Interim-Programmatic Habitat Conservation Plan

for the Endangered Mount Hermon June Beetle and Ben Lomond Spineflower

Prepared for:

Citizens of the City of Scotts Valley and County of Santa Cruz
Proposing Small-Scale Residential Development Projects in the Zayante Sandhills, Santa Cruz County, California

Prepared by:

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EXECUTIVE SUMMARY

Numerous private landowners in the two local jurisdictions of the Sandhills region (i.e., the City of Scotts Valley [City] and County of Santa Cruz [County]) are interested in applying for a permit pursuant to section 10(a)(1)(B) of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (Act), from the U.S. Fish and Wildlife Service (Service) for incidental take of the federally endangered Mount Hermon June beetle (*Polyphylla barbata*). These landowners have proposed projects on sites that are likely occupied by Mount Hermon June beetles and the federally endangered Ben Lomond spineflower (*Chorizanthe pungens* var. *hartwegiana*). Therefore, the Service has recommended that the City and County work together to apply for incidental take permits and develop a regional programmatic habitat conservation plan (HCP) for the Sandhills. This would provide a high level of conservation for these species and other rare species associated with this habitat. The regional HCP would streamline the local, state, and Federal permitting processes associated with these species and their habitat. However, the City and County will likely need 3 to 5 more years to complete a regional HCP.

Consequently, the Service worked with the City and the County to develop this interim programmatic habitat conservation plan (IPHCP) for the Mount Hermon June beetle and Ben Lomond spineflower for small development projects proposed in areas with existing, dense residential development. This IPHCP will be in effect for 5 years following the issuance of the requested incidental take permits; the regional HCP is completed by the City and County; or the limit of habitat modification (i.e., the limit on the number of acres of Zayante soils that may be affected) specified in the IPHCP is reached, whichever occurs first.

This IPHCP covers certain eligible small development projects (e.g., single family dwelling, garage, room addition, etc.) in densely developed residential neighborhoods that support habitat for the Mount Hermon June beetle and Ben Lomond spineflower. This IPHCP is intended to support issuance of two incidental take permits (ITPs) under section 10(a)(1)(B) of the Act that would authorize the County and the City to take of the Mount Hermon June beetle resulting from such activities. The County and the City would then extend their take coverage through Certificates of Inclusion to eligible land owners within their jurisdiction needing incidental take authorization associated with their small development projects. To be eligible for coverage under the IPHCP and the ITPs, a proposed small development project must: (1) require a County or City discretionary or building permit that involves ground disturbance; (2) be residential in nature; (3) be within 1 of 10 identified “Project Units;” (4) be located within a parcel that is less than or equal to 1.5 acres; (5) involve no more than 15,000 square feet of development activity and associated ground disturbance on a single parcel; and (6) incorporate the minimization measures described in Section 5.2 of this IPHCP. Projects that meet these eligibility requirements can be covered by the IPHCP and ITPs, and are thereby the proposed “Covered Activities” referred to in this IPHCP.

The 10 Project Units within the IPHCP boundary were identified within the communities of Ben Lomond, Felton, Mount Hermon, and Scotts Valley. These Project Units range in size from 3.2 to 373 acres. Project Units include parcels in the vicinity of the Rollingwoods neighborhood, the Whispering Pines neighborhood, east and west Scotts Valley, Green Valley, Mount Hermon, Zayante Road, and Ben Lomond.
This IPHCP includes an operating conservation program that defines specific minimization and compensatory mitigation measures that apply to all Covered Activities.

Compensatory mitigation requirements include the following alternative measures:

1. Secure conservation credits at a ratio of 1:1 in terms of area of disturbance envelope to the areal amount of credits (e.g., a project with a 500-square-foot disturbance envelope will mitigate by securing 500 square feet of conservation credits) at the Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank; or

2. Secure conservation credits at a ratio of 1:1 in terms of area of disturbance envelope to numbers of credits (e.g., a project with a 0.1-acre disturbance envelope will mitigate by securing 0.1 conservation credit) at another Service-approved conservation bank, which also has an Operating Agreement with the County if the parcel is within the County’s jurisdiction.

Required minimization measures include all of the following:

1. Avoid impacts to native Sandhills plants to the greatest extent feasible, consistent with the purpose of the Covered Activity;

2. Minimize construction-related ground disturbance during the growing season of the Ben Lomond spineflower and adult flight period of the Mount Hermon June beetle (May 15 through August 15);

3. If scheduling ground disturbance to avoid the May 15 to August 15 time frame is not possible during construction, cover recently disturbed areas each evening during that period.

4. Minimize landscaping elements that degrade habitat, as determined by the City or County and as consistent with the Covered Activity; and

5. Minimize use of exterior night lighting that attracts insects during the flight period of the Mount Hermon June beetle (May 15 through August 15).

The 10 Project Units encompass a total of 1,693.2 acres. However, this acreage figure includes roads, common areas, and a substantial amount of existing development. Within this area, a maximum of 139 acres could be developed under the IPHCP. Compensatory mitigation for development will be funded by landowners proposing to implement Covered Activities. Mitigation must be ensured before Covered Activities are implemented; therefore, the IPHCP is based on a pay-as-you-go approach to mitigation. The Ben Lomond Sandhills Preserve of the Zayante Sandhills Conservation Bank (i.e., mitigation option number one outlined above) is comprised of 22.8 acres of high quality Sandhills habitat, including 22.4 acres of prime habitat for the Mount Hermon June beetle. The IPHCP also includes an option to purchase credits at another approved conservation bank. Regardless of the mitigation option selected for a given
Covered Activity under the IPHCP, mitigation will precede, and be compensatory for, the impacts of the take that results from a Covered Activity.

Eight appendices are included with this document to aid in reading, interpreting, and using this IPHCP. Appendix A includes a list and definitions of terms used throughout this document. Appendix B includes maps for each of the project units. These maps are intended for use by landowners to locate the approximate location of a parcel and determine whether a parcel lies within the IPHCP unit boundaries. Appendix C is the Certificate of Inclusion that each landowner will sign with the City or County in order to obtain incidental take coverage and commit to compliance and mitigation according to the IPHCP. Appendix D is a Sandhills IPHCP Eligibility Checklist. Appendix E is a template for a Landowner’s Sandhills IPHCP Monitoring Report. Appendix F is a list of plant species that are native to the Sandhills. Appendix G is the Implementing Agreement, which clarifies and formalizes the respective responsibilities of all parties involved in the implementation of the IPHCP.
Chapter 1. Introduction

1.0 Project Background

The Sandhills are biological communities found only in central Santa Cruz County on inland outcrops of Zayante sand soil. These soils, which are derived from marine sediments deposited over than 15 million years ago when the region was under an ancient sea. Due to the hot, dry conditions created by the coarse grained Zayante soil, the Sandhills support unique assemblages of plants and animals found nowhere else in the world. These assemblages include seven species that are endemic to (occur exclusively in) the Sandhills.

The endemic Sandhills species are naturally rare due to their limited geographic range (central Santa Cruz County) and narrow habitat specificity (Zayante soils). Mining and development have converted an estimated 40 percent of Sandhills habitat, while the remaining fragmented habitat is being degraded by exotic plant species, intensive recreation, and the exclusion of wildfire. As a result, four Sandhills species have been listed by the United States Fish and Wildlife Service (Service) as federally endangered under the Federal Endangered Species Act of 1973, as amended (Act), and Sandhills habitat is one of the rarest biological communities in the lower 48 United States.

The Service listed the Ben Lomond spineflower (\textit{Chorizanthe pungens} var. \textit{hartwegiana}) and Mount Hermon June beetle (\textit{Polyphylla barbata}) as federally endangered in 1994 and 1997, respectively, under the Act (59 Federal Register (FR) 5499; 62 FR 3616). The Mount Hermon June beetle (Figure 1) and Ben Lomond spineflower (Figure 2) are associated with sandy soils in the Zayante series. The Zayante soil series supports habitat known as the Zayante or Santa Cruz Sandhills (Sandhills) found in and near the communities of Mount Hermon, Scotts Valley, Felton, Olympia, and Ben Lomond in Santa Cruz County, California (Figure 3). The Mount Hermon June beetle and Ben Lomond spineflower occur on additional islands of Zayante sands in the vicinity of the community of Bonny Doon in Santa Cruz County. Both species are threatened by sand mining, urban development, invasion of nonnative plant species, intensive recreation, and fire suppression.

Biologists have conducted surveys for the Mount Hermon June beetle and Ben Lomond spineflower in association with proposed residential and commercial development, scientific research, and monitoring programs for existing conservation plans. Results from these surveys have increased our awareness and understanding of the range, distribution, and habitat requirements of both species. These surveys confirm that the Mount Hermon June beetle and Ben Lomond spineflower are restricted to Sandhills habitat, which is found only on soils of the Zayante series in central Santa Cruz County, California. In this region, surveyors have detected Mount Hermon June beetles and Ben Lomond spineflower in areas of dense residential and commercial development.

Numerous private landowners have proposed projects on sites that are likely occupied by the Mount Hermon June beetle and Ben Lomond spineflower. To comply with the Act, the Service advises all private landowners proposing activities that may result in injury or mortality of
federally listed animals to prepare a habitat conservation plan (HCP) and apply for an incidental take permit (ITP). The Service recognizes that developing an HCP and permit application can be a difficult, time-consuming, and costly process for landowners. Therefore, the Service has recommended that the two local governments with jurisdiction in the Sandhills region, the City and County, work together to develop a regional HCP for the Sandhills. A regional HCP would provide a high level of conservation for the Mount Hermon June beetle, Ben Lomond spineflower, and other rare species associated with this habitat. Additionally, a regional HCP would make the permit process easier on local residents by shortening and simplifying the local, State, and Federal permitting processes associated with these species and their habitats.
Figure 1. Life Stages of the Mount Hermon June Beetle (*Polyphylla barbata*).

Adult Mount Hermon June beetle

![Photo courtesy of Richard Arnold](image)

Larval June beetle (*Polyphylla* sp.)

![Photo courtesy of Jodi McGraw](image)
Figure 2. Ben Lomond Spineflower (*Chorizanthe pungens* var. *hartwegiana*).
Figure 3. Zayante soils series and the general locations of Sandhills habitat, Santa Cruz County, California.
The Sandhills Regional HCP is not expected to be complete for another 3 to 5 years. Meanwhile, the Service, the County, and the City have developed this interim programmatic habitat conservation plan (IPHCP) for the Mount Hermon June beetle and Ben Lomond spineflower. As discussed in Chapter 2, this IPHCP is intended to cover small development projects proposed in areas with existing, dense residential development that are likely occupied by the Mount Hermon June beetle and Ben Lomond spineflower. Upon approval of this IPHCP, the Service would issue ITPs to the City and County. The City and County could extend take coverage under these ITPs to landowners proposing small development projects, provided the landowners follow the application instructions established by the City and County (in accordance with Chapter 6 of this IPHCP) and sign a Certificate of Inclusion (Appendix C). The City and County would review landowners’ applications to ensure that the proposed projects are eligible “covered activities” under this IPHCP and would adhere to the IPHCP by including the measures identified in the IPHCP to minimize and mitigate the effects of their project on the Mount Hermon June beetle and Ben Lomond spineflower. Subsequently, landowners would sign a Certificate of Inclusion with the City or County if applications are complete and consistent with the IPHCP. By signing the Certificate of Inclusion and agreeing to incorporate and implement the IPHCP’s minimization and mitigation measures, landowners would receive authorization to implement their proposed project under the ITPs issued to the City and County.

1.1 Scope of the Interim Programmatic HCP/Permit Duration

This IPHCP is intended as an interim document to be used by landowners who are proposing small residential development projects that will have minimal, but negative, impacts to the Mount Hermon June beetle and Ben Lomond spineflower (see Chapter 2 for eligibility requirements). The IPHCP will not cover any commercial development or larger residential projects. Minor land divisions within the jurisdiction of the County may be covered by the IPHCP after individual project review pursuant to the California Environmental Quality Act and with the approval of the County Board of Supervisors. The IPHCP is a short-term HCP and is not intended to cover larger development projects in the Sandhills area; rather, the regional HCP is intended to serve that purpose. Therefore, until the regional HCP is completed, landowners proposing projects not eligible for this IPHCP who do not wish to wait for the development of the regional HCP have the option to complete an individual HCP. The Service strongly recommends that landowners planning to develop individual HCPs contact the Ventura Fish and Wildlife Office at (805) 644-1766 to discuss regulatory requirements and anticipated time frames before beginning the development of an individual HCP.

1.2 Regulatory Framework

Landowners proposing development projects within the Sandhills are required to comply with a variety of environmental laws, regulations, and ordinances at the local, state, and Federal levels. The following section briefly summarizes these laws, regulations, and ordinances, and describes how they relate to the development and implementation of the IPHCP and the issuance of ITPs.

1.2.1 Federal Endangered Species Act
The Endangered Species Act of 1973, as amended (Act) provides for the protection and conservation of species of fish, wildlife, and plants that have been listed as threatened or endangered. Section 9 of the Act prohibits the taking of any federally listed endangered or threatened animal species. Section 3(18) of the Act defines “take” to mean “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Service regulations (50 CFR 17.3) define “harm” to include significant habitat modification or degradation which actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harassment is defined by the Service as an intentional or negligent action that creates the likelihood of injury to wildlife 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.

The Act provides for civil and criminal penalties for the unlawful taking of listed species. Exemptions to the prohibitions against take may be obtained through coordination with the Service in two ways: 1) through interagency consultation for projects with Federal involvement pursuant to section 7 of the Act; or 2) through the issuance of an ITP under section 10(a)(1)(B) of the Act. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity (50 CFR 17.3).

The majority of projects proposed in the Sandhills that may result in impacts to the Mount Hermon June beetle and Ben Lomond spineflower do not have a Federal nexus that would facilitate interagency consultation. Therefore, these project proponents must apply for an ITP to comply with the Act. An HCP must accompany the proponent’s application for an ITP. The purpose of the HCP is to ensure that the authorized incidental take is adequately minimized and mitigated. Pursuant to 50 CFR 17.22(b)(1) and 17.32(b)(1), the required components of a HCP include:

(i) A complete description of the activity sought to be authorized;

(ii) The common and scientific names of the species sought to be covered by the permit, as well as the number, age, and sex of such species, if known;

(iii) A conservation plan that specifies:

(A) The impact that will likely result from such taking;

(B) What steps the applicant will take to monitor, minimize, and mitigate such impacts, the funding that will be available to implement such steps, and the procedures to be used to deal with unforeseen circumstances;

(C) What alternative actions to such taking the applicant considered and the reasons why such alternatives are not proposed to be utilized; and

(D) Such other measures that the Director may require as being necessary or appropriate for purposes of the plan;
In addition, incidental take permit issuance criteria, as described in 17.22 (b)(2) and 17.32 (b)(2) includes the following:

(A) The taking will be incidental;

(B) The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such takings;

(C) The applicant will ensure that adequate funding for the conservation plan and procedures to deal with unforeseen circumstances will be provided;

(D) The taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild;

(E) The measures, if any, required under paragraph (b)(1)(iii)(D) of this section will be met; and

(F) He or she has received such other assurances as he or she may require that the plan will be implemented.

This IPHCP includes all the required components of an HCP. Landowners proposing small residential development projects in the Sandhills may participate in this IPHCP and receive authorization for incidental take of the Mount Hermon June beetle if: (1) their projects meet the eligibility requirements described in Chapter 2, and (2) they sign a Certificate of Inclusion with the City or County.

Protection of Plant Species Under the Act

Under the Act, protections for federally listed plants differ from the protections afforded to federally listed animals. Take of listed plant species is not prohibited under the Act and cannot be authorized under a section 10 permit. However, before the Service issues an incidental take permit, the effects on listed plants of issuing the permit must be analyzed because section 7(a)(2) of the Act requires that a Federal action must not jeopardize any listed species. Listed plant species may be included on an incidental take permit in recognition of the conservation benefit provided to them under an HCP. The Ben Lomond spineflower is proposed to be included on the permit in recognition of the conservation benefits provided to the species by this IPHCP. This species would also receive no surprises assurances under the Service’s “No Surprises” regulations (50 CFR 17.22 (b)(5) and 17.32 (b)(5)).

1.2.2 National Environmental Policy Act (NEPA)

The National Environmental Policy Act of 1969, as amended (NEPA), requires that Federal agencies analyze and disclose the environmental impacts of their proposed actions. Issuance of an ITP is considered a Federal action, and is therefore subject to environmental analysis under NEPA. In addition to analyzing impacts to sensitive
species, NEPA requires that the Service analyze the impacts of issuance of the incidental take permit and carrying out of the proposed project on other environmental resources, including, but not limited to, air quality, water quality, and cultural and historical resources. Depending on the scope of a HCP, anticipated environmental impacts, and potential for public interest, the Service can comply with NEPA by completing an Environmental Action Statement, an Environmental Assessment, or an Environmental Impact Statement. For the IPHCP, the Service has completed an Environmental Assessment in compliance with the requirements of NEPA.

1.2.3 California Endangered Species Act

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 and Ben Lomond spineflower are not listed under CESA. Therefore, this IPHCP will not further address CESA permitting requirements.

1.2.4 California Environmental Quality Act

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. The IPHCP will be reviewed by the City and County pursuant to CEQA before it is adopted.

1.2.5 Sensitive Habitat Protection Ordinance (County of Santa Cruz)

For properties in the unincorporated area of Santa Cruz County, 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) recording a Declaration of Restriction 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 and Ben Lomond spineflower are protected under the Sensitive Habitat Protection Ordinance. The Service anticipates that measures to avoid, minimize, and mitigate impacts to the Mount Hermon June beetle in the ITPs issued
pursuant to the IPHCP will 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 IPHCP’s mitigation strategy is based on the preservation and long-term management of Sandhills habitat through the acquisition of mitigation credits, and should therefore be sufficient to fulfill the requirements of the Sensitive Habitat Protection Ordinance with respect to the Mount Hermon June beetle and Ben Lomond spineflower.

1.2.6 Tree Removal Ordinances

The County and City have adopted ordinances that protect a variety of trees, including some pine trees. Ponderosa pines (*Pinus ponderosa*) are a critical element of Sandhills habitat, and are the dominant species within Maritime Coast Range Ponderosa Pine Forest, a sensitive plant community endemic to the Sandhills.

The County has an ordinance in place to protect “significant trees” growing in the Coastal Zone. Because the areas of Sandhills habitat covered by this IPHCP are outside the Coastal Zone, ponderosa pines in the plan area receive no protection under this tree ordinance. However, Maritime Coast Range Ponderosa Pine Forest is identified as a sensitive habitat under the County’s Sensitive Habitat Protection Ordinance. As described above, this ordinance restricts the removal of sensitive habitat, in this case ponderosa pines, without approval from the County.

In February 2002, the City updated an ordinance regarding tree protection regulations (City of Scotts Valley 2002). The purpose of the ordinance is to protect significant trees which are a valued resource to the community of Scotts Valley. Determination of which trees receive protection is based on: 1) location; 2) size; 3) requirements of permits approved by the City’s Planning Department or Planning Commission; and 4) status as a “heritage tree.” For example, the City’s tree ordinance may protect some ponderosa pine trees that are designated heritage trees, grow near roadways, grow on slopes, or are large in size.

Projects receiving take coverage under the IPHCP must be situated to avoid impacting native Sandhills plant species (including native trees) to the maximum extent possible (see Chapter 5). Where complete avoidance is not feasible, projects covered by the IPHCP will be required to minimize impacts to native Sandhills plant species. Therefore, the Service does not anticipate that implementation of the IPHCP will result in the loss of any pines protected under the City’s Tree Protection Ordinance. If landowners propose to remove or relocate any other type of tree, they should consult with the City or County to ensure compliance with local tree and sensitive habitat protection ordinances.

Chapter 2. Covered Activities

2.1 Identification of Project Units

This IPHCP covers only activities associated with small development projects proposed in densely developed residential neighborhoods that support habitat for the Mount Hermon June
beetle and Ben Lomond spineflower. A map that identifies the specific geographic areas covered by this IPHCP, referred to as the Project Units, is shown in Figure 4. Certain eligible projects (see Chapter 2.3) within the identified Project Units are the activities analyzed in this IPHCP and proposed for coverage under an incidental take permit (i.e., the proposed “Covered Activities”).

The Project Units were designated based on the following criteria:

- **High likelihood of occurrence of the Mount Hermon June beetle and/or Ben Lomond spineflower.** The Project Unit must occur within the known distribution of the Mount Hermon June beetle and/or Ben Lomond spineflower and have habitat components characteristic of the Sandhills.

- **Residential neighborhoods.** Parcels within the Project Unit must be zoned for residential use by the County or City.

- **High percentage of parcels developed.** At least 80 percent of the parcels within the Project Unit must already be developed.

- **Small parcel sizes.** At least 90 percent of the parcels within the Project Unit must be less than 1.5 acres in size.

The Service used a Geographic Information System to identify Project Units that met these four criteria. Specifically, the known distributions of the Mount Hermon June beetle, Ben Lomond spineflower, Zayante soils, ponderosa pines, zoning designations, and occurrences of developed and undeveloped parcels within the City and County were mapped and evaluated. Using these maps, the Service identified Project Units for the IPHCP (Appendix B). Because soil types and plant assemblages change over a gradient, it was often difficult to identify distinct boundaries of areas that support Sandhills habitat. In such cases, the Service used existing roads, zoning changes, neighborhood boundaries, or topographical features to designate boundaries for the Project Units. Table 1 provides a general description of the 10 Project Units based on the criteria described above.
Figure 4. Project Units Covered under the IPHCP, Santa Cruz County, California.
Table 1. Description of the 10 Project Units for the IPHCP.

<table>
<thead>
<tr>
<th>Project Unit</th>
<th>Total Acreage of Unit/Total Acreage of Parcels Excluding Roads, Common Areas, etc.</th>
<th>Total Number of Parcels</th>
<th>Number of Parcels Less than or Equal to 1.5 acres</th>
<th>Number of Parcels Developed</th>
<th>Mean/Median Parcel Size (acres)</th>
<th>Project Unit Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Rollingwoods</td>
<td>184 / 163</td>
<td>351</td>
<td>339 (97%)</td>
<td>328 (93%)</td>
<td>0.46/0.32</td>
<td>County</td>
</tr>
<tr>
<td>(2) Whispering Pines</td>
<td>373 / 329.57</td>
<td>892</td>
<td>875 (98%)</td>
<td>837 (94%)</td>
<td>0.36/0.23</td>
<td>County and City</td>
</tr>
<tr>
<td>Total</td>
<td>131 / 114</td>
<td>270</td>
<td>265 (98%)</td>
<td>249 (92%)</td>
<td>0.42 / 0.34</td>
<td>County</td>
</tr>
<tr>
<td>Whispering Pines (County)</td>
<td>242 / 224</td>
<td>622</td>
<td>610 (98%)</td>
<td>588 (95%)</td>
<td>0.36 / 0.22</td>
<td>City</td>
</tr>
<tr>
<td>Whispering Pines (City)</td>
<td>242 / 224</td>
<td>622</td>
<td>610 (98%)</td>
<td>588 (95%)</td>
<td>0.36 / 0.22</td>
<td>City</td>
</tr>
<tr>
<td>(3) Scotts Valley East</td>
<td>3.2 / 3.2</td>
<td>5</td>
<td>5 (100%)</td>
<td>5 (100%)</td>
<td>0.65/0.65</td>
<td>City</td>
</tr>
<tr>
<td>(4) Scotts Valley West</td>
<td>109 /102.52</td>
<td>747</td>
<td>736 (98%)</td>
<td>620 (97%)</td>
<td>0.14/0.07</td>
<td>City</td>
</tr>
<tr>
<td>(5) Green Valley</td>
<td>9 / 8.72</td>
<td>22</td>
<td>22 (100%)</td>
<td>19 (86%)</td>
<td>0.40/0.28</td>
<td>County</td>
</tr>
<tr>
<td>(6) Mount Hermon</td>
<td>168 / 123</td>
<td>534</td>
<td>526 (98%)</td>
<td>493 (92%)</td>
<td>0.32/0.17</td>
<td>County</td>
</tr>
<tr>
<td>(7) Zayante Road North</td>
<td>26 / 22.08</td>
<td>69</td>
<td>69 (100%)</td>
<td>58 (84%)</td>
<td>0.32/0.21</td>
<td>County</td>
</tr>
<tr>
<td>(8) Zayante Road South</td>
<td>56 / 49.91</td>
<td>78</td>
<td>78 (100%)</td>
<td>75 (96%)</td>
<td>0.64/0.39</td>
<td>County</td>
</tr>
<tr>
<td>(9) Ben Lomond North</td>
<td>132 / 111</td>
<td>346</td>
<td>345 (99%)</td>
<td>320 (92%)</td>
<td>0.32 / 0.28</td>
<td>County</td>
</tr>
<tr>
<td>(10) Ben Lomond South</td>
<td>260 / 203.65</td>
<td>596</td>
<td>593 (99%)</td>
<td>530 (89%)</td>
<td>0.34/0.26</td>
<td>County</td>
</tr>
<tr>
<td>TOTALS:</td>
<td>1693.2 / 1,454.65</td>
<td>3,654</td>
<td>3,606 (99%)</td>
<td>3285 (90%)</td>
<td>0.39/0.29</td>
<td>County and City</td>
</tr>
</tbody>
</table>

1 - Sixteen developed parcels of the Whispering Pines Unit are common areas associated with multiple-unit housing. The mean parcel size for the Whispering Pines unit excludes mobile home parks.

2 - The Scotts Valley West Unit has 221 parcels less than 1.5 acres that are townhouses or condominiums. Twenty-eight of the developed parcels in this unit are common areas or parks associated with multiple-unit housing.

3 - Four developed parcels of the Mount Hermon Unit are common areas associated with multiple-unit housing. Additionally, the developed parcels include 29 non-profit camps, 1 tank site, and 1 mineral quarry.
2.2 Description of Project Units

The City, County, and Service have designated 10 Project Units for the IPHCP (Appendix B). The Project Units occur within the vicinity of Mount Hermon, Scotts Valley, Felton, and Ben Lomond. The Project Units range in size from 3.2 acres to 373 acres. The 10 Project Units comprise 3,654 parcels, which collectively amount to 1,693.2 acres (including roads and common areas). Excluding roads and common areas, the 10 Project Units encompass 1,454.65 acres (Table 1).

2.2.1 Rollingwoods Unit (#1)

The Rollingwoods Unit encompasses 184 acres. It contains 351 parcels, 339 (97 percent) of which are 1.5 acres or less in size. The unit is bordered by Graham Hill Road to the west, Pasatiempo Drive to the south, Rollingwoods Drive to the north, and lower-density residential development to the east. This entire Project Unit is within the jurisdiction of the County.

2.2.2 Whispering Pines Unit (#2)

The Whispering Pines Unit is 373 acres. It contains 892 parcels, 875 (98 percent) of which are 1.5 acres or less in size. The unit is bordered to the northwest by the Hanson Quarry, to the southwest by Graham Hill Road and Hidden Glen Drive, to the northeast by the Valley Gardens Golf Course and Mount Hermon Road, and to the southeast by low-density residential development. Two large parcels occur along Mount Hermon Road in the northeast section of the unit. While these parcels appear large in size, they are actually densely developed with hundreds of mobile home units. Therefore, they are included in this Project Unit. The County has jurisdiction over 131 acres of this unit, while 242 acres of the unit are within the jurisdiction of the City.

2.2.3 Scotts Valley East Unit (#3)

The Scotts Valley East Unit is 3.2 acres in size. It contains 5 parcels, all of which are less than 1.5 acres in size. It is surrounded by larger, residentially developed parcels to the north, and commercial development to the west, east, and south. The unit is entirely within the jurisdiction of the City. Surveys have not been conducted in this Project Unit to conclusively document the presence of the Mount Hermon June beetle or Ben Lomond spineflower (Table 2). However, this Project Unit is included in the IPHCP because it meets all of the criteria for Project Unit identification outlined in section 2.1, including the presence of suitable habitat for the covered species (i.e., Zayante soils).

2.2.4 Scotts Valley West Unit (#4)

The Scotts Valley West Unit is 109 acres. It contains 747 parcels, 736 (98 percent) of which are 1.5 acres or less in size. The unit is bordered on the west by the Kings Village Shopping Center, to the southeast by Scotts Valley Drive and commercial properties, to the east by commercial and City properties, and to the north by undeveloped lands and
low density residential development. Condominiums, mobile homes, and apartment buildings comprise a large portion of this unit. The City has jurisdiction over the entire unit.

2.2.5 Green Valley Unit (#5)

The Green Valley Unit is 9 acres in size. It contains 22 parcels, all of which are less than 1.5 acres in size. The unit is bordered to the south by a large storage facility, to the west by Lockhart Gulch Road, and to the north and east by low-density residential development. This unit is entirely within the jurisdiction of the County.

2.2.6 Mount Hermon Unit (#6)

The Mount Hermon Unit is 168 acres in size. It contains 534 parcels, 526 (98 percent) of which are 1.5 acres or less in size. The unit is bordered to the south by property owned by the Mount Hermon Association that is used for a lodge and environmental education center. Hanson Quarry borders much of the eastern boundary of the unit. The unit is bordered by Graham Hill Road to the south, East Zayante Road to the east, and Mount Hermon Road to the north. This project unit is densely developed with small summer homes and cabins built in the early portion of the 1900s. Many of the homes are now being expanded and transformed into full-year residences. This unit is entirely within the jurisdiction of the County.

2.2.7 Zayante Road North Unit (#7)

The Zayante Road North Unit is 26 acres in size. It contains 69 parcels, all of which are less than 1.5 acres in size. This unit is bordered to the east by West Zayante Road and to the north, south, and west by low-density, residential development. This unit is entirely within the jurisdiction of the County.

2.2.8 Zayante Road South Unit (#8)

The Zayante Road South Unit is 56 acres in size. It contains 78 parcels, all of which are 1.5 acres or less in size. This unit is bordered to the east by West Zayante Road and to the north, south, and west by low-density, residential development. This unit is entirely within the jurisdiction of the County.

2.2.9 Ben Lomond North Unit (#9)

The Ben Lomond North Unit is 132 acres in size. It contains 346 parcels, 345 (99 percent) of which are 1.5 acres or less in size. This unit is bordered to the west by Glen Arbor and Brookside Roads, and to the east, north and south by lower-density, residential development. This unit is entirely within the jurisdiction of the County.

2.2.10 Ben Lomond South Unit (#10)

The Ben Lomond South Unit is 260 acres in size. It contains 596 parcels, 593 (99 percent) of which are 1.5 acres or less in size. This unit is bordered to the east by
Graniterock’s Quail Hollow Quarry property and to the north, west and south by low-density residential development. This unit is entirely within the jurisdiction of the County.

2.3 Eligible Projects

The activities covered by this IPHCP are limited to small, residential development projects proposed in the Project Units described in Chapter 2.2, which are already densely developed. Appendix B includes detailed maps of the Project Units. To be an IPHCP Covered Activity, a proposed project must be located within a designated Project Unit and also meet all of the eligibility criteria described below.

Eligibility Criteria for Coverage Under the IPHCP

- Project is residential.
- Project is located on a parcel that is 1.5 acres or less in size.
- Project would result in ground disturbance of Zayante soils.
- Development envelope for the project, when combined with the development envelope for any project previously implemented on the same parcel using the IPHCP and the ITP, will not exceed 15,000 square feet (0.34 acre). For the purposes of this IPHCP, development envelope is defined as:

  Any portion of the project site that will undergo ground disturbance such as the following activities\(^1\): grading (excavation and/or fill); land clearing; building; paving; installation of landscaping; or deposition of refuse or debris in relation to a discretionary permit.

- Proposed development is one or more of the following project types that requires a City or County discretionary or building permit that involves ground disturbance. Examples include:

  Single Family Dwelling

  Guest Cottage (or Accessory Dwelling Unit)

  Attached or Detached Garage; Shed; Storage Building

  Room Addition

  Remodels that Involve Ground Disturbance

  Septic System Installations and Upgrades that Involve New Ground Disturbance

\(^{1}\) These activities are defined in more detail in Appendix A.
On a case-by-case basis, the Service and appropriate local jurisdiction may also approve for coverage under the IPHCP and ITPs other similar development projects that meet the eligibility requirements listed in the IPHCP.

2.4 Multiple Projects on a Single Parcel

Landowners may sign a Certificate of Inclusion to participate in the IPHCP and receive incidental take coverage under the ITP for more than one project on a single parcel, provided that the total development envelope on each parcel does not exceed 15,000 square feet (see Section 2.6). For instance, a landowner may receive authorization under the IPHCP and ITP for take associated with the construction of a single family dwelling with a detached garage, driveway, and sidewalks provided that the total (cumulative) development envelope associated with all of these projects does not exceed 15,000 square feet in size. Furthermore, landowners could receive incidental take coverage for one project, and then amend their Certificate of Inclusion at a later date to cover additional eligible projects. However, the total development envelope that can be covered for take under the ITP on any individual parcel may not exceed 15,000 square feet, regardless of whether the property changes ownership.

2.5 Project/Permit Duration

The City, the County, and the Service have developed this IPHCP as an interim plan available to private landowners while the Sandhills Regional HCP is under development. The ITP issued pursuant to this IPHCP will expire when the Sandhills Regional HCP is finalized, when the total amount of habitat disturbance authorized under the ITPs reaches 139 acres, or when 5 years have elapsed since issuance of the ITP, whichever occurs first. Projects conducted under the City and County’s ITPs (i.e., Covered Activities) must be completed before the ITPs expire.

2.6 Number and Location of Eligible Projects

The City and County have not designated a limit on the total number of eligible projects that can be covered under the IPHCP. Furthermore, the City and County have not designated a limit on the number of projects that can occur in any one project unit. However, a maximum of 139 acres of habitat for the Mount Hermon June beetle and Ben Lomond spineflower would be lost or degraded under the ITPs issued pursuant to this IPHCP. This figure represents approximately 8 percent of the total acreage within the 10 Project Units, a large portion of which is already developed. In addition, this figure (139 acres) is equal to 5 percent of the estimated amount of habitat that remains for the Mount Hermon June beetle (McGraw 2004b). The City and County will jointly maintain a database that tracks the total number of acres of habitat modification that each jurisdiction authorizes under the ITPs.

2.7 Exempt Projects

In certain cases, individual project sites within the Project Units may not harbor Zayante soils. If a landowner proposing a project within one of the Project Units believes that their parcel does not support Zayante soils (and thereby Sandhills habitat), then the landowner must obtain a written habitat evaluation from a qualified individual from, or recommended by, the County, City, or Service. In such cases, upon written concurrence from the Service that the subject
project site does not support Sandhills habitat, the project would be exempt from the minimization and mitigation requirements outlined in section 5.2 of this IPHCP. In such cases, the Service will ensure that the City and County are aware of and copied on the Service’s written concurrence.
Chapter 3. Environmental Setting and Biological Resources

3.1 Environmental Setting

3.1.1 History

The IPHCP Project Units are located in the San Lorenzo River watershed in Santa Cruz County. The following provides a land use history as it is known for the general region. Specific uses discussed below may or may not have occurred in Sandhills habitat.

The area encompassing the San Lorenzo watershed was first inhabited by the Ohlone Indians, who lived in small villages and coexisted with the natural processes in the area. The discovery and naming of the San Lorenzo River by the Portola expedition in 1769 initiated the development of the watershed. Spaniards initially focused their development in the coastal grasslands for cattle ranching and agricultural farming in the watershed. Logging of the local forests was the major use of the San Lorenzo watershed from the 1860s through the 1890s.

Industrial activity in the San Lorenzo watershed has included extraction of mineral resources including lime, limestone, sand, gravel, and crushed rock. Beginning in the first half of the twentieth century, sand mining in the Sandhills, has occurred within six separate quarries. Three of these quarries completed mining prior to passage of the Surface Mining and Reclamation Act of 1975 (SMARA) and therefore were not subject to the reclamation requirements of that legislation: the Scotts Valley Quarry on Scotts Valley Drive, the Old Geyer Quarry at the end of Geyer Road in Scotts Valley, and the Old Kaiser Quarry within the present Olympia Well Field managed by the San Lorenzo Valley Water District (McGraw 2004b).

There are two sand quarry sites in the Sandhills, which are subject to SMARA, where mining activities have been completed and a reclamation plan must be implemented. These sites are Kaiser’s Felton Sand Plant (Hanson Quarry) and the CEMEX/RMC (formerly Lonestar) Olympia Quarry. The third currently-active sand mining site, Graniterock’s Quail Hollow Quarry, obtained permits (including an ITP issued pursuant to section 10(a)(1)(B) of the Act) in 1998 to quarry an area that is expected to take up to 50 years to complete.

Vegetation, wildlife, underground aquifers, soils, and drainage channels are permanently altered or eliminated by quarries. Quarries use a large amount of water for washing the quarried materials; this activity creates the potential for serious erosion and siltation problems.

Residential subdivisions within the Sandhills began to be developed between the late 1950s and early 1970s. Human population in the IPHCP area has increased dramatically in the past few decades. Data is lacking for population growth specific to most areas within the boundary of the IPHCP. However, over the 30-year period between 1970 and
2000, the population in the City of Scotts Valley increased from 3,621 residents to 11,385 residents and is forecasted to grow to 13,864 residents by 2015 (Santa Cruz Public Library 2003).

3.1.2 Climate

The Sandhills area has a mild, Mediterranean climate. The average annual maximum and minimum temperatures are 73.8 and 43.5 degrees Fahrenheit, respectively. However, it is not uncommon to have temperatures in the 80's or 90's during summer months. The average total precipitation is 49.1 inches, ranging from 0.1 inch in July to 10.2 inches in January.

3.1.3 Topography, Geology, and Hydrology

The IPHCP Project Units occur on the western slope of the Santa Cruz Mountains, which have complex ridges that reach elevations of 2,000 to 3,400 feet and slopes between 40 and 60 percent. Topography of the area ranges from steep, mountainous hillsides to gently rolling valley grasslands. The Santa Cruz Mountains are primarily formed of igneous rock which has been overlain in places by marine sediments deposited by the ancient seas that once covered the area. The Zayante soils that formed from these marine sandstone deposits occur in scattered pockets throughout the San Lorenzo watershed. Zayante soils are endemic to Santa Cruz County and are deep, coarse textured, poorly developed, and well-drained (USDA Soil Conservation Service 1980).

Many hillside areas in the IPHCP project area are susceptible to landslides, especially in the San Lorenzo Valley area where steep slopes are present. Landslide deposits can be found in hillside areas near the western and eastern boundaries of the City of Scotts Valley and throughout the plan area (Rincon Consultants, Inc. 2001).

Faults in the Scotts Valley area include the Ben Lomond and Zayante Faults. The Ben Lomond Fault Zone is located between the cities of Santa Cruz and Scotts Valley, approximately 1 mile southeast of the City of Scotts Valley planning area. The Zayante Fault Zone, which is tied into the San Andreas Fault system, is located approximately 1.5 miles north of the City of Scotts Valley. Based on major historic earthquakes that have occurred along these and other faults in Santa Cruz County, the Zayante Fault is considered active or potentially active. Insufficient data is available to determine the status of the Ben Lomond Fault (Rincon Consultants, Inc. 2001).

The San Lorenzo River is the major drainage basin in northern Santa Cruz County. Major tributaries in the IPHCP area include Branciforte Creek, Bean Creek, Carbonera Creek, and Zayante Creek.

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2 Climate data was obtained from The Santa Cruz Public Library website at the following address: http://www.wrec.dri.edu/cgi-bin/cliMAIN.pl?cabenl+nca.
3.1.4 Vegetation/ Sandhills Habitat

Predominant vegetation of the Santa Cruz Mountains consists of coast redwood forest (Zinke 1988) and mixed evergreen forest (Sawyer et al. 1988). However, the coarse, low nutrient, sandy Zayante soils create a warmer and drier microclimate that supports uniquely adapted flora and fauna that are distinctly different from the surrounding forest and chaparral communities (Marangio 1985, Davilla 1990). The Zayante soils in the vicinity of the communities of Mount Hermon, Scotts Valley, Olympia, Felton, and Ben Lomond harbor a complex vegetation mosaic dominated by maritime coast range ponderosa pine forest and northern maritime chaparral (Griffin 1964, Holland 1986). These communities overlap to form an intergrading mosaic of habitats that are collectively referred to as “Zayante Sandhills” or “Santa Cruz Sandhills” (McGraw 2004b).

The Sandhills ecosystem supports a diverse assemblage of rare and endemic plant species and disjunct populations (Thomas 1961, Griffin 1964, Morgan 1983, McGraw 2004b). Ponderosa pines in the Sandhills are disjunct populations (i.e., physically separated from other populations) of the species. Ponderosa pines are occasionally interspersed with knobcone pines (Pinus attenuata) and, in the Bonny Doon region, with the federally endangered Santa Cruz cypress (Cupressus abramsiana). Northern maritime chaparral on Zayante soils is dominated by silver-leafed manzanita (Arctostaphylos silvicola), a species recognized by the California Native Plant Society (CNPS) as rare or endangered (CNPS List 1B). This manzanita may occur as monotypic stands or be mixed with California-lilac (Ceanothus sp.), Adenostoma sp., yerba santa (Eriodictyon sp.), and other shrub species (Morgan 1983, Marangio 1985, Lee 1994, McGraw 2004b).

The two primary types of Sandhills habitat are sand parkland and sand chaparral. Sand parkland is characterized by scattered ponderosa pine trees and an open understory consisting of herbaceous plants and few shrubs. Sand chaparral is more densely vegetated; this habitat type is typically dominated by silver-leafed manzanita but also consists of other shrub species and herbaceous plants.

In addition to the Mount Hermon June beetle and the Ben Lomond spineflower, the Sandhills support the federally endangered Zayante band-winged grasshopper, and the federally and state endangered Ben Lomond wallflower. The Sandhills also support another endemic CNPS 1B plant species, the Ben Lomond buckwheat (Eriogonum nudum var. decurrens). These species are not covered by the IPHCP. Unlike the Mount Hermon June beetle, the Zayante band-winged grasshopper has never been observed coexisting with dense development, and the Project Units do not contain habitat for this species. With the exception of three adjacent, undeveloped parcels in the Ben Lomond South Project Unit, the Ben Lomond wallflower is not known to occur within the Project Units. These parcels where the Ben Lomond wallflower occurs would not be eligible to participate in the IPHCP. Section 3.3 provides a more detailed discussion of the Zayante band-winged grasshopper and Ben Lomond wallflower.
More than 40 percent of the Sandhills is estimated to have been lost or altered due to human activities including sand mining, urban development, recreational activities, introduction of invasive plant species, and suppression of natural disturbance regimes such as fire (Marangio and Morgan 1987, Lee 1994). The four federally listed species associated with the Sandhills have been affected to varying degrees by these threats as described in more detail below. Sandhills habitat that supports the four federally listed species has been preserved through habitat conservation plans at Quail Hollow Quarry (110 acres; Graniterock Company 1998) and the Felton Plant owned by Hanson Aggregates (21.7 acres; Habitat Restoration Group 1999). In addition, the California Department of Fish and Game has protected Sandhills habitat that supports all four species at Quail Hollow County Park (Service 1998).

3.2 Listed Species Covered in the IPHCP

3.2.1 Mount Hermon June Beetle

3.2.1.1 Description and Conservation Status

The Mount Hermon June beetle is a member of the family Scarabaeidae (Insecta: Coleoptera). Adult males measure about 0.75 inch in length and females are slightly longer. The adult has a black head and dark brown elytra (leathery forewings) covered with brown hairs and stripes that are broken and irregular (Young 1988) (Figure 1). Larvae, eggs, and pupae of the species have not been identified or described. The Mount Hermon June beetle was listed as federally endangered on January 24, 1997 (62 FR 3509). Critical habitat has not been designated for this species.

3.2.1.2 Life History

Unless noted otherwise, the following life history information for the Mount Hermon June beetle is summarized from Arnold (2004a). 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. To date, little research has been conducted on below-ground stages of the life cycle of the Mount Hermon June beetle including eggs, larvae, pupae, and portions of the adult stage. However, information can be inferred on these life stages from other species of *Polyphylla* that are well-studied. Presumably, the entire life cycle of the Mount Hermon June beetle takes 2 to 3 years to complete. Adult females lay eggs beneath the soil surface on, or in close proximity, to host plants. 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 in early June and continues through about mid-August (activity period). However, seasonal activity may vary from year to year depending on weather conditions.
During the activity period, 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 sandy soils and fly up through herbaceous vegetation and shrubs. Once they reach the tops of the vegetation, they actively fly low to the ground in search of pheromones released by flightless females which emerge from the soil but remain on the surface of the ground. Mating occurs at the surface of the soil, and females retreat underground immediately thereafter where they presumably lay eggs. At the end of the flight period each evening, males burrow back into the soil, emerging repeatedly on subsequent evenings to search for mates until their nutrient reserves expire (Hazeltine 1993). Lifespan data from a brief capture-recapture study suggest that adult males live no longer than eight days (Arnold 2001a). Dispersal data from the same study indicate that most adult males have home ranges of less than a few acres. 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.

### 3.2.1.3 Distribution and Habitat Requirements

The Mount Hermon June beetle has been found in association with Zayante sands and vegetation characteristic of the Sandhills (see Section 3.1.4). Additionally, adult Mount Hermon June beetles have been found in disturbed areas where remnants of Sandhills habitat still occur (Arnold 1999a). All documented observations of Mount Hermon June beetle reproduction are from sites that harbor Zayante soils. A limited number of observations of adult Mount Hermon June beetles have occurred on sandy soils in the immediate vicinity of, although not specifically on, Zayante soils (62 FR 3617). The observations that were not specifically on Zayante soils were in locations similarly characterized by sparsely vegetated sandy substrate with silver-leafed manzanita or ponderosa pine, and were of adult male Mount Hermon June beetles that had likely originated and dispersed from the adjacent Zayante soils due to attraction by lights (62 FR 3617).

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), pteridophytes (ferns and allies), and fungi in the digestive tracts of Mount Hermon June beetle larvae (Hill 2006). In addition, Hill (2006) has confirmed a close association between locations where the Mount Hermon June beetle occurs and various native Sandhills plant species, including ponderosa pines and Ben Lomond spineflower.

The Mount Hermon June beetle has been observed in approximately 150 locations in Sandhills habitat (Zayante soils) in the vicinity of Mount Hermon, Felton, Ben Lomond, Zayante, and Scotts Valley (Arnold 2004a). The species was also recently discovered in the Bonny Doon area (Arnold pers. comm. 2008). While the entire known range of the Mount Hermon June beetle encompasses a total
area of nearly 10,000 acres, suitable habitat for the endangered insect is only known to occur within approximately 2,800 acres of that total (McGraw 2004b). The precise amount of habitat which is currently occupied by the Mount Hermon June beetle is unknown.

3.2.1.4 Threats

Sand mining has resulted in the loss and fragmentation of habitat for the Mount Hermon June beetle. As discussed in Section 3.1.1, six quarry sites in the Sandhills are currently being excavated or have been excavated and abandoned in the past. Mining operators often excavate all of the Zayante sands, leaving only hard sandstone at the base of the quarries. Operators are required to grade the sides of quarries in a bench-like pattern to provide increased stability, and to then revegetate these areas. Preliminary surveys indicate that sandstone pits and benched areas with an absence of loose, sandy substrate do not support the Mount Hermon June beetle (Arnold 1999a; Arnold pers. comm. 2005).

Many ridges that historically supported Sandhills habitat have been developed into dense residential and commercial areas. Although much of the native vegetation in these developed areas has been removed, Zayante soils remain. Recent surveys indicate that Mount Hermon June beetles continue to inhabit many of these developed areas (Arnold pers. comm. 2005). Long-term population estimates are not available to assess whether the Mount Hermon June beetle is declining in these developed areas. However, development of the Sandhills has likely caused a decline of the Mount Hermon June beetle for the following reasons: (1) impervious surfaces including buildings, pavement, and some landscaped areas render habitat unusable by the Mount Hermon June beetle; (2) outdoor lights attract adult male Mount Hermon June beetles, thereby disrupting breeding behavior; and (3) development and associated landscaping have reduced potential host plant populations.

Recreational use also threatens Sandhills habitat. Erosion of sandy soils results from recreational uses, including off-highway vehicles (OHV) (e.g., motorized dirt bikes), equestrian activities, and hiking. Excessive erosion can expose Mount Hermon June beetle eggs, larvae, pupae, and adults to the soil surface, causing dessication and increased predation. Additionally, erosion of sandy soils, particularly on steep slopes, exposes and may damage the roots of host plants. Observations of dead trees in areas subject to OHV use suggest that root damage may cause tree mortality.

A variety of invasive, non-native plant species found in the Sandhills may also threaten Mount Hermon June Beetle persistence. These non-native plants compete with native host plant species and render habitat conditions less suitable for the fossorial insect (McGraw 2004b).

Fragmentation of Sandhills habitat has likely inhibited genetic exchange between populations of the Mount Hermon June beetle, given that adult males disperse
only short distances and females are flightless. Habitat fragmentation may preclude natural recolonization of habitat following stochastic events such as fires, or predator or disease outbreaks, which could extirpate (eliminate) populations of the Mount Hermon June beetle.

3.2.1.5 Recovery Objectives

The recovery strategy for the Mount Hermon June beetle and other Sandhills species consists of the following objectives: (1) protecting Sandhills habitat from further development, mining, and recreational threats through purchase of conservation easements, fee title, or other means; (2) managing habitat to ensure ecosystem processes vital to the long-term survival of the Sandhills species are allowed to function; 3) conducting research to provide a greater understanding of what the Sandhills species require for long-term survival; (4) locating additional habitat/populations within the historic range of Sandhills species; and, (5) developing and implementing a public outreach program (Service 1998).

3.2.2 Ben Lomond Spineflower

3.2.2.1 Description and Conservation Status

The Ben Lomond spineflower was listed as federally endangered on February 4, 1997 (59 FR 499). Critical habitat has not been designated. The Ben Lomond spineflower is a small, annual herb of the buckwheat family (Polygonaceae). It can grow up to 10 inches high, but more typically grows no more than a few inches above ground. Flower clusters and associated structures are pink with small distinct heads. Whorls of bracts below the flowers are 0.06 to 0.09 inch long and have pink margins (Figure 2).

3.2.2.2 Life History

The Ben Lomond spineflower is a short-lived annual species. Seeds germinate in late fall after the first substantial rains. Plants form a basal rosette of leaves in the winter, bolt in late February and early March, flower between March and May, and then set seed between June and July (McGraw and Levin 1998, McGraw 2004a, McGraw 2004b). In open habitat, the Ben Lomond spineflower can reach seedling densities of hundreds to thousands per square meter (Kluse and Doak 1999; McGraw 2004b). When in bloom, the Ben Lomond spineflower often appears as a spreading mat of small, showy, pink flowers.

3.2.2.3 Distribution and Habitat Requirements

The Ben Lomond spineflower is endemic to the Sandhills and restricted to sandy soils of the Zayante series. Specifically, the Ben Lomond spineflower requires sandy soils in open, sparsely vegetated areas (McGraw and Levin 1998). The core of current and historical populations of the species occurs in the vicinity of Mount Hermon, Felton, Ben Lomond, Zayante, Scotts Valley, and Bonny Doon. Population sizes vary widely from year to year due to interannual variability in
climate, particularly rainfall (McGraw 2004b). No information is available regarding the current or historical number of populations.

3.2.2.4 Threats

Habitat loss due to sand mining and residential and commercial development has greatly reduced the amount of habitat for the Ben Lomond spineflower. In residential developments, populations of the Ben Lomond spineflower occur within backyards and along roadsides. These populations are highly susceptible to extirpation because they are small, fragmented, and isolated. One of the secondary effects of urban development is the introduction of non-native plants to adjacent intact habitat. The Ben Lomond spineflower is easily out-competed by non-native grasses, herbs, and woody vegetation. Furthermore, natural fire regimes have been suppressed resulting in increased vegetative cover and leaf litter (particularly from pine needles), and reduction of habitat for the Ben Lomond spineflower (McGraw 2004a, McGraw 2004b).

Recreational uses of habitat threaten the Ben Lomond spineflower throughout its range. Because the Ben Lomond spineflower is shade intolerant, it may benefit from low-level disturbance that would maintain the open habitat. However, overuse by motorized bikes, equestrians, and pedestrians can result in erosion of sandy soils, and create inhospitable conditions for the Ben Lomond spineflower (McGraw 2004b).

3.2.2.5 Recovery Objectives

The overall recovery strategy for the Ben Lomond spineflower is the same as that described for the Mount Hermon June beetle in Section 3.2.1.5.

3.3 Non-covered Federally-Listed Sandhills Species

The Service does not expect the Zayante band-winged grasshopper or Ben Lomond wallflower to be adversely impacted by the Covered Activities described in this IPHCP because they have not been observed coexisting with dense development in urbanized areas, and therefore the City and County are not seeking coverage for these two species under the IPHCP. However, these two species are discussed below and in section 3.7 to provide information to landowners regarding additional sensitive species in Sandhills habitat, and to provide a basis for the decision to not cover these species in the IPHCP. In addition, the potential future discovery of these species in areas that are covered by this IPHCP is considered and addressed as a changed circumstance in section 7.1.2 of this IPHCP.

3.3.1 Zayante Band-winged Grasshopper

The Zayante band-winged grasshopper was listed as endangered on January 24, 1997 (62 FR 3509). The Zayante band-winged grasshopper is a member of the family Acrididae (Insecta: Orthoptera) (Figure 5). The distinguishing characteristics of the species are dark cross-bands on the forewings, pale yellow on the hindwings, blue lower legs, and
eye bands. Males range in length from 0.54 to 0.68 inch; females are larger, ranging in length from 0.78 to 0.85 inch (Otte 1984; Rentz and Weissman 1984).

The flight season for adult Zayante band-winged grasshoppers extends from late May through October, with peak activity during July and August (White 1993; Morgan 1994; Arnold 1999a,b). Individuals have been observed as late as November 11 (Arnold 2000). When flushed, individuals generally fly three to seven feet, producing a buzzing sound while in flight (Rentz and Weissman 1984). Band-winged grasshoppers often alight on bare ground and are conspicuous in flight because of their hind wing color and the buzzing sound made by the wings (Borror et al. 1976). Females presumably lay eggs in sandy areas close to the soil surface. No additional information on the life cycle of this species is available.

Sand mining and development have reduced and fragmented habitat for the Zayante band-winged grasshopper. Remaining habitat has been degraded by fire exclusion, exotic plants, and recreational use. Exclusion of fire has increased the density of shrubs and trees, which reduces the area of open sand habitat required by the Zayante band-winged grasshopper. In many habitat patches, non-native plant species, including French broom (Genista monspessulana), Portuguese broom (Cytisus striatus), and acacia (Acacia sp.), as well as non-native grasses and forbs, have reduced the amount of open habitat that remains (McGraw 2004b). Recreational uses (e.g., motorized dirt bikes, mountain bikes, and equestrian activities) further threaten the Zayante band-winged grasshopper by directly trampling or running over individuals; disrupting normal behavioral patterns including egg laying, mating, and feeding; and reducing host plant populations. Finally, genetic exchange among remaining populations is likely limited due to the short dispersal distance of the Zayante band-winged grasshopper and the fragmented nature of remaining habitat.

Unlike the Mount Hermon June beetle, the Zayante band-winged grasshopper has not been observed coexisting with dense development. Dense residential development and associated landscaping greatly reduce the amount of open, sparsely vegetated habitat. This habitat is critical for thermoregulation and completion of the insect’s life cycle (Chu 2002, Arnold 2004b). Therefore, the Project Units do not contain habitat for the Zayante band-winged grasshopper.
Figure 5. The Zayante Band-winged Grasshopper (*Trimerotropis infantilis*).
The Service designated critical habitat for the Zayante band-winged grasshopper on February 7, 2001 (66 FR 9219). The primary constituent elements for the Zayante band-winged grasshopper are those physical and biological conditions that are essential for the primary biological needs of thermoregulation, foraging, sheltering, reproduction, and dispersal. The primary constituent elements are: (1) the presence of Zayante soils; (2) the occurrence of Zayante Sandhills habitat and associated plant species (e.g., scattered ponderosa pines and a wide array of annual and perennial herbs and grasses); and (3) certain microhabitat conditions, including areas that receive large amounts of sunlight, widely scattered tree and scrub cover, bare or sparsely vegetated ground, and loose sand (Arnold 1999a, 1999b).

The Service designated approximately 10,560 acres of land as critical habitat for the Zayante band-winged grasshopper (Figure 5). Of this area, 3,950 acres support Zayante soils. The remaining 6,610 acres of critical habitat are areas that were included due to insufficient mapping detail (i.e., includes roads, developed areas such as towns, housing developments, and other similar lands), although these areas with non-Zayante soils do not contain the primary constituent elements and therefore are not considered critical habitat for the species.

All of the Project Units for this IPHCP, with the exception of Scotts Valley East, occur within designated critical habitat of the Zayante band-winged grasshopper. The ITP issued in association with this IPHCP could result in the removal of 139 acres of Zayante soils within the critical habitat unit for the Zayante band-winged grasshopper. However, areas within the Project Units do not contain the primary constituent elements necessary to support conservation of the Zayante band-winged grasshopper. Specifically, buildings, pavement, and dense landscape vegetation associated with the existing development within the Project Units have removed the bare ground and loose soil conditions that are required by the Zayante band-winged grasshopper.

### 3.3.2 Ben Lomond Wallflower

The Ben Lomond wallflower was listed as endangered on February 4, 1994 (59 FR 5499). Critical habitat has not been designated for this species. The species is also listed as endangered by the State of California. The Ben Lomond wallflower, a member of the mustard family (Brassicaceae), is a monocarpic, short-lived perennial herb that forms a basal rosette of leaves within its first year, then typically bolts and flowers the following spring. A low proportion of plants have been observed to complete their life cycle in a single year, while those growing in shade conditions often require 3 or more years to reproduce (McGraw 2004a,b).

When the Ben Lomond wallflower reproduces, it develops a raceme (i.e., flowers clustered in a terminal spike) consisting of deep yellow flowers with petals 0.5 to 1 inch in length. The fruit is a slender capsule that reaches 4 inches in length and is covered with hairs.
Figure 6. Ben Lomond Wallflower (*Erysimum teretifolium*).
The Ben Lomond wallflower is endemic to the Zayante Sandhills where it is found in open, sparsely vegetated areas. Although the largest populations of Ben Lomond wallflower occur in sand parkland habitat, the endangered plant is also found in canopy gaps within silver-leafed manzanita mixed chaparral and ponderosa pine forest (McGraw 2004a,b).

The Ben Lomond wallflower is threatened by the same factors as the Ben Lomond spineflower. Specifically, sand mining and development remove habitat for the Ben Lomond wallflower, while fire exclusion, exotic plant species, and recreation degrade the quality of its habitat (McGraw 2004b).

The Ben Lomond wallflower is currently known to occur in 17 populations near Scotts Valley, Ben Lomond, Felton, and Bonny Doon (McGraw 2004b). The Ben Lomond wallflower does not persist in residentially developed areas because it is a poor competitor with landscape plants that occur in these areas. Only two occurrences of the endangered plant are known from residential areas, both of which are in small patches of undeveloped, unlandscaped habitat (McGraw 2004b). One occurrence is located in a residential area consisting of large parcels that is not within any of the Project Units of the IPHCP. The second occurrence is within three adjacent, undeveloped parcels within the Ben Lomond South Project Unit of the IPHCP. Projects on the three parcels within the Ben Lomond South Project Unit where the Ben Lomond wallflower occurs would not be eligible to participate in the IPHCP. The remainder of the Ben Lomond South Project Unit and the other nine Project Units for the IPHCP are very unlikely to support other occurrences of the Ben Lomond wallflower.

### 3.4 Other Federally-Listed Species that Have the Potential to Occur in Proximity to the Project Units

A number of federally listed species occur in the San Lorenzo River watershed. Although they are not currently known to occur in any of the IPHCP Project Units, these species could potentially be discovered in the Project Units in the future. These species include the following:

- **California red-legged frog** (*Rana aurora draytonii*): occurs in an upper tributary to Zayante Creek;
- **Ohlone tiger beetle** (*Cicindela ohlone*): current known distribution includes at least one location within the City of Scotts Valley;
- **Santa Cruz cypress** (*Cupressus abramsiana*): five known populations occur in the Santa Cruz Mountains, four of which are in Santa Cruz County.
- **Santa Cruz tarplant** (*Holocarpha macradenia*): current known distribution includes at least seven populations in the vicinity of the cities of Santa Cruz and Soquel;
- **Scotts Valley polygonum** (*Polygonum hickmanii*): currently occurs exclusively in the northern Scotts Valley area; and
• Scotts Valley spineflower (*Chorizanthe robusta* var. *hartwegii*): currently occurs on four parcels in northern Scotts Valley.

### 3.5 General Habitat Characteristics within the Project Units

The Project Units are comprised primarily of Zayante soils. They support a mosaic of Sandhills communities including remnant patches of sand parkland, ponderosa pine forest, and Sandhills chaparral communities. Each of the Project Units supports habitat for the Ben Lomond spineflower and Mount Hermon June beetle.

### 3.6 Covered Species within the Project Units

Mount Hermon June Beetle and Ben Lomond spineflower habitat and populations have been observed in the 10 Project Units during prior surveys. Table 2 lists documented occurrences of the Mount Hermon June beetle in and near the 10 Project Units, while Table 3 lists known occurrences of the Ben Lomond spineflower. These records are summarized from reports on file at the Service’s Ventura Fish and Wildlife Office, and from the BUGGY database maintained by Dr. Richard Arnold (Mount Hermon June beetle records only). Figure 7 illustrates the locations of these occurrences.

<table>
<thead>
<tr>
<th>Table 2. Documented Occurrences of the Mount Hermon June Beetle in or near (within 0.25 mile of) (<em>italics</em>) the 10 Project Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Unit</strong></td>
</tr>
<tr>
<td>Rollingwoods</td>
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<tr>
<td>Rollingwoods Drive</td>
</tr>
<tr>
<td>Between Brookknoll School and Sims Road</td>
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<tr>
<td>Pet Cemetery on Sims Road</td>
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<tr>
<td><em>Entrance to Henry Cowell State Park</em></td>
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<tr>
<td><em>Near Sims and Graham Hill Roads</em></td>
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<tr>
<td>Whispering Pines</td>
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<tr>
<td>Sugarpine Drive</td>
</tr>
<tr>
<td>Lockwood Lane</td>
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<tr>
<td>Estrella Drive</td>
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<tr>
<td>Project Unit</td>
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<tr>
<td>Collado Drive</td>
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<tr>
<td>LaCuesta Drive</td>
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<td></td>
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<tr>
<td>Scotts Valley West</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Bean Creek Road</td>
</tr>
<tr>
<td>(Creekside Estates)</td>
</tr>
<tr>
<td>Blake Lane</td>
</tr>
<tr>
<td>Scotts Valley East</td>
</tr>
<tr>
<td>Green Valley</td>
</tr>
<tr>
<td>Mount Hermon</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Mound &amp; Lake Roads</td>
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<td>Conference Drive</td>
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<tr>
<td>Forest Drive</td>
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<tr>
<td>Lakeside Avenue</td>
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<tr>
<td>Parkway Drive</td>
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<tr>
<td>Pine Avenue</td>
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<td>Cellular Tower on</td>
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<tr>
<td>Mt. Hermon</td>
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<tr>
<td>Hanson Quarry</td>
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<tr>
<td>Zayante North &amp;</td>
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<tr>
<td>Zayante South</td>
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<td></td>
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<td></td>
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<tr>
<td>Newton Drive</td>
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<tr>
<td>Olympia Quarry</td>
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<td></td>
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<tr>
<td>Freeman Property</td>
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<tr>
<td>(Hanson)</td>
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</tbody>
</table>
Table 2. Documented Occurrences of the Mount Hermon June Beetle in or near (within 0.25 mile of) (italics) the 10 Project Units

<table>
<thead>
<tr>
<th>Project Unit</th>
<th>Location</th>
<th>Jurisdiction</th>
<th>Surveyor</th>
<th>Survey Year</th>
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<tbody>
<tr>
<td><em>Olympia Well Field</em></td>
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<td>County</td>
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<td>Ben Lomond South</td>
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<td>County</td>
<td>S. McCabe</td>
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<td>Ridgeview Drive</td>
<td>County</td>
<td>S. McCabe</td>
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<td>W. Hazeltine</td>
<td>1993</td>
</tr>
<tr>
<td></td>
<td>Hihn Road</td>
<td>County</td>
<td>W. Davilla</td>
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<td></td>
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<td>W. Hazeltine</td>
<td>1993</td>
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</table>

Footnotes:  
(a) Observation was of a *Polyphylla* sp.; species not confirmed.  
(b) In accordance with the habitat conservation plan for the site (Habitat Restoration Group 1999), Mount Hermon June beetle surveys are conducted every other year (i.e., 1999, 2001, 2003, etc.) at Hanson Quarry.
<table>
<thead>
<tr>
<th>Project Unit</th>
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<th>Jurisdiction</th>
<th>Surveyor</th>
<th>Survey Year</th>
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<td>Pet Cemetery on Sims Road</td>
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<td>W. Davilla,R. Arnold</td>
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<td>Whispering Pines</td>
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Table 3. Documented Occurrences of the Ben Lomond Spineflower in or near (within 0.25 mile of) (italics) the 10 Project Units

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<th>Jurisdiction</th>
<th>Surveyor</th>
<th>Survey Year</th>
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<td>2001 2002</td>
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<td>(San Lorenzo Valley</td>
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<td>Quail Hollow Quarry</td>
<td>County</td>
<td>County</td>
<td>J. McGraw</td>
<td>2004</td>
</tr>
<tr>
<td>Ben Lomond North</td>
<td>Sund Ave</td>
<td>County</td>
<td>J. McGraw</td>
<td>2005</td>
</tr>
<tr>
<td>Manzanita Ave</td>
<td>County</td>
<td>County</td>
<td>J. McGraw</td>
<td>2005</td>
</tr>
</tbody>
</table>
Figure 7. Occurrences of the Mount Hermon June Beetle and Ben Lomond Spineflower in or near the 10 Project Units.
3.7 Other Federally Listed Species that May Occur in Proximity to the Project Units

3.7.1 Federally Endangered Zayante Band-winged Grasshopper and Ben Lomond Wallflower

During frequent site visits to the Project Units covered in the IPHCP over the past 5 years, biologists familiar with the Zayante band-winged grasshopper have never observed the species in densely developed areas (Sculley pers. comm. 2002; Arnold pers. comm. 2005; McGraw pers. comm. 2005). This species requires loose sand soil and bare or sparsely vegetated areas that receive large amounts of sunlight (Chu 2002, Arnold 2004b). These conditions are not found within the densely developed Project Units.

The Ben Lomond wallflower has been observed in two residential areas. One of these residential areas is located within the boundaries of an IPHCP Project Unit (McGraw 2004b, McGraw pers. comm. 2005).

Little data exist on the historic distribution of the Zayante band-winged grasshopper and Ben Lomond wallflower in the Sandhills. Presumably both species inhabited much of the sand parkland habitat within the Sandhills that has since been lost to sand mining and urban development. Development has resulted in suppression of the natural fire regime and subsequent encroachment of both native and non-native plants. Therefore, Sandhills habitat that historically was sparsely vegetated and had minimal cover has become densely vegetated with virtually no bare ground such as that required by the Ben Lomond wallflower or Zayante band-winged grasshopper. Habitat for these species is further reduced in urbanized areas by densely-located structures, turf grass, landscaping, and shading from trees and structures.

Based on the lack of appropriate habitat or any observations of these species, the Service has concluded that the Zayante band-winged grasshopper and Ben Lomond wallflower are not likely to occur in the project units covered in the IPHCP. Therefore, the IPHCP does not cover these species.

Chapter 4. Effects of Covered Activities

This chapter addresses the potential effects of the taking of the covered species from implementation of the Covered Activities. Direct impacts are assessed quantitatively in terms of acres of disturbance of Zayante soils; indirect impacts are assessed qualitatively. Implementation of the Covered Activities will result in take of the Mount Hermon June beetle.

4.1 Status of Covered Species in the Project Units

Existing populations of the Ben Lomond spineflower and Mount Hermon June beetle face numerous threats from ongoing activities associated with existing residential development in the project units. Approximately 90 percent of the total number of parcels in the 10 Project Units are developed, and the average parcel size is 0.39 acre. The Mount Hermon June beetle and Ben
Lomond spineflower are found around existing roads, sidewalks, and buildings, and in small vacant lots surrounded by residential development. Numerous ongoing activities associated with the existing residential development threaten these populations (Table 4), which are naturally small and may be susceptible to extirpation from random genetic, demographic, or environmental events. The small size of remaining undeveloped parcels within the Project Units limits opportunities for permanent conservation through acquisition or conservation easements of remaining habitat for both species. Given the ongoing threats and lack of conservation opportunities for the Ben Lomond spineflower and Mount Hermon June beetle occurring in the Project Units, the remaining habitat for these species in these areas is highly degraded and suboptimal.

Table 4. Threats to the Mount Hermon June Beetle and Ben Lomond Spineflower from Ongoing Activities in Residential Neighborhoods.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian use</td>
<td>Mount Hermon June Beetle: Adults at soil surface crushed during adult activity period (summer evenings) Ben Lomond Spineflower: Plants and seeds crushed</td>
</tr>
<tr>
<td>Vehicular use</td>
<td>Mount Hermon June Beetle: Fossorial life stages crushed                              Ben Lomond Spineflower: Plants and seeds crushed</td>
</tr>
<tr>
<td>Grading</td>
<td>Mount Hermon June Beetle: Fossorial life stages exposed, injured, or killed        Ben Lomond Spineflower: Plants and seeds injured or killed</td>
</tr>
<tr>
<td>Vegetation clearing</td>
<td>Mount Hermon June Beetle: Fossorial life stages exposed, injured, or killed        Ben Lomond Spineflower: Plants and seeds injured or killed</td>
</tr>
<tr>
<td>Pesticide use</td>
<td>Mount Hermon June Beetle: Fossorial life stages injured or killed                  Ben Lomond Spineflower: Plants and seeds injured or killed</td>
</tr>
<tr>
<td>Irrigation</td>
<td>Mount Hermon June Beetle: Fossorial life stages diseased or killed                 Ben Lomond Spineflower: Increased competition from exotic plants; facilitation of fungal pathogens; plants and seeds injured or killed</td>
</tr>
<tr>
<td>Installation of non-native landscaping</td>
<td>Mount Hermon June Beetle: Fossorial life stages exposed, injured, or killed; potential food plants removed Ben Lomond Spineflower: Creation of inhospitable growing conditions for native plants due to increased competition from exotic plants; plants and seeds injured or killed</td>
</tr>
<tr>
<td>Fire suppression</td>
<td>Mount Hermon June Beetle: Unknown                                                Ben Lomond Spineflower: Creation of inhospitable growing conditions for native plants due to increased competition from exotic plants; increased leaf litter</td>
</tr>
<tr>
<td>Night lighting</td>
<td>Mount Hermon June Beetle: Mate searching of adult males disrupted                  Ben Lomond Spineflower: Unknown</td>
</tr>
<tr>
<td>Existing buildings, walls, fences</td>
<td>Mount Hermon June Beetle: Flying males injured, killed, flight paths disrupted     Ben Lomond Spineflower: Seed dispersal and pollinator movement obstructed</td>
</tr>
<tr>
<td>Existing swimming pools</td>
<td>Mount Hermon June Beetle: Flying males drowned or are                              Ben Lomond Spineflower: Seed dispersal obstructed</td>
</tr>
<tr>
<td>Activity</td>
<td>Potential Impact</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>Mount Hermon June Beetle</td>
<td>Ben Lomond Spineflower</td>
</tr>
<tr>
<td>injured</td>
<td>injured</td>
</tr>
<tr>
<td>Native plant removal</td>
<td>Loss of potential food plants Unknown</td>
</tr>
<tr>
<td>Digging by pets</td>
<td>Fossorial life stages exposed, injured, or killed</td>
</tr>
<tr>
<td></td>
<td>Plants and seeds damaged or killed</td>
</tr>
</tbody>
</table>

However, habitat within the Project Units does provide some long-term conservation value for the Mount Hermon June beetle and Ben Lomond spineflower. Though degraded, fragmented, and reduced in size, habitat within the 10 Project Units may support persisting populations, as many of the Project Units were developed more than 40 years ago. The Mount Hermon June beetle lives the vast majority of its life below ground. Therefore, it is possible that development within the Project Units, at least at the current level, might not cause extirpations of Mount Hermon June beetle populations in these areas. Indeed, the fact that Mount Hermon June beetles, which have a life cycle of 2 to 3 years, still inhabit these areas suggests that populations may be able to persist in the Project Units despite the current level of development. It is likely that remaining habitat in the Project Units also provides connectivity between otherwise isolated populations of the Mount Hermon June beetle and Ben Lomond spineflower. Many of the Project Units are located adjacent to intact habitat that is being preserved and managed for long-term persistence of these species. Maintaining habitat and populations within the Project Units could allow migration between populations in these protected areas. Connectivity and 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).

### 4.2 Take of / Adverse Impacts to the Covered Species Resulting from Covered Activities

Grading, land clearing, and construction activities associated with new development projects covered in the IPHCP will likely injure or kill plants and seeds of the Ben Lomond spineflower, and adults, larvae, pupae and eggs of the Mount Hermon June beetle. Construction of new buildings and associated infrastructure including driveways and sidewalks will permanently remove habitat (i.e., Zayante soils) for both species. Mount Hermon June beetle and Ben Lomond spineflower individuals that persist on a project site after construction activities would be threatened by ongoing use of the property (Table 4).

It is not possible to determine or accurately project how many individuals of each species would be injured or killed as a result of the Covered Activities. Comprehensive data describing the distribution and abundance of the Mount Hermon June beetle and Ben Lomond spineflower within the Project Units are not available. In addition, population densities of these species fluctuate annually such that the number of individuals impacted would depend on the year in which a given project is conducted. For these reasons, it is more tangible and biologically defensible to evaluate the impacts of the activities covered under this IPHCP in terms of degradation or destruction of habitat.
Take of the Mount Hermon June beetle authorized by the ITPs issued pursuant to this IPCHP would be defined in terms of the areal extent of the species’ habitat, specifically Zayante soils, that is disturbed by the Covered Activities. Within the Sandhills communities that occur on Zayante soils, surveys have revealed that the Mount Hermon June beetle occurs within a broad array of microhabitats, including conditions associated with existing high density development. Ground disturbing activities that would be covered by the ITPs (see Section 2.3) negatively impact populations of the Mount Hermon June beetle in a variety of direct and indirect mechanisms (Table 4). Therefore, it is reasonable to assume that conducting these activities within Zayante soils in the Project Units will degrade or eliminate Mount Hermon June beetle habitat and injure or kill Mount Hermon June beetles.

The ITPs issued pursuant to this IPCHP would authorize the take of Mount Hermon June beetles that occur within 139 acres of Sandhills habitat in the Project Units. This acreage figure represents 5 percent of the estimated total amount (2,800 acres) of Sandhills habitat with documented occurrences of the Mount Hermon June beetle as of 2004 (McGraw 2004b). Approximately 510 acres of the 2,800 acres of Sandhill habitat are already protected from development given landownership and use of this area (i.e., Henry Cowell State Park, Quail Hollow Ranch County Park, and Gray Whale Ranch (McGraw, 2004b)).

Given that the IPHCP would cover projects that are yet to be proposed it is not possible to determine the exact locations of the habitat that would be lost. Based on locations of proposed projects to date, the City and County anticipate that some portion of habitat will be lost in each Project Unit. Habitat would be lost only on parcels that are equal to or less than 1.5 acres in size. A maximum of 15,000 square feet of additional habitat would be lost on any given parcel. However, the City and County anticipate that most projects covered under the IPHCP (e.g., swimming pools, garages, room additions, etc.) would be smaller and would each result in a loss of less than 15,000 square feet of habitat.

The degradation or loss of up to 139 acres of Sandhills habitat within the Project Units should not have a significant effect on the persistence of the Mount Hermon June beetle and Ben Lomond spineflower throughout the species’ ranges. Existing populations of these species persist on and in exposed3 Zayante soils around existing structures and other infrastructure and in vacant parcels. No more than 15,000 square feet of additional habitat would be lost on any given parcel. Additionally, these habitat losses will likely be distributed throughout the Project Units in rough proportion to the size of each unit. Given the amount and expected distribution of the habitat that may be lost, Mount Hermon June beetles and Ben Lomond spineflowers should continue to persist on and in exposed soils in each of the Project Units. Therefore, following implementation of the Covered Activities, each Project Unit will likely provide less habitat, but essentially the same quality of habitat, for the Mount Hermon June beetle and Ben Lomond spineflower.

While both species will likely continue to inhabit the Project Units in the short term, it is not possible to definitively predict whether these areas will support long term persistent populations

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3 Exposed soils are any soils not covered by a structure, pavement, or other impervious, permanent feature that would restrict plants from growing or insects from burrowing.
of the Mount Hermon June beetle and/or Ben Lomond spineflower. There are no historical data on populations of the species within the Project Units, precluding assessment of the effects of development on population density and trends. Initial development of the residential neighborhoods likely greatly reduced populations of both species. It is also likely that human habitation in these areas has caused further declines over the past several decades. Given that 90 percent of the parcels within the Project Units are already developed, it is unlikely that the additional habitat loss and other impacts from the projects covered under the IPHCP would be a substantial additional threat to the long-term persistence of the Mount Hermon June beetle and Ben Lomond spineflower.

4.3 Assessment of Take

The IPHCP must describe the level of incidental take of the Mount Hermon June beetle that would occur from Covered Activities in addition to describing and analyzing the impacts of the project on the covered species. Although the Federal Endangered Species Act does not address take of federally listed plants, this section evaluates effects on the Ben Lomond spineflower of issuing the requested ITPs; this evaluation is included to facilitate analysis of Covered Activity impacts through the NEPA and CEQA processes, and in the enforcement of the County’s Sensitive Habitat Protection Ordinance. No take of, or adverse impacts to, any other federally listed or proposed species is anticipated to occur as a result of the Covered Activities.

Implementation of projects that meet the eligibility requirements and occur within the Project Units (i.e., the Covered Activities) would injure or kill adults, larvae, pupae, and eggs of the Mount Hermon June beetle. Therefore, the Covered Activities would cause take of the Mount Hermon June beetle either by directly killing individuals or in the form of harm through significant habitat modification or degradation (see Section 1.2.1). In addition, implementing Covered Activities could damage or kill plants and seeds of the Ben Lomond spineflower. The Service recommended that the loss or degradation of habitat within the Project Units should be limited to a maximum of 139 acres. This represents a small percentage (approximately 5 percent) of the species’ remaining habitat, and includes only the most degraded and fragmented habitat remaining for the species.

The loss of Mount Hermon June beetle and Ben Lomond spineflower individuals within the IPHCP Project Units is not expected to compromise the long-term persistence of these species. Populations of these species occur within a variety of habitat areas that are protected from development, including Henry Cowell State Park, Quail Hollow Ranch County Park, the conservation areas of the Quail Hollow Quarry, the conservation areas of the Hanson Quarry, the preserve of the Zayante Sandhills Conservation Bank, and the Bonny Doon Ecological Reserve (Ben Lomond spineflower only).

4.4 Cumulative Impacts

Cumulative effects are those impacts of future tribal, State, and private actions that are reasonably certain to occur in the action area. Future Federal actions would be subject to the requirements established in section 7 of the Act and, therefore, are not considered cumulative to the proposed action. The County, City and Service are aware of a number of development projects that have been implemented in the action area by landowners who have not applied for
or obtained an ITP. This fact shows the need for this IPHCP in providing a streamlined mechanism for local residents to develop their land while legally complying with the Act. In these cases, the Service is uncertain as to the amount of Sandhills habitat that has been lost and the number of Mount Hermon June beetles and Ben Lomond spineflowers that have been killed or affected as a result of the development. As of the date of this IPHCP, the Service has issued approximately 10 ITPs for the Mount Hermon June Beetle, spanning a total of 22 acres in Santa Cruz County to landowners who did not qualify under the IPHCP because their parcels are either greater than 1.5 acres, did not fall within one of the IPHCP Project Units, otherwise did not meet the eligibility criteria described in Section 2.3, or landowners chose to do their own HCP.

Chapter 5. Operating Conservation Program

5.1 Biological Goals and Objectives

In 2000, the Service published a Final Addendum to the Habitat Conservation Planning Handbook, also known as the five-point policy (65 FR 35242). This policy requires the Service to ensure that all future HCPs include explicit biological goals and objectives. These goals and objectives should clarify the purpose and direction of the operating conservation program, create parameters for developing conservation measures, provide the rationale behind the terms and conditions of the incidental take permit, promote an effective monitoring program, and where appropriate, help determine the focus of an adaptive management strategy. Biological objectives are used to “step-down” the biological goals into manageable and, therefore, more understandable units.

In developing the biological goals and objectives for the IPHCP, the City, County, and Service evaluated the type, number, and location of activities covered by the IPHCP that could result in take of the Mount Hermon June beetle and adverse effects to the Ben Lomond spineflower (Chapter 4). Through this evaluation, it became apparent that take of the Mount Hermon June beetle and adverse effects to the Ben Lomond spineflower would occur from loss of habitat in and around neighborhoods with existing, dense residential development. Both the Mount Hermon June beetle and Ben Lomond spineflower occur in loose, sandy soils throughout these developed areas that are highly fragmented by structures such as roads, driveways, buildings, sidewalks, and fences.

Human activities create substantial threats to the Mount Hermon June beetle and Ben Lomond spineflower in developed areas (Table 11). Habitat within the IPHCP Project Units has been degraded as a result of prior development and continuing human habitation. Populations of the Mount Hermon June beetle and Ben Lomond spineflower in these areas will be further impacted by the implementation of Covered Activities.

Based on these considerations, an operating conservation program was developed that would minimize take of the Mount Hermon June beetle and adverse effects to Ben Lomond spineflower in the Project Units, and mitigate for these impacts at a larger off-site Sandhills habitat preserve. In accordance with this approach, the biological goals for the IPHCP are as follows:
Goal 1. Minimize take of the Mount Hermon June beetle and adverse effects to the Ben Lomond spineflower within the Project Units.

Objective 1.1. Avoid disturbance of Sandhills habitat whenever feasible, and when avoidance is infeasible minimize disturbance to Sandhills habitat.

Objective 1.2. Minimize ground-disturbing activities during the growing season of the Ben Lomond spineflower and adult flight period of the Mount Hermon June beetle (May 15 – August 15).


Objective 1.4. Minimize landscaping with turf grass, weed matting, aggregate, and mulch.

Objective 1.5. Minimize night lighting during the flight season of the Mount Hermon June beetle.

Goal 2. Protect habitat for the Mount Hermon June beetle and Ben Lomond spineflower 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 and Ben Lomond spineflower at a Service-approved conservation bank(s).

5.2 Measures to Minimize and Mitigate Take

Section 10(a)(2)(B) 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 should include compensatory mitigation consisting of the permanent preservation of suitable habitat.

In accordance with these guidelines and the requirements of the Act, the IPHCP’s Operating Conservation Program is intended to achieve its biological goals and objectives and to ensure that the impacts of Covered Activities on the Mount Hermon June beetle and Ben Lomond spineflower are minimized and mitigated to the maximum extent practicable.

Under the IPHCP, the take resulting from Covered Activities must be mitigated by permanently preserving and managing suitable habitat outside of the Project Units. Covered Activities will be limited to small “infill-type” projects in areas that contain previous development (i.e., the Project Units). Habitat for the Mount Hermon June beetle and/or Ben Lomond spineflower in the Project Units is fragmented and, in many cases, of reduced quality relative to larger contiguous,
undisturbed parcels. Therefore, protection in perpetuity of contiguous blocks of high quality habitat outside of the Project Units should compensate for the impacts of Covered Activities within the Project Units and should help ensure the long-term conservation of these species.

Because contiguous areas of high-quality habitat will be used to mitigate for impacts to fragmented, lower-quality habitat, the mitigation ratio for Covered Activities will be 1 to 1 in terms of the area of disturbance envelope to the number of conservation credits of mitigation responsibility (i.e., a landowner with a project that has a disturbance envelope of 0.1 acre will be required to mitigate by securing 0.1 acre of conservation credits for the Mount Hermon June beetle).

Specifically, in addition to implementing certain minimization measures, the impacts of Covered Activities must be mitigated by one of the following two methods: (1) acquire an appropriate number of Mount Hermon June beetle conservation credits from the Zayante Sandhills Conservation Bank; or (2) acquire an appropriate number of Mount Hermon June beetle conservation credits from another Service-approved conservation bank, which also has an Operating Agreement with the County if the parcel is within the County’s jurisdiction.

### 5.2.1 Minimization Measures

The following measures are designed to minimize the direct and indirect effects of the Covered Activities on the Mount Hermon June beetle and Ben Lomond spineflower by decreasing injury and death of individuals, and by reducing habitat degradation. These minimization measures apply to all Covered Activities (i.e., activities authorized under the ITP).

#### 5.2.1.1 Impacts to plants that are native to the Sandhills must be avoided to the greatest extent feasible, consistent with the purpose of the Covered Activity.

Projects will be located to avoid the Ben Lomond spineflower, ponderosa pine, and silver-leafed manzanita whenever feasible, as determined by the City or County. Where avoidance is not feasible, minimizing impacts to native Sandhills plant species will be required.

Implementation of these measures will minimize impacts to the Mount Hermon June beetle by maintaining host plants for the species. In addition, implementation of these measures will minimize impacts to the Ben Lomond spineflower by retaining individuals of the species whenever feasible.

#### 5.2.1.2 Ground-disturbing activities associated with construction (e.g., vegetation clearance, grading, digging, etc.) must be minimized between May 15 and August 15 within the development envelope.

To the maximum extent feasible, the City and County will condition project approvals to avoid or minimize ground disturbance between May 15 and August 15.
Adult Mount Hermon June beetles actively search for mates and breed during the evenings for approximately 12-14 weeks, generally 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. This measure will minimize impacts to the Mount Hermon June beetle by avoiding disturbance of adults during the critical breeding season.

The Ben Lomond spineflower completes its annual life cycle between mid-October and early August. This measure reduces adverse impacts to the Ben Lomond spineflower by minimizing construction activities during a portion of its life cycle.

5.2.1.3 If construction-related ground disturbance associated with Covered Activities can not be scheduled to avoid the May 15 to August 15 time frame, participating landowners must ensure that areas that have been disturbed by construction activities are covered each evening during this time frame with tarps, landscape fabric, or other similar material. Only the immediate areas that have been recently disturbed must be covered in this manner between May 15 and August 15.

As described in section 5.2.1.2 above, adult Mount Hermon June beetles actively seek mates during the evenings between approximately May 15 and August 15. Following activity each evening, males may burrow into duff and soils for protection during the daytime hours. Under such circumstances, disturbed, sandy soils in a project area may attract Mount Hermon June beetles seeking shelter for the evening. This measure will minimize impacts to the Mount Hermon June beetle by preventing adults that may have emerged from Zayante soils near the project site from burrowing into disturbed areas on the project site and being injured or killed when project activities resume the following day.

5.2.1.4 Landscaping elements that degrade habitat must be minimized to the greatest extent feasible, as determined by the City or County, and consistent with the purpose of the Covered Activity.

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. This measure minimizes impacts to the Mount Hermon June beetle by limiting these landscaping elements where adults may emerge from beneath the soil surface.

This measure will minimize impacts to the Ben Lomond spineflower by limiting the installation of landscape materials that inhibit establishment, growth, and reproduction of the plant.
5.2.1.5 Indirect impacts to the Mount Hermon June beetle from project lighting must be minimized to the greatest extent feasible.

Project activities between May 15 and August 15 will not utilize night lighting during construction. In addition, projects constructed under the IPHCP (Covered Activities) will minimize the installation of outdoor lighting. Permanent outdoor lighting shall be minimized and shall be shielded by fixture design or other means to minimize illumination of surrounding areas. If outdoor lighting is a necessary result of the Covered Activity (e.g., security lighting or lighting for handicap access structures), light sources (bulbs) that do not attract insects (e.g., yellow or sodium vapor bulbs) will be used to the maximum extent feasible.

During the species’ activity period (May 15 – August 15), male Mount Hermon June beetles fly to seek mates for a brief period beginning near dusk each evening. If these male Mount Hermon June beetles are attracted to artificial light sources, it may disrupt their reproductive behavior. This measure will minimize impacts to the Mount Hermon June beetle by avoiding potential interference with adult male Mount Hermon June beetle behavior during the breeding season.

5.2.2 Mitigation Measures

5.2.2.1 Planting of Native Sandhills Plant Species

To the maximum extent feasible, the City and County will require that any revegetation or landscaping activities associated with Covered Activities are conducted using locally-derived source material (i.e., seeds or cuttings) of plant species native to the Sandhills, with particular emphasis on the plant species identified in Appendix G of this IPHCP.

5.2.2.2 Securing Off-site Mitigation

Prior to beginning any ground-disturbing activities, the impacts of Covered Activities must be mitigated in one of the following ways:

1. Secure conservation credits for the Mount Hermon June beetle at a ratio of 1:1 in terms of acres of disturbance to numbers of credits (e.g., a project with a 0.1-acre disturbance envelope will mitigate by securing 0.1 acre of conservation credits for the Mount Hermon June beetle) at the Zayante Sandhills Conservation Bank; or

2. Secure conservation credits for the Mount Hermon June beetle at a ratio of 1:1 in terms of acres of disturbance to numbers of credits (e.g., a project with a 0.1-acre disturbance envelope will mitigate by securing 0.1 acre of conservation credits for the Mount Hermon June beetle) at another Service-approved conservation bank, which also has an Operating Agreement with the County if the parcel is within the County’s jurisdiction.
5.3 Monitoring Program

Monitoring tracks compliance with the terms and conditions of an HCP, Implementing Agreement, and permit. There are three types of monitoring: (1) compliance monitoring tracks the permit holder’s compliance with the requirements specified in the HCP, Implementing Agreement, and permit; (2) effects monitoring tracks the impacts of the Covered Activities on the covered species; and (3) effectiveness monitoring tracks the progress of the conservation strategy in meeting the biological goals and objectives of the HCP. Monitoring provides information for making adaptive management decisions.

5.3.1 Compliance Monitoring: Completion of Minimization and Mitigation Measures

The City and County will monitor participating landowners’ compliance with the terms of the IPHCP and ITPs using a combination of the monitoring reports for each Covered Activity and follow-up visits to project sites. This monitoring component will document total area of Zayante soils disturbance, and include a checklist of completed minimization and mitigation measures (e.g., lighting, landscaping, timing of construction activities, etc.). This compliance monitoring is guided by the IPHCP monitoring and mitigation strategy. A template compliance monitoring report for Covered Activities is provided in Appendix E. The City’s and County’s compliance monitoring strategy is further described under Section 5.3.2, below. Additional reporting requirements are described in Section 5.4.

5.3.2 Effects Monitoring: Tracking the Impacts of Covered Activities on the Covered Species

The City and County will monitor the effects of Covered Activities on the Mount Hermon June beetle and Ben Lomond spineflower by tracking the cumulative areal extent of Zayante sandy soils that is degraded or destroyed. The City and County will monitor and track the amount of Zayante soils disturbed by Covered Activities, as well as compliance with the terms of the IPHCP and ITPs, through the following process: City or County staff will fill out a monitoring report (Appendix E) for each Covered Activity prior to finalization of the building permit for the Covered Activity; each monitoring report will note the areal extent of habitat disturbance that is authorized on the subject parcel; the City and County will perform a follow-up visit to the project site for each Covered Activity to confirm the amount of habitat disturbed is consistent with the figure noted on the landowner’s report. This follow-up site visit will enable the City and County to document the effects of the Covered Activities as well as confirm that the participating landowner is in compliance with the terms of the IPHCP and ITPs. This strategy will also enable a “hold” to be placed on a building permit, if necessary, to assure compliance with the provisions of the IPHCP and ITPs. As noted previously, the City and County will jointly maintain a database that tracks the total number of acres of habitat modification that each jurisdiction authorizes under its’ ITP.
5.3.3 Effectiveness Monitoring: Achievement of Biological Goals and Objectives

It is important to ensure that the biological goals and objectives of the IPHCP are being achieved. The data obtained from the process described in Effects Monitoring section 5.3.2 will assist the City, County, and Service in assessing the effectiveness of the IPHCP. The County and City will review data from monitoring reports on an annual basis and prepare a report that describes: (1) the number of projects completed and the area of habitat affected in each of the Project Units; (2) landowner compliance with the avoidance and minimization measures; (3) area of compensatory mitigation secured; and (4) any observations of injured or dead Mount Hermon June beetles (including location, date, and numbers of individuals observed). This review process will be used to help ensure that the IPHCP’s Operating Conservation Program is successful. More information relating to this annual report is outlined in Section 5.4 below.

5.4 Reporting

For each Covered Activity, the appropriate local jurisdiction (i.e., City or County) will fill out a compliance monitoring report. For projects implemented over the course of two or more years, the City or County will prepare and submit annual monitoring reports until the Covered Activities are completed. In order for the Service to accurately assess take levels and determine if the biological goals and objectives of the IPHCP are being met, each of the compliance monitoring reports must include updated information on the proposed project and extent of Zayante soils disturbed, photographs, and information on adherence to the minimization and mitigation measures outlined in this IPHCP. A template monitoring report is attached as Appendix E.

The City and County will provide feedback to each participating landowner as necessary to ensure compliance with the IPHCP and the ITPs. The City and County will compile the individual compliance monitoring reports prepared during each calendar year, summarize the information in the reports, and provide an annual summary report to the Service. The Service may prepare a brief report to the City and the County assessing the status of the conservation program including the effectiveness of minimization measures and the success of off-site mitigation.

Chapter 6. Plan Implementation

The City and County would be the recipients of the ITPs based on the IPHCP, and would therefore be responsible for complying with both the ITPs and the IPHCP. A more detailed description of how the IPHCP would be implemented is provided in the Implementing Agreement (Appendix H); the Implementing Agreement would govern implementation of the IPHCP. In general, however, the City and County would implement the IPHCP by integrating the requirements of the IPHCP into the City’s and the County’s building permit programs.
The planning department of the City and the planning department of the County would assume the day-to-day responsibilities for implementation. As landowners submit applications for discretionary and building permits, each planning department would determine whether the proposed project is within a Project Unit and whether it is eligible for coverage under its’ ITP. If the proposed project is within a Project Unit and would disturb ground by grading or other means, the planning department will notify the landowner that the proposed project may impact Zayante soils and may require an ITP from the Service. If the project is eligible for coverage under the IPHCP and the pursuant ITPs, the planning department will also explain the requirements for coverage and ensure that the landowner’s application adheres to the IPHCP and the ITPs. If the landowner submits a complete application, including a signed Certificate of Inclusion, and has otherwise complied with all relevant terms of the IPHCP, as determined by the City or County, the City or County may extend coverage under its’ ITP to the project. The project would then be a Covered Activity within the context of this IPHCP and incidental take resulting from the project would be authorized by either the City or County ITP.

6.1 Application Requirements

The City and the County will establish application requirements and procedures for Covered Activities generally as follows:

Step 1. Determine if the proposed project is within an IPHCP Project Unit.

The landowner should review the maps provided in Appendix B of this IPHCP.

a. If the parcel lies within 1 of the 10 Project Units, proceed to step 2.

b. If the parcel lies outside the boundaries of the 10 Project Units, the project site may still harbor Zayante soils and/or the Mount Hermon June beetle, Zayante band-winged grasshopper, Ben Lomond spineflower, or Ben Lomond wallflower. The City or County will notify the landowner that he or she should contact the Service to determine if the proposed project may take the Mount Hermon June Beetle and if an individual ITP may be necessary. This step will help ensure the landowner is not in violation of section 9 of the Act for a project that is otherwise a lawful activity.

Step 2. Determine if the proposed project will disturb Zayante soils.

Most projects within the IPHCP Project Units will occur on Zayante soils, which support Mount Hermon June Beetle habitat. However, due to the imprecision of soils map and the buffer that was applied using a Geographic Information System (GIS), some parcels within the IPHCP Project Units may not contain Zayante soils. Landowners who are uncertain as to whether their project will indeed impact Zayante soils can have their project area evaluated by a qualified individual from, or recommended by, the County, City, or Service. A list of personnel qualified to conduct these evaluations will be available from the City, County, or Service. If a written evaluation from a qualified individual concludes that the project site does not contain Zayante soils, and the proposed project is not likely to result in take of Mount Hermon June beetles, the landowner does not need to obtain incidental take coverage under the IPHCP. If the proposed project will disturb Zayante soils, the landowner must proceed to step 3.
Step 3. Complete checklist of eligibility requirements.

The landowner must provide information to the City or County that demonstrates their eligibility to be covered by the IPHCP and ITP. The landowner should use the template “Sandhills IPHCP Eligibility Checklist” in Appendix E of this document. If all requirements are met, proceed to step 4. If all requirements are not met and the proposed project is not eligible for coverage under the IPHCP and ITP, the City or County will recommend that the landowner contact the Service for information about individual incidental take permits. Additionally, the City or County may provide information about the regional HCP currently under development.


The landowner must submit a signed Certificate of Inclusion with all necessary documentation in order to proceed. A template Certificate of Inclusion is provided in Appendix C of this IPHCP. To comply with the IPHCP, the landowner must submit the following documentation as part of their discretionary or building application submittal to the appropriate local jurisdiction (City or County):

1. Certificate of Inclusion;
2. Sandhills IPHCP Eligibility Checklist;
3. City or County Discretionary or Building Application; and
4. Project Plans (including development envelope).
5. Submit Proof of Mitigation

Prior to issuance of a discretionary or building permit from the City or County, the landowner or conservation bank must submit a Conservation Credit Sales Receipt.

6.2 Responsibilities

6.2.1 City and County Responsibilities

The City and County’s implementation responsibilities include:

- Overseeing implementation of avoidance and minimization measures required by the IPHCP and ITP.
- Monitoring landowner compliance with the terms of each Certificate of Inclusion, the IPHCP, and the ITP.
● Creating and maintaining the database to track the areal extent of Zayante soils that is disturbed or modified by the Covered Activities, as authorized under the ITP.

● Training planning department staff to review permit applications for compliance with the IPHCP.

● Enforcing the terms and conditions of the IPHCP and ITP.

● Submitting Annual reports to the Service

### 6.2.2 Service Responsibilities

The Service will be responsible for providing timely advice and participation in consultations with the City and County under this IPHCP.

### 6.3 Implementation Costs and Funding

#### 6.3.1 Costs Associated with Implementing the IPHCP

**Santa Cruz County**

County costs to implement the IPHCP are estimated to be $321.00 per certificate of inclusion application (i.e., building application). This estimate is based on the amount of time required for Planning Department staff to perform the additional tasks necessary to process building applications in the sandhills. While the County will minimize costs by incorporating implementation of the IPHCP into existing application review and permit issuance procedures, there will be several tasks that are unique to implementing the IPHCP. These include:

- **Task 1** - Performing a second site visit at each parcel to confirm that temporary orange fencing has been installed to delineate the total ground disturbance area (1.0 hour of Resource Planner time for every application at $148.00/application);

- **Task 2** - Ensuring that the appropriate number of conservation credits have been purchased to mitigate project impacts (0.5 hour of Resource Planner time for every application at $74.00/application);

- **Task 3** - Conducting a third site visit, when necessary, to ensure that any errors or deficiencies in delineating the total ground disturbance area have been corrected and the appropriate number of conservation credits have been obtained (1.0 hour of Resource Planner time for 50% of the applications for an average of $74.00/application);
• Task 4 - Creating and maintaining a Certificate of Inclusion tracking system to document development projects within the IPHCP area (0.25 hour of Planning Technician time for every application at $25.00); and

• Task 5 - Preparing annual reports to USFWS to satisfy the County’s reporting requirements (4.0 hours of Principal Planner time annually. For at least the first year to be absorbed by the County, after which to be included in the sandhills application-processing fee).

By totaling the costs to perform these tasks, the average additional cost to process an application in the sandhills is estimated to be $321.00. This total is calculated by adding: $148.00 (Task 1) + $74.00 (Task 2) + $74.00 (Task 3) + $25.00 (Task 4). These costs are based on 2008 billing rates, which will be subject to change over time due to inflation and other factors that affect County costs. When costs increase, Certificate of Inclusion fees will also increase accordingly to keep in step with costs.

City of Scotts Valley

City costs to implement the IPHCP are estimated to be $274.00 per certificate of inclusion application (along with the building application). This estimate is based on the amount of time required for Planning Department staff to perform the additional tasks necessary to process building applications in the sandhills. While the County will minimize costs by incorporating implementation of the IPHCP into existing application review and permit issuance procedures, there will be several tasks that are unique to implementing the IPHCP for the City. These include:

• Task 1 - Performing a second site visit at each parcel to confirm that temporary orange fencing has been installed to delineate the total ground disturbance area (1.0 hour of Senior Planner time for every application at $122.00/application);

• Task 2 - Ensuring that the appropriate number of conservation credits have been purchased to mitigate project impacts (0.5 hour of Senior Planner time for every application at $61.00/application);

• Task 3 - Conducting a third site visit, when necessary, to ensure that any errors or deficiencies in delineating the total ground disturbance area have been corrected and the appropriate number of conservation credits have been obtained (1.0 hour of Senior Planner time for 50% of the applications for an average of $61.00/application);

• Task 4 - Creating and maintaining a Certificate of Inclusion tracking system to document development projects within the IPHCP area (0.25 hour of the Senior Planner’s time for every application at $30.00); and

• Task 5 - Preparing annual reports to USFWS to satisfy the City’s reporting requirements (4.0 hours of Senior Planner time annually at $488 per year. For at
least the first year to be absorbed by the City, after which to be included in the sandhills application-processing fee).

By totaling the costs to perform these tasks, the average additional cost to process an application in the sandhills is estimated to be $274.00. This total is calculated by adding: $122.00 (Task 1) + $61.00 (Task 2) + $61.00 (Task 3) + $30.00 (Task 4). These costs are based on 2009 billing rates, which will be subject to change over time due to inflation and other factors that affect County costs. When costs increase, Certificate of Inclusion fees will also increase accordingly to keep in step with costs.

6.3.2 Funding Sources

The County and the City have instituted a new sandhills application-processing fee, in the amount of $321.00 for the County and $274.00 for the City, to cover the costs of performing the tasks noted above. The County anticipates that about five to ten building applications will be submitted annually for projects within the IPHCP area. This would generate an estimated $1,600.00 to $3,200.00 in annual revenues during the five-year permit term. The City estimates about six to twelve building permit annually for projects within the IPHCP in the City of Scotts Valley. This would generate an estimated $1,370.00 to $3,288.00 in annual revenues during the five-year permit term.

The County Planning Department will maintain a tracking system of all sandhills building and discretionary applications that are submitted and all permits issued. While this tracking system will not be limited to the IPHCP area, all of the information required to track the IPHCP Certificates of Inclusion will be captured as part of this documentation. For example, the tracking system will record the number of certificates issued each year, the amount and location of sandhills habitat impacted by each project, and the number of conservation credits purchased from an approved conservation bank. The City of Scotts Valley will set up a program for tracking all sandhills building and discretionary applications that are submitted and all permits issued.

6.3.3 Funding Assurances

If the revenue received through the $321.00 application-processing fee is insufficient to meet the costs of implementing the IPHCP, the County will increase the fee and/or absorb the additional costs using base resources. The County is committed to ensuring that the IPHCP is properly and fully implemented, and understands that the ITP will be suspended or revoked if it does not fully comply with its terms and conditions. The City of Scotts Valley will follow the same approach as the County.

6.3.4 Mitigation Costs

Mitigation costs for Covered Activities (i.e., purchasing conservation credits as outlined in Section 5.2.2.2) will be borne by landowners proposing to implement Covered Activities. Because mitigation must be provided before Covered Activities are permitted and implemented, the IPHCP is based on a pay-as-you-go approach to mitigation, and adequate funding for mitigation is thereby assured.
The costs of managing and monitoring mitigation lands at the Zayante Sandhills Conservation Bank have already been addressed and assured through the various documents approved by the Service in establishing the conservation bank. For this reason, the IPHCP does not address costs or funding assurances for managing or monitoring mitigation lands.

6.4 Contact

Questions regarding implementation of this IPHCP should be directed to:

For properties outside the City, contact:

County of Santa Cruz Planning Department
701 Ocean Street, 4th Floor
Santa Cruz, California 95060
(831) 454-3252 phone
(831) 454-2131 fax

OR

For properties within the City, contact:

City of Scotts Valley Planning Department
1 Civic Center Drive
Scotts Valley, California 95066
(831) 440-4630 phone
(831) 438-2793 fax
Chapter 7. Changed and Unforeseen Circumstances

Federal regulation [50 CFR 17.22(b)(2) and 17.32(b)(2)] requires that an HCP specify the procedures to address changed and unforeseen circumstances that may arise during the implementation of the HCP.

7.1 Changed Circumstances

Changed circumstances are defined 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 (50 CFR 17.3). If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances and these additional measures are 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 are 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 implemented” (properly implemented means the commitments and provisions of the HCP and the Implementing Agreement have been or are being fully implemented) except under extraordinary circumstances. Further, in cases where the status of a species worsens, the primary obligation for implementing additional conservation measures would rest on the Federal government, other government agencies, private conservation organizations, or other private landowners who have not yet developed an HCP.

Changed circumstances must be addressed for the entire plan area of an HCP; in other words, both the Project Units and potential mitigation lands must be considered. Management responses and funding for the changed circumstances that could occur on mitigation lands (e.g., fire or invasive species) have already been considered and addressed in the in the Conservation Bank Agreement and the Adaptive Management and Monitoring Plan supporting the establishment of the Zayante Sandhills Conservation Bank. Adequate funding for responding to changed circumstances at the Zayante Sandhills Conservation Bank has been addressed through the inclusion of a contingency fund for such purposes (i.e., the Interim Management Account), and is also factored into the conservation credit purchase price. In the event another conservation bank offering conservation credits for the Mount Hermon June beetle (other than the Zayante Sandhills Conservation Bank) is approved by the Service, funding for changed circumstances would need to be assured by the conservation bank operators prior to Service approval. The following discussion of changed circumstances relates only to Sandhills habitat within the Project Units of the IPHCP.
7.1.1 Listing of New Species

If a new species that is not covered by the IPHCP but that may be affected by activities covered by the IPHCP is listed under the Act during the term of the ITPs, the permit will be reevaluated by the Service. The IPHCP covered activities may be modified, as necessary, to ensure that the activities covered under the IPHCP are not likely to jeopardize or result in take of the newly listed species or adverse modification of any newly designated critical habitat. The County and City will implement the modifications to the IPHCP covered activities identified by the Service as necessary to avoid the likelihood of jeopardy to, or take of, the newly listed species or destruction or adverse modification of newly designated critical habitat. The County and City will continue to implement such modifications until such time as they have applied for and the Service has approved an amendment of the ITPs, in accordance with applicable statutory and regulatory requirements, to cover the newly listed species or until the Service notifies them in writing that the modifications to the HCP covered activities are no longer required to avoid the likelihood of jeopardy to the newly listed species or adverse modification of newly designated critical habitat.

7.1.2 Discovery of the Zayante Band-winged Grasshopper or Ben Lomond Wallflower in the Project Units

If the Zayante band-winged grasshopper or Ben Lomond wallflower are discovered within any of the Project Units, the Service will evaluate this new information and determine what, if any, IPHCP Covered Activities may affect the Zayante band-winged grasshopper or Ben Lomond wallflower. In addition, if the IPHCP Covered Activities would likely result in incidental take of the Zayante band-winged grasshopper, the City and County will coordinate with the Service and either request a permit amendment or implement activities that would avoid the take of the Zayante band-winged grasshopper.

7.2 Unforeseen Circumstances

The Habitat Conservation Plan Assurances (No Surprises) Rule [50 CFR 17.22 (b)(5) and 17.32(b)(5); 69 FR 71723] describes the obligations of the permittee (i.e., the City and County) 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.

Unforeseen circumstances are defined as changes in circumstances that affect a species or geographic area covered by an 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 the status of the covered species (50 CFR 17.3).

In case of a potential unforeseen event, the City or County will immediately notify the Service staff who have functioned as the principal contacts for implementing this IPHCP. In determining whether such an event constitutes an unforeseen circumstance, the Service must 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.

The City and County will receive regulatory assurances (No Surprises) for the Mount Hermon June beetle and Ben Lomond spineflower. In accordance with the No Surprises Rule, the City and County will be responsible for implementing remedial measures in response to any changed circumstances as described in this chapter, but they will not be responsible for addressing unforeseen circumstances.

If the Service, City, and County collectively agree that additional conservation and mitigation measures are necessary to respond to the unforeseen circumstances additional minimization or mitigation measures may be required for Covered Activities. However, once an application for a Covered Activity has been approved by the City or County, and all applicable parties have signed a Certificate of Inclusion for that activity, the mitigation requirements that apply to the Covered Activity that is the subject of the Certificate of Inclusion will not be changed by the City, the County, or the Service.
Chapter 8: Permit Amendment and Duration

The process for amending the ITPs and the IPHCP is set forth in the Implementing Agreement (Appendix H). However, in general, the following changes will require an amendment to the ITPs and/or the IPHCP.

8.1 Major Amendments

Major amendments may require a reinitiation of the intra-Service section 7 consultation, changes to the NEPA document, changes to the Findings and Recommendations document, and public comment. Amendment of the ITPs and/or the IPHCP would be required for any of the following:

• significant revision to the boundary of any of the Project Units;

• the new listing under the Act of a species not currently addressed in this IPHCP and which is likely to be taken by Covered Activities;

• modification of any project action, mitigation, or minimization measure in the IPHCP that may significantly affect authorized take levels, effects to the Mount Hermon June beetle, or the nature or scope of the Operating Conservation Program; or

• any other modification of a project likely to result in significant adverse effects to the Mount Hermon June beetle not addressed in the IPHCP and permit application.

8.2 Minor Amendments

Under certain circumstances, the ITPs, the IPHCP, or the Implementing Agreement may be amended without reinitiating the intra-Service section 7 consultation, modifying the NEPA document, or soliciting additional public comment. Such “minor amendments” may be undertaken to correct typographical errors or to effect other minor changes that bear little impact on the Operating Conservation Program. The effect of minor amendments on the Mount Hermon June beetle or the Ben Lomond spineflower would not exceed that described in this IPHCP, and the level of take authorized under the ITPs would not be exceeded. Examples of minor amendments include: (1) routine administrative revisions or changes to the Operating Conservation Program; (2) minor revisions to monitoring or reporting protocols; and (3) minor revisions to the IPHCP plan area or boundaries.

To effect a minor amendment, the City or County must submit the following documents in writing to the Service:

1. A description of the proposed amendment;

2. An explanation of why the amendment is necessary or desirable; and
3. An explanation of why the effects of the proposed amendment are not believed to be substantially different from those described in the original IPHCP.

If the Service concurs with the proposed amendment, the Service would authorize the amendment in writing, which becomes effective upon the date of the Service’s written authorization.

### 8.3 Permit Duration

The ITPs will terminate automatically upon occurrence of any one of the following: 1) 5 years elapse from the date the ITPs are issued pursuant to this IPHCP; 2) the amount of Mount Hermon June beetle habitat that is impacted by Covered Activities reaches 139 acres; or 3) the regional HCP for the Sandhills is finalized.

The ITPs may be renewed, if necessary, without the issuance of a new permit. This can occur provided the permit is renewable, and that biological circumstances and other pertinent factors affecting the Mount Hermon June beetle and Ben Lomond spineflower within the Project Units are not substantially different than those described in this IPHCP. A minimum of 60 days prior to the expiration of the ITPs, the County and City must submit to the Service in writing the following documents:

1. A request to renew the ITPs, with reference to the original permit number;

2. Certification that all statements and information in the original IPHCP and permit application, together with any approved IPHCP amendments, are still true and correct, or inclusion of a list of changes;

3. A description of the take (i.e., the extent of habitat degradation or loss) that has occurred under the existing ITPs; and

4. A description of what portions of the project are still to be completed, if applicable, or what activities under the original ITPs the renewal is intended to cover.

### 8.4 Transfer of Certificates of Inclusion

In the event of a sale or transfer of ownership of a parcel within the boundaries of the IPHCP during the term of the signed Certificate of Inclusion, the new landowner may assume the rights and obligations under the Certificate of Inclusion. To do so, the landowner must submit a written request to the City or County, as appropriate, to reissue the Certificate of Inclusion for the new landowner’s signature. The City or County may then reissue the Certificate of Inclusion, provided the Covered Activity that is the subject of the Certificate is in compliance with the Certificate, the IPHCP, and the ITP.
Chapter 9: Alternatives Considered

Section 10(a)(2)(A)(iii) of the Act requires that alternatives to the taking of listed species be considered and the reasons why such alternatives are not implemented be included in the IPHCP. The alternatives are summarized below:

9.1 No Action Alternative

Under this alternative, landowners who own property supporting Mount Hermon June beetle habitat would need to individually apply for an incidental take permit so as not to be in violation of section 9 of the Act. As a result, many projects in areas containing Sandhills habitat may not be implemented or would be implemented only after the regional HCP is approved. Other projects would likely be implemented without minimization or mitigation measures because of a lack of information about the Mount Hermon June beetle or the requirements of the Act. If projects are not implemented, incidental take of the Mount Hermon June beetle associated with a proposed project would be avoided. However, overall impacts to the Mount Hermon June beetle would likely be greater in the absence of this IPHCP and associated ITPs because of the number of projects that would be conducted without minimization and mitigation measures.

Mount Hermon June beetle and Ben Lomond spineflower habitat in the Sandhills has been degraded or lost due to sand mining, urban development, recreational activities, introduction of invasive plant species, and suppression of natural disturbance regimes (e.g., fire). Numerous private landowners continue to propose projects on sites that are likely to be occupied by Mount Hermon June beetles and Ben Lomond spineflower. These areas are being developed as the human population increases, demand for land intensifies, and unmanaged Sandhills habitat degrades. Because very little of the natural habitat remains, it is imperative to help preserve and properly manage any remaining high quality Sandhills habitat. Therefore, the No Action Alternative is of lesser conservation value to the Mount Hermon June beetle and Ben Lomond spineflower than is the proposed IPHCP. The No Action Alternative would also result in a considerable economic burden on landowners because they would need to prepare individual HCPs in lieu of participation in the IPHCP to comply with the Act. Additionally, because many of the proposed projects are ministerial in nature (i.e., the projects are not subjected to discretionary review by the City or County), some landowners have received building permits and have been informed to contact the Service, but instead conduct their building activities without doing so. For all of these reasons, the No Action Alternative was rejected.

9.2 Reduced Project Alternative (Reduced Take)

Under this alternative, the total amount of development that would be covered under the plan would be 100 acres (instead of 139 acres), yet the maximum disturbance footprint would remain at 15,000 square feet per parcel. This would limit construction-related impacts to the Mount Hermon June beetle and Ben Lomond spineflower under the plan by reducing the loss of habitat for the species by 39 acres, or 1.5 percent of the remaining sandhills habitat, however a section 10(a)(1)(B) permit would still be needed. Although the Reduced Project Alternative would only cover 100 acres of impacts from development, this alternative would not substantially change the
amount of potential take of the covered species because landowners could still apply for their own ITP with the Service to develop their parcel. Rather, this Alternative unnecessarily reduces opportunities for landowners to participate in a streamlined approach to comply with the Act when developing their parcel. In addition, the benefits of reducing adverse impacts to the Mount Hermon June beetle and Ben Lomond spineflower, and reducing the degradation of the species’ habitat, would be outweighed by the corresponding reduction in compensatory mitigation. For these reasons, the Reduced Project Alternative was rejected.
Literature Cited


Arnold, R.A. 2001a. Monitoring report for the Mount Hermon June beetle at Hanson Aggregates’ Felton Quarry. Prepared for 1) Hanson Aggregates Mid-Pacific Region, Pleasanton, CA.; 2) U.S. Fish and Wildlife Service, Portland, Oregon, and Ventura, California; and 3) the County of Santa Cruz Planning Department, Santa Cruz, California. 33 pages.


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Davilla, W.B. 1990. Declaration regarding Santa Cruz Aggregates proposal to expand Quail Hollow Quarry. Submitted to the Board of Supervisors of Santa Cruz County. Executed on January 10, 1990.


Habitat Restoration Group. 1999. Habitat conservation plan for the federally endangered Mount Hermon June beetle and Zayante band-winged grasshopper on Hanson Aggregates’ Felton Plant, Santa Cruz, California. Prepared on behalf of Hanson Aggregates, Pleasanton, California.


Appendix A. Definition of Terms

Authorized Activities: See Covered Activities.

Building and Paving: The construction or alteration of any structure or part thereof including access to and construction of parking areas.

Certificate of Inclusion: A document signed by each landowner and the applicable local jurisdiction (i.e., the City or County) to obtain incidental take coverage and commit to compliance and mitigation according to the IPHCP (see appendix C).

City: Where used in this IPHCP, refers to the City of Scotts Valley.

County: Where used in this IPHCP, refers to the County of Santa Cruz.

Covered Activities: The project types and/or activities described in chapter 2 of this IPHCP that are likely to result in take of the Mount Hermon June beetle, and for which take authorization is provided under the associated incidental take permits.

Covered Species: The plant and wildlife species addressed in a habitat conservation plan. In the case of this IPHCP, the covered species are the Mount Hermon June beetle and Ben Lomond spineflower.

Critical Habitat: Specific areas in and/or outside the geographical area occupied by a species at the time it is listed pursuant to section 4 of the Federal Endangered Species Act, on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection.

Development Envelope: Any portion of a project site that will undergo the following activities: grading, land clearing, paving, construction or alteration of any structure or part thereof, including access to and construction of parking or staging areas, installation or repair of septic systems, installation of wells, tree and shrub removal, or the deposition of refuse or debris.

Eligible Development Projects: Projects that meet the eligibility criteria described in chapter 2.3 of this IPHCP.

Grading: Ground excavating, filling, leveling, smoothing, or any combination thereof.

Harm: In the definition of “take in the Federal Endangered Species Act, means an action which kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

Incidental Take: Any taking that is otherwise prohibited by the Federal Endangered Species Act, if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.
Incidental Take Permit: A permit issued by the U.S. Fish and Wildlife Service pursuant to section 10(a)(1)(B) of the Federal Endangered Species Act, which authorizes the incidental taking of federally listed endangered or threatened wildlife.

Land Clearing: The removal, by any method, of individual plants or vegetation down to duff or bare soil.

Mitigation: Actions that reduce or address potential adverse effects of a proposed activity on species covered by an HCP.

Native Sandhills Plant Species: Plant species that occurred in the Sandhills before the Spanish colonization in the 1700s and is therefore presumed to be natural.

No Surprises Rule: As described in Federal regulation (69 Federal Register 71723), assurances provided by the government to non-Federal landowners that if "unforeseen circumstances" arise, the Service would not require the commitment of additional land, water, or financial compensation or additional restrictions on the use of land, water, or other natural resources beyond the level otherwise agreed to in an HCP without the consent of the landowner.

Project Unit: Any of the 10 geographic areas identified in this IPHCP (described in chapter 2 and shown in appendix B), within which Covered Activities may be conducted with the benefit of authorization under the Incidental Take Permits issued pursuant to this IPHCP.

Recovery: The use of all methods and procedures necessary to bring an endangered or threatened species to the point where measures provided by the Endangered Species Act are no longer necessary.

Sandhills Habitat: Unique communities of plant and animal species found on Zayante soils in Santa Cruz County.

Take: As defined in the Federal Endangered Species Act, to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.


Zayante Soils: Soils derived from weathering of the Santa Margarita formation sandstone in Santa Cruz County, California. Zayante soils are coarse textured, sandy soils, which support the Sandhills ecosystem near the city of Scotts Valley and the communities of Ben Lomond, Mount Hermon, Felton, Olympia, Corralitos, and Bonny Doon.
Appendix B: Project Units for the IPHCP

Figure B-1. Rollingwoods Unit, IPHCP, Santa Cruz County, California
Figure B-2. Whispering Pines Unit, IPHCP, Santa Cruz County, California
Figure B-3. Scotts Valley West Unit, IPHCP, Santa Cruz County, California
Figure B-4. Scotts Valley East Unit, IPHCP, Santa Cruz County, California
Figure B-5. Green Valley Unit, IPHCP, Santa Cruz County, California
Figure B-6. Mount Hermon Unit, IPHCP, Santa Cruz County, California
Figure B-7. Zayante Road North Unit, IPHCP, Santa Cruz County, California
Figure B-8. Zayante Road South Unit, IPHCP, Santa Cruz County, California
Figure B-9. Ben Lomond South Unit, IPHCP, Santa Cruz County, California
Figure B-10. Ben Lomond North Unit, IPHCP, Santa Cruz County, California
Appendix C. Certificate of Inclusion to Participate in the IPHCP

The United States Fish and Wildlife Service (Service) has issued incidental take permits (Permits) pursuant to the Federal Endangered Species Act authorizing take (50 Code of Federal Regulations 17.3) of the Mount Hermon June beetle in accordance with the terms and conditions of the Permits, the Sandhills Interim-Programmatic Habitat Conservation Plan (IPHCP), and the associated Implementing Agreement. Under the Permits, certain activities by [FILL IN PARTY OR ENTITY] are authorized to take the Mount Hermon June beetle, provided all applicable terms and conditions of the Permits, the IPHCP, and the associated Implementing Agreement are met.

As the owner/operator of the property depicted on Exhibit "1," attached hereto and incorporated herein by this reference, you are entitled to the protection of the [FILL IN CITY OF SCOTTS VALLEY OR COUNTY OF SANTA CRUZ] for the proposed activities as set forth in Exhibit "2," with respect to any take of the Mount Hermon June beetle as identified in the IPHCP. In the event that you use the property depicted on Exhibit "1" for other purposes without the express written consent of the Service, take authorization under the Permits will automatically cease. Such authorization is provided as described in the Permits, the IPHCP, and the Implementing Agreement. By signing this Certificate of Inclusion, you signify your election to receive Take Authorization under the [FILL IN CITY OF SCOTTS VALLEY OR COUNTY OF SANTA CRUZ] Permit in accordance with the terms and conditions thereof. This Certificate of Inclusion does not give Federal agencies additional regulatory control over the signatory nor require the signatory to provide additional information not called for in the Certificate of Inclusion, but instead ensures compliance with 50 Code of Federal Regulations, section 13.25(d). Coverage under the Permit will become effective upon receipt of the executed Certificate of Inclusion by the [FILL IN CITY OF SCOTTS VALLEY OR COUNTY OF SANTA CRUZ]. In the event that the subject property is sold or leased, the buyer or lessee must be informed of these provisions and execute a new Certificate of Inclusion.

Name ___________________________________________ Signature _______________________________

Address _____________________________________________

Phone _____________________________________________

City or County Representative _____________________________________________

C-1
Appendix D. Sandhills IPHCP Eligibility Checklist

Directions: The following Sandhills IPHCP Eligibility Checklist is intended for use by each landowner/applicant to provide the U.S. Fish and Wildlife Service the information needed to ensure their proposed project is eligible to participate in the IPHCP. Please fill in all sections, attach photographs of the project area, and submit with the application package. Submit completed checklist to: (1) County of Santa Cruz Planning Department, 701 Ocean Street, 4th Floor, Santa Cruz, California 95060; or (2) City of Scotts Valley Building Department, 1 Civic Center Drive, Scotts Valley, California 95066

Applicant Name: ___________________________ Date: ___________________________
Address: ___________________________________ APN: ___________________________
Name of IPHCP Project Unit the Parcel lies within: ________________________________

Type of Project Proposed. Circle the type(s) of proposed development.

- Single Family Dwelling
- Guest Cottage
- Room Addition
- Detached Garage
- Attached Garage
- Remodel
- Deck (ground-level or elevated)
- Patio
- Retaining Wall
- Swimming Pool
- Spa/Hot Tub
- Fence
- Sidewalk
- Driveway
- Other Impervious Surface
- Utility Installation (gas, electric, cable, water, septic, sewage)
- Other ______________

IPHCP Eligibility Criteria. Check the appropriate box for each eligibility requirement. Provide an attachment with detailed explanations for any “no” answers.

- YES NO Is the proposed project parcel zoned residential?
- YES NO Would the proposed project result in ground disturbance? (grading, excavation, fill, land clearing, building, paving)
- YES NO Is the proposed project located on a parcel that is 1.5 acres or less in size?
- YES NO Will the total development envelope for the proposed project be less than 15,000 square feet (0.34 acre) on a single parcel?

Total amount of area expected to be disturbed as a result of the proposed project: _____ square feet

Note: This should include the construction area, as well as areas that will be disturbed as a result of the construction, including ground around the project, storage of building or paving materials, access areas for heavy equipment, and landscaping associated with development)
Appendix E. Sandhills IPHCP Compliance Monitoring Report

Directions: The following Sandhills Compliance Monitoring Report is intended for use by the County of Santa Cruz and City of Scotts Valley to comply with the annual monitoring report requirements of the IPHCP. The appropriate local jurisdiction is to fill in all sections and attach photographs of the project/habitat area.

Applicant Name: ___________________________ Date: __________________
Address: _______________________________________
APN: __________________ Incidental Take Permit Number: __________________

Background Information

Project description:
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________

Construction Activities

List the ground-disturbing activities that were conducted on the parcel during this year:
_________________________________________________________________________
_________________________________________________________________________

Total amount of area to be disturbed as a result of the proposed project: __________ square feet. Total amount of area disturbed this year: ____________ square feet.

On-Site Habitat Conditions

Briefly describe the conditions on the parcel, including whether or not natural habitat conditions have been and will be maintained on the parcel.
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
IPHCP Minimization Measures

Check the appropriate answer (yes or no) for each minimization measure that was or was not implemented this past year. Provide detailed explanations for all “yes” answers.

__YES  __NO Were native plants destroyed, removed, crushed, or otherwise negatively impacted by project activities? If yes, please attach a description.

__YES  __NO Were ground-disturbing activities (e.g., vegetation clearing, grading, digging, etc.) conducted between May 15 and August 15 on the project site? If yes, please attach a description.

__YES  __NO Was turf grass, dense ground cover plants (e.g., ivy), weed matting, aggregate, or mulch installed on any portion of the project site? If yes, please attach a description.

IPHCP Mitigation

Please indicate how the property owner mitigated for project impacts:

Purchased credits in a conservation bank
  Name of bank:___________
  Number of conservation credits purchased___________

Recommendations

On an attachment, please outline any recommendations that may solve existing or anticipated problems with regard to project permitting or implementation in the Sandhills.

Note: Attach photographs documenting the conditions within and surrounding the project area.

Printed Name of Individual Completing Report

________________________________________
Signature
Appendix F. Native Sandhills Plant Species


<table>
<thead>
<tr>
<th>Genus</th>
<th>Species</th>
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### Appendix F. Native Sandhills Plant Species

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### Appendix F. Native Sandhills Plant Species

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<th>Jepson Page</th>
<th>Description</th>
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**Key**

- **Life Form:** G=Grass; H=Herb; S=Shrub; T=Tree
- **Jepson Page:** Page number in The Jepson Manual (Hickman 1993) on which a detailed description of the subject plant species can be found.
APPENDIX G

IMPLEMENTING AGREEMENT

<<To be inserted when complete>>