

**Botanical Resources Survey Report  
Sanders Cultivation Permitting, Minor Use Permit  
(DRC2018-00094)  
12000 Nacimiento Lake Drive (APN 080-041-036),  
Paso Robles, San Luis Obispo County, California**



Prepared for:

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Prepared by:



July 24, 2019

Report prepared by:

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I hereby certify that this Botanical Resources Assessment was prepared according to the Guidelines established by the County of San Luis Obispo Department of Planning and Building and that the statements furnished in the report and associated maps are true and correct to the best of my knowledge and belief; and I further certify that I was present throughout the site visits associated with this report.

  
\_\_\_\_\_  
Signature

July 24, 2019  
Date

## **INTRODUCTION**

The following botanical resources survey report has been prepared by Ecological Assets Management LLC (EAM), for Mr. Trent Sanders and this report covers an approximately 16-acre portion (survey area) of a 167-acre parcel (APN 080-041-036) located off 12000 Nacimiento Lake Drive in San Luis Obispo County, California. The proposed project would construct a greenhouse, outdoor hoopouses, a drying building, and parking spaces in both undeveloped and previously developed areas accessed by existing dirt roadways. This report presents the methods and results of three focused botanical surveys conducted within the survey area of the subject parcel during the spring and early summer of 2019.

In 2018, EAM prepared a "Biological Resources Survey Report" for this proposed project and in that report identified potentially suitable habitat for thirteen (13) annual special-status plant species within the survey area based on existing soils and habitat conditions. The site visit to the survey area for the initial Biological Resources Survey Report occurred on August 21, 2018, and was outside of the blooming period for most plant species. The report recommended focused botanical surveys during the blooming period to determine if any of the identified thirteen (13) special-status species are present. The County of San Luis Obispo reviewed the Biological Resources Survey Report in early 2019 and subsequently requested that "a series of floristic surveys over the proposed project area during the spring blooming season" shall be conducted.

In summary, three focused botanical resources surveys were conducted during the flowering season in 2019 and found the survey area to contain blue oak woodland and annual grassland habitats. Small areas of disturbed (ruderal) habitat associated with existing dirt roads and structures are also present. The survey efforts identified a total of fifty-one (51) plant species within the survey area, with twenty-nine (29) native and twenty-two (22) non-native species. During the three focused survey none of the thirteen (13) special-status plant species previously identified with a potential to occur in the survey area were observed. In addition, EAM biologists had access to Camp Roberts and timed the three May 2019 surveys with the blooming period of the federally-threatened purple amole (*Chlorogalum purpureum* var. *purpureum*), which is located on Camp Roberts immediately adjacent to the subject parcel (<1,300 meters). No special-status plant species were observed during the three focused botanical surveys of the survey area and the proposed project will not result in any impacts to special-status plant species.

## **SITE LOCATION**

The approximate 16-acre area surveyed for this report is located within the 167-acre subject parcel (APN 080-041-036) at 12000 Nacimiento Lake Drive (State Route G19) in northern San Luis Obispo County, California (refer to Figure 1). The site is located near the northern boundary of San Luis Obispo County, approximately 5.4 miles west of



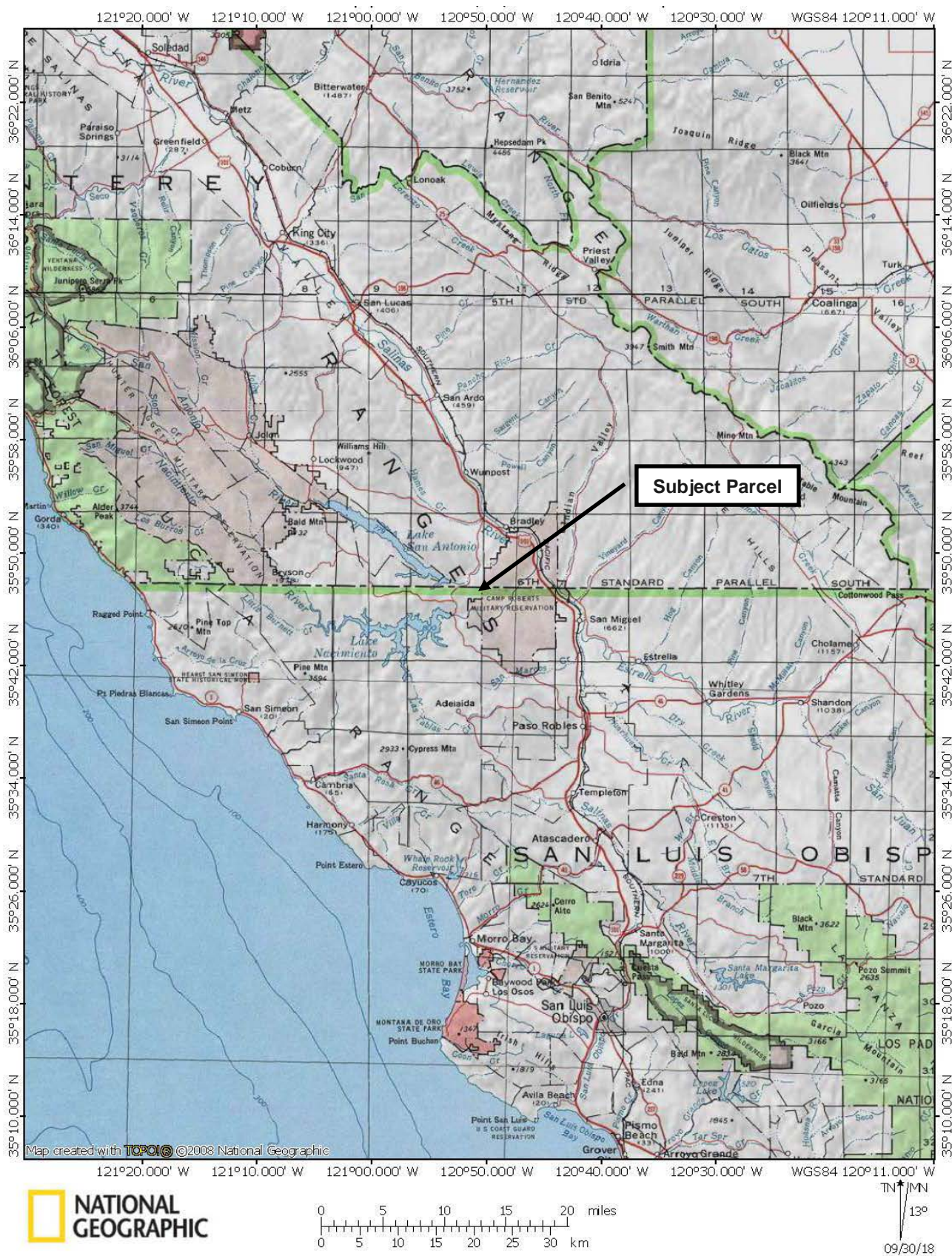


FIGURE 1. Vicinity map.



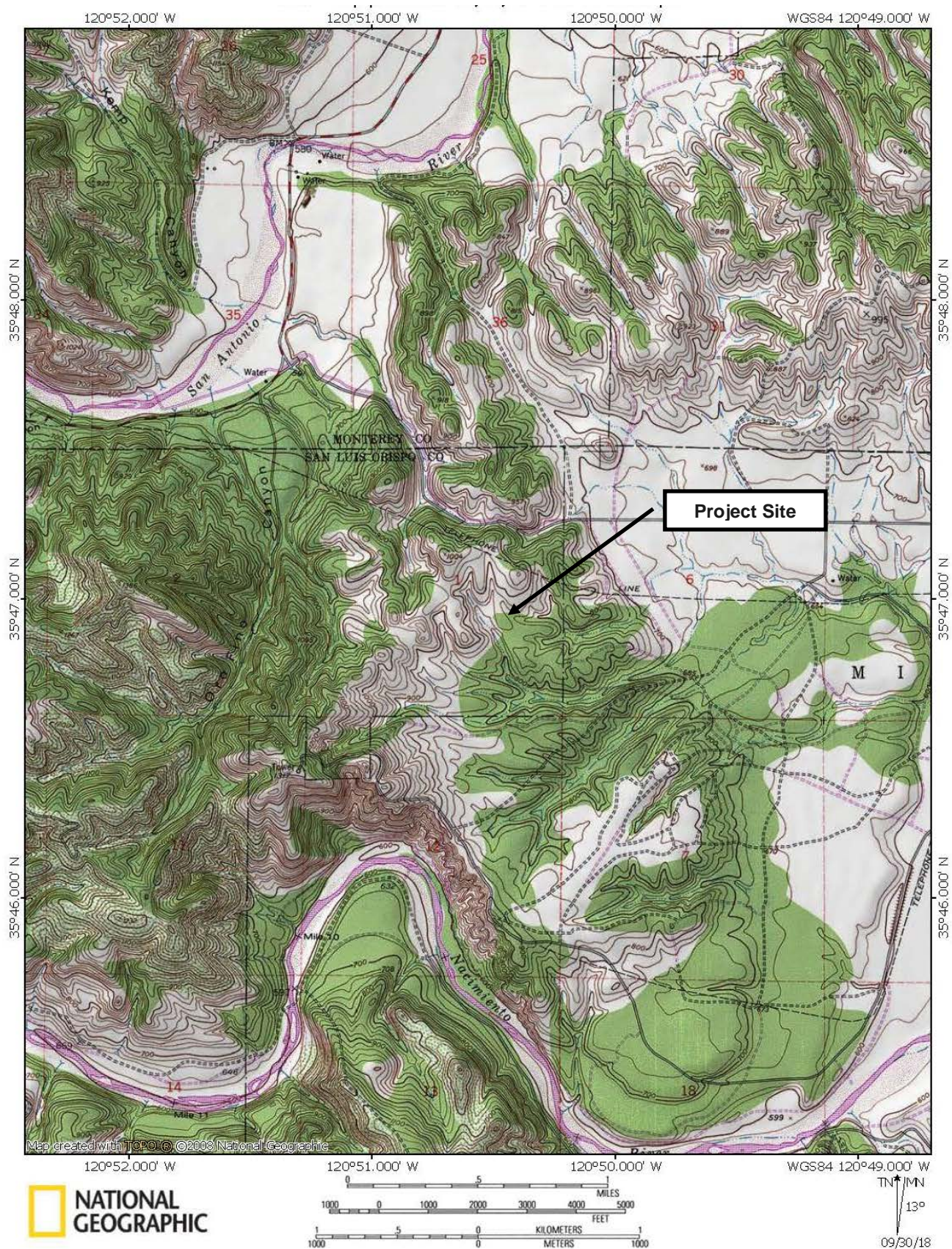


FIGURE 2. Location map.



Highway 101, and is surrounded by similar large rural properties. Camp Roberts is located immediately adjacent to the east and south of the subject parcel. Primary access to the subject parcel, and specifically the survey area, is along an existing ranch road extending from Nacimiento Lake Drive.

### **PROPOSED PROJECT**

The proposed project would construct twenty-two (22) hoop houses (a total of 43,560 square feet), a 900 square-foot drying building, a 27-000 square-foot cultivation greenhouse, fourteen (14) parking spaces, 6-foot tall security fence, and driveway/access road improvements. Project construction will remove oak trees and there may be additional impacts to oak trees from ground disturbance and pruning. Mitigation for tree impacts will occur onsite per county requirements. Two adjacent seasonal drainages will not be directly impacted by the project.

### **SURVEY METHODS**

Previously, for the "Biological Resources Survey Report" EAM prepared, a review of the California Natural Diversity Data Base (CNDDB) results from a five-mile radius of the subject parcel to evaluate the potential for occurrence of special-status plants was conducted. The results of the CNDDB review and the existing conditions of the survey area (e.g. habitats and soils) observed during the August 21, 2018, site visit identified potentially suitable habitat for thirteen (13) special-status plant species. The thirteen (13) special-status plant species include:

- Round-leaved filaree (*California macrophylla*)
- Dwarf calycadenia (*Calycadenia villosa*)
- Lemmon's jewelflower (*Caulanthus coulteri* var. *lemmonii*)
- San Luis Obispo Owl's clover (*Castilleja densiflora* var. *obispoensis*)
- Purple amole (*Chlorogalum purpureum* var. *purpureum*)
- Rattan's cryptantha (*Cryptantha rattanii*)
- Small-flowered gypsum-loving larkspur (*Delphinium gypsophilum* ssp. *parviflorum*)
- Koch's cord moss (*Entosthodon kochii*)
- Pale-yellow layia (*Layia heterotricha*)
- Jared's pepper-grass (*Lepidium jaredii* ssp. *jaredii*)
- California spineflower (*Mucronea californica*)
- Shining navarretia (*Navarretia nigelliformis* ssp. *radians*)
- Hooked popcorn-flower (*Plagiobothrys uncinatus*)

Efforts for this botanical resources survey report focused on these thirteen (13) special-status species, but did not discount the potential for observations other special-status species on site that were not previously identified as potentially occurring. EAM biologists conducted approximately 6.50 person-hours over three focused botanical

surveys of the survey area in the spring of 2019 (refer to Table 1). The surveys involved walking transects in all portions of the survey area, and identifying all plant species observed. Plants were identified to species, or sub-species, with dichotomous keys used as necessary (Hoover, 1970; Hickman, ed. 1993). The surveys were timed to cover the spring and early summer flowering periods of all thirteen (13) special-status plant species with the potential to occur within the survey area.

**Table 1. Dates of focused botanical surveys.**

Survey #	Survey Date	Surveyor	Purpose of Site Visit
1	4/17/2019	D. Oberhoff & B. Sloan	Focused Botanical Survey
2	5/1/2019	D. Oberhoff	Focused Botanical Survey
3	5/23/2019	D. Oberhoff & B. Sloan	Focused Botanical Survey

Other literature reviewed prior to the focused botanical surveys included recent environmental documents and reports from Camp Roberts. These documents and reports included the "Draft Environmental Assessment for Multiple Construction Projects at SATCOM", the "2017 Purple Amole Monitoring Report", the "Sensitive Plant Inventory of Camp Roberts and Camp San Luis Obispo", and "Results of the 2017 Invasive Weed Survey on Camp Roberts." All four reports provided extremely valuable information on botanical resources located on Camp Roberts, which borders the subject parcel immediately to the east and south.

In addition, due to the survey area's close proximity (<1,300 meters) to an occurrence of the federally threatened purple amole located to the south on Camp Roberts, EAM biologist Dwayne Oberhoff conducted three site visits, May 1, 9 and 23, 2019, to this reference population to confirm its growth stage and blooming status. Biologist Bob Sloan was present on the May 23, 2019, visit to Camp Roberts also. The three site visits to the reference site on Camp Roberts confirmed the presence of blooming purple amole (refer to Appendix C, Photo 5) and also confirmed that the timing of our focused surveys within the 16-acre survey area would have identified this species, if it was present.

A CNDDDB species occurrence discussion table is included in Appendix A, a list of plant species observed within the survey area during the three surveys is included in Appendix B, and photos are included in Appendix C.

### **EXISTING SITE CONDITIONS**

The survey area is located in the area around an existing barn, and consists of a gently sloping ridgetop extending to the south, with small ephemeral drainage channels on either side. The survey area also extended to the north of the existing barn toward an

existing water tank (refer to Appendix E: Proposed Site Plan). Site elevations in the project area range from 258 to 293 meters above mean sea level.

The survey area was observed to contain intermixed areas of blue oak woodland and annual grassland, and appears to be grazed by horses. Understory plants are sparse in the oak-dominated areas, and consist of annual grassland species. No shrub cover is present. South of the existing barn along the ridgetop the sides slope steeply down to small drainage channels on either side that appear to contain water only during rainy periods. No vernal pools, wetlands or riparian habitat was observed during the survey efforts.

The University of California Davis, Soil Resource Laboratory website, SoilWeb (<http://casoilresource.lawr.ucdavis.edu/>), maps the underlying soils in the majority of the project area as the Arbuckle-Positas complex, 30 to 50 percent slopes. This complex consists of loam soils on steep terraces. This deep, well-drained soil complex was formed from alluvium from mixed rock sources. Surface runoff is rapid, and the hazard of water erosion is high. The northern, developed portion of the site in the area of the existing barn (and to the north) contains Nacimiento silty clay loam, 30 to 50 percent slopes. This moderately deep, rolling to hilly, well-drained soil formed in material weathered from calcareous sandstone and shale. Surface runoff is rapid, and the hazard of water erosion is high. Soil conditions observed onsite matched the mapped loamy soil characteristics. Adjacent drainage channels exhibited areas of exposed shale bedrock. No serpentine-influenced soils were observed in the area.

## **SURVEY RESULTS**

The three (3) focused botanical surveys identified a total of fifty-one (51) vascular plant species within the 16-acre survey area. A list of all species observed within the survey area during the surveys is provided in Appendix B. Of the fifty-one (51) total plant species observed, twenty-nine (29) were native and twenty-two (22) were nonnative species.

None of the thirteen (13) previously identified special-status plant species with the potential to occur within the survey area were observed during the three (3) focused botanical surveys. Due to the timing of the surveys during the blooming season for all thirteen (13) species and the thorough coverage of the survey area, none of these thirteen (13) species are considered present and no impacts will occur.

## **DISCUSSION**

Based on the results of the three (3) focused botanical resources surveys, the proposed project will not impact any special-status plant species. Due to these results, no specific avoidance, protection, and mitigation measures are recommended at this time. Changes to the project that expand its footprint outside of the survey area identified in



this report will need to be addressed to determine potential impacts to special-status plant species.

## References

- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. *The Jepson Manual: vascular plants of California*, second edition. University of California Press, Berkeley.
- Calflora. 2015. Information on wild California plants for conservation, education, and appreciation. Berkeley, CA. Accessed via: <http://www.calflora.org/>.
- California Army National Guard. 2004. Sensitive Plant Inventory of Camp Roberts and Camp San Luis Obispo.
- California Army National Guard. 2017. Results of the 2017 invasive weed survey on Camp Roberts. Prepared by John Chestnut for Don Applegate, Integrated Training Area Management Program Manager.
- California Department of Fish and Game. 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities.
- California Department of Fish and Game. 2003. California Natural Diversity Database, Rarefind V. Queried January 2015.
- California Department of Fish and Game. 2003. Special Vascular Plants, Bryophytes, and Lichens List. Biogeographic Data Branch, California Natural Diversity Database. January 2015.
- California Native Plant Society. 2001. Inventory of Rare and Endangered Plants. V.7-08c-Interim 8-22-02. Updated online and accessed via: <http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi>.
- Hickman, James C., Ed. 1993. *The Jepson Manual, Higher Plants of California*. University of California Press, Berkeley, CA.
- Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game, Sacramento.
- Hoover, Robert F. 1970. *The Vascular Plants of San Luis Obispo County, California*. University of California Press, Berkeley, CA.
- Sawyer, J. O., T. Keeler-Wolf, and J.M. Evens. 2009. *A Manual of California Vegetation*, Second Edition. California Native Plant Society, Sacramento, CA.
- Terra Verde Environmental Consulting, LLC. 2017. 2017 Purple Amole Monitoring Report Camp Roberts, San Luis Obispo County, California. October 2017.
- University of California Davis, Soil Resource Laboratory website, SoilWeb. 2018. Available at: (<http://casoilresource.lawr.ucdavis.edu/>).



U.S. Department of the Army. 2015. Draft environmental assessment for multiple construction projects. SATCOM, Camp Roberts, San Luis Obispo County, California. March 2015.

USFWS. 2002. Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for *Chlorogalum purpureum*, a Plant from the South Coast Ranges of California; Final Rule. October 2002.

United States Fish and Wildlife Service. 2000. Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants. January 2000.

## **Appendix A: Habitat Requirements and Potential for Occurrence of Special-Status Plants Occurring in the Vicinity of the Project Site**



**Appendix A. List of Special-Status Plant Species with a Potential to Occur within the Survey Area.**

<b>Species</b>	<b>Status* Fed/CA/CNPS</b>	<b>Habitat Requirements</b>	<b>Blooming Period</b>	<b>Project Site Suitability/Observations</b>
Hoover's bentgrass <i>Agrostis hooverii</i>	--/--/1B.2	Stoloniferous perennial herb found on dry sandy soils in open chaparral, oak woodlands, valley grasslands, foothill woodlands at elevations from 60 to 600 meters.	April - August	<b>Species not observed during focused surveys.</b> Species would have been identifiable during surveys if present.
Round-leaved filaree <i>California macrophylla</i>	--/--/1B.1	Open sites, valley grasslands, foothill woodlands, and shrublands with vertic clay, occasionally serpentine at elevations <1,200 meters.	March - May	<b>Species not observed during focused surveys.</b> Species would have been identifiable during surveys if present.
Dwarf calycadenia <i>Calycadenia villosa</i>	--/--/1B.1	Found on dry, rocky hills, ridges, valley grassland, openings in foothill woodland, chaparral at elevations from 250 to 850 meters.	May – October	<b>Species not observed during focused surveys.</b> Species would have been identifiable during surveys if present.
San Luis Obispo Owl's clover <i>Castilleja densiflora</i> var. <i>obispoensis</i>	--/--/1B.2	Annual herb; ranges from 10 to 400 meters in elevation and occurs in meadows, seeps, and valley and foothill grassland.	March - May	<b>Species not observed during focused surveys.</b> Species would have been identifiable during surveys if present.
Lemmon's jewelflower <i>Caulanthus coulteri</i> var. <i>lemmonii</i>	--/--/1B.2	Valley and foothill grassland, pinyon and juniper woodland; 260-4,000 feet.	March - May	<b>Species not observed during focused surveys.</b> Species would have been identifiable during surveys if present.
Purple amole <i>Chlorogalum purpureum</i> var. <i>purpureum</i>	FT/--/1B.1	Gravelly or clay soils in valley grassland and foothill woodland at elevations around 300 meters.	April - June	<b>Species not observed during focused surveys.</b> EAM biologists visited reference site on Camp Roberts and observed species blooming on May 1, 9 and 23, 2019. Species would have been identifiable if present within survey area.
Rattan's Cryptantha <i>Cryptantha rattanii</i>	--/--/4.3	Rocky, gravelly slopes, grassland, coastal scrub, chaparral, foothill woodland at elevations from 150 to 780 meters.	April - July	<b>Species not observed during focused surveys.</b> Species would have been identifiable during surveys if present.
Small-flowered gypsum-loving larkspur <i>Delphinium gypsophilum</i> ssp. <i>parviflorum</i>	--/--/3.2	Cismontane woodland, valley and foothill grassland, occasionally vernal pools at elevations from 75 to 1,000 meters.	April - June	<b>Species not observed during focused surveys.</b> Species would have been identifiable during surveys if present.

**Appendix A. List of Special-Status Plant Species with a Potential to Occur within the Survey Area.**

<b>Species</b>	<b>Status* Fed/CA/CNPS</b>	<b>Habitat Requirements</b>	<b>Blooming Period</b>	<b>Project Site Suitability/Observations</b>
Koch's cord moss <i>Entosthodon kochii</i>	--/--/1B.3	On cryptogamic soil in cismontane woodland at elevations from 180 to 1,000 meters.	n/a	<b>Species not observed during focused surveys.</b> No mosses or cryptogamic crusts were observed during the survey.
Pale-yellow layia <i>Layia heterotricha</i>	--/--/1B.1	Alkaline or clay soils in valley grassland, foothill woodland, pinyon-juniper woodland, wetland-riparian at elevations from 200 to 1800 meters.	March - June	<b>Species not observed during focused surveys.</b> Species would have been identifiable during surveys if present.
Jared's pepper-grass <i>Lepidium jaredii</i> ssp. <i>jaredii</i>	--/--/1B.2	Valley and foothill grassland in alkaline or adobe soil at elevations from 300 to 1,000 meters.	March - May	<b>Species not observed during focused surveys.</b> Species would have been identifiable during surveys if present.
California spineflower <i>Mucronea californica</i>	--/--/4.3	Sandy soils in coastal strand, chaparral, foothill woodland, northern coastal scrub, coastal sage scrub, and valley grassland at elevations <1,000 meters.	March - July	<b>Species not observed during focused surveys.</b> Species would have been identifiable during surveys if present.
Shining navarretia <i>Navarretia nigelliformis</i> ssp. <i>radians</i>	--/--/1B.2	Vernal pools and clay depressions within valley grassland, foothill woodland, freshwater wetlands, and wetland-riparian at elevations from 150 to 1,000 meters.	April - July	<b>Species not observed during focused surveys.</b> Species would have been identifiable during surveys if present.
Hooked popcorn-flower <i>Plagiobothrys uncinatus</i>	--/--/1B.2	On sandy soils, canyon sides, rocky outcrops, sometimes a fire follower and found within chaparral, valley grassland, foothill woodland at elevations from 300 to 600 meters.	April - May	<b>Species not observed during focused surveys.</b> Species would have been identifiable during surveys if present.

\*FT = Federally Threatened; List 1B – Rare, threatened, or endangered in California and elsewhere; List 2 – Rare, threatened or endangered in California, but more common elsewhere; List 3 – Plants needing more information; List 4 – Limited distribution (Watch List). Source: California Natural Diversity Database (California Department of Fish and Wildlife March 2019); California Native Plant Society Online Inventory of Rare Plants, accessed March 2019 (online at [www.cnps.org](http://www.cnps.org)); Special Vascular Plants, Bryophytes, and Lichens List (California Department of Fish and Wildlife March 2019).



## **Appendix B: List of Plant Species Observed on the Project Site**

**Appendix C – List of Plant Species Observed within the Project Area**

Scientific Name	Common Name
<i>Achillea millefolium</i>	Common yarrow
<i>Acmispon brachycarpus</i>	Short podded lotus
<i>Agoseris heterophylla</i>	Mountain dandelion
<i>Amsinckia intermedia</i>	Common fiddleneck
<i>Avena barbata</i> *	Slender wild oats
<i>Bloomeria crocea</i>	Common goldenstar
<i>Brassica nigra</i> *	Black mustard
<i>Brodiaea jolonensis</i>	Mesa Brodiaea
<i>Bromus diandrus</i> *	Ripgut brome
<i>Bromus hordeaceus</i> *	Soft chess brome
<i>Bromus madritensis</i> *	Red brome
<i>Calochortus venustus</i>	Butterfly mariposa lily
<i>Capsella bursa-pastoris</i> *	Shepard's purse
<i>Castilleja exserta</i>	Purple owls-clover
<i>Centaurea melitensis</i> *	Tocalote
<i>Centaurea solstitialis</i> *	Yellow starthistle
<i>Centromadia pungens</i>	Common tarweed
<i>Chlorogalum pomeridianum</i>	Soap plant
<i>Clarkia affinis</i>	Chaparral clarkia
<i>Claytonia perfoliate</i>	Miner's lettuce
<i>Croton setiger</i>	Turkey-mullein
<i>Delphinium parryi</i>	San Bernardino larkspur
<i>Dichelostemma capitatum ssp. capitatum</i>	Bluedicks
<i>Erigeron canadensis</i>	Horseweed
<i>Erodium botrys</i> *	Longbeak stork's bill
<i>Erodium cicutarium</i> *	Redstem stork's bill
<i>Festuca myuros</i> *	Rattail sixweeks grass
<i>Galium aparine</i>	Common bedstraw
<i>Hirschfeldia incana</i> *	Summer mustard
<i>Hordeum murinum</i> *	Foxtail barley
<i>Lactuca serriola</i> *	Prickly lettuce
<i>Lomatium utriculatum</i>	Hog fennel
<i>Lupinus bicolor</i>	Annual lupine
<i>Lupinus microcarpus</i>	Valley lupine
<i>Lupinus succulentus</i>	Arroyo Lupine
<i>Marrubium vulgare</i> *	White horehound
<i>Matricaria discoidea</i> *	Pineapple weed
<i>Medicago polymorpha</i> *	Bur clover
<i>Mellilotus indicus</i> *	Annual yellow sweetclover
<i>Microseris douglasii</i>	Douglas' microseris
<i>Navarretia mitracarpa</i>	Paso robles navarretia

<i>Plagiobothrys canescens</i>	Common popcorn flower
<i>Poa secunda</i>	One sided blue grass
<i>Quercus douglasii</i>	Blue oak
<i>Raphanus sativus</i> *	Wild radish
<i>Sanicula bipinnatifida</i>	Purple sanicle
<i>Silene gallica</i> *	Common catchfly
<i>Sisymbrium orientale</i> *	Hedge mustard
<i>Trifolium ciliolatum</i>	Foothill clover
<i>Verbascum virgatum</i> *	Wand mullein
<i>Viola pedunculata</i>	California golden violet

\*Nonnative species



## **Appendix C: Photo Documentation**

- **5 Photos**



**Photo 1:** Photo viewing south through proposed cultivation area. April 17, 2019





**Photo 2:** Photo viewing south through proposed cultivation area. May 9, 2019





**Photo 3:** Photo viewing northeast through proposed cultivation area. May 23, 2019





**Photo 4:** Photo viewing southwest from hilltop with existing water tank down dirt access road toward survey area. May 23, 2019

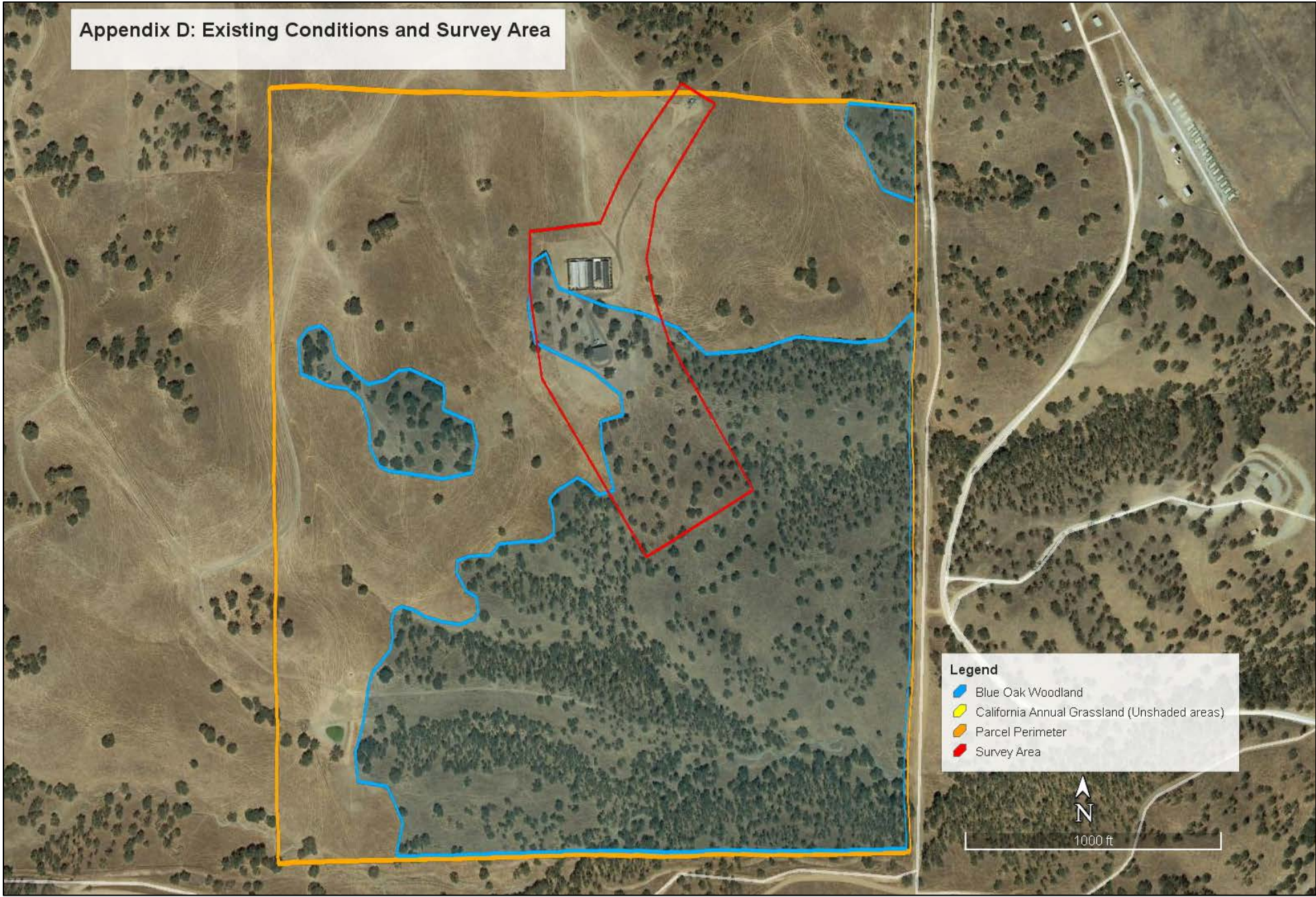




**Photo 5:** Photo of blooming purple amole (*Chlorogalum purpureum* var. *purpureum*) observed on Camp Roberts. May 9, 2019

## **Appendix D: Existing Conditions and Survey Area**





\*All locations are approximate.



# Appendix E: Proposed Project Site Plans

