# County of Santa Cruz

PLANNING DEPARTMENT
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131
**KATHLEEN MOLLOY PREVISICH, PLANNING DIRECTOR**
www.sccoplanning.com

## NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

## NOTICE OF PUBLIC REVIEW AND COMMENT PERIOD

Pursuant to the California Environmental Quality Act, the following project has been reviewed by the County Environmental Coordinator to determine if it has a potential to create significant impacts to the environment and, if so, how such impacts could be solved. A Negative Declaration is prepared in cases where the project is determined not to have any significant environmental impacts. Either a Mitigated Negative Declaration or Environmental Impact Report (EIR) is prepared for projects that may result in a significant impact to the environment.

Public review periods are provided for these Environmental Determinations according to the requirements of the County Environmental Review Guidelines. The environmental document is available for review at the County Planning Department located at 701 Ocean Street, in Santa Cruz. You may also view the environmental document on the web at www.sccoplanning.com under the Planning Department menu. If you have questions or comments about this Notice of Intent, please contact Todd Sexauer of the Environmental Review staff at (831) 454-3511.

The County of Santa Cruz does not discriminate on the basis of disability, and no person shall, by reason of a disability, be denied the benefits of its services, programs or activities. If you require special assistance in order to review this information, please contact Bernice Shawver at (831) 454-3137 to make arrangements.

**PROJECT: Sohl Residence**

**APP #: 141097**

**APN(S): 063-061-28**

**PROJECT DESCRIPTION:** The proposed project is to construct a 1,583 square foot single family dwelling with an attached 440 square foot garage on an existing vacant parcel that is located in the Bonny Doon Zayante Sandhills.

**PROJECT LOCATION:** The proposed project is located on the north side of Alta Vista Road, approximately 1,960 feet west of Martin Road, within the community of Bonny Doon, in unincorporated Santa Cruz County. Santa Cruz County is bounded on the north by San Mateo County, on the south by Monterey and San Benito counties, on the east by Santa Clara County, and on the south and west by the Monterey Bay and the Pacific Ocean.

**EXISTING ZONE DISTRICT: RA (Residential Agriculture)**
**APPLICANT: Valerie Hart**
**OWNER: Steven Sohl**
**PROJECT PLANNER: Lezanne Jeffs**
**EMAIL: Lezanne.Jeffs@santacruzcounty.us**
**ACTION: Negative Declaration with Mitigations**
**REVIEW PERIOD: April 23, 2018 through May 22, 2018**

This project will be considered at a public hearing before the Zoning Administrator. The time, date and location have not been set. When scheduling does occur, these items will be included in all public hearing notices for the project.

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## MITIGATED NEGATIVE DECLARATION

**Project: Sohl Residence** **APN(S): 063-061-28**

**Project Description:** The proposed project is to construct a 1,583 square foot single family dwelling with an attached 440 square foot garage on an existing vacant parcel that is located in the Bonny Doon Zayante Sandhills.

**Project Location:** The proposed project is located on the north side of Alta Vista Road, approximately 1,960 feet west of Martin Road, within the community of Bonny Doon, in unincorporated Santa Cruz County. The County of Santa Cruz is bounded on the north by San Mateo County, on the south by Monterey and San Benito counties, on the east by Santa Clara County, and on the south and west by the Monterey Bay and the Pacific Ocean.

**Owner:** Steven Sohl

**Applicant:** Valerie Hart

**Staff Planner:** Lezanne Jeffs, (831) 454-2480

**Email:** Lezanne.Jeffs@santacruzcounty.us

**This project will be considered** at a public hearing before the Zoning Administrator. The time, date and location have not been set. When scheduling does occur, these items will be included in all public hearing notices for the project.

California Environmental Quality Act Mitigated Negative Declaration Findings:

Find, that this Mitigated Negative Declaration reflects the decision-making body's independent judgment and analysis, and; that the decision-making body has reviewed and considered the information contained in this Mitigated Negative Declaration and the comments received during the public review period; and, that revisions in the project plans or proposals made by or agreed to by the project applicant would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur; and, on the basis of the whole record before the decision-making body (including this Mitigated Negative Declaration) that there is no substantial evidence that the project as revised will have a significant effect on the environment. The expected environmental impacts of the project are documented in the attached Initial Study on file with the County of Santa Cruz Clerk of the Board located at 701 Ocean Street, 5th Floor, Santa Cruz, California.

Review Period Ends: May 22, 2018

Date: 4-18-18

TODD SEXAUER, Environmental Coordinator
(831) 454-3511

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## CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)
## INITIAL STUDY/ENVIRONMENTAL CHECKLIST

**Date:** April 17, 2018 **Application Number:** 141097

**Project Name:** Sohl Residence **Staff Planner:** Lezanne Jeffs

## I. OVERVIEW AND ENVIRONMENTAL DETERMINATION

**APPLICANT:** Valerie Hart (formerly Frauke Zajac) **APN(s):** 063-061-28

**OWNER:** Steven Sohl **SUPERVISORAL DISTRICT:** Third

**PROJECT LOCATION:** The proposed project is located on the north side of Alta Vista Road, approximately 1,960 feet west of Martin Road, within the community of Bonny Doon, in unincorporated Santa Cruz County. Santa Cruz County is bounded on the north by San Mateo County, on the south by Monterey and San Benito counties, on the east by Santa Clara County, and on the south and west by the Monterey Bay and the Pacific Ocean.

**SUMMARY PROJECT DESCRIPTION:**

The proposed project is to construct a 1,583 square foot single family dwelling with an attached 440 square foot garage on an existing vacant parcel that is located in the Bonny Doon Zayante Sandhills.

**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:** *All of the following potential environmental impacts are evaluated in this Initial Study. Categories that are marked have been analyzed in greater detail based on project specific information.*

- ☐ Aesthetics and Visual Resources
- ☐ Agriculture and Forestry Resources
- ☐ Air Quality
- ☒ Biological Resources
- ☒ Cultural Resources
- ☐ Geology and Soils
- ☐ Greenhouse Gas Emissions
- ☐ Hazards and Hazardous Materials
- ☐ Hydrology/Water Supply/Water Quality
- ☐ Land Use and Planning
- ☐ Mineral Resources
- ☐ Noise
- ☐ Population and Housing
- ☐ Public Services
- ☐ Recreation
- ☐ Transportation/Traffic
- ☐ Utilities and Service Systems
- ☐ Tribal Cultural Resources
- ☐ Mandatory Findings of Significance

## DISCRETIONARY APPROVAL(S) BEING CONSIDERED:

- ☐ General Plan Amendment
- ☐ Land Division
- ☐ Rezoning
- ☐ Development Permit
- ☐ Sewer Connection Permit
- ☒ Coastal Development Permit
- ☐ Grading Permit
- ☐ Riparian Exception
- ☐ LAFCO Annexation
- ☐ Other:

## OTHER PUBLIC AGENCIES WHOSE APPROVAL IS REQUIRED (e.g., permits, financing approval, or participation agreement):

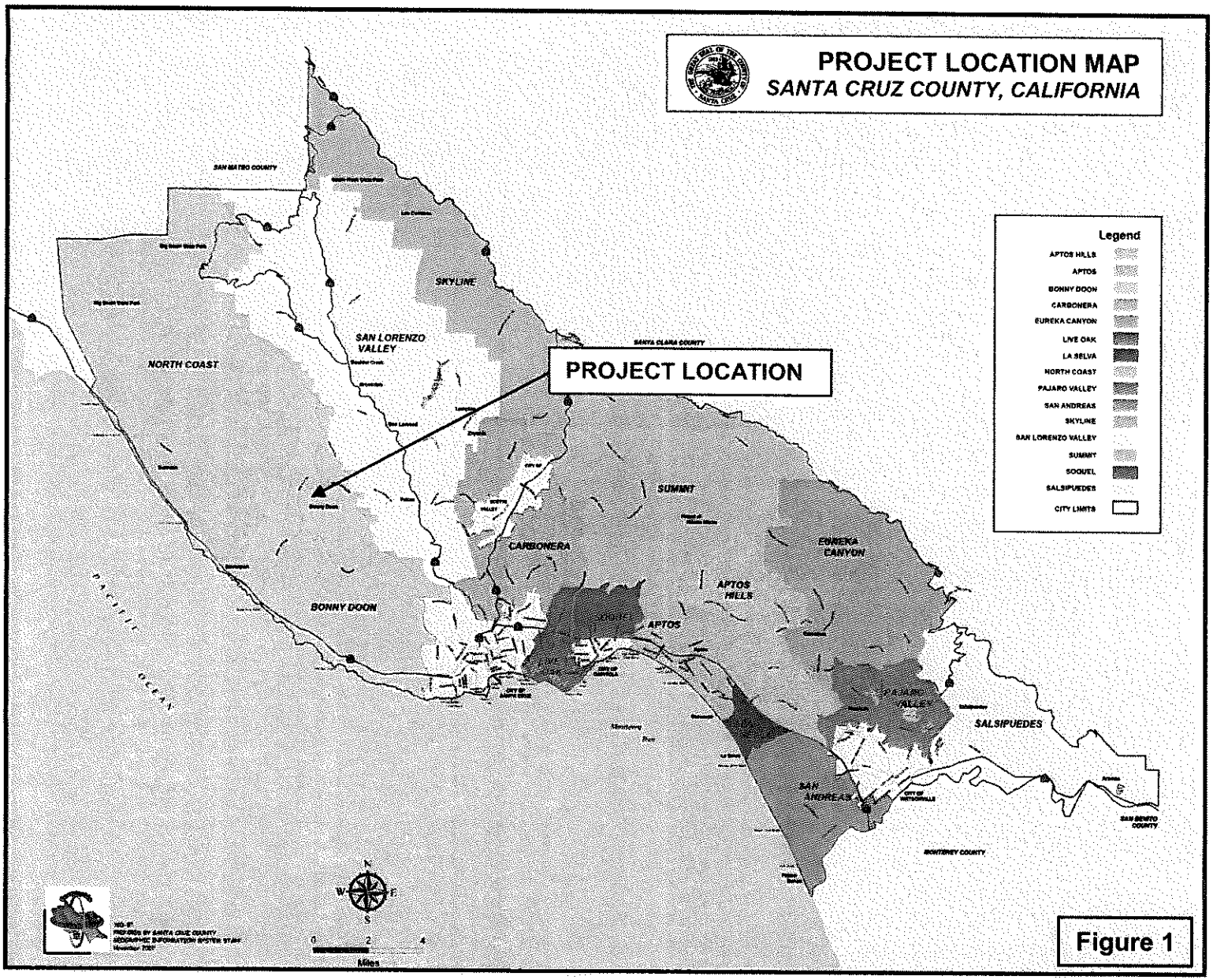
| Permit Type/Action | Agency |
|---|---|
| Habitat Conservation Plan/Take Permit | United States Fish and Wildlife Service |
| Incidental Take Permit | California Department of Fish and Wildlife |

## DETERMINATION:

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

TODD SEXAUER, Environmental Coordinator _____ Date _____


PROJECT LOCATION MAP
SANTA CRUZ COUNTY, CALIFORNIA
PROJECT LOCATION
Legend
APTOS HILLS
APTOS
BONNY DOON
CARBONERA
EUREKA CANYON
LIVE OAK
LA SELVA
NORTH COAST
PAJARO VALLEY
SAN ANDREAS
SKYLINE
SAN LORENZO VALLEY
SUMMIT
SOQUEL
SALSIPUEDES
CITY LIMITS
SAN MATEO COUNTY
SANTA CLARA COUNTY
SKYLINE
SAN LORENZO VALLEY
NORTH COAST
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EUREKA CANYON
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Figure 1

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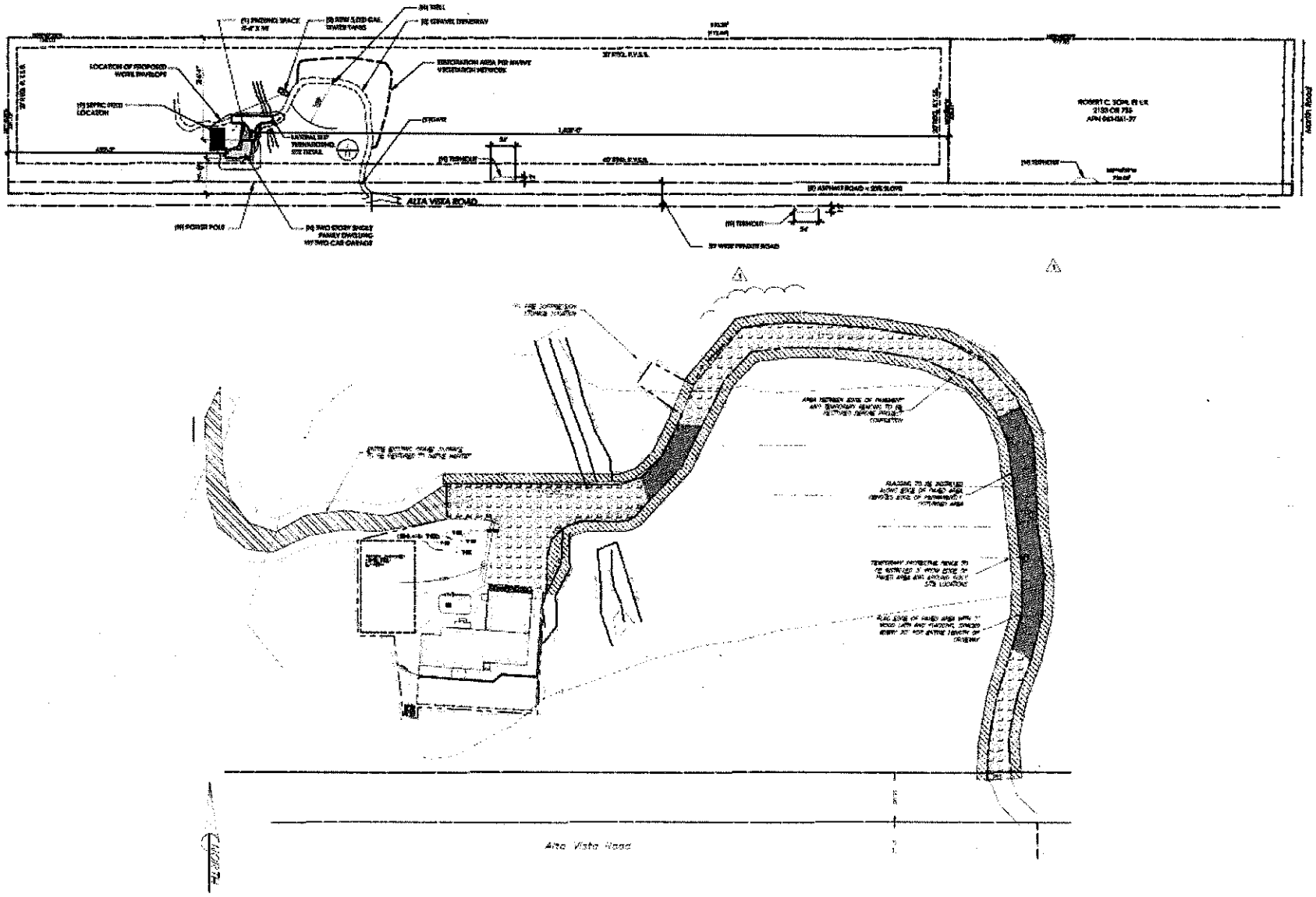


**Project Site Plan**

**Figure 2**

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| Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|

# II. BACKGROUND INFORMATION

## EXISTING SITE CONDITIONS:

Parcel Size (acres): 14.9
Existing Land Use: Vacant residential parcel
Vegetation: Sandhills habitat
Slope in area affected by project: ☒ 0 - 30% ☐ 31 – 100% ☐ N/A
Nearby Watercourse: Mill Creek (tributary)
Distance To: 1,240 feet

## ENVIRONMENTAL RESOURCES AND CONSTRAINTS:

| | | | |
|---|---|---|---|
| Water Supply Watershed: | Yes | Fault Zone: | Not Mapped |
| Groundwater Recharge: | Yes | Scenic Corridor: | Martin Road |
| Timber or Mineral: | Not Mapped | Historic: | No structure |
| Agricultural Resource: | Not Mapped | Archaeology: | Not Mapped |
| Biologically Sensitive Habitat: | Sandhills | Noise Constraint: | None |
| Fire Hazard: | Critical Fire | Electric Power Lines: | None |
| Floodplain: | Not Mapped | Solar Access: | Adequate |
| Erosion: | Not Mapped | Solar Orientation: | Adequate |
| Landslide: | Not Mapped | Hazardous Materials: | None |
| Liquefaction: | Not Mapped | Other: | No |

## SERVICES:

| | | | |
|---|---|---|---|
| Fire Protection: | Santa Cruz County Fire | Drainage District: | Outside |
| School District: | Bonny Doon/ Santa Cruz | Project Access: | Alta Vista Road |
| Sewage Disposal: | Septic | Water Supply: | Well |

## PLANNING POLICIES:

| | | | |
|---|---|---|---|
| Zone District: | RA (Residential Agriculture | Special Designation: | None |
| General Plan: | R-R (Rural Residential) | | |
| Urban Services Line: | ☐ Inside | ☒ Outside | |
| Coastal Zone: | ☒ Inside | ☐ Outside | |

## ENVIRONMENTAL SETTING AND SURROUNDING LAND USES:

### Natural Environment

Santa Cruz County is uniquely situated along the northern end of Monterey Bay approximately 55 miles south of the City of San Francisco along the Central Coast. The

| Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|

Pacific Ocean and Monterey Bay to the west and south, the mountains inland, and the prime agricultural lands along both the northern and southern coast of the county create limitations on the style and amount of building that can take place. Simultaneously, these natural features create an environment that attracts both visitors and new residents every year. The natural landscape provides the basic features that set Santa Cruz apart from the surrounding counties and require specific accommodations to ensure building is done in a safe, responsible and environmentally respectful manner.

The California Coastal Zone affects nearly one third of the land in the urbanized area of the unincorporated County with special restrictions, regulations, and processing procedures required for development within that area. Steep hillsides require extensive review and engineering to ensure that slopes remain stable, buildings are safe, and water quality is not impacted by increased erosion. The farmland in Santa Cruz County is among the best in the world, and the agriculture industry is a primary economic generator for the County. Preserving this industry in the face of population growth requires that soils best suited to commercial agriculture remain active in crop production rather than converting to other land uses.

## PROJECT BACKGROUND:

The subject property is an approximately 650,879 square foot (15 acre) rectangular parcel which includes a narrow strip of land that extends eastwards to Martin Road. The parcel is accessed via Alta Vista Lane, a private right-of-way that runs westwards form Martin Road along the southern edge of the parcel. The property is located in the community of Bonny Doon, and also within the Coastal Zone.

Bonny Doon is a loosely defined rural community that lies between Empire Grade to the northeast and the Pacific Ocean to the southwest, from San Vicente Creek on the northwest to the Santa Cruz City border on the east. The larger Bonny Doon area is characterized by rural dwellings and estates set within a landscape that includes redwood forests on the inland slopes, coastal chaparral on hillsides close to the ocean, Zayante Sandhills habitat at higher elevations in the northeast, and a range of agricultural uses from arable crops, mostly on the coastal terraces, as well as vineyards and horse pastures.

The project site is located in the Bonny Doon Zayante Sandhills, a unique community of plants and animals found only on outcrops of Zayante sands. Due to their limited geographic range and narrow habitat specificity, the endemic communities and species of the Sandhills are naturally extraordinarily rare and include several federally listed endangered species of both plants and animals. Within 1,000 feet of the property on three sides, to the north, south and east, is the Bonny Doon Ecological Reserve. To the north of the subject parcel, within the preserve area, is a rocky peak known as the Lone Star Peak or the "moon rocks", and a ridge of higher ground with exposed sandstone outcrops extends southwards from this peak,

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crossing the parcel close to its eastern edge. The central and eastern portions of the parcel have similar concentrations of rare and endangered species as within the Bonny Doon Ecological Reserve. At the western edge of the parcel, although still within the Sandhills habitat area, the vegetation changes and there is an area of mixed evergreen forest and stands of Coast Live Oak as well as small areas of open meadow.

In April 2006 a complaint was received by the Santa Cruz County Planning Department alleging that unauthorized land clearing had been done on the subject parcel. Site inspections showed that an area of approximately one acre had been cleared and that a rock driveway providing access to a potential building site had been installed. Subsequently a Notice of Violation was recorded on the parcel. In order to resolve the violation a Restoration Plan with a 5-year monitoring and maintenance plan was prepared by Valerie Haley of Native Vegetation Network. This Restoration Plan was initially required to cover restoration of the entire disturbed area. However, an allowance was made that a portion of the cleared area that made up the rocked access road and the potential building site, could be left disturbed until the restoration of the remainder of the parcel was complete and the property owner came in with a proposal for future dwelling on the parcel. This allowance was made to reduce the potential impacts to Mount Hermon June beetles that are present on the subject parcel. It was made clear to the property owner, based upon a signed stipulation order (07-008, dated 4/26/2007), that the areas that were not restored would be considered new development by the County as part of a future application for a dwelling on the subject parcel, and would be included in the total allowed disturbance area of one-quarter acre that could be permitted. It was also made clear that any disturbed portions of the site beyond that one-quarter acre would have to be restored as a component of the development process. As part of this future submittal, a plan prepared by a civil engineer identifying the areas that have been disturbed, the areas to be restored, and the areas that will remain disturbed was required.

Following completion of the 5-year monitoring and maintenance plan in 2011, a final letter was prepared by Native Vegetation Network which concluded that the restoration program was on schedule and had met the vast majority of the established performance criteria and that with ongoing maintenance as specified, the restoration criterion would have been met.

Because the proposed dwelling would be located within the Bonny Doon Zayante Sandhills habitat, the proposed project has the potential to jeopardize the continued existence of listed species or destroy or adversely modify critical habitat that is associated with listed species. These species include the Mount Hermon June beetle (MHJB), Zayante Band-Winged grasshopper, Ben Lomond spineflower, Santa Cruz wallflower, Santa Cruz Cypress, Silverleaf manzanita and Ben Lomond buckwheat. During a presence-absence survey in 2008 by Dr. Jodi McGraw, Ecologist, the Mount Hermon June beetle (MHJB) was found on the property. However, based upon site reconnaissance

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by Valerie Haley of the Native Vegetation Network it was determined that there would be no additional take of any other federally listed species for the construction of the proposed home.

In February 2014, a Low-Effect Habitat Conservation Plan (HCP) for the Endangered Mount Hermon June Beetle for APN 063-061-26" was prepared by Richard A. Arnold Ph.D. This plan, which provides measures for mitigating adverse effects on the MHJB for activities associated with the site preparation and construction of a new single-family residence, revegetation associated with installation of a well and water pipeline, and vegetation management of the protected habitat area of the property, was approved by the United States Fish and Wildlife Service. The HCP addressed the area of the proposed home but did not include the area of the rock driveway which had been represented as "existing". It also failed to address any other federally listed species on the site.

In June 2014 an application was submitted for a Coastal Development Permit for the construction of a single-family dwelling on the parcel. The submitted plans, initially prepared by Frauke Zajack and later finalized by Valerie Hart, Drafting and Design, include preliminary plans for the proposed dwelling and for the other required site improvements, together with a proposed Habitat Protection Plan. The application also included Biotic Reports, prepared by Valerie Haley of the Native Vegetation Network to address potential impacts to the sensitive habitat and all special status species due to the proposed residential development. This report, in conjunction with the HCP, was accepted by the County Of Santa Cruz Environmental Planning section. All required measures to mitigate and minimize for project impacts, including protection of existing vegetation, vegetation management, habitat enhancement, and restoration of disturbed habitat, included in the Biotic Report, as well as the required mitigation and monitoring program from the HCP prepared by Richard A. Arnold Ph.D., are included into the final project plans.

On October 24, 2017 a minor amendment request was submitted to the United States Fish and Wildlife Service (USFWS) to address the area of the unrecognized rock driveway, installed in 2006, that was not included in the a the 2014 HCP prepared by Richard A. Arnold Ph.D. Based upon County requirements which include: the purchase of additional conservation credits to compensate for impacts throughout the anticipated impact area, the restoration of previously disturbed habitat, and the recording of a deed restriction that limits all further development on the parcel, it was determined by Chad Mitcham, Fish and Wildlife Biologist for the USFWS, that proposed project is in compliance with the federal Endangered Species Act and that no additional action was required.

In October 2017, the applicant also contacted the Monica Oey of the California Department of Fish and Wildlife (CDFWS) to determine whether there were any additional requirements from the State regarding the area of the rock driveway. Based upon a determination by the

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project Biologist, Valerie Haley of the Native Vegetation Network, that if the proposed protection fencing works correctly the project will not directly or indirectly cause take of a state listed or rare species, the CDFWS determined that an incidental take permit would not be needed for the proposed building site and driveway. It was also found that a Consistency Determination was not required for the proposed project because the one quarter acre maximum disturbance area will not affect any animal or plant species that are listed on both the federal Endangered Species Act and the California Endangered Species Act (CESA).

### DETAILED PROJECT DESCRIPTION:

At the present time the subject parcel is largely vacant with no existing structures or other improvements, except for a well, a small water tank and the rock driveway that includes a turn-around area. The proposed project is for the construction of a 1,583 square foot two-story single-family dwelling with a 440 square foot garage, accessed via a portion of the previously installed rock driveway. In addition, the project includes the installation of a septic system, a small fenced yard area, water tanks for fire suppression and a revised turnaround for fire trucks. The submitted plans show that the proposed project, would not exceed the maximum one-quarter of an acre of permanent disturbance allowed under the County of Santa Cruz 1994 General Plan and County Code section 16.32, Sensitive Habitat ordinance. All areas of site disturbance outside the permitted area one-quarter acre site would be restored in accordance with the recommendations of the HCP and Biotic Report, prior to project completion, including protection of existing vegetation, vegetation management, habitat enhancement, and restoration of disturbed habitat.

## III. ENVIRONMENTAL REVIEW CHECKLIST

### A. AESTHETICS AND VISUAL RESOURCES

*Would the project:*

| | | | | | |
|---|---|---|---|---|---|
| 1. | *Have a substantial adverse effect on a scenic vista?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The proposed single-family dwelling would not be visible from any public road or other public viewpoint. In views from Martin Road, which is a County designated scenic road, the proposed building site would, at its closest point be 1,400 feet from the travelled roadway and be completely screened by existing mature vegetation as well as by the natural topography. The proposed dwelling would also not be visible from Quail Drive and Towhee Drive, located west of the project site, due to dense areas of woodland that lie between these roads and the property. Therefore the proposed dwelling would not directly impact any public scenic resources, as designated in the County's General Plan (1994), or

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obstruct any public views of these visual resources. Although the proposed single-family dwelling is located in a designated scenic resource area, the only possible views that would potentially be affected by the project are those from private property. County visual resource protection regulations only apply to public viewsheds. No impact would occur.

| | | | | | |
|---|---|---|---|---|---|
| 2. | *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The project site is located on Alta Vista Lane, that runs westwards from Martin Road, a County designated scenic road and because the proposed building site is potentially within a public viewshed area associated the scenic highway, it is within a mapped scenic resource area. However, the proposed dwelling would not be visible from any point along Martin Road. Where Martin Road runs south of the project site, the dwelling would be located a minimum of 1,400 feet from the road at its closest point and would be separated in views looking northwards by an elevation difference of around 160 feet, as well as substantial areas of dense mature vegetation with stands of mature trees. Where Martin Road turns northward to run east of the property, the proposed building site would be a minimum of 2,000 feet from the road at its closest point. In views looking westwards from the road, the proposed dwelling would be completely screened by mature vegetation, in particular by tall trees along the western edge of the road, and also by an intervening ridge of high ground. Furthermore, the proposed project does not affect any rock outcroppings or require the removal of any mature trees. Therefore the proposed single-family dwelling would not damage any scenic resources. The proposed project is not located in a designated scenic resource area associated with a state scenic highway. Therefore, no impact is anticipated.

| | | | | | |
|---|---|---|---|---|---|
| 3. | *Substantially degrade the existing visual character or quality of the site and its surroundings?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: Although the parcel is not located in the Bonny Doon Ecological Reserve the existing visual setting is characterized by its central location within the Bonny Doon Zayante Sandhills. To the north of the subject parcel, within the preserve area, is a rocky peak known as the Lone Star Peak, and a ridge of higher ground with exposed sandstone outcrops extends southwards from this peak, crossing the parcel close to its eastern edge. This portion of the site, which is characterized by vegetation associated with Sandhills habitat, such as Santa Cruz Cypress and Bonny Doon (Silverleaf) Manzanita, has a high scenic beauty. However, the proposed building site is located away from this area, close to an area of mixed evergreen forest that covers the western approximately one quarter of the parcel, and is also bordered by areas of Live Oak woodland. Because of the surrounding

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
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trees the proposed dwelling would not be visible from the upper ridges of the Bonny Doon Ecological Reserve. The proposed project is small in scale and is required to include exterior materials and colors that reflect the colors and textures of the surrounding natural landscape. Further, in accordance with the County's Sensitive Habitat ordinance, all areas outside of the development envelope would be landscaped and restored in accordance with the approved Habitat Conservation Plan, so as to fit into this setting (see Mitigation Measures BIO-6-14). Impacts would be less than significant.

| | | | | | |
|---|---|---|---|---|---|
| 4. | *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: The proposed single-family dwelling would create an incremental increase in night lighting. However, this increase would be small, and would be similar in character to the lighting associated with the surrounding existing residential uses. Therefore impacts would be less than significant.

## B. AGRICULTURE AND FORESTRY RESOURCES

*In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:*

| | | | | | |
|---|---|---|---|---|---|
| 1. | *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The project site does not contain any lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. In addition, the project does not contain Farmland of Local Importance. Therefore, no Prime Farmland, Unique Farmland, Farmland of Statewide or Farmland of Local Importance would be converted to a non-agricultural use. No impact would occur from project implementation.

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| 2. *Conflict with existing zoning for agricultural use, or a Williamson Act contract?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The project site is zoned RA (Residential Agriculture) which, although small scale agricultural uses are allowed, is not considered to be an agricultural zone. Additionally, the project site's land is not under a Williamson Act Contract. Therefore, the project does not conflict with existing zoning for agricultural use, or a Williamson Act Contract. No impact is anticipated.

| | | | | |
|---|---|---|---|---|
| 3. *Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The project is not located near land designated as Timber Resource. Therefore, the project would not affect the resource or access to harvest the resource in the future. No impact would occur.

| | | | | |
|---|---|---|---|---|
| 4. *Result in the loss of forest land or conversion of forest land to non-forest use?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: No forest land occurs on the project site or in the immediate vicinity. See discussion under B-3 above. No impact is anticipated.

| | | | | |
|---|---|---|---|---|
| 5. *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The project site and surrounding area does not contain any lands designated as Prime Farmland, Unique Farmland, Farmland of Statewide Importance or Farmland of Local Importance as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. Therefore, no Prime Farmland, Unique Farmland, Farmland of Statewide, or Farmland of Local Importance would be converted to a non-agricultural use. In addition, the project site contains no forest land. Therefore, no impacts are anticipated.

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|

## C. AIR QUALITY

*The significance criteria established by the Monterey Bay Unified Air Pollution Control District (MBUAPCD) has been relied upon to make the following determinations. Would the project:*

| | | | | | |
|---|---|---|---|---|---|
| 1. | *Conflict with or obstruct implementation of the applicable air quality plan?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The proposed project is for the construction of a small single-family dwelling on a roughly level site that is served by an existing rocked driveway. No grading is proposed. Therefore, the project would not conflict with or obstruct any long-range air quality plans of the Monterey Bay Unified Air Pollution Control District (MBUAPCD). No impact would occur.

| | | | | | |
|---|---|---|---|---|---|
| 2. | *Violate any air quality standard or contribute substantially to an existing or projected air quality violation?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: No grading is required for the construction of the proposed dwelling or for the existing rock driveway. Therefore, although construction activities such as installation of the required septic system may result in a short term, a very minor localized decrease in air quality, standard dust control best management practices, such as periodic watering during construction would avoid significant air quality impacts.

Given the modest amount of new traffic that would be generated by the proposed single-family dwelling there is no indication that new emissions would exceed MBUAPCD thresholds and there would not be a significant contribution to an existing air quality violation.

| | | | | | |
|---|---|---|---|---|---|
| 3. | *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: Project construction would have a very limited and temporary potential to contribute to existing violations of California air quality standards for ozone and $PM_{10}$ primarily through diesel engine exhaust and fugitive dust. Because no grading is proposed at the building site and because most of the driveway serving the dwelling was previously installed, diesel emissions and dust generated by the proposed project would be minimal. Therefore, the proposed project would not result in a cumulatively considerable net increase in criteria pollutants. The impact on ambient air quality would be less than significant.

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| 4. *Expose sensitive receptors to substantial pollutant concentrations?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: The proposed construction of a single-family dwelling would not generate substantial pollutant concentrations. Emissions from construction activities represent temporary impacts that are typically short in duration. Impacts to sensitive receptors would be less than significant.

| | | | | |
|---|---|---|---|---|
| 5. *Create objectionable odors affecting a substantial number of people?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: California ultralow sulfur diesel fuel with a maximum sulfur content of 15 ppm by weight would be used in all diesel-powered equipment, which minimizes emissions of sulfurous gases (sulfur dioxide, hydrogen sulfide, carbon disulfide, and carbonyl sulfide). Therefore, no objectionable odors are anticipated from construction activities associated with the proposed project, and no mitigation measures would be required. The proposed project would not create objectionable odors affecting a substantial number of people; therefore, impacts are expected to be less than significant.

## D. BIOLOGICAL RESOURCES

*Would the project:*

| | | | | |
|---|---|---|---|---|
| 1. *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, or U.S. Fish and Wildlife Service?* | ☐ | ☒ | ☐ | ☐ |

*Discussion*: The project site is situated in Bonny Doon and the entire property is characterized by Zayante sandy soils and plant communities indigenous to the Zayante Sandhills region. The Sandhills habitat supports a unique community of plants and animals found only on outcrops of Zayante sands in the central portion of Santa Cruz County. The sandy soil potentially supports habitat for several rare and endangered species as set out in the table below:

| Common Name | Scientific Name | Conservation Status | | |
|---|---|---|---|---|
| | | Federal | State | CNPS* |
| Mount Hermon June beetle | *Polyphylla barbata* | Endangered | — | — |
| Zayante Band-Winged grasshopper | *Trimerotropis infantilis* | Endangered | — | — |
| Ben Lomond spineflower | *Chorizanthe pungens* var. *hartwegiana* | Endangered | — | — |
| Santa Cruz wallflower | *Erysimum teretifolium* | Endangered | Endangered | 1B |
| Santa Cruz cypress | *Cupressus abramsiana* | Endangered | Endangered | |
| Silverleaf manzanita | *Arctostavhylos silvicola* | — | — | 1B |
| Ben Lomond buckwheat | *Eriogonum nudum* var.*decurrens* | — | — | 1B |

*CNPS is the California Native Plant Society, whose lists of rare plants are often treated as endangered species by resource agencies.

Based upon site reconnaissance by both Valerie Haley of the Native Vegetation Network and Richard A. Arnold, PhD. of Entomological Consulting Services, Ltd. it was determined that no federally or State listed plant species (Santa Cruz wallflower, Santa Cruz Cypress and Ben Lomond spineflower) were present at the project site. Some special status plants, including the Ben Lomond spineflower were identified near the existing gravel driveway and close to the eastern end of the parcel along the existing paved access route, but these are outside the proposed development envelope and will remain undisturbed. In addition, it was established by Dr. Richard A. Arnold, that the Zayante Band-Winged grasshopper is not present in the Bonny Doon region of the Zayante Sandhills habitat. However, during a presence-absence survey in 2008 by Jodi McGraw Ph.D, Ecologist, the Mount Hermon June Beetle (MHJB) was found on the property. The MHJB *(Polyphylla barbata:* Coleoptera: Scarabaeidae), is a federally-listed endangered species, but is not listed as endangered or threatened under the California Endangered Species Act (CESA), where insects are specifically excluded as a type of animal that may be designated as endangered or threatened species.

To address potential impacts from the site preparation, construction, restoration, and habitat management activities at the project site a Low-Effect Habitat Conservation Plan (HCP) for the Endangered Mount Hermon June Beetle for APN 063-061-26 was prepared by Richard A. Arnold Ph.D., dated February 2014 (Attachment 2). This plan was approved by the United States Fish and Wildlife Service (Attachment 3) and a Permit was issued (Attachment 4).

Subsequently, on October 24, 2017 a minor amendment request was submitted to the

United States Fish and Wildlife Service (USFWS) to address the area of the unrecognized rock driveway, installed in 2006, that was not included in the a the 2014 HCP prepared by Richard A. Arnold Ph.D. Based upon County requirements which include: the purchase of additional conservation credits to compensate for impacts throughout the anticipated impact area, the restoration of previously disturbed habitat, and the recording of a deed restriction that limits all further development on the parcel, it was determined by Chad Mitcham, Fish and Wildlife Biologist for the USFWS, that proposed project is in compliance with the federal Endangered Species Act and that no additional action was required (Attachment 5).

In addition, a Biotic Report was prepared for this project by Valerie Haley of Native Vegetation Network, dated November 2015 to determine potential impacts on special status herbaceous plant species that are associated with the Bonny Doon Sandhills. Because the initial biotic assessment and field studies of the parcel were done in October 2015, before the start of the rainy season when few herbaceous species were evident, additional field surveys were carried out in spring 2016 and a Supplemental Biotic Report, dated July 2016, was also submitted. These Biotic Reports (Attachment 6) were reviewed and accepted by the Planning Department, Environmental Section (Attachment 7). Further discussions on the potential impacts on the Zayante sandhills habitat and associated plant species are included under D.2. (below). An Addendum for the approved Biotic Reports (Attachment 8), was prepared in April 2018 to provide additional information on the proposed project impacts and to update the proposed mitigation measures.

The following ***biological goals and objectives*** were developed based on the MHJB's biology and potential impacts of the covered activities within the scope of the HCP. They include on-site measures that will minimize take of the MHJB at the project site and off-site measures that will protect habitat with high conversation value for the beetle in perpetuity

*Mitigation Measures*

BIO-1 Avoid and minimize, to the extent practical, take of the MHJB within the project site.

- A biologist approved by the USFWS shall conduct a pre-construction training session for all construction staff. All personnel shall be shown pictures of the MHJB larval and adult life stages, and instructed to cease construction activities and call an entomologist qualified and permitted to handle and translocate the endangered beetle should any be observed during the covered activities. If the life stage of the MHJB is one that is below ground, then it shall be reburied outside of the impact area at the approximate depth

at which it was unearthed. If an adult MHJB is found on the soil surface, then it shall be relocated and released outside of the impact area on the soil surface. This measure will minimize take of the MHJB by reducing the number of larvae and adults that could otherwise be injured or killed as a result of project-related activities. The orientation will also inform equipment operators and other workers about the impact area's boundaries, equipment storage locations, materials laydown areas, construction activity restrictions, and identify other habitat protection and work procedures. Workers will be directed to immediately cease work if a MHJB is observed within the designated impact area and contact the project biologist who can handle and relocate the beetle.

- Require that temporary fencing and signs be erected before any vegetation clearing, or excavation activities occur to clearly delineate the boundaries of the project's impact area. Warning signs shall be posted on the temporary fencing to alert excavators and other construction workers not to proceed beyond the fence. All protective fencing shall remain in place until all construction and other site improvements have been completed. Signs will include the following language: "NOTICE: SENSITIVE HABITAT AREA. DO NOT ENTER."

- To prevent dust that can clog the spiracles of adult beetles or cause a decline in vigor or even death of plants that larvae of the MHJB may feed upon, dust control measures, such as periodically wetting down the work areas, shall be used as necessary during excavation for the new foundations in of the impact area, site grading, or any other project-related activities that generate dust.

- If any construction occurs during any portion of the MHJB breeding/flight season, between May 15 and August 15, all exposed soils within the impact area will be covered between the hours of 7pm and 7am daily with tarps, plywood, erosion control fabric, or another suitable impervious material. This will prevent adult males from burrowing into the exposed soils and subsequently being injured or killed by soil disturbance (i.e., digging, grading, covering, etc.).

- Revegetate portions of the project site that are temporarily disturbed due to construction with plant taxa indigenous to the Zayante Sandhills. Because MHJB adults emerge from the soil to attract and search for mates, turf grass, dense ground covers (such as ivy), weed matting, aggregate, and mulch can degrade habitat conditions and shall not be used in this project

BIO-2 Protect habitat for the MHJB at an off-site location with high conservation value for the beetle.

- Provide funds, through the purchase of conservation credits at the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank, to protect, manage, and monitor habitat of the MHJB in perpetuity. Project construction will permanently remove 10,857 square feet (0.2492acre) of habitat that could potentially be used by the MHJB. Credits shall be purchased at a 1:1 ratio, of conservation credits based upon the total area of project disturbance, from the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank. The property owner has previously purchased credits as required under the HCP prepared by Richard Arnold, Ph.D. for a total of 2,720 square feet as evidenced by the receipt for payment from from the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank (Attachment 9) and shall pay the remaining balance of credits for the remaining 8,137 square feet at a 1:1 ratio for the total square feet of permanent disturbance for this project.

  The operator of the conservation bank, PCO, LLC, will be responsible for all species monitoring, habitat management, and other conservation related activities that occur at the Ben Lomond Sandhills Preserve. An annual monitoring report will be prepared for submission to the USFWS and the County of Santa Cruz.

BIO-3 Protect Manage habitat for the MHJB on-site.

- Maintain the habitat portions of the property.
- Control invasive plants in the habitat area.
- Promote native sandhill plant colonization

For further discussion and details of how the objectives of BIO-4 will be achieved, see discussions under section D.2. (below).

*Project Monitoring*

**BIO-4** Track compliance with the terms and conditions of the HCP and permit, including compliance, effects, and effectiveness monitoring.

- In accordance with the provisions set out in the pre-construction meeting, workers shall be directed to immediately cease work if a MHJB is observed within the designated impact area. Workers shall immediately contact the project biologist who can handle and relocate the beetle as authorized by the USFWS.

- Throughout the construction and the other covered activities an approved biologist shall conduct regular inspections of the project site during all phases of the project to ensure that the perimeter fencing and signs that delineate the impact area remain in place, that exposed soils are properly covered by impervious materials, and to salvage and relocate and MHJB life stages.

- Following project completion the project biologist shall calculate the area of soil disturbance (i.e., incidental take), and tally the number of MHJB life stages that were found and translocated during the project to quantify the amount of incidental take at the end of the project.

- The permit holder shall allow representatives from the USFWS access to the project site to monitor compliance with the terms and conditions of the HCP and the effects of the covered activities of this project.

*Reporting*

**BIO-5** The following reports shall be prepared as required by the HCP.

- Compliance Report: By January 31st following each year of the permit, the project biologist shall submit a report to the Ventura Fish and Wildlife Office of the Service and the Santa Cruz County Planning Department to document the status of the project. The report will provide the following information:

1. Brief summary or list of project activities accomplished during the reporting year (e.g. this includes development/construction activities, and other covered activities)
2. Project impacts (e.g. number of acres graded, number of buildings constructed, etc.)
3. Description of any take that occurred for each covered species (includes cause of take, form of take, take amount, location of take and time of day, and deposition of dead or injured individuals)
4. Brief description of conservation strategy implemented
5. Monitoring results (compliance, effects and effectiveness monitoring) and survey information (if applicable)
6. Description of circumstances that made adaptive management necessary and how it was implemented. Please include a table including the cumulative totals; by reporting period all adaptive management changes to the HCP, including a very brief summary of the actions.
7. Description of any changed or unforeseen circumstances that occurred and how they were dealt with
8. Funding expenditures, balance, and accrual
9. Description of any minor or major amendments.

- Annual Mitigation Monitoring Reports: The operator of the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank, PCO, LLC, must submit an annual monitoring report to the Ventura Fish and Wildlife Office of the Service, describing activities performed to benefit the MHJB as part of its agreement to sell conservation credits and operate a conservation bank.. This report shall be submitted to Service by December 31st of the monitoring year. This report shall include:

1. A general assessment of the condition of the habitat at the Ben Lomond Sandhills Preserve;
2. A description of all management actions taken on the Preserve along with an assessment of their effectiveness toward enhancing the biological goals and objectives;
3. A description of any problems encountered in managing the Preserve;
4. Results of monitoring studies for the endangered species and/or communities conducted during the year and an assessment of their implications for the biological goals and objectives; and
5. A description of other activities designed to enhance the Preserve.

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|

Except for the MHJB, the project would not result in the take of any other federally or State listed species. However, the project would have a direct impact on other locally protected species including Silverleaf manzanita and Ben Lomond Buckwwheat. Additional discussions regarding impacts on the Zayante Sandhills habitat are included at D.2. (below).

| | | | | |
|---|---|---|---|---|
| 2. *Have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, regulations (e.g., wetland, native grassland, special forests, intertidal zone, etc.) or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?* | ☐ | ☒ | ☐ | ☐ |

*Discussion:* The proposed project includes construction of a two-story single family dwelling with the associated installation of utilities, and a rock driveway. There would be no grading needed for developing the residence; however, there would be excavation for drilling the well, water lines, septic tank and leach fields. Most of the future development would be located in disturbed Live Oak Woodland where the previously installed gravel occurs, and a small amount of the house footprint would be in the Meadow habitat in the southwest portion of the parcel. A small portion of the Mixed Evergreen Forest would be developed for the septic system.

Potential impacts of the proposed development on special status herbaceous plant species that are associated with the Bonny Doon Sandhills such as the Ben Lomond spineflower (*Chorizanthe pungens, var. hartwegiana*) and on other federally listed species such as the endangered Santa Cruz Cypress (*Cupressus abramsiana),* have been analyzed in the Biotic Reports prepared for this project by Valerie Haley of Native Vegetation Network, dated November 2015 and July 2016 (Attachment 6) Additional information on the project impacts and an updated discussion on proposed mitigation measures is included in an Addendum to the Biotic Reportsm dated April 2018 (Attachment 8). For discussion of the potential impacts of the proposed development on the Mount Hermon June Beetle, a special status insect that is associated with the Zayante sandhills habitat, see section D.1 above.

Impacts to special status plant species due to residential development are discussed under two time periods:

1. Disturbance due to the installation of a gravel driveway in 2006, and
2. Proposed new impacts related to home construction, construction vehicles, well system, and septic system.

EXISTING GRAVEL/ROCK DRIVEWAY AND DISTURBED HABITATS

A survey of the property determined that the existing rock/gravel driveway covered an area of 7,088 square feet. Most of the gravel driveway near the proposed residence (Development Envelope) has Live Oak Woodland on both sides, which provides the basis for determining that most of the future residential impacts would occur in disturbed Live Oak Woodland, where gravel has been placed. The following sensitive plant communities have been disturbed, and lack understory vegetation: Live Oak Woodland, Santa Cruz Cypress-Knobcone Pine Forest/ Maritime Mixed Chaparral, and Mixed Evergreen Forest.

*Mitigation Measures*

BIO-6 This direct impact is considered significant, but mitigatable to a less-than-significant level through the incorporation of the following measures:.

- Implement a Four-year Restoration program that commences after construction is complete. Restoration measures will include: reclaiming gravel areas outside of the 12-foot wide driveway, and gravel areas that are not needed for maintenance access, and the fire turn-around. Gravel shall be removed by using hand rakes. Reclaimed areas shall be hand seeded with local native plant species representative of Sandhills habitat, weeded, and managed to promote native vegetation. Monitoring and reporting shall document new locations of special status species, invasive weeds, and rate of natural recruitment.

- Opportunities for Habitat Enhancement. The Meadow habitat areas support moderate levels of non-native annual grasses and weeds. A combination of weed control and hand seeding to promote species richness would improve the habitat value. Most of the meadow areas occur in gaps in the existing Live Oak Woodland or adjacent to the Live Oak Woodland located west of the house site. Four small areas of Meadow habitat located within the Live Oak Woodland, totaling approximately 4,009 square feet are proposed to be restored and enhanced. In addition, approximately 18,750 square feet of Oak Woodland adjacent to the entrance gate and along the driveway are proposed to be enhanced. The Mixed Evergreen Forest at the west end of the parcel will also be enhanced by removing French broom, velvet grass and other invasive non-native plants, and by protecting special status manzanita seedlings that naturally recruit in the forest. There are recorded observations of Anderson's manzanita in the past, and after the 4-year drought, normal rainfall may activate the soil "seed bank". Approximately 49,645 square feet of the Mixed

Evergreen Forest will undergo enhancement and will be monitored for natural recruitment of native trees and shrubs.

## IMPACT AND MITIGATION TABLE FOR SANDHILLS HABITAT AREAS

| Sensitive Sandhills Habitat | | Area of Disturbance (sq. ft.) | Replacement/ Restoration ratio | Area of Restoration/ Enhancement (sq. ft.) | Proposed restoration/ enhancement/ mitigation measures |
|---|---|---|---|---|---|
| Mixed Evergreen Forest | P | 121 | 1:1 | 121 | Conservation credits* |
| | T | 1,721** | 1:1<br>29:1 | 1:721 (restore)<br>49,645 (enhance) | Restoration and Habitat Enhancement |
| Oak Woodland | P | 838 | 1:1<br>22:1 | 838<br>18,750 | Conservation credits* and Restoration |
| | T | 794 | 1:1 | 794 | Conservation credits* and Restoration |
| Santa Cruz Cypress/ Knobcone PineForest/ Maritime Mixed Chapparal (old impacts included as existing disturbed habitat) | P | None | N/A | None | N/A |
| | T | No additional | N/A | No additional | N/A |
| Meadow | P | 1,256 | 1:1<br>3:1 | 1,256<br>4,009 (enhance) | Conservation credits*<br>Habitat Enhancement |
| | T | None | N/A | None | N/A |
| Existing disturbed habitat area*** | | | | | |
| • (e)/(p) Driveway | P | 7,088 | 1:1 | 7,088 | Conservation credits* |
| • House Site | P | 760 | 1:1 | 760 | Conservation credits* |

* Credits are paid to the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank. Payment has already been made for 2,720 square feet of disturbance. An additional payment of credits for the remaining 8,137 square feet of permanent disturbance will be required prior to the issuance of a building permit for the proposed home.

** Area of disturbed Mixed Evergreen Forest in area of existing gravel driveway that extends beyond the (p) building site. After completion of construction all gravel will be removed and entire area restored.

*** This is the area of existing disturbance, including the rock driveway and cleared building site that will incorporated into the area of permanent disturbance. Disturbed oak woodland within the building envelope has no herb layer and has bare dirt or gravel.

P = Permanent disturbance (total maximum 0.25 acre)
T = Temporary disturbance areas to be restored

| Summary | Area (square feet/acres) |
|---|---|
| Total area of permanent disturbance | 10,063 / 0.2310 |
| Total area of temporary additional disturbance during construction | 794 / 0.0182 |
| Total area subject to purchase of conservation credits | 10,857 / 0.2492 |
| Total area of Restoration/enhancement (not including areas of permanent disturbance for which conservation credits will be purchased) | 55,375 / 1.2712 |

An Addendum to the Biotic Reports, dated April 2018, prepared by the Native Vegetation Network, which includes a revised Vegetation Map showing the proposed development area and locations of restoration areas and enhancement areas is included as Attachment 8.

- Purchase Conservation Credits at the Zayante Sandhills Conservation Bank. After construction, the gravel areas remaining for residential use including the access drive way and turn-around, shall be surveyed to determine the number of square feet of permanently disturbed habitat. It is estimated that the current gravel area may be reduced by approximately 1,721 square feet. The size of the remaining gravel driveway is estimated to be around 7,088 sq. ft., with these figures to be verified by a topographic survey after the completion of construction and used as a basis for determining the number of conservation credits that the property owner has voluntarily agreed to purchase. The property owner will purchase these conservation credits at a 1:1 ratio, one credit purchased for each sq. ft. of remaining gravel and other permanent disturbance. These conservation credits will be purchased in addition to the credits determined for mitigation in the Habitat Conservation Plan for the Mount Hermon June Beetle prepared by Richard Arnold Ph.D. (February 2014). County Planning has agreed to the 1:1 ratio due to the extensive restorationand enhancement measures proposed on-site (pers. comm. Matt Johnston November 17, 2015). Total combined area of permanent disturbance is estimated to be 10,063 sq. ft., with an additional 794 sq. ft. of disturbance in the area of the proposed septic system, totaling approximately 10,857 sq.ft (0.2492 ac.)

PROPOSED RESIDENTIAL DEVELOPMENT

Mitigation measures have been provided to address the potential impacts. Examples of direct impacts include tree removal, ground disturbance, and placement of gravel and cement blocks on natural habitat. Examples of indirect impacts include potential disturbance to Special Status species from increased human uses on the property (e.g., noise, lighting). No special status plant species were observed in the Development Envelope.

The following mitigation measures would reduce impacts from the proposed residential development on each of the sensitive habitats or plant communities and also compensate for indirect impacts.

| Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|

INTERIOR LIVE OAK- CANYON LIVE OAK WOODLAND

Disturbance of Sensitive Live Oak Woodland Habitat (no gravel). In addition to the area of disturbance from the existing gravel driveway, approximately 838 square feet of Live Oak Woodland will be permanently disturbed by the proposed development. This includes approximately 220 square feet that will be disturbed by the installation of two water tanks, a well, pressure tank pads and a fire hydrant with the remainder in the area of the proposed home/septic system. Approximately 18,750 square feet of Live Oak Woodland outside the development envelope will be enhanced. The direct impact is considered significant, but mitigable to a less-than-significant level through the incorporation of the following measures:

*Mitigation Measures*

BIO-7 The following measures are recommended to reduce impacts to the Live Oak Woodland to a less-than significant level.

- After the Development Permit is issued and prior to construction, remove the cement blocks (no mortar keystone blocks), BBQ and patio furniture from the existing recreational barbecue area. Also, remove the dead chinquapin trees.
- During the construction of the house site, protect the Live Oak Woodland habitats that occur adjacent to the development envelope to prevent inadvertent impacts to these habitat types. These natural areas outside the development envelope should be protected by the placement of 5-foot high construction fencing (metal stakes and rope) along the outside edge of the Development Envelope. The fencing should be maintained throughout the site construction period and should be inspected periodically for damage and proper functioning.
- To the greatest extent possible, keep construction activities a minimum of 10 feet away from the tree trunks. Existing trees to be saved that are adjacent to construction activities shall be protected by a 5- foot high temporary fence (metal stakes and rope). The protection fencing should also be installed along the gravel driveway access route where it abuts the Live Oak Woodland habitat. The fence will start at the entry gate, where the gravel driveway starts. The existing natural habitat along the existing gravel driveway and natural habitat outside the proposed Development Envelope shall not be cut, filled, or compacted. The fencing along the

driveway access route shall be maintained throughout the construction period and shall be inspected periodically for damage and proper functioning.

- For trees designated to be retained within 20 feet of construction, utility trenching for the house and leach field, the trees should COP be protected by the placement of 5-foot high plastic construction fencing along the outside edge of the drip line of the tree or grove of trees. The fencing should be maintained throughout the site construction period and should be inspected periodically for damage and proper functioning.

- If construction activities are proposed within the drip line of trees designated to be retained, the following construction guidelines should be implemented: minimize excavation, filling, or other type of soil disturbance within 10 feet of the tree trunk. If 1/3 or more of the roots are disturbed, the injured tree should be watered so that the ground is soaked to a depth of 18 inches, extending outward to the drip line of the tree.

- Remove Invasive, Non-native Species (see Mitigation Measure BIO-14).

SANTA CRUZ CYPRESS KNOBCONE PINE FOREST/MARITIME MIXED CHAPARRAL

Potential Direct Impacts: Construction Vehicles, Equipment, and Turnouts.

The highly sensitive Santa Cruz Cypress-Knobcone Pine Forest/Maritime Mixed Chaparral habitat occurs immediately adjacent to Alta Vista Road, the only available access route to the proposed building site. Implementation of the proposed project would involve the use of small quantities of Fuels (e.g., diesel and gasoline), oils, lubricants, paints and solvents necessary of the routine operation of earthwork equipment. During construction activities, there is the potential for oil and gas spills along the construction access route, which could damage adjacent sensitive Sandhills habitat and potentially result in releases of contaminants to the groundwater and nearby water courses. Vehicles may also introduce plant diseases and spread weed seed.

In addition to the proposed dwelling and driveway, three new turnouts are proposed for construction along Alta Vista Rd. The locations and sizes are per Fire Department requirements. The turnouts will be located where there are existing disturbed open areas along the private road. No new sensitive habitat, Santa Cruz Cypress trees or Bonny Doon (Silverleaf) Manzanita shrubs will need to be removed.

*Mitigation Measures*

BIO-8 These direct impacts are considered significant, but mitigatable to a less-than-significant level through the incorporation of the following measures:

- Staging of construction vehicles and equipment. No Staging areas shall be allowed along Alta Vista Rd., especially in the turnout located at a low point midway along Alta Vista Rd. that is associated with a drainage and seasonal tributary that leads to Mill Creek. Sediments and hazardous material such as oil and gas shall not enter the drainage.

- Staging of construction vehicles and equipment shall be allowed in the Development Envelope, provided that Best Management Practices for sensitive habitats are used, including parking vehicles over drip pans and having spill kits on-site during construction. All refueling, maintenance, and staging of equipment and vehicles will occur within the established staging areas. The property owners will ensure that contamination of sensitive habitat does not occur during such operations. Prior to the onset of work, the contractor shall prepare a plan that provides a prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

- Standard construction procedures and Best Management Practices (BMPs) will be implemented to reduce the emissions of dust and pollutants during construction. Some standard BMPs for construction projects include:

  1. Using a covered, paved area dedicated to vehicle maintenance and washing;
  2. Developing a spill prevention and cleanup plan;
  3. Preventing hazardous chemical leaks by properly maintaining vehicles and equipment;

- Vehicle tires should be sanitized with Lysol or equivalent prior to entering Alta Vista Rd. to avoid spread of fungal diseases and "Sudden Oak Death".

- Remove Invasive, Non-native Species (see Mitigation Measure BIO-14).

Potential Indirect Impacts:

Development of the single-family residence would not directly impact this sensitive habitat type. However, increased residential land uses on the property may result in indirect impacts to the Santa Cruz Cypress-Knobcone Pine Forest/ Maritime Mixed Chaparral habitat. The proposed residence would cause an increase in human activity on the site. Potential human impacts include: night lighting, domestic pets, trampling of vegetation, dumping of trash, and gardening.

*Mitigation Measures*

BIO-9 These direct impacts are considered significant, but mitigatable to a less-than-significant level through the incorporation of the following measures:

- Protection Fencing. During the construction of the house site, protect the Santa Cruz Cypress-Knobcone Pine Forest/ Maritime Mixed Chaparral that occurs adjacent to the existing gravel driveway access. This sensitive habitat should be protected by the placement of 5-foot high construction fencing along the outside edge of the gravel driveway. The fencing should be maintained throughout the site construction period and should be inspected periodically for damage and proper functioning.

- After the construction, a permanent fence (i.e., split rail wood or rocks) shall be placed along the entrance driveway to minimize future potential disturbance to adjacent natural habitats.

- Minimize the use of bright lighting that may influence the behavior and disorient wildlife species (see Mitigation Measures LGT-1 and LGT-2 in section D.7. below).

- Maintain moderate levels of cats and dogs, so that there is not over predation of the site's rodent, bird, snake and lizard populations. No Kennel or other animal boarding is allowed such that a maximum of four cats and/or dogs may be kept on the parcel in accordance with the provisions of Santa Cruz county Code 13.10.700-K definitions "Kennel".

- Remove Invasive, Non-native Species (see Mitigation Measure BIO-14).

- Foster the natural recruitment of native plant species that are representative of Sandhills habitat.

- Structures and features proposed for residential development shall not be placed within 50 feet of an endangered Santa Cruz Cypress tree. This measure is specified in the County's Sensitive Habitat Ordinance (Santa Cruz County Code 16.10.090).

MIXED EVERGREEN FOREST

Home construction would remove Mixed Evergreen Forest Habitat. Approximately 121 square feet of forest habitat would be developed for a septic tank and leach field in the southwestern portion of the Development Envelope. Approximately 49,645 square feet of Mixed Evergreen Forest outside the development area will be enhanced.

*Mitigation Measures*

**BIO-10 These direct impacts are considered significant, but mitigatable to a less-than-significant level through the incorporation of the following measures:**

- Enhance remaining forest areas by removing invasive, non-native vegetation and by fostering natural recruitment of native trees and shrubs (see Mitigation Measure BIO-14).

- For trees designated to be retained within 20 feet of construction, utility trenching for the house and leach field, the trees should be protected by the placement of 5-foot high plastic construction fencing along the outside edge of the drip line of the tree or grove of trees. The fencing should be maintained throughout the site construction period and should be inspected periodically for damage and proper functioning.

- If construction activities are proposed within the drip line of trees designated to be retained, the following construction guidelines should be implemented: minimize excavation, filling, or other type of soil disturbance within 10 feet of the tree trunk. If 1/3 or more of the roots are disturbed, the injured tree should be watered so that the ground is soaked to a depth of 18 inches, extending outward to the drip line of the tree.

MEADOW HABITAT

Direct impacts on Meadow Habitat: Home construction would remove natural Meadow Habitat. Approximately 1,256 square feet of Meadow habitat would be developed for part of the residence in the southwestern portion of the Development Envelope.

*Mitigation Measures*

BIO-11 These direct impacts are considered significant, but mitigatable to a less-than-significant level through the incorporation of the following measures:

- Enhance Remaining Meadow areas. After construction, the remaining meadow areas will be managed to promote native sandhills vegetation. Certain planting sites will be selected hand-seeding. Seeds will be collected within two miles of the property, and will include common aster, bristly aster, goldenrod, yellow yarrow, white yarrow, and woolly paint brush. The project botanist and revegetation specialist will conduct the seed collection, hand seeding, and select the areas to be seeded. The exact areas to be seeded will be determined by the project Biologist so that no special status species are adversely affected.

- Implement Selective Weed-trimming Program. Depending on the amount of annual rainfall, it is recommended that the meadow areas be selectively weed trimmed 2 to 3 times in spring and once again in late fall. Mowing should not be conducted during the summer season so that the native plants may complete their life cycle to produce mature seed. The project botanist will let the property owner know when it is the proper time to mow. The mowing or trimming will serve two main functions:

  1. Mowing helps lower the competition between native herbs and non-native weeds and grasses.

  2. Mowing will lower vegetation height and fire hazard.

Indirect Impacts to Meadow Habitat: Human activities on the property may result in indirect impacts to the endangered species, Santa Cruz Cypress and Bonny Doon (Silverleaf) Manzanita. Due to the limited distribution of Santa Cruz cypress in the region and its special status under FESA, County Code, and CEQA, these impacts are considered significant.

However, the following mitigation measures would reduce impacts to a less than significant level.

*Mitigation Measures*

BIO-12 These direct impacts are considered significant, but mitigatable to a less-than-significant level through the incorporation of the following measures:

- Remove Invasive, Non-native Species (see Mitigation Measure BIO-11). Care should be taken during invasive, non-native plant removal when working near the cypress saplings.

- Measures for Vegetation Management and Fire Safety in the 100' CAL Fire Defensible Space around Residence:

  Avoid doing fuel reduction work during the flight season for the Mount Hermon June Beetle (MHJB), which extends from mid May to Mid August. Do not remove completely, or thin out rare Santa Cruz Cypress trees, Bonny Doon (Silverleaf) Manzanita shrubs, or other listed species. Instead, use corrective pruning and remove lower branches that could fuel a ground fire.

  If a burn pile is needed, it should be placed in the Mixed Evergreen Forest habitat on the property. Place the burn pile to avoid damage to the Western azalea grove or manzanita seedlings. Routes for hauling slash/cut brush or cut trees should avoid ground disturbance near special status plants such as Santa Cruz Cypress and Bonny Doon (Silverleaf) Manzanita.

SPECIAL STATUS PLANT SPECIES

Special status plans occur within 5 feet of the existing gravel driveway. Species include Bonny Doon (Silverleaf) Manzanita, Ben Lomond Buckwheat, Santa Cruz Monkey Flower and the rare Ben Lomond Spineflower. Human activities on the property may result in indirect impacts to the endangered species Due to the limited distribution of these special status species in the region and their special status under FESA, County Code, and CEQA, these potential impacts are considered significant. However, the following mitigation measures would reduce impacts to a less than significant level.

*Mitigation Measures*

BIO-13 These direct impacts are considered significant, but mitigatable to a less-than-significant level through the incorporation of the following measures:

- Placement of temporary protection fencing that will be functional during the construction period around the entire area of the existing gravel driveway and proposed development. In addition, to protect the population area of the Ben Lomond Spineflower (Chorizanthe pungens var.) construction fencing should be placed at the east end of the parcel, in the previously burned area along Alta Vista Road.

- Install individual protection shelters using welded wire or poultry netting to avoid impacts to special status Bonny Doon (Silverleaf) Manzanita (Arctostaphylos silvicola) and Anderson's Manzanita (A. andersonii).

- Ensure a minimum 10 feet between the flagged Arctostaphylos silvicola seedlings and the proposed water tanks.

- Hold a pre-construction meeting to verify that the adjacent Sandhills habitats and special status plant species will be protected by the proper placement of construction fencing and individual protection shelters. The proposed construction fencing shall not be placed outside of the existing disturbed area, most of which is currently covered with gravel. The line of the temporary fencing is required to be approved by the Project Biologist prior to installation of the construction fencing.

OTHER POTENTIAL IMPACTS ON SENSITIVE HABITAT

An increased potential exists for direct impact on soil erosion into sensitive habitat: Construction activities and excavation for the new leach field would leave some disturbed areas with bare soil, which are subject to increased erosion, sedimentation, and run-off into adjacent natural habitats.

*Mitigation Measures*

**BIO-14 These direct impacts are considered significant, but mitigatable to a less-than-significant level through the incorporation of the following measures:**

- Erosion Control Measures. Measures shall be implemented to prevent increased erosion, sedimentation, and run-off into undisturbed habitats, especially in sensitive habitats. Suggested erosion control measures include: straw wattles, and/or weed-free straw bales anchored with wooden stakes

to trap loose sediment, which could move down slope. Santa Cruz Erosion Control Mix should not be used as it contains invasive, non-native grasses and clover species. The effectiveness of the erosion control measures should be inspected to determine if additional measures should be implemented the following fall.

- Monitoring for Natural Recruitment and Special Status Plants. The western third of the parcel shall be evaluated for rare plants, sandhills indicator species, natural regeneration, and to confirm the amount of hand seeding needed. A survey is recommended, since the rare Ben Lomond spineflower and other annual sandhills specialty plants would be identifiable at this time.

There is an increased potential for direct impact due to the spread of exotic species. Construction vehicles and earth moving activities (for septic system and well) typically result in disturbed ground, which may be easily colonized by invasive, non-native species (i.e., French broom, acacia, and velvet grass).

*Mitigation Measures*

BIO-15 These direct impacts are considered significant, but mitigatable to a less-than-significant level through the incorporation of the following measures:

- The project botanist will conduct weed surveys, flag problem areas, and conduct walk-throughs with the property owners to show them the maintenance needed. As compensation for indirect impacts to locally unique species and sensitive habitats, the landowners should remove/control the occurrences of invasive, non-native plant species that occur along the construction route and the western third of the parcel. Winter and early spring are good times to remove acacia saplings and French broom plants, when the soil is wet and before the plants have gone to seed. This helps to avoid the spread of seed into new areas. Controlling invasive, non-native plants will likely be needed on a yearly basis as regular management of the property. No herbicides shall be used.

- High priority species for removal include silver wattle acacia, rose clover, dog tail grass, French broom, thistle species, velvet grass, feather grass, cat's ear, and rattlesnake grass. The plants should be removed in a manner that minimizes disturbances to the native trees and shrubs occurring in these habitat areas.

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| 3. *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: There are no mapped or designated federally protected wetlands on or adjacent to the project site. Therefore, no impacts would occur from project implementation.

| | | | | |
|---|---|---|---|---|
| 4 *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or migratory wildlife corridors, or impede the use of native wildlife nursery sites?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The Mount Hermon June Beetle is not a migratory species and therefore the proposed project does not involve any activities that would interfere with the movements or migrations of fish or wildlife, or the impede use of a known wildlife nursery site. No impact would occur.

| | | | | |
|---|---|---|---|---|
| 5. *Conflict with any local policies or ordinances protecting biological resources (such as the Sensitive Habitat Ordinance, Riparian and Wetland Protection Ordinance, and the Significant Tree Protection Ordinance)?* | ☐ | ☒ | ☐ | ☐ |

***Discussion***: See discussions and mitigation measures specified under D-1 and D-2 above. The project would be consistent with the County of Santa Cruz (Section 16.32 of the County Code) in that a biotic approval has been issued in accordance with section 16.32.060, and the total area of permanent site disturbance would not exceed a maximum of one-quarter of an acre as specified in County Code section 16.32.090(3). The total permanent disturbance, including the area of the proposed septic system, which is included in the area of disturbance for which conservation credits will be paid but which will be restored, would be approximately 10,857 square feet (0.2492 ac). All areas of disturbance outside the one-quarter acre development envelope will also be restored. No Riparian areas or wetlands exist on the parcel and no trees are proposed to be removed for the proposed project. Impacts from project implementation would be less than significant with mitigation incorporated (BIO-1 through BIO-15).

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| 6. *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?* | ☐ | ☐ | ☐ | ☒ |

***Discussion:*** The proposed project would comply with all provisions of the approved Habitat Conservation Plan for the project and would not conflict with the provisions of any other adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, no impact would occur.

| | | | | |
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| 7. *Produce nighttime lighting that would substantially illuminate wildlife habitats?* | ☐ | ☒ | ☐ | ☐ |

***Discussion:*** The development area is located in the Zayante Sandhills, which includes species and communities that could be potentially adversely affected by a new or additional sources of light that are not adequately deflected or minimized. The expected levels of nighttime lighting from the proposed single-family dwelling is small but would include light from uncovered windows, outdoor lighting and occasional glare from the headlights of vehicles arriving or leaving the property. These nighttime light sources are expected to have a minimal adverse effect on the surrounding wildlife habitat. However, the following mitigation measures would be added to the project such that any potential impact would be reduced to a less than significant level:

*Mitigation measures*

**BIO-16** All exterior lighting on the property must comply with the following restrictions:

- All outdoor lighting shall be directed away from adjacent sensitive habitat areas. Light sources may be shielded by landscaping, structure, fixture design or other physical means.

- Outdoor light fixtures shall use only light bulbs that are certified to not attract nocturnally-active insect species.

## E. CULTURAL RESOURCES

*Would the project:*

| | | | | |
|---|---|---|---|---|
| 1. *Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5?* | ☐ | ☐ | ☐ | ☒ |

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|

***Discussion***: There are no existing structures on the property and the parcel is not designated as a historic resource on any federal, state or local inventory. As a result, no impacts to historical resources would occur from project implementation.

| | | | | | |
|---|---|---|---|---|---|
| 2. | *Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: No archeological resources are known to occur in the project area. Pursuant to County Code Section 16.40.040, if at any time in the preparation for or process of excavating or otherwise disturbing the ground, any human remains of any age, or any artifact or other evidence of a Native American cultural site which reasonably appears to exceed 100 years of age are discovered, the responsible persons shall immediately cease and desist from all further site excavation and comply with the notification procedures given in County Code Chapter 16.40.040. Impacts are expected to be less than significant.

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| 3. | *Disturb any human remains, including those interred outside of dedicated cemeteries?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: No human remains are known to occur in the project area However, pursuant to Section 16.40.040 of the Santa Cruz County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this project, human remains are discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the sheriff-coroner and the Planning Director. If the coroner determines that the remains are not of recent origin, a full archeological report shall be prepared and representatives of the local Native California Indian group shall be contacted. Disturbance shall not resume until the significance of the archeological resource is determined and appropriate mitigations to preserve the resource on the site are established. Impacts are expected to be less than significant.

| | | | | | |
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| 4. | *Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: See discussion under E-2. Impacts would be less than significant.

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| 5. *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: The subject property is mapped in an area of paleontological resources or unique geologic features. This mapping reflects the presence of Zayante sands in the vicinity of the project site which also include outcroppings of sandstone boulders. To the north of the subject parcel is a rocky peak known as the Lone Star Peak or the "moon rocks", and a ridge of higher ground with exposed sandstone outcrops extends southwards from this peak, crossing the parcel close to its eastern edge. However, the proposed single-family dwelling and associated development, that includes a rock driveway, water storage tanks and a septic disposal system, would be located approximately 900 feet west of the area where there are exposed sandstone rock formations, on a roughly level portion of the subject property. Further, no grading is proposed for the construction of the home or driveway and site disturbance from construction activities would be minimal. Therefore no significant impacts are anticipated.

## F. GEOLOGY AND SOILS

*Would the project:*

| | | | | |
|---|---|---|---|---|
| 1. *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:* | | | | |
| A. *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.* | ☐ | ☐ | ☒ | ☐ |
| B. *Strong seismic ground shaking?* | ☐ | ☐ | ☒ | ☐ |
| C. *Seismic-related ground failure, including liquefaction?* | ☐ | ☐ | ☒ | ☐ |
| D. *Landslides?* | ☐ | ☐ | ☐ | ☒ |

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|

***Discussion (A through D)***: The project site is located outside of the limits of the State Alquist-Priolo Special Studies Zone (County of Santa Cruz GIS Mapping, California Division of Mines and Geology, 2001). However, the project site is located approximately 10 miles southwest of the San Andreas fault zone, and approximately 5.75 miles southwest of the Zayante-Vergeles fault zone. While the San Andreas fault is larger and considered more active, each fault is capable of generating moderate to severe ground shaking from a major earthquake. Consequently, large earthquakes can be expected in the future. The October 17, 1989 Loma Prieta earthquake (magnitude 7.1) was the second largest earthquake in central California history.

All of Santa Cruz County is subject to some hazard from earthquakes. However, the project site is not located within or adjacent to a County or state mapped fault zone, therefore the potential for ground surface rupture is low. The project site is likely to be subject to strong seismic shaking during the life of the improvements. The improvements would be designed in accordance with the Uniform Building Code, which should reduce the hazards of seismic shaking and liquefaction to a less than significant level. There is no indication that landsliding is a significant hazard at this site.

| | | | | | |
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| 2. | *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: Following a review of mapped information and a field visit to the site, there is no indication that the development site is subject to a significant potential for damage caused by any of these hazards.

| | | | | | |
|---|---|---|---|---|---|
| 3. | *Develop land with a slope exceeding 30%?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: There are slopes that exceed 30% on the eastern one third of the property. However, all proposed development would be located within areas with slopes of less than 15%. Therefore no impacts are anticipated.

| | | | | | |
|---|---|---|---|---|---|
| 4. | *Result in substantial soil erosion or the loss of topsoil?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: Some potential for erosion exists during the construction phase of the project. However, this potential is minimal because the proposed building site is limited in area and because the site is roughly level and no grading activities are proposed. Further, standard erosion controls are a required condition of the project. Prior to approval of a

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|

building permit, the project must have an approved Erosion Control Plan (*Section 16.22.060 of the County Code*), which would specify detailed erosion and sedimentation control measures, including planting to minimize surface erosion. Further, all areas of existing unauthorized disturbance and other temporary site disturbance during construction are required to be revegetated and restored with native vegetation in accordance with the approved Biotic Report and Habitat Conservation Plan. All restored areas will be maintained in perpetuity. Impacts from soil erosion or loss of topsoil would be considered less than significant.

| | | | | | |
|---|---|---|---|---|---|
| 5. | *Be located on expansive soil, as defined in Section 1802.3.2 of the California Building Code (2007), creating substantial risks to life or property?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: There is no indication that the development site is subject to substantial risk caused by expansive soils. Therefore, no impact is anticipated.

| | | | | | |
|---|---|---|---|---|---|
| 6. | *Have soils incapable of adequately supporting the use of septic tanks, leach fields, or alternative waste water disposal systems where sewers are not available for the disposal of waste water?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The proposed project would use an onsite sewage disposal system, and County Environmental Health Services has determined that site conditions are appropriate to support such a system.

| | | | | | |
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| 7. | *Result in coastal cliff erosion?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The proposed project is not located in the vicinity of a coastal cliff or bluff; and therefore, would not contribute to coastal cliff erosion. No impact is anticipated.

## G. GREENHOUSE GAS EMISSIONS

*Would the project:*

| | | | | | |
|---|---|---|---|---|---|
| 1. | *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: The proposed project, like all development, would be responsible for an incremental increase in greenhouse gas emissions by usage of fossil fuels during construction. However, no grading is proposed and all project construction equipment would be required to comply with the Regional Air Quality Control Board emissions requirements for construction equipment. As a result, impacts associated with the temporary increase in greenhouse gas emissions are expected to be less than significant. Impacts are expected to be less than significant.

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| 2. *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: See the discussion under G-1 above. No significant impacts are anticipated.

## H. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

| | | | | |
|---|---|---|---|---|
| 1. *Create a significant hazard to the public or the environment as a result of the routine transport, use or disposal of hazardous materials?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: The proposed project would not create a significant hazard to the public or the environment. No routine transport or disposal of hazardous materials is proposed. Impacts are expected to be less than significant.

| | | | | |
|---|---|---|---|---|
| 2. *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: Please see discussion under H-1 above. Project impacts would be considered less than significant.

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| 3. *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: There are no existing or proposed public schools located within a quarter mile radius of the project site. No fueling of vehicles or large equipment is anticipated to occur at the construction site. No impacts are anticipated.

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| 4. *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The project site is not included on the September 15, 2017, list of hazardous sites in Santa Cruz County compiled pursuant to Government Code Section 65962.5. No impacts are anticipated from project implementation.

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| 5. *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The proposed project is not located within two miles of a public airport or public use airport. No impact is anticipated.

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| 6. *For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The proposed project is not located in the vicinity of a private airstrip. The nearest private airstrip (Bonny Doon Village Airport) is located in Bonny Doon approximately 1.5 miles to the northwest. No impact is anticipated.

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| 7. *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The proposed project would not conflict with implementation of the County of Santa Cruz Local Hazard Mitigation Plan 2015-2020 (County of Santa Cruz, 2020). Therefore, no impacts to an adopted emergency response plan or evacuation Plan would occur from project implementation.

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|---|---|---|---|---|
| 8. *Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: Although the proposed project is located in a Fire Hazard Area, the project design incorporates all applicable fire safety code requirements and includes fire protection devices as required by the local fire agency. Impacts would be less than significant.

## I. HYDROLOGY, WATER SUPPLY, AND WATER QUALITY

*Would the project:*

| | | | | |
|---|---|---|---|---|
| 1. *Violate any water quality standards or waste discharge requirements?* | ☐ | ☐ | ☒ | ☐ |

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|

***Discussion***: The project would not discharge runoff either directly or indirectly into a public or private water supply. However, runoff from this project may contain very small amounts of chemicals and other household contaminants. No commercial or industrial activities are proposed that would contribute contaminants. Potential siltation from the proposed project would be addressed through implementation of erosion control best management practices (BMPs). No water quality standards or waste discharge requirements would be violated. Impacts would be less than significant.

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| 2. *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: Although the proposed project would be located in a mapped groundwater recharge area, the proposal would be consistent with General Plan policies 5.8.3 (*Uses in Primary Groundwater Recharge Areas*), and 5.8.4 (*Drainage Design in Primary Groundwater Recharge Areas*). The project would also be consistent with Section 7.79.110 of the County Code (*New Development and Redevelopment*). The code states, "All responsible parties shall mitigate impacts due to development and implement Best Management Practices (BMPs) per the County Design Criteria adopted by the County of Santa Cruz and Chapters 16.20 and 16.22 SCCC to control the volume, runoff rate, and potential pollutant load of stormwater runoff from new development and redevelopment projects to minimize the generation, transport, and discharge of pollutants, prevent runoff in excess of predevelopment conditions, and maintain predevelopment groundwater recharge." No adverse impact would occur to groundwater recharge with project implementation.

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| 3. *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The proposed project is not located near any watercourses, and would not alter the existing overall drainage pattern of the site. Department of Public Works Drainage

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|

Section staff has reviewed and approved the proposed drainage plan. No impact would occur from project implementation.

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| 4. | *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding, on- or off-site?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: The proposed project is not located near any watercourses, and would not alter the existing overall drainage pattern of the site. Department of Public Works Drainage Section staff has reviewed and approved the proposed drainage plan. Impacts from project construction would be less than significant.

| | | | | | |
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| 5. | *Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems, or provide substantial additional sources of polluted runoff?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: Department of Public Works Drainage staff has reviewed the project and have determined that existing storm water facilities are adequate to handle the minor projected increase in drainage associated with the project. Refer to response I-1 for discussion of urban contaminants and/or other polluting runoff. Impacts would be considered less than significant.

| | | | | | |
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| 6. | *Otherwise substantially degrade water quality?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: Please see discussion under I-1 above. Impacts would be considered less than significant with the implementation of BMPs.

| | | | | | |
|---|---|---|---|---|---|
| 7. | *Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map, dated September 29, 2017, no housing or any other development lies within a 100-year flood hazard area. Impacts from project implementation are expected to be less than significant.

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| 8. *Place within a 100-year flood hazard area structures which would impede or redirect flood flows?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map, dated September 29, 2017, no portion of the project site lies within a 100-year flood hazard area. Therefore, the proposed project would not impede or redirect flood flows. No impact would occur.

| | | | | |
|---|---|---|---|---|
| 9. *Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The proposed project would not increase the risk of flooding and would not lead to the failure of a levee or dam. No impact would occur.

| | | | | |
|---|---|---|---|---|
| 10. *Inundation by seiche, tsunami, or mudflow?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The project site is located approximately 4.25 miles inland and is at an elevation of 1,640 feet above sea level where there is no potential of inundation by tsunami. In addition, no impact from a seiche or mudflow is anticipated. No impact would occur.

## J. LAND USE AND PLANNING

*Would the project:*

| | | | | |
|---|---|---|---|---|
| 1. *Physically divide an established community?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The proposed project does not include any element that would physically divide an established community. No impact would occur.

| | | | | |
|---|---|---|---|---|
| 2. *Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: The proposed project has been designed in accordance with County Code Chapter 16.32, "Sensitive Habitat Protection," that has been adopted by the County of Santa Cruz for the purpose of avoiding or mitigating an environmental effect. A Biotic Report for the project was prepared in accordance with County Code section 16.32.070 (Attachment 6) and the report has been reviewed and approved by the Environmental Coordinator

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|

(Attachment 7). With the implementation of the required mitigation and monitoring measures included in the report (see section D. above), no significant impacts are anticipated.

| | | | | | |
|---|---|---|---|---|---|
| 3. | *Conflict with any applicable habitat conservation plan or natural community conservation plan?* | ☐ | ☐ | ☒ | ☐ |

***Discussion:*** The proposed project has been designed in accordance with all of the provisions of the "Low-Effect Habitat Conservation Plan (HCP) for the Endangered Mount Hermon June Beetle for APN 063-061-28" prepared by Richard A. Arnold Ph.D. (Attachment 2). With the implementation of the required mitigation and monitoring measures included in the report, no significant impacts are anticipated (see section D.1 for more discussion). The project would also comply with the provisions of the Biotic Report prepared for this project by Valerie Haley of Native Vegetation Network, dated November 2015 (Attachment 6). With the implementation of the required mitigation and monitoring measures included in the report, no significant impacts are anticipated (see section D.2 for more discussion).

## K. MINERAL RESOURCES

*Would the project:*

| | | | | | |
|---|---|---|---|---|---|
| 1. | *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?* | ☐ | ☐ | ☐ | ☒ |

***Discussion:*** The site does not contain any known mineral resources that would be of value to the region and the residents of the state. Therefore, no impact is anticipated from project implementation.

| | | | | | |
|---|---|---|---|---|---|
| 2. | *Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?* | ☐ | ☐ | ☐ | ☒ |

***Discussion:*** The project site is zoned RA (Residential Agriculture), which is not considered to be an Extractive Use Zone (M-3) nor does it have a Land Use Designation with a Quarry Designation Overlay (Q) (County of Santa Cruz 1994). Therefore, no potentially significant loss of availability of a known mineral resource of locally important mineral resource recovery (extraction) site delineated on a local general plan, specific plan or other land use plan would occur as a result of this project. No impact would occur.

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|

## L. NOISE

Would the project result in:

1. *Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?* ☐ ☐ ☒ ☐

***Discussion***: The proposed construction of one single-family dwelling would not result in the generation of any significant noise levels in excess of standards established in the local general plan. Impacts are expected to be less than significant.

2. *Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?* ☐ ☐ ☐ ☒

***Discussion***: No heavy equipment that could potentially generate vibration in the project area is expected to be used for the construction of the proposed dwelling. Therefore, no impact is anticipated.

3. *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?* ☐ ☐ ☒ ☐

***Discussion***: The proposed project would not result in a permanent increase in the ambient noise level. The main source of ambient noise in the project area is traffic noise along Martin Road. However, no substantial increase in traffic trips is anticipated as a result of the proposed project. Impacts are expected to be less than significant.

4. *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?* ☐ ☐ ☒ ☐

***Discussion***: See discussion under L-1 above. Noise generated during project construction may result in a minor increase the ambient noise levels in adjacent areas. Construction would be temporary, however, and given the limited duration of this impact it is considered to be less than significant.

5. *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?* ☐ ☐ ☐ ☒

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|

***Discussion:*** The proposed project is not within two miles of a public airport. Therefore, the proposed project would not expose people residing or working in the project area. No impact is anticipated.

| | | | | | |
|---|---|---|---|---|---|
| 6. | *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?* | ☐ | ☐ | ☐ | ☒ |

***Discussion:*** The proposed project is not within two miles of a private airstrip. Therefore, the proposed project would not expose people residing or working in the project area. No impact is anticipated.

## M. POPULATION AND HOUSING

*Would the project:*

| | | | | | |
|---|---|---|---|---|---|
| 1. | *Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?* | ☐ | ☐ | ☒ | ☐ |

***Discussion:*** The proposed project is designed at the density and intensity of development allowed by the General Plan and zoning designations for the parcel. Additionally, the project does not involve extensions of utilities (e.g., water, sewer, or new road systems) into areas previously not served. Consequently, it is not expected to have a significant growth-inducing effect. Impacts would be less than significant.

| | | | | | |
|---|---|---|---|---|---|
| 2. | *Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?* | ☐ | ☐ | ☐ | ☒ |

***Discussion:*** The proposed project would not displace any existing housing. No impact would occur.

| | | | | | |
|---|---|---|---|---|---|
| 3. | *Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?* | ☐ | ☐ | ☐ | ☒ |

***Discussion:*** The proposed project would not displace a substantial number of people since the project is for the construction of one single-family dwelling on an existing residentially zoned parcel. No impact would occur.

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|

## N. PUBLIC SERVICES

*Would the project:*

| | | | | | |
|---|---|---|---|---|---|
| 1. | *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:* | | | | |
| | a. *Fire protection?* | ☐ | ☐ | ☒ | ☐ |
| | b. *Police protection?* | ☐ | ☐ | ☒ | ☐ |
| | c. *Schools?* | ☐ | ☐ | ☒ | ☐ |
| | d. *Parks?* | ☐ | ☐ | ☒ | ☐ |
| | e. *Other public facilities; including the maintenance of roads?* | ☐ | ☐ | ☒ | ☐ |

***Discussion (a through e)***: While the project represents a small incremental contribution to the need for services, the increase would be minimal. Moreover, the project meets all of the standards and requirements identified by the Santa Cruz County Fire Department, and school, park, and transportation fees to be paid by the applicant would be used to offset the incremental increase in demand for school and recreational facilities and public roads. Impacts would be considered less than significant.

## O. RECREATION

*Would the project:*

| | | | | | |
|---|---|---|---|---|---|
| 1. | *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: The proposed project would not substantially increase the use of existing neighborhood and regional parks or other recreational facilities. Impacts would be considered less than significant.

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| 2. *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The proposed project does not propose the expansion or construction of additional recreational facilities. No impact would occur.

## P. TRANSPORTATION/TRAFFIC

*Would the project:*

| | | | | |
|---|---|---|---|---|
| 1. *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: The project would create a small incremental increase in traffic on nearby roads and intersections. However, given the small number of new trips created by the project, this increase would be less than significant. Further, the increase would not cause the Level of Service at any nearby intersection to drop below Level of Service D, consistent with General Plan Policy 3.12.1.

| | | | | |
|---|---|---|---|---|
| 2. *Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: In 2000, at the request of the Santa Cruz County Regional Transportation Commission (SCCRTC), the County of Santa Cruz and other local jurisdictions exercised the option to be exempt from preparation and implementation of a Congestion Management Plan (CMP) per Assembly Bill 2419. As a result, the County of Santa Cruz no longer has a Congestion Management Agency or CMP. The CMP statutes were initially established to create a tool for managing and reducing congestion; however, revisions to those statutes progressively eroded the effectiveness of the CMP. There is also duplication between the

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|

CMP and other transportation documents such as the Regional Transportation Plan (RTP) and the Regional Transportation Improvement Program (RTIP). In addition, the goals of the CMP may be carried out through the Regional Transportation Improvement Program and the Regional Transportation Plan. Any functions of the CMP which are useful, desirable and do not already exist in other documents may be incorporated into those documents.

The proposed project would not conflict with either the goals and/or policies of the RTP or with monitoring the delivery of state and federally-funded projects outlined in the RTIP. No impact would occur.

| | | | | | |
|---|---|---|---|---|---|
| 3. | *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: No change in air traffic patterns would result from project implementation. Therefore, no impact is anticipated.

| | | | | | |
|---|---|---|---|---|---|
| 4. | *Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The proposed project consists of one small-scale single-family dwelling. No increase in hazards would occur from project design or from incompatible uses. No impact would occur from project implementation.

| | | | | | |
|---|---|---|---|---|---|
| 5. | *Result in inadequate emergency access?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: The project's road access meets County standards and has been approved by the Santa Cruz County Fire Department.

| | | | | | |
|---|---|---|---|---|---|
| 6. | *Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The proposed project design would comply with current road requirements to prevent potential hazards to motorists, bicyclists, and/or pedestrians. No impact would occur.

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **Q. TRIBAL CULTURAL RESOURCES** | | | | |
| *1. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:* | | | | |
| *A. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources Code section 5020.1(k), or* | ☐ | ☐ | ☐ | ☒ |
| *B. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The project proposes the construction of a single-family dwelling. Section 21080.3.1(b) of the California Public Resources Code (AB 52) requires a lead agency formally notify a California Native American tribe that is traditionally and culturally affiliated within the geographic area of the discretionary project when formally requested. As of this writing, no California Native American tribes traditionally and culturally affiliated with the Santa Cruz County region have formally requested a consultation with the County of Santa Cruz (as Lead Agency under CEQA) regarding Tribal Cultural Resources. As a result, no Tribal Cultural Resources are known to occur in or near the project area. Therefore, no impact to the significance of a Tribal Cultural Resource is anticipated from project implementation.

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|

## R. UTILITIES AND SERVICE SYSTEMS

Would the project:

| | | | | |
|---|---|---|---|---|
| 1. *Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: The proposed project's wastewater flows would not violate any wastewater treatment standards. No significant impacts would occur from project implementation.

| | | | | |
|---|---|---|---|---|
| 2. *Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: The project would rely on an individual well for water supply. Public water delivery facilities would not have to be expanded. Impacts from project construction would be less than significant.

The project would be served by an on-site sewage disposal system, which would be adequate to accommodate the relatively light demands of the project. Impacts would be considered less than significant.

| | | | | |
|---|---|---|---|---|
| 3. *Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: All stormwater runoff from the proposed single-family dwelling can be retained on site such that the project would not generate increased runoff; therefore, it would not result in the need for new or expanded drainage facilities. No impact would occur.

| | | | | |
|---|---|---|---|---|
| 4. *Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: The Environmental Health Services Department have indicated that adequate water supplies are available to serve the proposed single-family dwelling. The development would also be subject to the water conservation requirements. Therefore, existing water supplies would be sufficient to serve the proposed project, and no new entitlements or expanded entitlements would be required. Impacts would be less than significant.

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| 5. *Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: An approved Preliminary Onsite Septic Site Evaluation conducted by the Environmental Health Services Department has indicated that the project would be served by a septic disposal system. This on-site facility would provide sufficient wastewater treatment capacity to serve the proposed project. Please see discussion under R-2 above. No impact would occur from project implementation.

| | | | | |
|---|---|---|---|---|
| 6. *Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?* | ☐ | ☐ | ☒ | ☐ |

***Discussion***: Due to the small incremental increase in solid waste generation by the proposed project during construction and operations, the impact would not be significant.

| | | | | |
|---|---|---|---|---|
| 7. *Comply with federal, state, and local statutes and regulations related to solid waste?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: The project would comply with all federal, state, and local statutes and regulations related to solid waste disposal. No impact would occur.

## S. MANDATORY FINDINGS OF SIGNIFICANCE

| | | | | |
|---|---|---|---|---|
| 1. *Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?* | ☐ | ☒ | ☐ | ☐ |

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|

***Discussion***: The potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory were considered in the response to each question in Section III (A through R) of this Initial Study. Resources that have been evaluated as significant would be potentially impacted by the project, particularly Biotic Resources. However, mitigation has been included that clearly reduces these effects to a level below significance. The proposed mitigation measures include a requirement that the a maximum total area of the proposed development, including the dwelling, driveway, septic system, yard area and all associated facilities, be restricted to a maximum of one-quarter of an acre of permanent disturbance. In addition, there is a requirement that all areas of the site that are outside the one-quarter acre area be restored. In addition, to restoration, other degraded portions of the habitat will be enhanced to improve the overall quality of the biotic resource on the parcel. Furthermore, conservation credits have been paid to the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank for 2,720 square feet of existing disturbance, and further credits are required to be purchased for an additional 8,137 square feet, which means that credits would be paid for the entire one-quarter acre of permanent site disturbance. As a result of this evaluation, there is no substantial evidence that, after mitigation, significant effects associated with this project would result. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

| | | | | |
|---|---|---|---|---|
| 2. *Does the project have impacts that are individually limited, but cumulatively considerable? ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?* | ☐ | ☒ | ☐ | ☐ |

***Discussion***: In addition to project specific impacts, this evaluation considered the projects potential for incremental effects that are cumulatively considerable. The proposed construction of a single-family dwelling with associated site improvements would result in permanent disturbance of one-quarter acre within a sensitive habitat. The construction of an additional home within an area of biotic resources could have cumulative impacts on the Bonny Doon Zayante Sandhills habitat. However, mitigation has been included that clearly reduces these effects to a level below significance. In addition, conservation credits are required to be paid to the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank at a ratio of 1:1 for the entire one-quarter acre which will result in the

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|

preservation and enhancement of the Zayante Sandhills habitat in perpetuity. Therfore, as a result of this evaluation, there is no substantial evidence that, after mitigation, that there are cumulative effects associated with this project. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

| | | | | | |
|---|---|---|---|---|---|
| 3. | *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?* | ☐ | ☐ | ☐ | ☒ |

***Discussion***: In the evaluation of environmental impacts in this Initial Study, the potential for adverse direct or indirect impacts to human beings were considered in the response to specific questions in Section III (A through R). As a result of this evaluation, there is no substantial evidence that there are adverse effects to human beings associated with this project. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

# IV. REFERENCES USED IN THE COMPLETION OF THIS INITIAL STUDY

California Department of Conservation. 1980

Farmland Mapping and Monitoring Program Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance Santa Cruz County U.S. Department of Agriculture, Natural Resources Conservation Service, soil surveys for Santa Cruz County, California, August 1980.

County of Santa Cruz, 2013

County of Santa Cruz Climate Action Strategy. Approved by the Board of Supervisors on February 26, 2013.

County of Santa Cruz, 2015

*County of Santa Cruz Local Hazard Mitigation Plan 2015-2020.* Prepared by the County of Santa Cruz Office of Emergency Services.

County of Santa Cruz, 1994

1994 General Plan and Local Coastal Program for the County of Santa Cruz, California. Adopted by the Board of Supervisors on May 24, 1994, and certified by the California Coastal Commission on December 15, 1994.

MBUAPCD, 2008

Monterey Bay Unified Air Pollution Control District (MBUAPCD), CEQA Air Quality Guidelines. Prepared by the MBUAPCD, Adopted October 1995, Revised: February 1997, August 1998, December 1999, September 2000, September 2002, June 2004 and February 2008.

MBUAPCD, 2013a

Monterey Bay Unified Air Pollution Control District, NCCAB (NCCAB) Area Designations and Attainment Status – January 2013. Available online at http://www.mbuapcd.org/mbuapcd/pdf/Planning/Attainment_Status_January_2013_2.pdf

MBUAPCD, 2013b

Triennial Plan Revision 2009-2011. Monterey Bay Air Pollution Control District. Adopted April 17, 2013.

# Attachment 1

## Mitigation Monitoring and Reporting Program

# Attachment 2

## Low-Effect Habitat Conservation Plan for the Endangered Mount Hermon June Beetle

For APN 063-061-28

Prepared by Richard A. Arnold Ph.D.

# Low-Effect Habitat Conservation Plan

# for the Endangered Mount Hermon June Beetle

# for APN 063-061-28,

# site of a new, single-family home on Alta Vista Way next to

# 1055 Martin Road in Bonny Doon (Santa Cruz County), California

*Prepared for:*

*Mr. Steven C. Sohl*
*PO Box 61*
*Felton, CA 95018*
*(831) 460-9975*
*sohlman7@yahoo.com*

*Prepared by:*

*Richard A. Arnold, Ph.D.*
*Entomological Consulting Services, Ltd.*
*104 Mountain View Court*
*Pleasant Hill, CA 94523-2188*
*(925) 825-3784*
*bugdctr@comcast.net*

*Agency Draft HCP*
*February 2014*

# Contents

# Tables and Figures

# Executive Summary

Mr. Steven C. Sohl (hereafter referred to as "Mr. Sohl") has applied for a permit pursuant to section 10(a)(1)(B) of the Endangered Species Act of 1973 as amended (16 U.S.C. 153101544, 87 Stat. 884), from the U.S. Fish & Wildlife Service (USFWS) for the incidental take of the endangered Mount Hermon June beetle (MHJB) (*Polyphylla barbata*: Coleoptera: Scarabaeidae). The potential taking would occur incidental to construction of one new, single-family residence with 1,196 ft.$^2$ of living space, on a 14.942-acre parcel (APN 063-061-28) that is currently undeveloped land and at present lacks an assigned street address on Alta Vista Way, but is located next to 1055 Martin Road in Bonny Doon (Santa Cruz County), CA. The new home and associated improvements (garage, water tanks, septic system and leach field) will be constructed within as small of a footprint as possible to allow the remaining undeveloped portions of the parcel to remain as habitat. Mr. Sohl intends to live in the new home upon its completion.

The project site is situated in the Bonny Doon portion of the Zayante Sandhills that currently supports endemic plant communities. Today, most of this undeveloped property supports native vegetation characterized by Northern maritime chaparral and Mixed Deciduous - Evergreen forest with coastal chaparral, the latter which includes individuals of the endangered Santa Cruz Cypress (*Cupressus abramsiana*, Cupressaceae). Vegetation at the proposed homesite on the property was previously cleared. A previously installed gravel driveway provides access from Alta Vista Way to the planned home site at the property.

During a presence-absence survey in 2008 by Dr. Jodi McGraw the MHJB was found at Mr. Sohl's property. Therefore, Mr. Sohl has applied for a section 10(a)(1)(B) permit and proposes to implement the habitat conservation plan (HCP) described herein, which provides measures for mitigating adverse effects on the MHJB for activities associated with the site preparation and construction of a new single-family residence, revegetation associated with installation of a well and water pipeline, and vegetation management of the protected habitat area of the property. Mr. Sohl is requesting issuance of the section 10(a)(1)(B) permit for a period of five (5) years.

This HCP summarizes information about the project and identifies the responsibilities of the USFWS and Mr. Sohl for implementing the actions described herein to benefit the MHJB.

The biological goals of the HCP are to avoid and minimize take of the MHJB and to replace the MHJB habitat impacted by the construction project at a secure site in perpetuity. Construction of the new home and associated amenities will impact 2,720 ft.$^2$ (0.0625 acre) of sandhills habitat. Pending approval by the USFWS and Santa Cruz County, Mr. Sohl plans to purchase MHJB conservation credits as mitigation for the endangered MHJB from the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank, which is operated by PCO, LLC and is located in Ben Lomond, CA. The total number of conservation credits purchased for the project will be 2,720 ft.$^2$. Undeveloped portions of the property will be maintained to protect and encourage native sandhill plants. This HCP also describes measures that ensure the elements of the HCP are implemented in a timely manner. Funding sources for implementation of the HCP, actions to be taken for unforeseen events, alternatives to the proposed permit action, and other measures required by the USFWS are also discussed.

Section 1
# Introduction and Background

## 1.1 Overview/Background

This Habitat Conservation Plan (HCP) is for the proposed construction of one new, single-family residence at a vacant parcel located in the Bonny Doon portion of the Zayante Sandhills region of Santa Cruz County, California. This parcel lies on the north side of Alta Vista Way and west of Martin Road, approximately 0.4 mi. south of the intersection between Martin Road and Ice Cream Grade. A street address number has not yet been assigned to the parcel by the local Fire Department, but it is adjacent to 1055 Martin Road. Noreen Doyas is the current owner the property but Mr. Sohl has a quit claim deed and expects to own the property in the near future.

This HCP has been prepared pursuant to the requirements of section 10(a) of the Federal Endangered Species Act (ESA). It is intended to provide the basis for issuance of a section 10(a)(1)(B) permit to Mr. Steven C. Sohl (hereafter "Mr. Sohl"), the permit applicant, to authorize incidental take (see section 4) of the Mount Hermon June beetle (MHJB) (*Polyphylla barbata*: Coleoptera: Scarabaeidae), a federally-listed endangered species, that may potentially result from the site preparation, construction, restoration, and habitat management activities at the aforementioned project site. Dr. Jodi McGraw conducted a one night presence-absence survey in 2008 and found the MHJB at this property. The entire property is characterized by Zayante sandy soils and plant communities indigenous to the Zayante Sandhills region, thus it supports habitat for this federally-listed beetle. The U.S. Fish & Wildlife Service (Service) has concluded that the project site provide suitable habitat for this beetle. Mr. Sohl requests a permit for a period of five (5) years commencing on the date of permit issuance.

This HCP provides an assessment of the existing habitat conditions at the project site for the MHJB, evaluates the effects of the proposed project on this beetle, and presents a conservation program to offset habitat losses and/or direct harm to this beetle that could result from site preparation, construction, restoration, and habitat management activities at the property. The biological goal of this HCP is to replace the MHJB habitat impacted by the development of the parcel at a secure site in perpetuity. Specifically, a total 2,720 ft.$^2$ of conservation credits will be purchased from the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank to mitigate for impacts of this proposed project. Because habitat

quality at the Ben Lomond Sandhills Preserve is superior to that at the proposed construction site on this property, and habitat at the conservation bank is protected in perpetuity via a conservation easement, this mitigation solution will provide greater long term conservation value to the MHJB and its habitat than would on-site mitigation.

## 1.2 Permit Holder/Permit Duration

Mr. Steve Sohl requests an incidental take permit to cover take of the MHJB commencing on the date of permit issuance. Mr. Sohl can be contacted via mail at PO Box 61, Felton, CA 95018, or via telephone at (831) 460-9975 or via email at sohlman7@yahoo.com .

Mr. Sohl intends to live in the new home upon its completion. Since there may be delays in the securing local permits and he plans to build the house largely by himself, a permit duration of five (5) years is requested to ensure that he can complete this project during the term of the incidental take permit.

## 1.3 Permit Boundary/Covered lands

Mr. Sohl requests an incidental take permit to authorize take of the MHJB within the project's impact area at the property, which is located north of Alta Vista Way (a street address has yet to be assigned) in Bonny Doon, Santa Cruz County, CA. The project site is located within the Davenport 7.5' United States Geological Survey (USGS) topographic quadrangle in Township 10S, Range 3W, and Section 24 of the Mount Diablo Meridian (Figure 1). Figure 2 is a street-level location map for the project site. Figure 3 illustrates existing conditions at the site of the proposed new residence.

The requested permit boundaries ("covered lands") are the same as the boundaries of the 2,720 $ft.^2$ (0.0625 acre) impact areas within the 14.942-acre project site. Locations of the new home and other amenities (i.e., impact areas) at this property are illustrated in Figures 4a and 4b, the site plan for the proposed construction of a single family residence.

## 1.4 Species to be Covered by Permit

The following insect species is referred to as a "covered species" in this HCP and its related incidental take permit.

| Covered Species | Federal Status/State Status |
|---|---|
| Mount Hermon June beetle (*Polyphylla barbata*) | Federally Endangered |

## 1.5 Regulatory Framework

This section discusses the various federal, state, and local environmental laws and ordinances that this project may need to comply with to receive its necessary permits.

### 1.5.1 Federal Endangered Species Act

Section 9 of the Endangered Species Act (Act) and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the U.S. Fish and Wildlife Service (Service) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species by annoying them to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

Pursuant to section 11(a) and (b) of the Act, any person who knowingly violates section 9 of the Act or any permit, certificate, or regulation related to section 9, may be subject to civil penalties of up to $25,000 for each violation or criminal penalties up to $50,000 and/or imprisonment of up to one year.

Individuals and State and local agencies proposing an action that is expected to result in the take of federally listed species are encouraged to apply for an incidental take permit under section 10(a)(1)(B) of the Act to be in compliance with the law. Such permits are issued by the Service when take is not the intention of and is incidental to otherwise legal activities. An application for an incidental take permit must be accompanied by a habitat conservation plan, commonly referred to as an HCP. The regulatory standard under section 10(a)(1)(B) of the Act is that the effects of authorized incidental take must be minimized and mitigated to the maximum extent practicable. Under section 10(a)(1)(B) of the Act, a proposed project also must not appreciably reduce the likelihood of the survival and recovery of the species in the wild, and adequate funding for a plan to minimize and mitigate impacts must be ensured.

Section 7 of the Act requires Federal agencies to ensure that their actions, including issuing permits, do not jeopardize the continued existence of listed species or destroy or adversely modify listed species' critical habitat. "Jeopardize the continued existence of..." pursuant to 50 CFR 402.2, means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species. Issuance of an incidental take permit under section 10(a)(1)(B) of the Act by the Service is a Federal action subject to section 7 of the Act. As a Federal agency issuing a discretionary

permit, the Service is required to consult with itself (i.e., conduct an internal consultation). Delivery of the HCP and a section 10(a)(1)(B) permit application initiates the section 7 consultation process within the Service.

The requirements of section 7 and section 10 substantially overlap. Elements unique to section 7 include analyses of impacts on designated critical habitat, analyses of impacts on listed plant species, if any, and analyses of indirect and cumulative impacts on listed species. Cumulative effects are effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area, pursuant to section 7(a)(2) of the Act. The action area is defined by the influence of direct and indirect impacts of covered activities. The action area may or may not be solely contained within the HCP boundary. These additional analyses are included in this HCP to meet the requirements of section 7 and to assist the Service with its internal consultation.

#### 1.5.1.1 The Section 10(a)(1)(B) Process - Habitat Conservation Plan Requirements and Guidelines

The Section 10(a)(1)B) process for obtaining an incidental take permit has three primary phases: (1) the HCP development phase; (2) the formal permit processing phase; and (3) the post-issuance phase. During the HCP development phase, the project applicant prepares a plan that integrates the proposed project or activity with the protection of listed species. An HCP submitted in support of an incidental take permit application must include the following information:

- impacts likely to result from the proposed taking of the species for which permit coverage is requested;
- measures that will be implemented to monitor, minimize, and mitigate impacts; funding that will be made available to undertake such measures; and procedures to deal with unforeseen circumstances;
- alternative actions considered that would not result in take; and
- additional measures the Service may require as necessary or appropriate for purposes of the plan.

The HCP development phase concludes and the permit processing phase begins when a complete application package is submitted to the appropriate permit-issuing office. A complete application package consists of 1) an HCP, 2) an Implementing Agreement (IA) if applicable, 3) a permit application, and 4) a $100 fee from the applicant. The Service must also publish a Notice of Availability of the HCP package in the Federal Register to allow for public comment. The Service also prepares an Intra-Service Section 7 Biological Opinion; and prepares a Set of Findings, which evaluates the Section 10(a)(1)(B) permit application as in the context of permit issuance criteria (see below). An Environmental Action Statement, Environmental Assessment, or Environmental Impact Statement serves as the Service's record of compliance with the National Environmental Policy Act (NEPA), which has gone out for a 30-day, 60-day, or 90-day

public comment period. An implementing agreement is required for HCPs unless the HCP qualifies as a low-effect HCP. A Section 10(a)(1)(B) incidental take permit is granted upon a determination by the Service that all requirements for permit issuance have been met. Statutory criteria for issuance of the permit specify that:

- the taking will be incidental;
- the impacts of incidental take will be minimized and mitigated to the maximum extent practicable;
- adequate funding for the HCP and procedures to handle unforeseen circumstances will be provided;
- the taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild;
- the applicant will provide additional measures that the Service requires as being necessary or appropriate; and
- the Service has received assurances, as may be required, that the HCP will be implemented.

During the post-issuance phase, the Permittee and other responsible entities implement the HCP, and the Service monitors the Permittee's compliance with the HCP as well as the long-term progress and success of the HCP. The public is notified of permit issuance by means of the Federal Register.

### 1.5.2 National Environmental Policy Act

The purpose of the National Environmental Policy Act (NEPA) is two-fold: to ensure that Federal agencies examine environmental impacts of their actions (in this case deciding whether to issue an incidental take permit) and to utilize public participation. NEPA serves as an analytical tool on direct, indirect, and cumulative impacts of the proposed project alternatives to help the Service decide whether to issue an incidental take permit (ITP or section 10(a)(1)(B) permit). NEPA analysis must be done by the Service for each HCP as part of the incidental take permit application process.

### 1.5.3 National Historic Preservation Act

All Federal agencies are required to examine the cultural impacts of their actions (e.g. issuance of a permit). This may require consultation with the State Historic Preservation Office (SHPO) and appropriate American Indian tribes. All incidental take permit applicants are requested to submit a Request for Cultural Resources Compliance form to the Service. To complete compliance, the applicant may be required to contract for cultural resource surveys and possibly mitigation.

### 1.5.4 California Endangered Species Act (CESA)

The California Endangered Species Act (CESA) provides for the designation of native species or subspecies of fish, wildlife, and plants as endangered or threatened (CESA Sections 2062-2067). However, insects are specifically excluded as a type of animal that may be designated as endangered or threatened species. Thus the MHJB is not listed under CESA and this HCP will not further address CESA permitting requirements.

### 1.5.5 California Environmental Quality Act (CEQA)

In many ways the California Environmental Quality Act, commonly known as CEQA (Public Resources Code Section 21000 *et seq.*), is analogous at the State level as NEPA is to the Federal level. CEQA requires state and local governmental agencies to complete an environmental review of discretionary projects that might impact environmental resources. CEQA differs from NEPA in that it requires that a project's significant environmental impacts be reduced to a less than significant level through the adoption of feasible avoidance, minimization, and/or mitigation measures unless overriding considerations are identified and documented. With regard to wildlife and plants, those that are already listed by any State or Federal governmental agency are presumed to be endangered for the purposes of CEQA (Section 15380) and impacts to such species and their habitats may be considered significant.

The project presented in this HCP may be subject to CEQA review, with the County of Santa Cruz as the lead agency. However, because of the existing rural residential development in the surrounding neighborhood, as well as the mitigation proposed in this HCP for the MHJB, the proposed project is unlikely to reach a level of significance that would require a formal or more extensive CEQA review.

### 1.5.6 California Public Resources Code

Public Resources Code 4291 requires homeowners living in or adjacent to forest or brush-covered lands to maintain a firebreak of not less than 100 feet on all sides around all structures, or to the property line, whichever is nearer. The California Forestry and Fire Protection Department (Cal Fire) enforces this code in this portion of Bonny Doon. As can be seen in Figure 3, the proposed location of the new home and garage is open and no additional vegetation clearing to create a firebreak is anticipated.

### 1.5.7 Santa Cruz County's Sensitive Habitat Ordinance

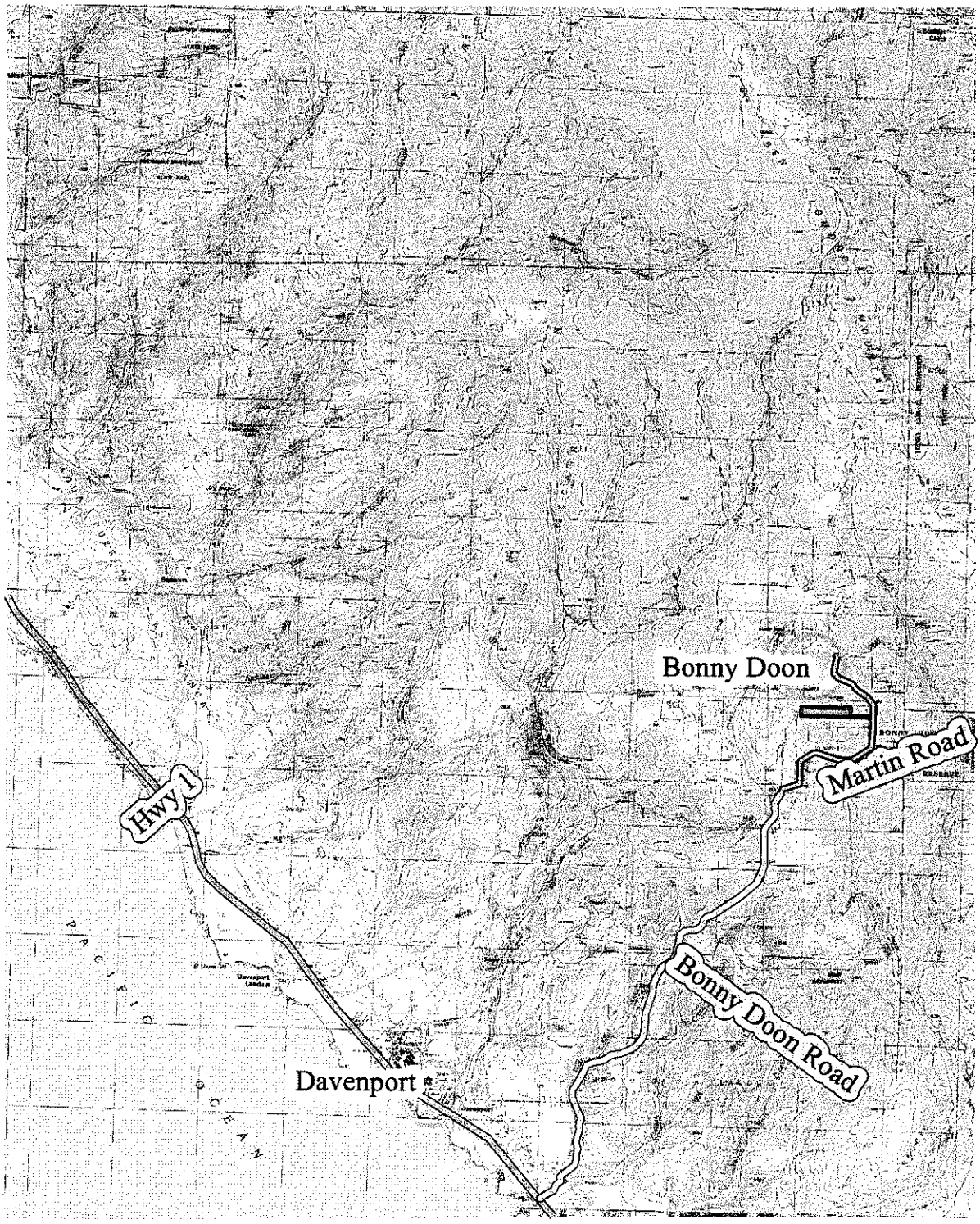
Santa Cruz County's General Plan (1994) and its County Codes (16.32) identify protective measures for sensitive habitats and species. The County's Sensitive Habitat Protection Ordinance is designed to minimize disturbance in sensitive habitats and to protect these areas for their genetic, scientific, and educational values. The County defines a "sensitive habitat" as "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments". Sensitive habitats include, but are not limited to, areas where sensitive species live, areas necessary for the survival of sensitive species, and any location where disturbance is likely to lower population numbers. Based on the

findings of a biotic review, the County may require the project proponent to avoid, minimize, and mitigate impacts to the sensitive habitat by: a) limiting the portion of sensitive habitat to be disturbed; b) deeding an easement to protect undisturbed portions of this habitat; c) restoring portions of degraded sensitive habitat; and/or d) restricting land uses.

Santa Cruz County's on-line geographic information system (GIS) recognize all of Mr. Sohl's property as occurring within a sensitive biotic habitat area, presumably Zayante Sandhills due to the presence of Zayante sandy soils and indigenous plant communities. The occurrence of Northern maritime chaparral and forests that include Santa Cruz Cypress are among the special habitats protected by the County's General Plan (Chapter 5, Conservation and Open Space) and codes, specifically 16.32 that discusses the Sensitive Habitat Protection Ordinance. Also, sites that are occupied by the MHJB are protected under the Sensitive Habitat Protection Ordinance. According to the soil mapping for Santa Cruz County (Bowman and Estrada 1980), Zayante sands are present throughout this property, which suggests that the beetle is likely to be present not only within the proposed project's impact area but also throughout the entire property.

The measures described in the conservation strategy developed in this HCP to avoid, minimize, and mitigate impacts to the MHJB as required in this incidental take permit will largely overlap with requirements under the County's Sensitive Habitat Protection Ordinance. The County has sole authority to determine whether project proponents have complied with this Ordinance. However, the conservation strategy presented in this HCP is primarily based on the preservation and perpetual management of Zayante Sandhills habitat through the acquisition of conservation credits that should be sufficient to fulfill the requirements of the Sensitive Habitat Protection Ordinance. Secondarily, undeveloped portions of the impact area (Figure 4b) will be revegetated with sandhill plants and maintained by the owner as habitat areas. Any future improvements proposed by the property owner would require review and approval by the County and USFWS.

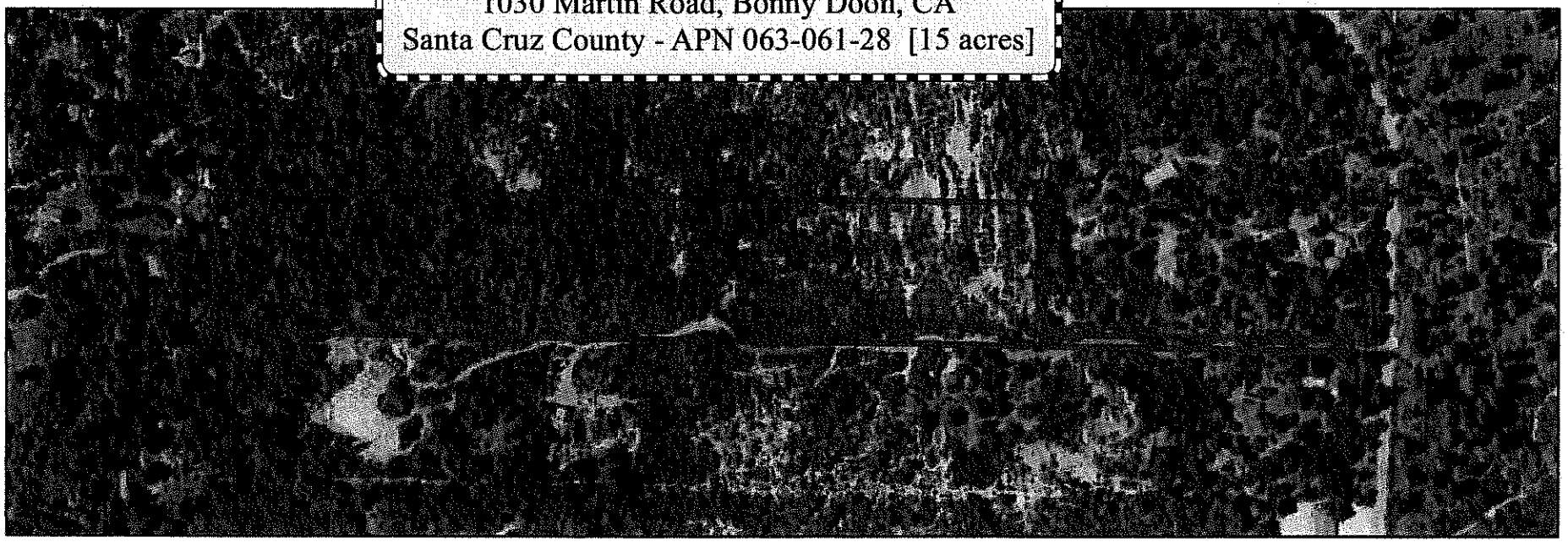
Figure 1.
Location of HCP Property in Santa Cruz County
Davenport Quadrangle 7.5-Minute Series

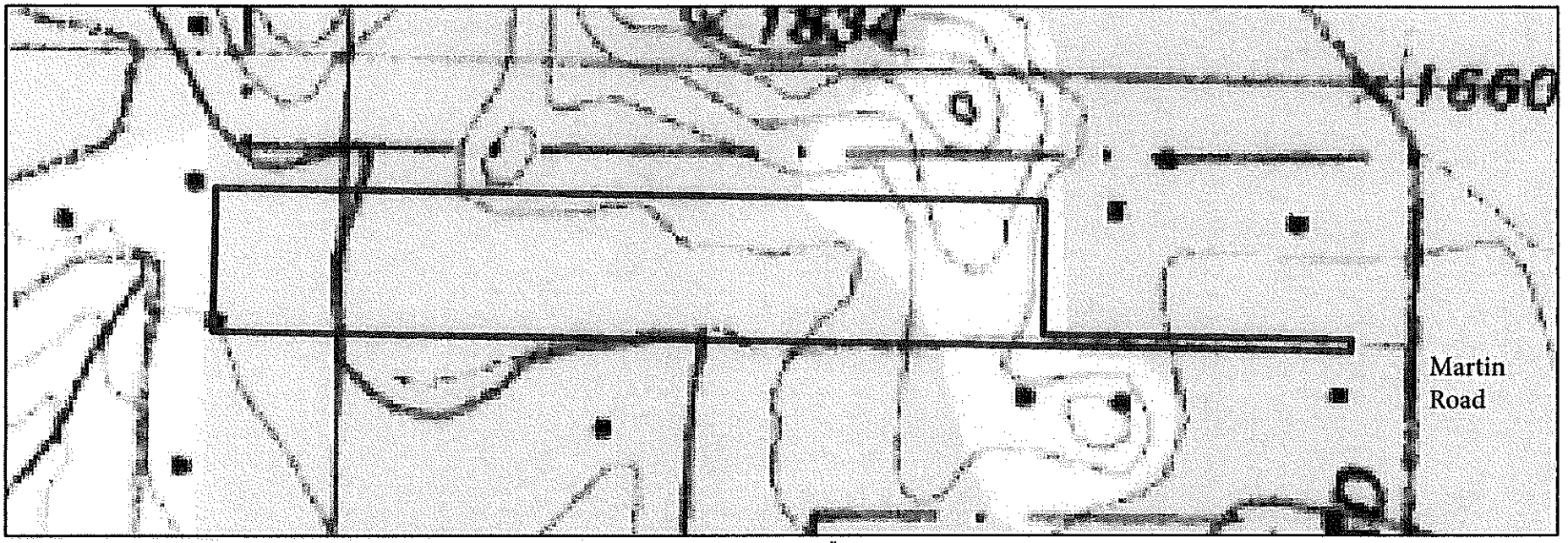



0 0.75 1.5 3 Miles

Entomological Consulting Services, Ltd.
April 13, 2012

Figure 2.
Aerial and Topographic View of Property
1030 Martin Road, Bonny Doon, CA
Santa Cruz County - APN 063-061-28 [15 acres]






0 0.05 0.1 0.2 Miles

Entomological Consulting Services, Ltd.
April 13, 2012

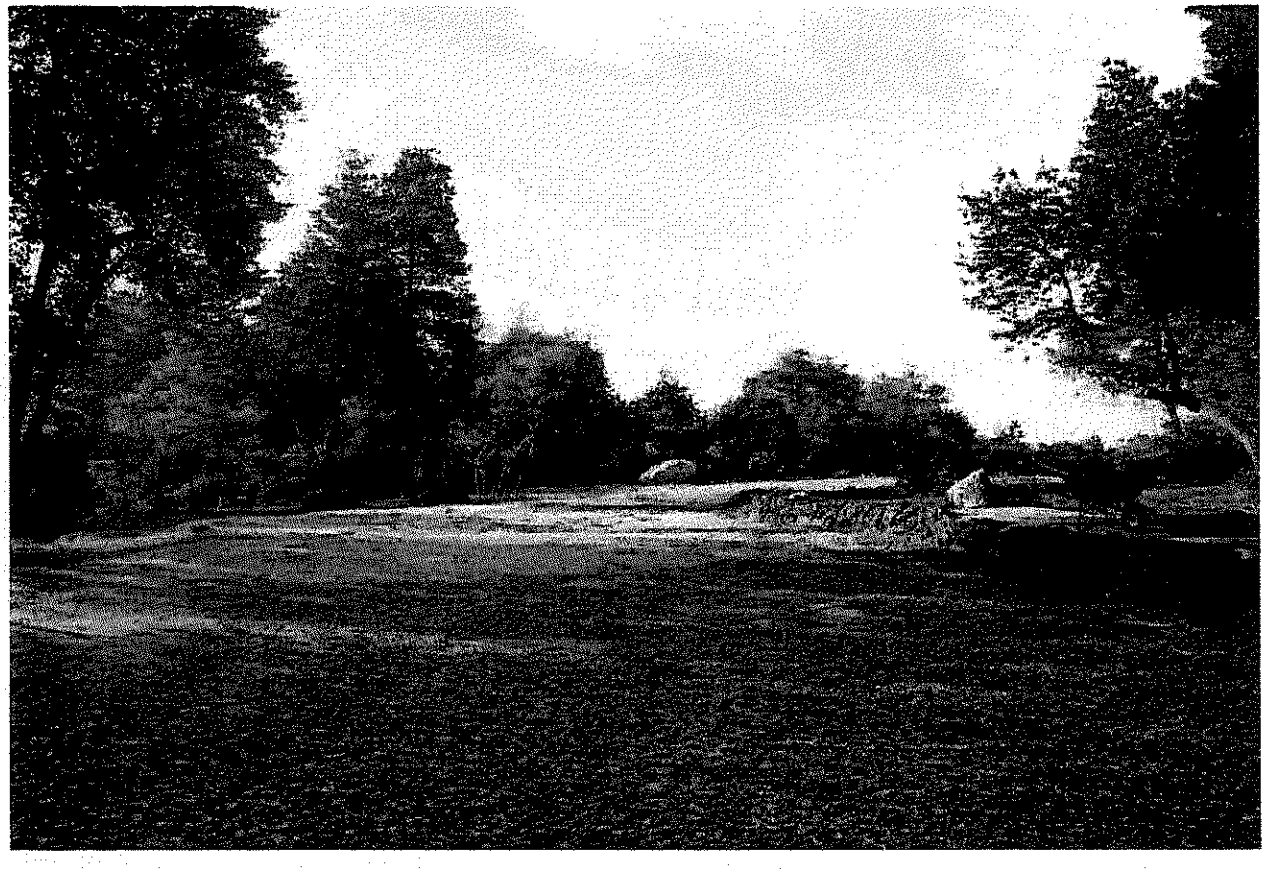


**Figure 3**. Existing conditions at Steven Sohl's proposed new home site in Bonny Doon.

# Section 2
# Project Description/Activities Covered by Permit

## 2.1 Project Description

At the present time Mr. Sohl's property is largely vacant, with no existing structures and or other improvements except for a well, a small water tank, and graveled driveway with a turn around for a fire truck. As illustrated in the site plan that was prepared by Frauke Zajac (Figures 4a and 4b), one new, single-family home will be constructed. The new home will be two-story and will have 1,196 ft.$^2$ of interior living space, with the first floor measuring 940 ft.$^2$. It will be situated in a clearing next to the gravel driveway. A 440 ft.$^2$ garage will also be built.

The "impact area," where ground disturbing activities such as excavation and construction activities will occur, is illustrated in Figures 4a and 4b. The location of the proposed new residence and garage is at the end of the graveled driveway. Because this site is flat, no grading is anticipated. The remainder of the parcel, i.e., portions of the property outside of where the illustrated construction activities will occur, will not be disturbed during construction activities and is referred to as the "habitat area".

Electrical power is fed from overhead power lines that run along Martin Road and Alta Vista Way. Also, a septic system and its associated leach field will occur within the impact area. Two new 5,000 gallon water tanks will be placed adjacent to the gravel driveway. The new home will utilize a new well for water, which will be situated within the graveled driveway. Santa Cruz County requires that the well must be located a minimum of 100 ft. from a septic system and its leach field. Parking for workers and temporary storage for building materials will be on the existing gravel driveway.

The new home will be situated in an existing clearing to avoid the removal of any native trees or shrubs (Figure 3). Temporary construction fencing will be erected prior to the start of any construction activities and around any native trees and shrubs that grow within the impact area. Native trees and shrubs that grow within the habitat area will be maintained. This includes a recently completed habitat restoration area near the entrance of the driveway from Alta Vista Way (Haley 2011). The maintained trees will not be disturbed except as needed to conform to

any future fire clearance regulations of Cal Fire. The total retained habitat area at the property is 14.88 acres (i.e., 14.942 ac parcel – 0.0625 ac impact area).

Table 1 itemizes the expected sizes or areas of ground disturbance for each of the aforementioned features of the development project.

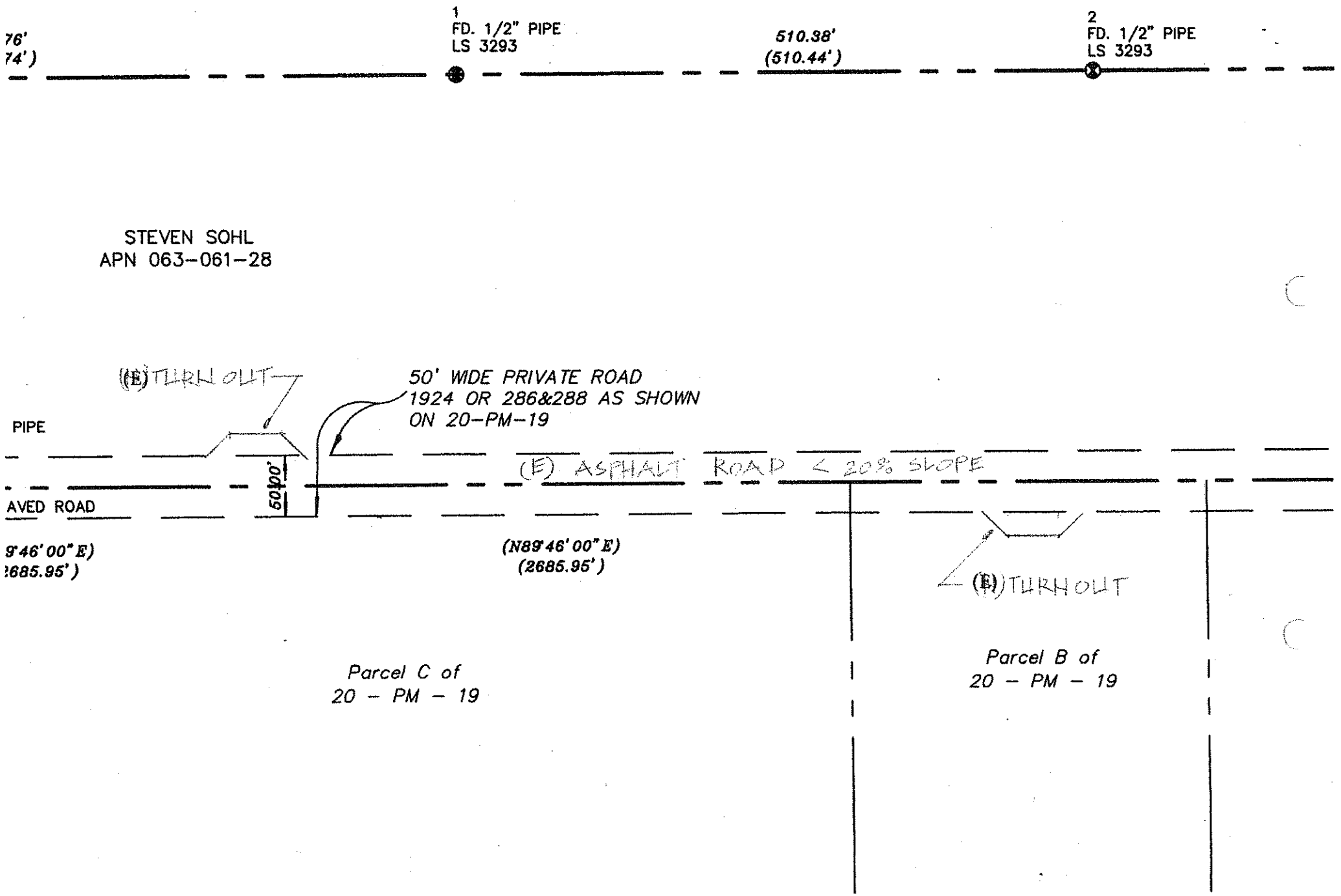
**Table 1. Size of project features**

| Proposed Feature | Area of Ground Disturbance | |
|---|---|---|
| | Square feet | Acres |
| Foundation for new home | 940 | 0.0216 |
| Landings at entries | 56 | 0.0013 |
| Concrete slab for new garage | 440 | 0.0101 |
| Septic system, tank, infiltrators, and leach field | 270 | 0.0062 |
| Two, 5,000 gallon water tanks | 200 | 0.0046 |
| Fire hydrant, new utility pole, and pressure tank pad | 20 | 0.0005 |
| Pipelines between house and septic tank, between water tanks and fire hydrant and house | 74 | 0.0017 |
| Perimeter work zone around house and garage | 720 | 0.0165 |
| ***Totals*** | ***2,720*** | ***0.0625*** |

## 2.2 Activities Covered by Permit

An incidental take permit is requested to cover impacts to the MHJB that could result from removal of existing herbaceous vegetation, trenching, excavation, construction of the new home, installation of the septic system and leach field, revegetation with native sandhill plants, and vegetation management of the habitat area. All covered activities are further described in Section 4 of this HCP, which assess their impacts on the covered species.

No grading or vegetation removal is needed within the impact area to prepare the site for construction. Construction activities may take more than a year as Mr. Sohl intends to do as much of the construction as possible by himself. Upon completion of all construction activities, undeveloped portions of the impact area will be revegetated with native sandhill plants. The habitat area of the property will not be disturbed during the project.


1
FD. 1/2" PIPE
LS 3293
510.38'
(510.44')
2
FD. 1/2" PIPE
LS 3293
76'
74')
STEVEN SOHL
APN 063-061-28
(E) TURN OUT
50' WIDE PRIVATE ROAD
1924 OR 286&288 AS SHOWN
ON 20-PM-19
PIPE
(E) ASPHALT ROAD < 20% SLOPE
50.00'
AVED ROAD
9'46'00"E)
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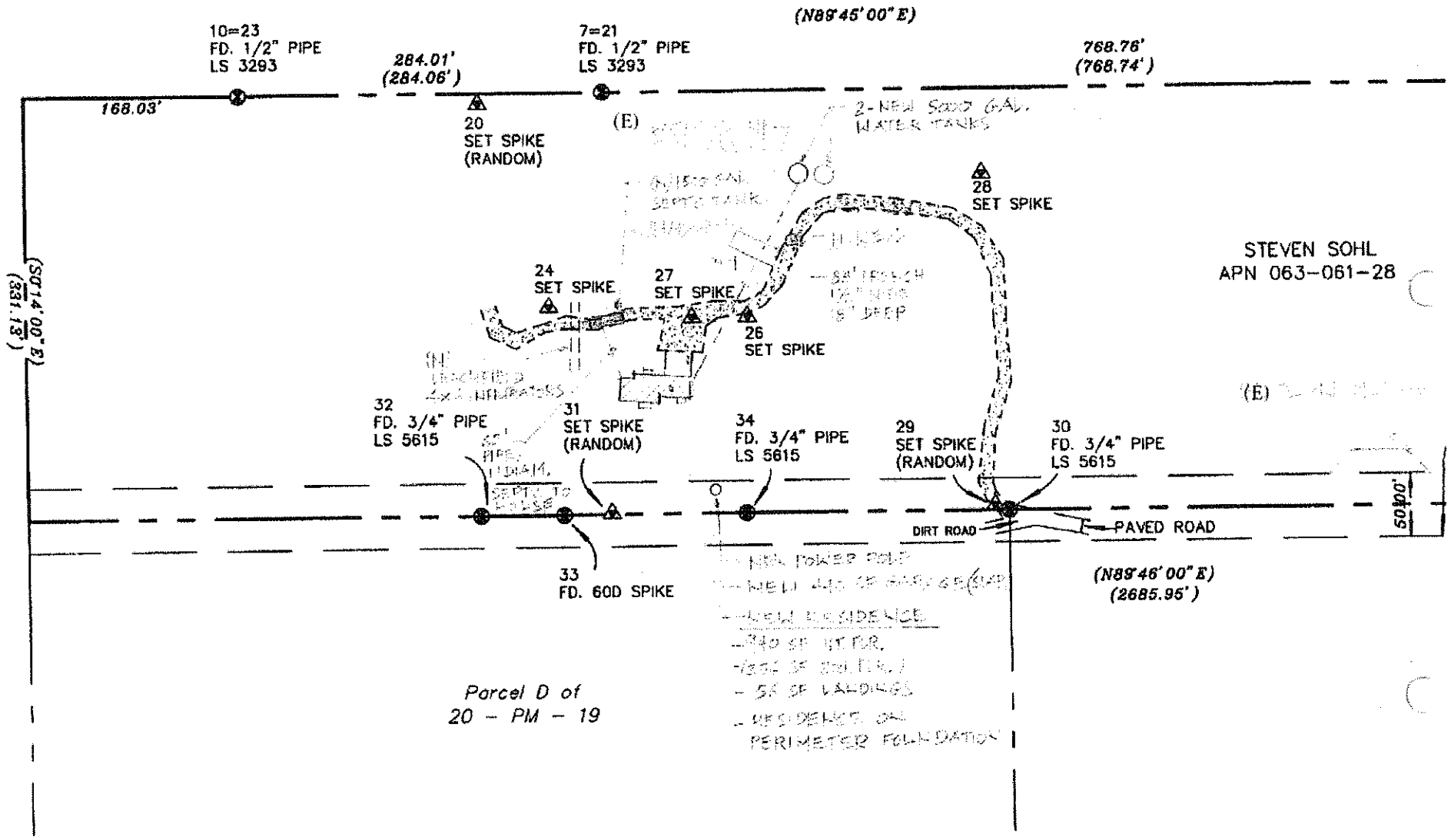



**Figure 4b. Enlarged site plan for proposed Sohl residence (no scale).**

Section 3

# Environmental Setting/Biological Resources

## 3.1 Environmental Setting

### 3.1.1 Climate

The greater Bonny Doon area is characterized by a Mediterranean climate. In the plan area, the summer temperature range is from 45°F to 95°F and average is 68°F. Winter temperatures range from 36°F to 65°F and average is 51°F.

Annual precipitation is 44 inches. Most precipitation falls as rain, although some localities may also receive some fog drip. The rainy season is from October to May, with the majority of the rainfall occurring between December and March.

### 3.1.2 Topography/Geology

Elevations at the property range from approximately 1,600 to 1,700 ft. The site slopes gently from its highest elevations along the northern border to the southern border. Zayante sands (Bowman and Estrada 1980) characterize the entire property and the plan area. Such sands are excessively well drained, low in nutrients, and are derived from weathering of marine sediments and sandstones of the Santa Margarita formation.

### 3.1.3 Hydrology/Streams, Rivers, Drainages

The property lies approximately equidistant between Mill Creek (3,000 ft. to the west) and Liddell Creek (3,200 ft. to the east). It is located within the Laguna and San Vincente Creek watersheds.

### 3.1.4 Existing Land Use

The property is located in a rural residential neighborhood known as Bonny Doon, within the town of Santa Cruz. Surrounding properties primarily support single-family homes on parcels five or more acres in size. The California Department of Fish & Game has an ecological preserve on the east side of Martin Road. Zoning for the property is residential-agriculture.

The plant communities at this property include Northern Maritime Chaparral and Mixed Deciduous Evergreen Forest and Coast Chaparral. Within the impact area much of the native understory vegetation was cleared at some time in the past.

## 3.2 Covered Wildlife Species: Mount Hermon June Beetle (*Polyphylla barbata*: Coleoptera, Scarabaeidae)

### 3.2.1 Status and Distribution

The MHJB is a federally-listed endangered species. Throughout most of its range, the primary threats to the beetle are sand mining and urbanization. In a few instances, other types of land uses, such as agricultural conversion, recreation activities, plus pesticide use, alteration of fire cycles, and possibly even collectors, have also threatened the beetle. For these reasons, the beetle was recognized as an endangered species by the Service (1997) in 1997 and a recovery plan was published by the Service (1998) in 1998. Critical habitat has not yet been proposed by the Service for the MHJB. Although the scientific name *Polyphylla barbata* has been used since its original description, in the literature the beetle has commonly been referred to as the Mount Hermon June beetle or the Barbate June beetle.

The State of California does not recognize insects as endangered or threatened species pursuant to the State's Fish & Game Code. However, the MHJB does receive consideration under the California Environmental Quality Act (CEQA) since it satisfies the definition of a rare species under this statute.

The MHJB is restricted to the Zayante sandy soils that are found in the Scotts Valley-Mount Hermon-Felton-Ben Lomond-Santa Cruz area of the Santa Cruz Mountains. During the summer of 2008 it was also observed at a couple of locations in the Bonny Doon area (Arnold, pers. observ.; McGraw, 2009), including the Sohl property. Historically, MHJB localities were referred to as sandhills (Cazier 1938; Young 1988), but more recently this area has been called the Zayante Sandhills (U.S. Fish & Wildlife Service 1998). Arnold (2004) reviewed museum specimens and other reported records for the beetle and determined that it had been observed at about 70 locations throughout the Zayante Sandhills area.

### 3.2.2 Habitat Characteristics

Habitats in the Zayante sandhills where MHJB has been found include Northern Maritime Chaparral, Mixed Oak Woodland, Ponderosa Pine Forest, Sand Parkland (which is a mixture of the aforementioned habitats with a shrub/subshrub and grass/forb understory), and mixed Deciduous-Evergreen Forest. In addition, adults have been found in disturbed sandy areas where remnants of these habitats still occur. Ponderosa Pine grows at all known MHJB locations and for this reason was previously thought to be a potential larval food plant of the beetle. However, analyses of partially-digested plant fragments in fecal pellets of MHJB larvae by

Kirsten Hill (2005) indicate that larvae feed on other plant species. Even if Ponderosa Pine is not a food plant, it is a useful indicator of suitable habitat for the MHJB.

### 3.2.3 Occurrences Within the Project Area

McGraw (2009) conducted a one-night, presence-absence survey for the MHJB at the property in June 2008 and observed a single beetle. Also Arnold (personal observation) observed the beetle at the nearby California Department of Fish & Game Preserve and at a nearby private property in 2008 and in 2011 observed the beetle on nearby watershed lands maintained by the City of Santa Cruz.

### 3.2.4 Life History

Adult males measure about 0.75 inch in length and females are slightly longer. The adult male has a black head and dark brown elytra (leathery forewings) that are covered with brown hairs. The elytra also have stripes that are broken and irregular rather than continuous and well-defined as in related species of June beetles. Larvae are grub-shaped (scarabaeiform) and vary in color from cream to pale yellow for the body segments and darker brown for the head.

The MHJB is univoltine, i.e., it has only one generation per year. As its common name suggests, adult emergence and seasonal activity normally starts in May or June and continues through about mid-August; although, seasonal activity may vary from year to year depending on weather conditions. Adults are nocturnal, with most of their activity between about 8:45 and 9:30 pm. Adult males actively fly low to the ground in search of females, which are flightless. Presumably the female emits a pheromone for the males to find her.

Lifespan data from a brief capture-recapture study suggest that adult males live no longer than one week (Arnold 2001). Dispersal data from the same capture-recapture study indicate that most adult males are quite sedentary, with home ranges of no more than a few acres. Similar data on lifespan and dispersal of females is lacking at this time since they are less frequently observed.

Specific life history information for the MHJB is unknown, but can be inferred from related species. Presumably the entire life cycle (egg, larva, pupa, and adult) takes two to three years to complete. The majority of the life cycle is spent as a subterranean larval stage that feeds on plant roots (Furniss and Carolin 1977).

## 3.3 Other Zayante Sandhills Endangered Species

The Zayante sandhills region near Mr. Sohl's property support several special status plant and animal taxa, including four federally endangered species. Table 2 lists these taxa and their federal and state conservation statuses. Although a complete floristic inventory of the entire Sohl property has not been undertaken, the proposed habitat area is known to support Santa Cruz Cypress, Silverleaf Manzanita and a few other recognized rare plants (Haley 2011). However,

the proposed impact area does not support any of these other sandhill species (Arnold, personal observation) since the native habitat conditions were altered by prior vegetation clearing.

**Table 2. Special-status Species of the Zayante Sandhills**

| Common Name | Scientific Name | Conservation Status | | |
|---|---|---|---|---|
| | | Federal | State | CNPS |
| Mount Hermon June beetle | *Polyphylla barbata* | Endangered | | |
| Zayante Band-Winged grasshopper | *Trimerotropis infantilis* | Endangered | | |
| Ben Lomond spineflower | *Chorizanthe pungens* var. *hartwegiana* | Endangered | | |
| Santa Cruz wallflower | *Erysimum teretifolium* | Endangered | Endangered | 1B |
| Santa Cruz cypress | *Cupressus abramsiana* | Endangered | Endangered | |
| Silverleaf manzanita | *Arctostaphylos silvicola* | | | 1B |
| Ben Lomond buckwheat | *Eriogonum nudum* var. *decurrens* | | | 1B |

Note: CNPS is the California Native Plant Society, whose lists of rare plants are often treated as endangered species by resource agencies.

Section 4

# Potential Biological Impacts/Take Assessment

## 4.1 Direct and Indirect Impacts

Direct and indirect impacts, including temporary and permanent impacts, are anticipated to occur due to project-related activities at Mr. Sohl's property. This section identifies the specific activities that could result in impacts to the MHJB as well as its habitat.

### 4.1.1 Direct Impacts

The proposed project has the potential to directly impact life stages of the MHJB by causing mortality of eggs, larvae, pupae, and adult life stages wherever soils are disturbed within the impact area of Mr. Sohl's project site. Permanent habitat loss will occur as a result of these activities.

#### 4.1.1.1 Permanent Habitat Loss

Because the building site is flat, no grading will be necessary. Nonetheless, permanent habitat loss will result from construction of the new home, garage, and installation of the septic system and other amenities. These ground-disturbing activities will remove roots of vegetation, which may be fed upon by larvae of the MHJB, as well as kill, injure, or remove life stages of the MHJB. The total area of permanent habitat loss is 1,926 $ft.^2$ (0.0443 acre), as detailed in Table 3.

#### 4.1.1.2 Temporary Habitat Loss

Temporary habitat loss will occur due to trenching to install water and septic pipelines and in the peripheral construction work zone, a 5 ft. wide area around the entire perimeter of the new home and garage. The total area of temporary habitat loss is 794 $ft.^2$ (0.0182 acre), as detailed in Table 3.

No additional habitat loss is anticipated for fire clearance compliance, but Cal Fire will ultimately determine the fire clearance requirements, if any, for the new residence. According to Cal Fire, fire clearance requirements depend on the type of construction materials used to build the structure, the location of the proposed structure within the building envelope, and the presence of sensitive habitat on site. Since there is currently no dense brush or tree growth near the location of the proposed new home (Figure 3), it is anticipated that no additional fire clearance will be necessary within the impact area; however, it is possible that at a later date Cal Fire may require clearing or pruning of vegetation.

### 4.1.2 Indirect Impacts

Indirect impacts are those caused by covered activities that may occur at a different time or in a different place than the direct impacts. This project is designed to avoid indirect effects on the MHJB. For example, any outdoor lights that are installed will use bulbs designed to not attract nocturnally-active insects. If any construction occurs during the flight season for adult MHJB (mid-May through mid-August), any exposed soil will be covered between the hours of 7:00 pm and 7:00 am with erosion control fabric, tarps, or a similar impervious material. This precaution will prevent males from burrowing into soils and subsequently being impacted by construction activities.

**Table 3. Types and areas of temporary and permanent impacts to Mt. Hermon June beetle habitat resulting from features of the proposed project.**

| Project Feature | Type of Impact | Area of Impact | |
|---|---|---|---|
| | | Square feet | Acres |
| Foundation of new home | Permanent | 940 | 0.0216 |
| Landings | Permanent | 56 | 0.0013 |
| Concrete slab for garage | Permanent | 440 | 0.0101 |
| Septic system, tank, infiltrators & leach field | Permanent | 270 | 0.0062 |
| Two 5,000 gallon water tanks | Permanent | 200 | 0.0046 |
| Fire hydrant, new utility pole, and pressure tank pads | Permanent | 20 | 0.0005 |
| | ***Subtotal Permanent*** | ***1,926*** | ***0.0443*** |
| | | | |
| Pipelines between house and septic system, and between water tanks and house | Temporary | 74 | 0.0017 |
| Perimeter work zone around house, garage, septic, water tank, etc. | Temporary | 720 | 0.0165 |
| | ***Subtotal Temporary*** | ***794*** | ***0.0182*** |
| ***Grand Totals*** | | ***2,720*** | ***0.0625*** |

## 4.2 Anticipated Take of Covered Wildlife Species

Since there are no accurate estimates of the numbers of MHJB that reside at Mr. Sohl's property, it is not possible to quantify the exact number of individual animals that could be taken by the removal of its degraded habitat within the impact area. For these reasons, the level of take of the MHJB is expressed as the affected acreage, i.e., the 0.0625-acre impact area of the property. Thus, take due to injury or mortality of MHJB life stages could result from disturbance to approximately 0.0625-acre of degraded habitat within the impact area.

## 4.3 Effects on Critical Habitat

Critical habitat has not been designated for the MHJB. Thus, the proposed project will not cause any impacts to critical habitat. The Zayante Sandhills Conservation Bank is located within the critical habitat (Service 2001) for the federally-listed endangered Zayante band-winged grasshopper (*Trimerotropis infantilis*). The Zayante band-winged grasshopper is not covered in this HCP because suitable habitat for this species does not exist at this project site (Arnold, personal observation).

## 4.4 Cumulative Impacts

The Service has recently published notices in the Federal Register for several other small projects in the Zayante Sandhills that include new residential construction, plus remodels and additions to existing homes. Older HCPs that were previously approved in the sandhills included sand mining at the now closed Hanson Aggregates' Felton Sand Plant and at the Quail Hollow Quarry, and two small development projects for single-family homes in Scotts Valley. As of October 2011, residents of 11 sandhill neighborhoods are able to participate in the Interim Programmatic HCP (IPHCP) that was approved by the County of Santa Cruz and Service.

Impacts of the proposed Sohl project on the long term persistence of the MHJB are low because of the small size of the impact area and its location within an existing rural residential neighborhood that supports degraded and fragmented sandhills habitat. These losses are not expected to affect the range-wide survival of the beetle due to the occurrence and abundance of this species and its habitat at several nearby locations, as well as elsewhere throughout its entire geographic range. Furthermore, MHJB has been observed inhabiting soils in residential yards and less disturbed habitats that occur in close proximity to the Sohl property (Arnold, personal observation), so it can presumably co-exist in such habitat once soil disturbance has ceased. Thus, some MHJBs may ultimately recolonize the less disturbed and revegetated portions of the impact area, where loose, sandy soils remain after all construction activities have been completed.

Future development, residential additions and remodels in the Sohl's neighborhood would reduce the amount of available habitat for the beetle. Nonetheless, significant portions of

the sandhills in the Bonny Doon area have been protected and support significant populations of the endangered beetle, including the California Department of Fish & Game Preserve off of Martin Road and the Laguna Creek watershed lands maintained by the City of Santa Cruz.

## 4.5 Anticipated Impacts of the Taking

The level of take of the MHJB at the Sohl property, as described above, is expected to have negligible effects on the species' overall survival and should not hinder its recovery. This is because the actual number of animals incidentally taken will be very low and the percentage of the species' habitat affected, 0.0625 acre, is very small relative to the species' entire geographic range of approximately 10,000 acres. Furthermore, habitat quality within the impact area of the project site has been degraded by prior vegetation clearing. Surrounding properties are similarly degraded to varying degrees due to residential development, and the impact area's relative importance to the species, both regionally and throughout its range, is thought to be minor. For these reasons, the amount of take of the MHJB that would result from Mr. Sohl's project is considered negligible.

Section 5

# Conservation Program/Measures to Minimize and Mitigate for Impacts

## 5.1 Biological Goals

Section 10(a)(2)(A) of the Act requires that an HCP specify the measures that the permittee will take to minimize and mitigate to the maximum extent practicable the impacts of the taking of any federally listed animal species as a result of activities addressed by the plan. As part of the "Five Point" Policy adopted by the Services in 2000, HCPs must also establish biological goals and objectives (65 *Federal Register* 35242, June 1, 2000). The purpose of the biological goals is to ensure that the operating conservation program in the HCP is consistent with the conservation and recovery goals established for the species. The goals are also intended to provide to the applicant an understanding of why these actions are necessary. These goals are developed based upon the species' biology, threats to the species, the potential effects of the covered activities, and the scope of the HCP.

The following biological goals and objectives were developed based on the MHJB's biology and potential impacts of the covered activities within the scope of this HCP. They include on-site measures that will minimize take of the MHJB at the project site and off-site measures that will protect habitat with high conversation value for the beetle in perpetuity.

**Goal 1: Avoid and minimize, to the extent practical, take of the MHJB within the project site.**

Objective 1.1: Locate proposed improvements in degraded portion of the property.

Objective 1.2: Minimize removal of plant taxa indigenous to the Zayante Sandhills that grow at the project site.

Objective 1.3: Cover exposed soils nightly if construction activities occur during the MHJB's flight season (mid-May through mid-August).

Objective 1.4: Revegetate portions of the project site that are temporarily disturbed due to construction with plant taxa indigenous to the Zayante Sandhills and avoid landscaping with turf grass, weed matting, aggregate, and mulch.

Objective 1.5: Minimize outdoor night lighting during the flight season of the MHJB or use light bulbs that are certified to not attract nocturnally-active insects.

**Goal 2: Protect habitat for the MHJB at an off-site location with high conservation value for the beetle.**

Objective 2.1: Provide funds, through the purchase of conservation credits at the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank, to protect, manage, and monitor habitat of the MHJB in perpetuity.

**Goal 3: Manage habitat for the MHJB on-site.**

Objective 3.1: Maintain the habitat portions of the property.

Objective 3.2: Control invasive plants in the habitat area.

Objective 3.3: Promote native sandhill plant colonization.

## 5.2 Minimization and Mitigation Measures

Section 10 of the Endangered Species Act requires that all applicants submit HCPs that "minimize and mitigate" the impacts of take authorized by an incidental take permit, and that issuance of the permit will not "appreciably reduce the likelihood of the survival and recovery of the species in the wild." In general, HCPs should include mitigation programs that are based on sound biological rationale, practicable, and commensurate with the impacts of the project on species for which take is requested. Additionally, the Service encourages applicants to develop HCPs that contribute to the recovery of a listed species. If the proposed project is expected to result in permanent habitat loss, then the mitigation strategy must include compensatory mitigation consisting of the permanent preservation of suitable habitat or similar measures.

In accordance with these guidelines and the requirements of the Endangered Species Act, the conservation program of this HCP is intended to achieve its biological goals and objectives and to ensure that the impacts of covered activities on the MHJB are minimized and mitigated to the maximum extent practicable.

### 5.2.1 Measures to Minimize Impacts

The following measures are designed to minimize the indirect effects of the covered activities on the MHJB by reducing incidental take of individuals and the degradation of habitat adjacent to the project area and existing development.

#### 5.2.1.1 Minimize the Development Footprint

Site planning and design of the new home and other improvements have been done in a manner to minimize impacts to the MHJB and its habitat at this property. Examples include:

a) the locations of the new home, garage, and other improvements are adjacent to graveled driveway in a previously cleared area where no native trees or shrubs need to be removed to accommodate it;
b) the new home is a two-story design to minimize its footprint and ground disturbance;
c) the septic leech field for the new home has been located within the previously disturbed impact area of the project site; and
d) the new well will be located within the footprint of the existing driveway.

#### 5.2.1.2 Delineate Boundaries of the Impact Area

Temporary fencing and signs will be erected before any vegetation clearing, or excavation activities occur to clearly delineate the boundaries of the project's impact area. Warning signs will be posted on the temporary fencing to alert excavators and other construction workers not to proceed beyond the fence. All protective fencing will remain in place until all construction and other site improvements have been completed. Signs will include the following language:

**"NOTICE: SENSITIVE HABITAT AREA. DO NOT ENTER."**

#### 5.2.1.3 Cover Exposed Soils

Adult males of the MHJB actively search for breeding females during the evenings between about May 15 and August 15. During this period, both sexes burrow into duff and soils during the daytime. If construction occurs during any portion of the MHJB flight season, all exposed soils within the impact area will be covered by tarps, plywood, erosion control fabric, or another suitable impervious material. Exposed soils should be covered between the hours of 7pm and 7am daily. This will prevent adult males from burrowing into the exposed soils and subsequently being injured or killed by soil disturbance (i.e., digging, grading, covering, etc.).

#### 5.2.1.4 Relocate Observed Life Stages of the Covered Species

During the pre-construction training session, all construction personnel will be shown pictures of the MHJB larval and adult life stages, and instructed to cease construction activities and call an entomologist qualified and permitted to handle and translocate the endangered beetle should any be observed during the covered activities. If the life stage is buried, then it will be reburied outside of the impact area at the approximate depth at which it was unearthed. If an adult MHJB is found on the soil surface, then it will be relocated and released outside of the impact area on the soil surface. This measure will minimize take of the MHJB by reducing the number of larvae and adults that could otherwise be injured or killed as a result of project-related activities.

#### 5.2.1.5 Dust Control

Dust can clog the spiracles of adult beetles and accumulated dust on plants may cause them to experience a decline in vigor or even die, which would affect the roots that larvae of the MHJB may feed upon. Appropriate dust control measures, such as periodically wetting down the work areas, will be used as necessary during excavation for the new foundations in of the impact area, site grading, or any other project-related activities that generate dust.

#### 5.2.1.6 New Outdoor Lighting

Adult MHJBs are active at dusk and may be distracted by incandescent, mercury vapor, sodium, and black light sources, which can disrupt normal behaviors and breeding activities. Thus any outdoor lighting installed as part of this project will use bulbs certified to not attract nocturnal insects.

#### 5.2.1.7 Landscaping Elements That Degrade MHJB Habitat

Because MHJB adults emerge from the soil to attract and search for mates, turf grass, dense ground covers (such as ivy), weed matting, aggregate, and mulch can degrade habitat conditions and will not be used in this project.

### 5.2.2 Measures to Mitigate Unavoidable Impacts

To mitigate for unavoidable impacts of their project, Mr. Sohl will purchase conservation credits and revegetate the area of temporary habitat loss with native sandhill plants. The next two sections describe these mitigation measures in more detail.

#### 5.2.2.1 Purchase Conservation Credits at the Zayante Sandhills Conservation Bank

Project construction will temporarily and permanently remove 2,720 ft.$^2$ (0.0625 acre) of habitat that could potentially be used by the MHJB (Table 3). Mr. Sohl will compensate for

these impacts by purchasing at a 1:1 ratio, a total of 2,720 ft.$^2$ (0.0625 acre) of conservation credits from the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank. This level of mitigation (i.e., conservation credits) is clearly commensurate with the level of impacts to MHJB habitat at Mr. Sohl's property because the habitat quality at the conservation bank is prime compared to the degraded habitat within the impact area of his property; thus the conservation value of the bank habitat is much greater than that of the impact area.

The Zayante Sandhills Conservation Bank was approved by the Service and the County of Santa Cruz to provide mitigation for impacts to the MHJB and other special-status plants and animals of the Zayante sandhills from projects within the Felton USGS quad. Figure 5 is a map that illustrates the location of the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank operated by PCO, LLC and its service area. A copy of the sales agreement between Mr. Sohl and PCO, LLC is attached to this HCP in Appendix A.

The operator of the conservation bank, PCO, LLC, will be responsible for all species monitoring, habitat management, and other conservation related activities that occur at the Ben Lomond Sandhills Preserve. An annual monitoring report will be prepared for submission to the Service and the County of Santa Cruz as described in Section 5.3.2 of this HCP.

#### 5.2.2.2 Vegetation Management of the Protected Habitat Areas

Because of the uncertainty about future vegetation pruning or clearing activities that may be required by Cal Fire, the permanent protection of the habitat areas of Mr. Sohl's property cannot be assured. Also, it may be too small for a land trust to accept a conservation easement for their protection. Finally, no post-construction monitoring will occur in the protected habitat area of the project site. It is for these reasons that off-site mitigation is being utilized to compensate for all of the anticipated and potential project-related impacts.

The understory of the protected habitat area will be managed to promote continued colonization by native plants indigenous to the Zayante sandhills. Also, non-chemical measures will be utilized to control invasive plants on an as-needed basis throughout the duration of the incidental take permit.

## 5.3 Monitoring

Monitoring tracks compliance with the terms and conditions of the HCP and permit. This project will include compliance, effects, and effectiveness monitoring. Compliance monitoring will track the permit holder's compliance with the requirements specified in the HCP and permit, as described below. Effects monitoring tracks the impacts of the covered activities on the covered species. Compliance and effects monitoring will be conducted by the permitted entomologist. All biological effectiveness monitoring, which tracks the progress of the conservation program in meeting the HCP's biological goals and objectives, will be conducted at

the Zayante Sandhills Conservation Bank's Ben Lomond Sandhills Preserve, where the off-site mitigation will occur. This latter monitoring will be the responsibility of the bank operator.

### 5.3.1 Construction and Compliance Monitoring

Prior to construction, a Service-approved biologist will conduct a training session for all construction workers involved with the project. The program will include a brief presentation about the biology of the MHJB, its habitats, and the terms of the HCP. The orientation will also inform equipment operators and other workers about the impact area's boundaries, equipment storage locations, materials laydown areas, construction activity restrictions, and identify other habitat protection and work procedures. Workers will be directed to immediately cease work if a MHJB is observed within the designated impact area and contact the biologist who can handle and relocate the beetle as authorized by the Service.

Throughout the construction and the other covered activities the Service-approved biologist will conduct regular inspections of the project site during all phases of the project to ensure that the perimeter fencing and signs that delineate the impact area remain in place, that exposed soils are properly covered by impervious materials, and to salvage and relocate and MHJB life stages.

### 5.3.2 Effects Monitoring

To quantify the amount of incidental take at the end of the project, the Service-approved biologist will calculate the area of soil disturbance (i.e., incidental take), and tally the number of MHJB life stages that were found and translocated during the project. This information will be summarized in the Compliance Monitoring Report (see Section 5.4.1).

### 5.3.3 Access to Project Site

The permit holder shall allow representatives from the Service access to the project site to monitor compliance with the terms and conditions of this HCP and the effects of the covered activities of this project.

## 5.4 Reporting

### 5.4.1 Compliance Report

By January 31st following each year of the permit, the Service-approved biologist will submit a report to the Ventura Fish and Wildlife Office of the Service and the Santa Cruz County Planning Department to document the status of the project. The report will provide the following information:

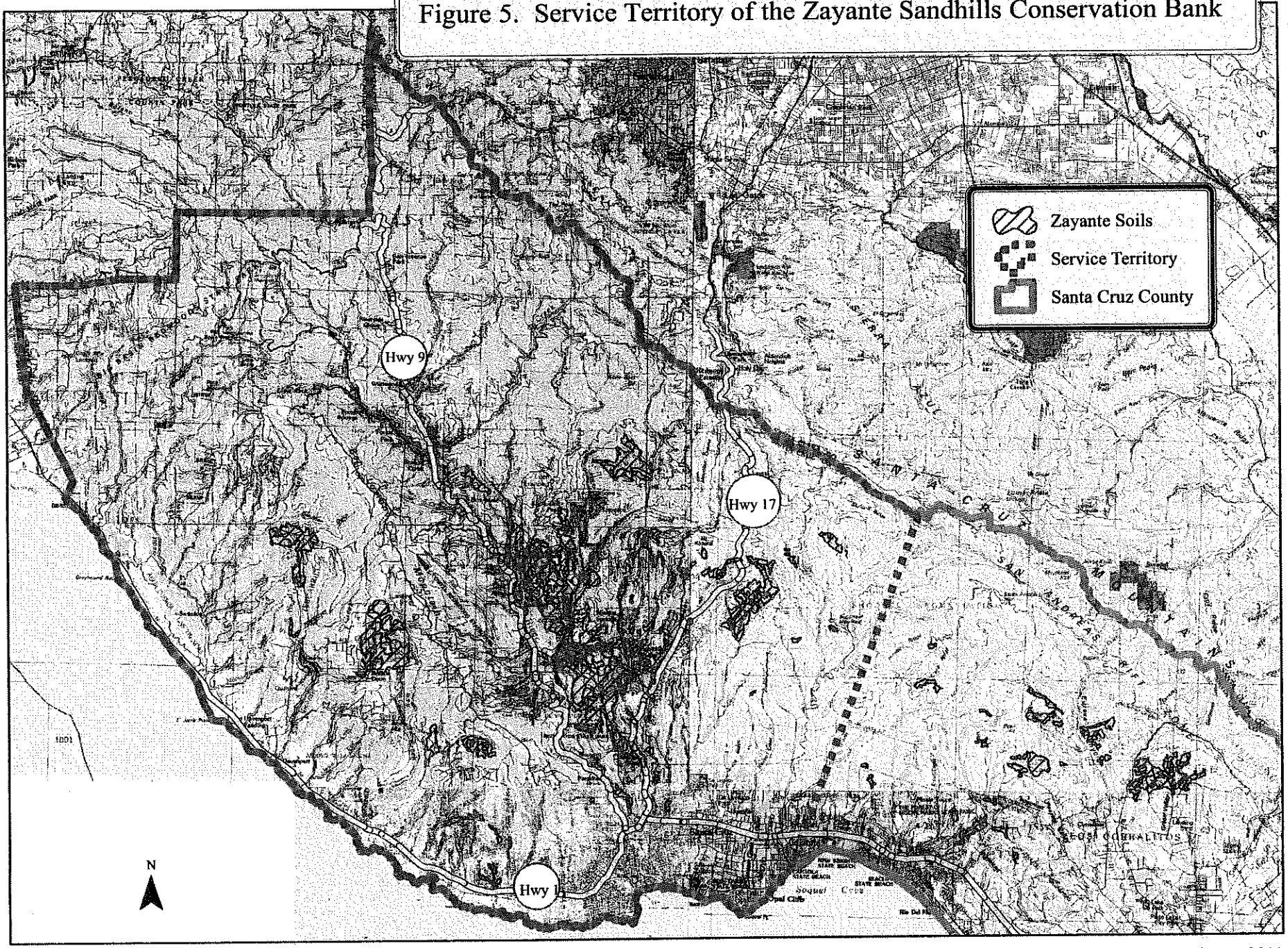
1. Brief summary or list of project activities accomplished during the reporting year (e.g. this includes development/construction activities, and other covered activities)
2. Project impacts (e.g. number of acres graded, number of buildings constructed, etc.)
3. Description of any take that occurred for each covered species (includes cause of take, form of take, take amount, location of take and time of day, and deposition of dead or injured individuals)
4. Brief description of conservation strategy implemented
5. Monitoring results (compliance, effects and effectiveness monitoring) and survey information (if applicable)
6. Description of circumstances that made adaptive management necessary and how it was implemented. Please include a table including the cumulative totals; by reporting period all adaptive management changes to the HCP, including a very brief summary of the actions.
7. Description of any changed or unforeseen circumstances that occurred and how they were dealt with
8. Funding expenditures, balance, and accrual
9. Description of any minor or major amendments.

**5.4.2 Annual Mitigation Monitoring Reports**

PCO, LLC must submit an annual monitoring report to the Ventura Fish and Wildlife Office of the Service, describing activities performed to benefit the MHJB as part of its agreement to sell conservation credits and operate a conservation bank. Thus, mitigation monitoring reports will be prepared annually by PCO, LLC. This report shall be submitted to Service by December 31st of the monitoring year. This report shall include:

1. a general assessment of the condition of the habitat at the Ben Lomond Sandhills Preserve;
2. a description of all management actions taken on the Preserve along with an assessment of their effectiveness toward enhancing the biological goals and objectives;
3. a description of any problems encountered in managing the Preserve;
4. results of monitoring studies for the endangered species and/or communities conducted during the year and an assessment of their implications for the biological goals and objectives; and
5. a description of other activities designed to enhance the Preserve.

# Figure 5. Service Territory of the Zayante Sandhills Conservation Bank




October 1, 2011
Entomological Consulting Services, Ltd.

Section 6
# Plan Implementation

## 6.1 Plan Implementation

Mr. Sohl will become the owner of the property before construction of the new home begins and is the applicant for the incidental take permit. He plans to do much of the construction of the new home himself, but with the assistance of a contractor. He will also purchase of conservation credits needed to completion the mitigation strategy. The schedule of implementation of the covered activities will depend on the timing of issuance of the incidental take permit and local building permits, as well as seasonal constraints.

## 6.2 Changed Circumstances

### 6.2.1 Summary of Circumstances

Section 10 regulations [(69 *Federal Register* 71723, December 10, 2004 as codified in 50 Code of Federal Regulations (C.F.R.), Sections 17.22(b)(2) and 17.32(b)(2))] require that an HCP specify the procedures to be used for dealing with changed and unforeseen circumstances that may arise during the implementation of the HCP. In addition, the HCP No Surprises Rule [50 CFR 17.22 (b)(5) and 17.32 (b)(5)] describes the obligations of the permittee and the Service. The purpose of the No Surprises Rule is to provide assurance to the non-Federal landowners participating in habitat conservation planning under the Act that no additional land restrictions or financial compensation will be required for species adequately covered by a properly implemented HCP, in light of unforeseen circumstances, without the consent of the permittee.

Changed circumstances are defined in 50 CFR 17.3 as changes in circumstances affecting a species or geographic area covered by an HCP that can reasonably be anticipated by plan developers and the Service and for which contingency plans can be prepared (e.g., the new listing of species, a fire, or other natural catastrophic event in areas prone to such event). If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances and these additional measures were already provided for in the plan's operating

conservation program (e.g., the conservation management activities or mitigation measures expressly agreed to in the HCP or IA), then the permittee will implement those measures as specified in the plan. However, if additional conservation management and mitigation measures are deemed necessary to respond to changed circumstances and such measures were not provided for in the plan's operating conservation program, the Service will not require these additional measures absent the consent of the permittee, provided that the HCP is being "properly implement" (properly implemented means the commitments and the provisions of the HCP and the IA have been or are fully implemented).

Foreseeable changed circumstances within the project area of this HCP including the following:

- the new listing of a species;
- the discovery of the Zayante Band-winged grasshopper, Santa Cruz wallflower, Ben Lomond spineflower, Ben Lomond buckwheat, or Santa Cruz Cypress within the impact area of the project site; or
- natural disasters.

### 6.2.2 Listing of New Species

If a new species that is not covered by the HCP but that may be affected by activities covered by the HCP is listed under the Act during the term of the section 10(a)(1)(B) permit, the section 10 permit will be reevaluated by the Service and the HCP covered activities may be modified, as necessary, to insure that the activities covered under the HCP are not likely to jeopardize or result in the take of the newly listed species or adverse modification of any newly designated critical habitat. Mr. Sohl shall implement the modifications to the HCP covered activities identified by the Service as necessary to avoid the likelihood of jeopardy to or take of the newly listed species or adverse modification of newly designated critical habitat. Mr. Sohl shall continue to implement such modifications until such time as the Permittee has applied for and the Service has approved an amendment of the Section 10(a)(1)(B) permit, in accordance with applicable statutory and regulatory requirements, to cover the newly listed species or until the Service notifies Mr. Sohl in writing that the modifications to the HCP covered activities are no longer required to avoid the likelihood of jeopardy of the newly listed species or adverse modification of newly designated critical habitat.

The occurrence of a newly listed species at Mr. Sohl's project site during the 5-year permit is unlikely due to the small size of the project site and impact area, the degraded habitat conditions there and in the surrounding neighborhood, and the short duration of the incidental take permit.

### 6.2.3 Discovery of Other Currently Listed Species at the Project Site

In the unlikely event that one or more currently listed endangered or threatened species are found at the project site, the applicant will cease project activities that would likely result in take of the newly-discovered listed species and apply for a permit amendment. Because of the degraded habitat conditions within the impact area of the project site, the distance to nearest known populations, and the short duration of the project permit, this circumstance is unlikely to actually happen.

### 6.2.4 Natural Disasters

As to other potential changed circumstances, Mr. Sohl has applied for a permit for incidental take of the MHJB throughout the entire 0.0625-acre impact area at his project site. Therefore, he does not anticipate that any additional changed circumstances will occur during the 5-year life of the incidental take permit in the area covered by this HCP that will result in unanticipated levels of take of the covered species.

Additional changed circumstances; e.g., wildfire, erosion, extended drought, earthquake or other natural disaster, may occur at the off-site conservation bank. However, the short duration of the permit (i.e., five years) lessens the likelihood that one of these phenomena may cause substantial changes to the off-site conservation bank during the permit period. Furthermore, some types of changed circumstances, for example a wildfire, may actually enhance habitat values in the long term because Ponderosa Pine and other members of the indigenous sandhill plant communities are adapted to, and regenerate well after such fires. Winter storms or earthquakes could cause landslide or erosion problems in habitat areas that would require subsequent repairs, such as slope stabilization, repair of fencing, and revegetation. A portion of the fees paid by the permittee for the MHJB conservation credits include contingency funds to cover the costs of unexpected repairs, or habitat restoration that may be required as a result of any natural disasters occurring at the off-site conservation bank.

## 6.3 Unforeseen Circumstances

Unforeseen circumstances are defined in 50 CFR 17.3 as changes in circumstances that affect a species or geographic area covered by the HCP that could not reasonably be anticipated by plan developers and the Service at the time of the HCP's negotiation and development and that result in a substantial and adverse change in status of the covered species. The purpose of the No Surprises Rule is to provide assurances to non-Federal landowners participating in habitat conservation planning under the Act that no additional land restrictions or financial compensation will be required for species adequately covered by a properly implemented HCP, in light of unforeseen circumstances, without the consent of the permittee.

In case of an unforeseen event, the permittee shall immediately notify the Service staff who have functioned as the principal contacts for the proposed action. In determining whether such an event constitutes an unforeseen circumstance, the Service shall consider, but not be limited to, the following factors: size of the current range of the affected species; percentage of range adversely affected by the HCP; percentage of range conserved by the HCP; ecological significance of that portion of the range affected by the HCP; level of knowledge about the affected species and the degree of specificity of the species' conservation program under the HCP; and whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of the affected species in the wild.

If the Service determines that additional conservation and mitigation measures are necessary to respond to the unforeseen circumstances where the HCP is being properly implemented, the additional measures required of the permittee must be as close as possible to the terms of the original HCP and must be limited to modifications within any conserved habitat area or to adjustments within lands or waters that already set-aside in the HCP's operating conservation program. Additional conservation and mitigation measures shall involve the commitment of additional land or financial compensation or restrictions on the use of land or other natural resources otherwise available for development or use under original terms of the HCP only with the consent of the permittee.

Thus, in the event that unforeseen circumstances adversely affecting the MHJB occur during the term of the requested incidental take permit, Mr. Sohl would not be required to provide additional financial mitigation or implement additional land use restrictions above those measures specified in the HCP, provided that the HCP is being properly implemented. This HCP expressly incorporates by reference the permit assurances set forth in the revised (Service 2004) Habitat Conservation Plan Assurances ("No Surprises") Rule (50 CFR Part 17).

## 6.4 Amendments

### 6.4.1 Minor Amendments

Minor amendments are changes that do not affect the scope of the HCP's impact and conservation strategy, change amount of take, add new species, and change significantly the boundaries of the HCP. Examples of minor amendments include correction of spelling errors or minor corrections in boundary descriptions. The minor amendment process is accomplished through an exchange of letters between the permit holder and the Service's Ventura Field Office.

### 6.4.2 Major Amendments

Major amendments to the HCP and permit are changes that do affect the scope of the HCP and conservation strategy, increase the amount of take, add new species, and change significantly the boundaries of the HCP. Major amendments often require amendments to the

Service's decision documents, including the NEPA document, the biological opinion, and findings and recommendations document. Major amendments will often require additional public review and comment.

## 6.5 Suspension/Revocation

The Service may suspend or revoke their respective permits if Mr. Sohl fails to implement the HCP in accordance with the terms and conditions of the permits or if suspension or revocation is otherwise required by law. Suspension or revocation of the Section 10(a)(1)(B) permit, in whole or in part, by the Service shall be in accordance with 50 CFR 13.27-29, 17.32 (b)(8).

## 6.6 Permit Renewal

The applicant requests a permit duration of five (5) years. This period of time should ensure that the covered activities associated with the proposed project can be completed prior to permit expiration.

Upon expiration, the Section 10(a)(1)(B) permit may be renewed without the issuance of a new permit, provided that the permit is renewable, and that biological circumstances and other pertinent factors affecting covered species are not significantly different than those described in the original HCP. To renew the permit, Mr. Sohl shall submit to the Service, in writing:

- a request to renew the permit, along with reference to the original permit number;
- certification that all statements and information provided in the original HCP and permit application, together with any approved HCP amendments, are still true and correct, and inclusion of a list of changes;
- a description of any take that has occurred under the existing permit; and
- a description of any portions of the project still to be completed, if applicable, or what activities under the original permit the renewal is intended to cover.

If the Service concurs with the information provided in the request, it shall renew the permit consistent with permit renewal procedures required by Federal regulation (50 CFR 13.22). If Mr. Sohl files a renewal request and the request is on file with the issuing Service office at least 30 days prior to the permits expiration date, the permit shall remain valid while the renewal is being processed, provided the existing permit is renewable. However, Mr. Sohl may not take listed species beyond the quantity authorized by the original permit. If Mr. Sohl fails to file a renewal request within 30 days prior to permit expiration, the permit shall become invalid upon expiration. Mr. Sohl and the conservation bank operator must have complied with all annual reporting requirements to qualify for a permit renewal.

## 6.7 Permit Transfer

In the event of a sale or transfer of ownership of the property during the life of the permit, the following will be submitted to the Service by the new owner(s): a new permit application, permit fee, a receipt for conservation credits purchased from the Zayante Sandhills Conservation Bank, and written documentation providing assurances pursuant to 50 CFR 13.25 (b)(2) that the new owner(s) will provide sufficient funding for the HCP and will implement the relevant terms and conditions of the incidental take permit, including any outstanding minimization and mitigation. The new owner(s) will commit to all requirements regarding the take authorization and mitigation obligations of this HCP unless otherwise specified in writing and agreed to in advance by the Service.

Section 7
# Funding

## 7.1 Costs of HCP Implementation

Costs to implement the conservation strategy described in this HCP are listed in Table 4.

**Table 4. Estimated costs to implement Mr. Sohl's conservation program.**

| Item or Activity | Conservation Strategy | Units | | Costs ($) | |
|---|---|---|---|---|---|
| | | Type | Number | Per Unit | Total |
| **Minimization and Mitigation Measures** | | | | | |
| Minimization Measure 5.2.1.2 | Install construction fencing | Construction fencing | 800 ft. | | 0.00 |
| | Install signs | signs | 8 signs | | 0.00 |
| | | | | | |
| Minimization Measure 5.2.1.3 | Cover exposed soils | Geojute – 4' x 147' roll | 6 | | 0.00 |
| Minimization Measure 5.2.1.5 | Dust control | Spray water with garden hose | As needed | | 0.00 |
| Minimization Measure 5.2.1.6 | Outdoor lights | Non-attracting insect light bulbs | 4 | 10.00 | 40.00 |
| Mitigation Measure 5.3.2.1 | Compensation | Conservation credits | 2,720 | 8.00 | 21,760.00 |
| Mitigation Measure 5.2.2.3 | Weed control | Non-chemical | 10 | 50 | 500.00 |
| ***Subtotal*** | | | | | ***$22,300.00*** |
| | | | | | |

| Table 4. Estimated costs to implement Mr. Sohl's conservation program. | | | | | |
|---|---|---|---|---|---|
| Item or Activity | Conservation Strategy | Units | | Costs ($) | |
| | | Type | Number | Per Unit | Total |
| **Monitoring** | | | | | |
| Compliance monitoring | Service-approved biologist to conduct compliance monitoring | Labor/hrs. | 24 | 100 | 2,400.00 |
| Effects monitoring | Service-approved biologist to conduct effects monitoring | Labor/hrs. | 24 | 100 | 2,400.00 |
| ***Subtotal*** | | | | | ***$4,800.00*** |
| | | | | | |
| Reporting | Service-approved biologist to complete annual project reports | Labor/hrs./ | 40 | 100 | 4,000.00 |
| ***Subtotal*** | | | | | ***$4,000.00*** |
| | | | | | |
| ***Grand Total*** | | | | | ***$31,100.00*** |

**Note**: Although construction fencing, signs, and geojute are listed in Table 4 as minimization measures, Mr. Sohl has indicated that he already possesses these items. Similarly, water for dust control will come from the new well, so no cost for this minimization measure is provided.

## 7.2 Funding Source

The applicant, Mr. Steven C. Sohl, will pay for all costs associated with implementing this HCP's conservation strategies, including minimization measures, conservation credits, plus effects and compliance monitoring as itemized in Table 4. He will also provide the labor for the minimization measures. In recognition of the fact that the costs for these activities in Table 4 are estimates, the actual incurred costs may be less or more than these estimates. However, if the actual costs for any of the aforementioned activities are higher than estimated in Table 4, Mr. Sohl agrees to pay the actual costs.

## 7.3 Funding Mechanism and Management

Mr. Sohl will provide all funds needed to implement the conservation program measures

itemized in Table 4. Mr. Sohl, the permit applicant, understands that failure to provide adequate funding and consequent failure to implement the terms of this HCP in full could result in temporary permit suspension or permit revocation.

To demonstrate his ability to cover these costs, Mr. Sohl will provide a bank statement or letter of credit to the Service. A copy of the sales receipt for the purchase of conservation credits will be provided to the Service prior to permit issuance and a copy will be included in this HCP (Appendix A).

# Section 8
# Alternatives

## 8.1 Summary

Section 10(a)(2)(A)(iii) of the Endangered Species Act of 1973, as amended, [and 50 CFR 17.22(b)(1)(iii) and 17.32(b)(1)(iii)] requires that alternatives to the taking of species be considered and reasons why such alternatives are not implemented be discussed. Three alternatives for the proposed project are discussed.

## 8.2 Alternative #1: No Action

Under the No Action Alternative, construction of the new home at Mr. Sohl's property would not occur and he would not request an incidental take permit, and an incidental take permit would not be issued by the Service. His property would remain vacant.

Furthermore, the conservation measures described in this HCP would not be implemented and the purchase of 2,720 conservation credits for the MHJB would not occur. This would reduce funding for preservation, management, and monitoring of the MHJB and its high quality sandhills habitat at the Ben Lomond Sandhills Preserve. Thus the No-Action Alternative is concluded to be of lesser conservation value to the covered species than the proposed project and accompanying HCP and has been rejected.

## 8.3 Alternative #2: Redesigned Project (Reduced Take)

Under this alternative, the impact area of the construction project would be reduced at the project site, which presumably would result in reduced take of the MHJB. Frauke Zajac has already designed this project to minimize impacts to the MHJB and its habitat. Thus, the Redesigned Project Alternative is not practical and no reduced take can actually be realized. The proposed project provides greater habitat conservation benefits than the Redesigned Project Alternative. For these reasons the Redesigned Project Alternative has been rejected.

## 8.4 Alternative #3: Proposed Action

Under the Proposed Action Alternative, Mr. Sohl will complete the proposed construction of a new, single-family home as described in section 2. This alternative would require the issuance of a section 10(a)(1)(B) permit to allow construction of the project. The project would cause the loss of approximately 2,720 $ft^2$ (0.0625 acre) of habitat for the MHJB

and mortality of any beetles living within this impact area. However, the conservation measures proposed in this HCP would result in greater conservation value for the MHJB than either the No Action or Redesigned Project alternatives, while best meeting the needs of the applicant. Therefore, the Proposed Action is the preferred alternative.

# Section 9
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# Attachment 3

## USFWS Biological Opinion

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
08EVEN00-2014-F-0558

January 6, 2015

Memorandum

To: Field Supervisor, Ventura Fish and Wildlife Office, Ventura, California

From: Karl Root
Deputy Field Supervisor, Ventura Fish and Wildlife Office, Ventura, California

Subject: Intra-Service Biological Opinion for the Issuance of an Incidental Take Permit for the Mount Hermon June Beetle associated with the Construction of a Single Family Residence in Santa Cruz County, California (8-8-14-FW-50)

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion regarding the proposed issuance of an incidental take permit (ITP) to Steven Sohl (Applicant), pursuant to section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act). This ITP would authorize incidental take of the federally endangered Mount Hermon June beetle (*Polyphylla barbata*) in association with development of Assessor's Parcel Number 063-061-28 in Bonny Doon, an unincorporated community of Santa Cruz County, California. Issuance of the ITP is supported by a low-effect habitat conservation plan (HCP; Arnold 2014) prepared for the project. At issue are the effects that the Service's issuance of the subject ITP would have on the Mount Hermon June beetle. The Service proposes to issue the ITP to Mr. Sohl for a duration of 5 years.

We prepared this biological opinion using the HCP and information from our files. We can make available a complete record of this consultation at the Ventura Fish and Wildlife Office.

The Service has established a special category of HCP, called a low-effect HCP, for projects with relatively minor or negligible impacts. Conservation activities proposed for the HCP would result in the perpetual conservation and/or enhancement of high quality breeding and dispersal habitat for the Mount Hermon June beetle.

## BIOLOGICAL OPINION

### DESCRIPTION OF THE PROPOSED ACTION

The Applicant proposes construction of a two-story single-family residence, garage, associated landscaping, and infrastructure in a previously disturbed portion of a 14.9-acre parcel in Bonny Doon, in central Santa Cruz County. The Applicant would install a septic system, two 5,000-

gallon water tanks, and a new well adjacent to an existing gravel driveway. Implementation of the project would result in impacts to Mount Hermon June beetles potentially living within 0.0625 acre of habitat that would be impacted during construction.

Conservation Measures

1. Perpetual Habitat Protection

The Applicant will contribute funding to the long-term protection and management of high-quality sandhills habitat. Specifically, the Applicant will purchase conservation credits at the Ben Lomond Sandhills Preserve of the Ben Lomond Sandhills Preserve, which is a Service-approved conservation bank that has secured areas of undeveloped, high-quality sandhills habitat.

The Applicant will secure conservation credits for the Mount Hermon June beetle at a ratio of 1:1 in terms of area of disturbance of Zayante soils to acreage of credits. In other words, because the project would disturb 0.0625 acre of Zayante soils, the Applicant will purchase 0.0625 acre of conservation credits for the Mount Hermon June beetle at the Ben Lomond Sandhills Preserve.

2. Avoidance / Protective Measures

In addition to the perpetual habitat protection described above, the Applicant will implement avoidance and protective measures on their property that are consistent with the protection of the Mount Hermon June beetle. Successful implementation of the following measures conducted prior to, concurrent with, and following construction of the project will enable the HCP to achieve its biological goals.

a. Prior to construction, a Service-approved biologist will conduct construction crew training, in which individuals involved in construction will be provided a brief presentation about the biology of the Mount Hermon June beetle and shown pictures of the species during its various life stages in order to aid in its identification during construction. Construction personnel will be directed to cease work immediately and contact the Service-approved biologist to capture and relocate Mount Hermon June beetles, should one be observed within the project site. The biologist will conduct regular inspections of the project site during construction to salvage and relocate individuals, and to ensure that the requirements of the HCP are being met.

b. If ground disturbing activities are conducted during the flight season of the Mount Hermon June beetle (May 15 to August 15), black plastic will be placed over exposed soil by 7:00 pm each night to prevent dispersing males from burrowing and being impacted by subsequent soil disturbance.

c. Any potential larva or adult Mount Hermon June beetle encountered in an area that would be impacted by the proposed project will be relocated to intact habitat outside the impact area and re-buried at the approximate depth at which it was unearthed. If the Mount Hermon June beetle is found on the soil surface, then it will be relocated to a portion of the project site outside of the impact area and left on the soil surface in a location protected by vegetation.

d. Night lights installed to illuminate new structures will feature low-pressure sodium vapor bulbs that emit wavelengths of light that are not attractant to nocturnal insects.

e. The permit holder will allow representatives from the Service access to the HCP plan area to monitor compliance with the terms and conditions of the HCP.

f. Landscaping elements that can degrade Mount Hermon June beetle habitat will not be used in this project. This includes elements such as turf grass, dense ground cover, weed matting, aggregate, and mulch.

## ANALYTICAL FRAMEWORK FOR THE JEOPARDY DETERMINATION

Section 7(a)(2) of the Endangered Species Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the range-wide condition of the Mount Hermon June beetle, the factors responsible for those conditions, and their survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the Mount Hermon June beetle in the action area, the factors responsible for those conditions, and the relationship of the action area to the survival and recovery of the species; (3) the Effects of the Action, which determine the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the Mount Hermon June beetle; and (4) the Cumulative Effects, which evaluate the effects of future, non-Federal activities in the action area on the Mount Hermon June beetle.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the current status of the Mount Hermon June beetle, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the Mount Hermon June beetle in the wild.

STATUS OF THE SPECIES

Mount Hermon June beetle

The Mount Hermon June beetle was federally listed as endangered in 1997 (62 Federal Register (FR) 3616). A recovery plan has been published (Service 1998). Critical habitat has not been designated for this species. Unless otherwise noted, information in this account was obtained from the recovery plan, the final listing rule (62 FR 3616), and Arnold (2004).

Adult males of the Mount Hermon June beetle measure about 0.75 inch in length; females are slightly longer, but exhibit a smaller antennal club than males. The adult male has a black head and dark brown elytra (leathery forewings) that are covered with brown hairs. The elytra have stripes that are broken and irregular, rather than continuous and well-defined as in related species of June beetles. Larvae are grub-shaped and vary in color from cream to pale yellow for the body segments and darker brown for the head.

The Mount Hermon June beetle is univoltine (i.e., having only one generation per year). As its common name suggests, adult emergence and seasonal activity often begins in June. Historical collection records (Young 1988; BUGGY Database 2003) indicate that adult males have been observed in the months of June, July, August, and September. Season-long trapping studies by Arnold (2003a and 2003b) indicate that the Mount Hermon June beetle's flight season varies but can begin as early as mid-May and continue through about mid-August; the total season is about 80 to 92 days in length. Considerable year-to-year variation exists in the start, peak, and end of the species' flight season, with differences of 2 to 3 weeks observed over a 5-year period (Arnold 1999a, 1999b, 2000, 2001, 2003a, and 2003b).

Adult Mount Hermon June beetles are crepuscular, being active between about 7:00 pm and 10:00 pm, with peak activity usually between 8:45 and 9:30 pm. At dusk, adult males emerge from the sandy soils. Once they fly to the tops of the grasses and other herbaceous vegetation, they actively fly low to the ground in search of females, which emerge from the soil but remain on the surface of the ground. Mount Hermon June beetle flight activity may be affected by variations in temperature and wind. Arnold (1999a, 1999b, 2000, 2001, 2003a, and 2003b) found that flight activity generally was minimal below 57 degrees Fahrenheit, or when wind speed exceeded 9 miles per hour. The flightless condition of female Mount Hermon June beetles may be an evolutionary adaptation to avoid being displaced from suitable habitat by the persistent winds that often characterize sand-based habitats.

Based on behavior observed in the field, a female Mount Hermon June beetle presumably emits an as-yet-unidentified pheromone that enables the males to find her. Swarms of male Mount Hermon June beetles, with their lamellate antennal branches (where the pheromone receptors are likely located) extended apart have frequently been observed flying and landing around mating pairs on the ground. Male Mount Hermon June beetles have also been observed on the soil surface where females subsequently emerged, which suggests that the female may emit the

pheromone before emerging from the soil. To demonstrate that a pheromone is used for mate location, Arnold (unpublished) moved calling females and observed males following and swarming around the female, even while in transit from one subsite to another subsite within a particular study site. Even after placing the female in a new location on the ground, male Mount Hermon June beetles landed on Arnold's hand that was used to transport the calling female. Copulation is fairly brief, approximately 5 minutes in duration, and occurs on the sandy soil. Upon the conclusion of copulation, female Mount Hermon June beetles burrow into the sand.

Lifespan data from two brief capture-recapture studies, extending 5 and 9 nights, suggest that most adult males live no longer than 1 week (Arnold 2000 and 2001). A handful of individuals were observed to live as long as 5 to 8 days between capture and recapture events, but the average estimated lifespan for most individuals was no more than 1 or 2 days. These values may slightly underestimate the actual lifespan of the Mount Hermon June beetle, as the capture-recapture studies were only 5 and 9 nights in duration; nonetheless, the capture histories of recaptured individuals indicate that the lifespan of adult males is brief. At this time there are no estimates of lifespan for adult female Mount Hermon June beetles.

Dispersal data from the same capture-recapture studies indicate that most adult males are quite sedentary, with home ranges of no more than a few acres. At Quail Hollow Quarry, male Mount Hermon June beetles moved between 121 to 923 feet, with an average dispersal distance of 305 feet (Arnold 2000). Only 6 of 72 individual Mount Hermon June beetles that were recaptured moved more than 400 feet. Similar trends in dispersal frequency and distances were observed at the Hanson Quarry and Freeman property (Arnold 2001). Given the brief crepuscular flight period and short lifespan of males, the limited dispersal of male Mount Hermon June beetles is not surprising. Dispersal of females may be limited to burrowing through the sandy soils as they are apparently flightless.

The Mount Hermon June beetle is restricted to Zayante sands soils (Bowman and Estrada 1980) derived from ancient sand deposits, known as the Santa Margarita formation (Marangio and Morgan 1987), which are found in the Scotts Valley-Mount Hermon-Felton-Ben Lomond area of the Santa Cruz Mountains. Initial collection records and observations suggested that the Mount Hermon June beetle occurred only in Mount Hermon; however, subsequent surveys have determined that the species is more widely distributed in the Zayante sandhills region of Santa Cruz County. Surveys and observations in 2008 identified Mount Hermon June beetles in the Bonny Doon area west of the Bonny Doon Ecological Reserve and in the Redwood Glen area, off Bean Creek Road in Scotts Valley. Subsequent observations in the Bonny Doon area have confirmed this population (Arnold pers. comm. 2008), while no subsequent observations in the Redwood Glen/Glenwood area have yet been made. Between 1990 and 2003, Arnold (2004) visited over 200 individual properties in the Zayante sandhills to assess habitat conditions or to perform presence-absence surveys for the Mount Hermon June beetle and the federally endangered Zayante band-winged grasshopper. As a result of these field surveys, the Mount Hermon June beetle is now known from approximately 150 locations in the Zayante sandhills.

The results of Arnold's field surveys indicate that the Mount Hermon June beetle's preferred habitats are silverleaf manzanita (*Arctostaphylos silvicola*) chaparral with ponderosa pine (*Pinus ponderosa*), ponderosa pine forest, dense sand parkland, and open sand parkland (also referred to as ponderosa pine parkland or sandhills parkland). In addition, adult Mount Hermon June beetles have been found in mixed deciduous-evergreen forest when this plant community occurs adjacent to one or more of the aforementioned plant communities and when ponderosa pine is present. Adult Mount Hermon June beetles have also been found in disturbed sandy areas where remnants of these habitats still occur. A few locations where the Mount Hermon June beetle was not observed during Arnold's surveys are characterized by more indurate (i.e., with a hardened surface layer) Zayante sand formations. These conditions may not be favorable for adults and larvae of the Mount Hermon June beetle that burrow into the sand. Other outlier sand deposits may be too far from the nearest Mount Hermon June beetle locations (i.e., too far for a flightless female to disperse). These deposits may be separated from occupied areas by unsuitable habitat or they may lack the appropriate larval food plant(s).

Specific life history information for the Mount Hermon June beetle is limited, but can be inferred from related species (Buckhorn and Orr 1961; Downes and Andison 1941; Kard and Hain 1990; Lilly and Shorthouse 1971; Van Steenwyk and Rough 1989). Presumably the entire life cycle (i.e., egg, larva, pupa, and adult) takes 2 to 3 years to complete. The majority of the Mount Hermon June beetle's life cycle is spent as a subterranean larval stage that feeds on plant roots.

Larval food plants of other June beetle species in the genus *Polyphylla* include a number of conifers, deciduous trees, shrubs, herbs, and grasses (Downes and Andison 1941; Furniss and Carolin 1977; Van Steenwyk and Rough 1989; Young 1988). O'Malley and Taylor (2003) observed larvae, presumed to be of the Mount Hermon June beetle, in the ground beneath ferns and a ponderosa pine at the Quail Hollow Quarry. Arnold (unpublished) has monitored various excavation and vegetation removal projects in the sandhills and observed larvae, presumed to be of the Mount Hermon June beetle, in association with roots of ponderosa pines. Although the Mount Hermon June beetle's larval food plant(s) has not been confirmed by rearing, and it is unknown whether the larvae are monophagous (dependent on a single food source) or polyphagous (able to utilize multiple food sources), distributional studies by Arnold (unpublished) suggest that ponderosa pine is at least one of the food plants utilized by Mount Hermon June beetle larvae.

Presence-absence surveys have been conducted at approximately 200 properties in the sandhills, and Mount Hermon June beetles have been found primarily at sites where ponderosa pine are present or within a few hundred feet. Arnold has observed numerous calling females of the Mount Hermon June beetle, all within close proximity to Ponderosa pines. Male and female Mount Hermon June beetles have been observed at a few sites where all above-ground vegetation except ponderosa pine or coast live oak (*Quercus agrifolia*) had been removed. Similarly, male and female Mount Hermon June beetles have been observed emerging from the soil at properties where ponderosa pine was the only remaining native plant and in mixed deciduous-evergreen forest with widely scattered Ponderosa pines.

While Polyphylla larvae are generally presumed to feed on grass and pine roots, analysis of Mount Hermon June beetle frass (fecal pellets) has documented the remains of angiosperms (flowering plants), pteridophyta (ferns and allies), and fungi in the digestive tracts of larvae (Hill 2006). In addition, Hill (2006) confirmed a close association between locations where the Mount Hermon June beetle occurs and various native sandhills plant species, including Ponderosa pine and the Ben Lomond spineflower.

The Mount Hermon June beetle was originally listed as an endangered species because of historical loss of habitat and several actual or potential future actions that could further reduce the amount of suitable habitat that supports the species. Throughout most of its range, the primary threats to the species are loss of habitat from sand mining and urbanization, and habitat degradation due to invasive plants and unnatural succession. In addition, land uses such as agricultural conversion and recreation (e.g., hiking, horseback riding, mountain biking, and off-road vehicle use) have resulted in loss or degradation of habitat. Herbicide or insecticide use and overcollection by insect collectors are also considered potential threats to the Mount Hermon June beetle and/or its habitat.

The recovery plan (Service 1998) described three actions necessary to downlist the Mount Hermon June beetle. These actions include: a) protection of the 28 known (as of 1998) collection sites (consisting of 7 discrete areas) of sand parkland habitat through fee-title acquisition, conservation easements, or habitat conservation plans; b) development and implementation of a management plan for the Quail Hollow Ranch County Park; and c) ensuring stable or increasing populations of the Mount Hermon June beetle. The recovery plan states that when the downlisting criteria have been met the species can be considered for delisting if: threats are reduced or eliminated so that populations are capable of persisting without significant human intervention or perpetual endowments are secured for management necessary to maintain the continued existence of the species (Service 1998).

## ENVIRONMENTAL BASELINE

The implementing regulations for section 7(a)(2) of the Act define the "action area" as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 Code of Federal Regulations 402.02). For the purposes of this biological opinion, we consider the action area to include all areas where people and equipment would be working or staging within the subject parcel (063-061-28), all access routes to the area, and areas where Mount Hermon June beetles may be relocated. Section 2.1 (Project Description/Activities Covered by Permit) of the HCP thoroughly describes all areas of potential take that are referenced above.

### Status of the Species within the Action Area

Dr. Jodi McGraw (2009) conducted a one-night, presence absence survey for the Mount Hermon June beetle at the subject property in June 2008 and observed a single individual. Based on the

presence of Zayante sands at the project site and the known occurrence at the site the Mount Hermon June beetle is assumed to be present throughout the subject parcel.

Recovery

Although the action area is not specifically cited in the recovery plan (Service (1998) as serving a role in the Mount Hermon June beetle's recovery, the site does contain suitable habitat for the species. According to the recovery plan, approximately 3,608 acres of Zayante sandhills habitat remains in a natural state, indicating the importance of the conservation of all remaining suitable habitat. The proposed HCP would result in the conservation of the undeveloped portion of the property, constituting over 14 acres of conservation.

The recovery plan outlines three downlisting criteria that are specific to the Mount Hermon June beetle:

1) The 28 currently known sites have been secured through fee-title acquisition, conservation easements, or HCP's including HCP's for Graniterock Quarry, Kaiser Sand and Gravel Felton Plan, County of Santa Cruz, and the City of Scotts Valley. Conservation easements should be negotiated with private landowners not included in HCP's for high priority and medium priority parcels in sandhills habitat.
2) Management plan for Quail Hollow Ranch County Park has been developed and is being implemented.
3) Population numbers are stable or increasing.

Delisting criterion: Definitive delisting criteria will be developed for the Mount Hermon June beetle as more information becomes available on biology, range, and distribution through research and surveys. When the downlisting criteria have been met the species can be considered for delisting if: threats are reduced or eliminated so that populations are capable of persisting without significant human intervention or perpetual endowments are secured for management necessary to maintain the continued existence of the species.

EFFECTS OF THE ACTION

Implementation of the project would result in the permanent loss of 0.0443 acre of Mount Hermon June beetle habitat. Although soil and vegetation alterations on the subject parcel have resulted in degraded habitat for the Mount Hermon June beetle, suitable habitat persists for the species. Temporary habitat loss of 0.0182 acre, resulting from soil disturbance, would occur for the Mount Hermon June beetle. The areas where temporary habitat loss would occur are currently degraded due to soil and vegetation alterations; however, like the area where permanent habitat loss would occur, this area still supports habitat for the Mount Hermon June beetle. Following construction activities, areas of temporary habitat loss would likely be re-colonized by Mount Hermon June beetles at this project site.

Transient adult Mount Hermon June beetles may be attracted to exposed, sandy soils in the proposed project area during the species' flight season (evening hours between approximately May 15 and August 15), and could be susceptible to crushing or further disturbance by workers conducting project-related activities. This effect will be reduced by conducting the ground-disturbing activities between August 15 and May 15 to the greatest extent feasible. If project activities must be conducted between May 15 and August 15, exposed disturbed soils will be covered with black plastic each evening at 7:00 pm starting at the beginning of the flight season, regardless of when project activities commence within the flight season. This measure will ensure that project activities avoid or minimize adverse impacts to Mount Hermon June beetles that may disperse through the project area.

Adult Mount Hermon June beetles are distracted by light during the night, which can disrupt breeding activity. Outdoor lights installed to illuminate the pathways and parking areas created by this project will feature low-pressure sodium vapor bulbs that emit wavelengths of light that are not attractant to nocturnal insects.

Adult Mount Hermon June beetles emerge from under the soil surface to attract and locate mates. Turf grass, dense ground cover plants (e.g., ivy), weed matting, aggregate, and mulch can degrade habitat for the Mount Hermon June beetle by inhibiting their ability to burrow into the soil or emerge from it. Project activities will avoid the use of turf grass, aggregate, mulch, and similar landscaping elements that could degrade habitat for the Mount Hermon June beetle. This measure will minimize potential long-term impacts to Mount Hermon June beetles by limiting these landscaping elements in areas where adults may emerge from beneath the soil surface.

Uninformed workers may intentionally or unintentionally injure, harm, or kill Mount Hermon June beetles. The potential for these effects will be reduced by informing workers of the presence and protected status of the species and the measures that are to be implemented to protect them during project activities.

Direct injury or mortality of Mount Hermon June beetles during construction would also be reduced by the Applicant's proposal to cease work and relocate the species, if any are found, during construction activities. Mount Hermon June beetles could be injured or killed if they are improperly handled or contained during capture and relocation efforts. Relocated individuals are susceptible to increased risk of predation, increased competition, or other factors associated with relocation to an unfamiliar environment. Such effects will be reduced or prevented with the use of a Service-approved biologist to capture and move the species to suitable habitat.

The proposed HCP is not anticipated to substantially affect the recovery of the Mount Hermon June beetle. Implementation of the HCP would result in the loss 0.0443 acre of suitable habitat and the loss of any individuals utilizing the action area at the time of construction. However, the HCP would also result in the permanent conservation of over 14 acres of suitable habitat that would remain undeveloped on the subject parcel.

The proposed project would affect a small number of Mount Hermon June beetles, if any occur within the work areas. Because of the small size of the work areas and the fact that the Applicant will implement the protective measures described in the project description section of this document, we anticipate that few, if any, Mount Hermon June beetles are likely to be killed or injured during this work.

## CUMMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. We are not aware of any other non-Federal actions that are reasonably certain to occur in the action area that have not been addressed in the HCP or this biological opinion.

## CONCLUSION

After reviewing the current status of the Mount Hermon June beetle; the environmental baseline for the action area; the effects of the proposed action; and the cumulative effects; it is our biological opinion that the proposed construction activities, as proposed, are not likely to jeopardize the continued existence of the Mount Hermon June beetle. We have reached this conclusion for the following reasons:

1. The proposed action would permanently modify 0.0443 acre and temporarily disturb 0.0182 acre of degraded habitat for the Mount Hermon June beetle, which cumulatively represents a fraction of a percent of available suitable habitat for the species throughout its range;

2. Few Mount Hermon June beetles are likely to be killed or injured during construction activities due to the proposed measures that would minimize potential adverse effects of the proposed activities on the species;

3. The Applicant will be preserving Mount Hermon June beetle habitat in perpetuity through the purchase of conservation credits in the Ben Lomond Sandhills Preserve; and

4. The proposed HCP would result in a new benefit to the Mount Hermon June beetle. Although the project would cause a loss of 0.0443 acre of habitat resulting in temporary negative effects for the species, 0.0625 acre of prime habitat would be permanently conserved at the Ben Lomond Sandhills Preserve; furthermore, over 14 acres of the 14.9-acre property would remain intact Zayante sandhills habitat.

## INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of the incidental take statement contained in a biological opinion.

The Service's evaluation of the effects of the proposed action includes consideration of the measures to minimize the adverse effects of the proposed action on the Mount Hermon June beetle that were developed by the Applicant and repeated in the HCP. Any subsequent changes in these measures proposed by the Applicant may constitute a modification of the proposed actions and may warrant re-initiation of formal consultation, as specified at 50 CFR 402.16.

All Mount Hermon June beetles within the action area may be subject to take in the form of injury or mortality during the proposed construction activities; however, the HCP contains measures to minimize and avoid take so we anticipate that not all individuals present would be taken. We cannot determine the precise number of Mount Hermon June beetles that may killed or injured as a result of the proposed project; however, it is likely to be very low due to the degraded nature of the habitat and the implementation of proposed avoidance and minimization measures.

While we are unable to reasonably anticipate the actual number of Mount Hermon June beetles that would be taken by the project, and any beetles taken would be difficult to observe/document due to their small body size and cryptic coloration, we must provide a threshold at which consultation would have to be reinitiated. The Environmental Baseline and Effects of the Action sections of this biological opinion indicate that adverse effects to Mount Hermon June would likely be low given the habitat conditions in the action area, the nature of the proposed activities, and the proposed measures to minimize and avoid such effects.

Therefore, if direct or indirect adverse impacts occur to covered species outside of the action area, as referenced in the Environmental Baseline section of this biological opinion and thoroughly described in the HCP, the Applicant must contact our office immediately to reinitiate formal consultation. As such, project activities that are likely to cause additional take beyond

that anticipated in this biological opinion should cease during this review period because the exemption provided under section 7(o)(2) would lapse and any additional take would not be exempt from the section 9 prohibitions.

This biological opinion does not exempt from the prohibitions of section 9 of the Act any form of take that is not incidental to the proposed construction project in accordance with the project description of the HCP. Take of Mount Hermon June beetles is only exempted by this biological opinion in the action area defined in the Environmental Baseline section of this biological opinion.

## REASONABLE AND PRUDENT MEASURES AND TERMS AND CONDITIONS

The proposed HCP and its associated documents identify anticipated impacts to affected species likely to result from the proposed action and the measures that are necessary to minimize those impacts. All conservation measures described in the proposed HCP, together with the terms and conditions described in the section 10(a)(1)(B) permit issued with respect to the proposed HCP, are hereby incorporated by reference as reasonable and prudent measures and terms and conditions within this Incidental Take Statement pursuant to 50 CFR 402.14 (i). As described in the terms and conditions, the Permittee must provide the names, addresses, phone numbers, and qualifications of the requested individuals to work with the Mount Hermon June beetle to the Ventura Fish and Wildlife Office at least 30 days prior to the start of the requested activities. Such terms and conditions are non-discretionary and must be undertaken for the exemptions under section 10(a)(1)(B) and section 7(o)(2) to apply. If the Applicant fails to adhere to these terms and conditions, protective coverage of the section 10(a)(1)(B) permit and section 7(o)(2) may lapse.

## REPORTING REQUIREMENTS

The Applicant will be required to send annual reports to the Service following the requirements detailed in the HCP. A more detailed description of the reporting requirements is found in section 5.5 of the HCP.

## DISPOSITION OF DEAD OR INJURED SPECIMENS

Upon locating a dead or injured Mount Hermon June beetle initial notification must be made to our office by telephone, (805) 644-1766) within 3 working days of the finding. The report must include the date, time, location of the carcass, a photograph, cause of death, if known, and any other pertinent information.

Care must be taken in handling dead specimens to preserve biological material in the best possible state for later analysis. Should any injured Mount Hermon June beetles survive, the Applicant must contact the Service regarding its final disposition. Any remains of intact Mount Hermon June beetles should be placed with the California Academy of Sciences Entomology

Department (Contact: David Kavanaugh, California Academy of Sciences Entomology Department, 875 Howard Street, San Francisco, California, 94103 (415) 321-8310). Arrangements regarding proper disposition of potential museum specimens must be made with the California Academy of Sciences by the Service prior to the initiation of any project-related activities.

## REINITIATION NOTICE

This concludes formal consultation on the issuance of an Incidental Take Permit to implement the HCP for the project proposed by Mr. Sohl. As provided in 50 CFR 402.16, re-initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the agency action that may adversely affect listed species or critical habitat in a manner or to an extent not considered in this biological opinion; 3) the agency action is subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in this biological opinion; or 4) a new species is listed or critical habitat designated that may be affected by this action (50 CFR 402.16). In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

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# Attachment 4

## USFWS Incidental Take Permit

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
08EVEN00-2014-CPA-0208

January 12, 2015

Steven C. Sohl
1101 Martin Road
Santa Cruz, California 95060

Subject: Low Effect Habitat Conservation Plan and Incidental Take Permit for Assessor Parcel Number 063-061-28, Bonny Doon, Santa Cruz County, California

Dear Mr. Sohl:

We have reviewed the incidental take permit application and habitat conservation plan (HCP) submitted for the subject parcel located adjacent to 1055 Martin Road in the community of Bonny Doon. You have requested a permit term of 5 years to authorize take of the Mount Hermon June beetle (*Polyphylla barbata*) that is likely to result from the construction of a single-family residence and associated infrastructure on this 14.94-acre parcel. The HCP includes minimization and mitigation measures that you commit to fund and implement. Minimization measures include the preparation and delivery of an environmental awareness training program for all personnel working onsite during site preparation and construction activities, retention of a Service-approved biologist to conduct pre-construction and construction monitoring surveys, capture and moving of all live Mount Hermon June beetles out of harm's way, and the use of low-pressure sodium vapor bulbs on the outside of new structures. Mitigation for unavoidable take is the purchase of 0.0625 acre of conservation credits at the Service-approved Ben Lomond Sandhills Preserve.

Based on our evaluation of your application and HCP, we determine that all permit issuance criteria established pursuant to Fish and Wildlife Regulation 50 CFR 17.22 are met. Under the authority of section 10(a)(1 )(B) of the Endangered Species Act of 1973, as amended, you are hereby authorized to take those Mount Hermon June beetles located only within the 0.0625-acre permit area for a period of up to 5 years and in conjunction with those activities identified in the HCP. Enclosed please find permit TE-36028B-0; we encourage you to review its terms and conditions.

We thank you for your cooperation and patience during this process. Should you have any questions regarding your permit or the contents of this letter, please contact Chad Mitcham at (831) 768-7794.

Sincerely,

Stephen P. Henry
Field Supervisor

Enclosure: Federal Fish and Wildlife Permit TE36028B-0

DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE

# FEDERAL FISH AND WILDLIFE PERMIT

2. AUTHORITY-STATUTES
16 USC 1539(a)

REGULATIONS
50 CFR 17.22

50 CFR 13

1. PERMITTEE

STEVEN C SOHL
1101 MARTIN ROAD
SANTA CRUZ, CA 95060
U.S.A.

3. NUMBER
TE36028B-0

4. RENEWABLE
☒ YES
☐ NO

5. MAY COPY
☒ YES
☐ NO

6. EFFECTIVE
01-12-2015

7. EXPIRES
01-12-2020

8. NAME AND TITLE OF PRINCIPAL OFFICER *(If #1 is a business)*

9. TYPE OF PERMIT
NATIVE ENDANGERED SP. HABITAT CONSERVATION PLAN - E WILDLIFE

10. LOCATION WHERE AUTHORIZED ACTIVITY MAY BE CONDUCTED
APN 063-061-28, Site of a New Single-Family Home on Alta Vista Way next to 1055 Martin Road in Bonny Doon, Santa Cruz County, California.

11. CONDITIONS AND AUTHORIZATIONS

A. GENERAL CONDITIONS SET OUT IN SUBPART D OF 50 CFR 13, AND SPECIFIC CONDITIONS CONTAINED IN FEDERAL REGULATIONS CITED IN BLOCK #2 ABOVE, ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES DESCRIBED IN THE APPLICATION SUBMITTED. CONTINUED VALIDITY, OR RENEWAL, OF THIS PERMIT IS SUBJECT TO COMPLETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS, INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS.

B. THE VALIDITY OF THIS PERMIT IS ALSO CONDITIONED UPON STRICT OBSERVANCE OF ALL APPLICABLE FOREIGN, STATE, LOCAL, TRIBAL, OR OTHER FEDERAL LAW.

C. VALID FOR USE BY PERMITTEE NAMED ABOVE

D. Further conditions of authorization are below.

E. All sections and provisions of Title 50 Code of Federal Regulations, parts 13 and 17.32, are conditions of this permit.

F. The authorization granted by this permit is subject to compliance with, and implementation of the Low-Effect Habitat Conservation Plan for the Endangered Mount Hermon June Beetle for APN 063-061-28, Site of a New Single-Family Home on Alta Vista Way next to 1055 Martin Road in Bonny Doon, Santa Cruz County, California (HCP), hereby incorporated by reference. This permit and the HCP are binding upon the Permittee, and any authorized officer, employee, contractor, or agent conducting covered activities.

G. The Permittee, and its authorized officers, employees, contractors, and agents are authorized under the Endangered Species Act of 1973, as amended (Act), to incidentally take the endangered Mount Hermon June beetle (*Polyphylla barbata*), to the extent that take of this species would otherwise be prohibited under section 9 of the Act, and its implementing regulations, or pursuant to a rule promulgated under section 4(d) of the Act. Take may only occur incidental to otherwise lawful covered activities within the 0.0625-acre action area of the 14.942-acre parcel in Santa Cruz County, California, as described in the HCP, and as conditioned herein. This permit authorizes the incidental take of Mount Hermon June beetles of all life stages in the form of harassment, harm, capture, injury, and mortality caused by construction of the residence on the parcel.

H. The Permittee must refer to the permit number above in all correspondence and reports concerning permit activities. Any questions you may have about this permit should be directed to the Field Supervisor of the Ventura Fish and Wildlife Office, 2493 Portola Road, Suite B, Ventura, California 93003, telephone (805) 644-1766.

I. A copy of this permit must be on the premises of the project site, or in the possession of the Permittee or its designated agents while conducting activities that may result in incidental take.

☒ ADDITIONAL CONDITIONS AND AUTHORIZATIONS ALSO APPLY

12. REPORTING REQUIREMENTS

| ISSUED BY | TITLE | DATE |
|---|---|---|
| Stephen A. Henry | FIELD OFFICE SUPERVISOR | 1/12/15 |

J. Only qualified individuals authorized by the Service under the authority of this permit and its associated biological opinion may conduct handling of Mount Hermon June beetles as prescribed in the HCP. The Permittee must request our approval of any additional individual(s) it wishes to employ to conduct these activities. The Permittee must provide the names, addresses, phone numbers, and qualifications of the requested individuals to work with the Mount Hermon June beetle to the Ventura Fish and Wildlife Office at least 30 days prior to the start of the requested activities. Individuals may conduct the requested activities only following the written concurrence of the Service.

K. Annual reports must meet all requirements referenced in the HCP and be provided by the Permittee to the Service by January 31 of each year.

L. Upon finding dead or injured Mount Hermon June beetles, the Permittee or designated agents must notify the Service's Ventura Fish and Wildlife Office at (805) 644-1766 within 3 working days. The notification must include the date, time, and location of the specimen, cause of death, if known, and any other pertinent information. Care must be taken in handling dead specimens to preserve biological material in the best possible state for later analysis. Should any injured Mount Hermon June beetles survive, the Permittee must contact the Service regarding their final disposition. Any remains of intact Mount Hermon June beetles should be placed with the California Academy of Sciences Entomology Department (Contact: David Kavanaugh, California Academy of Sciences Entomology Department, 875 Howard Street, San Francisco, California, 94103 (415) 321-8310).

M. The HCP and each of its provisions are intended to be and by this reference are incorporated herein. Notwithstanding such incorporation, the HCP was drafted by the Permittee and submitted to the Service in support of its application for the Permit. Characterizations, analyses, and representations in the HCP, and in particular, characterizations, analyses and representations in the HCP of Federal laws, regulations and policies, represent the views of the Permittee and shall not control the administration of the Permit by the Service in accordance with Federal laws, regulations and policies. In the event of any inconsistency between the HCP and the Permit, the Permit controls.

Extent of covered take: Under the proposed action and Permit number TE36028B-0, the Applicant would receive take coverage on approximately 0.0625 acre for the proposed construction of a single-family residence, garage, and associated infrastructure in central Santa Cruz County, California (Project). The 0.0625-acre project area would take place within an existing legal parcel described as Assessor Parcel Number (APN) 063-061-28 in Bonny Doon, Santa Cruz County, California. The 0.0625-acre project area contains habitat for the federally endangered Mount Hermon June beetle (Polyphylla barbata).

# Attachment 5

## USFWS Response Regarding Minor Amendment Request

## Lezanne Jeffs

**From:** Lezanne Jeffs
**Sent:** Tuesday, December 12, 2017 5:41 PM
**To:** Lezanne Jeffs
**Subject:** FW: Sohl ITP

**From:** Mitcham, Chad [mailto:chad_mitcham@fws.gov]
**Sent:** Thursday, November 30, 2017 10:44 AM
**To:** Matt Johnston <Matt.Johnston@santacruzcounty.us>
**Subject:** Sohl ITP

Matt,

We thank the County for your coordination on the previously issued incidental take permit (ITP) for the Sohl Low-Effect HCP (HCP) for the Mount Hermon June Beetle, in Santa Cruz County. We understand that due to errors in calculation of the anticipated impact area the ITP does not fully account for potential take of the Mount Hermon June beetle for the subject project. We also understand that the County of Santa Cruz is requiring the applicant/permittee to fully compensate for all impacts to habitat of the Mount Hermon June beetle, which meets the requirements of, and is in accordance with US Fish and Wildlife Service policy. This information is contained in a January 11, 2016 letter you provided to the permittee. We received a minor amendment request from the permittee, in an October 24, 2017 letter, that outlines County requirements which includes: the purchase of additional conservation credits to compensate for impacts throughout the anticipated impact area, the restoration of previously disturbed habitat, and the recording of a deed restriction that limits all further development on the parcel. Based on this information we believe that the permittee has fully coordinated with the Service on this minor amendment request and is in compliance with the federal Endangered Species Act. This information will be included in the project file and kept on record with the Service. Thank you and please contact me if you require further assistance on this project.

Chad Mitcham
Fish & Wildlife Biologist
U.S. Fish & Wildlife Service
VFWO, Santa Cruz sub-office
1100 Fiesta Way
Watsonville, CA 95076
(805) 677-3328

# Attachment 6

## Biotic Reportprepared by Valerie Haley of Native Vegetation Network

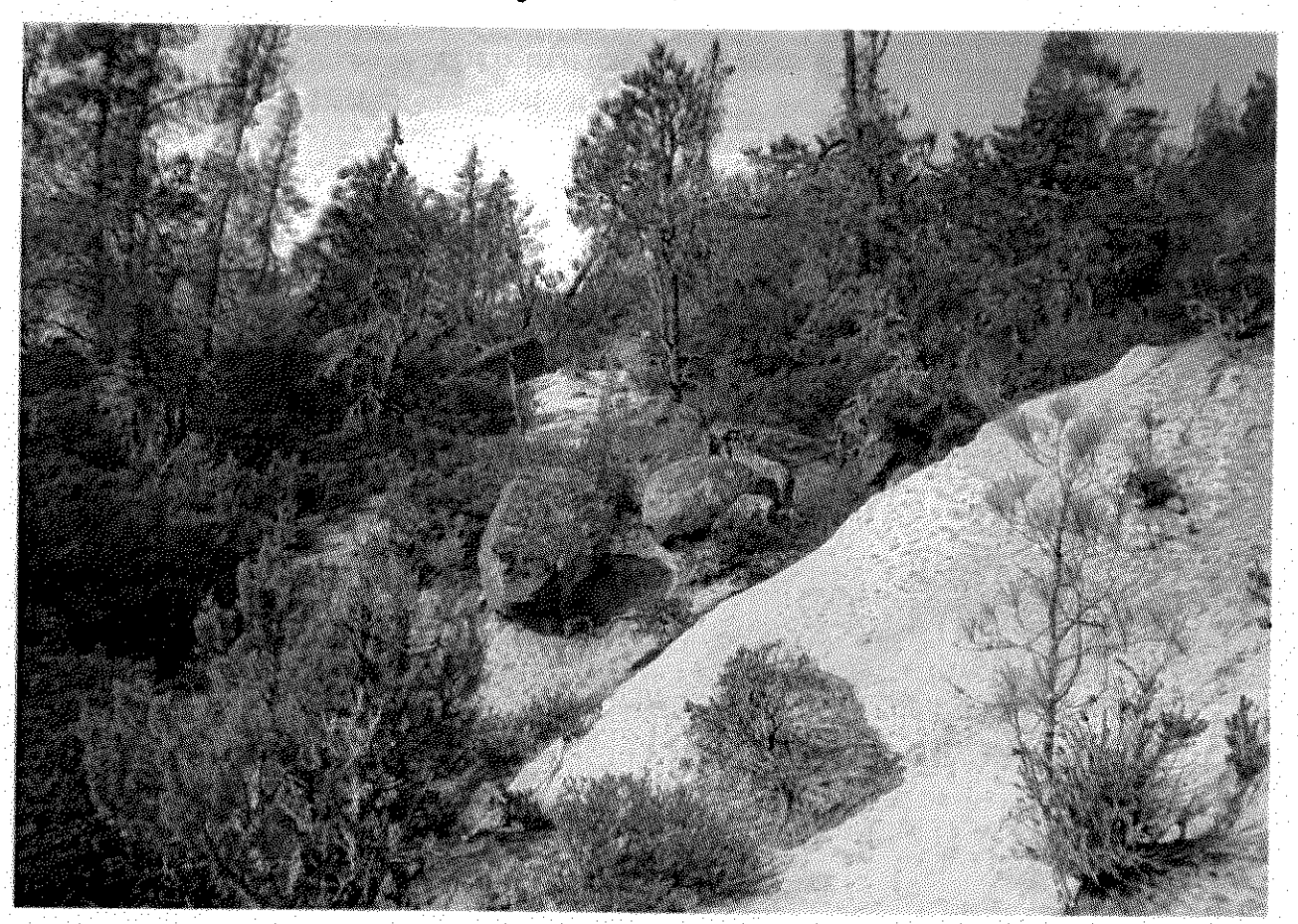
# Attachment 6

Biotic Reports prepared by Valerie Haley of Native Vegetation Network dated November 2015 and July 2016

# Biotic Report

# Sohl Residential Project

## Bonny Doon, California



**Assessor's Parcel No. 063-061-28**

*Prepared for:*

*Steven Sohl Family*

*Prepared by:*

**Native Vegetation Network**

Valerie Haley, Botanist
Karen Williams, Graphic Designer

PV-402

November 2015

## TABLE OF CONTENTS



### List of Tables



### List of Figures

## List of Appendices

# INTRODUCTION

## PURPOSE OF THE REPORT

This biotic report has been prepared at the request of the County of Santa Cruz Planning Department. This report provides an assessment of the biological resources on the property and addresses potential impacts that may occur due to the future planned residential development. The report provides measures to ensure that impacts to sensitive botanical resources and habitats will not occur during construction, and over the long-term residential use of the property.

This biotic report summarizes reconnaissance-level botanical surveys conducted by Valerie Haley in October 2015 to identify the botanical resources occurring at the Sohl property. The potential impacts to sensitive habitats and special status species due to the proposed residential development were also evaluated.

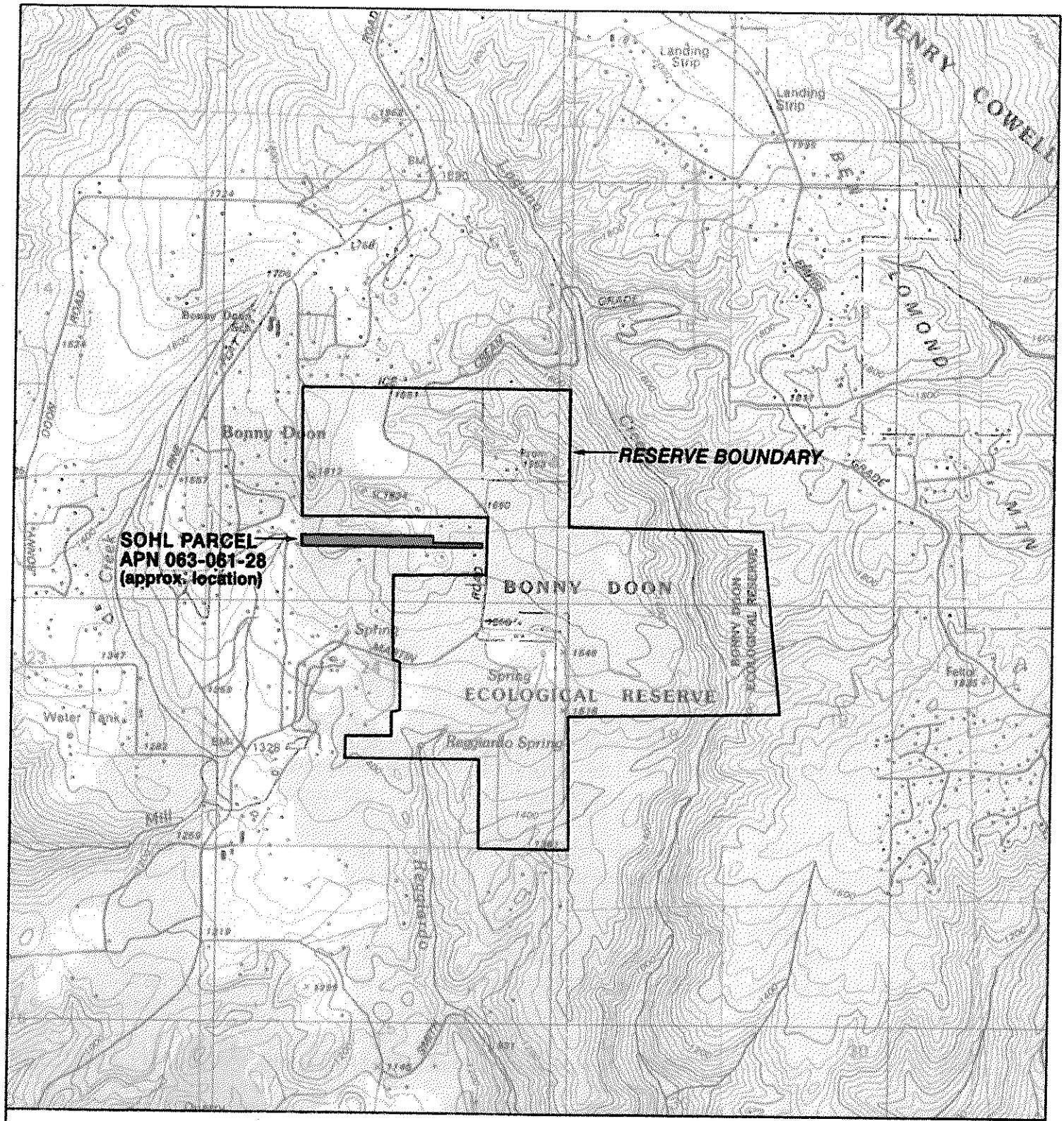
In addition, the County of Santa Cruz Planning Department has requested that previous impacts resulting from placing gravel on an older driveway on the parcel in 2006 be addressed.

Measures to mitigate and minimize for project impacts are proposed. Measures include weed surveys, protecting natural habitats adjacent to construction activities, vegetation management, habitat enhancement, and restoring portions of the disturbed habitat. Note that most of the existing gravel driveway will be needed for driveway access, septic system maintenance, and the required CAL Fire emergency truck turn-around.

After construction activities are complete, the temporary perimeter work zones in the development envelope and gravel road areas that are not needed for residential use, will be evaluated for restoration with the goal of re-establishing natural habitat. These areas will be hand raked to remove the gravel, and then monitored for natural recruitment of native plant species. The monitoring results will determine how much hand broadcast seeding is needed, and appropriate methods of weed control and removing invasive, non-native plant species. Measures are also proposed to enhance the existing meadow habitat areas and potions of the Mixed Evergreen Forest.

## PROPERTY DESCRIPTION

The property is located in the Bonny Doon region and Coastal Zone of Santa Cruz County. The closet town is Davenport, which lies to the west of the project parcel. The site is located on the western side of Ben Lomond Mountain. The property has a street address, 1055 Martin Rd. in Bonny Doon, CA 95060. A vicinity map for the parcel is depicted in Figure 1 of this report. The parcel (APN 063-061-028) is approximately 15 acres in size, and has a somewhat rectangular shape (Figures 1 and 2), except for a narrow right-of-way along the private Alta Vista Road. This is the only road available to access the proposed residential development. The road is located along sensitive





**Native Vegetation Network**

653 Quail Drive • Santa Cruz, California 95060
Telephone/Fax (831) 425-0687


**VICINITY MAP**
Bonny Doon Ecological Reserve
Sohl Residential Development

Figure 1
11/15
PV-402

habitat, Santa Cruz Cypress- Knobcone Pine Forest / Maritime Mixed Chaparral (Figure 3). Alta Vista Rd. is also the proposed construction access route.

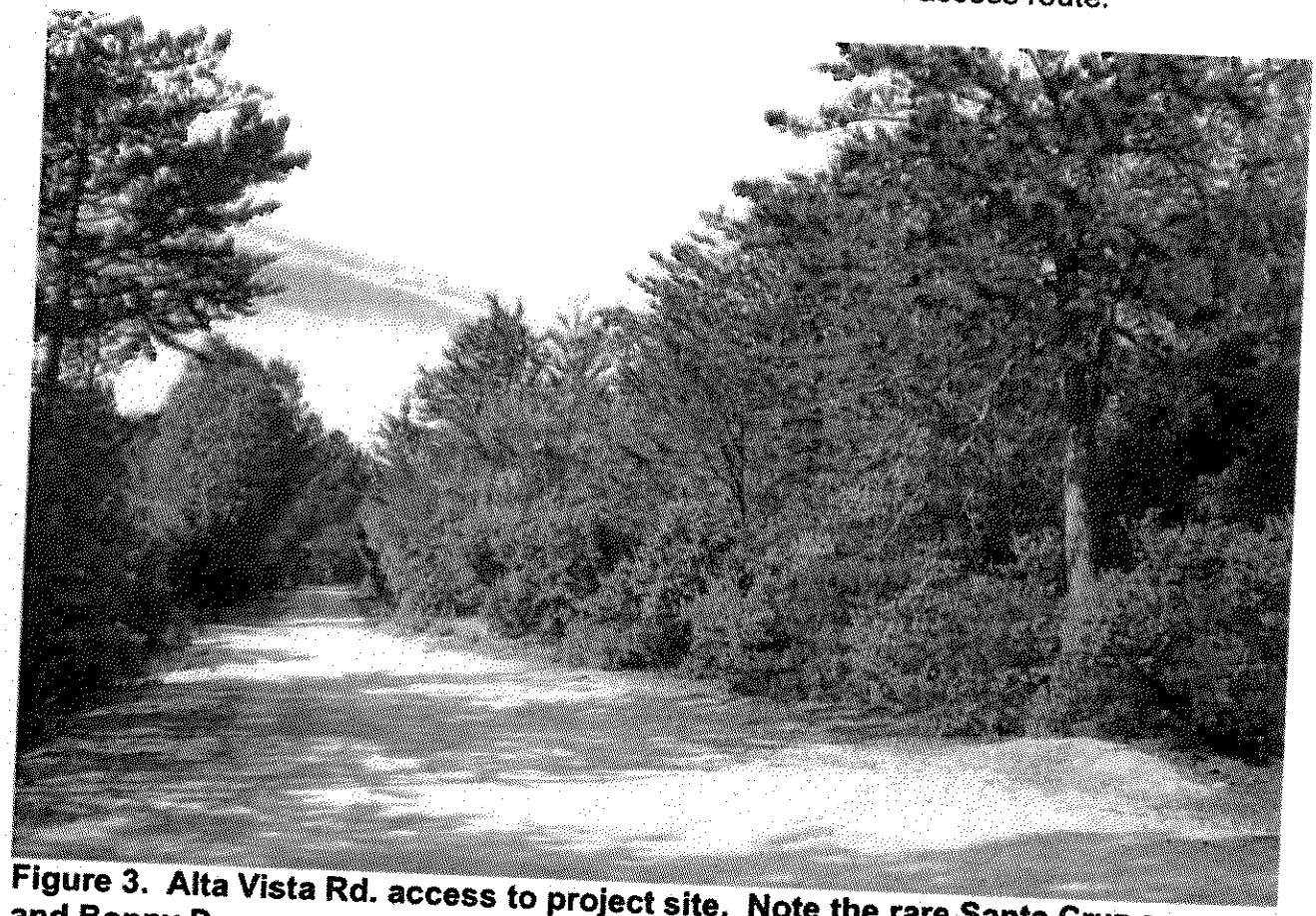


**Figure 3. Alta Vista Rd. access to project site. Note the rare Santa Cruz cypress and Bonny Doon manzanita on the right side of the photograph.**

The property is centrally located in the Bonny Doon Zayante Sandhills. The parcel does not immediately border the Bonny Doon Ecological Reserve (BDER), but is surrounded by the BDER nearby (within 1000 feet) on three sides (Figure 1). A large sandstone rock out crop known as Lone Star Peak is located on the BDER property to the north. The majority of the Sohl parcel has sensitive habitat due to concentrations of Santa Cruz Cypress and Bonny Doon Manzanita, and has similar high habitat values as found in the BDER (personal observations, Valerie Haley).

An earlier assessment of the parcel was conducted by Howard McCully, Ph D. in 1979. According to McCully (1979), the parcel has high scenic beauty and "was included in the "High Priority Protection Area" of the County of Santa Cruz PROS Plan because of the scenic qualities of the ridge and large stands of Santa Cruz Cypress and Silver-leaved Manzanita".

## Existing Soils

According to the "Soil Survey of Santa Cruz County California (USDA Soil Conservation Service, 1980) there are two main soil types on the 15-acre parcel:

No. 181 Xerorthents-Rock Outcrop Complex, 50 to 100% Slopes, which occurs in the approximate eastern half of the parcel, and

No. 182 Zayante Coarse Sand, 5 to 30% slopes, which occurs in the western portion of the parcel. This soil type occurs on hills and mountains, and has a rooting depth of 60 inches. These soils tend to be excessively drained (USDA 1980).

**Development Envelope**

The proposed Development Envelope is approximately 0.25 acre in size (Figure 2). The proposed structures and features for the new residence include the garage/house site, septic system and leach field, well, waterlines, water tanks and fire hydrant. The specific locations of the above structures and features are shown in the current Site Plan for the proposed new Residence prepared by building designer Frauke Zajac (11-17-15). A copy of the Site Plan is included in this report (see blueprint pocket).

The house site is near the Mixed Evergreen Forest (MEF) habitat in the western end of the parcel, and will not be in sight from the upper ridges in the Bonny Doon Ecological Reserve. Most of the proposed development will occur in disturbed Live Oak Woodland where gravel was placed in the past. The leach field will be placed in MEF and a portion of the house site will be built in Meadow habitat. No rare and endangered Santa Cruz Cypress trees or Bonny Doon Manzanita shrubs were observed in the Development Envelope in October 2015. For a summary of residential impacts according to plant community effected see Table 2.

Presence-absence surveys for special status herbaceous plant species and other species that are associated with the Bonny Doon Sandhills will be conducted in spring 2016. The survey will focus on the Development Envelope, along the existing gravel driveway and the construction route along Alta Vista Rd. If special status plant species, such as Ben Lomond spineflower are observed in the Development envelope, the Site Plan will be refined as part of adaptive management.

**Background Information**

In February 2014, a "Low-Effect Habitat Conservation Plan for the Endangered Mount Hermon June Beetle (MHJB) for APN 063-061-28 " was prepared by Richard A. Arnold Ph.D. This plan has been approved by the United States Fish & Wildlife Service and addresses potential impacts to the MHJB and minimization measures for the ¼ acre Development Envelope. Dr. Arnold is a Service approved entomologist, and holds a recovery permit for the MHJB. He will be the primary biological monitor during the construction period, and shall be on-site during excavation activities. Note that no grading will be needed due to the level conditions by the house site. Separate monitoring reports related to the MHJB will be prepared that include information on any June Beetle larvae found during construction and protection measures used.

## Previous Restoration Project and Stipulation Letter

Valerie Haley with Native Vegetation Network prepared a restoration plan for the property in 2006, and completed a five-year restoration project in August 2011. She is familiar with the sensitive botanical resources on the property, and has documented occurrences of special status plants in recent years. The previous restoration was implemented as mitigation for land clearing activities in sensitive sandhills habitat, and the import of gravel onto the pre-existing driveway. The County of Santa Cruz Planning Department issued a Code Compliance Stipulation and Order on February 7, 2007. Various conditions were requested by County Planning, including compliance and financial responsibility for implementing the Restoration Plan that was prepared by NVN in August 2006. Also, the alignment of the gravel driveway depicted in Figure 2 has been fixed, so that residential development will be required to use the same driveway access. Steven Sohl is considered the responsible party. Note that Mr. Sohl plans on purchasing the property in the near future, but currently Ms. Noreen Doyas is the property owner.

## ENVIRONMENTAL SETTING

### ASSESSMENT METHODS

The botanical resources of the 15-acre parcel were investigated in October 2015, prior to the beginning of the rainy season. Field observations and literature review formed the basis of the investigation. Prior to the field surveys, the California Natural Diversity Data Base for the Davenport Quadrangle, California Native Plant Society On-line Inventory, and the "Annotated Checklist of the Vascular Plants of Santa Cruz County, California" Second Edition (Neubauer, 2013) were reviewed to determine the potential presence of rare, threatened, or endangered species in the vicinity of the Project Site. In addition, Valerie Haley reviewed the "Low-effect Habitat Conservation Plan (HCP) for the Endangered Mount Hermon June Beetle for APN 063-061-28" prepared in February 2014 by Richard A. Arnold Ph. D. This HCP addressed resources and provided measures to minimize and mitigate potential impacts to the Mount Hermon June Beetle in the 0.25 acre proposed building envelope, which includes the house site, garage, septic system and leach fields, water tanks and perimeter work zone around the proposed residence and garage.

This supplemental Biotic Report should be read in conjunction with the HCP (Arnold, Feb. 2014), as it documents resources and sensitive habitats occurring on the entire 15-acre parcel. This Biotic Report also addresses construction access routes on Alta Vista Rd. and the existing gravel driveway in the western portion of the parcel.

The study area was traversed on foot, using an aerial photograph (Google Earth image, 3/28/15). The major plant communities present and the area burned in the Martin Fire in 2008 were delineated onto the aerial photograph. These delineations are depicted in Figure 2. Plant species were identified using The Jepson Manual Higher Plants of California (second edition, 2012) and the Flora of the Santa Cruz Mountains of California (Thomas 1961). The vascular plant species observed are listed in Appendix A. This appendix represents only a partial list of plant species occurring at the property, since it lists only the species recorded during October 2015 after four years of extreme drought. Additional species are expected to be identifiable during normal rainfall and during other times of the year.

Concurrent with the October 2015 habitat assessment, a survey for rare, threatened, and endangered perennial plants (primarily trees and shrubs) was also conducted. The field survey used regional floristic information and standard endangered plant survey protocol (Nelson 1987). Since the rare plant survey was conducted in fall, it was limited in scope to mostly perennial species. The survey focused on species that are Federally listed, State listed, or other special status plants with a high probability of occurrence in the project area. Potential special status species were determined from known occurrences in the vicinity and through review of the records reported in the California Natural Diversity Data Base (Rare Find version) of the California Department of Fish & Wildlife and the local Santa Cruz Chapter of the California Plant Society.

A spring 2016 survey will be performed to determine whether any annual special status plant species occur at the property. Spring and summer are when many of the potential Federally listed, Stated listed, or other sandhills indicator species would be identifiable in the field (i.e., when flowering or fruiting).

## EXISTING BOTANICAL RESOURCES AND PLANT COMMUNITIES

The 15-acre parcel has a variety of habitats and plant communities, ranging from hot, dry sandstone rock outcrops with stunted Santa Cruz Cypress trees and dwarf shrubs representative of Mixed Maritime Chaparral, to groves of western azaleas located in the shady Mixed Evergreen Forest. Several ephemeral drainages traverse the property and join tributaries leading down slope to Mill Creek, located southwest of the parcel.

Four main plant communities were observed on the parcel:

Santa Cruz Cypress- Knobcone Pine Forest /Maritime Mixed Chaparral,
Mixed Evergreen Forest,
Interior Live Oak - Canyon Live Oak Woodland, and
Meadow

The vegetation resources of these plant communities/habitats are described below.

### Santa Cruz Cypress- Knobcone Pine Forest/ Maritime Mixed Chaparral

This plant community is the most extensive and the most sensitive habitat type at the property, and occupies approximately ten acres in the eastern 2/3 of the parcel (Figure 2). The detailed name of this plant community refers to a sparse forest overstory dominated by Santa Cruz Cypress and knobcone pine (*Pinus attenuata*) that is associated with a shrub understory of Maritime Mixed Chaparral. There is a mixture of over six shrub species compared to the types of chaparral with one dominant shrub such as Bonny Doon Manzanita Maritime Chaparral. Two endemic, rare woody species occur in scattered locations throughout this plant community. These species are the federally Endangered Santa Cruz Cypress (*Hesperocyparis abramsiana)* and endemic Bonny Doon Manzanita (*Arctostaphylos silvicola*), which has a California Rare Plant Rank of 1B.2 (Rare, threatened, or endangered in California and elsewhere). A tree and shrub inventory was not conducted, but it is estimated that approximately 800+ Santa Cruz Cypress trees occur on the parcel, and that approximately 1600+ Bonny Doon Manzanita shrubs occur in the Maritime Chaparral understory. Bonny Doon Manzanita, sensitive or Fort Bragg manzanita (*Arctostaphylos sensitiva*), and crinite manzanita (*Arctostaphylos crustacea ssp. crinta*) are the dominant shrubs.

To a lesser extent, the following woody species were also observed: chamise, Yerba Santa, huckleberry, toyon (*Heteromeles arbutifolia*), dwarf live oaks, and sticky monkeyflower (*Mimulus aurantiacus*).

Alta Vista Road is used to access western portions of the parcel. This private road is located immediately adjacent to the Santa Cruz Cypress- Knobcone Pine Forest/ Maritime Chaparral habitat (Figure 2).

Depending on the substrate and depth of the soil profile, the density and size of the trees and shrubs present varies. For example, the cypress forest/ maritime chaparral habitat in the western portion of the parcel has deeper soils and the native trees and shrubs are denser and taller compared to the vegetation growing in the eastern portion of the parcel, where there are abundant sandstone rock outcrops (Figure 2). In the western portion of the property, along Alta Vista Rd. the Santa Cruz Cypress trees ranged in height from approximately 6 feet to 30 feet; whereas, in the eastern rock outcrops, the cypress trees were dwarfed, ranging in height from 5 feet to 15 feet.

**Figure 4. Santa Cruz Cypress- Knobcone Pine Forest/ Maritime Mixed Chaparral Note existing gravel driveway. Temporary construction fencing will be placed along the sensitive habitat adjacent to the gravel driveway (part of construction route).**

The same trend was also observed in the knobcone pine trees, which were taller in the western deeper soil, ranging from 20 feet to 70 feet. In the rock outcrops, the knobcone pines range from 12 to 25 feet.

As may be seen in the aerial image in Figure 2, the landscape in the eastern portion of the parcel is very barren due to Santa Margarita Sandstone rock out crops. During a field meeting with Steven Sohl on October 23, 2015, he pointed out an area in the rock outcrops that burned during the Martin Fire in June 2008 (see Figures 2 and 4). Many native species have re-established after the fire: woolly paintbrush (*Castilleja foliosa*), Chamise (*Adenostoma fasciculatum*), sensitive manzanita, Bonny Doon manzanita, peak rush rose (*Helianthemun scoparium*), globose sedge (*Carex globosa*), sticky monkeyflower, and Yerba Santa (*Eriodictyon californicum*).

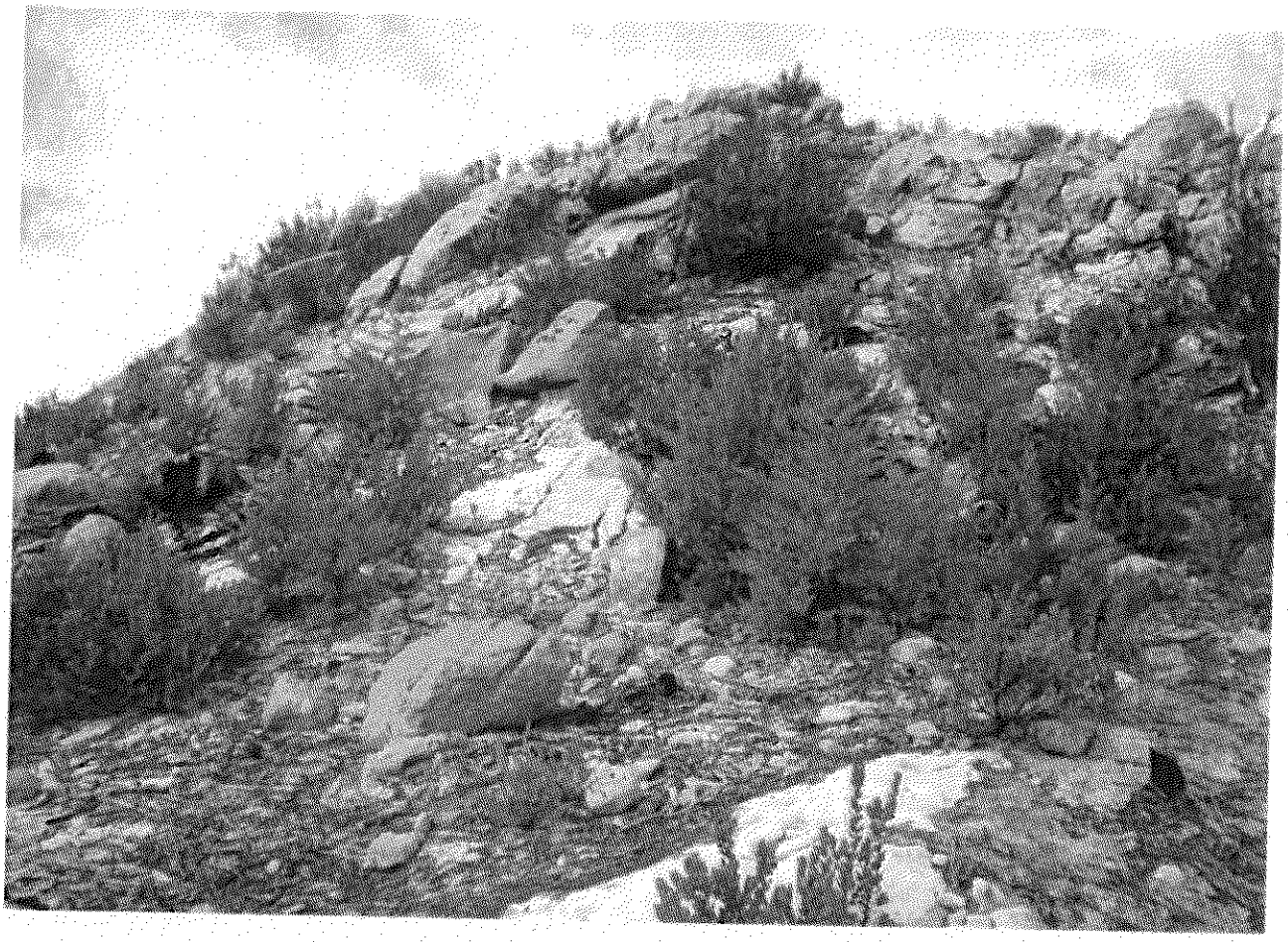


**Figure 5. Portion of the eastern rock outcrops that burned during the Martin Fire. Note the regeneration of the rare Santa Cruz cypress, Bonny Doon manzanita and other native shrubs (October 2015).**

Of ecological interest, is the fact that chaparral habitat is adapted to repeated fires, which cause a succession of different vegetation types (Holland 1986). Fire acts as an evolutionary force, selecting for methods of plant reproduction that are fire dependent. For example, manzanita species tend to sprout from their crown or basal burl after a fire; whereas, ceanothus species tend to have in-soil seed storage and fire stimulated germination (Barbour *et al.* 1980). Some chaparral seeders are dependent on fire for reproduction. If fire is suppressed for decades, exceeding the life span of seed viability, the chaparral habitat will become locally or regionally extinct (Sweeney 1977). It is

hypothesized that fires also help seedling survival by reducing plant pathogens and by removing plant competition (Barbour *et al.* 1980).

**Figure 6. Santa Cruz Cypress- Knobcone Pine Forest/Maritime Mixed Chaparral in sandstone rock outcrops located in the eastern portion of the property. Note the dwarf Santa Cruz Cypress trees in center of photograph.**

### Mixed Evergreen Forest

Mixed Evergreen Forest (MEF) occurs in one main area (approximately 2.5 acres) at the western end of the parcel upslope from Quail Drive (Figure 2). It appears that the upper portions of the MEF adjacent to the proposed residence may have historically been Maritime Chaparral, which has undergone succession to become Mixed Evergreen Forest.

The structure of the mixed evergreen forest located near the western end of the property is open with a very sparse shrub layer. California blackberry (*Rubus ursinus*), California huckleberry, and hispid honey suckle (*Lonicera hispidula*) were the most prevalent shrubs. There were also a few scattered shrubs of the following species: coffeeberry (*Frangula californica*), toyon (*Heteromeles arbutifolia*), and poison oak (*Toxicodendron diversilobum*). One mature toyon shrub was over 20 feet tall. A few

manzanita (*Arctostaphylos* sp.) seedlings were seen in sunnier locations. They were too small to identify the species.

In the southwestern portion of the forest there is a large grove of Western azaleas (*Rhododendron occidentale*) that is approximatey 100 feet long by 30 feet wide (Figure 2). This is the largest grove of Western azaleas in Santa Cruz County that I have observed.

**Figure 7. Example of mature Mixed Evergreen Forest in the western portion of the parcel. Native vegetation predominates, including huckleberry and western azaleas, October 2015.**

The majority of the trees in the Mixed Evergreen Forest overstory were mature, and over 100 feet tall. Few saplings or trees under 10 feet tall were observed. The forest is dominated by Douglas fir (*Pseudotsuga menziesii*), Pacific madrone (*Arbutus menziesii*), and coast live oak trees (*Quercus agrifolia*). To a lesser extent, tan bark oak (*Notholithocarpus densiflorus*), chinquapin, and canyon live oak (*Quercus chrysolepis*) occur.

The herbaceous layer includes, California sword fern (*Polystichum californicum*), Yerba buena (*Satureja douglasii*), California bedstraw (*Galium californicum*), Fernald's iris (*Iris fernaldi*), hawk weed (*Hieraceum album*), California milkwort (*Polygala californica*) and pine grass (*Calamagrotis rubescens*). A few French broom (*Genista monspessulana*)

seedlings were seen in sunnier locations near the proposed leach field, and near the western boundary fence by Quail Drive.

### Interior Live Oak-Canyon Live Oak Woodland (Live Oak Woodland)

This plant community occupies approximately one acre near the existing gravel driveway and proposed house site (Figure 2). Much of the existing gravel driveway is located in what was originally Live Oak Woodland. Most of the undisturbed Live Oak Woodland occurs on the southern side of the existing gravel driveway (Figure 8). Many of the mature trees appear dwarfed (8 -15 feet tall), which is most likely due to shallow, nutrient poor soil profiles. The tree overstory is dominated by interior live oak (*Quercus wislizeni* var. *wislizeni*) and Canyon live oak (*Quercus chrysolepis*). Many of the dwarf live oaks have lichens hanging from their branches. Of note, are eight rare Santa Cruz Cypress (*Hesperocyparis abramsiana)* trees that are located in the Live Oak Woodland on the southern side of the bend in the gravel driveway.

**Figure 8. Portion of the undisturbed Live Oak Woodland near entrance gate. Note the rare Santa Cruz Cypress on the right side of the photograph, October 2015.**

To a lesser extent, chinquapin (*Chrysolepis chrysophylla*) trees occur near the gravel driveway, and at the top of the slope adjacent to the Mixed Evergreen Forest (Figure 2). Five of the chinquapin trees have died and a few others are declining due to fungal disease. A plausible explanation for their decline is that the recent drought of the four years has stressed the trees, and made them vulnerable to disease

During the October 2015 surveys, few herbaceous species were evident due to dry conditions. However, patches of the native perennial, pine grass (*Calamagrostis rubescens*) were seen in shadier areas under the tree canopy. The following species were also observed in small numbers: globose sedge (*Carex globosa*), silver hair grass (*Aira caryophyllea*), peak rush rose (*Helianthemum scoparium*), silver bush lupine (*Lupinus albifrons*), and seedlings of live oak, Douglas fir, and manzanita.

In recent years, a barbecue (BBQ) recreational area has been set up in the Live Oak Woodland near the existing gravel driveway by the proposed house site (Figure 9). The BBQ area is approximately 20 feet in diameter, and has a ring of granite blocks and patio furniture. There was no fire pit in the ground, but a metal dome BBQ with standing legs was present. According to Steven Sohl, the granite blocks and patio furniture can be removed easily to restore this part of the oak woodland (pers. comm. Steven Sohl (Oct. 21, 2015).

**Figure 9. Recreational area in Live Oak Woodland with granite blocks and patio furniture, October 2015 .**

## Meadow Habitat (grassland)

In the western portion of the property, there is approximately 0.20 acre of meadow habitat in scattered locations (Figure 2). The largest meadow area is located to the southwest of the proposed house site. There are also some smaller grassy openings in

the Interior Live Oak -Canyon Live Oak Woodland habitat on the southern side of the existing gravel driveway. In some of the meadow gaps in the Live Oak Woodland there are carpets of the native perennial, pine grass (*Calamagrotis rubescens*).

The meadow near the proposed house site has a mix of native and non-native plant species (Figure 10). Soil disturbance and gopher mounds are present. Most of the herbaceous species observed in October 2015 were non-native. More native herbaceous species are likely to occur, but were not identifiable during the dry fall conditions. The dominant non-native grass was silver hair grass (*Aira caryophyllea*). Additional non-native species observed include velvet grass (*Holcus lanatus*), smooth cat's ear, bristly dogtail grass (*Cynosurus echinatus*), rattlesnake grass (*Briza maxima*), wild oats (*Avena sp.*), horse weed, catch fly (*Silene gallica*), and rose clover (*Trifolium hirtum*). Rose clover is of concern as it is known to be a very invasive, non-native species.

**Figure 10. Portion of Meadow habitat near the proposed house site (October 2015).**

All of the perennial plants observed in the meadow habitat were native species, and approximately 22 oak seedlings about 1.5 to 2 feet tall occur scattered in the meadow area by the propose house site. Additional native perennials present include globose sedge (*Carex globosa*), bracken fern (*Pteridium aquilinum*), golden chinquapin trees (*Chrysolepis chrysophylla var. minor*), huckleberry (*Vaccinium ovatum*), deerweed (*Acmispon glaber*) and peak rush rose (*Helianthemum scoparium*).

These meadow areas should be surveyed again for herbaceous, annual species in spring 2016 to confirm presence or absence of listed rare plants, and other locally rare and endemic species associated with the Bonny Doon Sandhills.

**Invasive, Non-native Vegetation**

Invasive, non-native species occur at low levels at the parcel. European, non-native annual grasses occur the meadow habitat areas and in open areas and along the gravel road, including rattlesnake grass (*Briza maxima*), bristly dogtail grass (*Cynosurus echinatus*), velvet grass, and rattail fescue (*Festuca myuros var. myuros*). The invasive rose clover (*Trifolium hirtum*) was observed in small quantities in the largest meadow area located to the southwest of the proposed house site. French broom was observed by the fence line at the western end of the parcel in open areas in the Mixed Evergreen Forest. Velvet grass (*Holcus lanatus*) occurs in low levels in the Mixed Evergreen Forest by the western azalea grove (Figure 2).

**Figure 11. Invasive, non-native Feather grass (garden escape) in the Santa Cruz Cypress- Knobcone Pine Forest/Maritime Mixed Chaparral (October 2015).**

Garden escapes (ornamental acacias and feather grass) from neighboring properties have started to establish by entrance gate near the Cypress- Knobcone Pine Forest/Mixed Maritime Chaparral habitat (Figure 11). Feather grass (*Stipa tenuissima*) was observed near the gate and inside the gate along the existing gravel driveway. This species is commonly used in landscaping, and is known to spread aggressively.

## SENSITIVE BIOLOGICAL RESOURCES

### Results of Literature Review

The records of the CNDDB and the CNPS On-line inventory indicate that 58 plant species of concern have the potential to occur in Santa Cruz County. These species were screened by assessing habitat and substrate requirements to determine which ones have the potential to occur in the vicinity of the Sohl Property Site. The screening resulted in the potential special status plants listed in Table 1, which gives the scientific and common name, Federal and State statutory status, California Rare Plant Rank (California Native Plant Society) designation, known habitat, and whether the species occurs on the property.

### Sensitive Habitats

Sensitive habitats are defined by local, State, or Federal agencies as those habitats that support special status species, provide important habitat values for wildlife, represent areas of unusual or regionally restricted habitat types, and/or provide high biological diversity. Under County Code, Habitats of Locally Unique Species are considered sensitive (Code 16.32.090, Section C). Examples of these habitats include San Andreas Live Oak Woodland/Maritime Chaparral, Santa Cruz Cypress forest, Ponderosa Pine Forest, and native Monterey Pine Forests. In addition, areas supporting rare or endangered plant species are also considered sensitive (Code 16.32.040).

At the State level, the California Oak Woodlands Conservation Act was enacted in 2001. It recognizes the importance of California's oak woodlands and defines "oak woodlands as habitat with greater than 10% cover of oak trees in the genus *Quercus*". The California Environmental Quality Act (CEQA) recognizes oak woodlands of the genus *Quercus* to be a sensitive resource. California Public Resources Code 21083.4 states that a County may require mitigation for significant impacts to oak woodlands, including planting, maintaining, and restoring former oak woodlands.

### County of Santa Cruz General Plan

Goals, Objectives and Policies regarding sensitive species and their habitats are found in Chapter 5, Conservation and Open Space, of the Santa Cruz County General Plan (1994). Relevant policies to the project follow:

**Goal, Natural Resources Protection:** To protect and restore unique, rare, threatened, endangered and other natural resources that warrant preservation because of their biological value, scarcity, scientific value, and aesthetic quality.

**Objective 5.1 Biological Diversity:** To maintain the biological diversity in the County through an integrated program of open space acquisition and protection,

identification and protection of plant habitat and wildlife corridors and habitats, low-intensity and resources compatible land uses in sensitive habitats and mitigations on projects and resources extraction to reduce impacts on plant and animal life.

**Policy 5.1.1 Sensitive Habitat Designation:** Designate the following areas as sensitive habitats:

a) Areas shown on the county General Plant and LCP Resources and Constraints Maps;
b) Any undesignated areas which meet the criteria (Policy 5.1.2) and which are identified through the biotic review process or other means; and
c) Areas of biotic concern as shown on the Resources and Constraints Maps which concentrations of rare, endangered, threatened, or unique species.

**Policy 5.1.2 Definition of Sensitive Habitat:** An area is defined as a sensitive habitat if it meets one or more of the following criteria:

c) Areas adjacent to essential habitats of rare, endangered or threatened species is defined in e) and f) below.
d) Areas which provide habitat for Species of Special Concern as listed by the California Department of Fish and Game in the Special Animals List, Natural Diversity Database.
e) Areas which provide habitat for rare or endangered species which meet the definition of Section 15380 of the California Environmental Quality Act Guidelines.
f) Areas which provide habitat for rare, endangered, or threatened species as designated by the State Fish and Wildlife Commission, United States Fish and Wildlife Service, or California Native Plant Society.
i) All lakes, wetlands, estuaries, lagoons, streams, and rivers.
j) Riparian corridors.

**Policy 5.1.6 Development within Sensitive Habitats:** Sensitive habitats shall be protected against any significant disruption of habitat values; and any proposed development within or adjacent to those areas must maintain or enhance the functional capacity of the habitat . Reduce in scale, redesign, or, if no other alternative exists, deny any project which cannot sufficiently mitigate significant adverse impacts on sensitive habitats unless approval of a project is legally necessary to allow reasonable use of the land.

Santa Cruz County Code Chapter 16.32 (Sensitive Habitat Ordinance) includes oak woodlands in its definition of sensitive habitat. Although the Ordinance does not define oak woodlands, County policy uses the definition adopted by the California Oak Woodlands Conservation Act.

## RESULTS OF FIELD SURVEYS

All of the habitats and plant communities at the property are part of the Zayante Sandhills and are considered sensitive habitat, including the existing gravel driveway or adjacent natural areas covered in gravel. Although no special status plants were observed in the Development Envelope in October 2015, these areas also provide potential habitat for the Mount Hermon June Beetle (*Polyphylla barbata*).

### Habitat Sensitivity

All of the habitats and plant communities at the property are part of the Zayante Sandhills, which is considered highly sensitive habitat. Sandhills composed of Zayante Sand only occur in the County of Santa Cruz, and therefore have very limited distribution.

Since the canopy cover of interior live oak and canyon live oak (both *Quercus* species) exceeds 10% of the total tree cover in this habitat, the Live Oak Woodland is considered a sensitive habitat by County and State policy.

On the Sohl parcel, all of the habitats are considered sensitive for purposes of this report. They are listed with the most sensitive habitat first in descending order of habitat sensitivity:

a) Santa Cruz Cypress-Knobcone Pine Forest/ Maritime Mixed Chaparral: occurrences of Santa Cruz Cypress, Bonny Doon Manzanita, sensitive manzanita, Santa Cruz County (Rattan's ) monkeyflower (*Mimulus rattanii ssp. decurtatus*), and Naked-stem Buckwheat (*Eriogonum nudum var. decurrens*).

b) Interior Live Oak-Canyon Live Oak Woodland: occurrences of Santa Cruz Cypress and occurrences of *Quercus* species,

c) Meadow: occurrences of *Quercus* species,

d) Mixed Evergreen Forest: occurrences of "seed bank" of Special Status manzanitas,

e) Disturbed Oak Woodland with Gravel, Zayante Sand soil and potential habitat for the Mount Hermon June Beetle

### Special Status Plant Species

**Santa Cruz Cypress** (*Hesperocyparis abramsiana*). This species is State and Federally listed, and is considered rare by the County of Santa Cruz and California Department of Fish and Wildlife. Over 800 cypress trees occur in the Santa Cruz Cypress-Knobcone Pine Forest/ Mixed Maritime Chaparral habitat (Figure 2).

**Bonny Doon or Silver-leaved Manzanita** (*Arctostaphylos silvicola*). This special status, rare manzanita is endemic to and restricted to Zayante sand deposits in Bonny

Doon and in the greater Felton/Zayante area of Santa Cruz County. Over 1800 Bonny Doon Manzanita shrubs were observed throughout the Santa Cruz Cypress-Knobcone Pine Forest/ Mixed Maritime Chaparral on the Sohl parcel.

**Ben Lomond or Naked-stem Buckwheat** (*Eriogonum nudum var. decurrens*). This Species is not State or Federally listed, but is considered rare by the California Plant Society, Rare Plant Rank 1B.1. Six individuals were observed along the existing gravel driveway near the entrance gate.

**Coast Live Oak (and other *Quercus* species).** This species is not State or Federally listed, but is recognized by the State as a sensitive resource when it occurs within a habitat and covers more than 10% of the total tree canopy of the habitat area. In addition, the oak trees must have a diameter of 5 inches or greater diameter at breast height (DBH) to be considered a sensitive resource. The County of Santa Cruz Sensitive Habitat Ordinance includes oak woodlands within the definition of "sensitive habitat". It is County policy to define oak woodlands according to the State's definition.

**Santa Cruz County Monkeyflower** (*Mimulus rattanii ssp decurtatus*). This species is not State or Federally listed, but according to the California Plant Society, it has limited distribution, Rare Plant Rank 4.2. In spring 2011, Valerie Haley observed 69 individuals near the existing gravel drive way.

For photographs and more information about selected special status plant species, see Appendix B.

**Sensitive Plant Species Protection Acts**

Under the California Environmental Quality Act (CEQA), specifically Section 15380, plants that fulfill the biological requirements for State listing are considered for impact and mitigation consideration. Generally, this equates to CNPS List 1 or List 2 plants; whereas, CNPS List 3 and List 4 generally do not fall under this category.

In Santa Cruz County, the General Plan and the Sensitive Habitat Protection ordinance (Section 16.32, Santa Cruz County Code) define additional criteria used to identify and regulate impacts to Special Status Plants and sensitive habitats (cf. http://www.co.santa-cruz.ca.us/pln/sensitiv.htm). A criterion for designation of a Sensitive Habitat under the County Code is the presence of a Special Status Plant (i.e., either CNPS List 1 or List 2). California's endangered plants are also protected under the California Endangered Species Act (CESA) and the California Native Plant Protection Act (NPPA).

## Table 1. Special Status Plant Species (Listed Taxa) Evaluated for Potential to Occur or Known to Occur at the 15-acre parcel, proposed Sohl Residential Development

| Species Scientific / Common Name[1] | **Federally Listed** | State Listed[3] | California Rare Plant Rank[4] | Habitat Type[5] | **Known to Occur' Potential to Occu** |
|---|---|---|---|---|---|
| *Arctostaphylos andersonii* *Santa Cruz Manzanita* | None | None | CRPR 1B.2 | forest openings | Known to occur Observed On parcel in past |
| *Arctostaphylos silvicola* *Bonny Doon Silver-leaved Manzani* | None | None | CRPR 1B.2 | sandy marine deposits | Known to occur Abundant on site 2015 |
| *Chorizanthe pungens var. hartwegiana* *Ben Lomond Spineflower* | Endangered | None | CRPR 1B.1 | inland marine deposits | Potential to occur |
| *Hesperocyparis abramsiana* *Santa Cruz Cypress* | Endangered | Endangered | CRPR 1B.2 | inland marine deposits | Known to occur Abundannt on site 2015 |
| *Eriogonum nudum var. decurrens* *Ben Lomond Buckwheat* | None | None | CRPR 1B.1 | inland marine deposits | Known to occur 6 plants observed Oct. 2015 |
| *Erysimum teretifolium* *Santa Cruz Wallflower* | Endangered | Endangered | CRPR 1B.1 | inland marine deposits | Potential to occur |
| *Horkelia marinensis* *Point Reyes Horkelia* | None | None | CRPR 1B.2 | coastal dune scrub/sandy | Potential to occur |
| *Mimulus rattanii ssp. decurtatus* *Santa Cruz Mountains Monkeyflow* | None | None | CRPR 4.2 | inland marine deposits | Observed On parcel in past |
| *Monardella sinuatavar. nigrescens* | None | None | CRPR 4.2 | sandy marine deposits | Potential to occur |
| *Gilia tenuiflora subsp. arenaria* *Monterey Gilia* | Endangered | Threatened | CRPR 1B.2 | sandy marine deposits | Potential to occur |

Footnotes:

1. Nomenclature corresponds to Jepson Manual 2nd Edition (2012).
2. California Rare Plant Ranks:
   - 1B Plants rare, threatened or endangered in California and elsewhere
   - 2B Plants rare, threatened or endangered in California, and more common elsewhere
   - 3 More information needed – a review list
   - 4 Plants of limited distribution – a watch list.
3. Threat Ranks:
   0.1 Seriously threatened in CA 0.2 Moderately threatened in CA 0.3 Not very threatened in CA

# IMPACTS AND MITIGATION MEASURES

## IMPACT CRITERIA

The thresholds of significance presented in the California Environmental Quality Act (CEQA) were used to evaluate project impacts and to determine if the residential development posed significant impacts to biological resources. In addition, State and County policies were used to develop the significance criteria. For this analysis, significant impacts are those that substantially affect either.

- A species (or its habitat) listed or proposed for listing by State or Federal governments as rare or endangered;
- Breeding/nesting habitat for a State Species Concern (e.g., Cooper's hawk);
- A plant considered rare (i.e., California Rare Plant Rank 1B) by CNPS;
- A habitat regulated by State or Federal law;
- Movement of native resident or migratory species; or
- A habitat recognized as sensitive by California Dept. of Fish and Wildlife and/or the County of Santa Cruz (e.g., Santa Cruz Cypress forest, oak woodlands)

On the Sohl Parcel all of the habitats/plant communities are considered sensitive, since they are located in the highly sensitive Zayante Sandhills habitat, which only occurs in the County of Santa Cruz.

## POTENTIAL IMPACTS AND MITIGATION MEASURES

According to Steven Sohl (pers comm. October 23, 2015), there will be no grading needed for developing the residence; however, there will be excavation for drilling the well, water lines, septic tank and leach fields. Most of the future development would be located in disturbed Live Oak Woodland where gravel occurs, and a small amount of the house footprint will be in the Meadow habitat in the southwest portion of the parcel. A small portion of the Mixed Evergreen Forest will be developed for the septic system.

**Impacts due to residential development are discussed under two time periods**:

1) previous disturbance due to the improvement of a gravel driveway in 2006, and

2) proposed new impacts related to home construction, construction vehicles, well system, and septic system.

## EXISTING GRAVEL/ROCK DRIVEWAY AND DISTURBED HABITATS

Mr. Sohl had the existing gravel driveway areas depicted in the topographic survey map (see blue print pocket) surveyed in March 2015. The survey was conducted by Cary Edmundson & Associates Land Surveying. The survey determined that there was 7880 square feet of existing rock/gravel driveway.

As mentioned above, the gravel driveway was put in by the previous owner, and Steven Sohl added more gravel, and improved maintenance access to the western portion of the parcel in 2006. During past surveys, and during the recent October surveys, Valerie

Haley has observed small areas where the older gravel placed in the 1970s is still evident along the driveway edges. The older gravel is smaller and more deeply embedded in the compacted sandy soil. The approximate location of the existing gravel driveway with the mapped plant communities is depicted in Figure 2.

As may be seen from the plant community mapping, most of the gravel driveway near the proposed residence (Development Envelope) has Live Oak Woodland on both sides of the existing gravel driveway. This provides the basis for determining that most of the future residential impacts will occur in disturbed Live Oak Woodland, where gravel has been placed (Figure 13). An accurate topographic map of the existing gravel driveway location is depicted in the Topographic Survey Map (Edmundson and Associates, March 2015). See Blueprint pocket.

**Previous Direct Impact 1. Disturbance of Sensitive Habitats by Placement of Gravel Driveway in 2006.** According to Edmundson & Associates (March 2015), Approximately 7880 square feet of land in the western end of the parcel has been covered in gravel/rock. The following sensitive plant communities have been disturbed, and lack understory vegetation: Live Oak Woodland, Santa Cruz Cypress-Knobcone Pine Forest/ Maritime Mixed Chaparral, and Mixed Evergreen Forest.

**Mitigation Measure 1.** This direct impact is considered significant, but mitigable to a less-than-significant level through the incorporation of the following measures:

**a) Implement a Four-year Restoration program** that commences after construction is complete. Restoration measures will include: reclaiming gravel areas outside of the 12-foot wide driveway, and gravel areas that are not needed for maintenance access, and the CAL Fire turn-around. Gravel will be removed by using hand rakes. Reclaimed areas will be hand seeded with local native plant species representative of Sandhills habitat, weeded, and managed to promote native vegetation. Monitoring and reporting will document new locations of special status species, invasive weeds, and rate of natural recruitment. For more detail, see the Restoration Program section of this report.

**b) Opportunities for Habitat Enhancement.** The Meadow habitat areas depicted in Figure 2 support moderate levels of non-native annual grasses and weeds. A combination of weed control and hand seeding to promote species richness would improve the habitat value. Most of the meadow areas occur in gaps in the existing Live Oak Woodland or adjacent to the Live Oak Woodland located west of the house site. Approximately one acre of Meadow and Live Oak Woodland would benefit from habitat restoration. Since the Development Envelope can not exceed ¼ acre, habitat enhancement would be at a 4:1 ratio. The Mixed Evergreen Forest at the west end of the parcel may also be enhanced by removing French broom, velvet grass and other invasive non-native plants, and by protecting special status manzanita seedlings that naturally recruit in the forest. There are recorded observations of Anderson's manzanita in the past, and after the 4-year drought, normal rainfall may activate the soil "seed bank". Approximately one acre of the forest will be monitored for natural recruitment of native trees and shrubs.

**c) Purchase Conservation Credits at the Zayante Sandhills Conservation Bank.** After construction, the gravel areas remaining for residential use including the access drive way and turn-around shall be surveyed to determine the number of square feet of permanently disturbed (covered in gravel) habitat. It is estimated that the current gravel area of 7880 sq. ft. may be reduced by 1,000 to 1,500 sq. ft. The size of the remaining gravel driveway will be verified by a topographic survey, and used as a basis for determining the number of conservation credits that Mr. Sohl has voluntarily agreed to purchase. Mr. Sohl will purchase these conservation credits at a 1:1 ratio, one credit purchased for each sq. ft. of remaining gravel. These conservation credits will be purchased in addition to the credits determined for mitigation in the Habitat Conservation Plan for the Mount Hermon June Beetle prepared by Richard Arnold Ph.D. (February 2014). County Planning has agreed to the 1:1 ratio due to the extensive restoration and enhancement measures proposed on-site (pers. comm. Matt Johnston November 17, 2015).

## PROPOSED RESIDENTIAL DEVELOPMENT

Mitigation measures have been provided to address the potential impacts. Examples of direct impacts include tree removal, ground disturbance, and placement of gravel and cement blocks on natural habitat. Examples of indirect impacts include potential disturbance to Special Status species from increased human uses on the property (e.g., noise, lighting).

**Figure 12. Overview of area proposed for residential development. Most of the area has no understory vegetation due to existing gravel.**

During the October 2015 surveys, no special status plant species were observed in the Development Envelope. Another survey will be done in spring 2016 to confirm the present or absence of herbaceous special status species in and near the development envelope, along the gravel driveway, and the Alta Vista Road construction access route.

Mitigation measures are recommended to reduce impacts from the proposed residential development, and to compensate for indirect impacts to sensitive habitats. These mitigation measures are presented below. The impacts and mitigation measures have been organized according to the habitat or plant community affected. The types of impacts according to habitat are listed in Table 2. Note that no Santa Cruz Cypress-Knobcone Pine Forest / Maritime Mixed Chaparral habitat occurs in the Building Envelope.

**Table 2. Summary of Impacts to Sensitive Habitats Resulting From the Proposed Residential Development.***

| Project Feature | Type of Impact | Area of Impact | | Habitats Effected |
|---|---|---|---|---|
| | | Square Feet | Acres | |
| Foundation of new home | Permanent | 940 | 0.0216 | Meadow, Disturbed Live Oak Woodland |
| Landings | Permanent | 56 | 0.0013 | Meadow, Disturbed Live Oak Woodland |
| Concrete slab for garage | Permanent | 440 | 0.0101 | Disturbed Live Oak Woodland |
| Septic system, tank, infiltrators and leach field | Permanent | 270 | 0.0062 | Mixed Evergreen Forest |
| Two 5,000 gallon water tanks | Permanent | 200 | 0.0046 | Live Oak Woodland |
| Fire hydrant, new utility pole, and pressure tank pads | Permanent | 20 | 0.0005 | Live Oak Woodland |
| **Subtotal Permanent** | | **1,926** | **0.0443** | |
| | | | | |
| Pipelines between house and septic system, and between water tanks and house | Temporary | 74 | 0.0017 | Disturbed Live Oak Meadow |
| Perimeter work zone around house, garage, septic, water tank, etc. | Temporary | 720 | 0.065 | Mixed Evergreen Forest, Meadow, Disturbed Live Oak Woodland, Live Oak Woodland |
| **Subtotal Temporary** | | **794** | **0.0182** | |
| **Grand Total** | | **2,720** | **0.0625** | |

* The acreage numbers are from the Habitat Conservation Plan (Arnold, 2014).

## INTERIOR LIVE OAK- CANYON LIVE OAK WOODLAND

**Potential Direct Impact 2. Disturbance of Sensitive Live Oak Woodland Habitat (no gravel).** Approximately 220 square feet of Live Oak Woodland will be permanently disturbed by installing two water tanks, well, pressure tank pads and fire hydrant.

**Mitigation Measure 2.** The following measures are recommended to reduce impacts to the Live Oak Woodland to a less-than significant level.

a) After the Development Permit is issued and prior to construction, remove the cement blocks (no mortar keystone blocks), BBQ and patio furniture from the existing recreational barbecue area. Also, remove the dead chinquapin trees.

b) During the construction of the house site, protect the Live Oak Woodland habitats that occur adjacent to the development envelope to prevent inadvertent impacts to these habitat types. These natural areas outside the development envelope should be protected by the placement of 5-foot high construction fencing (metal stakes and rope) along the outside edge of the Development Envelope. The fencing should be maintained throughout the site construction period and should be inspected periodically for damage and proper functioning.

c) To the greatest extent possible, keep construction activities a minimum of 10 feet away from the tree trunks. Existing trees to be saved that are adjacent to construction activities shall be protected by a 5- foot high temporary fence (metal stakes and rope). The protection fencing should also be installed along the gravel driveway access route where it abuts the Live Oak Woodland habitat. The fence will start at the entry gate, where the gravel driveway starts. The existing natural habitat along the existing gravel driveway and natural habitat outside the proposed Development Envelope shall not be cut, filled, or compacted. The fencing along the driveway access route shall be maintained throughout the construction period and shall be inspected periodically for damage and proper functioning.

d) For trees designated to be retained within 20 feet of construction, utility trenching for the house and leach field, the trees should be protected by the placement of 5-foot high plastic construction fencing along the outside edge of the drip line of the tree or grove of trees. The fencing should be maintained throughout the site construction period and should be inspected periodically for damage and proper functioning.

e) If construction activities are proposed within the drip line of trees designated to be retained, the following construction guidelines should be implemented: minimize excavation, filling, or other type of soil disturbance within 10 feet of the tree trunk. If 1/3 or more of the roots are disturbed, the injured tree should be watered so that the ground is soaked to a depth of 18 inches, extending outward to the drip line of the tree.

f) Remove Invasive, Non-native Species (see Mitigation Measure 9).

## SANTA CRUZ CYPRESS KNOBCONE PINE FOREST/ MARITIME MIXED CHAPARRAL

**Potential Direct Impact 3. Construction Vehicles, Equipment, and Turnouts.**

Implementation of the proposed project would involve the use of small quantities of Fuels (e.g., diesel and gasoline), oils, lubricants, paints and solvents necessary of the routine operation of earthwork equipment. Spills or leaks of these compounds could potentially result in releases of contaminants to the groundwater.

During construction activities, there is the potential for oil and gas spills along the construction access route, which could damage adjacent sensitive Sandhills habitat and water courses. The highly sensitive Santa Cruz Cypress-Knobcone Pine Forest/ Maritime Mixed Chaparral habitat occurs immediately adjacent to Alta Vista Rd. (Figures 2 and 3). Vehicles may also introduce plant diseases and spread weed seed.

Three new turnouts are proposed for construction along Alta Vista Rd. (see Site Plan, Zajac, 11-17-15). The locations and sizes are per CAL Fire requirements. The turnouts will be located where there are existing wide areas along the private road. No new sensitive habitat, Santa Cruz Cypress trees or Bonny Doon Manzanita shrubs will need to be removed.

**Mitigation 3.** These direct impacts are considered significant, but mitigable to a less-than-significant level through the incorporation of the following measures:

a) Staging of construction vehicles and equipment. No Staging areas shall be allowed along Alta Vista Rd., especially in the turnout located at a low point midway along Alta Vista Rd. that is associated with a drainage and seasonal tributary that leads to Mill Creek. Sediments and hazardous material such as oil and gas shall not enter the drainage.

b) Staging of construction vehicles and equipment shall be allowed in the Development Envelope, provided that Best Management Practices for sensitive habitats are used, including parking vehicles over drip pans and having spill kits on-site during construction. All refueling, maintenance, and staging of equipment and vehicles will occur within the established staging areas. The Sohl Family will ensure that contamination of sensitive habitat does not occur during such operations. Prior to the onset of work, the contractor shall prepare a plan that provides a prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

Standard construction procedures and Best Management Practices (BMPs) will be implemented to reduce the emissions of dust and pollutants during construction. Some standard BMPs for construction projects include:

- Using a covered, paved area dedicated to vehicle maintenance and washing;

Developing a spill prevention and cleanup plan;
- Preventing hazardous chemical leaks by properly maintaining vehicles and equipment;

c) Vehicle tires should be sanitized with Lysol or equivalent prior to entering Alta Vista Rd. to avoid spread of fungal diseases and "Sudden Oak Death".

d) Remove Invasive, Non-native Species (see Mitigation Measure 9).

**Potential Indirect Impact 4.** Development of the single-family residence will not directly impact this sensitive habitat type. However, increased residential land uses on the property may result in indirect impacts to the Santa Cruz Cypress-Knobcone Pine Forest/ Maritime Mixed Chaparral habitat. The proposed residence will cause an increase in human activity on the site. Potential human impacts include: night lighting, domestic pets, trampling of vegetation, dumping of trash, and gardening.

**Mitigation 4.** These indirect impacts are considered significant, but mitigable to a less-than-significant level through the incorporation of the following measures:

a) Protection Fencing. During the construction of the house site, protect the Santa Cruz Cypress-Knobcone Pine Forest/ Maritime Mixed Chaparral that occurs adjacent to the existing gravel driveway access. This sensitive habitat should be protected by the placement of 5-foot high construction fencing along the outside edge of the gravel driveway. The fencing should be maintained throughout the site construction period and should be inspected periodically for damage and proper functioning.

b) After the construction, a permanent fence (i.e., split rail wood or rocks) shall be placed along the entrance driveway to minimize future potential disturbance to adjacent natural habitats.

c) Minimize the use of bright lighting (i.e., floodlights that are on all night) that nay influence the behavior and disorient wildlife species.

d) Maintain moderate levels of cats and dogs, so that there is not over predation of the site's rodent, bird, snake and lizard populations.

e) Remove Invasive, Non-native Species (see Mitigation Measure 9).

f) Foster the natural recruitment of native plant species that are representative of Sandhills habitat.

g) Structures and features proposed for residential development shall not be placed within 50 feet of an endangered Santa Cruz Cypress tree. This measure is specified in the County's Sensitive Habitat Ordinance.

## MIXED EVERGREEN FOREST

**Direct Impact 5. Home construction will remove Mixed Evergreen Forest Habitat.** Approximately 300 square feet of forest habitat will be developed for a septic tank and leach field in the southwestern portion of the Development Envelope (Figure 2).

**Mitigation 5.** These direct impacts are considered significant, but mitigable to a less-than-significant level through the incorporation of the following measures:

a) Enhance remaining forest areas by removing invasive, non-native vegetation and by fostering natural recruitment of native trees and shrubs (see Mitigation measure 9).

b) For trees designated to be retained within 20 feet of construction, utility trenching for the house and leach field, the trees should be protected by the placement of 5-foot high plastic construction fencing along the outside edge of the drip line of the tree or grove of trees. The fencing should be maintained throughout the site construction period and should be inspected periodically for damage and proper functioning.

c) If construction activities are proposed within the drip line of trees designated to be retained, the following construction guidelines should be implemented: minimize excavation, filling, or other type of soil disturbance within 10 feet of the tree trunk. If 1/3 or more of the roots are disturbed, the injured tree should be watered so that the ground is soaked to a depth of 18 inches, extending outward to the drip line of the tree.

## MEADOW HABITAT

**Direct Impact 6. Home construction will remove natural Meadow Habitat.** Approximately 600 square feet of Meadow habitat will be developed for part of the residence in the southwestern portion of the Development Envelope (Figure 2).

**Mitigation 6.** This direct impact is considered significant, but mitigable to a less-than-significant level through the incorporation of the following measures:

a) **Enhance Remaining Meadow areas.** After construction, the remaining meadow areas will be managed to promote native sandhills vegetation. Certain planting sites will be selected hand-seeding. Seeds will be collected within two miles of the property, and will include common aster, bristly aster, goldenrod, yellow yarrow, white yarrow, and woolly paint brush. The project botanist and revegetation specialist will conduct the seed collection, hand seeding, and select the areas to be seeded. The exact areas to be seeded will be determined after the spring 2016 surveys so that no special status species are adversely affected.

b) **Implement Selective Weed-trimming Program.** Depending on the amount of annual rainfall, it is recommended that the meadow areas be selectively weed

trimmed 2 to 3 times in spring and once again in late fall. Mowing should not be conducted during the summer season so that the native plants may complete their life cycle to produce mature seed. The project botanist will let the Sohl family know when it is the proper time to mow. The mowing or trimming will serve two main functions:

1) Mowing helps lower the competition between native herbs and non-native weeds and grasses.

2) Mowing will lower vegetation height and fire hazard.

**Potential Impact 7. Indirect Impacts to Special Status Plant Species.** Human activities on the property may result in indirect impacts to the endangered species, Santa Cruz Cypress and Bonny Doon Manzanita. Due to the limited distribution of Santa Cruz cypress in the region and its special status under FESA, County Code, and CEQA, these impacts are considered significant.

**Mitigation Measure 7.** The following measures are recommended to reduce indirect impacts to Santa Cruz Cypress a less-than significant level.

a) **Remove Invasive, Non-native Species (see Mitigation Measure 9).** Care should be taken during invasive, non-native plant removal when working near the cypress saplings.

b) **Measures for Vegetation Management and Fire Safety in the 100' CAL Fire Defensible Space around Residence**.

Fuel reduction work should avoid being done during the flight season for the Mount Hermon June Beetle (MHJB), which extends from mid May to Mid August. Do not remove completely, or thin out rare Santa Cruz Cypress trees, Bonny Doon Manzanita shrubs, or other listed species. Instead, use corrective pruning and remove lower branches that could fuel a ground fire.

If a burn pile is needed, it should be placed in the Mixed Evergreen Forest habitat on the property. Place the burn pile to avoid damage to the Western azalea grove or manzanita seedlings. Routes for hauling slash/cut brush or cut trees should avoid ground disturbance near special status plants such as Santa Cruz Cypress and Bonny Doon Manzanita.

**Potential Direct Impact 8. Increased Potential for Soil Erosion into Sensitive Habitat.** Construction activities and excavation for the new leach field will leave some disturbed areas with bare soil, which are subject to increased erosion, sedimentation, and run-off into adjacent natural habitats.

**Mitigation Measure 8.** These impacts to vegetation resources are considered significant, but mitigable through the following mitigation measures.

a) **Erosion Control Measures.** Measures shall be implemented to prevent increased erosion, sedimentation, and run-off into undisturbed habitats, especially in sensitive habitats.

   Suggested erosion control measures include: straw wattles, and/or weed-free straw bales anchored with wooden stakes to trap loose sediment, which could move down slope. Santa Cruz Erosion Control Mix should not be used as it contains invasive, non-native grasses and clover species. The effectiveness of the erosion control measures should be inspected to determine if additional measures should be implemented the following fall.

b) **Monitoring for Natural Recruitment and Special Status Plants.** In May 2016, the western third of the parcel will be evaluated for rare plants, sandhills indicator species, natural regeneration, and to confirm the amount of hand seeding needed. A survey at this time is recommended, since the rare Ben Lomond spineflower and other annual sandhills specialty plants would be identifiable at this time.

**Potential Direct Impact 9. Increased Potential for Spread of Exotic Species.** Construction vehicles and earth moving activities (for septic system and well) typically result in disturbed ground, which may be easily colonized by invasive, non-native species (i.e., French broom, acacia, and velvet grass).

**Mitigation Measure 9.** The project botanist will conduct weed surveys, flag problem areas, and conduct walk-throughs with the Sohl family to show them the maintenance needed. As compensation for indirect impacts to locally unique species and sensitive habitats, the landowners should remove/control the occurrences of invasive, non-native plant species that occur along the construction route and the western third of the parcel. Winter and early spring are good times to remove acacia saplings and French broom plants, when the soil is wet and before the plants have gone to seed. This helps to avoid the spread of seed into new areas. Controlling invasive, non-native plants will likely be needed on a yearly basis as regular management of the property. No herbicides shall be used.

High priority species for removal include silver wattle acacia, rose clover, dog tail grass, French broom, thistle species, velvet grass, feather grass, cat's ear, and rattlesnake grass. The plants should be removed in a manner that minimizes disturbances to the native trees and shrubs occurring in these habitat areas. For more information on weed control and hand seeding, see the Restoration Program section of this report.

**Implementation of Mitigation Measures**

Some of the mitigation measures described above have been incorporated into a four-year restoration program to be implemented at the Sohl property. The proposed restoration program begins on the following page.

## RESTORATION PROGRAM

The following goals and objectives have been developed for the Sohl Project:

## GOALS AND OBJECTIVES

- Preserve, enhance, and restore the natural resource values of the area to maximize the habitat value. Re-establish native vegetation that will become self-sustaining.
- Reduce the impacts of human activities (including run-off, sedimentation, and erosion).
- Manage the restoration site to promote native vegetation to levels that existed prior to residential development.
- Control and/or eradicate invasive, non-native plant species.
- Maintain the local gene pool of native vegetation by hand seeding locally native species and managing the restoration site to support their establishment and survival. All of the native seeds will be collected on the Sohl property or within 2 miles of the property.

## RESTORATION CONCEPT AND METHODS

### Restoration Concept

A qualified botanist/revegetation specialist with experience in sandhills habitat should coordinate and oversee the restoration program, including propagule collection, hand seeding, and maintenance activities. The exact location of the disturbed areas available for restoration will be determined after construction. To minimize soil disturbance and potential impacts to the Mount Hermon June Beetle, container stock shall not be planted. No planting holes will be dug. Restoration methods will emphasize fostering natural recruitment of native plant species associated with Sandhills habitat, hand broadcast seeding and control of invasive, non-native species and weeds.

### Plant Procurement Methods

**Preserving the Local Gene Pool.** The purpose of the restoration plan is to recreate or enhance native habitat. Plant performance will be better if locally collected seeds are used for a native seed mix, since the propagules have adapted to local environmental conditions (Guinon, 1992). Therefore, all of the native seed will be collected at the Sohl property or within two miles of the property.

**Monitoring for Special Status Plants.** The project Botanist will conduct Reconnaissance surveys in Spring 2016 to confirm the presence or absence of herbaceous, rare and endangered plants near the proposed Development Envelope, and along the construction access route (existing gravel driveway and Alta Vista Rd.).

The project Botanist will conduct reconnaissance surveys in spring, summer, and fall for 4 years, commencing after construction is complete. As mentioned above, garden escapes and target weedy species have been observed on the parcel. Currently, there are low levels of invasive vegetation near Alta Vista Rd. and at the eastern and western ends of the property. The Botanist will flag problem weeds or invasive plant locations, and will attend walk-throughs with the Sohl family. Since Steven Sohl does gardening work as part of his profession, he will be doing most of the weed maintance.

**Monitoring for Natural Recruitment and Plant Protection.** As mentioned in the mitigation measures above, monitoring of natural recruitment will be necessary to determine the exact areas to hand seed. The project botanist shall inspect the habitats by proposed residence for natually recruiting native trees and shrubs and flag them for preservation. Depending on the plant species, some of the new volunteering plants, especially live oak trees, Santa Cruz Cypress, chinquapin, and manzanita will need to be protected by deer fencing or by poultry wire cages.

**Hand-broadcast Seeding.** Spot seeding using a locally collected, native seed mix is proposed to restore the reclaimed areas where the gravel was removed, and gaps in the Live Oak Woodland the Meadow habitat. A total application rate of approximately 8 lbs. per acre is estimated. The amount of area to be seeded will depend on the level of natural recruitment and soil erosion. The actual areas, species seeded, and the application rates for each species will be documented in the annual report. The potential native seed mix includes: June grass, bristly golden aster, naked-stem buckwheat, California aster, yellow yarrow, white yarrow, Indian paint brush, purple owl's clover and golden rod (see Table 3).

**Table 3. Native Seed Mix****

| Common Name | Scientific Name | Approx. Application Rate (lbs. per acre) |
|---|---|---|
| Common Yarrow | *Achillea milifolium* | 1.0 |
| California Aster | *Corethrogyne filaginifolia)* | 0.5 |
| California Golden Rod | *Solidago californica* | 0.5 |
| California Poppy Sandhills ecotype | *Eschscholzia californica* | 0.5 |
| Naked-stem Buckwheat | *Eriogonum nudum* var. *decurrens* | 0.5 |
| Miniature Annual Lupine | *Lupinus bicolor* | 1.0 |
| Purple Owl's Clover | *Castilleja pupurea* | 1.0 |
| Woolly Indian Paint brush | *Castilleja foliosa)* | 0.5 |
| Yellow yarrow | *Eriophyllum confertiflorum* | 1.0 |

** All seed to be collected in the Martin Road neighborhood, subject to permission of the property owners/neighbors. Exact quantities of seed will be verified after collection and seed processing. Species and quantities are subject to change, depending on availability. Trace amounts of other sandhills specialty plant species may be added as available.

**Weed Surveys and Removal of Invasive, Non-native Species.** Non-native plants and weeds will be removed from the project area. Target non-native species for removal include: French broom in the Mixed Evergreen Forest, garden escape feather grass, thistle species, velvet grass, horseweed, rose clover, rattlesnake grass (*Briza maxima*), cat's ear, and dogtail grass (*Cynosurus echinatus).*

**Mulching.** Areas that have been hand seeded will not be mulched with rice straw, since many of the rare and endangered plant species associated with the sandhills prefer open sandy soil. Such species include Ben Lomond spineflower and Ben Lomond buckwheat. Leaving the soil surface open will facilitate seed germination and encourage native plants to naturally re-establish.

### Implementation Schedule

The overall implementation schedule for restoration activities is presented in Table 4. If there is low natural recruitment of native plant species and soil erosion continues to be a problem, additional revegetation and erosion control measures will be implemented. Erosion control efforts will be concentrated in Year 1. Four years of vegetation management, maintenance, monitoring, and reporting are recommended, commencing after construction. Annual letter reports will be prepared in August. If the performance criteria have been met by Year 3, maintenance and monitoring may be reduced in Year 4. Active revegetation with hand seeding will start the first October after the existing gravel has been removed from the areas to be reclaimed. The maintenance and monitoring period may be extended if the performance criteria have not been met.

**Seasonal Timing of Planting.** The optimum season for hand seeding is fall. Planting at this time takes advantage of winter and spring rains. Therefore, hand-broadcast seeding will be implemented in October.

## MAINTENANCE ACTIVITIES

The project Botanist will inspect the site to determine the maintenance needed and will coordinate with the Sohl family on what to do. Maintenance efforts will primarily consist of weeding, maintaining plant protection shelters around trees and shrubs that have naturally recruited at the property, controlling invasive, non-native plants, and hand watering. A qualified botanist will perform the maintenance inspections on the average of three times a year, and will provide recommendations to Sohl family. The use of pesticides and chemical fertilizers will not be allowed.

### Weeds and Exotics Control

The Restoration Area should be surveyed for invasive non-native plants and weeds each year. Invasive non-native plants should be controlled and removed each winter and spring as part of the routine maintenance (see Performance Criteria section). Most of the invasive, non-native plant removal can be done mechanically by uprooting, pulling, and hoeing below the ground.

**Background.** In accordance with the policy on invasive, non-native plants adopted by the California Native Plant Society (CNPS) in September 1996, land managers are urged to control/eradicate invasive, non-native plant species (CNPS September 1996). According to the CNPS, an invasive, non-native plant species is one that did not occur naturally in California prior to European settlement and is able to proliferate and aggressively alter or displace indigenous plant communities (*ibid.*). Invasive, non-native plants are detrimental to the environment in many ways and often out compete California native plant species to their exclusion. Invasive, non-native plants can disrupt soil fungi and microorganism's relationships with plants, and they also disrupt nutrient cycles. Certain species (e.g., pampas grass and French broom) can contribute to the intensity of wild fires.

Both State (Department of Pest Regulation) and Federal governments have enacted legislation declaring the worst aggressive weeds as "noxious weeds" that should be eradicated whenever they are found (Hickman 1993). The California Invasive Pest Plant Council has developed a statewide list of invasive, non-native plant species.

**Integrated Pest Management.** The control of invasive non-native plants should have an integrated approach. The use of pesticides will be minimized. Most of the invasive plant removal can be done mechanically by uprooting, pulling, and hoeing below the ground.

**Non-herbicide Methods for the Control of Invasive Non-native Plants**

1) Mechanical control such as mowers, flaming equipment, and weed trimmers;
2) Manual methods such as hand pulling and hoeing;
3) Biological control (use of natural enemies/ insect predators); and
4) Maintenance practices such as solarization with plastic sheeting.

The control of invasive, non-native species should have an integrated pest management approach that uses a variety of control measures, primarily mechanical and physical. Chemical methods are the least desired, especially due to the recent sightings (June 2008) in Bonny Doon of the endangered Mount Hermon June beetle. This insect species spends much of its time living underground. As control measures are implemented, it is important to minimize disturbance to the soil, since invasive species establish readily in open disturbed areas.

**Target Species for Removal.** The following invasive, non-native species and weeds will require control at the site: stinkwort (*Dittrichia graveolens*), French broom, thistle species, velvet grass, cat's ear, sheep sorrel, Acacia spp., rattlesnake grass, and dogtail grass. There should be continued surveillance and removal of these species, as part of managing the property. The best time of year to remove invasive, non-native plants is in winter and early spring, when the soil is easy to dig, and before the plants have set seed. The safest way to control weeds is to patrol frequently, and remove weeds manually.

## MONITORING AND REPORTING PROGRAM

As indicated in the Restoration Implementation Schedule (Table 4), monitoring and reporting will occur over a four-year period. The following program overview describes the monitoring procedures and performance criteria. Monitoring will document the success of the restoration efforts implemented as compensation for the residential development. The monitoring will be conducted by the project botanist.

The following parameters will be monitored: locations of special status plants, vegetative cover according to plant species, proportions of native vegetation versus non-native vegetation, percent cover of invasive, non-native species, species richness, and any noted erosion or site disturbance problems. Monitoring over the 4-year period will help to insure that the site will be likely to proceed toward the long-term goals, and will allow for remedial action, as needed.

If the stated performance criteria are not met by Year 4, site maintenance and monitoring will continue untill the stated performance criteria are met.

### Monitoring for Special Status Species and Natural Recruitment

The western third of the parcel will be evaluated by the project botanist in spring and summer for native plant species that have re-established naturally. Depending on the monitoring results, the locations of the proposed planting areas may need to be refined collaboratively between the monitor, County Planning, and the owner. The survey should focus native tree seedlings, native woody shrubs, and special status plant species.

### Reconnaissance Surveys

The project botanist will survey the project site 3 times per year in spring, summer, and fall starting after constuction is complete, likely spring 2017. The site will be surveyed over a four- year period for special status plant species, natural recruitment, the effectiveness of plant protection measures and invading invasive, non-native plant species and weeds. The site will also be assessed for erosion problems, and whether the erosion control measures need to be adjusted. The proportion of native vegetation versus non-native vegetation will be assessed. The monitor will evaluate the performance of the hand seeding, and will make recommendations to correct any significant problems or potential problems.

### Vegetation Sampling using Belt Transects

The number of years that vegetation sampling will occur depends on when the performance criteria are met. Vegetation sampling will begin the first spring after hand seeding. Nine permanent belt transects will be established in the Meadow habitat areas. The belt transects will be three meters square. For each belt transect, the percent vegetative cover according to species, percent bare ground, and percent litter

will be recorded. The final locations of the belt transects will be mapped in the field and illustrated in the annual reports.

**Photodocumentation.** During the spring and summer surveys, photographs will be taken to document the restoration efforts. Photographs will be taken from the same vantage point (photostation), same time of day, and in the same direction every year. Selected photographs should be included in the annual reports. The mapped field locations of the permanent photostations should be included in the annual reports.

## PERFORMANCE CRITERIA

Attributes to be monitored include: species richness, vegetative cover, soil erosion, bare ground, and the proportion of invasive non-native plant species. The specific performance criteria follow:

**Trend in Increasing Native Vegetative Cover** of Santa Cruz cypress, Bonny Doon manzanita, Ben Lomond buckwheat, live oak, and species representative of Maritime Chaparral and Zayante Sandhills.

**Vegetative Cover Invasive Non-native Plants.** Maximum of 5% vegetative cover of invasive, non-native plants (velvet grass, rattlesnake grass, bristly dog tail grass acacia, stinkwort, French broom) invasive, non-native plants in the Restora tion Areas by Year 4 of the restoration program.

**Bare Ground.** Maximum of 30% bare ground by Year 4 or the amount of bare ground estimated to be present prior to residential development. Note that mulched surfaces or surfaces with duff/litter are not considered bare ground.

**Erosion Control.** Absence of erosion rills and gullies.

**Species Richness.** Minimum number of 8 different native plant species in the Restoration Area.

If the stated performance criteria are not met by Year 4, site maintenance and monitoring will continue untill the stated performance criteria are met. If the performance criteria have been met by Year 3, maintenance and monitoring may be reduced in Year 4.

### Preparation of Annual Reports

Yearly monitoring reports will be prepared in August 2017, 2018, 2019, and 2020 that document the results of the spring and summer monitoring surveys, maintenance efforts, and vegetation management activities. The report schedule may change depending on when home construction is complete. The reports should be brief, 6 to 8 pages, that document the findings of the year's monitoring, highlight problems and successes, date of monitoring, who performed the monitoring, yearly photographs, and other appropriate information. The reports will also include an evaluation of whether or not the previous year's recommendations were implemented. The reports will

recommend remedial actions to be undertaken, if the restoration is not meeting the above performance criteria. Reports shall be submitted to the County Planning Department and the USFWS.

**Table 4. Restoration Implementation Schedule*
(provides 4 years of maintenance and monitoring after construction)**

| Task | Year 0 (2016) | | | | Year 1 (2017) | | | | Year 2 (2018) | | | | Year 3 (2019) | | | | Year 4 (2020) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W | S | S | F | W | S | S | F | W | S | S | F | W | S | S | F | W | S | S | F |
| Propagule Collection | | | | | | • | • | | | | | | | | | | | | | |
| Exotic Plant Removal** | | | | | | • | • | | | • | • | | | • | • | | | • | • | |
| Erosion Control | | | | | | | | • | | | | | | | | | | | | |
| Hand Seeding*** | | | | | | | | • | | | | | | | | | | | | |
| Special Status Plant Surveys*** | | • | | | | • | | | | • | | | | • | | | | • | | |
| Maintenance Activities | | | | | | • | • | • | | • | • | • | | • | • | • | | • | • | • |
| Weed Survey and Biological Monitoring | | | | | | • | • | • | | • | • | • | | • | • | • | | • | • | • |
| Prepare Letter Report (August) | | | • | | | | • | | | | • | | | | • | | | | • | |

* Year 0 includes special status species surveys and a summary of findings in an updated botanical report. The report will include mapped locations of special status species and a list of additional species observed in Spring 2016. Year 1 restoration in 2017 is subject to change, if construction is not complete. If the performance criteria have been met by Year 3, maintenance and monitoring may be reduced in Year 4.

** Exotic plant removal is likely to continue as an on-going part of landscape maintenance.

*** Supplemental seeding will continue past Year 2 if needed to meet the Performance Criteria.

**Table 5. Invasive, Non-native Plant Species of the Santa Cruz Sandhills (partial list)**

| | |
|---|---|
| Andean Pampas Grass, Jubata Grass | *Cortaderia jubata* |
| Black Acacia | *Acacia melanoxylon* |
| Bull Thistle | *Cirsium vulgare* |
| Cat's Ear | *Hypochaeris* spp. |
| Cheat Grass | *Bromus tectorum* |
| Dog tail Grass | *Cynosurus echinatus* |
| Freeway Iceplant | *Carpobrotus edulis* |
| French Broom | *Genista monspesslana* |
| Italian Thistle | *Carduus pycnocephala* |
| Portuguese Broom | Cytisus striatus |
| Rattlesnake Grass | *Briza maxima* |
| Red Brome | *Bromus madritensis ssp. rubens* |
| Redstem Filaree | *Erodium botrys* |
| Ripgut Brome | *Bromus diandrus* |
| Rose clover | *Trifolium hirtum* |
| Scotch Broom | *Cytisus scoparius* |
| Silver Wattle | *Acacia dealbata* |
| Slender-flowered Thistle | *Carduus tenuiflorus* |
| Spring Vetch | *Vicia sativa* |
| Stinkwort | *Dittrichia graveolens* |
| Velvet Grass | *Holcus lanatus* |

## CONCLUSION

The mitigation measures proposed in this Biotic Report and Restoration Program include protection of natural habitats, maintenance, monitoring of special status plants, erosion control, exotics removal, hand seeding, performance criteria, and monitoring and reporting. Year 0 Monitoring and reporting will start in Spring 2016. Restoration and additional monitoring are proposed for a 4-year period, commencing after construction. Four years will be likely in order to document natural recruitment, plant protection and that invasive non-native plants are under control, and whether the performance criteria for the restoration program have been met. If the performance criteria have not been met, the restoration program may be extended.

It is likely that the impacts due to residential development can be partly mitigated on-site by the proposed mitigation and restoration measures in this report, when used in conjunction with the measures described in the "Habitat Conservation Plan (HCP) for the Sohl Residence" (Arnold, February, 2014).

## COORDINATION WITH THE UNITED STATES FISH & WILDLIFE SERVICE

A copy of this Biotic Report will be sent to the US Fish & Wildlife Service to inform them about the additional mitigation measures and supplemental information about the biotic resources and sensitive habitats occurring on the parcel as a whole, since the HCP prepared by Richard Arnold in February 2014 focuses on impacts and mitigation in the Development Envelope.

Due to the presence of the federally listed Mount Hermon June beetle in Bonny Doon, and the presence of the federally and State listed Santa Cruz Cypress on the property, Native Vegetation Network will send a letter to the United States Fish and Wildlife Service (Service) that asks if they would like to receive a copy of future annual reports that document the results of on-site surveys and restoration measures.

## ADAPTIVE MANAGEMENT

If the Spring 2016 surveys for special status species result in occurrences within the Development Envelope, the Site Plan will be adjusted to avoid such species. The annual reports prepared as part of the Restoration Program will be the main way to document any needed changes to the restoration and maintenance activities on the property. The annual reports will make recommendations to insure restoration success. If there are significant changes in site performance or significant monitoring results, the annual reports will make recommendations, as appropriate. Certain large changes or recommendations to the restoration program will need concurrence from County Planning. Significant changes such as the duration or extension of maintenance or monitoring should be documented in a letter prepared by the project botanist. If County Planning concurs with the recommendation(s), the recommendation letter should be considered as an amendment to this report.

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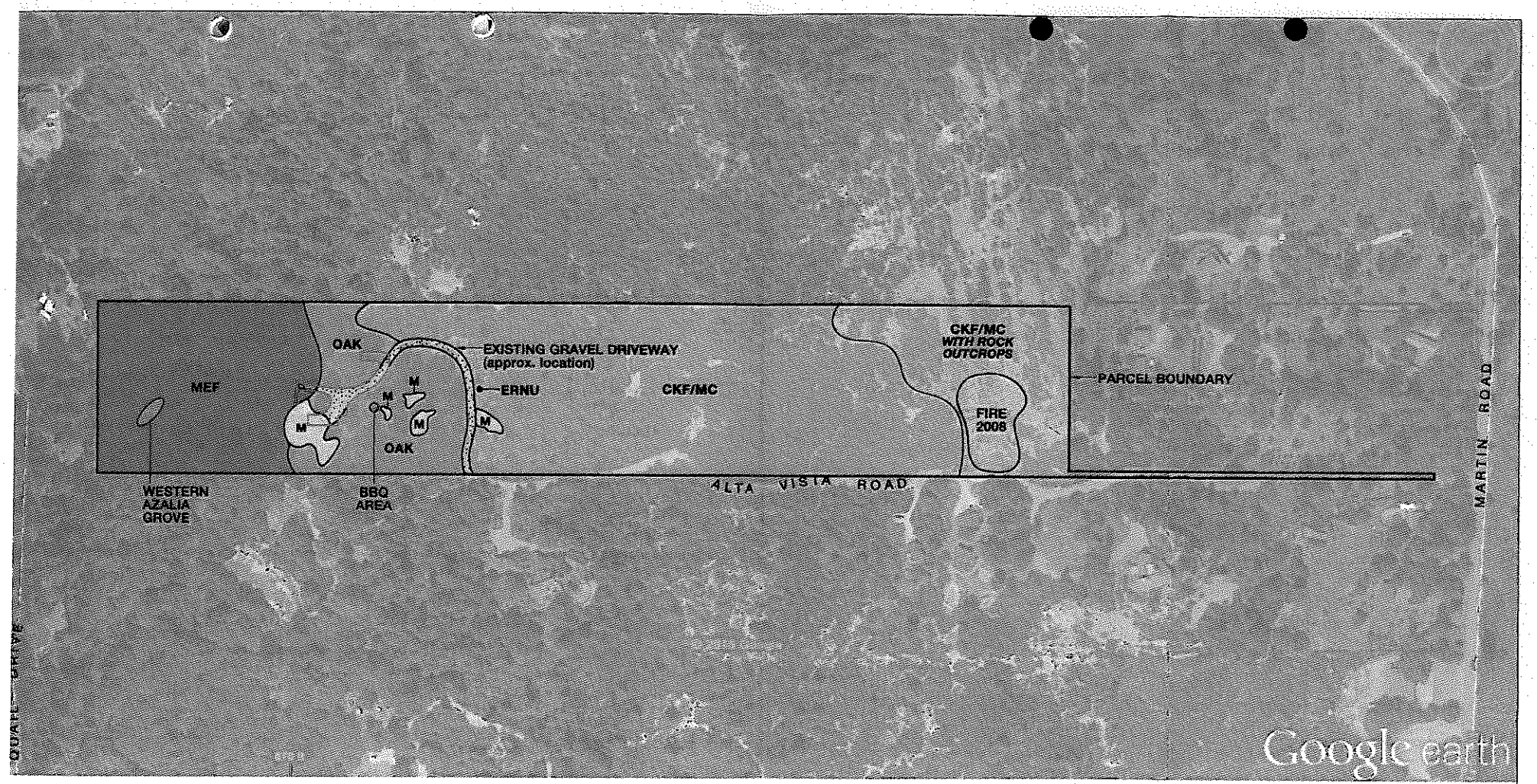
## Personal Communications

Steven Sohl, October 21 and November 17, 2015

Matt Johnston, Santa Cruz County Planning Dept., October 13 and November 17, 2015




Base Map Source: Google Earth 2015
Imagery Date: 3/28/2015

N

APPROXIMATE SCALE: 1" = 200'

0 200' 400'

LEGEND

- **MEF** Mixed Evergreen Forest
- **OAK** Oak Woodland
- **CKF/MC** Cypress-Knobcone Pine Forest / Maritime Mixed Chaparral
- **M** Meadow
- • **ERNU** *Eriogonum nudem* var. *decurrens*
- Development Envelope Boundary

Native Vegetation Network
653 Quail Drive • Santa Cruz, California 95060
Telephone/Fax (831) 425-0687

**EXISTING PLANT COMMUNITIES**
SOHL PARCEL

Figure 2
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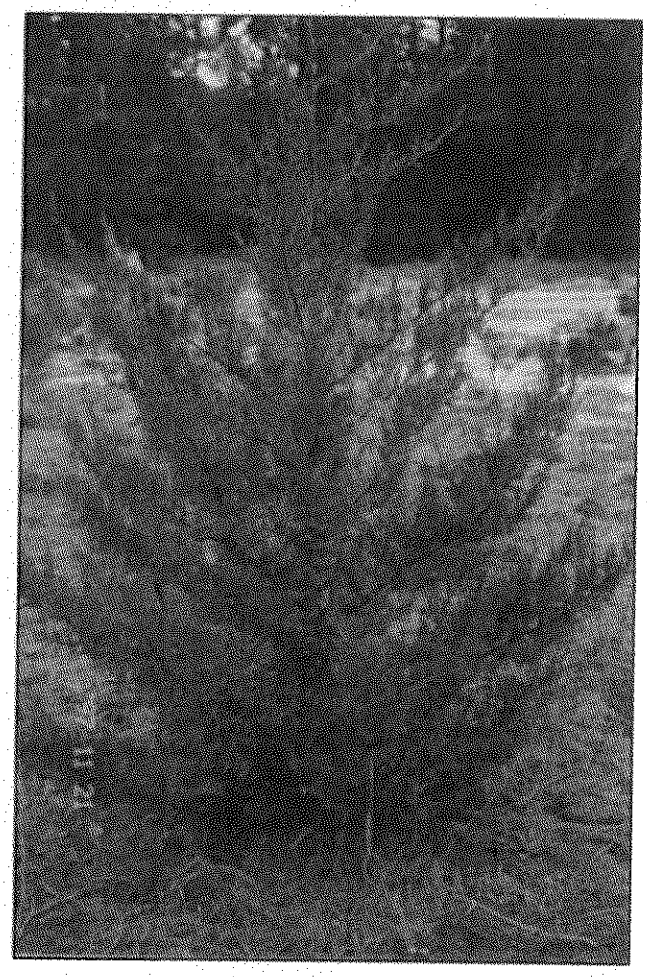
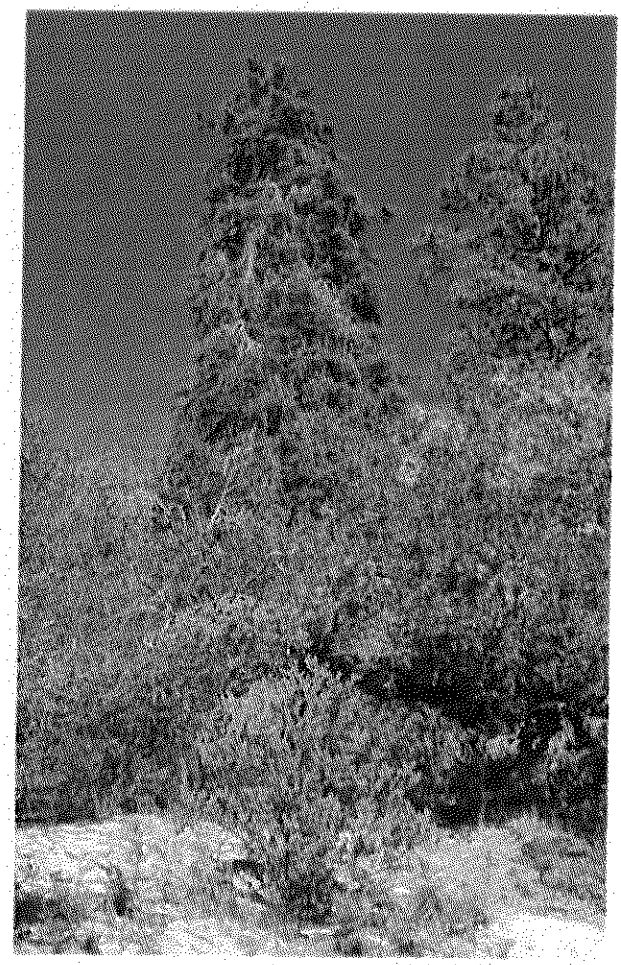
PV-402

# APPENDIX A

## Santa Cruz Cypress (*Hesperocyparis abramsiana*)





### Conservation Status

Santa Cruz cypress is on both the State of California (State) and United States (Federal) List of Endangered Species (Table 1). In addition, it is on the California Native Plant Society list of most threatened and endangered plants (List IB.2).

### Distribution

Habitat for Santa Cruz Cypress consists of chaparral and closed-cone cypress and pine forest within a mosaic of redwood and mixed evergreen forest. There are five known populations, including the Bonny Doon Population, which occurs on the BDER and on adjacent residential parcels. The other populations are located near Major's Creek (Santa Cruz County), Bracken Brae (Boulder Creek), near Eagle Rock, and Butano Ridge (southern San Mateo County). The cypress groves are associated with Eocene or Lower Miocene sandstone or soils derived from Mesozoic granite, within an area influenced by a Mediterranean-type climate (i.e., with cool wet winters and hot, dry

summers) and with little to no coastal fog. Cypress habitat ranges in elevation from 1020 to 2550 feet.

Santa Cruz cypress tends to grow on poorly developed soils that have low water holding capacity and that are low in nutrients. However, the trees are tallest on deep sand profiles. Originally, it was thought that *Cupressus abramsiana* was restricted to old marine sandstone substrates, consisting mainly of sand (Wolf, 1948; McMillan, *1956).* A portion of the Bonny Doon population occurs on the xerorthents-rock outcrop complex, and another portion occurs on Zayante coarse sand, *5-30* percent slopes *(ibid.).* Zayante coarse sand is a deep, somewhat excessively drained soil that has formed in residuum weathered from consolidated marine sediment or sandstone (i.e., Santa Margarita sandstone) *(ibid.).*

All of these soils are sandy or gravelly, and therefore are well-drained and porous. Santa Margarita sandstone derived soils are shallow, poorly developed, low in organic content, and very low in the major nutrients (United States Department of Agriculture, 1977).

**Description**

Santa Cruz cypress is an erect densely branched tree in the cypress family. This erect, densely branched tree, a member of the cypress family (Cupressaceae), attains a height of up to 34 feet and typically develops a compact, symmetrical, pyramidal crown. Mature foliage of Santa Cruz cypress is scale-like and rich light green, while its bark is gray and fibrous. The trees annually produce numerous female cones, 20 to 30 millimeters long, near the growing branch tip. These cones, which are firmly attached to the branch, remain closed and retain their seeds until the tree or supporting branch dies, generally as a result of fire. These serotinous (late-opening) cones enable cypresses to drop abundant quantities of seed to the ground after a typical fire burns a grove.

**Ecology**

Recurring wildfire periodically burns cypress habitat, a phenomenon that likely shaped all groves of Santa Cruz cypress. Because individual trees fail to resprout from their charred trunks after fire, the species depends upon seed stored in their serotinous cones for post-fire regeneration. Fire recurring at too frequent an interval to allow trees to reach seed-bearing age could result in extirpation of a grove. Conversely, the prolonged absence of fire (i.e., 200 years or more) could lead to lowered post fire reproductive capability with the successional establishment of other competing plants, thus possibly leading to the constriction or extinction of a grove.

In Bonny Doon, the disruption of natural fire frequency is threatening the sustainability of the cypress populations. Due to the proximity of most of the populations to residential areas, natural wildfires have been suppressed and the overall health of

# Bonny Doon or SILVERLEAF MANZANITA (ARCTOSTAPHYLOS SILVICOLA)

## Conservation Status

Silverleaf manzanita (*Arctostaphylos silvicola* ), which is also known as "Bonny Doon manzanita" is on the CNPS list of most threatened and endangered species (List 1B.2) (CNPS On-line Inventory of Rare and Endangered Plants, October 2015). This species is not State listed; however it is considered a Species of Concern at the Federal level.

## Distribution

Silverleaf manzanita occurs in the Zayante Sandhills of Santa Cruz County near the towns of Boulder Creek, Ben Lomond, Olympia, Zayante, Felton, Scotts Valley, Glenwood, and Bonny Doon.

## Description

Silverleaf manzanita is an evergreen tree-like shrub that grows to be 1-6 m tall. This non-burl forming manzanita has deep, dark red, smooth bark and stems covered with dense, fine, grayish white hairs. The oblong to elliptic leaves are held erectly and range from 1.5-3.5 cm in length. Their dull gray leaf surfaces are covered with dense white hairs in younger leaves, while older leaves are smooth and glaucus, or covered with a white or bluish film (Hickman 1993). The hairs and bluish film give the plant a gray or silver appearance, lending to its name. The whitish pink, urn-shaped, flowers are borne

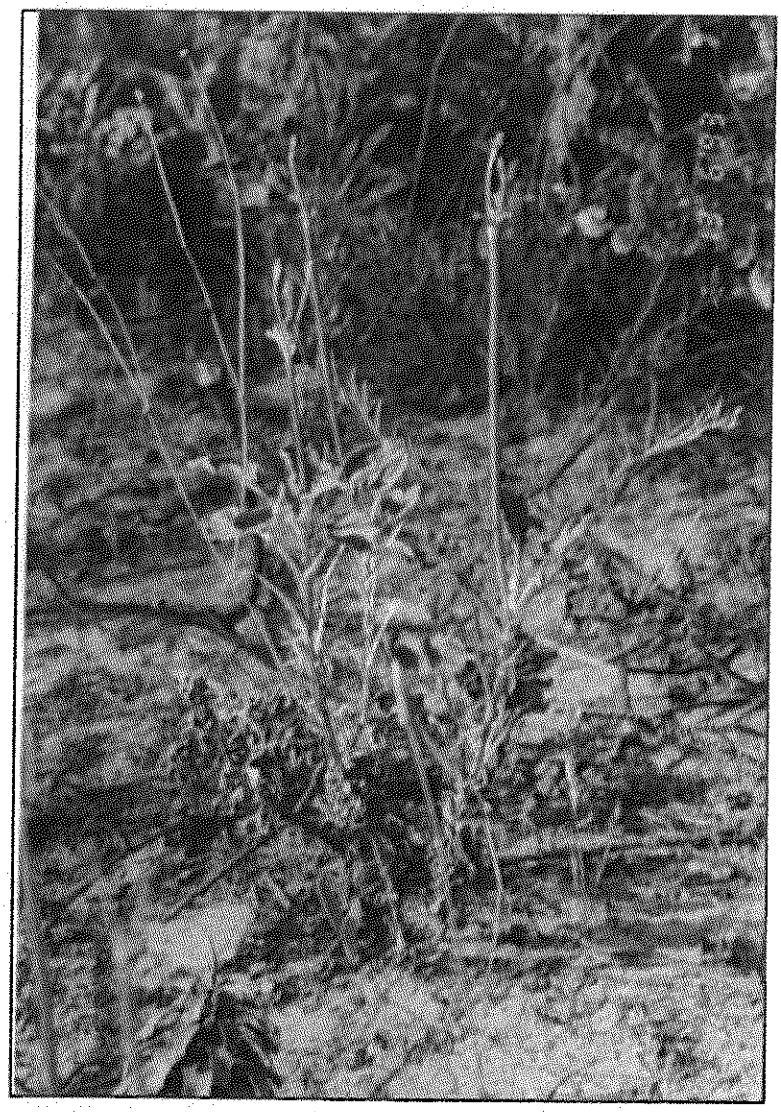
on dense racemes at the ends of branches. Silverleaf manzanita flowers between November and February.

**Ecology**

Silverleaf manzanita is endemic to and only occurs in Santa Cruz County. This plant species is only associated with soils of the Zayante Series, which are low nutrient, highly drained sand soils derived from the weathering of uplifted marine sediments and sandstones of the Santa Margarita formation (USDA 1980). Within the sandhills, silverleaf manzanita is frequently found in areas where the soil is thinner such as areas where the sandstone from which the soil is derived is nearer to the soil surface (Morgan 1983). These areas are primarily found at the base of ridges and are typically dominated by silverleaf manzanita and other chaparral shrubs including *Ceanothus cuneatus, Adenostoma fasiculatum, Mimulus aurantiacus, Ericameria ericoides* and trees including *Quercus agrifolia* and *Q. wislizenii.*

Silver leaf manzanita is an obligate seeding plant (Hickman 1993). That is, it cannot reproduce vegetative from underground burls ("stump sprout") following moderate to high intensity fires that consume aboveground biomass, so population persistence requires successful germination of seeds.

# Ben Lomond Buckwheat (*Eriogonum nudum var. decurrens)*



**Conservation Status**

The Ben Lomond buckwheat., also called Naked-stem Buckwheat (*Eriogonum nudum* var. *decurrens*) is not State or Federally listed; however, it is on the CNPS list of most threatened and endangered plant species and has California Rare Plant Rank of 1B.1 (CNPS On-line Inventory Rare and Endangered Plants (Oct 2015).

**Distribution**

The Ben Lomond buckwheat is endemic to the Zayante Sandhills of Santa Cruz County, and occurs near the towns of Boulder Creek, Ben Lomond, Olympia, Zayante, Felton, Scotts Valley, Glenwood, and Bonny Doon.

## Description

This variety of *Eriogonum nudum (E. nudum* var. *decurrens)* is a small perennial shrub in the buckwheat family, and has clusters of small pinkish flowers born in a flower head born on a stalk that has no leaves. This variety is also commonly called naked-stemmed buckwheat.

The Ben Lomond buckwheat is a perennial herb or occasionally a suffrutescent (subshrub) with a woody, persistent stem. Including the flower stalks, plants range from 30-200 cm tall (Hickman 1993). The thick, green leaves frequently have reddish coloration. Although the leaves may wilt in response to summer drought, they revive at the onset of the rainy season (personal observation Valerie Haley). Though many wither and shrink during the summer, most are persistent. Leaves have dense white hairs coating the underside of leaves, an apparent adaptation to drought stress. The white undersides reflect the sunlight back at the sandy soil surface.

The very small (3-4 mm), radial, white flowers of Ben Lomond buckwheat form a dense cluster at the end of long gray-green flower stalks, which give the inflorescence an open appearance. The fruits are 1.5-3.5 mm long achenes that remain enclosed in the orange to red-brown dried petals (Hickman 1993).

## Ecology

Seeds germinate at the beginning of the rainy season when warmth and moisture are both available. Seedlings develop a basal rosette of leaves during the first year after germination. Plants typically flower between June and August, and seed set occurs in late summer-early fall.

Endemic to Santa Cruz County, the Ben Lomond buckwheat is found only on soils of the Zayante Series which are low nutrient, highly drained sand soils derived from the weathering of uplifted marine sediments and sandstones of the Santa Margarita formation (USDA 1980). Within the sandhills, the Ben Lomond buckwheat is found in both the sand parkland and silver-leaf manzanita chaparral plant communities. Ben Lomond buckwheat is frequently found in the gaps in chaparral and along trails.

Fire removes aboveground biomass of adult Ben Lomond buckwheat individuals; however, most plants successfully resprout in the winter and flower in the spring following fire, suggesting that this plant is adapted to fire (McGraw 2004).

# APPENDIX B
# SOHL PARCEL PLANT SPECIES LIST
# OCTOBER 2015

**IIS IS A PARTIAL LIST. ADDITIONAL SPECIES WOULD BE IDENTIFIABLE RING OTHER SEASONS. A SURVEY WILL BE CONDUCTED IN MAY 2016.)**
**NON-NATIVE**

| FERNS |
|---|
| **unstaedtiaceae-Bracken Family** |
| ridium aquilinum var. pubescens - BRACKEN FERN |
| **vopteridaceae-Wood Fern Family** |
| /opteris arguta – COASTAL WOOD FERN |
| ystichum munitum - WESTERN SWORD FERN |
| **ypodiaceae-Polypody Family** |
| ypodium californicum - CALIFORNIA POLYPODY |
| **eridaceae-Brake Family** |
| ıtagramma triangularis ssp. triangularis – GOLDBACK FERN |
| |
| **GYMNOSPERMS** |
| **pressaceae-Cypress Family (includes Taxodiaceae)** |
| sperocyparis abramsiana (Cupressus) - SANTA CRUZ CYPRESS |
| ıuoia sempervirens – COAST REDWOOD |
| **ıaceae-Pine Family** |
| ıus attenuata - KNOBCONE PINE |
| ıus ponderosa - PONDEROSA PINE |
| udotsuga menziesii var. menziesii - DOUGLAS-FIR |
| |
| **ANGIOSPERMS** |
| **MAGNOLIIDS & EUDICOTS** |
| **acardiaceae-Sumac, Cashew Family** |
| xicodendron diversilobum - WESTERN POISON OAK |
| **iaceae-Carrot Family** |
| morhiza berteroi (O. chilensis) – WOOD SWEET CICILY |
| nicula crassicaulis – PACIFIC SANICLE |
| rilis arvensis – HEDGE PARSLEY * |
| **teraceae-Sunflower Family** |
| ccharis pilularis ssp. consanguinea - COYOTE BRUSH (upright) |
| rethrogyne filaginifolia (Lessingia) - CALIFORNIA-ASTER |
| icameria arborescens - GOLDEN-FLEECE |
| icameria ericoides - MOCK HEATHER/CALIFORNIA GOLDENBUSH |
| geron canadensis (Conyza) - HORSEWEED |
| iophyllum confertiflorum var. confertiflorum - GOLDEN or YELLOW-YARROW |
| mochaeta ustulata (Gnaphalium purpureum) – PURPLE CUDWEED |
| terotheca grandiflora - TELEGRAPH WEED |
| terotheca sessiliflora ssp. echioides – BRISTLY GOLDEN ASTER |
| eracium albiflorum - WHITE HAWKWEED |
| pochaeris glabra - SMOOTH CAT'S-EAR* |

| |
|---|
| Logfia gallica (Filago) - DAGGERLEAF COTTONROSE* |
| Madia gracilis - GUMWEED/SLENDER madia |
| Madia sativa - COAST MADIA/COAST TARWEED |
| Pseudognaphalium beneolens (Gnaphalium canescens ssp. b.) – FRAGRANT CUDWEED |
| Stylocline gnaphaloides – EVERLASTING NESTSTRAW |
| **Boraginaceae-Borage (includes Hydrophyllaceae)** |
| Eriodictyon californicum – YERBA SANTA |
| Myosotis latifolia - BROADLEAVED FORGET-ME-NOT* |
| **Brassicaceae-Mustard** |
| Cardamine californica - MILK MAIDS/TOOTH WORT |
| **Campanulaceae-Bellflower** |
| Asyneuma prenanthoides (Campanula) – CALIFORNIA HAREBELL |
| **Caprifoliaceae-Honeysuckle** |
| Lonicera hispidula (L. h. var. vacillans) – HAIRY HONEYSUCKEL |
| Symphoricarpos mollis - CREEPING SNOWBERRY/TRIP VINE |
| **Caryophyllaceae-Pink** |
| Silene gallica - SMALL-FLOWER CATCHFLY/windmill pink* |
| **Caryophyllaceae-Pink continued** |
| Spergularia rubra - PURPLE SAND-SPURREY * |
| **Cistaceae-Rock-Rose Family-** |
| Helianthemum scoparium - PEAK RUSH-ROSE |
| **Crassulaceae-Stonecrop -** |
| Crassula connata - PYGMY-WEED |
| **Ericaceae-Heath Family** |
| Arbutus menziesii - PACIFIC MADRONE |
| Arctostaphylos andersonii - ANDERSON'S MANZANITA |
| Arctostaphylos crustacea ssp. crinita (A. tomentosa ssp. crinita) - CRINITE MANZANITA |
| Arctostaphylos sensitiva (A. n. var. sensitiva) – SENSITIVE MANZANITA |
| Arctostaphylos silvicola - BONNY DOON MANZANITA |
| Rhododendron occidentale - WESTERN AZALEA |
| Vaccinium ovatum - CALIFORNIA HUCKLEBERRY |
| **Fabaceae-Legume, Pea Family** |
| Acacia sp. - SILVER WATTLE cultivar* |

| |
|---|
| :mispon americanus var. americanus (Lotus purshianus var. p.) – SPANISH CLOVER |
| :mispon glaber var. glaber (Lotus scoparius var. s.) – DEER WEED |
| :mispon parviflorus (Lotus micranthus) – SMALL-FLOWERED TREFOIL |
| :mispon strigosus (Lotus) – STRIGOSE TREFOIL |
| :nista monspessulana – FRENCH BROOM* |
| thyrus vestitus var. vestitus - common Pacific pea |
| **baceae-Legume, Pea continued** |
| pinus albifrons var. albifrons – SILVER BUSH LUPINE |
| pinus bicolor - MINIATURE LUPINE |
| pinus nanus – SKY LUPINE |
| edicago polymorpha - CALIFORNIA BURCLOVER* |
| keringia montana var. montana - CHAPARRAL PEA |
| pertia physodes - California tea |
| ifolium gracilentum (Trifolium gracilentum var. g.) - PINPOINT CLOVER |
| ifolium hirtum - ROSE CLOVER* |
| ifolium microcephalum - SMALL-HEADED CLOVER |
| ifolium willdenovii - TOMCAT CLOVER |
| cia americana ssp. Americana - AMERICAN VETCH |
| cia sativa ssp. nigra - NARROW-LEAVED VETCH* |
| **gaceae-Oak** |
| rysolepis chrysophylla var. minor - CHINQUAPIN |
| tholithocarpus densiflorus var. densiflorus (Lithocarpus) - TAN or TANBARK OAK |
| ercus agrifolia var. agrifolia - COAST LIVE OAK/ENCINA |
| ercus chrysolepis - MAUL OAK/CANYON LIVE OAK |
| ercus wislizeni var. wislizeni - INTERIOR LIVE OAK |
| **raniaceae-Geranium Family** |
| odium botrys - long-beaked STORKSBILL* |
| ranium dissectum - cut-leaved geranium* |
| ranium molle - cranesbill* |
| **miaceae-Mint Family** |
| inopodium douglasii (Satureja) - YERBA BUENA |
| achys bullata – CALIFORNIA HEDGE NETTLE |
| achys rigida var. quercetorum – RIGID HEDGE NETTLE |
| **ontiaceae-Miner's Lettuce Family (includes some Portulacaceae)** |
| aytonia parviflora ssp. parviflora – SMALL-FLOWERED CLATONIA |
| dyptridium umbellatum - PUSSYPAWS |
| aytonia perfoliata ssp. perfoliata - MINER'S LETTUCE |
| **nagraceae-Evening Primrose Family** |
| missonia contorta – CONTORTED PRIMROSE |

| |
|---|
| Camissonia strigulosa – HAIRY PRIMROSE |
| Camissoniopsis micrantha (CAMISSONIA) – SMALL-FLOWERED PRIMROSE |
| **Orobanchaceae (includes some Scrophulariaceae)-Broom-Rape Family** |
| Castilleja densiflora ssp. densiflora - OWL'S-CLOVER |
| Castilleja foliolosa - WOOLLY PAINTBRUSH |
| **Phrymaceae-Lopseed (includes some Scrophulariaceae)** |
| Mimulus aurantiacus var. aurantiacus - sticky monkeyflower |
| Mimulus rattanii ssp decurtatus – Ratan's monkeyflower |
| **Plantaginaceae-Plantain (includes some Scrophulariaceae)** |
| Nuttallanthus texanus (Linaria canadensis) - BLUE TOADFLAX |
| **Polemoniaceae-Phlox** |
| Navarretia atractyloides - holly-leaf navarretia |
| Navarretia hamata ssp. parviloba - navarretia |
| **Polygalaceae-Milkwort**<br>Polygala californica - CALIFORNIA MILKWORT |
| **Polygonaceae-Buckwheat** |
| Chorizanthe diffusa - DIFFUSE SPINEFLOWER |
| Chorizanthe pungens var. hartwegiana - BEN LOMOND SPINEFLOWER |
| Eriogonum nudum var. decurrens - BEN LOMOND BUCKWHEAT |
| Castilleja foliosa – WOOLY PAINTBRUSH |
| **Rhamnaceae-Buckthorn** |
| Ceanothus papillosus – WART-LEAF CEANOTHUS |
| Frangula californica ssp. californica (Rhamnus) - CALIFORNIA COFFEE BERRY |
| **Rosaceae-Rose** |
| Adenostoma fasciculatum var. fasciculatum - CHAMISE |
| Fragaria vesca - WOOD STRAWBERRY |
| Heteromeles arbutifolia - CHRISTMAS BERRY/TOYON |
| Rosa spithamea - COAST GROUND ROSE |
| Rubus ursinus - CALIFORNIA BLACKBERRY |
| **Rubiaceae-Madder Family** |
| Galium aparine - GOOSE GRASS |
| Galium californicum ssp. californicum - CALIFORNIA BEDSTRAW |
| **Scrophulariaceae-Figwort (see also Orobanchaceae, Plantaginaceae, Phrymaceae)** |
| Scrophularia californica - bee plant/CALIFORNIA FIGWORT |
| **Viscaceae- Mistletoe Family** |
| Phoradendron serotinum ssp. tomentosum (P. villosum) – OAK OR AMERICAN MISTLETOE |
| |
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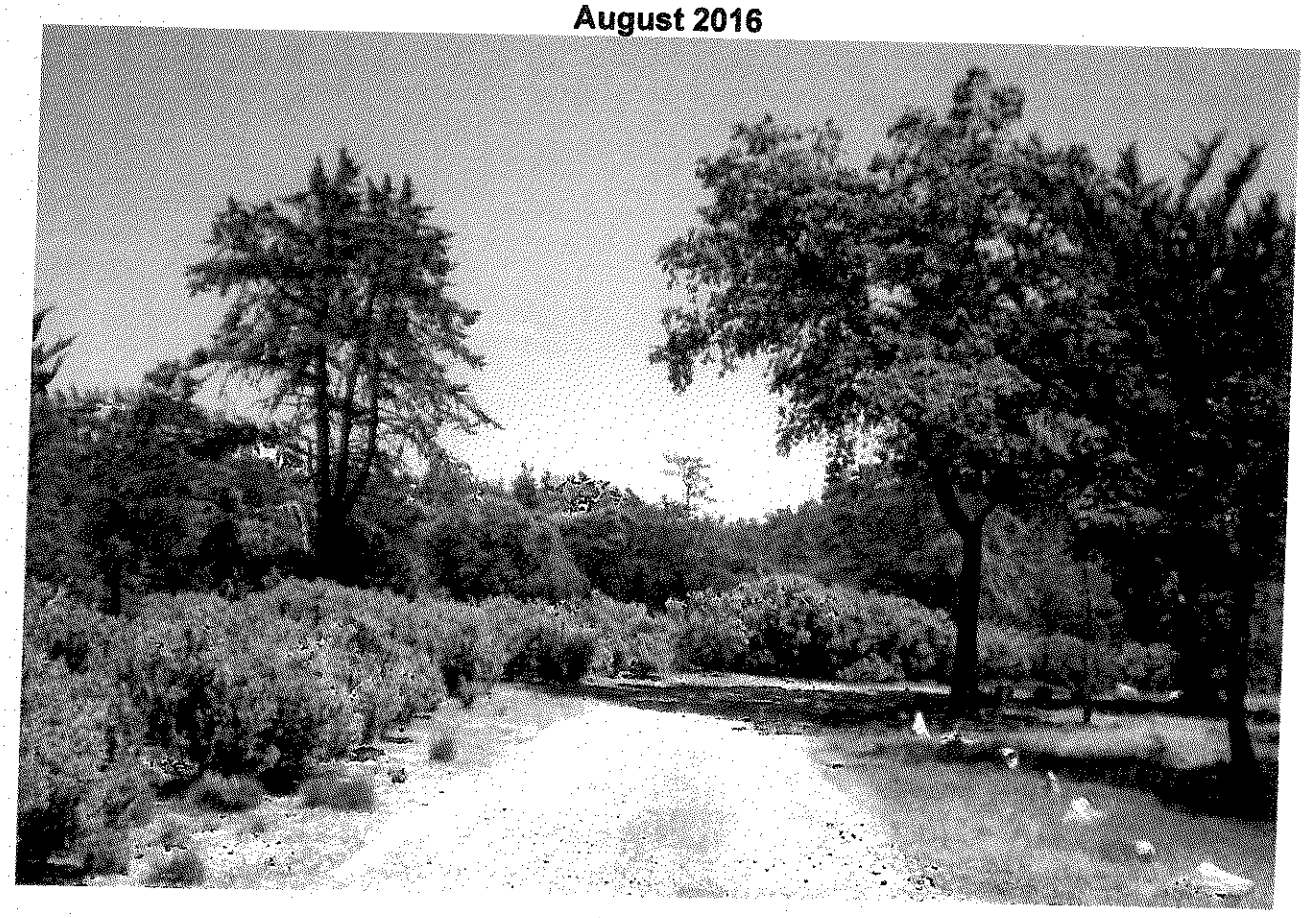
| |

| MONOCOTS |
| --- |
| **aceae-Agave (includes some Liliaceae)** |
| rogalum pomeridianum var. pomeridianum – SOAP PLANT/ AMOLE |
| **eraceae-Sedge Family** |
| x globosa - ROUND-FRUITED SEDGE |
| **aceae-Iris Family** |
| fernaldi -FERNALD'S IRIS |
| **caceae-Rush Family** |
| us bufonius var. bufonius - TOAD RUSH |
| ula comosa var. comosa – COMMON WOOD RUSH |
| **lanthiaceae-False-Hellebore Family(includes some Liliaceae)** |
| ficoscordion fremontii (Zigadenus) – FREMONT'S STAR LILY |
| **chidaceae-Orchid Family** |
| eria transversa - FLAT SPURRED or TRANSVERSE PIPERIA |
| **acene-Grass Family** |
| a caryophyllea - SILVER HAIR GRASS* |
| ena barbata - SLENDER WILD OAT* |
| za maxima - RATTLESNAKE or LARGE QUAKING GRASS * |
| omus carinatus var. carinatus - CALIFORNIA BROME |
| omus diandrus - RIPGUT GRASS* |
| omus hordeaceus - SOFT CHESS* |
| lamagrostis rubescens – PINE GRASS |
| nosurus echinatus - BRISTLY DOGTAIL GRASS* |
| nthonia californica - CALIFORNIA OAT GRASS |
| eschampsia elongata - SLENDER HAIR GRASS |
| ymus glaucus - BLUE or WESTERN WILD RYE |
| stuca myuros(Vulpia all var. lumped) - RATTAIL SIXWEEKS GRASS * |
| oleus lanatus - COMMON VELVET GRASS* |
| ordeum murinum ssp. leporinum - HARE BARLEY/farmer's foxtail* |
| oeleria macrantha - JUNE GRASS |
| tipa tenuissima – FEATHER GRASS |
| **hemidaceae-Brodiaea Family (includes some Liliaceae) -** |
| lichelostemma capitatum ssp. capitatum - BLUE DICKS |

# Supplemental Biotic Report for the Sohl Residential Project Bonny Doon Sandhills, California

**August 2016**



**Assessor's Parcel No. 063-061-28**

Prepared for:

**Steven Sohl Family**

Prepared by:

**Native Vegetation Network**

PV-402

July 2016

## INTRODUCTION

Since the initial biotic assessment and field surveys of the parcel were done in October 2015 before the start of the rainy season, few herbaceous plants were evident; therefore, supplemental field surveys were conducted in spring 2016. The field surveys were done on May 13 and 19, when most species were flowering or had fruits and seeds needed for identification. The vascular plant species list for the parcel, and the table of special status plants (listed taxa) from the initial biotic report have been updated to include the results of the spring 2016 surveys. The map of plant communities and locations of special status plants has also been updated, since more listed taxa were observed in spring 2016 (see Figure 1).

The results of the spring 2016 surveys described in this supplemental report should be used in conjunction with the initial biotic report. The spring 2016 results will guide the placement of protection fencing during construction and should be used to refine the construction fencing plan to protect adjacent sensitive habitat areas. As mentioned in this report, individual protection shelters are likely needed in a few areas to avoid impacts to special status manzanitas, Bonny Doon manzanita (*Arctostaphylos silvicola*) and Anderson's manzanita (*A. andersonii*).

### Property Description

The property is located in the Bonny Doon region and Coastal Zone of Santa Cruz County. The closet town is Davenport, which lies to the west of the project parcel. The site is located on the western side of Ben Lomond Mountain. The property has a street address, 1055 Martin Rd. in Bonny Doon, CA 95060. The parcel (APN 063-061-028) is approximately 15 acres in size, and has a somewhat rectangular shape (Figures 1 and 2), except for a narrow right-of-way along the private Alta Vista Road. This is the only road available to access the proposed residential development. The road is located along sensitive habitat, Santa Cruz Cypress- Knobcone Pine Forest / Maritime Mixed Chaparral. Alta Vista Rd. is also the proposed construction access route.

The property is centrally located in the Bonny Doon Zayante Sandhills. The parcel does not immediately border the Bonny Doon Ecological Reserve (BDER), but is surrounded by the BDER nearby (within 1000 feet) on three sides (Figure 1). A large sandstone rock out crop known as Lone Star Peak is located on the BDER property to the north. The majority of the Sohl parcel has sensitive habitat due to concentrations of Santa Cruz Cypress and Bonny Doon Manzanita, and has similar high habitat values as found in the BDER (personal observations, Valerie Haley).

## Development Envelope

The proposed Development Envelope is approximately 0.25 acre in size (Figure 1). The proposed structures and features for the new residence include the garage/house site, septic system and leach field, well, waterlines, water tanks and fire hydrant. The specific locations of the above structures and features are shown in the current Site Plan for the proposed new Residence prepared by building designer Frauke Zajac (11-17-15).

The house site is near the Mixed Evergreen Forest (MEF) habitat in the western end of the parcel, and will not be in sight from the upper ridges in the Bonny Doon Ecological Reserve. Most of the proposed development will occur in disturbed Live Oak Woodland where gravel was placed in the past. The leach field will be placed in MEF and a portion of the house site will be built in Meadow habitat. No rare and endangered Santa Cruz Cypress trees or Bonny Doon Manzanita shrubs were observed in the Development Envelope in October 2015.

## Background Information

In February 2014, a "Low-Effect Habitat Conservation Plan for the Endangered Mount Hermon June Beetle (MHJB) for APN 063-061-28 " was prepared by Richard A. Arnold Ph.D. This plan has been approved by the United States Fish & Wildlife Service and addresses potential impacts to the MHJB and minimization measures for the ¼ acre Development Envelope. Dr. Arnold is a Service approved entomologist, and holds a recovery permit for the MHJB. He will be the primary biological monitor during the construction period, and shall be on-site during excavation activities. Note that no grading will be needed due to the level conditions by the house site. Separate monitoring reports related to the MHJB will be prepared that include information on any June Beetle larvae found during construction and protection measures used.

## METHODS

Valerie Haley performed the additional spring surveys on May 13 and 19, 2016, when Ben Lomond spineflower (*Chorizanthe pungens var. hartwegiana*) (CRPR 1B.1) was blooming at the nearby Bonny Doon Ecological Reserve. The Bonny Doon Reserve served as a reference for the blooming period. On May 13, the survey focused on the Western portion of the parcel and the proposed house site and habitats along the existing gavel driveway. The proposed residential area, starting at the entrance gate and along the existing gravel driveway was thoroughly traversed and investigated. The May 19th survey focused on the eastern half of the parcel and the area burned in the Martin Fire (Figure 1).

The locations of selected special status plants observed near the proposed house site were flagged in the field with purple and white marking flags (see Figures 3, 4, and 5). The species flagged near the gravel driveway included Santa Cruz Mountains Monkeyflower, Ben Lomond Buckwheat, Anderson's manzanita, and Bonny Doon Manzanita (see Table 1 for scientific names and California rare plant ranks).

## RESULTS

### Sensitive Botanical Resources

The locations of the new special status plant species observed in May 2016 are shown in Figure 1. The following species are located along (within 10 feet) the existing gravel driveway: 2 Bonny Doon manzanita (*Arctostaphylos silvicola* ) seedlings by the proposed water tanks, 29 Santa Cruz Mountains Monkeyflower (*Diplacus rattanii var. decurtatus)* (Figure 4), and seven Ben Lomond buckwheat (*Eriogonum nudum var. decurrens)* along the existing gravel driveway. The rare and endemic Ben Lomond spineflower (*Chorizanthe pungens var. hartwegiana*) was observed at the Eastern end of the parcel in the area burned during the Martin Fire. Approximately 300 to 350 individuals were seen adjacent to Alta Vista Road, which will serve as part of the construction access route (Figures 1 and 2).

**Figure 2. Close up of Ben Lomond spineflower growing next to Alta Vista Road, along construction access route (May 19, 2016).**

Figure 4. Close-up of Santa Cruz Mountains Monkeyflower (*Diplacus rattanii ssp. decurtatus*) near entrance gate. Plants are 1 to 2 inches tall (May 13, 2016).

Figure 3. Close up of Santa Cruz Manzanita (*Arctostaphylos andersonii*) seedling.

**Figure 5. Purple flags marking location of the 29 Santa Cruz Mountains Monkeyflower plants near gravel driveway (May 13, 2016).**

### Invasive Non-Native Plants

The invasive ornamental feather grass (*Stipa tenuissima*) observed last fall was no longer present by the entrance gate. The plants were removed by Steve Sohl (pers. com May 13, 2016). During the May 2016 surveys, more French broom (*Genista monspessulana*) was observed in the Southwestern portion of the parcel (see Figure 1). The soil "seed bank" was likely stimulated by the increased rainfall in Winter 2015/2016 compared to the recent four years of drought. Over 100 seedlings were observed that ranged from 6" to 18".

Most of the area proposed for the house site is in meadow habitat. More weedy plant species were observed in May 2016 primarily smooth cat's ear (*Hypochaeris glabra*) and rat-tail fescue (*Festuca myuros*) (Figure 6). Much of the ground surface was disturbed due to gopher mounds and activity. Weedy non-native clovers were also present, including Shamrock (*Trifolium dubium*) and the invasive rose clover (*T. hirtum*).

Velvet grass (*Holcus lanatus*) was more prevalent in the understory of the Oak Woodland compared to October 2015, especially adjacent to the gravel driveway.

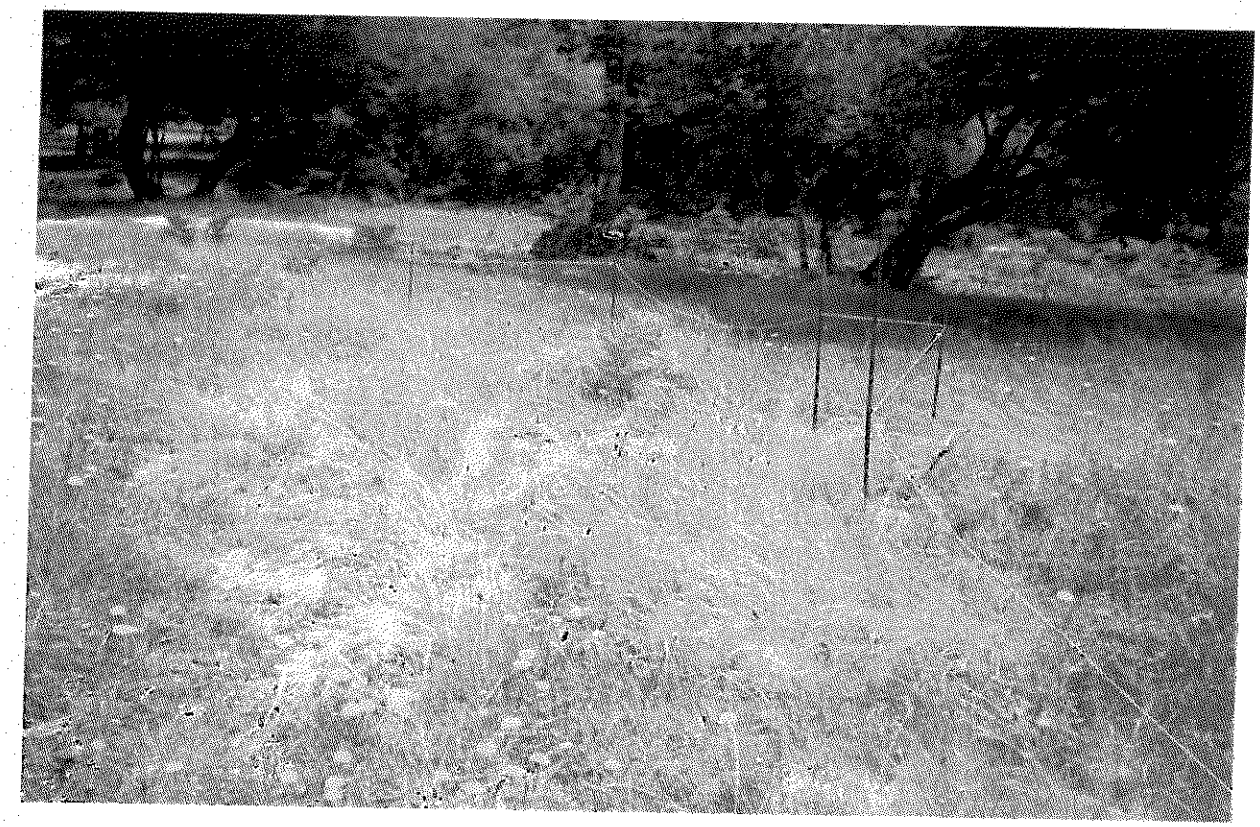


**Figure 6. Weedy species, rattail fescue and smooth cat's ear growing in the proposed house site (May 13, 2016).**

**Additional Observations**

In May 2016, more native grass cover was observed in the understory of Oak Woodlands surrounding the proposed house site. The dominant native grass was pine grass (*Calamagrostis rubescens*). June grass (*Koeleria macrantha*) was evident along the woodland edges. More native herbs and grasses were present in the Mixed Evergreen Forest, including woodland madia (*Anisocarpus madioides*), Dannie's skullcap (*Scutellaria tuberosa*), tomcat clover (*Trifolium willdenovii*), wood sweet cicely (*Osmorhiza berteroi*), blue wild rye grass (*Elymus glaucus*), and California brome (*Bromus carinatus*). See the revised species list for additional species observed (Appendix A). The more common diffuse spineflower (*Chorizanthe diffusa*), and woolly Indian paint brush (*Castilleja foliosa*) were abundant in the burned area, and were associated with the Ben Lomond spineflower population area.

**Figure 7. Dense cover of the native perennial pine grass in the understory of the Oak Woodland (May 13, 2016).**

## CONCLUSION

The May 2016 Surveys determined several new special status plants species near the existing gravel driveway, and near the east end of the parcel along the paved construction access route, including Anderson's manzanita, Bonny Doon manzanita, Santa Cruz Mountains Monkeyflower and Ben Lomond spine flower. The locations depicted in Figure 1 of this report should be protected by protection shelters or construction "Fencing" during the construction period. Plant salvage may also used as a protection measure, especially for small special status species located immediately adjacent to the proposed development envelope.

### Protection Measures

***Diplacus rattanii ssp. decurtatus* and *Eriogonum nudum var. decuurens.*** The population areas shown in Figure 1 will be protected during construction by the construction "fencing" (T-posts and rope) put up along the gravel driveway as depicted in the fencing plan.

***Arctostaphylos sivicola.*** Plant salvage and transplanting is also an option for the two *Arctostaphylos silvicola* seedlings by the proposed water tank area (Figure 1). Since the seedings are less than 8 inches tall, they can be carefully dug up with a shovel to obtain the root system. January 2017 will likely be a good time to salvage the seedlings, when the soil will be wet for digging, and the weather will be cooler. The seedlings may be transplanted and maintained in 2 to 3 gallon pots with native sandy soil, and saved for out planting later in winter or after construction is complete. The pots should be maintained in partial shade so that the pots do not overheat.

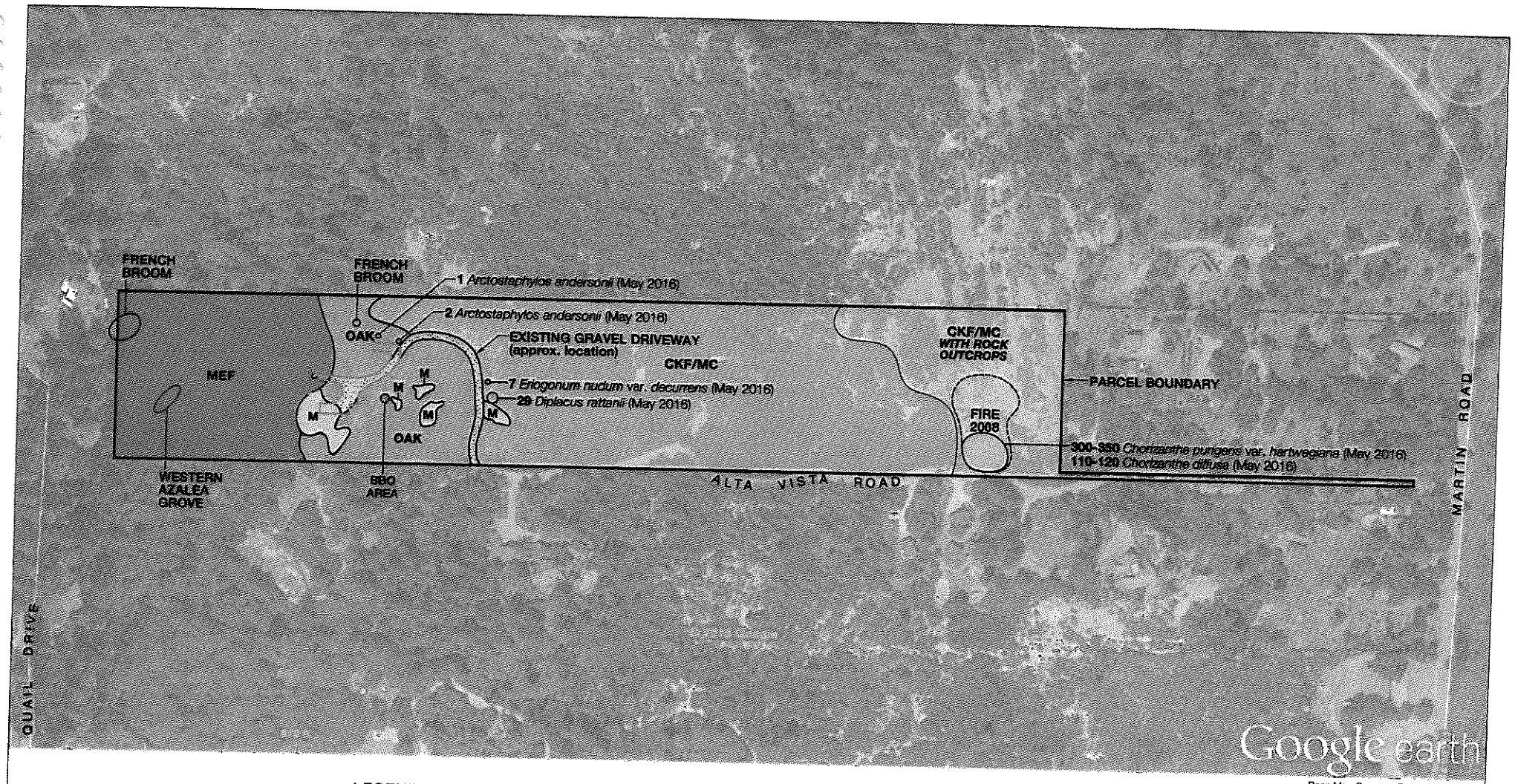
***Arctostaphylos andersonii.*** A protection shelter made of rebar and poultry wire may be used for the Anderson's manzanita (*A. andersonnii*) manzanita seedling located westward of the proposed tanks (Figure 1).

***Chorizanthe pungens var. hartwegiana.*** Of concern, is the population area of the rare Ben Lomond spineflower (*Chorizanthe pungens var. hartwegiana)* at the east end of the parcel in the previously burned area (Figure 1). The population area starts within several feet of the asphalt road. As a protection measure, a barrier made of metal T-posts with rope spanning between the posts should be placed along this portion of Alta Vista Road as part of the construction fencing plan.

## Table 1. Revised May 2016 Special Status Plant Species Evaluated for Potential to Occur or Known to Occur at the 15-acre parcel, proposed Sohl Residential Development

| Species Scientific / Common Name[1] | Federally Listed | State Listed | California Rare Plant Rank[2] | Habitat Type | Known to Occur' Potential to Occur |
|---|---|---|---|---|---|
| Arctostaphylos andersonii Anderson'sManzanita | None | None | CRPR 1B.2 | forest openings | Known to occur 1 plant observed May 2016 |
| Arctostaphylos silvicola Bonny Doon Silver-leaved Manzanita | None | None | CRPR 1B.2 | sandy marine deposits | Known to occur Abundant on site 2015 |
| Chorizanthe pungens var. hartwegiana Ben Lomond Spineflower | Endangered | None | CRPR 1B.1 | inland marine deposits | Known to occur 300 to 350 plants Observed 5/2016 |
| Hesperocyparis abramsiana Santa Cruz Cypress | Endangered | Endangered | CRPR 1B.2 | inland marine deposits | Known to occur Abundant on site 2015 |
| Eriogonum nudum var. decurrens Ben Lomond Buckwheat | None | None | CRPR 1B.1 | inland marine deposits | Known to occur 6 plants observed Oct. 2015 |
| Erysimum teretifolium Santa Cruz Wallflower | Endangered | Endangered | CRPR 1B.1 | inland marine deposits | Potential to occur |
| Horkelia marinensis Point Reyes Horkelia | None | None | CRPR 1B.2 | coastal dune scrub/sandy | Potential to occur |
| Diplacus rattanii ssp. decurtatus Santa Cruz Mountains Monkeyflower | None | None | CRPR 4.2 | inland marine deposits | Known to occur 29 plants observed May 2016 |
| Monardella sinuata var. nigrescens | None | None | CRPR 4.2 | sandy marine deposits | Potential to occur |
| Gilia tenuiflora subsp. arenaria Monterey Gilia | Endangered | Threatened | CRPR 1B.2 | sandy marine deposits | Potential to occur |

1. Nomenclature corresponds to Jepson Manual 2nd Edition (2012).
2. California Rare Plant Ranks:
   - 1B Plants rare, threatened or endangered in CA, and elsewhere
   - 2B Plants rare, threatened or endangered in CA, and more common elsewhere
   - 3 More information needed – a review list
   - 4 Plants of limited distribution – a watch list.
3. Threat Ranks: 0.1 Seriously threatened in CA 0.2 Moderately threatened in CA 0.3 Not very threatened in CA

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APPROXIMATE SCALE: 1" = 200'

0 200' 400'

LEGEND

**MEF** Mixed Evergreen Forest
**OAK** Oak Woodland
**CKF/MC** Cypress-Knobcone Pine Forest / Maritime Mixed Chaparral
**M** Meadow
Development Envelope Boundary

Base Map Source: Google Earth 2015
Imagery Date: 3/28/2015


Native Vegetation Network
653 Quail Drive • Santa Cruz, California 95060
Telephone/Fax (831) 425-0687


REVISED VEGETATION MAP
SOHL PARCEL

Figure 1
7/16
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# APPENDIX A
# SOHL PARCEL PLANT SPECIES LIST
# UPDATED MAY 2016

**New Species observed in May 2016 are highlighted in green**
*** = NON-NATIVE**

| |
|---|
| **FERNS** |
| **Dennstaedtiaceae-Bracken Family** |
| Pteridium aquilinum var. pubescens - BRACKEN FERN |
| **Polypodiaceae-Polypody Family** |
| Polypodium californicum - CALIFORNIA POLYPODY |
| **Pteridaceae-Brake Family** |
| Pentagramma triangularis ssp. triangularis – GOLDBACK FERN |
| **GYMNOSPERMS** |
| **Cupressaceae-Cypress Family (includes Taxodiaceae) Family** |
| Hesperocyparis abramsiana (Cupressus) - SANTA CRUZ CYPRESS |
| Sequoia sempervirens – COAST REDWOOD |
| **Pinaceae-Pine Family** |
| Pinus attenuata - KNOBCONE PINE |
| Pinus ponderosa - PONDEROSA PINE |
| Pseudotsuga menziesii var. menziesii - DOUGLAS-FIR |
| **ANGIOSPERMS** |
| **MAGNOLIIDS & EUDICOTS** |
| **Anacardiaceae-Sumac, Cashew Family** |
| Toxicodendron diversilobum - WESTERN POISON OAK |
| **Apiaceae-Carrot Family** |
| Osmorhiza berteroi (O. chilensis) - wood sweet cicely |
| Sanicula crassicaulis – PACIFIC SANICLE |
| Torilis arvensis – HEDGE PARSLEY * |
| **Asteraceae-Sunflower Family** |
| Anisocarpus madioides (Madia) - WOODLAND TARWEED |
| Baccharis pilularis ssp. consanguinea - COYOTE BRUSH (upright) |
| Corethrogyne filaginifolia (Lessingia) - CALIFORNIA-ASTER |
| Ericameria arborescens - GOLDEN-FLEECE |
| Ericameria ericoides - MOCK HEATHER/CALIFORNIA GOLDENBUSH |
| Erigeron canadensis (Conyza) - HORSEWEED |
| Eriophyllum confertiflorum var. confertiflorum - GOLDEN or YELLOW-YARROW |
| Gamochaeta ustulata (Gnaphalium purpureum) – PURPLE CUDWEED |
| Heterotheca grandiflora - TELEGRAPH WEED |
| Heterotheca sessiliflora ssp. echioides – BRISTLY GOLDEN ASTER |
| Hieracium albiflorum - WHITE HAWKWEED |
| Hypochaeris glabra - SMOOTH CAT'S-EAR* |
| Hypochaeris radicata - ROUGH CAT'S-EAR* |
| Logfia gallica (Filago) - DAGGERLEAF COTTONROSE* |
| Madia gracilis - GUMWEED/SLENDER madia |
| Madia sativa - COAST MADIA/COAST TARWEED |
| Pseudognaphalium beneolens (Gnaphalium canescens ssp. b.) – FRAGRANT CUDWEED |
| Pseudognaphalium californicum (Gnaphalium) – CALIFORNIA CUDWEED |
| Senecio aphanactis - CHAPARRAL RAGWORT |
| Stylocline gnaphaloides – EVERLASTING NESTSTRAW |
| **Boraginaceae-Borage (includes Hydrophyllaceae) Family** |
| Eriodictyon californicum – YERBA SANTA |
| Myosotis latifolia - BROADLEAVED FORGET-ME-NOT* |
| **Brassicaceae-Mustard Family** |
| Cardamine californica - MILK MAIDS/TOOTH WORT |
| **Campanulaceae-Bellflower Family** |
| Asyneuma prenanthoides (Campanula) – CALIFORNIA HAREBELL |
| **Caprifoliaceae-Honeysuckle Family** |
| Lonicera hispidula (L. h. var. vacillans) – HAIRY HONEYSUCKEL |
| Symphoricarpos mollis – CREEPING SNOWBERRY, TRIP VINE |
| **Caryophyllaceae-Pink Family** |
| Silene gallica - SMALL-FLOWER CATCHFLY/windmill pink* |
| Spergularia rubra - PURPLE SAND-SPURREY * |
| **Cistaceae-Rock-Rose Family-** |
| Helianthemum scoparium - PEAK RUSH-ROSE |
| **Crassulaceae-Stonecrop Family** |
| Crassula connata - PYGMY-WEED |
| **Ericaceae-Heath Family** |
| Arbutus menziesii - PACIFIC MADRONE |
| Arctostaphylos andersonii - ANDERSON'S MANZANITA |
| Arctostaphylos crustacea ssp. crinita (A. tomentosa ssp. crinita) - CRINITE MANZANITA |
| Arctostaphylos sensitiva (A. n. var. sensitiva) – SENSITIVE MANZANITA |
| Arctostaphylos silvicola - BONNY DOON MANZANITA |
| Rhododendron occidentale - WESTERN AZALEA |
| Vaccinium ovatum - CALIFORNIA HUCKLEBERRY |
| **Fabaceae-Legume, Pea Family** |
| Acacia sp. - SILVER WATTLE cultivar* |
| Acmispon americanus var. americanus (Lotus purshianus var. p.) – SPANISH CLOVER |
| Acmispon glaber var. glaber (Lotus scoparius var. s.) – DEER WEED |
| Acmispon parviflorus (Lotus micranthus) – SMALL-FLOWERED TREFOIL |

Acmispon strigosus (Lotus) – STRIGOSE TREFOIL
Genista monspessulana – FRENCH BROOM*
Lathyrus latifolius - PERENNIAL SWEET PEA*
Lathyrus vestitus var. vestitus - common Pacific pea
Lupinus albifrons var. albifrons – SILVER BUSH LUPINE
Lupinus bicolor - MINIATURE LUPINE
Lupinus nanus – SKY LUPINE
Medicago polymorpha - CALIFORNIA BURCLOVER*
Pickeringia montana var. montana - CHAPARRAL PEA
Rupertia physodes - California tea
Trifolium dubium - LITTLE HOP CLOVER*
Trifolium glomeratum - CLUSTERED CLOVER*
Trifolium gracilentum (Trifolium gracilentum var. g.) - PINPOINT CLOVER
Trifolium hirtum - ROSE CLOVER*
Trifolium microcephalum - SMALL-HEADED CLOVER
Trifolium wildenovii - TOMCAT CLOVER
Vicia americana ssp. Americana - AMERICAN VETCH
Vicia sativa ssp. nigra - NARROW-LEAVED VETCH*
**Fagaceae-Oak Family**
Chrysolepis chrysophylla var. minor - CHINQUAPIN
Notholithocarpus densiflorus var. densiflorus (Lithocarpus) - TAN or TANBARK OAK
Quercus agrifolia var. agrifolia - COAST LIVE OAK/ENCINA
Quercus chrysolepis - MAUL OAK/CANYON LIVE OAK
Quercus wislizeni var. wislizeni - INTERIOR LIVE OAK
**Geraniaceae-Geranium Family**
Erodium botrys - long-beaked STORKSBILL*
Geranium dissectum - cut-leaved geranium*
Geranium molle - cranesbill*
**Lamiaceae-Mint Family**
Clinopodium douglasii (Satureja) - YERBA BUENA
Scutellaria tuberosa - DANNIE'S SKULLCAP
Stachys bullata – CALIFORNIA HEDGE NETTLE
Stachys rigida var. quercetorum – RIGID HEDGE NETTLE
**Montiaceae-Miner's Lettuce Family (includes some Portulacaceae)**
Claytonia parviflora ssp. parviflora – SMALL-FLOWERED CLATONIA
Calyptridium umbellatum - PUSSYPAWS
Claytonia perfoliata ssp. perfoliata - MINER'S LETTUCE
**Myrsinaceae-Myrsine (includes some Primulaceae) Family**
Anagallis arvensis - SCARLET PIMPERNEL*

**Onagraceae-Evening Primrose Family**
Camissonia contorta – CONTORTED PRIMROSE
Camissonia strigulosa – HAIRY PRIMROSE
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Mimulus rattanii ssp decurtatus – Ratan's monkeyflower
**Plantaginaceae-Plantain (includes some Scrophulariaceae) Family**
Nuttallanthus texanus (Linaria canadensis) - BLUE TOADFLAX
**Polemoniaceae-Phlox Family**
Collomia heterophylla - VARIABLE-LEAF COLLOMIA
Navarretia atractyloides - holly-leaf navarretia
Navarretia hamata ssp. parviloba - navarretia
**Polygalaceae-Milkwort Family**
Polygala californica - CALIFORNIA MILKWORT
**Polygonaceae-Buckwheat Family**
Chorizanthe diffusa - DIFFUSE SPINEFLOWER
Chorizanthe pungens var. hartwegiana - BEN LOMOND SPINEFLOWER
Eriogonum nudum var. decurrens - BEN LOMOND BUCKWHEAT
Castilleja foliosa – WOOLY PAINTBRUSH
Rumex acetosella - SHEEP SORREL*
**Rhamnaceae-Buckthorn Family**
Ceanothus papillosus – WART-LEAF CEANOTHUS
Frangula californica ssp. californica (Rhamnus) - CALIFORNIA COFFEE BERRY
**Rosaceae-Rose Family**
Adenostoma fasciculatum var. fasciculatum - CHAMISE
Fragaria vesca - WOOD STRAWBERRY
Heteromeles arbutifolia - CHRISTMAS BERRY/TOYON
Rosa spithamea - COAST GROUND ROSE
Rubus ursinus - CALIFORNIA BLACKBERRY
**Rubiaceae-Madder Family**
Galium aparine - GOOSE GRASS
Galium californicum ssp. californicum - CALIFORNIA BEDSTRAW
**Scrophulariaceae-Figwort (see also Orobanchaceae, Plantaginaceae, Phrymaceae) Family**
Scrophularia californica - bee plant/CALIFORNIA FIGWORT

| |
|---|
| **Viscaceae- Mistletoe Family** |
| Phoradendron serotinum ssp. tomentosum (P. villosum) - OAK OR AMERICAN MISTLETOE |
| **MONOCOTS** |
| **Agavaceae-Agave (includes some Liliaceae) Family** |
| Chlorogalum pomeridianum var. pomeridianum – SOAP PLANT/ AMOLE |
| **Cyperaceae-Sedge Family** |
| Carex globosa - ROUND-FRUITED SEDGE |
| **Iridaceae-Iris Family** |
| Iris fernaldi -FERNALD'S IRIS |
| **Juncaceae-Rush Family** |
| Juncus bufonius var. bufonius - TOAD RUSH |
| Luzula comosa var. comosa – COMMON WOOD RUSH |
| **Melanthiaceae-False-Hellebore Family(includes some Liliaceae) Family** |
| Toxicoscordion fremontii (Zigadenus) – FREMONT'S STAR LILY |
| **Orchidaceae-Orchid Family** |
| Piperia transversa - FLAT SPURRED or TRANSVERSE PIPERIA |
| **Poaceae-Grass Family** |
| Aira caryophyllea - SILVER HAIR GRASS* |
| Avena barbata - SLENDER WILD OAT* |
| Briza maxima - RATTLESNAKE or LARGE QUAKING GRASS * |
| Bromus carinatus var. carinatus - CALIFORNIA BROME |
| Bromus diandrus - RIPGUT GRASS* |
| Bromus hordeaceus - SOFT CHESS* |
| Calamagrostis rubescens – PINE GRASS |
| Cynosurus echinatus - BRISTLY DOGTAIL GRASS* |
| Danthonia californica - CALIFORNIA OAT GRASS |
| Deschampsia elongata - SLENDER HAIR GRASS |
| Ehrharta erecta – PANIC VELDT GRASS |
| Elymus glaucus - BLUE or WESTERN WILD RYE |
| Festuca microstachys (Vulpia all var. lumpedi) – COMMON HAIRY LEAF FESCUE |
| Festuca myuros (Vulpia all var. lumpedi) - RATTAIL FESCUE * |
| Festuca octoflora (Vulpia o.) – SIX WEEKS GRASS |
| Holcus lanatus - COMMON VELVET GRASS* |
| Hordeum murinum ssp. leporinum - HARE BARLEY/farmer's foxtail* |
| Koeleria macrantha - JUNE GRASS |
| Stipa tenuissima – FEATHER GRASS |
| **Themidaceae-Brodiaea Family (includes some Liliaceae) - Family** |
| Dichelostemma capitatum ssp. capitatum - BLUE DICKS |

# Attachment 7

## Santa Cruz County Acceptance of Biotic Report

# COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
**KATHLEEN MOLLOY PREVISICH, PLANNING DIRECTOR**

January 11, 2016

Frauke Zajac
1261 Pine Flat Rd
Santa Cruz, CA 95060

APN: 063-061-28
App #: REV141048

Dear Ms. Zajac:

The Planning Department has received the Sohl Residential Project Biotic Report, prepared by Native Vegetation Network, dated November, 2015, which was reviewed in conjunction with the Low-Effect Habitat Conservation Plan (HCP) for the subject parcel, prepared by Richard Arnold, PhD., February, 2014. Together these plans address the potential impacts to the Mount Herman June Beetle (MHJB) through the HCP, impacts to Sand Hills habitat and the unique species associated with that habitat for the entire development, including the access road and proposed building pad.

The two reports are accepted by the Environmental Coordinator. Please note that the County considers the driveway to be new development and must be included in your development proposal. The current driveway was installed without permit in 2006, and was the subject of a code enforcement action. Aerial photos from the County's GIS (2003) and Google Earth (2005) show vegetation covering the entire alignment. If a driveway had been illegally installed in the 1970's, the native vegetation had reclaimed it by the time of the initial disturbance by Mr. Sohl in 2006. Even though both reports state the driveway is pre-existing, the County considers the driveway to be new development requiring a permit and mitigation.

The biotic report notes a total disturbance area, outside of the area considered in the HCP, of 7880 square feet, based upon the Edmunson and Associates 2015 survey, and estimates that the impact area may be reduced by 1,000 to 1,500 square feet. It also states that credits will be purchased for permanent impacts only. The 2015 survey was based upon a minimum width driveway of 12 feet, as required by design standards, not on the square footage of existing gravel. This was done to show that the total development area could be accomplished as proposed under ¼ acre limit. As noted in the HCP, credits must be purchased for both permanent and temporary disturbance. The total disturbance area must be identified and fenced off in the field prior to site disturbance, not calculated after the fact.

Due to the presence of maritime chaparral and Santa Cruz cypress forest, total site disturbance on this parcel is limited to ¼ acre – 10,890 square feet. The two reports and the 2015 survey show a total disturbance of 10,600; within the allowance of the County code, but with little room to spare. The Environmental Coordinator will accept the recommended 1:1 ratio, along with a habitat restoration of the surrounding areas, as mitigation for the permanent loss of approximately ¼ acre of habitat, provided the remainder of the parcel is protected by a recorded deed restriction that notes the allowed disturbance area has maximized the development potential of the parcel, and that includes a requirement for both restoration of, and credits purchased at a 3:1 ratio for, any disturbance, temporary or permanent, beyond the ¼ acre proposed.

In order to develop this parcel under the current proposal the following conditions shall apply:

1. All of the conservation program/mitigation measures to minimize and mitigate for impacts, as described in chapter 5 of the HCP must be implemented;

2. The mitigation measures and restoration plan as described in the biotic report must be fully implemented as described in the Biotic Report;
    a. Annual monitoring reports for both the HCP and the restoration plan shall be submitted together by January 31 of each year following completion of the project.

3. Credits must be purchased through the Zayante Sandhills Mitigation Bank at a 1:1 ratio for the total 10,600 square feet of anticipated disturbance;

4. A biotic deed restriction must be recorded on the parcel that clearly identifies the approved disturbance area, states no disturbance shall be allowed outside of that area, and states that should any disturbance occur outside the allowed area, it will be fully restored following a restoration plan to be reviewed and approved by the County Planning Department, and credits will be purchased at a 3:1 ratio from the Zayante Sandhills Mitigation Bank. Costs incurred by the Planning Department to enforce this provision such as restoration plan review and site inspections following credible information of a violation, will be paid by the responsible party.

Proof of purchase of the total amount of credits must be submitted to the Planning Department prior to issuance of the Coastal Development Permit.

This approval letter addresses the biotic constraints on the parcel based upon the proposal submitted to the County Planning Department. The proposed project will require an initial study pursuant to the California Environmental Quality Act (CEQA) as a component of the Coastal Development Permit process. Further information may be requested to address the issues that arise during the CEQA process.

Please call me at 831-454-3201 if you have any questions regarding this letter.

Sincerely,

Matthew Johnston
Environmental Planning

Cc: Lezanne Jeffs
Bob Loveland

# Attachment 8

## Revised Vegetation Map, Proposed Development Area and Locations of Restoration Areas and Enhancement Areas.

# Attachment 8

Addendum for the Biotic Reports prepared by Valerie Haley of Native Vegetation Network dated April 2018, including a Revised Vegetation Map, Proposed Development Area and Locations of Restoration Areas and Enhancement Areas.

# Addendum for Biotic Report Sohl Residential Project
# Bonny Doon Sandhills, California

## April 2018

**Assessor's Parcel No. 063-061-28**

**Prepared for:**

**Steven Sohl Family**

**Prepared by:**

**Native Vegetation Network**

This addendum also includes a revised vegetation map of the western portion of the parcel that shows the Proposed Development Boundary and the locations of the proposed restoration areas and habitat enhancement areas (Figure 1).

Table 1 also summarizes the total area of permanent disturbance, and the total of the areas to be restored and enhanced. According to Table 1, 10,063 sq. ft. will be permanently disturbed, and 74,125 sq. ft. will be restored/enhanced. This represents an overall mitigation ratio of 7:1.

**Figure 2. Overview of area proposed for house site. Much of the substrate is covered with existing gravel.**

**Habitat Enhancement Areas.** Due to occurrences of French broom, a large enhancement area, 49,645 sq. ft. is proposed in the Mixed Evergreen Forest near the western portion of the property (Figure 1). Three Oak Woodland Enhancement Areas, totaling 18,750 sq. ft. (Table 1) are proposed near the entrance gate and along the driveway (Figure 1). Roadways are often a source of non-native vegetation from seed transported by vehicles. Four smaller areas (total 4,009 sq. ft.) are also proposed for

mitigation ratio through the purchase of Conservation Credits, one credit for each square foot impacted.

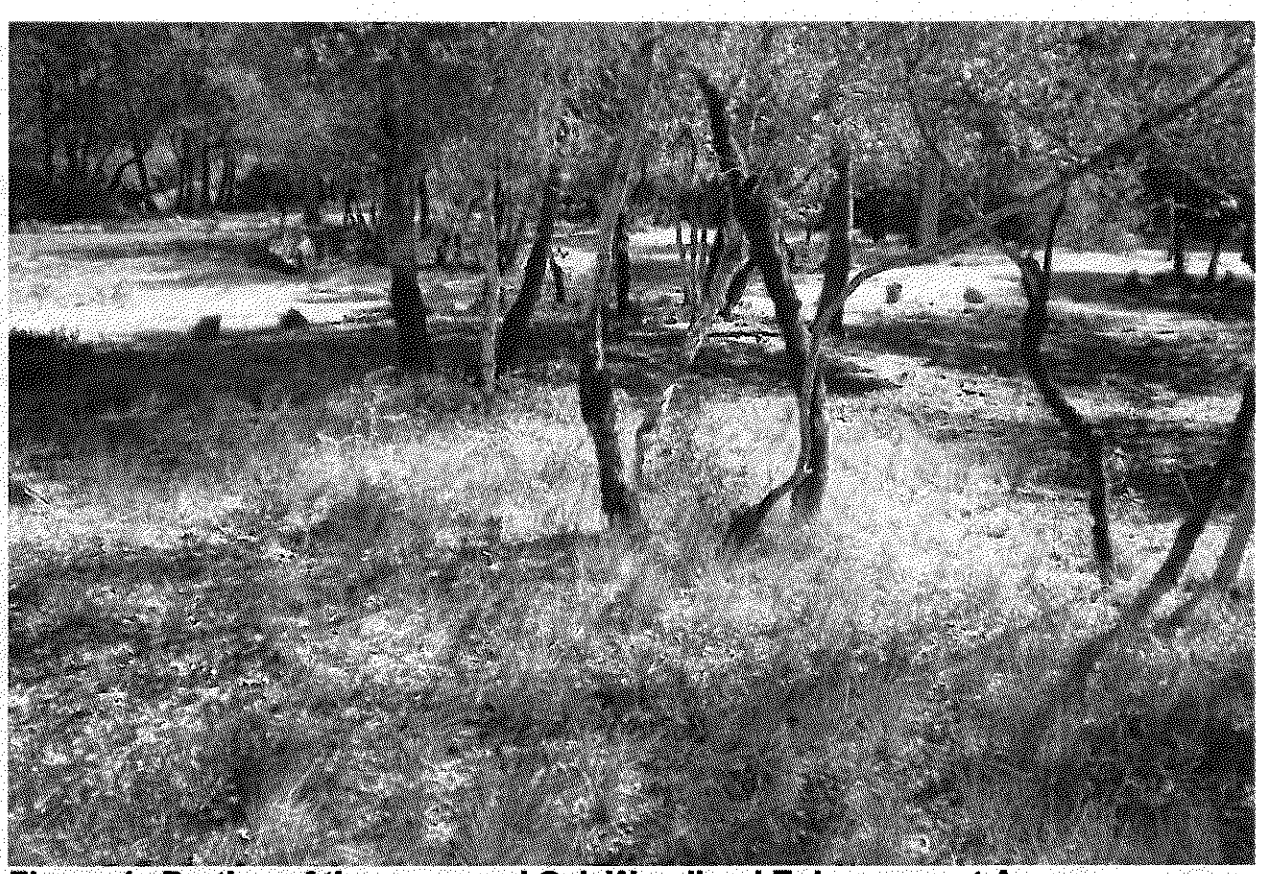


**Figure 4. Portion of the proposed Oak Woodland Enhancement Area.**

## CONCLUSION

### Temporary Construction Fencing

Critical to the protection of adjacent sensitive resources, is the proper placement of the temporary protection fencing that will be functional during the construction period. Special status plant species occur within 5 feet of the existing gravel driveway. These plants need to be protected during construction. Species include Bonny Doon Manzanita, Ben Lomond Buckwheat, and Santa Cruz County Monkeyflower. The Grading and Drainage Plan prepared by the Civil engineer, Hogan Land Services (dated 7-19-17) depicts the location of the temporary construction fencing. The line of the temporary fencing as shown on the Grading and Drainage plan is approximate, and will

The May 2016 Surveys determined several new special status plants species near the existing gravel driveway, and near the east end of the parcel along the paved construction access route. Their locations should be protected by protection shelters or construction Fencing during the construction period.

Individual protection shelters using welded wire or poultry netting are recommended for the two Bonny Doon manzanita (*Arctostaphylos silvicola*) seedlings located by the proposed water tanks area and the Santa Cruz manzanita seedling located westward of the proposed tanks. There should be a minimum of 10 feet between the flagged Arctostaphylos silvicola seedlings and the proposed water tanks. Of concern, is the population area of the rare Ben Lomond spineflower (*Chorizanthe pungens var. hartwegiana)* at the east end of the parcel in the previously burned area (Figure 1). As a protection measure, construction fencing should be placed along this portion of Alta Vista Road as part of the construction fencing plan.

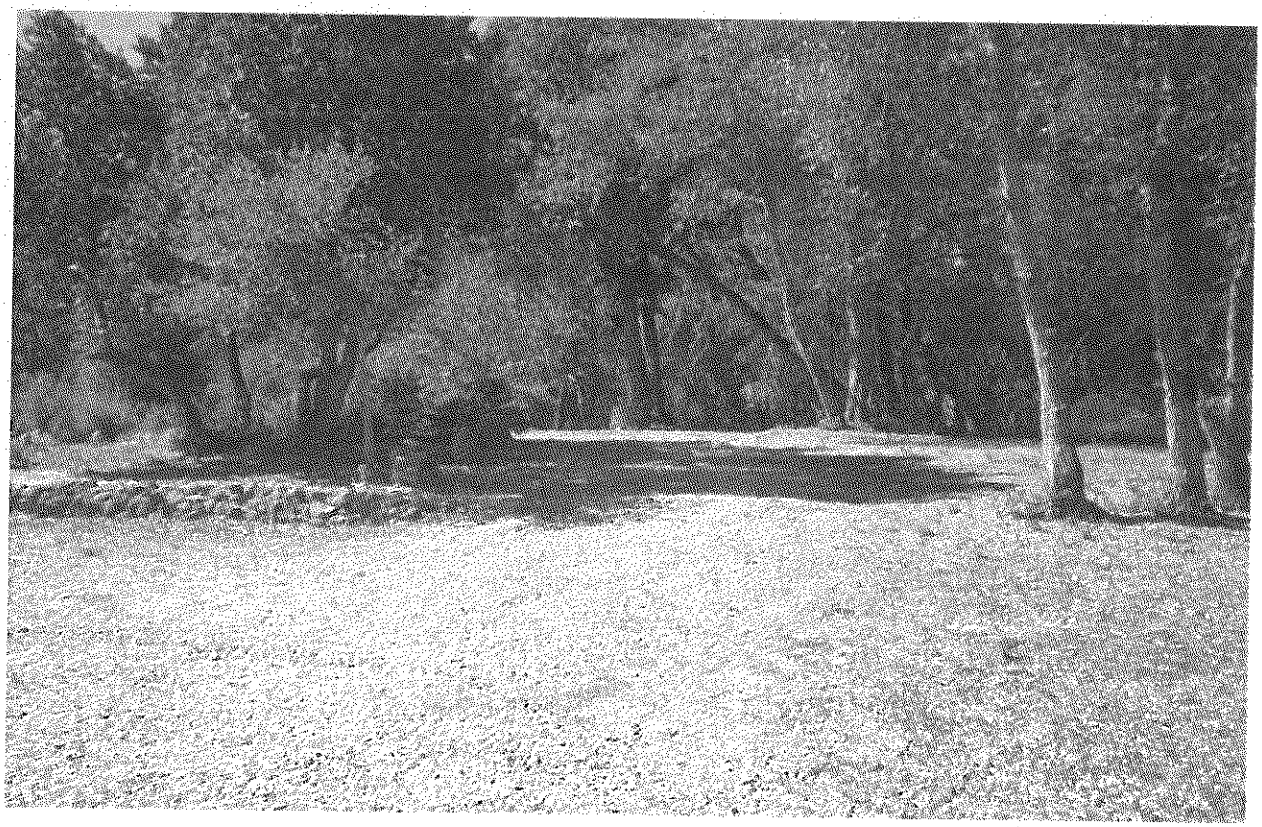


**Figure 7. Gravel in Portion of Mixed Evergreen Forest (background of photograph) to be restored.**

## Table 1. Summary of Impacts and Mitigation Measures of Sandhills Habitat Areas

| Sensitive Sandhills Habitat | | Area of Disturbance (sq. ft.) | Replacement/ Restoration ratio | Area of Restoration/ Enhancement (sq. ft.) | Proposed Restoration/ Enhancement/ Mitigation measures |
|---|---|---|---|---|---|
| Mixed Evergreen Forest | P | 121 | 1:1 | 121 | Conservation credits* |
| | T | 1,721** | 1:1<br>29:1 | 1,721 (restore)<br>49,645 (enhance) | Restoration and Habitat Enhancement |
| Oak Woodland | P | 838 | 1:1<br>22:1 | 838<br>18,750 (enhance) | Conservation credits* and Enhancement |
| | T | 794 | 1:1 | 794 | Conservation credits* and Restoration |
| Santa Cruz Cypress/ Knobcone PineForest/ Maritime Mixed Chapparal (old impacts included as existing disturbed habitat) | P | None | N/A | None | N/A |
| | T | No additional | N/A | No additional | N/A |
| Meadow | P | 1,256 | 1:1<br>3:1 | 1,256<br>4,009 (enhance) | Conservation credits*<br>Habitat Enhancement |
| | T | None | N/A | None | N/A |
| Existing disturbed habitat area***<br>• (e)/(p) Driveway<br>• House Site | <br>P<br>P | <br>7,088<br>760 | <br>1:1<br>1:1 | <br>7,088<br>760 | <br>Conservation credits*<br>Conservation credits* |

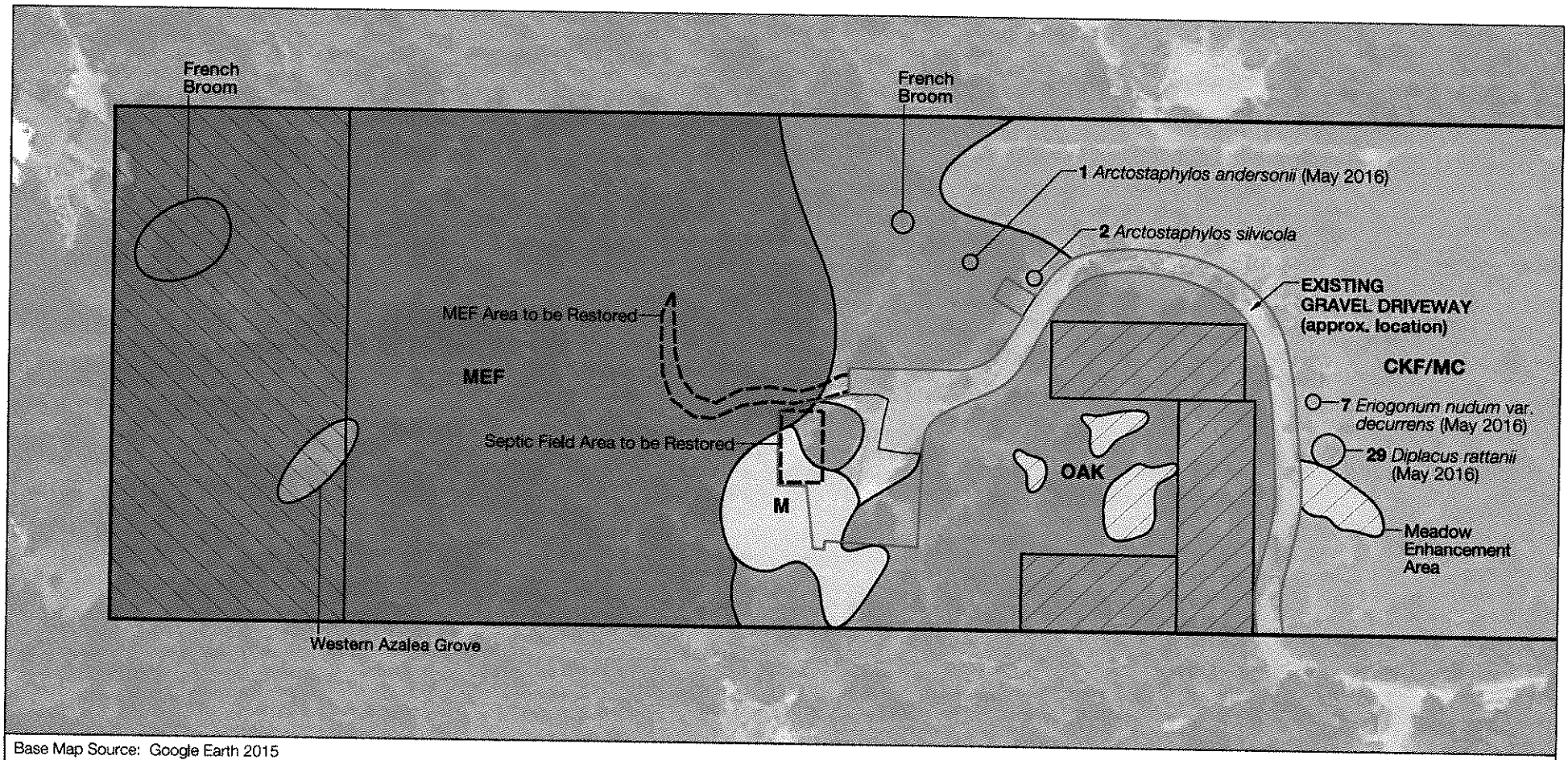
* Credits are paid to the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank. Payment has already been made for 2,720 square feet of disturbance. An additional payment of credits for the remaining 8,137 square feet of permanent disturbance will be required prior to the issuance of a building permit for the proposed home.

** Area of disturbed Mixed Evergreen Forest in area of existing gravel driveway that extends beyond the (p) building site. After completion of construction all gravel will be removed and entire area restored.

*** This is the area of existing disturbance, including the rock driveway and cleared building site that will incorporated into the area of permanent disturbance. Disturbed oak woodland within the building envelope has no herb layer and has bare dirt or gravel.

**P** = Permanent disturbance (total maximum 0.25 acre)
**T** = Temporary disturbance areas to be restored

| | Area (square feet/acres) |
|---|---|
| Total area of permanent disturbance | 10,063 / 0.2310 |
| Total area of temporary additional disturbance during construction | 794 / 0.0182 |
| Total area subject to purchase of conservation credits | 10,857 / 0.2492 |
| Total area of Restoration/enhancement (not including areas of permanent disturbance for which conservation credits will be purchased) | 74,125 / 1.7017 |




Base Map Source: Google Earth 2015
Imagery Date: 3/28/2015

N

APPROXIMATE SCALE: 1" = 100'

0 100' 200'

LEGEND

- Proposed Development Boundary
- **MEF** Mixed Evergreen Forest
- **OAK** Oak Woodland
- **M** Meadow
- Meadow Enhancement Area
- Areas to be Restored
- **CKF/MC** Cypress-Knobcone Pine Forest/ Maritime Mixed Chaparral
- Mixed Evergreen Forest Enhancement Area
- Oak Woodland Enhancement Area

Native Vegetation Network
653 Quail Drive • Santa Cruz, California 95060
Telephone/Fax (831) 425-0687

# VEGETATION MAP, PROPOSED DEVELOPMENT AREA, AND LOCATIONS OF RESTORATION AREAS AND ENHANCEMENT AREAS SOHL PARCEL APN 063-061-28

Figure 1
4/18
PV-402

# Attachment 9

Receipt for Payment of Credits for 2,720 square feet, to the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank.

Zayante Sandhills Conservation Bank

# AGREEMENT FOR SALE OF ZAYANTE SANDHILL HABITAT CONSERVATION CREDITS

U.S. Fish & Wildlife Service File No. _____

This Agreement is entered into this 3/26/14, by and between PCO, LLC (Bank Operator), dba Zayante Sandhills Conservation Bank (ZSCB) and Steven Sohl (Project Proponent).

## RECITALS

A. The Bank Operator has developed the Zayante Sandhills Conservation Bank located in Santa Cruz County, California; and

B. The Bank Operator has developed the Ben Lomond Sandhill Preserve of the ZSCB which was approved by the U.S. Fish and Wildlife Service on April 25, 2007;and

C. The Bank has received approval from the U.S. Fish and Wildlife Service (Service) to offer Sandhill Habitat credits for sale as compensation for the loss of the endangered: Mount Hermon June beetle (*Polyphylla barbata*); Zayante Band Winged grasshopper (*Trimerotropis infantilis*); the endangered Santa Cruz (Ben Lomond) Wallflower (*Erysimum teretifolium*); and the endangered Ben Lomond Spineflower (*Chorizanthe pungens* var. *hartwegiana*); and

D. Project Proponent is seeking to implement the project described on Exhibit "A" attached hereto (Project), which would unavoidably and adversely impact Mount Hermon June beetle (species) Mount Hermon June beetle, and seeks to compensate for the loss of Sandhill habitat by purchasing compensatory credits from Bank; and

E. Project Proponent has been authorized by the Service, Service File No. 2720 $ft^2$, to purchase from the Bank Mount Hermon June beetle credits; and

F. Project Proponent desires to purchase from Bank and Bank desires to sell to Project Proponent 2720 $ft^2$ (credits) Mount Hermon June beetle species credits;

**NOW, THEREFORE THE PARTIES AGREE AS FOLLOWS:**

1. Bank hereby sells to Project Proponent and Project Proponent hereby purchases from Bank 2720 $ft^2$ (credits) Mount Hermon June beetle (species) credits for the total purchase price of $22,032. The Bank will then deliver to Project Proponent an executed Bill of Sale in the manner and form as attached hereto and marked Exhibit "B". The purchase price for said credits shall be paid by cashier's check or, at the option of Bank, wire transfer of funds according to written instructions by Bank to Project Proponent.

2. The sales and transfer herein is not intended as a sale or transfer to Project Proponent of a security, license, lease, easement, or possessory or non-possessory interest in real property, nor the granting of any interest of the foregoing.

3. Project Proponent shall have no obligation whatsoever by reason of the purchase of the compensatory credits, to support, pay for, monitor, report on, sustain, continue in perpetuity, or otherwise be obligated or liable for the success or continued expense or maintenance in perpetuity of the credits sold, or the Bank. Pursuant to the Zayante Sandhills Conservation Bank Conservation Agreement, Bank shall monitor and make reports to the appropriate agency or agencies on the status of any compensatory credits sold to Project Proponent. Bank shall be fully and completely responsible for satisfying any and all conditions placed on the Bank or the compensatory credits, by all state or federal jurisdictional agencies.

4. The compensatory credits sold and transferred to Project Proponent shall be non-transferable and non-assignable, and shall not be used as compensatory mitigation for any other Project or purpose, except as set forth herein.

5. Project Proponent must exercise his/her/its right to purchase within 30 days of the date of this Agreement. Unless exercised, after the 30-day period this Agreement will be considered null and void.

6. Upon purchase of Mount Hermon June beetle (species credits) specified in paragraph E above, the Bank shall complete the payment receipt form attached hereto as Exhibit "C", and shall submit the completed payment receipt to the Service.

**IN WITNESS WHEREOF, the parties have executed this Agreement the day and year first above written.**

PCO, LLC dba Zayante Sandhills Conservation Bank

By Bank Operator (signature) _____

Date 3/29/14

Project Proponent (Name) Steven Sohl

By Project Proponent (signature) _____

Date 3/29/14

**APPROVED**

U.S. Fish & Wildlife Service: this Agreement fulfills the Mount Hermon June beetle mitigation requirement, as specified under Service File No. _____ dated _____ 20___.

UNITED STATES FISH & WILDLIFE SERVICE

By _____

Title _____

Date _____

**Exhibit "A"**

**Description of Project to be Mitigated**

**U.S. Fish & Wildlife Service File No. _____,**

**ATTACHED:**

**Low-Effect Habitat Conservation Plan for the Endangered Mount Hermon June Beetle for APN 063-061-28, site of a new, single-family home on Alta Vista Way next to 1055 Martin Road in Bonny Doon (Santa Cruz County), California**

*Prepared for:*
*Mr. Steven C. Sohl*
*PO Box 61*
*Felton, CA 95018*
*(831) 460-9975*
*sohlman7@yahoo.com*

*Prepared by:*
*Richard A. Arnold, Ph.D.*
*Entomological Consulting Services, Ltd.*
*104 Mountain View Court*
*Pleasant Hill, CA 94523-2188*
*(925) 825-3784*
*bugdctr@comcast.net*

*Agency Draft HCP*
*February 2014*

**Exhibit "B"**

**Zayante Sandhills Conservation Bank Contract No. _____**

**U.S. Fish & Wildlife Service File No. _____**

**Santa Cruz County File No. _____ or**

**Scotts Valley File No._____**

In consideration of $22,032, receipt of which is hereby acknowledged, Zayante Sandhills Conservation Bank does hereby bargain, will and transfer to Project Proponent Steven Sohl, the number of 2720 $ft^2$ credits in The Zayante Sandhills Conservation Bank in Santa Cruz County, developed and approved by the U.S. Fish and Wildlife Service.

The Zayante Sandhills Conservation Bank (PCO, LLC) represents and warrants that it has good title to the credits, has good right to sell the same, and that they are free and clear of all claims, liens, or encumbrances.

The Zayante Sandhills Conservation Bank (PCO, LLC) covenants and agrees with Project Proponent to warrant and defend the sale of the credits hereinbefore described against all and every person whomsoever lawfully claiming or to claim the same.

**Zayante Sandhills Conservation Bank**

By Bank operator (signature) _____

Date 3/29/19

**Exhibit "C"**

**Zayante Sandhills Conservation Bank**

**Type of Credits** Mount Hermon June beetle

**PAYMENT RECEIPT**

**PROJECT PROPONENT INFORMATION:**

Name Steven Sohl

Address P.O. Box 61 Felton, CA 95018

Telephone (831) 460-9975

Contact Steve Sohl

**PROJECT INFORMATION:**

Project Location Alta Vista Road off of Martin Road

Address/County Bonny Doon, Santa Cruz County

Project Description new home construction

U.S. Fish & Wildlife Service File

Species/Habitat Affected: Mount Hermon June beetle

Number of Credits Purchased 2720 $ft^2$

Credit Purchase Price $22,032

**PAYMENT INFORMATION:**

Payee PCO, LLC dba, Zayante Sandhills Conservation Bank

Payer Steven Sohl

Payment Amount $22,032

Method of Payment Cash Check No. 10015 204774 Money Order No.

Received by Date 5/29/14

Name Paul Burrowes Title Mgr.

# County of Santa Cruz

**PLANNING DEPARTMENT**
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
**KATHLEEN MOLLOY, PLANNING DIRECTOR**


## MITIGATION MONITORING AND REPORTING PROGRAM for the SOHL RESIDENCE PROJECT

Application No. 141097, April 2018

| No. | Environmental Impact | Mitigation Measures | Responsibility for Compliance | Method of Compliance | Timing of Compliance |
|---|---|---|---|---|---|
| **Biological Resources** | | | | | |
| ***BIO-1*** | *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife, or U.S. Fish and Wildlife Service?* | Avoid and minimize, to the extent practical, take of the Mount Hermon June Beetle (MHJB) within the project site.<br>• A biologist approved by the USFWS shall conduct a pre-construction training session for all construction staff. All personnel shall be shown pictures of the MHJB larval and adult life stages, and instructed to cease construction activities and call an entomologist qualified and permitted to handle and translocate the endangered beetle should any be observed during the covered activities. If the life stage of the MHJB is one that is below ground, then it shall be reburied outside of the impact area at the approximate depth at which it was unearthed. If an adult MHJB is found on the soil surface, then it shall be relocated and released outside of the impact area on the soil surface. This measure will minimize take of the MHJB by reducing the number of larvae and adults that could otherwise be injured or killed as a result of project-related activities. The orientation will also inform equipment operators and other workers about the impact area's boundaries, equipment storage locations, materials laydown areas, construction activity restrictions, and identify other habitat protection and work procedures. Workers will be directed to immediately cease work if a MHJB is observed within the designated impact area and contact the project biologist who can handle and relocate the beetle.<br>• Require that temporary fencing and signs be erected before any vegetation clearing, or excavation activities occur to clearly delineate the boundaries of the project's impact area. Warning signs shall be posted on the temporary fencing to alert excavators and other construction workers not to proceed beyond the fence. All protective fencing shall remain in place until all construction and other site improvements have been completed. Signs will include the following language: "NOTICE: SENSITIVE HABITAT AREA. DO NOT ENTER."<br>• To prevent dust that can clog the spiracles of adult beetles or cause a decline in vigor or even death of plants that larvae of the MHJB may feed upon, dust control measures, such as periodically wetting down the work areas, shall be used as necessary during excavation for the new foundations in of the impact area, site grading, or any other project-related activities that generate dust.<br>• If any construction occurs during any portion of the MHJB breeding/flight season, between May 15 and August 15, all exposed soils within the impact area will be covered between the hours of 7pm and 7am daily with tarps, plywood, erosion control fabric, or another suitable impervious material. This will prevent adult males from burrowing into the exposed soils and subsequently being injured or killed by soil disturbance (i.e., digging, grading, covering, etc.).<br>• Revegetate portions of the project site that are temporarily disturbed due to construction with | Project applicant and contractor. | To be conducted by a qualified A biologist approved by the USFWS. | To be implemented prior to, during, and following construction. |

| No. | Environmental Impact | Mitigation Measures | Responsibility for Compliance | Method of Compliance | Timing of Compliance |
|---|---|---|---|---|---|
| | | plant taxa indigenous to the Zayante Sandhills. Because MHJB adults emerge from the soil to attract and search for mates, turf grass, dense ground covers (such as ivy), weed matting, aggregate, and mulch can degrade habitat conditions and shall not be used in this project | | | |
| ***BIO-2*** | | Protect habitat for the MHJB at an off-site location with high conservation value for the beetle.<br>• Provide funds, through the purchase of conservation credits at the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank, to protect, manage, and monitor habitat of the MHJB in perpetuity. Project construction will permanently remove 10,857 square feet (0.2492acre) of habitat that could potentially be used by the MHJB. Credits shall be purchased at a 1:1 ratio, of conservation credits based upon the total area of project disturbance, from the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank. The property owner has previously purchased credits as required under the HCP prepared by Richard Arnold, Ph.D. for a total of 2,720 square feet as evidenced by the receipt for payment from the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank (Attachment 9) and shall pay the remaining balance of credits for the remaining 8,137 square feet at a 1:1 ratio for the total square feet of permanent disturbance for this project.<br>The operator of the conservation bank, PCO, LLC, will be responsible for all species monitoring, habitat management, and other conservation related activities that occur at the Ben Lomond Sandhills Preserve. An annual monitoring report will be prepared for submission to the USFWS and the County of Santa Cruz. | Project applicant. | Purchase of conservation credits at the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank. | To be implemented prior to construction. |
| ***BIO-3*** | | Protect Manage habitat for the MHJB on-site.<br>• Maintain the habitat portions of the property.<br>• Control invasive plants in the habitat area.<br>• Promote native sandhill plant colonization | Project applicant. | Routine maintenance to promote native sandhill plant colonization. | To be implemented prior to, during, and following construction. |
| ***BIO-4*** | | Track compliance with the terms and conditions of the HCP and permit, including compliance, effects, and effectiveness monitoring.<br>• In accordance with the provisions set out in the pre-construction meeting, workers shall be directed to immediately cease work if a MHJB is observed within the designated impact area. Workers shall immediately contact the project biologist who can handle and relocate the beetle as authorized by the USFWS.<br>• Throughout the construction and the other covered activities an approved biologist shall conduct regular inspections of the project site during all phases of the project to ensure that the perimeter fencing and signs that delineate the impact area remain in place, that exposed soils are properly covered by impervious materials, and to salvage and relocate and MHJB life stages.<br>• Following project completion the project biologist shall calculate the area of soil disturbance (i.e., incidental take), and tally the number of MHJB life stages that were found and translocated during the project to quantify the amount of incidental take at the end of the project. | Project applicant and contractor. | To be conducted by a qualified A biologist approved by the USFWS. | To be implemented prior to, during, and following construction. |

| No. | Environmental Impact | Mitigation Measures | Responsibility for Compliance | Method of Compliance | Timing of Compliance |
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| | | • The permit holder shall allow representatives from the USFWS access to the project site to monitor compliance with the terms and conditions of the HCP and the effects of the covered activities of this project. | | | |
| ***BIO-5*** | | The following reports shall be prepared as required by the Habitat Conservation Plan (HCP).<br>• Compliance Report: By January 31st following each year of the permit, the project biologist shall submit a report to the Ventura Fish and Wildlife Office of the Service and the Santa Cruz County Planning Department to document the status of the project. The report will provide the following information:<br>1. Brief summary or list of project activities accomplished during the reporting year (e.g. this includes development/construction activities, and other covered activities)<br>2. Project impacts (e.g. number of acres graded, number of buildings constructed, etc.)<br>3. Description of any take that occurred for each covered species (includes cause of take, form of take, take amount, location of take and time of day, and deposition of dead or injured individuals)<br>4. Brief description of conservation strategy implemented<br>5. Monitoring results (compliance, effects and effectiveness monitoring) and survey information (if applicable)<br>6. Description of circumstances that made adaptive management necessary and how it was implemented. Please include a table including the cumulative totals; by reporting period all adaptive management changes to the HCP, including a very brief summary of the actions.<br>7. Description of any changed or unforeseen circumstances that occurred and how they were dealt with<br>8. Funding expenditures, balance, and accrual<br>9. Description of any minor or major amendments.<br>• Annual Mitigation Monitoring Reports: The operator of the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank, PCO, LLC, must submit an annual monitoring report to the Ventura Fish and Wildlife Office of the Service, describing activities performed to benefit the MHJB as part of its agreement to sell conservation credits and operate a conservation bank. This report shall be submitted to Service by December 31st of the monitoring year. This report shall include:<br>1. A general assessment of the condition of the habitat at the Ben Lomond Sandhills Preserve;<br>2. A description of all management actions taken on the Preserve along with an assessment of their effectiveness toward enhancing the biological goals and objectives;<br>3. A description of any problems encountered in managing the Preserve;<br>4. Results of monitoring studies for the endangered species and/or communities conducted during the year and an assessment of their implications for the biological goals and | Project applicant and contractor. | To be conducted by a qualified A biologist approved by the USFWS. | To be implemented prior to, during, and following construction. |

<table>
<tr><th>No.</th><th>Environmental Impact</th><th>Mitigation Measures</th><th>Responsibility for Compliance</th><th>Method of Compliance</th><th>Timing of Compliance</th></tr>
<tr><td></td><td></td><td>objectives; and<br>5. A description of other activities designed to enhance the Preserve.</td><td></td><td></td><td></td></tr>
<tr><td>BIO-6</td><td>Have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, regulations (e.g. wetland, native grassland, special forest, intertidal zone, etc.) or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?</td><td>This direct impact is considered significant, but mitigatable to a less-than-significant level through the incorporation of the following measures:<br>• Implement a Four-year Restoration program that commences after construction is complete. Restoration measures will include: reclaiming gravel areas outside of the 12-foot wide driveway, and gravel areas that are not needed for maintenance access, and the fire turn-around. Gravel shall be removed by using hand rakes. Reclaimed areas shall be hand seeded with local native plant species representative of Sandhills habitat, weeded, and managed to promote native vegetation. Monitoring and reporting shall document new locations of special status species, invasive weeds, and rate of natural recruitment.<br>• Opportunities for Habitat Enhancement. The Meadow habitat areas support moderate levels of non-native annual grasses and weeds. A combination of weed control and hand seeding to promote species richness would improve the habitat value. Most of the meadow areas occur in gaps in the existing Live Oak Woodland or adjacent to the Live Oak Woodland located west of the house site. Four small areas of Meadow habitat located within the Live Oak Woodland, totaling approximately 4,009 square feet are proposed to be restored and enhanced. In addition, approximately 18,750 square feet of Oak Woodland adjacent to the entrance gate and along the driveway are proposed to be enhanced. The Mixed Evergreen Forest at the west end of the parcel will also be enhanced by removing French broom, velvet grass and other invasive non-native plants, and by protecting special status manzanita seedlings that naturally recruit in the forest. There are recorded observations of Anderson's manzanita in the past, and after the 4-year drought, normal rainfall may activate the soil "seed bank". Approximately 49,645 square feet of the Mixed Evergreen Forest will undergo enhancement and will be monitored for natural recruitment of native trees and shrubs.<br><u>IMPACT AND MITIGATION TABLE FOR SANDHILLS HABITAT AREAS</u>
<table>
<tr><th>Sensitive Sandhills Habitat</th><th></th><th>Area of Disturbance (sq. ft.)</th><th>Replacement/ Restoration ratio</th><th>Area of Restoration/ Enhancement (sq. ft.)</th><th>Proposed restoration/ enhancement/ mitigation measures</th></tr>
<tr><td>Mixed Evergreen Forest</td><td>P</td><td>121</td><td>1:1</td><td>121</td><td>Conservation credits*</td></tr>
<tr><td></td><td>T</td><td>1,721**</td><td>1:1<br>29:1</td><td>1:721 (restore)<br>49,645 (enhance)</td><td>Restoration and Habitat Enhancement</td></tr>
<tr><td>Oak Woodland</td><td>P</td><td>838</td><td>1:1<br>22:1</td><td>838<br>18,750</td><td>Conservation credits* and Restoration</td></tr>
<tr><td></td><td>T</td><td>794</td><td>1:1</td><td>794</td><td>Conservation credits* and Restoration</td></tr>
<tr><td>Santa Cruz Cypress/ Knobcone PineForest/ Maritime Mixed Chapparal (old impacts included as existing disturbed habitat)</td><td>P</td><td>None</td><td>N/A</td><td>None</td><td>N/A</td></tr>
<tr><td></td><td>T</td><td>No additional</td><td>N/A</td><td>No additional</td><td>N/A</td></tr>
<tr><td>Meadow</td><td>P</td><td>1,256</td><td>1:1</td><td>1,256</td><td>Conservation credits*</td></tr>
</table></td><td>Project applicant and contractor.</td><td>To be conducted by a qualified A restoration ecologist.</td><td>To be implemented following construction.</td></tr>
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| No. | Environmental Impact | Mitigation Measures | Responsibility for Compliance | Method of Compliance | Timing of Compliance |
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|---|---|---|---|---|---|
| | | 3:1 | 4,009 (enhance) | Habitat Enhancement | |
| T | None | N/A | None | N/A | |
| Existing disturbed habitat area*** | | | | | |
| • (e)/(p) Driveway | P | 7,088 | 1:1 | 7,088 | Conservation credits* |
| • House Site | P | 760 | 1:1 | 760 | Conservation credits* |

* Credits are paid to the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank. Payment has already been made for 2,720 square feet of disturbance. An additional payment of credits for the remaining 8,137 square feet of permanent disturbance will be required prior to the issuance of a building permit for the proposed home.

** Area of disturbed Mixed Evergreen Forest in area of existing gravel driveway that extends beyond the (p) building site. After completion of construction all gravel will be removed and entire area restored.

*** This is the area of existing disturbance, including the rock driveway and cleared building site that will incorporated into the area of permanent disturbance. Disturbed oak woodland within the building envelope has no herb layer and has bare dirt or gravel.

**P** = Permanent disturbance (total maximum 0.25 acre)

**T** = Temporary disturbance areas to be restored

| Summary | Area (square feet/acres) |
|---|---|
| Total area of permanent disturbance | 10,063 / 0.2310 |
| Total area of temporary additional disturbance during construction | 794 / 0.0182 |
| Total area subject to purchase of conservation credits | 10,857 / 0.2492 |
| Total area of Restoration/enhancement (not including areas of permanent disturbance for which conservation credits will be purchased) | 55,375 / 1.2712 |

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| ***BIO-7*** | | The following measures are recommended to reduce impacts to the Live Oak Woodland to a less-than significant level.<br>• After the Development Permit is issued and prior to construction, remove the cement blocks (no mortar keystone blocks), BBQ and patio furniture from the existing recreational barbecue area. Also, remove the dead chinquapin trees.<br>• During the construction of the house site, protect the Live Oak Woodland habitats that occur adjacent to the development envelope to prevent inadvertent impacts to these habitat types. These natural areas outside the development envelope should be protected by the placement of 5-foot high construction fencing (metal stakes and rope) along the outside edge of the Development Envelope. The fencing should be maintained throughout the site construction period and should be inspected periodically for damage and proper functioning.<br>• To the greatest extent possible, keep construction activities a minimum of 10 feet away from the tree trunks. Existing trees to be saved that are adjacent to construction activities shall be protected by a 5- foot high temporary fence (metal stakes and rope). The protection fencing | Project applicant and contractor. | To be monitored by a qualified A biologist approved by the USFWS and the County of Santa Cruz Planning Department. | To be implemented prior to, during, and following construction. |

| No. | Environmental Impact | Mitigation Measures | Responsibility for Compliance | Method of Compliance | Timing of Compliance |
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| | | should also be installed along the gravel driveway access route where it abuts the Live Oak Woodland habitat. The fence will start at the entry gate, where the gravel driveway starts. The existing natural habitat along the existing gravel driveway and natural habitat outside the proposed Development Envelope shall not be cut, filled, or compacted. The fencing along the driveway access route shall be maintained throughout the construction period and shall be inspected periodically for damage and proper functioning.<br>• For trees designated to be retained within 20 feet of construction, utility trenching for the house and leach field, the trees should COP be protected by the placement of 5-foot high plastic construction fencing along the outside edge of the drip line of the tree or grove of trees. The fencing should be maintained throughout the site construction period and should be inspected periodically for damage and proper functioning.<br>• If construction activities are proposed within the drip line of trees designated to be retained, the following construction guidelines should be implemented: minimize excavation, filling, or other type of soil disturbance within 10 feet of the tree trunk. If 1/3 or more of the roots are disturbed, the injured tree should be watered so that the ground is soaked to a depth of 18 inches, extending outward to the drip line of the tree.<br>• Remove Invasive, Non-native Species (see Mitigation Measure BIO-14). | | | |
| ***BIO-8*** | | These direct impacts are considered significant, but mitigatable to a less- than-significant level through the incorporation of the following measures:<br>• Staging of construction vehicles and equipment. No Staging areas shall be allowed along Alta Vista Rd., especially in the turnout located at a low point midway along Alta Vista Rd. that is associated with a drainage and seasonal tributary that leads to Mill Creek. Sediments and hazardous material such as oil and gas shall not enter the drainage.<br>• Staging of construction vehicles and equipment shall be allowed in the Development Envelope, provided that Best Management Practices for sensitive habitats are used, including parking vehicles over drip pans and having spill kits on-site during construction. All refueling, maintenance, and staging of equipment and vehicles will occur within the established staging areas. The property owners will ensure that contamination of sensitive habitat does not occur during such operations. Prior to the onset of work, the contractor shall prepare a plan that provides a prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.<br>• Standard construction procedures and Best Management Practices (BMPs) will be implemented to reduce the emissions of dust and pollutants during construction. Some standard BMPs for construction projects include:<br>1. Using a covered, paved area dedicated to vehicle maintenance and washing;<br>2. Developing a spill prevention and cleanup plan;<br>3. Preventing hazardous chemical leaks by properly maintaining vehicles and equipment;<br>• Vehicle tires should be sanitized with Lysol or equivalent prior to entering Alta Vista Rd. to avoid spread of fungal diseases and "Sudden Oak Death". | Project applicant and contractor. | To be monitored by the County of Santa Cruz Planning Department. | To be implemented during construction. |

| No. | Environmental Impact | Mitigation Measures | Responsibility for Compliance | Method of Compliance | Timing of Compliance |
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| | | • Remove Invasive, Non-native Species (see Mitigation Measure BIO-14). | | | |
| ***BIO-9*** | | These direct impacts are considered significant, but mitigatable to a less- than-significant level through the incorporation of the following measures:<br>• Protection Fencing. During the construction of the house site, protect the Santa Cruz Cypress-Knobcone Pine Forest/ Maritime Mixed Chaparral that occurs adjacent to the existing gravel driveway access. This sensitive habitat should be protected by the placement of 5-foot high construction fencing along the outside edge of the gravel driveway. The fencing should be maintained throughout the site construction period and should be inspected periodically for damage and proper functioning.<br>• After the construction, a permanent fence (i.e., split rail wood or rocks) shall be placed along the entrance driveway to minimize future potential disturbance to adjacent natural habitats.<br>• Minimize the use of bright lighting that may influence the behavior and disorient wildlife species.<br>• Maintain moderate levels of cats and dogs, so that there is not over predation of the site's rodent, bird, snake and lizard populations. No Kennel or other animal boarding is allowed such that a maximum of four cats and/or dogs may be kept on the parcel in accordance with the provisions of Santa Cruz county Code 13.10.700-K definitions "Kennel".<br>• Remove Invasive, Non-native Species (see Mitigation Measure BIO-14).<br>• Foster the natural recruitment of native plant species that are representative of Sandhills habitat.<br>• Structures and features proposed for residential development shall not be placed within 50 feet of an endangered Santa Cruz Cypress tree. This measure is specified in the County's Sensitive Habitat Ordinance (Santa Cruz County Code 16.10.090). | Project applicant and contractor. | To be monitored by the County of Santa Cruz Planning Department | To be implemented prior to, during, and following construction. |
| ***BIO-10*** | | These direct impacts are considered significant, but mitigatable to a less- than-significant level through the incorporation of the following measures:<br>• Enhance remaining forest areas by removing invasive, non-native vegetation and by fostering natural recruitment of native trees and shrubs (see Mitigation Measure BIO-14).<br>• For trees designated to be retained within 20 feet of construction, utility trenching for the house and leach field, the trees should be protected by the placement of 5-foot high plastic construction fencing along the outside edge of the drip line of the tree or grove of trees. The fencing should be maintained throughout the site construction period and should be inspected periodically for damage and proper functioning.<br>• If construction activities are proposed within the drip line of trees designated to be retained, the following construction guidelines should be implemented: minimize excavation, filling, or other type of soil disturbance within 10 feet of the tree trunk. If 1/3 or more of the roots are disturbed, the injured tree should be watered so that the ground is soaked to a depth of 18 inches, extending outward to the drip line of the tree. | Project applicant and contractor. | To be monitored by a qualified A biologist approved by the USFWS and the County of Santa Cruz Planning Department. | To be implemented prior to, during, and following construction. |

| No. | Environmental Impact | Mitigation Measures | Responsibility for Compliance | Method of Compliance | Timing of Compliance |
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| ***BIO-11*** | | These direct impacts are considered significant, but mitigatable to a less- than-significant level through the incorporation of the following measures:<br>• Enhance Remaining Meadow areas. After construction, the remaining meadow areas will be managed to promote native sandhills vegetation. Certain planting sites will be selected hand-seeding. Seeds will be collected within two miles of the property, and will include common aster, bristly aster, goldenrod, yellow yarrow, white yarrow, and woolly paint brush. The project botanist and revegetation specialist will conduct the seed collection, hand seeding, and select the areas to be seeded. The exact areas to be seeded will be determined by the project Biologist so that no special status species are adversely affected.<br>• Implement Selective Weed-trimming Program. Depending on the amount of annual rainfall, it is recommended that the meadow areas be selectively weed trimmed 2 to 3 times in spring and once again in late fall. Mowing should not be conducted during the summer season so that the native plants may complete their life cycle to produce mature seed. The project botanist will let the property owner know when it is the proper time to mow. The mowing or trimming will serve two main functions:<br>1. Mowing helps lower the competition between native herbs and non-native weeds and grasses.<br>2. Mowing will lower vegetation height and fire hazard. | | | |
| ***BIO-12*** | | These direct impacts are considered significant, but mitigatable to a less- than-significant level through the incorporation of the following measures:<br>• Remove Invasive, Non-native Species (see Mitigation Measure BIO-11). Care should be taken during invasive, non-native plant removal when working near the cypress saplings.<br>• Measures for Vegetation Management and Fire Safety in the 100' CAL Fire Defensible Space around Residence:<br>Avoid doing fuel reduction work during the flight season for the Mount Hermon June Beetle (MHJB), which extends from mid-May to mid-August. Do not remove completely, or thin out rare Santa Cruz Cypress trees, Bonny Doon (Silver leaf) Manzanita shrubs, or other listed species. Instead, use corrective pruning and remove lower branches that could fuel a ground fire.<br>If a burn pile is needed, it should be placed in the Mixed Evergreen Forest habitat on the property. Place the burn pile to avoid damage to the Western azalea grove or manzanita seedlings. Routes for hauling slash/cut brush or cut trees should avoid ground disturbance near special status plants such as Santa Cruz Cypress and Bonny Doon (Silver leaf) Manzanita. | Project applicant and contractor. | To be monitored by a qualified A biologist approved by the USFWS and the County of Santa Cruz Planning Department. | To be implemented prior to, during, and following construction. |
| ***BIO-13*** | | These direct impacts are considered significant, but mitigatable to a less- than-significant level through the incorporation of the following measures:<br>• Placement of temporary protection fencing that will be functional during the construction period around the entire area of the existing gravel driveway and proposed development. In addition, to protect the population area of the Ben Lomond Spineflower (*Chorizanthe pungens* var. *hartwegiana*) construction fencing should be placed at the east end of the parcel, in the previously burned area along Alta Vista Road. | Project applicant and contractor. | To be monitored by a qualified A biologist approved by the USFWS and the County of | To be implemented prior to and during construction. |

| No. | Environmental Impact | Mitigation Measures | Responsibility for Compliance | Method of Compliance | Timing of Compliance |
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| | | • Install individual protection shelters using welded wire or poultry netting to avoid impacts to special status Bonny Doon (Silver leaf) Manzanita (*Arctostaphylos silvicola*) and Anderson's Manzanita (*A. andersonii*).<br>• Ensure a minimum 10 feet between the flagged *Arctostaphylos silvicola* seedlings and the proposed water tanks.<br>• Hold a pre-construction meeting to verify that the adjacent Sandhills habitats and special status plant species will be protected by the proper placement of construction fencing and individual protection shelters. The proposed construction fencing shall not be placed outside of the existing disturbed area, most of which is currently covered with gravel. The line of the temporary fencing is required to be approved by the Project Biologist prior to installation of the construction fencing. | | Santa Cruz Planning Department. | |
| ***BIO-14*** | | These direct impacts are considered significant, but mitigatable to a less- than-significant level through the incorporation of the following measures:<br>• Erosion Control Measures. Measures shall be implemented to prevent increased erosion, sedimentation, and run-off into undisturbed habitats, especially in sensitive habitats. Suggested erosion control measures include: straw wattles, and/or weed-free straw bales anchored with wooden stakes to trap loose sediment, which could move down slope. Santa Cruz Erosion Control Mix should <u>not</u> be used as it contains invasive, non-native grasses and clover species. The effectiveness of the erosion control measures should be inspected to determine if additional measures should be implemented the following fall.<br>• Monitoring for Natural Recruitment and Special Status Plants. The western third of the parcel shall be evaluated for rare plants, sandhills indicator species, natural regeneration, and to confirm the amount of hand seeding needed. A survey is recommended, since the rare Ben Lomond spineflower and other annual sandhills specialty plants would be identifiable at this time. | Project applicant and contractor. | To be monitored by a qualified A biologist approved by the USFWS and the County of Santa Cruz Planning Department. | To be implemented prior to, during, and following construction. |
| ***BIO-15*** | | These direct impacts are considered significant, but mitigatable to a less- than-significant level through the incorporation of the following measures:<br>• The project botanist will conduct weed surveys, flag problem areas, and conduct walk-throughs with the property owners to show them the maintenance needed. As compensation for indirect impacts to locally unique species and sensitive habitats, the landowners should remove/control the occurrences of invasive, non-native plant species that occur along the construction route and the western third of the parcel. Winter and early spring are good times to remove acacia saplings and French broom plants, when the soil is wet and before the plants have gone to seed. This helps to avoid the spread of seed into new areas. Controlling invasive, non-native plants will likely be needed on a yearly basis as regular management of the property. No herbicides shall be used.<br>• High priority species for removal include silver wattle acacia, rose clover, dog tail grass, French broom, thistle species, velvet grass, feather grass, cat's ear, and rattlesnake grass. The plants should be removed in a manner that minimizes disturbances to the native trees and shrubs occurring in these habitat areas. | Project applicant and contractor. | To be monitored by a qualified A biologist approved by the USFWS and the County of Santa Cruz Planning Department. | To be implemented following construction. |

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| ***BIO-16*** | *Produce nighttime lighting that would substantially illuminate wildlife habitats?* | All exterior lighting on the property must comply with the following restrictions:<br>• All outdoor lighting shall be directed away from adjacent sensitive habitat areas. Light sources may be shielded by landscaping, structure, fixture design or other physical means.<br>• Outdoor light fixtures shall use only light bulbs that are certified to not attract nocturnally-active insect species. | Project applicant and contractor. | To be monitored by the County of Santa Cruz Planning Department. | To be implemented following construction. |