis</i>)		
Southern silvery blue (<i>Glaucopsyche lygdamus australis</i>)	3	Harford's sulphur (<i>Colias harfordii</i>)		Swallowtails		White checkered-skipper (<i>Pyrgus albescent</i>)		
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)		
San Bernardino blue (<i>Euphilotes bernardino</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>Papilio rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)		
Acmon blue (<i>Plebejus acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>Papilio zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)		
Marine blue (<i>Leptotes marina</i>)		California dogface (<i>Zerene eurydice</i>)		Miscellaneous		Rural skipper (<i>Ochlodes agricola</i>)		
Echo azure (<i>Celastrina echo</i>)	2	unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other		
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia</i>)				
Smoky arrowhead blue (<i>Glaucopsyche piasus umbrus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)				
Unidentified blue				California tortoiseshell (<i>Nymphalis californica</i>)				
Column Total	5	Column Total	8	Column Total	9	Column Total	7	
							Total	29

Surveyor: DAVID K. FAULKNER Date: 27 APRIL 2022
Site Name: Starlight Saline Project Survey No: _____
Additional Surveyors Present: ☒ _____
Check-In Time: 0900 Check-Out Time: 1600 Map Synched (Circle One): ☒ Yes ☐ No

Area (Circle One):		1	2	3	4	5	6	7	8	9	10
Field Conditions											
	Time (24 hr)	Temperature (F)			Wind Speed (mph)			Cloud Cover			
Start	0900	63°			3.5 (average)			☐ clear			
Mid	1200	72.5°			3.3 (")			☐			
End	1600	70.0°			3.9 (")			☐			

Blossoming: Phacelia, Lomatium, Blue Dicks, Larkspur, Lupines

Fading: Fiddlers, Grand Fiddlers

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)	/		Buckwheat (<i>Eriogonum fasciculatum</i>) Not flowering	✓
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	✓
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	✓
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	✓
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	✓
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	✓
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	✓
Bush groundsel (<i>Senecio flecidus</i> var. <i>douglasii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	✓
Ceanothus (<i>Ceanothus</i> spp.)	Not flowering	✓	Snapdragon penstemon (<i>Keckia antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		✓	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Josoma/Ericameria</i> spp.)		✓	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasleria</i> spp.)		✓	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		✓	Redmaids (<i>Calsandrinia menziesii</i>)	
Tamplants (<i>Delandria</i> spp.)			Sugar bush (<i>Rhus ovata</i>)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hainstreaks	
California patch (<i>Phyciodes californica</i>)		Sans orange tip (<i>Anthocheilus sans sans</i>)	2	California sister (<i>Adipha bledowii californica</i>)		Great purple hairstreak (<i>Atides healesus coronatus</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Feider's) orange tip (<i>A. cethurus</i>)		Lorquin's admiral (<i>Umenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Desmorymyia californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	1
Chalcidion checkerspot (<i>E. chalcidion chalcidion</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>M. atalanta rublia</i>)		Loki juniper hairstreak (<i>Callophrys gryneus loki</i>)	
Leonia checkerspot (<i>Thecophila leonia arizonae</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>M. cardui</i>)		Gray hairstreak (<i>Saymon melinus pudica</i>)	
Mytila crescent (<i>Phyciodes mytila</i>)		Becker's white (<i>Pieris beckeri</i>)		American (Virginia) lady (<i>M. virginiana</i>)		Skippers	
Blues		Checkered (common) white (<i>Pieris protodice</i>)	15	Unidentified lady (<i>Vanessa sp.</i>)		Athanas duskywing (<i>Erynnis athanas</i>)	
Western pygmy blue (<i>Glaucopis sili</i>)		Spring white (<i>P. silybri</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brix</i>)	
Cemence's blue (<i>Plebejus lupini monticola</i>)		Unidentified white		Behr's metalmark (<i>Apodemia ewene virgata</i>)	8	Funeral duskywing (<i>Erynnis funerals</i>)	3
Western tailed blue (<i>Ereus anythula</i>)		Sulphurs		Wright's metalmark (<i>Calophrys wrighti</i>)		Proterius duskywing (<i>Erynnis proterius</i>)	2
Southern blue (<i>Glaucopsyche lygdamus australis</i>)	1	Harford's sulphur (<i>Colias Alexandra Harfordi</i>)		Swallowtails		Mourning duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiarctus conus gyes</i>)		Orange sulphur (<i>Colias eurytheme</i>)	1	Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reed's blue (<i>Hemiarctus ides</i>)		Sleepy orange (<i>Eurema nippoi</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fairy skipper (<i>Hyalephila phylus</i>)	
Acmon blue (<i>Forcia acmon acmon</i>)		Dainty sulphur (<i>Nathala ides</i>)		Anise swallowtail (<i>P. ascleon</i>)		Sandhill skipper (<i>Poites sabule</i>)	
Marine blue (<i>Leptotes marine</i>)		Cloudless sulfur (<i>Phoebus semae marcellus</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus atreus</i>)	
Echo azure (<i>Colastina echo</i>)	1	Unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Phoebus sonoriensis</i>)		Other		Common buckeyes (<i>Junonia coenia grisea</i>)			
(Unidentified-blue) (RARE)				Mourning cloak (<i>Nymphalis antope</i>)			
Hairstreak - <i>Strymon isapha</i>	1			California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	3	Column Total	18	Column Total	8	Column Total	4
				Total			

Check In Time: 900 Check Out Time: 1600 Map Synced: Yes No

Area (Circle One):											1	2	3	4	5	6	7	8	9	10
Field Conditions																				
	Time (24 hr)		Temperature (°F)			Wind Speed (mph)			Cloud Cover											
Start	0900		66.5			2-8			0%											
Mid																				
End	1545		69.2			2-7			0%											

Vegetation Communities Surveyed (include dominant spp.)
Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	-
Purple owl's clover (<i>Castilleja exserta</i>)	10 points of 1-40 individuals	10	Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Red maids (<i>Calandrinia menziesii</i>)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	X
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Rockcress (<i>Boechera</i> sp.)		X	Blue dicks (<i>Dichelostemma capitatum</i>)	x
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma</i> / <i>Ericameria</i> spp.)		X	Tansy mustard (<i>Descurainia pinnata</i>)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Mexican manzanita (<i>Arctostaphylos pungens</i>)	
Popcorn flower (<i>Cryptantha</i> / <i>Plagiobothrys</i> / <i>Pectocarya</i> spp.)		X	Red stemmed filaree (<i>Erodium cicutarium</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	X
Dobie pod (<i>Trapidocarpum gracile</i>)			Southern tauschia (<i>Tauschia arguta</i>)	
Mountain mohagany (<i>Cercocarpus betuloides</i>)			London rocket (<i>Sisymbrium irio</i>)	X
Bush Snapdragon (<i>Keckiella antirrhinoides</i>)		X	California poppy (<i>Eschscholzia californica</i>)	X

[illegible]

2022 Starlight Solar Project: Quino Checkerspot Butterfly Survey Form

Surveyor:

Brenda Bennett

Date:

4/27/2022

Site Name:

Survey No:

8

Additional Surveyors Present: NA

Check-In Time:

Check-Out Time:

Map Synched (Circle One): Yes No

Area (Circle One):

1

2

3

4

5

6

7

8

9

10

Field Conditions

Time (24 hr)

Temperature (F)

Wind Speed (mph)

Cloud Cover

Start

1000

66.3

2-4

0%

Mid

End

1045

67.6

6-11

0%

Vegetation Communities Surveyed (include dominant spp.)

Buckhead scrub & Chaparral

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snaptagon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	X
Chinese houses (<i>Collinsia</i> spp.)	10', med.	X	Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
			Phacelia (<i>Phacelia</i> spp.)	X
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglasii</i>)		X	Blue dicks (<i>Dichelostemma capitatum</i>)	X
Ceanothus (<i>Ceanothus</i> spp.)		X	Snaptagon penstemon (<i>Keckia antirrhinoides</i>)	X
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	X
Goldenbush (<i>Isocoma/Encarnia</i> spp.)		X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Poppom flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Demandra</i> spp.)			Sugar bush (<i>Rhus ovata</i>)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspot		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chrysippe celtica</i>)		Sera orange (<i>Anthochloa sera sera</i>)	1	California water (<i>Chrysippe brydowii</i>)		Great purple hairstreak (<i>Phycodes phycodes</i>)	
California checkerspot (<i>Chrysippe celtica</i>)		Desert (<i>Anthochloa orange</i>)		Longhorn's admiral (<i>Junonia longhornii</i>)		Brown elfin (<i>Callophrys augustinus</i>)	
Common checkerspot (<i>Chrysippe celtica</i>)		Common California angel (<i>Coenonympha californica</i>)		Woolly tailed lady (<i>Neptis arctia</i>)		Hesperian hairstreak (<i>Callophrys lydia</i>)	1
Darkwinged checkerspot (<i>Chrysippe celtica</i>)		Pearly marbled (<i>Euchloe hyacinth</i>)		Red admiral (<i>Vanessa atalanta</i>)		Little purple hairstreak (<i>Callophrys lydia</i>)	
Florida checkerspot (<i>Chrysippe celtica</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>Vanessa cardui</i>)		Gray hairstreak (<i>Stymon melanos</i>)	
Milkweed checkerspot (<i>Chrysippe celtica</i>)		Black's white (<i>Pieris black</i>)		American (<i>Vanessa</i> lady (<i>Vanessa</i> spp.)		Skippers	
Blue		Unidentified (common) white (<i>Pieris</i> spp.)	16	Unidentified lady (<i>Vanessa</i> spp.)		African daisywing (<i>Gynnis athena</i>)	
Western pygmy blue (<i>Glaucopsyche</i>)		Spring white (<i>Pieris</i> spp.)		Metalmarks		Sleepy daisywing (<i>Gynnis athena</i>)	
Chatterbox's blue (<i>Glaucopsyche</i>)		Unidentified white		Salt's metalmark (<i>Glaucopsyche</i>)	19	Funeral daisywing (<i>Gynnis athena</i>)	4
Western tailed blue (<i>Glaucopsyche</i>)		Sulphur		Wright's metalmark (<i>Glaucopsyche</i>)		Proterops daisywing (<i>Gynnis athena</i>)	
Western blue (<i>Glaucopsyche</i>)	2	Harbort's sulphur (<i>Glaucopsyche</i>)		Swallowtails		Mourning daisywing (<i>Gynnis athena</i>)	
California blue (<i>Glaucopsyche</i>)		Orange sulphur (<i>Glaucopsyche</i>)	1	Pink swallowtail (<i>Glaucopsyche</i>)		Northern white skipper (<i>Pyrausta</i>)	
Arctic blue (<i>Glaucopsyche</i>)	7	Sleepy orange (<i>Glaucopsyche</i>)		Western tiger swallowtail (<i>Glaucopsyche</i>)		Very skipper (<i>Pyrausta</i>)	
Mormon blue (<i>Glaucopsyche</i>)		Dainty sulphur (<i>Glaucopsyche</i>)		Arctic swallowtail (<i>Glaucopsyche</i>)		Sandhill skipper (<i>Pyrausta</i>)	
Unidentified blue		Unidentified sulphur		Miscellaneous		White common checkered skipper (<i>Pyrausta</i>)	
		Other		Monarch (<i>Danaus plexippus</i>)		Other	
				Common buckeye (<i>Limenitis archippe</i>)			
				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	9	Column Total	19	Column Total	19	Column Total	5

Total 51

Surveyor: Jim Rocks Date: 4/28/22
 Site Name: Starlight Survey No: _____
Solar
 Additional Surveyors Present: _____

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Area (Circle One):										1	2	3	4	5	6	7	8	9	10
Field Conditions																			
	Time (24 hr)				Temperature (°F)				Wind Speed (mph)				Cloud Cover						
Start	1125				61				3-8				0						
Mid	1430				64				5-12				0						
End	1550				62				8-12(15)				0						

Vegetation Communities Surveyed (include dominant spp.)	Buckwheat scrub, non native grassland, mixed chaparral

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	X
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus</i> spp.)	X
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
California butterweed (<i>Senecio californicus</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	X
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		X	Manzanita (<i>Arctostaphylos</i> spp.)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovata</i>)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara</i>)	2	California sister (<i>Adelpha californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>Chlosyne gabbii</i>)		Desert orangetip (<i>Anthocharis cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Western elfin (<i>Callophrys augustinus iroides</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. perplexa</i>)	
Chalcedon checkerspot (<i>Euphydryas chalcedona chalcedona</i>)		California marble (<i>Euchloe hyantis</i>)		Red admiral (<i>Vanessa atalanta</i>)		Loki hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>Vanessa cardui</i>)	1	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American lady (<i>Vanessa virginiensis</i>)		Skippers	
Blues		Checkered white (<i>Pontia protodice</i>)	6	Unidentified lady (<i>Vanessa sp.</i>)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exilis</i>)		Spring white (<i>Pontia sisymbri</i>)		Metalmarks		Funereal duskywing (<i>Erynnis funeralis</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia virgulti</i>)	1	Properthus duskywing (<i>Erynnis properthus</i>)	
Western tailed blue (<i>Evers amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Mournful duskywing (<i>Erynnis tristis</i>)	
Southern silvery blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias harfordii</i>)		Swallowtails		White checkered-skipper (<i>Pyrgus albescent</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
San Bernardino blue (<i>Euphilotes bernardino</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>Papilio rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Plebejus acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>Papilio zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		California dogface (<i>Zerene eurydice</i>)		Miscellaneous		Rural skipper (<i>Ochlodes agricola</i>)	
Echo azure (<i>Celastrina echo</i>)	2	unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia</i>)			
Smoky arrowhead blue (<i>Glaucopsyche piasus umbrus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)			
Unidentified blue				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	2	Column Total	8	Column Total	2	Column Total	
Total							12

Surveyor: David W. Faulkner Date: 28 APRIL 2022
 Site Name: Starlight Solar Project Survey No: _____
 Additional Surveyors Present: 0
 Check-In Time: 0900 Check-Out Time: 1515 Map Synched (Circle One): Yes No

Area (Circle One):										
1	2	③	4	5	6	7	8	9	10	
Field Conditions										
	Time (24 hr)	Temperature (F)			Wind Speed (mph)			Cloud Cover		
Start	1100	62.5°			2.8 mph (Average)			> 10% clds		
Mid	1300	68.4°			4.4 mph (-)			☐ clear		
End	1500	66.1°			12.3 mph (-)			☐ clear		

Vegetation Communities Surveyed (include dominant spp.) CHAPARRAL (C. canis / R. humifusa)

In Flower: Primrose, Astragalus, Pinus, Lonicera, Elder Bush
Chia, Woolly Blue curls, Astragalus, Stick, Genoa, Potentilla

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>) Not flowering (Some flowering)	✓
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	✓
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	✓
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	✓
Chinese houses (<i>Collinsia</i> spp.)	low, ~15 plants	✓	Lotus (<i>Acmispon</i> spp.) In flower	✓
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	✓
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	✓
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	✓
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.) (2 species)	✓
Bush groundsel (<i>Senecio flaccidus</i> var. <i>douglasii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	✓
Ceanothus (<i>Ceanothus</i> spp.)	Not flowering	✓	Snapdragon penstemon (<i>Keckelia antirrhinoides</i>)	✓
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		✓	Tidy tips (<i>Layia</i> spp.)	✓
Goldenbush (<i>Isocoma/Eriogonum</i> spp.)		✓	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	✓
Goldfields (<i>Lesthenia</i> spp.)		✓	Yarrow (<i>Achillea millefolium</i>)	✓
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		✓	Redmaids (<i>Calandrinia menziesii</i>)	✓
Tamulants (<i>Oenandra</i> spp.)			Sugar bush (<i>Rhus ovata</i>)	✓

[illegible]

2022 Starlight Solar Project: Quino Checkerspot Butterfly Survey Form

Surveyor: Brenda Bennett Date: 4/28/22Site Name: _____ Survey No: 9

Additional Surveyors Present: _____

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes NoArea (Circle One): 1 2 3 4 5 6 7 8 9 10

Field Conditions

	Time (24 hr)	Temperature (F)	Wind Speed (mph)	Cloud Cover
Start	1030	60.8	2-9	0%
Mid				
End	1715	60.9	7-13	0%

Vegetation Communities Surveyed (include dominant spp.) Buckwheat scrub & chaparral

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf daisy (Pentstemon erectus)			Buckwheat (Eriogonum fasciculatum)	
Purple owl's clover (Castilleja exserta)			Ground pink (Linanthus dianthiflorus)	
Snapdragon (Antirrhinum douglasianum)			White flower currant (Ribes indecorum)	
Bird's beak (Coronilla rigida)			Sage (Salvia spp.)	X
Chinese houses (Coronilla spp.)			Lotus (Acmispon spp.)	
Woolly daisy (Pentstemon patagonicus)			Yerba santa (Eriodictyon spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (Lomatium spp.)	
			Yellow pincushion (Chaenactis glabriuscula var. glabriuscula)	
Nectar Plants		Obs	Phacelia (Phacelia spp.)	X
Bush groundsel (Senecio fasciatus var. douglasii)			Blue dicks (Dichelostemma capitatum)	X
XXXXXXXXXX Chon Zantho fin		X	Snapdragon penstemon (Keckia antirrhinoides)	X
Redneck (Amaranthus menziesii var. intermedia)		X	Tidy tips (Layia spp.)	X
Goldenbush (Sarcocolla Encarnata spp.)		X	Long-stemmed yarrow (Eriophyllum spp.)	X
Goldfields (Lasthenia spp.)		X	Yarrow (Achillea millefolium)	
Pigweed flower (Cryptantha/Pagobothrys spp.)		X	Redmaids (Calandrinia menziesii)	
Tarplants (Dendroica spp.)			Sugar bush (Rhus ovata)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California checkerspot (Euphydryas californica)		Swainson's checkerspot (Euphydryas swainsoni)	1	California lady (Adipha bowdoini californica)		Crow purple hairstreak (Glaucopsyche helice)	
White checkerspot (Euphydryas editha)		Durant's checkerspot (Euphydryas durantii)		Longhorn's admiral (Gloria longhorni)		Brown elfin (Callophrys augustinus)	
Orange checkerspot (Euphydryas orange)		California checkerspot (Euphydryas californica)		West coast lady (Gloria westi)		Portwing hairstreak (Glaucopsyche helice)	
Blue checkerspot (Euphydryas blue)		Pearly marble (Glaucopsyche pearly)		Red admiral (Vanessa atalanta)		Loe purple hairstreak (Callophrys gryneus)	
California checkerspot (Euphydryas californica)		Red admiral (Vanessa atalanta)		Painted lady (Vanessa cardui)		Gray hairstreak (Glaucopsyche helice)	
Blue checkerspot (Euphydryas blue)		Painted lady (Vanessa cardui)		American (winged) lady (Glaucopsyche americana)		Skippers	
Blues		Unidentified white (Vanessa sp.)	2	Unidentified lady (Vanessa sp.)		African daisywing (Glaucopsyche africanus)	
Orange butterfly (Euphydryas orange)		Spring white (Glaucopsyche)		Metamorphs		Shaggy daisywing (Glaucopsyche shaggy)	
Unidentified white (Vanessa sp.)		Unidentified white (Vanessa sp.)		Butterfly metamorph (Glaucopsyche metamorph)	9	Funnel daisywing (Glaucopsyche funnel)	7
Unidentified white (Vanessa sp.)		Sulphurs		Wingless metamorph (Glaucopsyche wingless)		Proportion daisywing (Glaucopsyche proportion)	
Unidentified white (Vanessa sp.)		Black and white (Vanessa black and white)		Swallowtails		Mourning daisywing (Glaucopsyche mourning)	
Unidentified white (Vanessa sp.)		Orange sulphur (Glaucopsyche orange)		Pale swallowtail (Glaucopsyche pale)		Northern white skipper (Glaucopsyche northern)	
Unidentified white (Vanessa sp.)		Shaggy orange (Glaucopsyche shaggy)		Whiskered swallowtail (Glaucopsyche whiskered)		Tiny skipper (Glaucopsyche tiny)	
Unidentified white (Vanessa sp.)		Evening sulphur (Glaucopsyche evening)		Asian swallowtail (Glaucopsyche asian)		Sandhill skipper (Glaucopsyche sandhill)	
Unidentified white (Vanessa sp.)		Unidentified white (Vanessa sp.)		Miscellaneous		White (common) checkered skipper (Glaucopsyche white)	
Unidentified white (Vanessa sp.)		Unidentified white (Vanessa sp.)		Monarch (Danaus plexippus)		Other	
Unidentified white (Vanessa sp.)		Other		Common buckeye (Junonia coenia)			
Unidentified white (Vanessa sp.)				Mourning cloak (Nymphalis xanthus)			
Unidentified white (Vanessa sp.)				California tortoiseshell (Glaucopsyche californica)			
Column Total	0	Column Total	3	Column Total	9	Column Total	7
				Total			

Surveyor: Ian Hirschler Date: 4/28/22
 Site Name: Starlight Solar Survey No: 10

Check-In Time: _____ Check-Out Time: _____ Map Synced (Circle One): Yes No

Vegetation Communities Surveyed (include dominant spp.)	Mixed chaparral and buckwheat scrub

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara</i>)		California sister (<i>Adelpha californica</i>)		Great purple hairstreak (<i>Atides halesus corcorani</i>)	
Gabb's checkerspot (<i>Chlosyne gabbii</i>)		Desert orangetip (<i>Anthocharis cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Western elfin (<i>Callophrys augustinus iroides</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (C. <i>perplexa</i>)	1
Chalcedon checkerspot (<i>Euphydryas chalcedona chalcedona</i>)		California marble (<i>Euchloe hyantis</i>)		Red admiral (<i>Vanessa atalanta</i>)		Loki hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>Vanessa cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American lady (<i>Vanessa virginiensis</i>)		Skippers	
Blues		Checkered white (<i>Pontia protodice</i>)	4	Unidentified lady (<i>Vanessa sp.</i>)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exilis</i>)		Spring white (<i>Pontia sisymbrii</i>)		Metalmarks		Funereal duskywing (<i>Erynnis funeralis</i>)	1
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia virgulti</i>)		Prophetius duskywing (<i>Erynnis prophetius</i>)	
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Mournful duskywing (<i>Erynnis tristis</i>)	
Southern silvery blue (<i>Glaucopsyche lygdamus australis</i>)	1	Harford's sulphur (<i>Colias harfordii</i>)	1	Swallowtails		White checkered-skipper (<i>Pyrgus albescens</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
San Bernardino blue (<i>Euphilotes bernardino</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>Papilio rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Plebejus acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>Papilio zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		California dogface (<i>Zerene eurydice</i>)		Miscellaneous		Rural skipper (<i>Ochlodes agricola</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia</i>)			
Smoky arrowhead blue (<i>Glaucopsyche piassus imbrus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)			
Unidentified blue				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	1	Column Total	5	Column Total		Column Total	28

Check In Time: 1000 Check Out Time: 1700 Map Synced: Yes No

Area (Circle One): 1 2 3 4 5 6 7 8 9 10									
Field Conditions									
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover					
Start	1000	60.2	3-10	20%					
Mid									
End	1645	62.3	8-13	0%					

Vegetation Communities Surveyed (include dominant spp.)

Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	-
Purple owl's clover (<i>Castilleja exserta</i>)	1 point of 1 individual	1	Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Red maids (<i>Calandrinia menziesii</i>)	X
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	X
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Rockcress (<i>Boechera</i> sp.)		X	Blue dicks (<i>Dichelostemma capitatum</i>)	x
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	x
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	x
Goldenbush (<i>Isocoma</i> / <i>Ericameria</i> spp.)		X	Tansy mustard (<i>Descurainia pinnata</i>)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Mexican manzanita (<i>Arctostaphylos pungens</i>)	
Popcorn flower (<i>Cryptantha</i> / <i>Plagiobothrys</i> / <i>Pectocarya</i> spp.)		X	Red stemmed filaree (<i>Erodium cicutarium</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	X
Dobie pod (<i>Trapidocarpum gracile</i>)			Southern tauschia (<i>Tauschia arguta</i>)	X
Mountain mohagany (<i>Cercocarpus betuloides</i>)			London rocket (<i>Sisymbrium irio</i>)	X
Bush Snapdragon (<i>Keckiella antirrhinoides</i>)		X	California poppy (<i>Eschscholzia californica</i>)	X

[illegible]

Surveyor: David K. Faulkner Date: 29 April 2022
 Site Name: Starlight Solar Project - (3 hour make-up) Survey No: _____
 Additional Surveyors Present: 0
 Check-In Time: 0900 Check-Out Time: 1200 Map Synched (Circle One): Yes No

Area (Circle One):					1	2	3	4	5	6	7	8	9	10
Field Conditions														
	Time (24 hr)	Temperature (F)	Wind Speed (mph)	Cloud Cover										
Start	0900	66.4°	1.1	☐ clear										
Mid	1000	71.8°	1.5	☐										
End	1200	74.3°	4.5	☐										

Vegetation Communities Surveyed (include dominant spp.) Chaparral - Chamise / Ribbon Wood
Nightshade, Yocha Santa (Flowering) Clematis, Scarlet Bugler

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>) Not flowering	✓
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Lithanthus dianthiflorus</i>)	✓
Snapdragon (<i>Antirrhinum coultarianum</i>)			White flower currant (<i>Ribes indecorum</i>)	✓
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	✓
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	✓
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	✓
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	✓
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	✓
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	✓
Bush groundsel (<i>Senecio flaccidus</i> var. <i>douglassii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	✓
Ceanothus (<i>Ceanothus</i> spp.)	Not flowering	✓	Snapdragon penstemon (<i>Keckelia antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		✓	Tidy tips (<i>Laysia</i> spp.)	
Goldenbush (<i>Isocoma/Eriogonum</i> spp.)		✓	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	✓
Goldfields (<i>Lasthenia</i> spp.)		✓	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plegiobothrys</i> spp.)		✓	Redmaids (<i>Catandrinia menziesii</i>)	
Tamariacs (<i>Daleandra</i> spp.)			Sugar bush (<i>Rhus ovata</i>)	✓

[illegible]

2022 Starlight Solar Project: Quino Checkerspot Butterfly Survey Form

Surveyor: Ian Hirschler Date: 5/2/22

Site Name: Starlight Solar Survey No: _____

Additional Surveyors Present: _____

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Area (Circle One):										
	1	2	3	4	5	6	7	8	9	10
Field Conditions										
	Time (24 hr)	Temperature (°F)			Wind Speed (mph)			Cloud Cover		
Start	0900	68.2			2-5			0		
Mid	1300	76.1			3-7			0		
End	1530	73.1			6-10			0		

Vegetation Communities Surveyed (include dominant spp.)	Buckwheat scrub and redshank chaparral

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus</i> spp.)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
California butterweed (<i>Senecio californicus</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		X	Manzanita (<i>Arctostaphylos</i> spp.)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovata</i>)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara</i>)	4	California sister (<i>Adelpha californica</i>)		Great purple hairstreak (<i>Atides halesus corcorani</i>)	
Gabb's checkerspot (<i>Chlosyne gabbii</i>)		Desert orangetip (<i>Anthocharis cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Western elfin (<i>Callophrys augustinus iroides</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. perplexa</i>)	
Chalcedon checkerspot (<i>Euphydryas chalcedona chalcedona</i>)		California marble (<i>Euchloe hyantis</i>)		Red admiral (<i>Vanessa atalanta</i>)		Loki hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>Vanessa cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American lady (<i>Vanessa virginiensis</i>)		Skippers	
Blues		Checkered white (<i>Pontia protodice</i>)	20	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exilis</i>)		Spring white (<i>Pontia sisymbrii</i>)		Metalmarks		Funereal duskywing (<i>Erynnis funeralis</i>)	2
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia virgulti</i>)	10	Propertius duskywing (<i>Erynnis propertius</i>)	
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Mourful duskywing (<i>Erynnis tristis</i>)	
Southern silvery blue (<i>Glaucopsyche lygdamus australis</i>)	5	Harford's sulphur (<i>Colias harfordii</i>)	10	Swallowtails		White checkered-skipper (<i>Pyrgus albescens</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)	1	Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
San Bernardino blue (<i>Euphilotes bernardino</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>Papilio rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Plebejus acmon</i>)	2	Dainty sulphur (<i>Nathalis iole</i>)	1	Anise swallowtail (<i>Papilio zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		California dogface (<i>Zerene eurydice</i>)		Miscellaneous		Rural skipper (<i>Ochlodes agricola</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia</i>)		Gorgon copper	7
Smoky arrowhead blue (<i>Glaucopsyche piasus umbrus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)			
Unidentified blue				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	7	Column Total	36	Column Total	10	Column Total	9
						Total	62

Surveyor: Ryan Meszaros Date: 5/2/2022
 Site Name: Starlight Survey No: 11
 Additional Surveyors Present: _____
 Check In Time: 915 Check Out Time: 1615 Map Synced: Yes No

Area (Circle One):	1	2	3	4	5	6	7	8	9	10
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Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0915	70.4	0-4	0%
Mid				
End	1600	74.5	2-6	0%

Vegetation Communities Surveyed (include dominant spp.)
Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	-
Purple owl's clover (<i>Castilleja exserta</i>)	9 points of several individuals	9	Ground pink (<i>Linanthus bellus</i>)	X
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Red maids (<i>Calandrinia menziesii</i>)	X
Chinese houses (<i>Collinsia</i> spp.)	1 polygon 6 feet in diameter, high density	1	Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	X
Nectar Plants		Obs		
			Phacelia (<i>Phacelia</i> spp.)	X
Rockcress (<i>Boechera</i> sp.)		X	Blue dicks (<i>Dichelostemma capitatum</i>)	x
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	x
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	x
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Tansy mustard (<i>Descurainia pinnata</i>)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Mexican manzanita (<i>Arctostaphylos pungens</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys/Pectocarya</i> spp.)		X	Red stemmed filaree (<i>Erodium cicutarium</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	X
Dobie pod (<i>Trapidocarpum gracile</i>)			Southern tauschia (<i>Tauschia arguta</i>)	X
Mountain mohogany (<i>Cercocarpus betuloides</i>)			London rocket (<i>Sisymbrium irio</i>)	X
Bush Snapdragon (<i>Keckiella antirrhinoides</i>)		X	California poppy (<i>Eschscholzia californica</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	13	California sister (<i>Adelpha bredowii californica</i>)	1	Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	2
Henne's checkerspot (<i>E. chalcidona hennei</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	2	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)	1	American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	13	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)	3	unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	3	Funereal duskywing (<i>Erynnis funeralis</i>)	4
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)	4	Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)	4	Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)	2	Dainty sulphur (<i>Nathalis iole</i>)	1	Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Celastrina echo</i>)	3	unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)	2	Juba skipper (<i>Hesperia juba</i>)	1
Smoky arrowhead blue (<i>Glaucopsyche piasus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)		Gorgon copper (<i>Lycaena gorgon gorgon</i>)	6
				California tortoiseshell (<i>Nymphalis californica</i>)		Rural skipper (<i>Ochlodes agricola</i>)	1
Column Total	8	Column Total	36	Column Total	8	Column Total	14

Surveyor: Ian Hirschler Date: 5/3/22
Site Name: Starlight Solar Survey No: 10

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Vegetation Communities Surveyed (include dominant spp.)	Buckwheat scrub, non native grassland, mixed chaparral

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	
Checkerspots		Whites		Ladies/Admirals		Hairstreaks		
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara</i>)	5	California sister (<i>Adelpha californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)		
Gabb's checkerspot (<i>Chlosyne gabbii</i>)		Desert orangetip (<i>Anthocharis cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Western elfin (<i>Callophrys augustinus iroides</i>)		
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. perplexa</i>)		
Chalcedon checkerspot (<i>Euphydryas. chalcedona chalcedona</i>)		California marble (<i>Euchloe hyantis</i>)		Red admiral (<i>Vanessa atalanta</i>)		Loki hairstreak (<i>Callophrus gryneus loki</i>)		
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>Vanessa cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)		
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American lady (<i>Vanessa virginiensis</i>)		Skippers		
Blues		Checkered white (<i>Pontia protodice</i>)	15	Unidentified lady (<i>Vanessa sp.</i>)		Afranius duskywing (<i>Erynnis afranius</i>)		
Western pygmy-blue (<i>Brephidium exilis</i>)		Spring white (<i>Pontia sisymbri</i>)		Metalmarks		Funereal duskywing (<i>Erynnis funeralis</i>)	3	
Clemence's blue (<i>Plebejus lupini monticola</i>)	1	unidentified white		Behr's metalmark (<i>Apodemia virgulti</i>)	1	Properitius duskywing (<i>Erynnis properitius</i>)		
Western tailed blue (<i>Evers amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Mournful duskywing (<i>Erynnis tristis</i>)		
Southern silvery blue (<i>Glaucopsyche lygdamus australis</i>)	1	Harford's sulphur (<i>Colias harfordii</i>)	5	Swallowtails		White checkered-skipper (<i>Pyrgus albescentis</i>)		
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)		
San Bernardino blue (<i>Euphilotes bernardino</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>Papilio rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)		
Acmon blue (<i>Plebejus acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>Papilio zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)		
Marine blue (<i>Leptotes marina</i>)		California dogface (<i>Zerene eurydice</i>)		Miscellaneous		Rural skipper (<i>Ochlodes agricola</i>)		
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other		
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia</i>)				
Smoky arrowhead blue (<i>Glaucopsyche piasus umbrus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)				
Unidentified blue				California tortoiseshell (<i>Nymphalis californica</i>)				
Column Total	2	Column Total	25	Column Total	1	Column Total	3	
							Total	31

Quino Checkerspot Butterfly Survey Form

Surveyor: M. Rocks

Date: 5/4/2022

Site Name: Area 1 + 2

Survey No: 11

Other Surveyors Present: J. Rocks

Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0945	70°	3-8	0
Mid	1350	74	2-7	0
End	1530	80°	2-6	~22 (hazy)

Vegetation Communities Surveyed (inc. dominant spp.)

Mixed chaparral/transition

Host Plants	Obs.	Nectar Plants Continued	Obs.
dwarf plantain (<i>Plantago erecta</i>)		buckwheat (<i>Eriogonum fasciculatum</i>)	✓
purple owl's clover (<i>Castilleja exserta</i>)		ground pink (<i>Linanthus dianthiflorus</i>)	
snaptail (<i>Antirrhinum coulterianum</i>)		gilia (<i>Gilia</i> spp.)	
birds-beak (<i>Cordylanthus rigidus</i>)		chia (<i>Salvia columbriæ</i>)	✓
Chinese houses (<i>Collinsia</i> spp.)		lotus (<i>Acroispon</i> spp.)	✓
Woolly plantain (<i>Plantago patagonica</i>)		yerba santa (<i>Eriodictyon</i> spp.)	✓
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)		lomatum (<i>Lomatium</i> spp.)	
		yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	✓
Nectar Plants	Obs.		
popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)	✓	phacelia (<i>Phacelia</i> spp.)	✓
goldfields (<i>Lasthenia</i> spp.)		redmaids (<i>Calandrinia menziesii</i>)	✓
goldenstar (<i>Mullea</i> spp.)		yellow (<i>Achillea millefolium</i>)	✓
fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)	✓	blue dicks (<i>Dichelostemma capitatum</i>)	
onion (<i>Allium</i> spp.)		tidy tips (<i>Layla</i> spp.)	
tarplants (<i>Deinandra</i> spp.)		gumplant (<i>Grindelia</i> spp.)	
goldenbush (<i>Isocoma/Ericameria</i> spp.)	✓	sugar bush (<i>Rhus ovata</i>)	✓
		long-stemmed yarrow (<i>Eriophyllum</i> spp.)	✓

Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		great purple hairstreak (<i>Atides hebesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbi</i>)		brown elfin (<i>Callophrys augustinus</i>)	1
Quino checkerspot (<i>Euphydryas editha quino</i>)		bramble (perplexing) hairstreak (<i>C. dumetorum affinis</i>)	11 2
chalcidion checkerspot (<i>E. chalcidion chalcidion</i>)		'Loki' juniper hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrighti</i>)		gray hairstreak (<i>Strymon melinus pudice</i>)	
Myiitta crescent (<i>Phyciodes myiitta</i>)		Ladies/Admirals	
Blues		California sister (<i>Adelpha bredowii californica</i>)	
western pygmy-blue (<i>Brephidium exilis</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)	
Bernardino blue (<i>Euphilotes battoides bernardino</i>)		west coast lady (<i>Vanessa annabella</i>)	
western tailed blue (<i>Everes amyntula</i>)		red admiral (<i>V. atalanta rubris</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		painted lady (<i>V. cardui</i>)	
Edward's blue (<i>Hemiarctus cernuus gyas</i>)		American (Virginia) lady (<i>V. virginiana</i>)	
Reakirt's blue (<i>Hemiarctus isola</i>)		unidentified lady (<i>Vanessa</i> sp.)	
Acmon blue (<i>Icaricia acmon acmon</i>) - 111	3	Swallowtails	
marine blue (<i>Leptotes marina</i>)		pale swallowtail (<i>Papilio eurymedon</i>)	
unidentified blue - 11	2	western tiger swallowtail (<i>P. rutulus</i>)	
Whites		anise swallowtail (<i>P. zelicaon</i>)	
Sara orangetip (<i>Anthocharis sara sara</i>) - 11	2	Miscellaneous	
desert (Felder's) orangetip (<i>A. cethura</i>)		monarch (<i>Danaus plexippus</i>)	
common California ringlet (<i>Coenonympha californica</i>)		common buckeye (<i>Junonia coenia grisea</i>)	
pearly marble (<i>Euchloe hyantis</i>)		mourning cloak (<i>Nymphalis antiopa</i>)	
cabbage white (<i>Pieris rapae</i>)		Skippers	
Becker's white (<i>Pontia beckeri</i>)		Afranius duskywing (<i>Erynnis afranius</i>)	
checkered (common) white (<i>Pontia protodice</i>) - 1111	4	sleepy duskywing (<i>Erynnis brizo</i>)	
spring white (<i>P. sisymbria</i>)		funereal duskywing (<i>Erynnis funerals</i>)	
unidentified white - 1111 1111 1	11	propretus duskywing (<i>Erynnis propretus</i>)	

Echo
Azup-1

Sulphurs		mountain duskywing (<i>Erynnis tristis</i>) -	2
Hartford's sulphur (<i>Colias Alexandra hartfordii</i>) -	1	northern white skipper (<i>Heliopeetes ericetorum</i>)	
orange sulphur (<i>Colias eurytheme</i>)		fiery skipper (<i>Hylephila phyleus</i>)	
sleepy orange (<i>Eurema nicippe</i>)		sandhill skipper (<i>Polites sabuleti</i>)	
dainty sulphur (<i>Nathalis iole</i>)		white (common) checkered-skipper (<i>Pyrgus albescent</i>)	
cloudless sulfur (<i>Phoebus sennae marcelina</i>)		Metalmarks	
unidentified sulphur		Behr's metalmark (<i>Apodemia momo virgata</i>) - IIII	6
Other		Wright's metalmark (<i>Calephelis wrighti</i>)	
Column Subtotal		Column Subtotal	
		Total	39

Gorgon Copper - IIII (4)

Surveyor: Brian Lohstroh Date: 5/4/2022
 Site Name: Starlight Solar Survey No: 11
 Additional Surveyors Present: None

Check-In Time: 0845 Check-Out Time 1515 Map Synched (Circle One): ☒ Yes No

Area (Circle One): 1 2 3 4 **5** 6 7 8 9 10

Field Conditions

	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	845	69	3-7	0%
Mid	1230	74	2-8	0%
End	1515	77	2-6	0%

Vegetation Communities Surveyed (include dominant spp.)	Red-shank/southern mixed chap,buckwheat scrub
Adenostema sparsifolium, A. fasciculatum, Eriogonum fasciculatum	

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	X
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglasii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	X
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)		California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)	1	Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	1
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	1	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)	1	American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	25	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)	2	unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	2	Funereal duskywing (<i>Erynnis funeralis</i>)	4
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Properthus duskywing (<i>Erynnis properthus</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)	5	Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)	1	Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescent</i>)	
Echo azure (<i>Celastrina echo</i>)	4	unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)		Gorgon Copper	4
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	7	Column Total	32	Column Total	3	Column Total	9
Total							51

Total	43
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Surveyor: Ryan Meszaros Date: 5/5/2022
 Site Name: Starlight Survey No: 11
 Additional Surveyors Present: _____
 Check In Time: 915 Check Out Time: 1615 Map Synced: Yes No

Area (Circle One):	1	2	3	4	5	6	7	8	9	10
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Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	0845	73.0	0-1	0%
Mid				
End	1545	81.6	5-12	5%

Vegetation Communities Surveyed (include dominant spp.)
Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	X
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus bellus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Red maids (<i>Calandrinia menziesii</i>)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	X
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Rockcress (<i>Boechera</i> sp.)		X	Blue dicks (<i>Dichelostemma capitatum</i>)	x
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	x
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Tansy mustard (<i>Descurainia pinnata</i>)	
Goldfields (<i>Lasthenia</i> spp.)		X	Mexican manzanita (<i>Arctostaphylos pungens</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys/Pectocarya</i> spp.)		X	Red stemmed filaree (<i>Erodium cicutarium</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	X
Dobie pod (<i>Trapidocarpum gracile</i>)			Southern tauschia (<i>Tauschia arguta</i>)	X
Mountain mohogany (<i>Cercocarpus betuloides</i>)			London rocket (<i>Sisymbrium irio</i>)	X
Bush Snapdragon (<i>Keckiella antirrhinoides</i>)			California poppy (<i>Eschscholzia californica</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)	4	California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	2
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	1
Henne's checkerspot (<i>E. chalcadone henne</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	1	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	37	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)	18	unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	4	Funereal duskywing (<i>Erynnis funeralis</i>)	3
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrightii</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)	6	Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)	4	Pale swallowtail (<i>Papilio eurymedon</i>)	1	Northern white skipper (<i>Heliopterus ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)	6	Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)	1	Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Celastrina echo</i>)	6	unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)		Purplish Hedgerow Hairstreak (<i>Satyrus saepium chlorophora</i>)	1
Smoky arrowhead blue (<i>Glaucopsyche piasus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)		Gorgon copper (<i>Lycaena gorgon gorgon</i>)	24
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	31	Column Total	51	Column Total	6	Column Total	31

2022 Starlight Solar Project: Quino Checkerspot Butterfly Survey Form

Surveyor: Ian Hirschler Date: 5/5/22
Site Name: Starlight Solar Survey No: 10

Additional Surveyors Present:

Check-In Time: _____ Check-Out Time _____ Map Synched (Circle One): Yes No

Area (Circle One):											1	2	3	4	5	6	7	8	9	10
Field Conditions																				
	Time (24 hr)				Temperature (°F)				Wind Speed (mph)				Cloud Cover							
Start	0900				72.3				1-4				0							
Mid	1230				90.1				1-4				0							
End	1530				90.1				2-6				0							

Vegetation Communities Surveyed (include dominant spp.)	Redshank chaparral, upland
	mustards

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)	Low density	X	Ground pink (<i>Linanthus</i> spp.)	X
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	
California butterweed (<i>Senecio californicus</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	X
Goldenbush (<i>Isocoma/Ericameria</i> spp.)			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		X	Manzanita (<i>Arctostaphylos</i> spp.)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovata</i>)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara</i>)	4	California sister (<i>Adelpha californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>Chlosyne gabbii</i>)		Desert orangetip (<i>Anthocharis cethura</i>)	2	Lorquin's admiral (<i>Limenitis lorquini</i>)		Western elfin (<i>Callophrys augustinus iroides</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (C. <i>perplexa</i>)	
Chalcedon checkerspot (<i>Euphydryas chalcedona chalcedona</i>)		California marble (<i>Euchloe hyantis</i>)		Red admiral (<i>Vanessa atalanta</i>)		Loki hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>Vanessa cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)	2	American lady (<i>Vanessa virginensis</i>)		Skippers	
Blues		Checkered white (<i>Pontia protodice</i>)	30	Unidentified lady (<i>Vanessa sp.</i>)		Afranian duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exilis</i>)		Spring white (<i>Pontia sisymbrii</i>)		Metalmarks		Funereal duskywing (<i>Erynnis funeralis</i>)	1
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia virgulti</i>)	5	Propertius duskywing (<i>Erynnis propertius</i>)	
Western tailed blue (<i>Evers amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Mournful duskywing (<i>Erynnis tristis</i>)	
Southern silvery blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias harfordii</i>)	2	Swallowtails		White checkered-skipper (<i>Pyrgus albescent</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)	1	Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes erictorum</i>)	
San Bernardino blue (<i>Euphilotes bernardino</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>Papilio rutulus</i>)		Fieri skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Plebejus acmon</i>)	30	Dainty sulphur (<i>Nathalis iole</i>)	4	Anise swallowtail (<i>Papilio zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		California dogface (<i>Zerene eurydice</i>)		Miscellaneous		Rural skipper (<i>Ochloides agricola</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia</i>)	1	Gorgon copper	3
Smoky arrowhead blue (<i>Glaucopsyche piasus umbrus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)			
Unidentified blue				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	30	Column Total	44	Column Total	6	Column Total	4
Total							84

2022 Starlight Solar Project: Quino Checkerspot Butterfly Survey Form

Surveyor:

Brenda Bennett

Date:

5/5/2022

Site Name:

Survey No:

10

Additional Surveyors Present:

NA

Check-In Time:

Check-Out Time

Map Synched (Circle One):

Yes

No

Area (Circle One):

1

2

3

4

5

6

7

8

9

10

Field Conditions

Time (24 hr)

Temperature (F)

Wind Speed (mph)

Cloud Cover

Start

1000

79.7

3-8

0%

Mid

End

1645

84.1

3-11

0%

Vegetation Communities Surveyed (include dominant spp.)

Buckwheat scrub + chaparral

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Duckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Casilleja exserta</i>)			Yarrow ERITRI	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)	10/10W	X	Lotus (<i>Adonis</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
			Phacelia (<i>Phacelia</i> spp.)	X
			Blue dicks (<i>Dichelostemma capitatum</i>)	X
			Snapdragon penstemon (<i>Keckia antirrhinoides</i>)	
			Tidy tips (<i>Layia</i> spp.)	
			Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	X
			Yarrow (<i>Achillea millefolium</i>)	
			Redmaids (<i>Calandrinia menziesii</i>)	
			Sugar bush (<i>Rhus ovata</i>)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		 hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orange tip (<i>Anthocharis sara sara</i>)	11	California sister (<i>Adelpha betheae californica</i>)		Great purple hairstreak (<i>Alticus natesus coronatus</i>)	
Cal's checkerspot (<i>C. palus</i>)		Desert (Felder's) orange tip (<i>A. cuneata</i>)		Longin's admiral (<i>Junonia longini</i>)		Brown elf (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California night (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Peppering hairstreak (<i>C. dumeretorum edithae</i>)	
Chalkwing checkerspot (<i>E. chabedone chabedone</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubes</i>)		Loki juniper hairstreak (<i>Callophrys gryneus loki</i>)	
Lesser checkerspot (<i>Phenicia lewisii lewisii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Stymon ocellus pudica</i>)	
Myio a crescent (<i>Phycodes myio</i>)		Becker's white (<i>Pieris beckeri</i>)		American virginia lady (<i>V. virginiana</i>)		Skippers	
Blues		Checkered (common) white (<i>Pieris protodicta</i>)	27	Unidentified lady (<i>Vanessa</i> sp.)		African duskywing (<i>Erynnis atranius</i>)	
Western pygmy blue (<i>Glyphidoceros egle</i>)		Spring white (<i>P. stymon</i>)		Moths/mites		Sleepy duskywing (<i>Erynnis borea</i>)	
Oregon's blue (<i>Polyommatus lydia monticola</i>)		Unidentified white		Bair's metalmark (<i>Apodemia mormo viguieri</i>)	4	Funeral dusky wing (<i>Erynnis funerals</i>)	2
Western tailed blue (<i>Erebia anytolus</i>)		Sulphurs		Wright's metalmark (<i>Callophrys wrighti</i>)		Proterops duskywing (<i>Erynnis proterops</i>)	
Scrub blue (<i>Glaucopsyche lygdamus scrub</i>)		Harford's sulphur (<i>Colias alexandra harfordi</i>)	2	Swallowtails		Mountain duskywing (<i>Erynnis orisio</i>)	
Edward's blue (<i>Hebertus centurus grayi</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Helicones erato</i>)	
Rowlett's blue (<i>Antargyreus lob</i>)		Sooty orange (<i>Eumene nicippe</i>)		Western tiger swallowtail (<i>P. nola</i>)		Pony skipper (<i>Polyphaga phylus</i>)	
Arizon blue (<i>Callophrys arizon arizon</i>)	23	Dairy sulphur (<i>Pholis ioli</i>)		Arise swallowtail (<i>P. arizon</i>)		Sandhill skipper (<i>Polyphaga salvia</i>)	
Mathe blue (<i>Euphydryas mathe</i>)	1	Cloudless sulfur (<i>Phoebastria annae mathe</i>)		Miscellaneous		White (common) checkered skipper (<i>Pyrus abacensis</i>)	1
Echo azure (<i>Colostethus echo</i>)		Unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Pholis sonoranensis</i>)		Other		Common buckeye (<i>Lunata coenia prae</i>)		Gorgon copper	
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	24	Column Total	40	Column Total	4	Column Total	11
							Total

79

Surveyor: Brian Lohstroh Date: 5/6/2022
 Site Name: Starlight Solar Survey No: 11
 Additional Surveyors Present: None

Check-In Time: 0845 Check-Out Time 1515 Map Synched (Circle One): ☒ Yes No

Area (Circle One): 1 **2** 3 4 5 6 7 8 9 10

Field Conditions

	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	845	75	0-7	0%
Mid	1220	86	3-12	0%
End	1515	93	2-7	0%

Vegetation Communities Surveyed (include dominant spp.)	Red-shank/southern mixed chap,buckwheat scrub
Adenostema sparsifolium, A. fasciculatum, Eriogonum fasciculatum	

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	X
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>) bellus	X
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglasii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	X
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)		California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atitides halesus corcorani</i>)	1
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)	1	Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	9
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	3
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	22	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	2	Funereal duskywing (<i>Erynnis funeralis</i>)	7
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Proterius duskywing (<i>Erynnis proterius</i>)	1
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)	2	Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)	1	Pale swallowtail (<i>Papilio eurymedon</i>)	2	Northern white skipper (<i>Heliopetes erictorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)	2	Dainty sulphur (<i>Nathalis iole</i>)		Desert swallowtail (<i>P. erictorum</i>)	1	Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)	1	Cloudless sulfur (<i>Phoebus sennae marcellina</i>)	2	Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescent</i>)	
Echo azure (<i>Celastrina echo</i>)	9	unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)		Gorgon Copper	10
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)		Bronzed Hedgerow Hstrk	1
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	12	Column Total	28	Column Total	5	Column Total	32
Total							77

Surveyor: Ian Hirschler Date: 5/6/22
Site Name: Starlight Solar Survey No: 11

Check-In Time:	Check-Out Time	Map Synched (Circle One):	Yes	No
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Vegetation Communities Surveyed (include dominant spp.)	Redshank chaparral and buckwheat scrub

[illegible]

Surveyor:	Ian Hirschler	Date:	5/7/22
Site Name:	Starlight Solar	Survey No:	10

Check-In Time:	Check-Out Time	Map Synced (Circle One):	Yes	No
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Vegetation Communities Surveyed (include dominant spp.)	Redshank chaparral and buckwheat scrub

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara</i>)	3	California sister (<i>Adelpha californica</i>)		Great purple hairstreak (<i>Atides halesus corcorani</i>)	
Gabb's checkerspot (<i>Chlosyne gabbii</i>)		Desert orangetip (<i>Anthocharis cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Western elfin (<i>Callophrys augustinus iroides</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (C. <i>perplexa</i>)	
Chalcedon checkerspot (<i>Euphydryas chalcedona chalcedona</i>)		California marble (<i>Euchloe hyantis</i>)		Red admiral (<i>Vanessa atalanta</i>)		Loki hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>Vanessa cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myllitta crescent (<i>Phyciodes myllitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American lady (<i>Vanessa virginiensis</i>)		Skippers	
Blues		Checkered white (<i>Pontia protodice</i>)	20	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exilis</i>)		Spring white (<i>Pontia sisymbrii</i>)		Metalmarks		Funereal duskywing (<i>Erynnis funeralis</i>)	2
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia virgulti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Mournful duskywing (<i>Erynnis tristis</i>)	
Southern silvery blue (<i>Glaucopteryx lygdamus australis</i>)		Harford's sulphur (<i>Colias harfordii</i>)	12	Swallowtails		White checkered-skipper (<i>Pyrgus albescent</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)	1	Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopterus ericetorum</i>)	
San Bernardino blue (<i>Euphilotes bernardino</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>Papilio rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Plebejus acmon</i>)	1	Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>Papilio zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		California dogface (<i>Zerene eurydice</i>)		Miscellaneous		Rural skipper (<i>Ochlodes agricola</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia</i>)			
Smoky arrowhead blue (<i>Glaucopteryx piasus umbrus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)			
Unidentified blue				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	1	Column Total	36	Column Total		Column Total	2
							Total

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara</i>)		California sister (<i>Adelpha californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>Chlosyne gabbii</i>)		Desert orangetip (<i>Anthocharis cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Western elfin (<i>Callophrys augustinus iroides</i>)	2
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (C. <i>perplexa</i>)	
Chalcedon checkerspot (<i>Euphydryas. chalcedona chalcedona</i>)		California marble (<i>Euchloe hyantis</i>)		Red admiral (<i>Vanessa atalanta</i>)		Loki hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>Vanessa cardui</i>)	2	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American lady (<i>Vanessa virginiensis</i>)		Skippers	
Blues		Checkered white (<i>Pontia protodice</i>)	16	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exilis</i>)		Spring white (<i>Pontia sisymbrii</i>)		Metalmarks		Funereal duskywing (<i>Erynnis funeralis</i>)	1
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia virgulti</i>)	2	Propertius duskywing (<i>Erynnis propertius</i>)	
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Mournful duskywing (<i>Erynnis tristis</i>)	
Southern silvery blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias harfordii</i>)		Swallowtails		White checkered-skipper (<i>Pyrgus albescentis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
San Bernardino blue (<i>Euphilotes bernardino</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>Papilio rutulus</i>)	1	Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Plebejus acmon</i>)		Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>Papilio zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		California dogface (<i>Zerene eurydice</i>)		Miscellaneous		Rural skipper (<i>Ochlodes agricola</i>)	
Echo azure (<i>Celastrina echo</i>)	2	unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia</i>)		Gorgon copper	2
Smoky arrowhead blue (<i>Glaucopsyche piasus umbrus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)		Bronze hedgerow	5
Unidentified blue				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	2	Column Total	16	Column Total	5	Column Total	10
Total							33

Surveyor: Ryan Meszaros Date: 5/9/2022
 Site Name: Starlight Survey No: 11
 Additional Surveyors Present: _____
 Check In Time: 915 Check Out Time: 1615 Map Synced: Yes No

Area (Circle One):	1	2	3	4	5	6	7	8	9	10
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Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	1000	63.4	2-6	0%
Mid				
End	1645	63.4	2-8	0%

Vegetation Communities Surveyed (include dominant spp.)
Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	X
Purple owl's clover (<i>Castilleja exserta</i>)	10 individual at 1 point	1	Ground pink (<i>Linanthus bellus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Red maids (<i>Calandrinia menziesii</i>)	X
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	X
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Rockcress (<i>Boechera</i> sp.)		X	Blue dicks (<i>Dichelostemma capitatum</i>)	x
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	x
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Tansy mustard (<i>Descurainia pinnata</i>)	
Goldfields (<i>Lasthenia</i> spp.)		X	Mexican manzanita (<i>Arctostaphylos pungens</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys/Pectocarya</i> spp.)		X	Red stemmed filaree (<i>Erodium cicutarium</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	X
Dobie pod (<i>Trapidocarpum gracile</i>)			Southern tauschia (<i>Tauschia arguta</i>)	X
Mountain mohogany (<i>Cercocarpus betuloides</i>)			London rocket (<i>Sisymbrium irio</i>)	X
Bush Snapdragon (<i>Keckiella antirrhinoides</i>)			California poppy (<i>Eschscholzia californica</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)		California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	
Henne's checkerspot (<i>E. chalcadone henne</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	28	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)	19	unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	1	Funereal duskywing (<i>Erynnis funeralis</i>)	3
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrightii</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)	1	Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)	4	Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopterus ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)	18	Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)	2	Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)		Purplish Hedgerow Hairstreak (<i>Satyrus saepium chlorophora</i>)	
Smoky arrowhead blue (<i>Glaucopsyche piasus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)		Gorgon copper (<i>Lycaena gorgon gorgon</i>)	10
				California tortoiseshell (<i>Nymphalis californica</i>)		San Bernardino blue (<i>Euphilotes bernadino</i>)	2
Column Total	39	Column Total	33	Column Total	1	Column Total	15

Surveyor: I. Hirschler Date: 5/10/22
 Site Name: Starlight Solar Survey No: 1
 Additional Surveyors Present: Sharif Durzi
 Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Area (Circle One):															1	2	3	4	5	6	7	8	9	10
Field Conditions																								
	Time (24 hr)			Temperature (°F)			Wind Speed (mph)			Cloud Cover														
Start	0915			61.4			1-5 (8 gusts)			0														
Mid	1200			72.4			3-8 (10 gusts)			0														
End	1400			67.6			4-11			0														

Vegetation Communities Surveyed (include dominant spp.)	Coastal sage scrub and redshank chaparral
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Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus</i> spp.)	X
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	X
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
California butterweed (<i>Senecio californicus</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Manzanita (<i>Arctostaphylos</i> spp.)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovata</i>)	

[illegible]

2022 Starlight Solar Project: Quino Checkerspot Butterfly Survey Form

Surveyor:

Brenda Bennett

Date:

5/12/2022

Site Name:

Survey No:

12

Additional Surveyors Present:

NA

Check-In Time:

Check-Out Time:

Map Synched (Circle One): Yes ☒ No ☐

Area (Circle One): 1 2 3 4 5 6 7 8 9 10

Field Conditions

	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	1015	66.2	3-9	0%
Mid				
End	1700	79.9	2-3	0%

Vegetation Communities Surveyed (include dominant spp.)

Buckwheat scrub, Chaparral

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	X
Purple owl's clover (<i>Castilleja exserta</i>)			(<i>Castilleja alba</i> var. <i>douglasii</i>) GERVIS	X
Snapdragon (<i>Antirrhinum douglasianum</i>)			White flowered castilleja (<i>Castilleja alba</i>) ERI SAP	X
Brick-peak (<i>Coronilla rigida</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acrospan</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Erodium</i> spp.)	
Notes: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Blue sage (<i>Salvia leucantha</i> douglasii) AST DOU		X	Blue dicks (<i>Dichelostemma capitatum</i>)	X
White sage (<i>Salvia leucantha</i> douglasii) PEN CEN		X	Snapdragon penstemon (<i>Keckia antirrhinoides</i>)	
White sage (<i>Salvia leucantha</i> douglasii) PRUILL		X	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Encarnia</i> spp.)		X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Piedmont flower (<i>Cryptantha/Pisipobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	
White sage (<i>Salvia leucantha</i> douglasii) OEN CAL AVI		X	Sugar bush (<i>Rhus ovata</i>)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspot		White		Ladies/Admirals		Heliconia	
California checkerspot (<i>Chrysippe californica</i>)		Santa orange tip (<i>Anthracinus sara sara</i>)		California sister (<i>Adelpha brexii</i> californica)		Great purple hairstreak (<i>Polites hebeus</i> concolor)	
California checkerspot (<i>C. californica</i>)		Desert (Felder's) orange tip (<i>A. celurus</i>)		Lorquin's admiral (<i>Eumetis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	1
Quino checkerspot (<i>Chrysippe quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Periphetes hairstreak (<i>C. dymetorum</i> affinis)	
Quino checkerspot (<i>Chrysippe quino</i>)		Pearly marble (<i>Euchloe hyacinthina</i>)		Red admiral (<i>V. atalanta rubens</i>)		Little juniper hairstreak (<i>Callophrys gryneus</i> jelskii)	
Quino checkerspot (<i>Chrysippe quino</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Stymon nictitans purpurea</i>)	
MAIA checkerspot (<i>Physodes mytilus</i>)		Becker's white (<i>Pieris beckeri</i>)		American Virginia lady (<i>V. virginica</i>)		Skippers	
Blue		Checkered (common) white (<i>Pieris proteropus</i>)	23	Unidentified lady (<i>Vanessa</i> sp.)		Athene duskywing (<i>Erynnis ateneus</i>)	
Western pygmy blue (<i>Phaedusa staudacheri</i>)		Spring white (<i>P. sylvatica</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis ateneus</i>)	
Gambel's blue (<i>Phaedusa staudacheri</i>)		Unidentified white		Belt's metalmark (<i>Apodemia mormo virgata</i>)		Funeral duskywing (<i>Erynnis funebris</i>)	
Western tailed blue (<i>Eriopis amabilis</i>)		Sulphur		Wright's metalmark (<i>Calophrys wrighti</i>)		Protoparce duskywing (<i>Erynnis protoparce</i>)	
Western tailed blue (<i>Eriopis amabilis</i>)		Hanford's sulphur (<i>Colias hanfordi</i>)	1	Swallowtails		Mourner duskywing (<i>Erynnis ateneus</i>)	
Howard's blue (<i>Amphigenia coronata</i>)		Orange sulphur (<i>Colias eurymedea</i>)	2	Pale swallowtail (<i>Papilio eurymedea</i>)		Northern white skipper (<i>Hesperia mitchellii</i>)	
Howard's blue (<i>Amphigenia coronata</i>)		Sleepy orange (<i>Amphigenia coronata</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fairy skipper (<i>Phyllosia phyllos</i>)	
Howard's blue (<i>Amphigenia coronata</i>)	48	Dainty sulphur (<i>Metis daisy</i>)		Arise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabotus</i>)	
Maroon blue (<i>Eriopis amabilis</i>)		Cloudless sulfur (<i>Phloxus sinuata</i>)		Miscellaneous		White (common) checkered skipper (<i>Pygus abjectus</i>)	
Little white (<i>Adelpha californica</i>)		Unidentified sulphur		Mourner (<i>Danaus plexippus</i>)		Other	
Scorpion blue (<i>Phaedusa staudacheri</i>)		Other		Common buckeye (<i>Lunonia cornelia</i>)		Gargan copper	9
Unidentified blue				Mourner cloak (<i>Nymphalis antiopa</i>)			
				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	48	Column Total	26	Column Total	0	Column Total	10
							Total

Total 64

Surveyor: Brian Lohstroh Date: 5/12/2022
 Site Name: Starlight Solar Survey No: 12
 Additional Surveyors Present: None

Check-In Time: 0930 Check-Out Time 1600 Map Synced (Circle One): ☒ Yes ☐ No

Area (Circle One):	1	2	3	4	5	6	7	8	9	10
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Field Conditions				
	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	915	61	3-13	0%
Mid	1230	67	4-8	0%
End	1600	73	2-7	0%

Vegetation Communities Surveyed (include dominant spp.)	Red-shank/southern mixed chap,buckwheat scrub
Adenostema sparsifolium, A. fasciculatum, Eriogonum fasciculatum	

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	X
Purple owl's clover (<i>Castilleja exserta</i>)		X	Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	X
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglassii</i>)		X	Blue dicks (<i>Dichelostemma capitatum</i>)	X
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	X
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	X
Goldfields (<i>Lasthenia</i> spp.)		X	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthrocharis sara sara</i>)		California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	
Chalcedon checkerspot (<i>E. chalcedona chalcedona</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Strymon melinus pudica</i>)	
Myllitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	14	Unidentified lady (<i>Vanessa sp.</i>)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)		unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)		Funereal duskywing (<i>Erynnis funeralis</i>)	1
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Hartford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes erictorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fieri skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)	30	Dainty sulphur (<i>Nathalis iole</i>)		Acmon Swallowtail (<i>P. elenor</i>)	1	Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescent</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)		Gorgon Copper	7
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
San Bernardino blue	3			California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	33	Column Total	14	Column Total	1	Column Total	8
							Total 56

Surveyor: Jim Rocks Date: 5/12/22
Site Name: Starlight Solar Survey No: _____

Check-In Time: _____ Check-Out Time _____ Map Synched (Circle One): Yes No

Vegetation Communities Surveyed (include dominant spp.)	Buckwheat scrub, non native grassland, mixed chaparral

[illegible]

2022 Starlight Solar Project: Quino Checkerspot Butterfly Survey Form

Surveyor: DAVID K. FAULKNER Date: 13 MAY 2022

Site Name: STARLIGHT SOLAR PROJECT Survey No: LAST SURVEY

Additional Surveyors Present: ϕ (Jim Rocks is Around here Somewhere)

Check-In Time: 0900 Check-Out Time: 1600 Map Synched (Circle One): Yes No

Area (Circle One):					1	2	③	4	5	6	7	8	9	10
Field Conditions														
	Time (24 hr)	Temperature (F)	Wind Speed (mph)	Cloud Cover										
Start	0900	76.2°	0.9 (Average)	☐ Clear										
Mid	1300	83.2°	1.5 (")	☐										
End	1600	81.9°	1.5 (")	☐										

Vegetation Communities Surveyed (include dominant spp.) *Ceanothus / Rib. hirtellus*

25 ANNUALS / Perennials in Flower

Collared - Helicopter glaucoma

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>) not flowering	✓
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus dianthiflorus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>) not flowering	✓
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.) " " "	✓
Chinese houses (<i>Collinsia</i> spp.)	not in flower	✓	Lotus (<i>Acmispon</i> spp.)	✓
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	✓
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.) not flowering	✓
			Yellow pin cushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	✓
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	✓
Bush groundsel (<i>Senecio flacidus</i> var. <i>douglasii</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	✓
Ceanothus (<i>Ceanothus</i> spp.)	Not flowering	✓	Snapdragon penstemon (<i>Keckelia antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		✓	Tidy tips (<i>Lewyia</i> spp.)	
Goldenbush (<i>Isocoma/Eriocameria</i> spp.)		✓	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	✓
Goldfields (<i>Lasthenia</i> spp.)		✓	Yarrow (<i>Achillea millefolium</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		✓	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovalis</i>) not flowering	✓

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspot		Whites		Ladies/Admirals		Hainstreaks	
California patch (<i>Chlosyne californica</i>)		Sans orange tip (<i>Anthochers sans sans</i>)	1	California sister (<i>Adipha bredowii californica</i>)		Great purple hairstreak (<i>Adides halaeus coropinti</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orange tip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Calophris augustinus</i>)	2
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Popplewing hairstreak (<i>C. dumeretorum affinis</i>)	
Chalcidion checkerspot (<i>E. chalcidion chalcidion</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubris</i>)		Least jasper hairstreak (<i>Calophris gryonae</i>)	1
Leanna's checkerspot (<i>Thessalia leanna wrighti</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Stymon melinus pudica</i>)	
Mytila crescent (<i>Phyciodes mytila</i>)		Becker's white (<i>Pontia beckeri</i>)		American (Virginia) lady (<i>V. virginiae</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	37	Unidentified lady (<i>Vanessa</i> sp.)	1	Atlantis duskywing (<i>Erynnis atlantis</i>)	
Western pygmy blue (<i>Brachidium exilis</i>)		Spring white (<i>P. sylvia</i>)		Metamarks		Sleepy duskywing (<i>Erynnis bricio</i>)	
Gemeno's blue (<i>Phebeja lupini monticola</i>)		unidentified white		Behr's metamark (<i>Apodemia momo vigut</i>)	1	Funeral duskywing (<i>Erynnis funeralis</i>)	2
Western tailed blue (<i>Eversia amyntula</i>)	3	Sulphurs		Wright's metamark (<i>Caliphys wrighti</i>)		Proterius duskywing (<i>Erynnis proterius</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra harfordi</i>)	9	Swallowtails		Mourning duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiaris cernuus gess</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reek's blue (<i>Hemiaris bolis</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Phylephila phytus</i>)	
Acon blue (<i>Caricula acon acon</i>)	5	Dainty sulphur (<i>Nithalia ibis</i>)		Arise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marine</i>)		Cloudless sulfur (<i>Phoebus senae marcellina</i>)		Miscellaneous		White (common) checkered skipper (<i>Pyrgus abeona</i>)	
Echo azure (<i>Calastria echo</i>)		unidentified sulphur		Monarch (<i>Danais plexippus</i>)		Other	
Sonoran blue (<i>Pholotes sonoriensis</i>)		Other		Common buckeye (<i>Lunonia coenia grisea</i>)			
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)			
<i>E. berundino</i>	26			California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	34	Column Total	47	Column Total	2	Column Total	5
				Total			
				88			

2022 Starlight Solar Project: Quino Checkerspot Butterfly Survey Form

Surveyor: Jim Rocks Date: 5/13/22
 Site Name: Starlight Solar Survey No: _____

Additional Surveyors Present: _____

Check-In Time: _____ Check-Out Time: _____ Map Synched (Circle One): Yes No

Area (Circle One): 1 2 3 4 5 6 7 8 9 10										
Field Conditions										
	Time (24 hr)	Temperature (°F)		Wind Speed (mph)		Cloud Cover				
Start	0950	68		2-7		0				
Mid	1340	77		2-6		0				
End	1550	80		2-6		0				

Vegetation Communities Surveyed (include dominant spp.) **Buckwheat scrub, non native grassland, mixed chaparral**

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	X
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus</i> spp.)	X
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
California butterweed (<i>Senecio californicus</i>)			Blue dicks (<i>Dichelostemma capitatum</i>)	X
Ceanothus (<i>Ceanothus</i> spp.)		X	Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	
Goldfields (<i>Lasthenia</i> spp.)		X	Manzanita (<i>Arctostaphylos</i> spp.)	
Popcorn flower (<i>Cryptantha/Plagiobothrys</i> spp.)		X	Redmaids (<i>Calandrinia menziesii</i>)	
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovata</i>)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara</i>)		California sister (<i>Adelpha californica</i>)		Great purple hairstreak (<i>Atides halesus corcorani</i>)	
Gabb's checkerspot (<i>Chlosyne gabbii</i>)		Desert orangetip (<i>Anthocharis cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Western elfin (<i>Callophrys augustinus iroides</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. perplexa</i>)	
Chalcedon checkerspot (<i>Euphydryas chalcedona chalcedona</i>)		California marble (<i>Euchloe hyantis</i>)		Red admiral (<i>Vanessa atalanta</i>)		Loki hairstreak (<i>Callophrys gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>Vanessa cardui</i>)	3	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)	3	American lady (<i>Vanessa virginiensis</i>)		Skippers	
Blues		Checkered white (<i>Pontia protodice</i>)	20	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exilis</i>)		Spring white (<i>Pontia sisymbrii</i>)		Metalmarks		Funereal duskywing (<i>Erynnis funeralis</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)	5	unidentified white		Behr's metalmark (<i>Apodemia virgulti</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrighti</i>)		Mourful duskywing (<i>Erynnis tristis</i>)	
Southern silvery blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias harfordii</i>)	3	Swallowtails		White checkered-skipper (<i>Pyrgus albescens</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)		Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
San Bernardino blue (<i>Euphilotes bernardino</i>)	4	Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>Papilio rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Plebejus acmon</i>)	4	Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>Papilio zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)		California dogface (<i>Zerene eurydice</i>)		Miscellaneous		Rural skipper (<i>Ochlodes agricola</i>)	
Echo azure (<i>Celastrina echo</i>)		unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia</i>)		Gorgon copper	10
Smoky arrowhead blue (<i>Glaucopsyche piasus umbrus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)		Bronze hedgerow	2
Unidentified blue				California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	15	Column Total	26	Column Total	3	Column Total	12
Evius blue	2					Total	56

2022 Starlight Solar Project: Quino Checkerspot Butterfly Survey Form

Surveyor: Brenda Bennett

Date: 5/13/2022

Site Name: _____

Survey No: 12

Additional Surveyors Present: NA

Check-In Time: _____

Check-Out Time: _____

Map Synched (Circle One): Yes No

Area (Circle One): 1 2 3 4 5 6 7 8 9 10

Field Conditions

	Time (24 hr)	Temperature (°F)	Wind Speed (mph)	Cloud Cover
Start	<u>0945</u>	<u>74.6</u>	<u>1-2</u>	<u>0%</u>
Mid				
End	<u>1630</u>	<u>84.2</u>	<u>2-7</u>	<u>0%</u>

Vegetation Communities Surveyed (include dominant spp.)

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	<u>X</u>
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus denticulatus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			White flower currant (<i>Ribes indecorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)			Sage (<i>Salvia</i> spp.)	
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	
Nectar Plants		Obs		
<u>Blue groundsel (<i>Chenopodium</i> spp.)</u>	<u>ADE PAS</u>	<u>X</u>	Phacelia (<i>Phacelia</i> spp.)	<u>X</u>
<u>Goldenrod (<i>Coreopsis</i> spp.)</u>	<u>ERISAP</u>	<u>X</u>	Blue dicks (<i>Dichelostemma capitatum</i>)	<u>X</u>
<u>Blackberry (<i>Rubus</i> spp.)</u>	<u>PEN CLE</u>	<u>X</u>	Snapdragon penstemon (<i>Keckia antirrhinoides</i>)	
<u>Goldenbush (<i>Sarcocolla</i> spp.)</u>		<u>X</u>	Tidy tips (<i>Layia</i> spp.)	
<u>Goldfields (<i>Lasthenia</i> spp.)</u>		<u>X</u>	Long-stemmed yarrow (<i>Eriophyllum</i> spp.)	<u>X</u>
<u>Popcorn flower (<i>Cryptantha</i> spp.)</u>		<u>X</u>	Yarrow (<i>Achillea millefolium</i>)	
<u>Popcorn flower (<i>Cryptantha</i> spp.)</u>		<u>X</u>	Redmaids (<i>Calandrinia menziesii</i>)	
<u>Trillium (<i>Trillium</i> spp.)</u>	<u>TRILLAN</u>	<u>X</u>	Sugar bush (<i>Rhus ovata</i>)	

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chrysene californica</i>)		Santa orange tip (<i>Anthochloa sara sara</i>)		California sater (<i>Adelpha brycei californica</i>)		Great purple hairstreak (<i>Alticus talus</i>)	
Gabb's checkerspot (<i>C. gabbi</i>)		Desert (Felder's) orange tip (<i>A. celura</i>)		Longish's admiral (<i>Junonia longis</i>)		Brown elfin (<i>Callophrys augustus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California angle (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Periploids hairstreak (<i>C. dymetorum affinis</i>)	
Chalcedon checkerspot (<i>E. chalcedon</i>)		Pearly mottle (<i>E. hyantis</i>)		Red admiral (<i>V. atalanta rubra</i>)		Low juniper hairstreak (<i>Callophrys gryneus</i>)	
Lee's checkerspot (<i>Thessalia leana</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)		Gray hairstreak (<i>Stymon melinus pudica</i>)	
Melita crescent (<i>Mycalesis mytilus</i>)		Black's white (<i>Pieris beckii</i>)		American virginia lady (<i>V. virginica</i>)		Skippers	
Blues		Checkered common white (<i>Pieris protodice</i>)	<u>28</u>	Unidentified lady (<i>Vanessa</i> sp.)	<u>1</u>	Athene duskywing (<i>Erynnis atene</i>)	
Western pygmy blue (<i>Glaucopsyche xeston</i>)		Spring white (<i>P. sylvan</i>)		Metamorphs		Sleepy duskywing (<i>Erynnis bruce</i>)	
Common blue (<i>Glaucopsyche xeston</i>)		Unidentified white		Deer's metamorph (<i>Apodemia normo virgata</i>)		Funeral duskywing (<i>Erynnis funerals</i>)	
Western tailed blue (<i>Euphydryas amyntula</i>)		Sulphurs		Wright's metamorph (<i>Calophrys wrighti</i>)		Proterius duskywing (<i>Erynnis proterius</i>)	
Southern blue (<i>Glaucopsyche lygdamus</i>)		Harford's sulphur (<i>Colias alexandria</i>)		Swallowtails		Mourning duskywing (<i>Erynnis nesiotes</i>)	
Edwards's blue (<i>Glaucopsyche centrosticta</i>)		Orange sulphur (<i>Colias eurytheme</i>)	<u>6</u>	Pale swallowtail (<i>Papilio eurymedon</i>)		Northwestern skipper (<i>Heliopterus erichsonii</i>)	
Robert's blue (<i>Glaucopsyche</i>)		Sleepy orange (<i>Eumitis nicippe</i>)		Western sp. swallowtail (<i>P. rutulus</i>)		Fairy skipper (<i>Pygostolus phylus</i>)	
Arizon blue (<i>Glaucopsyche arizonae</i>)	<u>11</u>	Delia sulphur (<i>Nathalis idia</i>)		Ante swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Hesperia schaeferi</i>)	
Maine blue (<i>Glaucopsyche maine</i>)		Cloudless sulfur (<i>Phoebastria semae</i>)		Miscellaneous		White common checkered skipper (<i>Pyrgus</i>)	
Echo azure (<i>Colostethus</i>)		Unidentified sulphur		Monarch (<i>Danusa plexippus</i>)		Other	
Sonoran blue (<i>Phloxetia sonoranensis</i>)		Other		Common buckeye (<i>Lunania cornuta</i>)		<u>Gorham copper</u>	<u>21</u>
Unidentified blue				Mourning cloak (<i>Nymphalis antiopa</i>)		<u>Rural skipper</u>	<u>1</u>
San Bern. Blue	<u>10</u>			California tortoiseshell (<i>Nymphalis californica</i>)			
Column Total	<u>21</u>	Column Total	<u>34</u>	Column Total	<u>1</u>	Column Total	<u>22</u>

Total 78

Surveyor: Ryan Meszaros Date: 5/14/2022
 Site Name: Starlight Survey No: 12
 Additional Surveyors Present: _____
 Check In Time: 900 Check Out Time: 1600 Map Synced: Yes No

Area (Circle One):					1	2	3	4	5	6	7	8	9	10
Field Conditions														
	Time (24 hr)	Temperature (°F)			Wind Speed (mph)			Cloud Cover						
Start	0900	83.4			1-3			0%						
Mid														
End	1545	85.6			1-3			5%						

Vegetation Communities Surveyed (include dominant spp.)														
Chaparral: Chamise, Cane cholla, Scrub-oak, Redshank,														

Host Plants	Diameter and Density (see note below)	Obs	Nectar Plants Continued	Obs
Dwarf plantain (<i>Plantago erecta</i>)			Buckwheat (<i>Eriogonum fasciculatum</i>)	X
Purple owl's clover (<i>Castilleja exserta</i>)			Ground pink (<i>Linanthus bellus</i>)	
Snapdragon (<i>Antirrhinum coulterianum</i>)			Oak gooseberry (<i>Ribes quercetorum</i>)	
Birds-beak (<i>Cordylanthus rigidus</i>)	1 individual	1	Red maids (<i>Calandrinia menziesii</i>)	X
Chinese houses (<i>Collinsia</i> spp.)			Lotus (<i>Acmispon</i> spp.)	X
Woolly plantain (<i>Plantago patagonica</i>)			Yerba santa (<i>Eriodictyon</i> spp.)	X
Note: Always include diameter of occurrence and density (low <20% cover per sq foot, medium 20-50%, high >50%)			Lomatium (<i>Lomatium</i> spp.)	
			Yellow pincushion (<i>Chaenactis glabriuscula</i> var. <i>glabriuscula</i>)	X
Nectar Plants		Obs	Phacelia (<i>Phacelia</i> spp.)	X
Rockcress (<i>Boechera</i> sp.)		X	Blue dicks (<i>Dichelostemma capitatum</i>)	x
Ceanothus (<i>Ceanothus</i> spp.)			Snapdragon penstemon (<i>Keckiella antirrhinoides</i>)	
Fiddleneck (<i>Amsinckia menziesii</i> var. <i>intermedia</i>)		X	Tidy tips (<i>Layia</i> spp.)	x
Goldenbush (<i>Isocoma/Ericameria</i> spp.)		X	Tansy mustard (<i>Descurainia pinnata</i>)	
Goldfields (<i>Lasthenia</i> spp.)		X	Mexican manzanita (<i>Arctostaphylos pungens</i>)	
Popcorn flower (<i>Cryptantha/Plagiobothrys/Pectocarya</i> spp.)		X	Red stemmed filaree (<i>Erodium cicutarium</i>)	X
Tarplants (<i>Deinandra</i> spp.)			Sugar bush (<i>Rhus ovate</i>)	X
Dobie pod (<i>Trapidocarpum gracile</i>)			Southern tauschia (<i>Tauschia arguta</i>)	X
Mountain mohogany (<i>Cercocarpus betuloides</i>)			London rocket (<i>Sisymbrium irio</i>)	X
Bush Snapdragon (<i>Keckiella antirrhinoides</i>)			California poppy (<i>Eschscholzia californica</i>)	X

Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.	Butterfly Species	No.
Checkerspots		Whites		Ladies/Admirals		Hairstreaks	
California patch (<i>Chlosyne californica</i>)		Sara orangetip (<i>Anthocharis sara sara</i>)		California sister (<i>Adelpha bredowii californica</i>)		Great purple hairstreak (<i>Atlides halesus corcorani</i>)	
Gabb's checkerspot (<i>C. gabbii</i>)		Desert (Felder's) orangetip (<i>A. cethura</i>)		Lorquin's admiral (<i>Limenitis lorquini</i>)		Brown elfin (<i>Callophrys augustinus</i>)	
Quino checkerspot (<i>Euphydryas editha quino</i>)		Common California ringlet (<i>Coenonympha californica</i>)		West coast lady (<i>Vanessa annabella</i>)		Perplexing hairstreak (<i>C. dumetorum affinis</i>)	
Henne's checkerspot (<i>E. chalcadone henne</i>)		Pearly marble (<i>Euchloe hyantis</i>)		Red admiral (<i>V. atalanta rubria</i>)		Loki' juniper hairstreak (<i>Callophrus gryneus loki</i>)	
Leanira checkerspot (<i>Thessalia leanira wrightii</i>)		Cabbage white (<i>Pieris rapae</i>)		Painted lady (<i>V. cardui</i>)	1	Gray hairstreak (<i>Strymon melinus pudica</i>)	
Mylitta crescent (<i>Phyciodes mylitta</i>)		Becker's white (<i>Pontia beckeri</i>)	1	American (Virginia) lady (<i>V. virginiensis</i>)		Skippers	
Blues		Checkered (common) white (<i>Pontia protodice</i>)	25	Unidentified lady (<i>Vanessa</i> sp.)		Afranius duskywing (<i>Erynnis afranius</i>)	
Western pygmy-blue (<i>Brephidium exile</i>)		Spring white (<i>P. sisymbrii</i>)		Metalmarks		Sleepy duskywing (<i>Erynnis brizo</i>)	
Clemence's blue (<i>Plebejus lupini monticola</i>)	15	unidentified white		Behr's metalmark (<i>Apodemia mormo virgulti</i>)	1	Funereal duskywing (<i>Erynnis funeralis</i>)	2
Western tailed blue (<i>Everes amyntula</i>)		Sulphurs		Wright's metalmark (<i>Calephelis wrightii</i>)		Propertius duskywing (<i>Erynnis propertius</i>)	
southern blue (<i>Glaucopsyche lygdamus australis</i>)		Harford's sulphur (<i>Colias Alexandra hartfordii</i>)		Swallowtails		Mournful duskywing (<i>Erynnis tristis</i>)	
Edward's blue (<i>Hemiargus ceraunus gyas</i>)		Orange sulphur (<i>Colias eurytheme</i>)	5	Pale swallowtail (<i>Papilio eurymedon</i>)		Northern white skipper (<i>Heliopetes ericetorum</i>)	
Reakirt's blue (<i>Hemiargus isola</i>)		Sleepy orange (<i>Eurema nicippe</i>)		Western tiger swallowtail (<i>P. rutulus</i>)		Fiery skipper (<i>Hylephila phyleus</i>)	
Acmon blue (<i>Icaricia acmon acmon</i>)	75	Dainty sulphur (<i>Nathalis iole</i>)		Anise swallowtail (<i>P. zelicaon</i>)		Sandhill skipper (<i>Polites sabuleti</i>)	
Marine blue (<i>Leptotes marina</i>)	1	Cloudless sulfur (<i>Phoebus sennae marcellina</i>)		Miscellaneous		White (common) checkered-skipper (<i>Pyrgus albescens</i>)	
Echo azure (<i>Celastrina echo</i>)	1	unidentified sulphur		Monarch (<i>Danaus plexippus</i>)		Other	
Sonoran blue (<i>Philotes sonorensis</i>)		Other		Common buckeye (<i>Junonia coenia grisea</i>)		Purplish Hedgerow Hairstreak (<i>Satyrrium saepium chlorophora</i>)	
Smoky arrowhead blue (<i>Glaucopsyche piasus</i>)				Mourning cloak (<i>Nymphalis antiopa</i>)		Gorgon copper (<i>Lycaena gorgon gorgon</i>)	24
				California tortoiseshell (<i>Nymphalis californica</i>)		San Bernardino blue (<i>Euphilotes bernadino</i>)	9
Column Total	92	Column Total	31	Column Total	2	Column Total	35

**APPENDIX H-2. 2024 QUINO CHECKERSPOT BUTTERFLY REPORT,
SWCA ENVIRONMENTAL CONSULTANTS**

June 21, 2024

Recovery Permit Coordinator
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

**Re: 2024 Focused Quino Checkerspot Butterfly Survey Report for the Proposed
Starlight Solar Project, San Diego County, California**

Dear Recovery Permit Coordinator:

This letter report documents the spring 2024 results of a focused survey conducted by SWCA Environmental Consultants (SWCA) for the federally listed endangered quino checkerspot butterfly (*Euphydryas editha quino*, QCB). This survey was conducted in support of the proposed Starlight Solar Project, San Diego County, California. This report is intended to satisfy reporting requirements for Paul Lemons (ES051248-7).

INTRODUCTION

Project Description and Background

Starlight Solar, LLC, is requesting a Major Use Permit from the County of San Diego (County) to develop, finance, construct, and operate an uncrewed renewable energy solar and battery storage project in southeastern San Diego County. The County's General Plan designates the project site as Rural Lands 80 (RL-80), and the County's Zoning Ordinance identifies the site as General Rural (S92). The County's General Regulation states that solar power plant projects are considered Major Impact Service and Utility in all zones and thus require the approval of a Major Use Permit.

The Starlight Solar Project would utilize photovoltaic (PV) electric generation system technology to produce up to 100 megawatts (MW) of alternating current solar energy at the utility scale. The project would also include an 868-megawatt-hour (MWh) battery energy storage system (217-MW, 4-hour batteries). The project would be constructed in two phases: 1) 20-MW solar energy generation and 17 MW of battery storage, and 2) 80-MW solar energy generation and 200 MW of battery storage.

SWCA and subconsultant Rocks Biological performed protocol QCB surveys across the entire project area in 2022. An additional 73 acres were added to the project site in 2024, which were the focus of this survey effort.

Project Location

The proposed Starlight Solar Project encompasses a total of approximately 588 acres located in unincorporated San Diego County, south of the community of Boulevard and approximately 0.93 mile north of the United States–Mexico border (Figure 1). The project site is within the Mountain Empire Subregional Plan area in unincorporated San Diego County within the U.S. Geological Survey 7.5-minute Live Oak Springs and Tierra Del Sol quadrangle and is generally located along Jewel Valley Road (Figure 2). The proposed project site would be divided into eight solar array areas. An underground generation tie-line (gen-tie) would be located on the east side of Tule Jim Lane and connect to the southeast corner of the Boulevard Substation.

Quino Checkerspot Butterfly Natural History

The QCB subspecies was listed as a federally endangered species by the U.S. Fish and Wildlife Service (USFWS) on January 16, 1997 (Federal Register 62:2313–2322). Edith’s checkerspot (*Euphydryas editha*) has a range extending from British Columbia and Alberta, Canada, south through Colorado and Utah, and west along the coast to northern Baja California. It is divided into 20 subspecies, each of which has its own range and biological and morphological characteristics. In California, there are 12 subspecies (Garth and Tilden 1986), three of which are currently known to occur in Southern California. The QCB is the southwesternmost subspecies of *E. editha* (Mattoni et al. 1997).

The QCB is known to occur in association with a variety of plant communities, soil types, and elevations (up to 5,000 feet above mean sea level). The plant communities include clay soil meadows, open grasslands, coastal sage scrub, chamise chaparral, red shank chaparral, juniper woodlands, and semi-desert scrub (Ballmer et al. 2001). The QCB is also associated with clay soils that possess cryptogamic crusts and vernal pools (USFWS 2002).

The QCB is a medium-sized butterfly (approximately 0.8–1.1-inch wingspan) belonging to the family Nymphalidae. The adults are primarily orange-red with white and black markings on the dorsal wing surface. They are active primarily in March and April, but this active period may vary depending on weather conditions (Ballmer et al. 2001). The adult butterfly feeds on nectar, which it obtains from spring annuals such as popcorn flower (*Plagiobothrys* spp., *Cryptantha* spp.), whitedaisy tidytops (*Layia glandulosa*), goldenbush (*Ericameria* spp.), pincushion (*Chaenactis* spp.), fiddleneck (*Amsinckia* spp.), chia (*Salvia columbariae*), and bluedicks (*Dipterostemon capitatus*), among others.

Adult males and virgin females sometimes “hilltop,” or travel to elevated locations to find mates. While waiting for females to arrive, the males will often exhibit territorial behavior and will chase other butterflies that approach them. Frequently, the butterflies are observed in meadows or clearings where their host plants occur (Ballmer et al. 2001).

A female may lay 20 to 75 eggs at one time and may produce up to 1,200 eggs in her lifetime. The eggs hatch in approximately 10 days under favorable weather conditions and the young larvae will immediately begin to feed upon a host plant. As of 2014, the USFWS considers the following as larval host plants: dwarf plantain (*Plantago erecta*), woolly plantain (*P. patagonica*), Coulter’s snapdragon (*Antirrhinum coulterianum*), purple Chinese houses (*Collinsia heterophylla*), stiffbranch bird’s beak (*Cordylanthus rigidus*), and exserted Indian paintbrush (*Castilleja exserta*) (USFWS 2014). In addition, Chinese houses (*Collinsia concolor*) is a potential larval host plant (Pratt and Pierce 2009).

After feeding, the early larva enters an obligatory aestival diapause (dormant stage), which may be broken after fall or winter rains (Murphy and White 1984; Osborne 1998). If adverse weather conditions occur, the

emergent larva may reenter a diapause stage repeatedly, for up to 5 or 6 years, until favorable weather conditions permit sufficient growth of the host plant to allow the larva to complete its development.

The QCB was once common in Southern California. It ranged north into Ventura County, California, west to the Pacific Ocean, east to the deserts, and south into northern Baja California, Mexico. Currently, it is known to occur only in a few, probably isolated, colonies in southwestern Riverside County, California; San Diego County, California; and northern Baja California, Mexico.

Reasons for the butterfly’s reduction in population are not well understood. Habitat loss due to degradation and fragmentation caused by urban and rural development, agricultural conversion, off-road vehicular use, the invasion of nonnative plants and insects, fire management practices, over collecting, and adverse weather conditions have likely contributed to the species’ decline (Federal Register 62:2313–2322).

METHODS

Habitat Assessment

On February 8, 2022, prior to the focused surveys, SWCA biologists Christina Torres and Parker Richardson conducted a habitat assessment within the project area to identify suitable habitat and exclude unsuitable habitat. Dense chaparral within the study area, including chamise chaparral and red shank, that was not walkable was excluded, as well as developed land and regularly mowed/disc'd areas. Habitat was determined to be suitable or non-suitable in accordance with QCB survey guidelines (USFWS 2014). Approximately 23 acres of the total 73 acres of additional project area were determined to be non-suitable habitat and were excluded for this future protocol surveys. SWCA biologists determined 50 acres of the total 73 acres to be suitable, hereafter referred to as the QCB survey area.

Table 1. Habitat Assessment Survey Conditions

Date	Hours	Personnel	Conditions (temperature, cloud cover, wind speed)
2/8/2024	7:10 a.m.–4:42 p.m.	Christina Torres, Parker Richardson	55–75°F; 20–30%; 0–3 mph wind; cloud cover; clear

Protocol Surveys

The 2014 USFWS protocol states that focused QCB surveys should begin the third week of February and end the second Saturday in May, unless otherwise approved by USFWS. Surveys are to be conducted during the adult flight season by biologists possessing a recovery permit for this species pursuant to Section 10(a)(1)(A) of the federal Endangered Species Act (USFWS 2014).

The QCB survey area was able to be entirely surveyed in a single day. Focused surveys were conducted over 13 visits from February 28 to May 9, 2024 (Table 2).

Mr. Lemons was provided with the QCB Study Area through the ArcGIS Field Maps mobile application. Binoculars (10 x 42) were used to aid in detecting and identifying butterfly and other wildlife species.

The survey methods consisted of slowly walking roughly parallel transects spaced approximately 30 feet (10 meters) apart throughout all suitable habitats within the QCB Study Area. Survey routes were arranged to thoroughly cover the survey area at a rate of no more than 10 acres per hour.

Surveys were conducted only during acceptable weather conditions (i.e., surveys were not conducted during fog, drizzle, or rain; winds greater than 15 miles per hour measured 4 to 6 feet above ground level for more than 30 seconds; temperature in the shade at ground level less than 60 degrees Fahrenheit [°F] on a clear, sunny day; or temperature in the shade at ground level less than 70°F on an overcast or cloudy day). Survey times, personnel, and conditions during the QCB survey are shown in Table 2.

Table 2. Schedule of Focused QCB Surveys and Survey Conditions

Survey Pass	Date	Biologist	Survey Time	Conditions
1 (make-up due to week-long bad weather previous week)	2/28/2024	Paul Lemons	10:00 a.m.–4:00 p.m.	Air temp: 64–65°F; ground temp: 62–69°F; 10–20% cloud cover; 0–6 mph wind; patchy to clear
2	3/1/2024	Paul Lemons	8:00 a.m.–3:00 p.m.	Air temp: 56–68°F; ground temp: 60–72°F; 0–10% cloud cover; 2–12 mph wind; clear
3	3/8/2024	Paul Lemons	9:00 a.m.– 3:00 p.m.	Air temp: 57–68°F; ground temp: 62–72°F; 0–10% cloud cover; 4–12 mph wind; clear
4 (partial due to bad weather)	3/16/2024	Paul Lemons	9:00 a.m.–12:30 p.m.	Air temp: 56–59°F; ground temp: 60–63°F; 10–40% cloud cover; 1–12 mph wind; patchy to cloudy
4 (partial)	3/17/2024	Paul Lemons	12:30 a.m.–4:30 p.m.	Air temp: 63–64°F; ground temp: 66–67°F; 20% cloud cover; 2–8 mph wind; clear to patchy
5	3/21/2024	Paul Lemons	8:30 a.m.– 4:30 p.m.	Air temp: 58–71°F; ground temp: 60–76°F; 0–10% cloud cover; 2–7 mph wind; clear
6	3/27/2024	Paul Lemons	8:30 a.m.– 4:30 p.m.	Air temp: 60–76°F; ground temp: 62–78°F; 0–10% cloud cover; 0–7 mph wind; clear
7	4/3/2024	Paul Lemons	8:00 a.m.–4:30 p.m.	Air temp: 61–75°F; ground temp: 62–82°F; 0% cloud cover; 0–10 mph wind; clear
8	4/11/2024	Paul Lemons	8:00 a.m.– 4:30 p.m.	Air temp: 63–83°F; ground temp: 64–88°F; 0% cloud cover; 0–12 mph wind; clear
9	4/21/2024	Paul Lemons	8:00 a.m.–4:30 p.m.	Air temp: 66–84°F; ground temp: 65–89°F; 1–15 mph wind; 0% cloud cover; clear
10 (make-up due to week-long bad weather previous week)	4/30/2024	Paul Lemons	8:00 a.m.–4:30 p.m.	Air temp: 64–78°F; ground temp: 64–83°F; 0–10 mph wind; 0% cloud cover; clear
11	5/2/2024	Paul Lemons	8:00 a.m.–4:30 p.m.	Air temp: 69–82°F; ground temp: 66–89°F; 0–10% cloud cover; 0–15 mph wind; clear
12	5/9/2024	Paul Lemons	8:00 a.m.–4:30 p.m.	Air temp: 66–77°F; ground temp: 68–77°F; 0% cloud cover; 1–15 mph wind

RESULTS

Quino Checkerspot Butterfly

No QCBs were observed within the QCB Study Area during 2024 protocol surveys. Butterfly species recorded during the focused survey effort are shown in Appendix A.

Suitable Habitat and Vegetation Communities

During the habitat assessment conducted on February 2, 2024, approximately 23 acres of non-suitable QCB habitat were excluded from the surveys. Excluded areas consisted of developed areas of Empire Ranch and other private property, closed-canopy mixed chaparral, closed-canopy redshank (*Adenostoma sparsifolium*) chaparral, closed-canopy chamise (*Adenostoma fasciculatum*) chaparral, and closed-canopy big sagebrush (*Artemisia tridentata*) scrub. Suitable habitat in the QCB survey area totaled approximately 50 acres. Representative site photographs are included as Appendix B. Suitable habitat within the QCB survey area occurred within several vegetation communities, including:

- Coastal sage scrub dominated by California buckwheat (*Eriogonum fasciculatum*), California cholla (*Cylindropuntia californica* var. *parkeri*), and interior goldenbush (*Ericameria linearifolia*)
- Buckwheat scrub dominated by California buckwheat, broom matchweed (*Gutierrezia sarothrae*), and deerweed (*Acmispon glaber* var. *brevialatus*)
- Upland mustards dominated by short-pod mustard (*Hirschfeldia incana*), tarweeds (*Deinandra* spp.) and nonnative grasses
- Southern mixed chaparral dominated by chamise, redshank, mountain mahogany (*Cercocarpus betuloides*), cup-leaf lilac (*Ceanothus perplexans*), and sugarbush (*Rhus ovata*)

Larval Host Plants and Nectar Sources

One larval host plant, purple owl's clover (*Castilleja exserta*), was observed within the QCB Study Area during 2024 focused surveys (Figure 3). QCB larval host plant locations were mapped in the field using the geographic information system (GIS) program ArcGIS Field Maps.

Nectar sources were present throughout the QCB survey area. SWCA biologists observed 52 potential nectar sources within the QCB survey area during the protocol surveys. A compiled list of potential nectar sources observed within the QCB survey area is presented in Appendix C.

CONCLUSION

SWCA biologist Paul Lemons documented QCB larval host plants and numerous nectar sources in the QCB survey area; however, QCB was not observed within the QCB Study Area during the 2024 focused survey effort. A total of 81 wildlife species were observed or detected during this focused survey effort and are shown in Appendix D.

CERTIFICATION

I certify that the information in this survey report and attached exhibits fully and accurately represents my work.

Please feel free to contact me at paul.lemons@swca.com if you have any questions regarding the contents of this report.

Sincerely,



Paul Lemons

Permit # ES051248-7

Attachments.: Figures 1–3; Appendices A–D

cc: Omar Moquit, SWCA

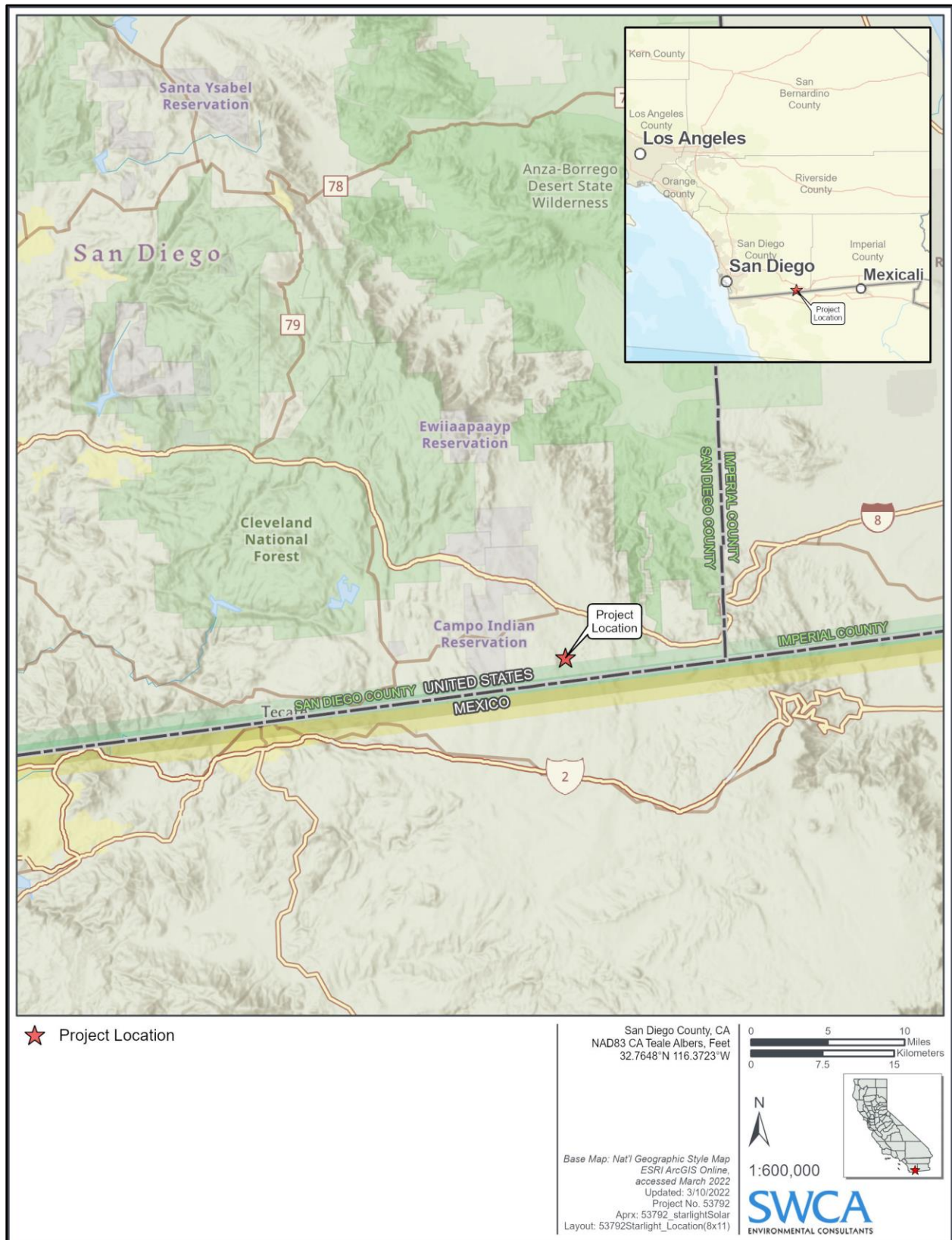


Figure 1. Project location map.

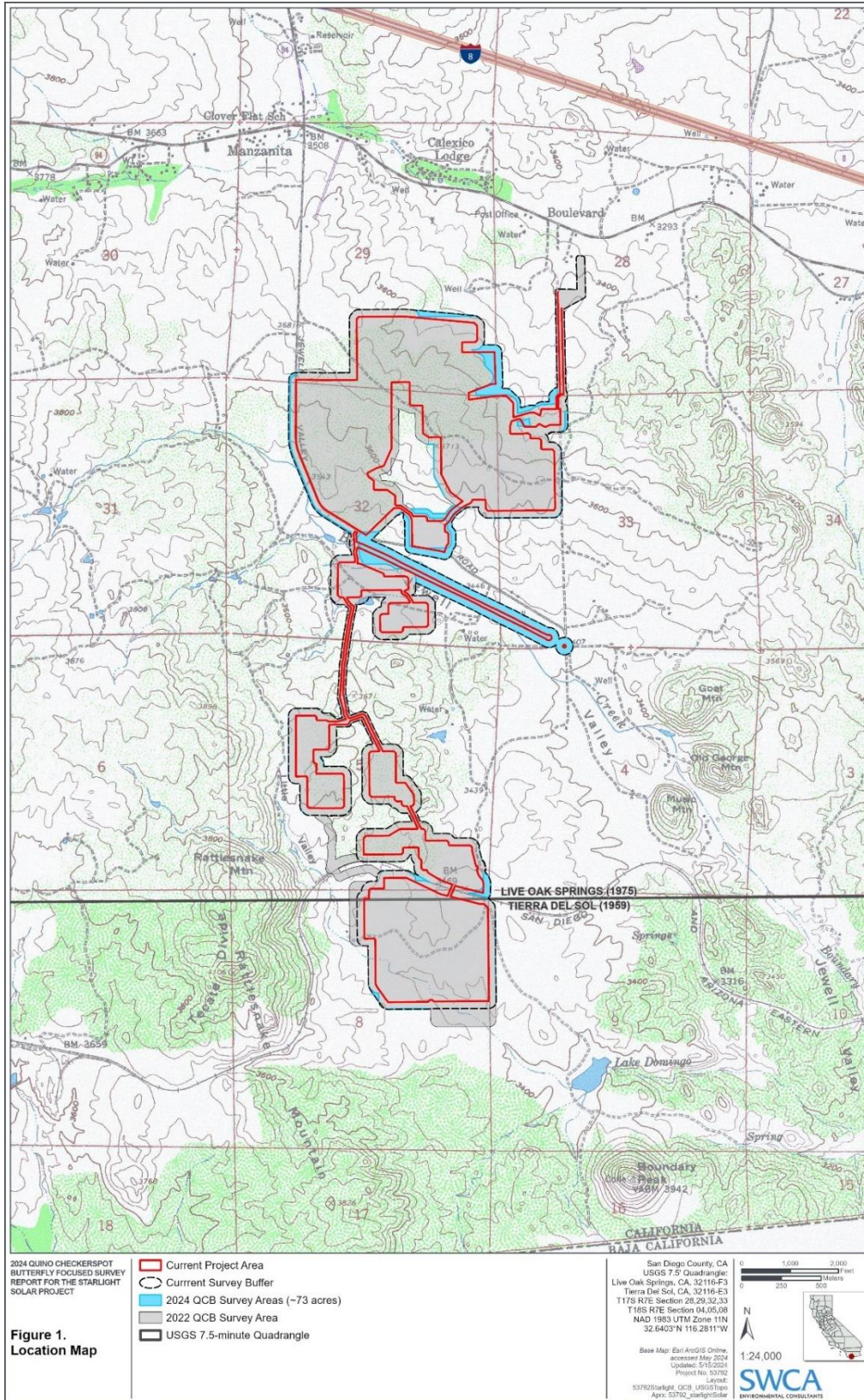


Figure 2. Project vicinity map.

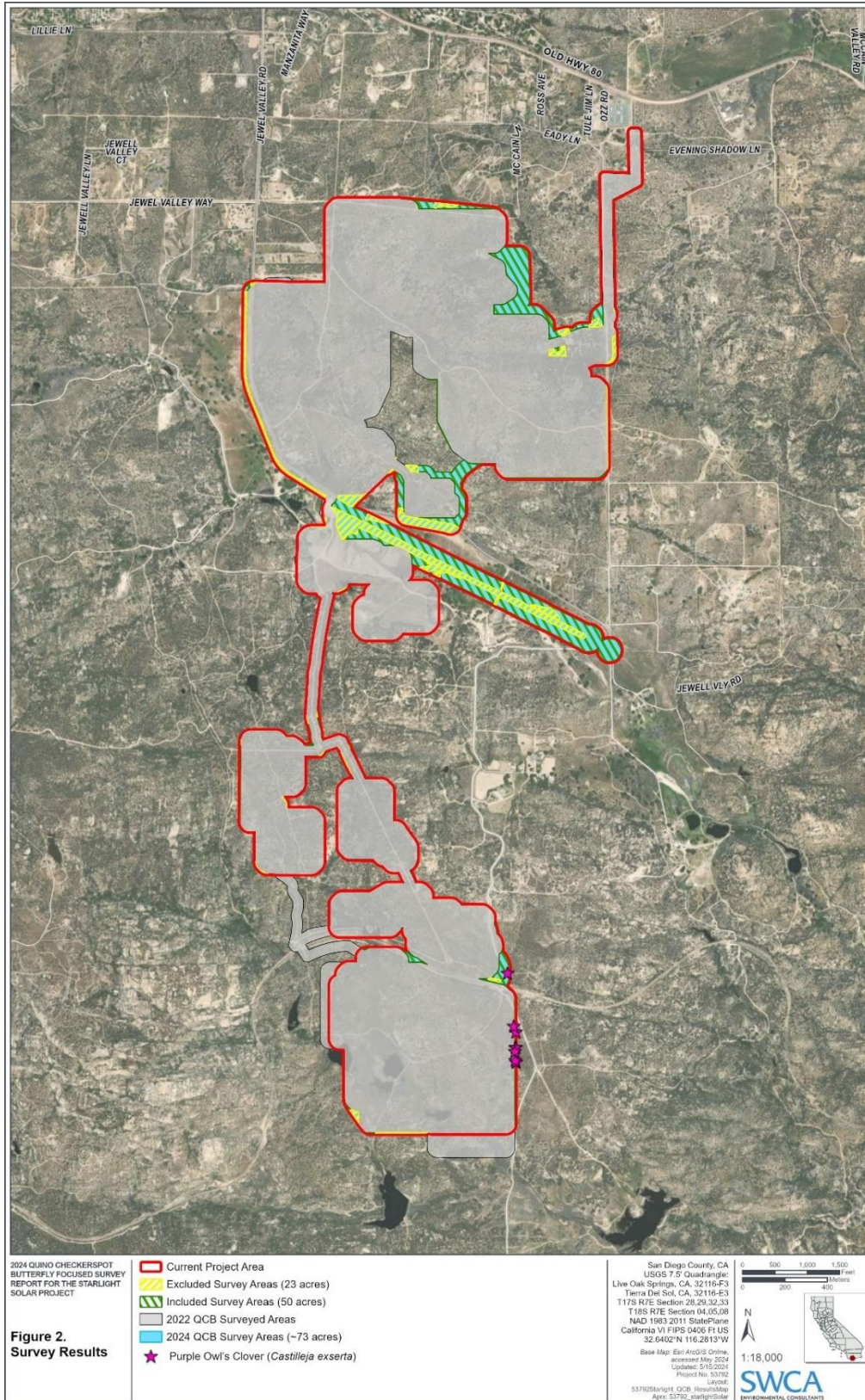


Figure 3. Location of larval host plants.

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Appendix A

Butterflies Observed During Focused Surveys

Scientific Name	Common Name	Survey 1	Survey 2	Survey 3	Survey 4.1	Survey 4.2	Survey 5	Survey 6	Survey 7	Survey 8	Survey 9	Survey 10	Survey 11	Survey 12
Nymphalidae (Brush Footed Butterflies)														
<i>Vanessa cardui</i>	Painted lady	X		X	X	X	X	X	X					
<i>Junonia coenia grisea</i>	Buckeye					X					X	X	X	X
Hesperiidae (Skippers)														
<i>Erynnis funeralis</i>	Funereal duskywing					X		X	X	X	X	X	X	X
<i>Erynnis propertius</i>	Propertius duskywing	X				X			X	X	X	X	X	X
Lycaenidae (Gossamer-wing Butterflies)														
<i>Aricia lupini</i>	Lupine blue												X	
<i>Callophrys augustinus</i>	Brown elfin					X					X			
<i>Callophrys perplexa perplexa</i>	Perplexing hairstreak			X		X	X	X	X	X	X	X	X	
<i>Celastrina echo echo</i>	Echo blue	X						X						
<i>Glaucopsyche lygdamus australis</i>	Southern blue							X	X		X	X	X	X
<i>Plebejus acmon</i>	Acmon blue	X	X	X		X	X	X	X	X	X	X		
Unidentified blue		X								X				X
Riodinidae (Metalmarks)														
<i>Apodemia virgulti virgulti</i>	Behr's metalmark					X		X	X	X	X		X	X
Papilionidae (Swallowtails)														
<i>Papilio eurymedon</i>	Pale swallowtail									X		X	X	X
<i>Papilio rutulus</i>	Western Tiger swallowtail								X				X	X
Pieridae (Whites and Sulphurs)														

[illegible]

Appendix B

Representative Site Photographs













Appendix C

Adult Nectar Plants Observed during Focused Surveys

Appendix C- Adult Nectar Plants Observed during Focused Surveys

Scientific Name	Common Name
<i>Acemisson argophyllus</i> var. <i>argophyllus</i>	silver-leaf lotus
<i>Acemisson glaber</i> var. <i>brevialatus</i>	deerweed
<i>Amsinckia menziesii</i>	common fiddleneck
<i>Arctostaphylos glandulosa</i>	Eastwood's manzanita
<i>Castilleja exserta</i>	purple owl's clover
<i>Castilleja foliolosa</i>	woolly Indian paintbrush
<i>Ceanothus leucodermis</i>	chaparral whitethorn
<i>Ceanothus perplexans</i>	cup-leaf-lilac
<i>Cirsium texanum</i>	Texas thistle
<i>Cryptantha intermedia</i>	popcorn flower
<i>Cryptantha pterocarya</i>	winged nut forget me not
<i>Delphinium parishii</i>	sapphire woollystar
<i>Delphinium parishii</i> ssp. <i>subglobosum</i>	Intermediate larkspur
<i>Descurainia pinnata</i>	western tansymustard
<i>Dichelostemma capitatum</i>	blue dicks
<i>Diplacus brevipes</i>	widethroat yellow monkeyflower
<i>Eriastrum sapphirinum</i>	sapphire eriastrum
<i>Ericameria linearifolia</i>	interior goldenbush
<i>Eriodictyon trichocalyx</i>	yerba santa
<i>Eriophyllum confertiflorum</i>	golden-yarrow
<i>Erodium cicutarium</i> *	red-stem filaree
<i>Erythranthe guttata</i>	seep monkeyflower
<i>Eschscholzia californica</i>	California poppy
<i>Euphorbia albomarginata</i>	rattlesnake weed
<i>Garrya flavescens</i>	ashy silk tassel
<i>Gilia capitata</i>	Blue-thimble-flower
<i>Hesperoyucca whipplei</i>	chaparral candle
<i>Hirschfeldia incana</i> *	short-pod mustard
<i>Lasthenia gracilis</i>	goldfields
<i>Layia glandulosa</i>	tidy tips
<i>Layia platyglossa</i>	tidy tips
<i>Leptosiphon parviflorus</i>	variable linanthus
<i>Linanthus dianthiflorus</i>	farinose ground pink
<i>Lomatium mohavense</i>	Mojave desert parsely
<i>Lupinus concinnus</i>	Bajada lupine
<i>Lupinus truncatus</i>	collared annual lupine
<i>Malacothrix glabrata</i>	Desert dandelion

<i>Oenothera californica</i>	California evening primrose
<i>Pectocarya linearis</i>	sagebrush combseed
<i>Penstemon centranthifolius</i>	scarlet bugler
<i>Phacelia distans</i>	Wild Heliotrope
<i>Plagiobothrys nothofulvus</i>	Rusty popcornflower
<i>Rafinesquia californica</i>	California chicory
<i>Rhamnus ilicifolia</i>	hollyleaf redberry
<i>Rhus ovata</i>	sugar bush
<i>Ribes quercetorum</i>	Oak gooseberry
<i>Salvia columbariae</i>	chia
<i>Senecio flaccidus</i>	threadleaf ragwort
<i>Sisymbrium altissimum</i> *	tumble mustard
<i>Solanum parishii</i>	Parish's nightshade
<i>Sphaeralcea ambigua</i>	apricot mallow
<i>Thysanocarpus curvipes</i>	sand fringe-pod

Appendix D

Wildlife Species Observed or Detected during Focused Surveys

Appendix D. Wildlife Species Observed or Detected During Focused Surveys

Species Type	Scientific Name	Common Name
Birds	<i>Amphispiza bilineata</i>	black-throated sparrow
	<i>Anas platyrhynchos</i>	mallard
	<i>Anthus rubescens</i>	American pipit
	<i>Aphelocoma californica</i>	California scrub-jay
	<i>Baeolophus inornatus</i>	oak titmouse
	<i>Buteo jamaicensis</i>	red-tailed hawk
	<i>Buteo lineatus</i>	red-shouldered hawk
	<i>Callipepla californica</i>	California quail
	<i>Calypte anna</i>	Anna's hummingbird
	<i>Cathartes aura</i>	turkey vulture
	<i>Catharus guttatus</i>	hermit thrush
	<i>Chamaea fasciata</i>	wrentit
	<i>Chondestes grammacus</i>	lark sparrow
	<i>Colaptes auratus</i>	northern flicker
	<i>Corthylio calendula</i>	ruby-crowned kinglet
	<i>Corvus brachyrhynchos</i>	American crow
	<i>Corvus corax</i>	common raven
	<i>Euphagus cyanocephalus</i>	Brewer's blackbird
	<i>Falco sparverius</i>	American kestrel
	<i>Geococcyx californianus</i>	greater roadrunner
	<i>Haemorhous mexicanus</i>	house finch
	<i>Icterus parisorum</i>	Scott's oriole
	<i>Junco hyemalis</i>	dark-eyed junco
	<i>Leiothlypis celata</i>	orange-crowned warbler
	<i>Melanerpes formicivorus</i>	acorn woodpecker
	<i>Meleagris gallopavo</i>	wild turkey
	<i>Melospiza crissalis</i>	California towhee
	<i>Mimus polyglottos</i>	northern mockingbird
	<i>Myiarchus cinerascens</i>	ash-throated flycatcher
	<i>Phainopepla nitens</i>	phainopepla
	<i>Pipilo maculatus</i>	spotted towhee
	<i>Poliophtila caerulea</i>	blue-gray gnatcatcher
	<i>Psaltiriparus minimus</i>	bushtit
	<i>Sayornis nigricans</i>	black phoebe
	<i>Sayornis saya</i>	Say's phoebe
	<i>Setophaga coronata</i>	yellow-rumped warbler
	<i>Sialia mexicana</i>	western bluebird

	<i>Spinus lawrencei</i>	Lawrence's goldfinch
	<i>Spinus pinus</i>	pine siskin
	<i>Spinus psaltria</i>	lesser goldfinch
	<i>Spizella atrogularis</i>	black-chinned sparrow
	<i>Spizella passerina</i>	chipping sparrow
	<i>Streptopelia decaocto</i>	Eurasian collared-dove
	<i>Toxostoma redivivum</i>	California thrasher
	<i>Troglodytes aedon</i>	house wren
	<i>Tyrannus verticalis</i>	western kingbird
	<i>Zenaida macroura</i>	mourning dove
	<i>Zonotrichia leucophrys</i>	white-crowned sparrow
Invertebrates	<i>Anthocharis cethura</i>	desert orangetip
	<i>Anthocharis sara sara</i>	Pacific sara orangetip
	<i>Apodemia mormo virgulti</i>	Behr's metalmark
	<i>Callophrys augustinus</i>	brown elfin
	<i>Callophrys dumetorum</i>	bramble hairstreak
	<i>Celistrina ladon [argiolus] echo</i>	echo blue
	<i>Colias harfordii</i>	Harford's sulphur
	<i>Erynnis funeralis</i>	funereal duskywing
	<i>Erynnis propertius</i>	Propertius duskywing
	<i>Euchloe hyantis lotta</i>	desert pearly marble
	<i>Glaucopsyche lygdamus australis</i>	southern blue
	<i>Icaricia acmon acmon</i>	Acmon blue
	<i>Junonia coenia</i>	common buckeye
	<i>Papilio eurymedon</i>	pale swallowtail
	<i>Papilio rutulus</i>	western tiger swallowtail
	<i>Pieris rapae</i>	cabbage white
	<i>Plebejus lupini</i>	lupine blue
	<i>Pontia sisymbrii</i>	spring white
	<i>Vanessa cardui</i>	painted lady
	<i>Blue sp.</i>	unidentified blue (flyby)
Mammals	<i>Canis latrans</i>	coyote
	<i>Lepus californicus</i>	black-tailed jackrabbit
	<i>Lynx rufus</i>	bobcat
	<i>Neotamias merriami</i>	Merriam's chipmunk
	<i>Odocoileus hemionus</i>	mule deer
	<i>Otospermophilus beecheyi</i>	California ground squirrel
	<i>Sylvilagus audubonii</i>	desert cottontail
	<i>Sylvilagus bachmani</i>	brush rabbit
	<i>Thomomys bottae</i>	Botta's pocket gopher
Reptiles	<i>Phrynosoma blainvillii</i>	Blainville's horned lizard

	<i>Pituophis catenifer</i>	gophersnake
	<i>Sceloporus occidentalis</i>	western fence lizard
	<i>Sceloporus orcutti</i>	granite spiny lizard
	<i>Uta stansburiana</i>	common side-blotched lizard

**APPENDIX I. 2025 CROTCH'S BUMBLE BEE
HABITAT VERIFICATION SURVEY REPORT,
SWCA ENVIRONMENTAL CONSULTANTS**

TECHNICAL MEMORANDUM

To: Empire II LLC
12302 Exposition Boulevard
Los Angeles, California 90064

From: Shirley Innecken, Senior Natural Resources Team Leda

Date: June 20, 2025

Re: **Starlight Solar Crotch's Bumble Bee Habitat Assessment / SWCA Project No. 53792**

INTRODUCTION

This memorandum documents SWCA Environmental Consultants' (SWCA's) habitat assessment for California candidate bumble bee species across desktop and field efforts conducted between April and May 2025. These habitat assessment efforts aimed to assist Empire II LLC in informing the likelihood for Crotch's bumble bee (*Bombus crotchii*; CBB) to occur within and adjacent to the Starlight Solar Project (project) site.

The proposed project development site encompasses a total of 565 acres within the Mountain Empire Subregional Plan area in unincorporated San Diego County, California. The project would use photovoltaic electric generation system technology to produce up to 100 megawatts (MW) of alternating current (AC) of solar energy at the utility scale and would also include a 400-megawatt hours (MWh) AC battery energy storage system (BESS). The project would be constructed in two phases, the first of 20 MW solar energy generation and 17 MW of BESS, and the second of 80 MW solar energy generation and 200 MW of BESS. This habitat assessment covered only the initial phase of the project, encompassing 124.91 acres.

METHODS

Before conducting the field surveys, SWCA reviewed the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) to determine the nearest recorded locations of CBB within the vicinity of the project site. Additionally, SWCA reviewed citizen science-based online databases, including Bumble Bee Watch (2025) and iNaturalist (2025), and data collected from previous project-related investigations. A desktop review of the project was conducted to identify portions of the project site that were most likely to be suitable for bumble bee species considering the requirements for nesting, and foraging behavior. Overwintering habitat for most North American bumble bees is poorly understood; therefore, areas with moderate to high potential for support overwintering habitat cannot be distinguished through habitat assessments conducted over a single surveying year. SWCA analyzed this information to assess the project site for areas that were likely to contain suitable habitat for bumble bee species and co-occurring pollinator species (e.g., known host plants for CBB, high floristic diversity and abundance of suitable nectar sources, adequate nesting and overwintering features such as rodent burrows and thatched grasses, and potential dispersal movement corridors informed by previously documented occurrences). SWCA used vegetation communities and known floral resources observed on-site during previous surveys to orient field verification of habitat assessment (Figure 1).

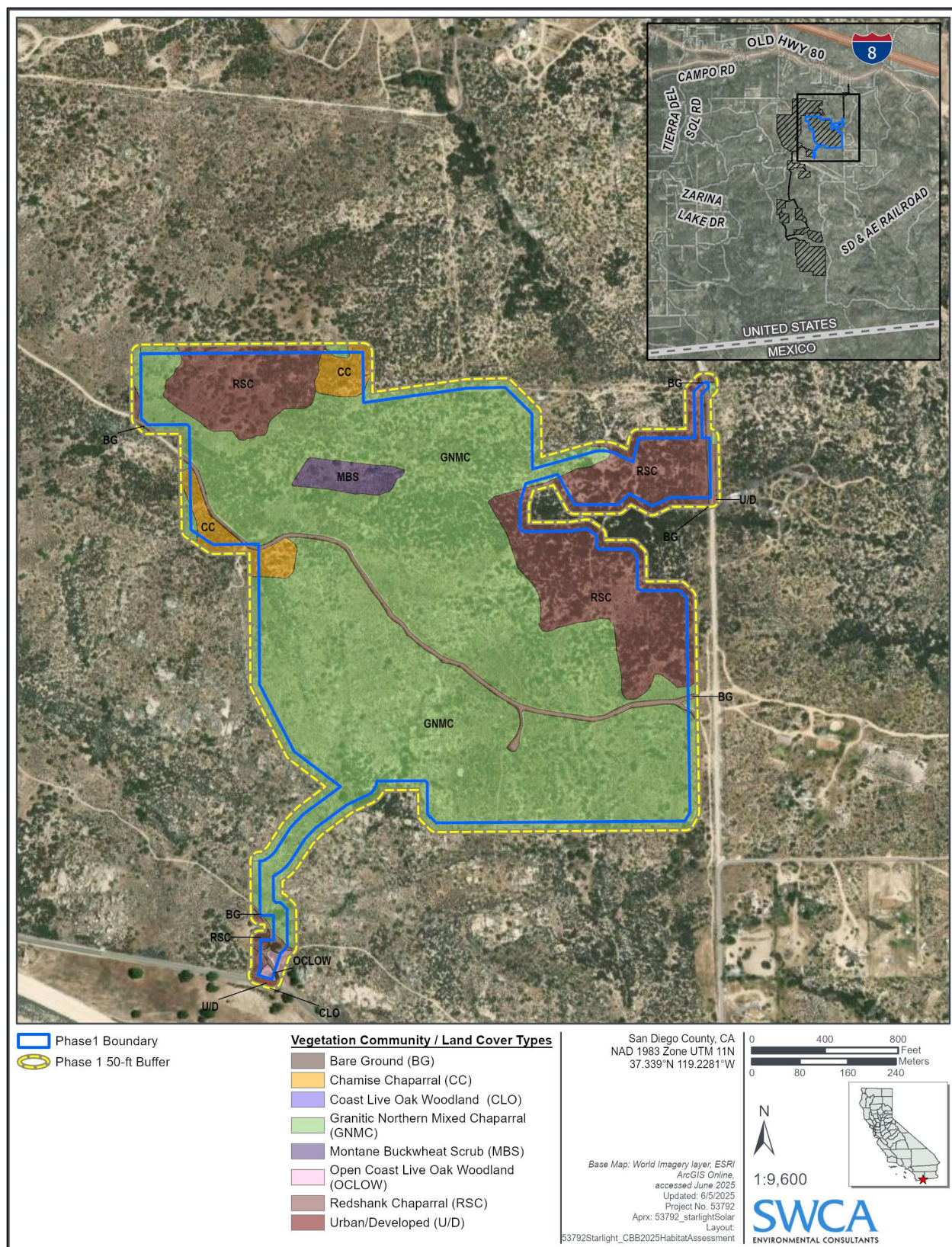


Figure 1. Previously Documented Vegetation Communities and Land Cover Types Encompassing the Project Site

As informed by the desktop effort, and in accordance with the CDFW *Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species* (CDFW 2023), 2 days of field verification were conducted to document suitable foraging and nesting habitat containing preferred foraging species, including nonnative and invasive flowering species. The SWCA biologists conducting these surveys were experienced in the identification and ecology of sensitive bumble bee species and co-occurring bumble bee species. SWCA biologists recorded weather conditions (e.g., air temperature, wind speed, and cloud cover) at the beginning and end of each survey day. Surveys were conducted on sunny days when air temperatures were suitable for bumble bee activity (approximately between 65 and 90 degrees Fahrenheit [°F]) and were not conducted during wet weather conditions or when winds exceeded an average of 15 miles per hour (mph). Surveys were conducted at least 1 hour after sunrise.

Surveys were completed by SWCA biologists Sharif Durzi and Parker Richardson on April 28, 2025, and April 29, 2025 (Table 1). The surveys were planned to occur in conjunction with the peak blooming period for CBB host plants likely to occur in the geographic range, and host plants previously observed on the project site during focused plant mapping efforts conducted in 2022. Biologists walked meandering pedestrian transects throughout the project site and used a combination of point and polygon data to document significant patches of CBB host plants, occurrence of suitable nesting features, and areas of high floristic diversity and abundance of potentially suitable nectar sources.

Table 1. Summary of Site Surveys

Date	Time	Temperature (°F) (Start – End)	Cloud Cover (%) (Start – End)	Wind (mph) (Start – End)
04/28/25	0915–1420	56°F – 71°F	5% – 5%	0–2 mph – 0–12 mph
04/29/25	0930–1330	71°F – 79°F	0% – 10%	0–12 mph – 0–4 mph

RESULTS

Results of the desktop assessment showed the nearest verified CBB documentation to be a 2004 occurrence located approximately 23.5 kilometers (km) northwest of the project site within the Laguna Mountain Range (CDFW 2025). Review of citizen science records showed the nearest occurrence of CBB as a 2024 occurrence of a male located approximately 3 km north of the project, in addition to two other occurrences of CBB documented from 2021 and 2024 within an approximately 20-km radius of the project (iNaturalist 2025).

During field efforts conducted in April 2024, biologists identified, mapped, and ranked (from high to low) areas based on their relative suitability to support populations of CBB compared with the remainder of the project site and surrounding habitat. Areas were ranked based on the occurrence of known host plants, high floristic diversity and abundance of suitable nectar sources, and adequate nesting and overwintering features such as rodent burrows and thatched grasses. Across the project site, biologists located three known hosts plants: California buckwheat (*Eriogonum fasciculatum*), California poppy (*Eschscholzia californica*), and distant phacelia (*Phacelia distans*). Other likely nectar-providing plants that were located and included in assessment of relative habitat suitability, although not described to host association with CBB, included short-wing deerweed (*Acmispon glaber* var. *brevialatus*), southern California sliver-leaf lotus (*Acmispon argophyllus* var. *argophyllus*), San Diego yerba santa (*Eriodictyon trichocalyx* var. *lanatum*), collared annual lupine (*Lupinus truncates*), bajada lupine (*Lupinus concinnus*), mountain blue curls (*Trichostema parishii*), and wild Canterbury bells (*Phacelia minor*). All floral resources in bloom observed during field efforts were recorded and documented in Appendix B.

In total, SWCA biologists identified 112.43 acres of the 124.91-acre project site as suitable to provide habitat for CBB (Table 2). Of those acres identified, the majority (87.65 acres) were determined to provide low-quality suitable habitat, with a dominant host plant association of California buckwheat, while 24.08 acres were identified as relative high-quality suitable habitat, with dominant host plant associations of California buckwheat and San Diego yerba santa (Figure A-1, Figure A-2, Figure A-3). A total of .7 acres of relative moderate quality habitat was identified, dominated by a mix of lupine and acmispon (Figure A-4). Relative high-quality habitat was divided across seven unique polygons within the project site (Figure 2), with footprints overlapping with Granitic Northern Mixed Chapparal (GNMC) Mountain Buckwheat Scrub (MBS), Redshank Chapparal (RSC), and Chamise Chaparral (CC) vegetation communities previously documented. Relative low-quality habitat encompassed all remaining areas of GNMC and MBS vegetation communities not recorded as high or medium relative quality. Figure 2 details the results of the field verification of the habitat assessment.

No *Bombus* species were observed over the course of the 2 survey days.

Table 2. Summary of Habitat Assessment Results

Relative Habitat Quality	Dominant Host Plant Association	Total Acreage
High	San Diego yerba santa	0.82
High	California buckwheat	23.26
Subtotal		24.08
Medium	Lupine sp.	0.70
Subtotal		0.70
Low	California buckwheat	87.65
Subtotal		87.65
Total		112.43

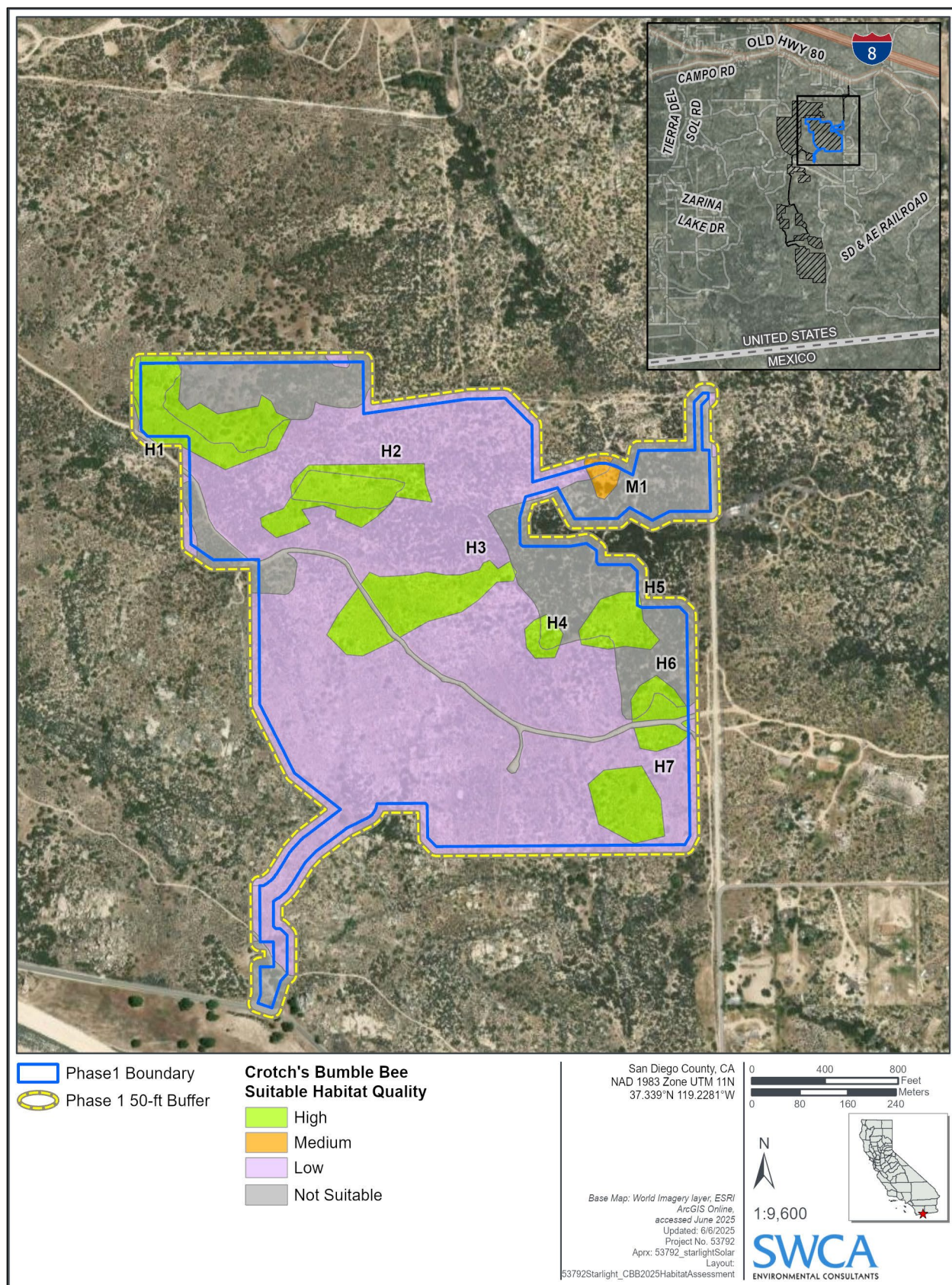


Figure 2. Areas of Relative Habitat Quality for Crotch's Bumble Bee from Field Verification

DISCUSSION

The project is located within the current and historic range for CBB, as published in CDFW *Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species* (CDFW 2023), and a desktop-based literature and database review reveals nearby citizen science data locating CBB within proximity of the project. Overall, suitable foraging, and nesting, habitat was documented throughout much of the project site, while due to the lack of verified documentation of CBB overwintering habitat in existing literature, areas with moderate to high potential to support overwintering were not documented. No observations of CBB or other co-occurring *Bombus* species were recorded across the two field days. The likelihood for CBB to occur on the project site remains low to moderate.

Within the project site, there are transition habitats between Redshank Chaparral and Granitic Northern Mixed Chaparral that provided high-quality relative habitat for CBB. In some cases, this area was previously recorded as occurring in the RSC vegetation community, as is the case with polygons H5 and H6 (see Figure 2). Areas that were determined to host no suitability for CBB were eliminated due to lack of suitable nectar sources and density of vegetation, making bumble bee navigation unlikely. This was particularly true of the areas classified as RSC.

Soils throughout the study area appeared friable, and there were small mammal burrows present throughout the study area that could provide suitable nesting or overwintering habitat for bumble bees. The presence of small mammal burrows does suggest that the study area can support nesting and overwintering bumble bees.

The following Mitigation Measures are recommended to be incorporated.

Crotch's bumblebee Habitat Assessment and Surveys.

This mitigation measure shall only be required if Crotch's bumble bee remains as a candidate state endangered species or is listed as a state endangered species at the time of project construction.

Focused Surveys. If the habitat assessment and field verification survey indicate a high likelihood for take of the species, occupancy will be assumed or a proposed survey protocol will be submitted to the Wildlife Agencies for review. If surveys are proposed, a survey methodology will be designed that is project- and site-specific, including the required qualifications of the biologist conducting the surveys. The survey methodology will follow the general guidelines and best practices outlined in CDFW's "Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species" (June 6, 2023). If surveys are conducted and occupied Crotch's bumble bee habitat within or bordering the Project Site is documented, or if Crotch's bumble bee is assumed to be present based on the habitat assessment, pre-construction surveys of such habitat for active bee nest colonies shall be required no more than 5 days prior to any ground disturbance activities that occur between February 15 and September 15. The project biologist will establish, monitor, and maintain a no-work buffer around any active nest colonies identified during surveys. The size and configuration of the no-work buffer will be based on the best professional judgment of the project biologist in consultation with CDFW. The buffer should provide at least 50 feet of clearance around nest entrances. Construction activities should not occur within the no-work buffers until the colony is no longer active. To determine that a nest is no longer active, the nest will be observed for a minimum of 60 minutes each day across multiple days (three days minimum) during suitable flight weather (i.e. ambient air temperature between 60- and 90-degrees Fahrenheit, winds under 10 mph, and no precipitation heavier than a drizzling rain). If no bees are seen flying in or out of the nest it will be determined that the next season's queens have dispersed from the colony and the nest is no longer active.

If Crotch's bumble bee is found on site during habitat assessments or protocol surveys, the project proponent shall:

1. Notify CDFW of the species' presence within 48 hours and consult with the CDFW to determine whether the project needs to obtain an ITP, and adhere to the following minimum conditions:
2. Implement Immediate Avoidance and Minimization Measures:
 - a. Conduct a nest search within suitable habitat areas identified during surveys
 - b. Establish and clearly mark no-work buffer zones of at least 50 feet around active nest colonies if found
 - c. Avoid all ground-disturbing activities within these buffer zones during the active bee season (February 15 through September 15)
3. Have a monitor present during initial ground disturbance and vegetation clearance.

Compensatory mitigation for permanent direct impacts to suitable Crotch's bumble bee habitat shall be offset through compensatory mitigation, which may include, but is not necessarily limited to, on-site or off-site habitat preservation, enhancement, restoration, and/or creation at a ratio of no less than 1:1. If an incidental take permit covering Crotch's bumble bee is issued for the project, the measures and mitigation ratios specified in that permit shall take precedence over those outlined in this report.

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APPENDIX A

Site Photographs



Figure A-3. Polygon H1 demonstrating high quality foraging habitat, dominated by California buckwheat with a mix of lupine, acmispon and lathyrus.



Figure A-4. Polygon H2 demonstrating high quality foraging habitat, dominated by California buckwheat with a mix of lupine, acmispon and phacelia.



Figure A-5. Polygon H4 demonstrating high quality foraging habitat, dominated by San Diego yerba santa with a mix of California buckwheat and phacelia.



Figure A-6. Polygon M1 demonstrating moderate quality foraging habitat, dominated by lupine with acmispon.

APPENDIX B

Observed Species List-Floral Resources in Bloom

Scientific Name	Common Name	Family	Habit	Non-native?	Special-status?
<i>Acmispon argophyllus</i> var. <i>argophyllus</i>	Southern California sliver-leaf lotus	Fabaceae	Perennial herb	-	-
<i>Acmispon glaber</i> var. <i>brevialatus</i>	short-wing deerweed	Fabaceae	Subshrub	-	-
<i>Acmispon strigosus</i>	strigose lotus	Fabaceae	Annual herb	-	-
<i>Amsinckia intermedia</i>	common fiddleneck	Boraginaceae	Annual herb	-	-
<i>Boechera californica</i>	California rockcress	Brassicaceae	Perennial herb	-	-
<i>Brassica tournefortii</i>	Sahara mustard	Brassicaceae	Annual herb	Yes	-
<i>Camissoniopsis</i> sp.	sun cup	Onagraceae	Annual herb	-	-
<i>Ceanothus perplexans</i>	cupped leaf ceanothus	Rhamnaceae	Shrub	-	-
<i>Ceanothus leucodermis</i>	chaparral whitethorn	Rhamnaceae	Shrub	-	-
<i>Cercocarpus betuloides</i> var. <i>betuloides</i>	birch-leaf mountain-mahogany	Rosaceae	Shrub	-	-
<i>Chenopodium californicum</i>	California goosefoot	Chenopodiaceae	Perennial herb	-	-
<i>Clematis pauciflora</i>	few-flowered clematis	Ranunculaceae	Shrub, Vine	-	-
<i>Eremocarya lepida</i>	mountain red-root	Boraginaceae	Annual herb	-	-
<i>Cryptantha intermedia</i> var. <i>intermedia</i>	common cryptantha	Boraginaceae	Annual herb	-	-
<i>Dipterostemon capitatus</i>	blue dicks	Themidaceae	Perennial herb	-	-
<i>Ericameria linearifolia</i>	interior goldenbush	Asteraceae	Shrub, Subshrub	-	-
<i>Eriodictyon trichocalyx</i> var. <i>lanatum</i>	San Diego yerba santa	Boraginaceae	Shrub	-	-
<i>Erodium cicutarium</i>	redstem filaree	Geraniaceae	Annual herb	Yes	-
<i>Eschscholzia californica</i>	California poppy	Papaveraceae	Annual herb, Perennial herb	-	-
<i>Eulobus californicus</i>	California primrose	Onagraceae	Annual herb	-	-
<i>Euphorbia</i> sp.	spurge	Euphorbiaceae	Annual herb	Yes	-
<i>Gilia diegensis</i>	coastal gilia	Polemoniaceae	Annual herb	-	-
<i>Gilia capitata</i>	bluehead gilia	Polemoniaceae	Annual herb	-	-
<i>Hesperoyucca whipplei</i>	chaparral yucca	Agavaceae	Shrub	-	-
<i>Lasthenia gracilis</i>	common goldfields	Asteraceae	Annual herb	-	-
<i>Lathyrus splendens</i>	pride-of-California	Fabaceae	Perennial herb	-	CRPR 4.3, County List D
<i>Leptosiphon lemmonii</i>	Lemmon's linanthus	Polemoniaceae	Annual herb	-	-

Scientific Name	Common Name	Family	Habit	Non-native?	Special-status?
<i>Linanthus bellus</i>	desert beauty	Polemoniaceae	Annual herb	-	CRPR 2B.1, County List B
<i>Lupinus truncatus</i>	Collared annual lupine	Fabaceae	Annual herb		
<i>Lupinus concinnus</i>	bajada lupine	Fabaceae	Annual herb	-	-
<i>Marah macrocarpa</i>	wild-cucumber, chilicothe	Cucurbitaceae	Perennial herb	-	-
<i>Matricaria discoidea</i>	pineapple weed	Asteraceae	Annual herb	-	-
<i>Mentzelia sp.</i>	balazingstar	Loasaceae	Annual herb		
<i>Pectocarya penicillata</i>	northern pectocarya	Boraginaceae	Annual herb	-	-
<i>Penstemon centranthifolius</i>	scarlet bugler	Plantaginaceae	Perennial herb	-	-
<i>Phacelia distans</i>	common phacelia	Boraginaceae	Annual herb	-	-
<i>Phacelia minor</i>	wild Canterbury bells	Boraginaceae	Annual herb	-	-
<i>Plagiobothrys sp.</i>	popcornflower	Boraginaceae	Annual herb	-	-
<i>Quercus agrifolia</i>	coast live oak	Fagaceae	Tree	-	-
<i>Rhus ovata</i>	sugar bush	Anacardiaceae	Shrub	-	-
<i>Salix lasiolepis</i>	arroyo willow	Salicaceae	Shrub, Tree	-	-
<i>Salvia columbariae</i>	chia	Lamiaceae	Annual herb	-	-
<i>Sambucus mexicana</i>	blue elderberry	Acanthaceae	Shrub, Tree	-	-
<i>Senecio californicus</i>	California ragwort	Asteraceae	Annual herb	-	-
<i>Sisymbrium sp.</i>		Brassicaceae	Annual herb, Perennial herb	Yes	
<i>Trichostema parishii</i>	mountain blue curls	Lamiaceae	Shrub	-	-
<i>Uropappus lindleyi</i>	silver puffs	Asteraceae	Annual herb	-	-
<i>Yucca schidigera</i>	Mojave yucca	Agavaceae	Shrub, Tree	-	-