
June 24, 2021

Bert Sandell
Sandell Holdings LLC
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Re: Special Status Plant Surveys 597 Helman Lane in Cotati, California

Dear Mr. Sandell,

This letter discusses the findings of protocol-level special status plant surveys at 597 Helman Lane in Cotati, California (Study Area). The purpose of the surveys was to determine the presence or absence of special status plant species and vegetation communities within the Study Area. The Study Area is within the Santa Rosa Plain and has the potential to support federally listed plant species that occur on the Santa Rosa Plain including Burke's goldfields (*Lasthenia burkei*), Sebastopol meadowfoam (*Limnanthes vinculans*), and Sonoma sunshine (*Blennosperma bakeri*). Surveys were performed on ~~DE~~ April 14, and May 13, 2021 within the Study Area in accordance with Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed Plants on the Santa Rosa Plain,¹ California Department of Fish and Wildlife (CDFW) protocol,² and California Native Plant Society (CNPS) protocol.³ No special status plant species were identified during the surveys.

Project Site Description

The Study Area Work for the Sandell Warehouse project (project) is located at 597 Helman Lane in Cotati, California, accessed via Blodgett Street, off Alder Avenue (Figure 1). It is bounded by the Laguna de Santa Rosa to the north, industrial development to the east, and agricultural lands to the south and west.

1 Santa Rosa Conservation Strategy. 1996. Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed Plants on the Santa Rosa Plain. Available online at:

https://www.fws.gov/sacramento/es/Recovery-Planning/Santa-Rosa/Documents/Appendix_D_%20FWS_Plant_Survey_Protocols.pdf. Accessed: May 2021.

2 CDFW. 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. Available online at:

<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline>. Accessed: May 2021.

3 CNPS. 2001. CNPS Botanical Survey Guidelines. Available online at: https://cnps.org/wp-content/uploads/2018/03/cnps_survey_guidelines.pdf. Accessed: May 2021.

Clear Lake clay, sandy substratum, drained, 0 to 2 percent slopes, MLRA 14 is the primary soil map unit within the Study Area.⁴ Clear Lake clay is poorly drained and occurs on basin floors. The parent material is basin alluvium derived from volcanic and sedimentary rock over fan alluvium derived from volcanic and sedimentary rock. Clear Lake clay is rated hydric. Elevation within the Study Area ranges from approximately 27 to 30 meters (91 to 99 feet) above mean sea level.

The project site is within the broad floor of the Santa Rosa Plain and consists of disturbed non-native annual grassland and seasonal wetland. The project site has been disturbed since 1993 based on Google Earth aerial images. Vegetation within the developed areas primarily consists of non-native grasses and forbs. A drainage ditch running north-south crosses the site near the west end of the parcel. The entire site, except for the drainage ditch and a small area west of it, is annually disked. A formal delineation of wetlands was conducted in 2009 by Lucy Macmillan.

Methods

Reference Sites

Reference sites were visited prior to each survey. Details regarding each reference site visit can be found in Table 1, below.

Table 1. Reference Site Observed Target Plant Species

Date	Reference Site	Species Observed ¹
March 16, 2021	Alton North Conservation Bank	BLBA, LABU
April 13, 2021	Alton North Conservation Bank	BLBA, LABU, LIVI

¹BLBA – *Blennosperma bakeri*

LABU – *Lasthenia burkei*

LIVI – *Limnanthes vinculans*

Burke's goldfields and Sonoma sunshine were observed in bloom at the Alton North Conservation Bank in March. All three species, including Sebastopol meadowfoam, were observed in bloom at the Alton North Conservation Bank in April.

Field Surveys

Protocol-level special status plant surveys were performed within the Study Area on March 16, April 14, and May 13, 2021. Surveys were performed by walking throughout the entire Study Area. Surveys were conducted during the appropriate season and were floristic in nature. All plants encountered during the surveys were identified to the highest taxonomic level necessary to determine rarity. The *Jepson Manual* was consulted for detailed biological, distributional,

4 U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2019. Web Soil Survey. Web application. Last updated: July 31, 2019. Available online at: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>. Accessed: May 2021.

and phenological information, and used as a standard for nomenclature.⁵ All special status plant populations and sensitive communities, if found, were mapped using a handheld Global Positioning System (GPS) unit with sub-meter accuracy.

Field Surveyor Qualifications

Andrew Georgeades, Senior Ecologist for Sol Ecology received his Bachelor of Science degree in Natural Resource Management and Conservation at San Francisco State University in 2005. Prior to co-founding Sol Ecology, Andrew worked as a natural resources' specialist for the Golden Gate National Recreation Area where he was responsible for monitoring native and rare plant populations and planning and supervising revegetation projects within the park. Andrew also previously worked for the California Native Plant Society as a vegetation project lead on the "Manual of California Vegetation, 2nd Ed." Publication. As a lead, he performed plant surveys, identified vegetation habitat types, landforms, environmental conditions, and plant species following the project protocol. Andrew currently is responsible for overseeing all floristic and focused plant surveys at Sol Ecology and maintains a CDFW scientific collecting permit.

Amy May, Associate Biologist for Sol Ecology received a Bachelor of Science degree in Biological Sciences at Virginia Tech in 2006 and a dual Master of Public Affairs and Master of Science in Environmental Science at Indiana University-Bloomington in 2010. She has worked as a biologist in the public and private industry for over 10 years and specializes in special status plant surveys, floristic inventories, and vegetation community mapping with experience in the Bay Area, Mojave Desert, Shasta Cascade Region, Great Basin, and Snake River Plain.

Elsbeth Mathau, Biologist for Sol Ecology received a Bachelor of Science in Environmental Studies, Biology, and Psychology at the University of Toronto in 2016 and a Master of Science in Ethnobotany at the University of Kent in Canterbury UK with training at Kew Royal Botanical Gardens in 2018. She started working in the environmental science education field in 2009 and has experience with plant restoration projects and floristic inventories. Her master's research was on ecological change and climate adaptation in the Moroccan High Atlas Mountains with indigenous communities. She has also worked with sustainable agriculture and STEM education non-profits focused on equity and inclusion programs. Elsbeth specializes in special status wildlife surveys.

Results

No special status plant species were observed during the 2021 special status plant surveys within the Study Area. Table 2 lists all the plant species observed within the Study Area during 2021 special status plant surveys.

⁵ 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.

Discussion

Adverse conditions from yearly weather patterns, as well as disease, drought, fire, herbivory, predation, or other disturbances may preclude the presence of certain plants in a given year. No evidence of disease, fire, herbivory, predation, or other disturbances were observed within the Study Area. Plant species in the developed areas and drainage ditches were evident and easily identifiable.

Weather patterns, including both precipitation and temperature, can influence the likelihood that herbaceous annuals will germinate in a given year. Spring 2021 was a relatively dry season in the Bay Area and the second consecutive year of drought conditions. Based on data from the National Oceanic and Atmospheric Administration (NOAA) California Nevada River Forecast Center (Napa State Hospital), the Study Area vicinity received 39% of the normal precipitation for the water year to date. The water year starts on October 1 and the most current data are based on the months of October 2020 through March 2021.⁶ Although there was not much precipitation in Spring 2021, the 3 target special status plant species were easily identifiable at the Alton North Conservation Bank throughout a two-month period. Average temperatures were mild enough to trigger germination.⁷

The reference site is composed of upland grassland and seasonal wetlands that occur almost entirely in swales or shallow headwater depressions. The dominant species within the seasonal wetlands include California oatgrass (*Danthonia californica*), curly dock (*Rumex crispus*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), rye grass (*Festuca perennis*), and soft chess (*Bromus hordeaceus*). The reference site is associated with Huichica loam soil series⁸. The Study Area is disturbed, mainly through regular disking. The grassland community consists primarily of non-native (invasive) annual grasses and non-native forbs including oats (*Avena* sp.), rye grass (*Festuca perennis*), and soft chess (*Bromus hordeaceus*), bristly ox-tongue (*Helminthotheca echioides*), carrot (*Daucus carota*), and radish (*Raphanus sativus*). The seasonal wetlands were dominated by hydrophytic vegetation including buttercup (*Ranunculus muricatus*), rye grass, semaphore grass (*Pleuropogon californicus*), and soft chess. The Study Area is associated with Clear Lake clay soil series. Although the Study Area is not similar to Alton North Conservation Bank, the elevation, soils, and hydrology observed in the drainage

6 National Oceanic and Atmospheric Administration (NOAA). 2021. California Nevada River Forecast Center, Monthly Precipitation Summary Water Year 2021, NSHC1 Napa State Hospital, CA. Last updated: April 21, 2021. Available online at: https://www.cnrfc.noaa.gov/monthly_precip.php. Accessed: April 2021.

7 USDA, NRCS. 2021. Climatic Data, Agricultural Applied Climate Information System (AgACIS), Napa County, Napa County State Hospital, Monthly summarized data, Variable Average Temperature. Available online at: <https://efotg.sc.egov.usda.gov/#/details>. Accessed: May 2021.

8 Ted Winfield and Associates. 2008. Long-term Monitoring and Management Plan for the Alton South Conservation Bank, Sonoma County, CA.

ditches within the Study Area do provide suitable potential habitat for the target special status plant species.⁹

Two consecutive years with rare plant surveys 3 times each year were conducted in 2008, 2009, with additional rare plant surveys in 2018. Sol Ecology has performed 3 rare plant surveys in 2021 in total. There is no need to perform additional surveys as no rare plants have been observed during the 4 survey years within a 13-year period, therefore it can be assumed there are no rare plants on site or within the seedbank. Should you have any questions or concerns, please feel free to contact me.

Sincerely,



Andrew Georgeades
Principal Plant Ecologist

Attachment A

Figure 1. Study Area

Table 2. Observed Plant Species Table

⁹ USFWS. 2016. Recovery Plan for the Santa Rosa Plain. Available online at: https://ecos.fws.gov/docs/recovery_plan/06012016_Final%20Santa%20Rosa_RP_signed_1.pdf. Accessed: May 2021.

Table 2. Observed Plant Species Table

SCIENTIFIC NAME	COMMON NAME	LIFE FORM	ORIGIN	CAL-IPC
ANGIOSPERMS				
Dicots				
<i>Brassica nigra</i>	black mustard	annual herb	non-native	moderate
<i>Cichorium intybus</i>	chicory	perennial herb	non-native	--
<i>Cirsium vulgare</i>	bull thistle	perennial herb	non-native	moderate
<i>Convolvulus arvensis</i>	field bindweed	perennial herb or vine	non-native	--
<i>Daucus carota</i>	Queen Anne's lace, wild carrot	perennial herb	non-native	--
<i>Epilobium brachycarpum</i>	panicled willow herb	annual herb	native	-
<i>Foeniculum vulgare</i>	fennel	perennial herb	non-native	moderate
<i>Geranium dissectum</i>	cranesbill, cut leaved geranium	annual herb	native	-
<i>Helminthotheca echioides</i>	bristly ox-tongue	annual or perennial herb	non-native	limited
<i>Hirschfeldia incana</i>	summer mustard, wild mustard	perennial herb	non-native	moderate
<i>Lupinus bicolor</i>	miniature lupine	perennial herb	native	--
<i>Ranunculus californicus</i>	California buttercup	perennial herb	native	--
<i>Raphanus sativus</i>	radish	annual herb	non-native	limited
<i>Rubus armeniacus</i>	Himalayan blackberry	Shrub	non-native	high
<i>Rumex crispus</i>	curly dock	perennial herb	non-native	limited
<i>Scandix pecten-veneris</i>	Shepherd's needle	annual herb or vine	non-native	--
<i>Tragopogon porrifolius</i>	purple salsify	perennial herb	non-native	--
<i>Torilis arvensis</i>	field hedge parsley	annual herb	non-native	moderate
<i>Trifolium dubium</i>	shamrock clover	perennial herb	non-native	--
<i>Vicia sativa</i>	spring vetch	annual herb	non-native	--
Monocots				
<i>Avena barbata</i>	slender wild oat	annual grass	non-native	moderate

SCIENTIFIC NAME	COMMON NAME	LIFE FORM	ORIGIN	CAL-IPC
<i>Bromus hordeaceus</i>	soft chess	annual grass	non-native	limited
<i>Cyperus eragrostis</i>	flatsedge	perennial grasslike herb	native	--
<i>Distichlis spicata</i>	salt grass	perennial grasslike herb	native	--
<i>Elymus triticoides</i>	beardless wild-rye	perennial grasslike herb	native	--
<i>Festuca perennis</i>	Italian rye grass, rye grass	perennial grass	non-native	moderate
<i>Juncus sp.</i>	rush	annual grasslike herb	native	--
<i>Phalaris aquatica</i>	Harding grass	perennial grass	non-native	moderate