

**Low-Effect Habitat Conservation Plan for the
Mount Hermon June Beetle at the
Sunde Residence (APN: 066-201-13)
In Mount Hermon, Santa Cruz County, California**



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Contents

Executive Summary	1
Section 1. Introduction and Background	3
Overview/Background	3
Permit Holder/Permit Duration.....	3
Permit Boundary/Covered Lands.....	3
Species to be Covered by Permit	5
Regulatory Framework	5
Federal Endangered Species Act.....	5
The Section 10 Process - Habitat Conservation Plan	
Requirements and Guidelines	7
National Environmental Policy Act.....	8
National Historic Preservation Act	8
California Endangered Species Act	8
California Environmental Quality Act	8
County of Santa Cruz Sensitive Habitat Ordinance	9
Section 2. Project Description/Activities Covered by Permit	10
Project Description	10
Activities Covered by Permit.....	10
Section 3. Environmental Setting/Biological Resources	11
Environmental Settings.....	11
Climate	11
Topography/Geology	11
Hydrology/Streams, Rivers, Drainages	11
Existing Land Use	12
Covered Wildlife and Fish Species	13
Mount Hermon June Beetle.....	13
Status and Distribution	13
Habitat Characteristics	15
Occurrence in the Project Area	15
Other Sandhills Endangered Species in the Region.....	17

Section 4. Potential Biological Impacts/Take Assessment	18
Direct and Indirect Impacts	18
Anticipated Take of each Covered Wildlife or Fish Species	20
Effects on Critical Habitat	20
Anticipated Impacts of the Taking.....	21
Cumulative Impacts	22
Section 5. Conservation Program	23
Biological Goals and Objectives	23
Avoidance, Minimization, and Mitigation Measures.....	24
Measures to Minimize Impacts	24
Measures to Mitigate Unavoidable Impacts.....	25
Monitoring 26	
Reporting 27	
Section 6. Plan Implementation	29
Plan Implementation (Optional)	29
Changed Circumstances	29
Summary of Circumstances	29
Listing of New Species	30
Discovery of Currently Listed Species in Project Site	30
Unforeseen Circumstances	31
Amendments 31	
Minor Amendments	31
Major Amendments	32
Suspension/Revocation	32
Renewal of the Section 10(a)(1)(B) Permit.....	32
Permit Transfer 33	
Section 7. Funding	34
Costs of HCP Implementation	34
Funding Source(s).....	35
Funding Mechanism and Management	35
Section 8. Alternatives	36
Summary 36	
Alternative #1: No Action Alternative	36
Alternative #2: Redesign Project	36
Alternative #3: Proposed Project.....	37
Section 9. Literature Cited	38
Section 10. Appendixes	40
Appendix A: Habitat Evaluation of Sunde Project Site.....	40

Tables and Figures

Table	Page
1 Size of Proposed Project Components	10
2 Special Status Species of the Sandhills	17
3 Temporary and Permanent Project Impacts.....	19
4 Estimated Costs to Implement the Conservation Strategy..	34

Figure	Page
1 Map of Project Vicinity	4
2 Map of Project Site	14
3 Mount Hermon June Beetle	16
4 Map of Project Site and Conservation Bank	28

Executive Summary

Executive Summary

Mr. Ronald and Mrs. Torunn Sunde are seeking an incidental take permit, under Section 10(a)(1)(B) of the Federal Endangered Species Act, to cover take of the Mount Hermon June beetle (*Polyphylla barbata*) associated with their proposed reconstruction project at their 0.17-acre home site, which is located at 16 Madrone Avenue (APN: 066-201-13), in Mount Hermon, in central Santa Cruz County, central coastal California.

A 3-year permit term is requested to address incidental impacts to the federally endangered Mount Hermon June beetle associated with demolition of the existing residence and construction of the new single family home. The impacts of the project would include permanent impacts to Mount Hermon June beetles potentially living within the 810 ft² (0.0186 acre) area to be disturbed during demolition and construction activities that is not currently covered by existing impervious surfaces. Of the 810 ft² (0.0186 acre) area of potential habitat on the site that will be disturbed, 766 ft² (0.0176 acre) will be permanently removed through construction of the house and associated hardscapes. The remaining 44 ft² (0.0010 acre) will be landscaped using elements designed to not deter use of habitat by Mount Hermon June beetle, such that the impacts on habitat will be temporary.

The Mount Hermon June beetle is a fossorial insect that lives in Zayante soils, which support unique communities known as the Zayante (or Santa Cruz) Sandhills (Sandhills). Though several other special status plants and animals are known to occur within the Sandhills, only the Mount Hermon June beetle has the potential to be impacted by this project. Due to the project's small size and occurrence within an area of high density residential development that is of marginal long term conservation value, the project is not anticipated to significantly impact the persistence of the Mount Hermon June beetle population within the Mount Hermon region, or the persistence of the species as a whole.

To mitigate the project impacts on the endangered insect, this plan's conservation strategy includes minimization measures designed to reduce the impacts of the proposed project on the Mount Hermon June beetle, including:

1. Locating the project on and adjacent to the already existing impervious surfaces, where habitat does not occur or is more degraded relative to the remainder of the parcel.
2. Avoiding the flight season, if at all possible, and using erosion control fabric to prevent Mount Hermon June beetles from burrowing into exposed soil in the construction site when/if soil disturbing activities occur between May and August.

3. Avoiding installation of any new outdoor night lighting, which can distract Mount Hermon June beetles from breeding
4. Minimizing hardscaping associated with the project, and using native Sandhills plants to revegetate the area that will be temporarily disturbed

In addition, the applicants will compensate for both the temporary and permanent loss of habitat resulting from the reconstruction project through off-site mitigation at a ratio of 1:1. To accomplish this, a total of 810 ft² of conservation credits will be purchased from the Zayante Sandhills Conservation Bank—a conservation bank that conserves, manages, and monitors large, high quality Sandhills habitat preserves that have high conservation value for the Mount Hermon June beetle and other Sandhills species.

The applicant will fund all elements of the proposed conservation strategy. A receipt for the purchase of conservation credits, which will provide proof of the habitat compensation, will be provided to the U.S. Fish and Wildlife Service prior to issuance of the permit. Upon completion of the project, a qualified biologist will conduct compliance monitoring to evaluate success toward the biological goals and objectives, and adherence to the proposed minimization measures. Biological effects monitoring will be used to quantify the impact of the project on Mount Hermon June beetle individuals and habitat. Results of this monitoring will be provided to the U.S. Fish and Wildlife Service in a project report.

Section 1

Introduction and Background

1.1 Overview and Background

This Habitat Conservation Plan (HCP) for the proposed residential reconstruction project at the Sunde Residence, a 0.17-acre home site in Mount Hermon, Santa Cruz County, California, has been prepared pursuant to the requirements of Section 10(a)(1)(B) of the Federal Endangered Species Act of 1973, as amended (Act). The HCP is intended to provide the basis for issuance of a Section 10(a)(1)(B) permit to Ronald and Torunn Sunde, the property owners, to authorize incidental take of the Mount Hermon June beetle (*Polyphylla barbata*), a federally-listed endangered species, that may result from their reconstruction of their single family residence. In July 2005, a qualified biologist determined that the project site contains Zayante soils, and therefore supports potential habitat for the federally endangered insect (Appendix A).

1.2 Permit Holder/Permit Duration

Ronald and Torunn Sunde request an incidental take permit to cover take of Mount Hermon June beetle for 3 years commencing on the date of permit approval. Project construction is anticipated to require less than one year. However, seasonal limitations on development may delay project inception following permit issuance. For this reason, a 3-year permit duration is requested to ensure that the covered activities will be implemented during the term of the permit.

1.3 Permit Boundary/Covered lands

A permit is requested to authorize the incidental take of Mount Hermon June beetle within the project area on the 0.17-acre Sunde Property (APN: 066-201-13), located at 16 Madrone Avenue in a community known as Mount Hermon, which is in an unincorporated portion of Santa Cruz County in central coastal California (Figure 1). The project site is located within the Felton 7.5" United States Geological Survey (USGS) topographic quadrangle, in Township 10S and Range 2W of the Mount Diablo Meridian.

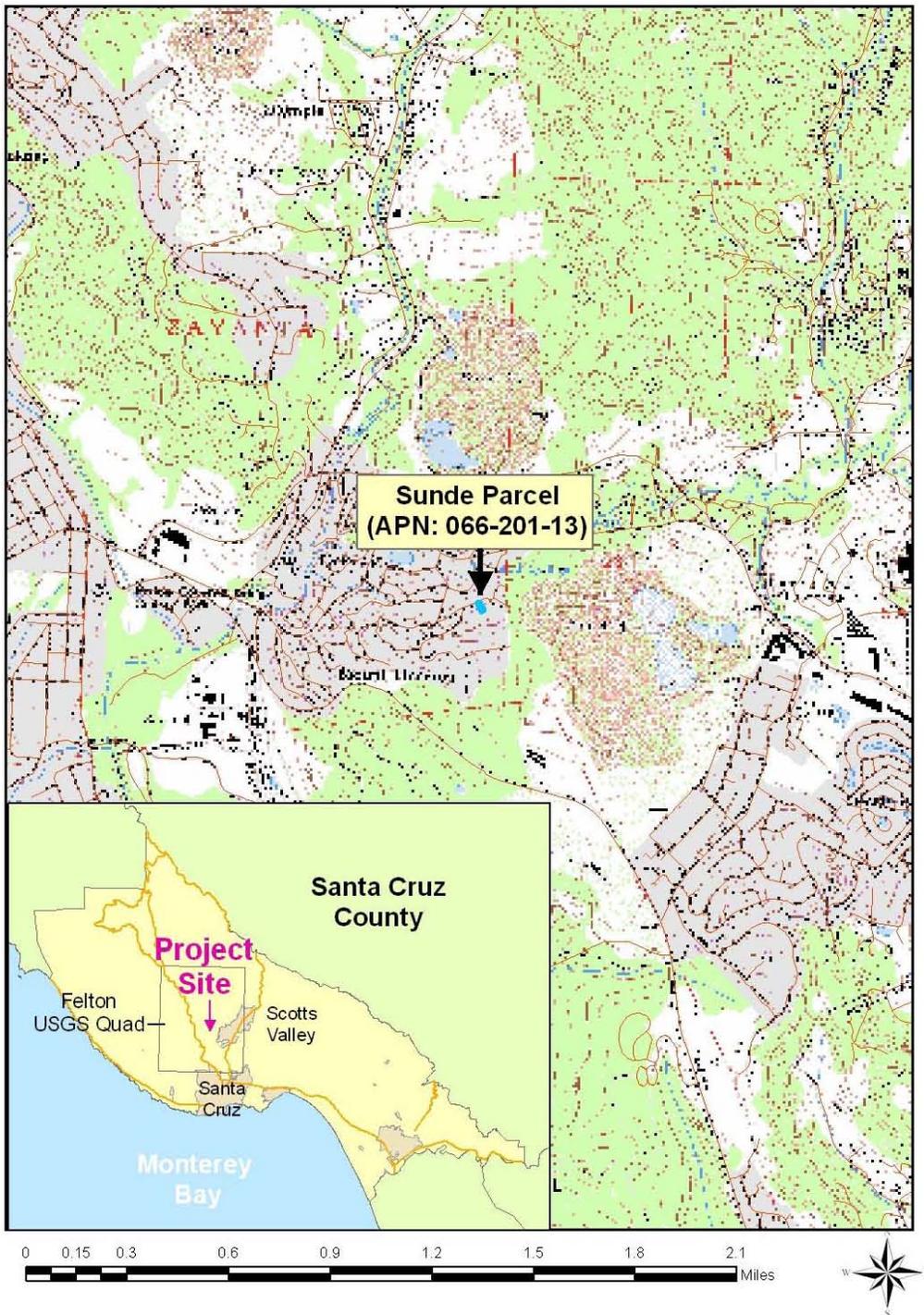


Figure 1: Location of proposed project site (Sunde Parcel) within the Felton US Geological Survey Quadrangle in central Santa Cruz County, west of Scotts Valley. Map prepared by Jodi M. McGraw.

1.4 Species to be Covered by Permit

The following species is referred to as a "covered species" related to the Incidental Take Permit if it is issued.

<u>Covered Species</u>	<u>Federal Status/State Status</u>
Mount Hermon June beetle (<i>Polyphylla barbata</i>)	Federally Endangered

The following additional federally endangered species that occur with the Mount Hermon June beetle at other locations will not be addressed in this HCP or covered under the requested Incidental Take Permit as they do not occur at the project site due to a lack of suitable habitat (J. McGraw, pers. obs. 2006):

<u>Additional Species</u>	<u>Federal Status/State Status</u>
Zayante band-winged grasshopper (<i>Trimerotropis infantilis</i>)	Federally Endangered
Ben Lomond spineflower (<i>Chorizanthe pungens</i> var. <i>hartwegiana</i>)	Federally Endangered
Santa Cruz (Ben Lomond) wallflower (<i>Erysimum teretifolium</i>)	Federally Endangered/ CA State Endangered

1.5 Regulatory Framework

1.5.1 Federal Endangered Species Act

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 U.S. Fish and Wildlife Service (Service) as an intentional or negligent act or omission that creates 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 incidental 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 HCP. The regulatory standard under section 10 of the Act is that the effects of authorized incidental take must be minimized and mitigated to the maximum extent practicable. Under Act section 10, 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.

1.5.2 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 application 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 USFWS 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), 3) a permit application, and 4) a \$100 fee from the applicant. An implementing agreement is not required for an HCP that qualifies as a low-effect HCP.. The Service prepares an Intra-Service Section 7 Biological Opinion; and also prepares a Set of Findings, which evaluates the Section 10(a)(1)(B) permit application 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). The Service must publish a Notice of Availability of the HCP package in the Federal Register to allow for public comment. The draft NEPA document, HCP, and IA (if applicable) are made available for public review during this 30-day to 90-day comment period. A Section 10(a)(1)(B) incidental take permit is granted upon a determination by that all requirements for permit issuance have been met. Statutory and regulatory criteria for issuance of the permit, pursuant to section 10(a)(2)(b) of the Act and 50 CFR 17.22 (b)(2) and 17.32 (b)(2) 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 USFWS 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.

1.5.3 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.

1.5.4 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 applicants may be required to contract for cultural resource surveys and possibly mitigation.

1.5.5 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 Section 2062-2067). The Mount Hermon June beetle is not listed under CESA. Therefore, this HCP will not further address CESA permitting requirements.

1.5.6 California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) (Pub. Res. Code §21000 seq.) requires state and local governmental agencies to complete an environmental review of discretionary projects that could impact environmental resources. CEQA differs from NEPA in that it requires that significant environmental impacts of proposed projects be reduced to a less-than significant level through adoption of feasible avoidance,

minimization, or mitigation measures unless overriding considerations are identified and documented.

1.5.7 County of Santa Cruz Sensitive Habitat Ordinance

The County oversees a Sensitive Habitat Protection Ordinance that 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” (County of Santa Cruz 1994). 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: (1) limiting the portion of sensitive habitat to be disturbed; (2) deeding an easement to protect undisturbed portions of this habitat; (3) restoring portions of degraded sensitive habitat; and/or (4) restricting land uses.

Sites that are occupied by the Mount Hermon June beetle are protected under the Sensitive Habitat Protection Ordinance. The measures described in the conservation strategy developed in this plan to avoid, minimize, and mitigate impacts to the Mount Hermon June beetle as required in this incidental take permit will overlap with requirements under the Sensitive Habitat Protection Ordinance. The County has sole authority to determine whether project proponents have complied with this Ordinance. However, the conservation strategy presented here is based on the preservation and long-term management of Zayante Sandhills habitat through the acquisition of conservation credits that should therefore be sufficient to fulfill the requirements of the Sensitive Habitat Protection Ordinance.

Section 2

Project Description/Activities Covered by Permit

2.1 Project Description

This proposed project will create a new single family home and associated improvements on a 0.17 acre homesite within the residential community known as Mount Hermon in central Santa Cruz County, California. The parcel currently supports a single family home and other improvements, including a patio and paved walkways. The existing structures require reconstruction to maintain their structural integrity and thus utility.

This proposed project will demolish an existing single family residence and construct in its place a new, larger home in its place. The project will also include creation of pathways and retaining walls, a parking area, and a patio (Table 1).

Table 1: Size of proposed residential development project components.

Project Component	Size	
	square feet	Acres
single family residence	1376	0.032
patio	258	0.006
pathways and retaining walls	448	0.010
parking space	245	0.006
Total	2327	0.053

2.2 Activities Covered by Permit

An incidental take permit is requested to cover impacts to the Mount Hermon June beetle that could result from demolition of the existing structure and improvements and construction of the new single family residence and improvements, including:

- demolition and removal of the existing structures and improvements (e.g. hardscapes)
- construction of the new residence
- installation of a new parking area, retaining walls, paved walkways, and a patio.
- Restoration of a heavy equipment access area following construction.

Construction would begin by removing the existing structures and hardscaping, which include a single family residence (1,000 ft²), paved walkways (274 ft²), and a patio (564 ft²). This demolition period is expected to require two weeks.

Following removal of existing structures and hardscaping, the concrete slab and perimeter foundation will be poured and retaining walls will be installed during a 4-6 week period. After this period, soil within the building footprint will no longer be exposed. Framing will take place during a 12-16 week period, after which the interior of the house will be constructed during an estimated 12-16 week period. During this time, native plants would be installed into a planting area that will be used by heavy equipment to access the site during demolition. As a result, the entire project is anticipated to require no more than 40 weeks; however, project delays could result in an extended period of take.

The covered activities are further described in Section 4.1, which assess their impacts on the covered species.

Section 3

Environmental Setting/Biological Resources

3.1 Environmental Setting

3.1.1 Climate

Located in central Santa Cruz County, the project area experiences a mediterranean climate, characterized by cool, wet winters and hot, dry summers. Summer temperatures range from 45°F to 95°F, with an average of 68°F. Winter temperatures range from 36°F to 65°F, with an average of 51°F.

Annual precipitation is 44 inches, with most falling as rain. The rainy season is from October to May, with the majority of the rainfall occurring between December and March.

3.1.2 Topography/Geology

The project site is located on the gentle northwestern slope of Mount Hermon, an 890 foot tall hill between the City of Scotts Valley and Felton. The elevation at the project site is 360 feet.

The soil in the area of the proposed project is a medium gray, loose sand soil characteristic of the Zayante series (U.S. Department of Agriculture 1980), which is an excessively well drained, low nutrient soil derived from the weathering of marine sediments and sandstones of the Santa Margarita Formation.

3.1.3 Hydrology/Streams, Rivers, Drainages

The project site is located within the San Lorenzo River Watershed. Bean Creek, a tributary to the San Lorenzo River that runs through Mount Hermon, is located 0.25 mile north of the project site.

The project area is within upland habitat and not within a flood zone or alluvial fan.

3.1.4 Existing Land Use

The proposed project will occur on a 0.17-acre home site located within a high density residential development, known as the community of Mount Hermon. Developed beginning in the early 1900's, this area consists primarily of small summer homes and cabins that were built in association with development of the Mount Hermon Conference Center, which was established in 1906. Several of the residences are owned by the conference center, which rents them for temporary use by conference attendees. However, the majority of the homes are owned by private individuals. Many homes are being expanded and transformed into full-year residences. Within the 168-acre Mount Hermon region, there are 490 developed parcels, with a mean parcel size of 0.38 acre, and a median parcel size of 0.17 acre

The proposed project parcel is surrounded on all sides by developed parcels less than 1.25 acres in size that feature single family homes (Figure 2). Within 300 feet to the south of the subject parcel, there is a narrow (180 foot wide) "greenbelt" of intact native vegetation between the residential development and additional residences to the south and the adjacent Ponderosa Camp—a residential youth camp. Owned by the Mount Hermon Association, this greenbelt connects to a relatively intact 347-acre patch of Sandhills habitat to the south, which is owned primarily by the Mount Hermon Association, County of Santa Cruz, Kaiser Sand and Gravel, and Save the Redwoods League (McGraw 2004b; Figure 2).

3.2 Covered Species

Mount Hermon June beetle (*Polyphylla barbata*)

Status and Distribution

The Mount Hermon June beetle is a member of the family Scarabaeidae (Insecta: Coleoptera; Figure 3). The Mount Hermon June beetle was listed as federally endangered on January 24, 1997 (62 *Federal Register* 3509; Service 1997). Critical habitat has not been designated for this species.

The Mount Hermon June beetle occurs in association with Zayante sand soil in central Santa Cruz County. Outcroppings of Zayante soils support a unique ecosystem known as the Zayante (or Santa Cruz) Sandhills (Sandhills). Within the Sandhills, the Mount Hermon June beetle has been recorded from approximately 150 locations in the vicinity of Mount Hermon, Felton, Ben Lomond, Zayante, and Scotts Valley (Arnold 2004).

While the entire known range of the Mount Hermon June beetle encompasses 10,000 acres, suitable habitat for the endangered insect is only known to occur within approximately 2,800 acres (McGraw 2004b) of that area. The amount of habitat which is presently occupied by the Mount Hermon June Beetle is unknown.

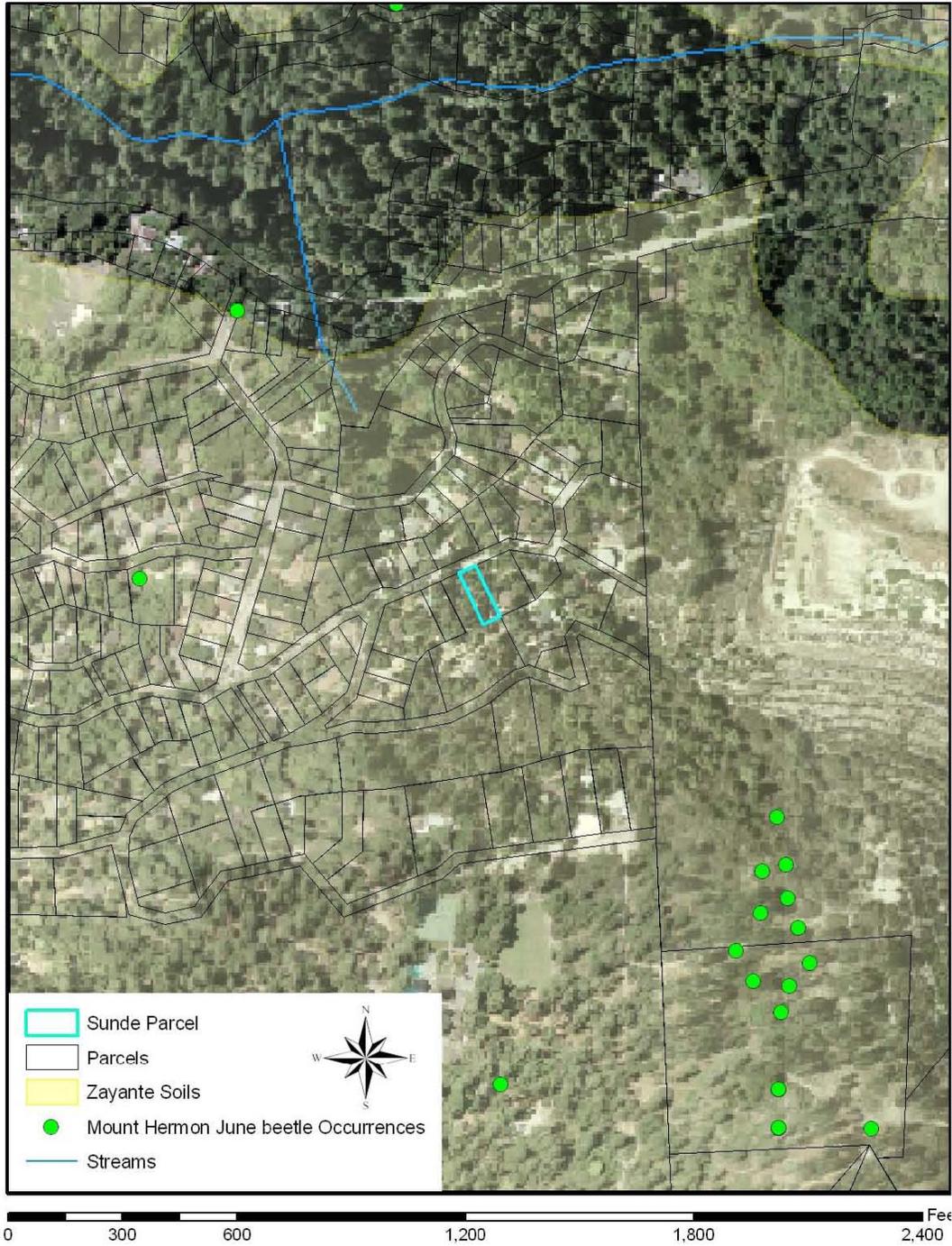


Figure 2: Location of proposed project site (Sunde Parcel) within the Mount Hermon community, showing known occurrences of the Mount Hermon June beetle (BUGGY 2004). Map prepared by Jodi M. McGraw.

Habitat Characteristics

The Mount Hermon June beetle occurs in the various plant assemblages or communities of the Sandhills, including those that could be broadly categorized as coast range ponderosa pine forest and northern maritime chaparral. In addition, the Mount Hermon June beetle has been found in areas where native Sandhills plant species have been removed, such as recently disturbed areas, and in areas covered by ornamental or other non-native plant species, including areas that have been converted for residential use (Arnold 2004).

Occurrences within the Project Area

Presence/absence surveys have not been conducted to definitively document Mount Hermon June beetles within the project parcel. However, prior surveys have identified Mount Hermon June beetles in five residential parcels located in Mount Hermon, including one parcel located 850 feet west of the project area, and a second parcel 940 feet northwest of the project area (BUGGY 2004). In addition, Mount Hermon June beetles occur within the intact habitat atop Mount Hermon (Arnold 2005), just 900 feet southeast of the proposed project site (Figure 2).

Within the project parcel, habitat suitable for Mount Hermon June beetle occurs to the south of the existing development, where there is loose, sand soil conducive to burrowing. Landscaping in and around the residence where the proposed project would occur has likely degraded habitat for the Mount Hermon June beetle, relative to that located on the southern end of parcel, which has not been extensively landscaped.

Life History

The Mount Hermon June beetle is univoltine (i.e., has only one generation per year). The majority of the life cycle of the Mount Hermon June beetle occurs beneath the soil surface. Though little research has been conducted on below-ground stages of the life cycle of the Mount Hermon June beetle (e.g., eggs, larvae, pupae, and portions of the adult stage), information can be cautiously inferred from other species of *Polyphylla* that are well-studied, including the tenlined June beetle (*Polyphylla decemlineata*).

The life cycle of the Mount Hermon June beetle is estimated to require two to three years. After mating during the summer, adult females lay eggs beneath the soil surface on, or in close proximity to, host plant roots. Eggs hatch into larvae that feed on roots of host plants. As the larvae grow, they molt from first to second, and finally third instars. Third instar larvae pupate below the soil surface, and eventually male and female adults emerge from pupae. Adult emergence and seasonal activity often begins



Figure 3: Mount Hermon June beetle adult male (left) and larva (right). Photographs by Jodi McGraw.

in May and continues through about mid-August (activity period). However, seasonal activity may vary from year to year depending on weather conditions (Arnold 2004).

During the summer, adult Mount Hermon June beetles are active between approximately 7:00 p.m. and 10:00 p.m., with peak activity usually between 8:45 p.m. and 9:30 p.m. At dusk, adult males emerge from the soil, fly up through herbs and shrubs, and then fly low to the ground in search of flightless females, which emerge from the soil but remain on the surface of the ground and can be found by males which sense their pheromones. After mating occurs on the soil surface, females burrow underground where they presumably lay eggs.

A seasonal capture-recapture study suggested that adult males live no longer than eight days and that most males have home ranges of less than a few acres (Arnold 2001). The maximum dispersal distance documented for adult male Mount Hermon June beetles is 923 feet (Arnold 2000). Similar data on lifespan and dispersal of females are lacking at this time because they are so infrequently observed.

The Mount Hermon June beetle can be distinguished from three congeners (species of the same genus) which also occur in central Santa Cruz County by the presence of relatively dense, long, erect hairs that are scattered over the elytra (leathery forewings), and short erect hairs on the pygidium (last abdominal segment) (Young 1967, 1988). Adult males are typically 20 millimeters (mm) long and 9.7 mm wide, while the slightly

larger females are approximately 22 mm long and 12 mm wide (Hill 2006).

3.3 Other Sandhills Endangered Species in Region

The Sandhills communities support other special status plant and animal species (Table 2), including three other federally endangered species.

Table 2: Special status species occurring within the Santa Cruz Sandhills.

Common Name	Scientific Name	Status
Mount Hermon June beetle	<i>Polyphylla barbata</i>	Federally Endangered
Zayante band-winged grasshopper	<i>Trimerotropis infantilis</i>	Federally Endangered
Ben Lomond spineflower	<i>Chorizanthe pungens</i> var. <i>hartwegiana</i>	Federally Endangered; CNPS 1B (most rare, threatened, or endangered)
Santa Cruz wallflower	<i>Erysimum teretifolium</i>	Federally Endangered; California Endangered; CNPS 1B
silverleaf manzanita	<i>Arctostaphylos silvicola</i>	CNPS 1B
Ben Lomond buckwheat	<i>Eriogonum nudum</i> var. <i>decurrens</i>	CNPS 1B

¹ California Native Plant Society *Inventory of Rare and Endangered Plants of California* (CNPS 2003)

The project parcel does not support habitat for the Zayante band-winged grasshopper, Santa Cruz wallflower, and Ben Lomond spineflower—Sandhills endemic species that require low canopy, high light conditions (Chu 2002, McGraw 2004a). The site instead features dense canopy cover from coast live oak (*Quercus agrifolia*) and Monterey pine (*Pinus radiata*). Though the Ben Lomond buckwheat and silverleaf manzanita have the potential to persist in more shaded Sandhills habitat (McGraw 2004a,b), spring surveys revealed that these species do not occur within the project site (J. McGraw, pers. obs. 2006).

Section 4

Potential Biological Impacts/Take Assessment

4.1 Direct and Indirect Impacts

Direct Impacts

The proposed project has the potential to directly negatively impact Mount Hermon June beetles by causing mortality of individuals within the remaining area of exposed soil in the project footprint, and by causing both permanent and temporary habitat loss.

Permanent Habitat Loss

Permanent habitat loss will result from the construction of the new residence and associated improvements in areas that are not currently covered by impervious surfaces, which include existing buildings and concrete and brick patios, retaining walls, and pathways (Table 3).

New Residence: Construction of the new 1,376 ft² house in place of the current 1,000 ft² residence will permanently remove 262 ft² of potential habitat for Mount Hermon June beetle. The additional 376 ft² building footprint will be located on the south end of the current residence. This area presently supports 114 ft² of paved walkways and a concrete retaining wall which do not provide habitat for the Mount Hermon June beetle. The remaining 262 ft² consists of landscaping beds which are dominated by dense English ivy (*Hedera helix*; Asteraceae), an invasive, non-native plant, and also other non-native, ornamental plants planted in thick bark. Though these landscape features highly degrade habitat for Mount Hermon June beetle, the endangered insect could still potentially use this area.

Patio: A small (258 ft²) concrete patio will be installed on the southwest corner of the residence. Of the proposed future patio footprint, 186 ft² currently consists of an existing patio created from concrete and brick, which does not represent habitat for the Mount Hermon June beetle. Located on the south end of the existing patio, the remaining 72 ft² to be covered by the proposed patio currently supports non-native herbs including rough cat's ears (*Hypochaeris radicata*), smooth cat's ears (*H. glabra*), rat-tail fescue (*Vulpia myuros*), and rip-gut brome (*Bromus diandrus*). This open soil area could provide habitat for Mount Hermon June beetle.

Table 3: Temporary and permanent impacts to Mount Hermon June beetle habitat resulting from five components of the proposed project, calculated by subtracting the area of non-habitat from the size of the project.

Project Component	Type of Impact	Area (Square feet)		
		Project Size	Non-Habitat	Habitat Disturbed
single family residence reconstruction	permanent	1376	1114	262
patio	permanent	258	186	72
pathways and retaining walls	permanent	448	190	258
parking space	permanent	245	71	174
soil disturbance caused by heavy equipment access	temporary	44	0	44
Total		2371	1561	810

Parking Area: This project will install a 245 ft² parking area on the north end of the parcel adjacent to Madrone Road. Presently, the property does not feature off-street parking and instead cars must be parked on the edges of the narrow roadway. Construction of the parking area will include grading to create a level pad, installation of a retaining wall, and covering of the surface with rock or other pervious hard surface (e.g. paving stones) to reduce run off. Presently, a concrete walkway traverses the proposed parking area, covering 71 ft² which does not provide Mount Hermon June beetle habitat. The remaining 174 ft², which supports dense English ivy that could provide degraded habitat for Mount Hermon June beetle, would be permanently removed as a result of construction of the parking area.

Pathways and Retaining Walls: To provide access to the residence and patio from the parking area, pathways created from various impervious surfaces, including concrete and paving stones, will cover 448 ft². In addition, narrow (i.e. 1 foot wide) concrete retaining walls will be installed to support the new structure and parking area, which are located on a hillslope. Within the foot print of the proposed pathways and retaining walls, 190 ft² is already covered by concrete pathways and therefore does not constitute Mount Hermon June beetle habitat. The remaining 258 ft² area consists of dense English ivy and landscaping beds supporting ornamental plants surrounded by thick bark, which could provide degraded habitat for the Mount Hermon June beetle. As a result, construction of the proposed pathways will permanently remove 258 ft² of potential Mount Hermon June beetle habitat.

Temporary Habitat Loss

A backhoe with a claw will be used to demolish the existing structure and remove the existing hardscapes. This equipment will access the north end of the parcel from the existing paved road. To southern portion of the residence will be accessed from a paved driveway located on the adjacent residential property to the west, which is owned by the contractor who will be constructing the proposed project.

To access the site, the tractor operator will need to drive over a 44 ft² (11 foot by 4 foot) landscape bed, which currently features non-native shrubs. This area may support Mount Hermon June beetle, and removal of the shrubs and soil disturbance associated with accessing the site could kill larvae within the soil and temporarily remove 44 ft² of habitat. Upon completion of the project, the beds will be re-planted with native shrubs. Though the impacts to Mount Hermon June beetles within the soil at the time of the access will be permanent, the impact of equipment access to Mount Hermon June beetle habitat will be temporary.

Indirect Effects

Indirect impacts are those effects caused by covered activities that may occur at a different time or in a different place than the direct impacts. The project is designed to avoid indirect effects on Mount Hermon June beetle. No new outdoor night lights, which distract adults during the breeding season, will be installed as part of this project. If any construction occurs during the flight season for adult Mount Hermon June beetles (May – August), any exposed soil that was previously covered by impervious surfaces (i.e. the building or concrete slabs) will be covered before 7 p.m. each night with erosion control fabric, which will preclude dispersing males from burrowing into soil within the project area and being impacted by ongoing construction.

4.2 Anticipated Take of Covered Species

The proposed project could cause mortality of Mount Hermon June beetles that might occur within the 810 ft² of soil that is not currently covered by the building or concrete and that will be disturbed and/or covered by as a result of the project. The project could also negatively impact Mount Hermon June beetle by permanently covering 766 ft² of potential habitat within the 810 ft² disturbance footprint.

4.3 Effects on Critical Habitat

Critical habitat has not been designated for the Mount Hermon June beetle. In designating critical habitat for the Zayante band-winged grasshopper, the Service included 10,560 acres of land in central Santa Cruz County. This area represents the boundaries of the known distribution of the endangered insect. The primary constituent elements of critical habitat for the Zayante band-winged grasshopper are the presence of Zayante soils, the occurrence of Zayante Sandhills habitat and the associated plant species, and certain microhabitat conditions, including areas that receive large amounts of sunlight, widely scattered tree and shrub cover, bare or sparsely vegetated ground, and loose sand (Service 2001).

This proposed project occurs within the boundaries of the Zayante band-winged grasshopper critical habitat designation. However, because the project site is densely wooded, on the north slope of Mount Hermon, and is largely covered by thick English ivy, it does not contain the primary constituent elements for the Zayante band-winged grasshopper. Therefore, the proposed project activities will not impact the endangered insect's critical habitat.

4.4 Anticipated Impacts of the Taking

Neither the mortality of Mount Hermon June beetles potentially occupying the 810ft² of intact soil proposed to be disturbed during project destruction, nor the permanent removal of 766 ft² of habitat due to the construction of this project, are anticipated to affect the persistence of the population of Mount Hermon June beetle in the Mount Hermon region or persistence of the species as a whole. The project impacts are extremely unlikely to influence successful recovery of the endangered species. This assessment is made based on several factors including:

1. The extraordinarily small area of habitat that will be removed
2. The degraded nature of the habitat that will be removed
3. The high density residential development surrounding the project area.

Within the Mount Hermon residential area, the Mount Hermon June beetle population faces numerous threats from on-going activities associated with existing residential development, including but not limited to: irrigation, installation of non-native landscaping, fire suppression, night lighting, existing buildings, walls, fences and swimming pools, native plant removal, and digging by pets.

As a result of historic residential development, the Mount Hermon June beetle population within this area is likely unnaturally small and as a result, may be susceptible to extirpation from random genetic, demographic, or environmental events. The small size of the remaining portion of the project parcel, as well as undeveloped parcels within the Mount Hermon area, greatly limits opportunities for permanent conservation through acquisition or conservation easements. Given the ongoing threats and lack of conservation opportunities for Mount Hermon June beetle, remaining habitat in the project area and Mount Hermon neighborhood is considered degraded and suboptimal.

That said, habitat within the Mount Hermon residential neighborhood could provide some long term conservation value for Mount Hermon June Beetle. Though degraded, fragmented, and reduced in size, the habitat may support persisting populations of the endangered insect. The Mount Hermon June Beetle lives 99% of its life belowground. Therefore, it is possible that development, at least at the current level, might not cause extirpation (population extinction). Indeed, the fact that Mount Hermon June Beetles, which have a 2-3 year life cycle, still inhabits this area, which began to be developed more than 40 years ago, suggests that populations could persist here despite the current level of development.

Remaining habitat within Mount Hermon might also provide connectivity between otherwise isolated populations located in intact habitat. The residential neighborhood in which this project is proposed is near intact habitat that is being preserved and managed for long term persistence of the species. Maintaining some habitat and populations within the Project Units can allow migration between populations in these protected areas. Migration can help maintain genetic diversity and facilitate natural recolonization of habitat following extirpations that might result from fire, disease, or other stochastic events (McGraw 2004b).

4.5 Cumulative Impacts

In contrast with the analysis of cumulative impacts under section 7, section 10 of the Act and HCPs analyze cumulative impacts as incremental impacts of the action on the environment when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. The geographic area for analysis should be defined by the manifestation of direct or indirect impacts as a result of covered activities. Cumulative impacts under section 10 of the Act can result from individually minor but collectively significant actions taking place over a period of time.

The impacts of this project on the persistence of the endangered Mount Hermon June beetle are very low, owing not only to the small size of the project, but also its occurrence in a already developed and therefore both degraded and fragmented habitat area. Other remodels, additions, and infill development in the Mount Hermon neighborhood will continue to reduce the amount of open sand habitat available for the species. It is possible that, over time, this development will result in the extirpation of the Mount Hermon June beetle from this developed area. Such infill development will not likely impact populations that persist at presumably higher densities within the approximately 350 acres of intact habitat to the south and east (Figure 2; McGraw 2004b), much of which has been protected from further development. As a result, the cumulative impacts of this project on the persistence of the Mount Hermon June beetle are anticipated to be very small.

Section 5

Conservation Program/Measures to Minimize and Mitigate for Impacts

5.1 Biological Goals and Objectives

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 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 were developed based upon the species’ biology, threats to the species, the potential effects of the Covered Activities, and the scope of the HCP.

Goal 1: Avoid and minimize take of the Mount Hermon June beetle within the project site.

Objective 1.1: Avoid removal of native Sandhills plant species.

Objective 1.2: Revegetate the temporarily disturbed habitat with native Sandhills plants, and avoid landscaping with turf grass, weed matting, aggregate, and mulch.

Objective 1.3: Minimize night lighting during the flight season of the Mount Hermon June beetle.

Goal 2: Protect habitat for the Mount Hermon June beetle at an off-site location of high long-term conservation value to the species.

Objective 2.1: Provide funds to protect, manage, and monitor habitat for the Mount Hermon June beetle at a conservation bank.

5.2 Avoidance, Minimization, and Mitigation Measures

Section 10 of the 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 and that the impacts of Covered Activities on the Mount Hermon June beetle 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 Mount Hermon June beetle by reducing incidental take of individuals and the degradation of habitat adjacent to the project area and existing development.

5.2.1.1: Locate project on and adjacent to current development.

The projects will be located in an area that does not currently support native Sandhills plant species, and instead has been previously developed, hardscaped, and landscaped.

5.2.1.2: If ground disturbing activities are conducted during the flight season of the adult Mount Hermon June beetle, erosion control fabric will be placed over exposed soil in areas that were previously covered by concrete in order to avoid impacts to dispersing males.

Adult male Mount Hermon June beetles actively search for mates and breed during the evenings for approximately 12-14 weeks sometime between May 15 and August 15. During this period, males and females may burrow into duff and soils at relatively shallow depths for protection during the daytime hours. Every attempt will be made to conduct soil disturbing aspects of the project outside of the adult flight season. If construction occurs during any part of the flight season, erosion control fabric will be used to cover open soil that was previously covered by impervious surfaces each night by 7 p.m. This will prevent adult males from burrowing into the exposed area and then being impacted by subsequent soil disturbance (digging,

grading, or covering).

5.2.1.3 Any potential larva or adult of the Mount Hermon June beetle (Figure 3) encountered in an area to be impacted by Covered Activities will be relocated to the intact habitat south of 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.

During pre-construction training, construction personnel will be shown pictures of Mount Hermon June beetle larva and adults, and instructed to cease construction activities and call a biologist qualified and permitted to handle the endangered species should one be observed during the course of construction. The biologist will then translocate the individuals to intact habitat located on the southern end of the project parcel, where it will either be released (adult) or gently buried to the approximate depth at which it was observed. This measure will minimize take of the Mount Hermon June beetle by reducing the number of larvae, pupae, and adults that could be injured or killed as a result of project-related activities.

5.2.1.4 No new outdoor lighting will be installed as part of this project.

Adult Mount Hermon June beetles are distracted out light during the night, which can disrupt breeding activity. As part of this project, existing outdoor lights will be replaced with motion sensing lights, which will be set to come on for just a brief period (< 1 minute) if motion is detected. No new outdoor lighting will be installed.

5.2.1.5: Do not install landscaping elements that degrade Mount Hermon June beetle habitat.

Because 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 this endangered insect, and will not be added in this project.

5.2.2 Measure to Mitigate Unavoidable Impacts

5.2.2.1 Compensate for direct impacts to individuals and permanent and temporary impacts to habitat that will occur in a total of 810 ft² of habitat by purchasing conservation credits at the Zayante Sandhills Conservation Bank at a 1:1 ratio.

Project construction will permanently remove 766 ft² of habitat that could potentially be used by the Mount Hermon June beetle (Table 3). It will also permanently impact Mount Hermon June beetles and temporarily remove their habitat within the

44 ft² that will be graded to provide access by heavy equipment. To compensate for these impacts, the applicant will secure conservation credits at the Zayante Sandhills Conservation Bank at a 1:1 ratio, by purchasing 810 square foot credits. These ratios are appropriate, given that the habitat impacted is highly degraded due to historical residential uses, and the habitat to be protected and managed by the Zayante Sandhills Conservation Bank is of exceptionally high conservation value for the Mount Hermon June beetle.

The Zayante Sandhills Conservation Bank was established to provide mitigation for impacts to Mount Hermon June beetle and other special status Sandhills plants and animals that might result from development projects within the Felton USGS quad, such as this project. Presently, the Zayante Sandhills Conservation Bank is selling credits for the Ben Lomond Sandhills Preserve, a 23 acre Sandhills habitat preserve located in Ben Lomond, California, approximately 1.89 miles north of the project site (Figure 4).

5.2.2.2 Revegetate the area of temporary habitat loss with native plants.

The 44 ft² area that is currently landscaped and will be temporarily disturbed by equipment to access the site will be replanted with native Sandhills plants, including sticky monkeyflower (*Mimulus aurantiacus*), California broom (*Lotus scoparius*), and/or silver bush lupine (*Lupinus albifrons* var. *albifrons*). These native plant species are likely to provide suitable habitat and food source for the Mount Hermon June beetle. The revegetated area will not feature landscape elements that degrade habitat for Mount Hermon June beetle, including mulch, bark, weed matting, rock, or turf grass.

5.4 MONITORING

Monitoring tracks compliance with the terms and conditions of the HCP and permit. This project will include compliance monitoring to track the permit holder's compliance with the requirements specified in the HCP and permit, as described below. All biological effectiveness monitoring will be conducted at the Zayante Sandhills Conservation Bank Preserves, where the off-site mitigation will occur. This monitoring will be the responsibility of the bank operator.

5.4.1 Construction and Compliance Monitoring

Pre-construction Orientation: Prior to construction, the biologist will conduct a 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 will be shown pictures of both adults and larva, to aid their identification during construction. Construction personnel will be directed

to cease work and immediately conduct a biologist permitted to handle and relocate Mount Hermon June beetle individuals (larva or adults) should they observed one in the project site.

Construction Monitoring: The biologist will conduct regular inspections of the project site during demolition to salvage and relocate any larva, and to ensure that the erosion control cloth is being used nightly during the flight season to prevent Mount Hermon June beetles entering the soil that was previously covered by impervious surfaces.

5.4.2 Effects Monitoring

To quantify the incidental take at the end of the project, the biologist will calculate the area of soil disturbance and thus incidental take, and count the number of larval and adult Mount Hermon June beetles that were found and translocated by a qualified biologist during construction.

5.4.3 Access to Project Site

The permit holder shall allow representatives from the Service access to the project site to monitoring compliance with the terms and conditions of the HCP, and the effects of the project.

5.6 Reporting

By January 31 following each year of the permit, a qualified biologist will submit a report to the US Fish and Wildlife Service in order to document the status of the project. The report will include:

1. A brief summary of project activities accomplished during the reporting year (e.g. this includes development/construction activities, and other covered activities)
2. Project impacts
3. Description of take that occurred (based on disturbance footprint)
4. Observations of any Mount Hermon June beetle adults or larva
5. Brief description of conservation strategy implemented
6. Compliance monitoring results
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.

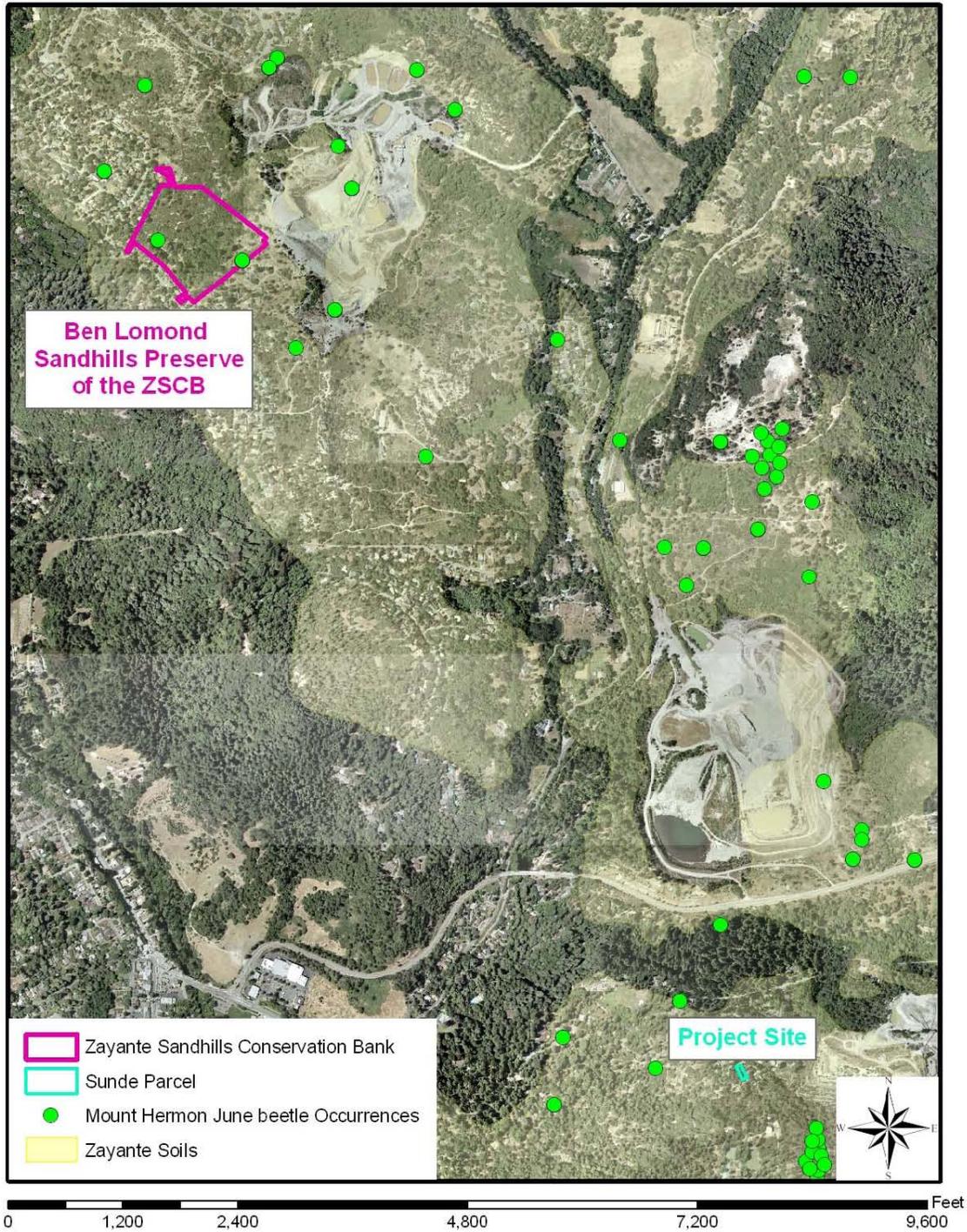


Figure 4: Location of the proposed project site (Sunde Parcel) with respect to the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank, the location of the off-site mitigation proposed in this plan. Map prepared by Jodi McGraw.

Section 6

Plan Implementation

6.1 Plan Implementation

The project will be implemented by the applicants, Ronald and Torunn Sunde, and their contractors. Precise timing of the project will depend on the timing of the incidental take permit and efforts will be made to minimize ground disturbing activities during the flight season (Section 5.2.1).

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 ESA 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), 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 include:

- the new listing of a species;
- the discovery of the Zayante band-winged grasshopper, Santa Cruz wallflower, or Ben Lomond spineflower at the project site.

6.2.2 Newly listed 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 Federal ESA during the term of the section 10 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. Ronald Sunde, the landowner, 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. The property owners 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. Sunde 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 the project site during the course of the requested 3-year permit is highly unlikely due to the small size of the project site, the degraded nature of the habitat, which is largely developed, and the short duration of the permit.

6.2.3 Discovery of other currently listed species at the project site

In the event that one or more other already listed endangered species are found at the site, the applicant will cease project activities that would likely result in incidental take of newly-discovered listed species, and apply for a permit amendment. It is extraordinarily unlikely that other listed species will be discovered at the project site, due to the degraded

nature of the habitat, the distance to nearest other populations, and the short duration of the project permit, among other factors.

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 HCP. 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.

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 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 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 an 3-year permit, to ensure that the covered activities associated with construction of the room addition, which are estimated to require only four months, 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, the property owners shall submit to the Service, in writing:

- * a request to renew the permit; 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 the property owners file a renewal request and the request is on file with the issuing Service

office at least 30 days prior to the permits expiration, the permit shall remain valid while the renewal is being processed, provided the existing permit is renewable. However, the property owners may not take listed species beyond the quantity authorized by the original permit. If the property owners fail to file a renewal request within 30 days prior to permit expiration, the permit shall become invalid upon expiration. The property owners and the mitigation bank operator must have complied with all annual reporting requirements to qualify for a permit renewal.

6.7 Permit Transfer

If the proposed permit holders who currently own the property, Mr. Ronald Sunde and Mrs. Torunn Sunde, transfer the property to another party, during the period of the permit and that party agrees to implement the project and comply with the terms of the HCP, the permit can be transferred to the new landowner.

In the event of sale or transfer of ownership of the property during the life of the permit, a new permit application, permit fee, and an Assumption Agreement will be submitted to the Service by the new owner(s). The new owner(s) will commit to all requirements regarding the take authorization and mitigation obligations of this HCP unless otherwise specified in the Assumption Agreement and agreed to in advance with the Service.

Section 7 Funding

7.1 Costs of HCP Implementation

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

Table 4: Estimated costs to implement the conservation strategy described in this plan.

Element	Strategy	Units		Costs (\$)	
		Type	Number	Per Unit	Total
Minimization Measure 5.2.1.2	Cover open soil in previously impervious portion(s) of project area with erosion control fabric to prevent burrowing during flight season	GeoJute: 4' x 147' roll	2	80	160
Minimization Measure 5.2.1.3	Replant temporary disturbance area with native Sandhills plants	1 gallon shrubs	4	10	40
Compensation	Purchase 810 square foot conservation credits at the Zayante Sandhills Conservation Bank	conservation credits	810	6	4,860
Compliance Monitoring	Hire biologist to conduct compliance monitoring and pre-construction training	labor hours	6	85	510
Effects Monitoring	Hire biologist to conduct effects monitoring	labor hours	4	85	340
Reporting	Hire biologist to complete project report to USFWS	labor hours	5	85	425
Total					6,335

7.2 Funding Source(s)

The applicant, Mr. Ronald Sunde and Torunn Sunde, will pay for all costs associated with implementing the HCP (Table 4).

7.3 Funding Mechanism and Management

The applicant will provide all funds required to implement the conservation strategy (Table 4). The 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 assure funding to cover the costs, the applicant has submitted a bank statement demonstrating the ability to cover these costs. A copy of the receipt documenting the applicant's purchase of conservation credits will be provided as proof to the Service prior to project permit issuance and implementation.

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.

8.2 No Action Alternative

Under the No Action Alternative, the Sunde residence would not be reconstructed and an incidental take permit would not be requested or issued. The property owners would not be able to enhance enjoyment of their property by increasing its living space, which is currently modest (1,000 ft²). The portion of the proposed project area that is not currently covered by concrete would continue to be covered by dense exotic plant species (e.g. English Ivy), non-native landscaping plants, and thick bark, which degrade habitat for the Mount Hermon June beetle by precluding/reducing burrowing and reducing the cover of native plant species that are more likely to serve as host plants for the endangered insect.

Under the No Action Alternative, the conservation measures proposed in this HCP would not be implemented, and the 810 ft² of conservation credits would not be protected at the Zayante Sandhills Conservation Bank. This would reduce funds available for preservation, management, and monitoring of the high quality reserve established to protect the Mount Hermon June beetle. Because the benefits of the HCP conservation measures outweigh the impacts of the project on the Mount Hermon June beetle, the No Action alternative has been rejected.

8.3 Alternative 2: Redesign Project (Reduce Take)

Under this alternative, the reconstructed house would not increase in its footprint relative to the existing structure. This could only be accomplished by creating a three story house, as the current structure is two stories due to its occurrence on the slope of the hill. The addition of a third story to the existing structure would reduce the aesthetic appeal of the residence, and degrade the viewshed for the neighbors. Compared to the proposed project, this would reduce the area of soil disturbed and the compensatory mitigation (i.e. conservation credits) by 262 ft². This redesign would present a significant burden on the landowners without significantly reducing the project impacts on the Mount Hermon June beetle. For these reasons, this redesign alternative has been rejected.

8.4 Alternative 3: Proposed Action (Permit Issuance)

Under the proposed action alternative, Mr. and Mrs. Sunde would reconstruct their house as described in Section 2. The proposed action will require the issuance of a Section 10(a)(1)(B) permit in order that the project be implemented in compliance with the federal Endangered Species Act. The project could cause mortality to individuals potentially occurring within the 810 ft² area of impervious soil surface that will be disturbed, and could permanently remove through covering 766 ft² of degraded but potentially suitable Mount Hermon June beetle habitat.

However, the conservation measures proposed in the HCP would provide for greater conservation benefit to the Mount Hermon June beetle than that which would result from the No Action alternative. Specifically, under the Proposed Action, the applicants will secure 810 ft² conservation credits in the Zayante Sandhills Conservation Bank, thus ensuring the preservation, management, and monitoring of Mount Hermon June beetle habitat in a relatively large, contiguous, and high quality habitat preserve, in perpetuity. The Proposed Action thus provides greater conservation benefits than the No Action and Redesigned Project alternative, while best meeting the needs of the applicant. Therefore, the Proposed Action is the preferred alternative.

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APPENDIX A: Habitat Evaluation of Sunde Project Site (McGraw July 29, 2005)

July 31, 2005

Mr. Ronald Sunde
145 St. Elmo Way
San Francisco, CA 94127

RE: Biotic Assessment for Parcel 066-201-13, Santa Cruz County, CA

Dear Mr. Sunde:

I am writing to provide you with results of a habitat assessment that I conducted for you on July 29, 2005 on parcel 066-201-13 a 0.17 acre homesite located at 16 Madrone Avenue, in Mount Hermon, California. The purpose of the assessment was to evaluate the likelihood that breeding habitat for the federally endangered Mount Hermon June Beetle (*Polyphylla barbata*) would be impacted by your proposed 200 ft² room addition on the south side of the existing residence.

The soil in the area of the proposed projects is a light gray, loose sand soil characteristic of the Zayante series (U.S. Department of Agriculture 1980), which supports the endemic Sandhills communities and the Mount Hermon June beetle in central Santa Cruz County. The vegetation on the proposed project adjacent to the house has been modified as a result of residential use of the property, and includes planted beds with ornamental species and English Ivy (*Hedera helix*). There are two pines approximately 30 and 70 feet south of the southern wall of the residence. These tall, adult trees (>75' tall) exhibit intermediate morphological characteristics suggesting they are either hybrids of *Pinus attenuata* and *Pinus ponderosa*, or *Pinus radiata* with pale colored needles. Within 150' feet of the proposed project area in all four cardinal directions, there are large *Pinus ponderosa* (>100 feet tall) which are indicator species of the plant communities endemic to the Santa Cruz Sandhills, which the Mount Hermon June Beetle is known to inhabit.

Based on these observations and the criteria used by the United States Fish and Wildlife Service to describe habitat of Mount Hermon June Beetle, your proposed room addition could negatively impact breeding habitat for the endangered insect, which inhabits loose, sandy soils of the Zayante series, as are widespread in the Mount Hermon area and found on your property. I recommend that you contact Mr. Roger Root, Biologist with the United States Fish and Wildlife Service, to discuss the implications of this assessment for your proposed project and to ensure you comply with the Federal Endangered Species Act, which prohibits take of breeding habitat for endangered species including the Mount Hermon June Beetle. Mr. Root can be reached at:

Mr. Roger Root
Biologist
United States Fish and Wildlife Service
2493 Portola Road, Suite "B"
Ventura, CA 93003
(805) 644-1766

Please do not hesitate to contact me if you have any questions regarding these observations, or if I can assist you further.

Sincerely,

Jodi M. McGraw

CC: Mr. Roger Root, US Fish and Wildlife Service