Final

Low- Effect Habitat Conservation Plan for the Bay Checkerspot Butterfly, Santa Clara Valley Dudleya, and Serpentine Grassland

Calero Lakes Estates
22599 Country View Lane
(APN 708-47-022)

Santa Clara County, California

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EXECUTIVE SUMMARY

Hossain Ahmadi (Applicant or Landowner) has applied for a permit pursuant to section 10(a)(1)(B) of the Endangered Species Act of 1973 as amended (16 U.S.C. 153101544, 87 Stat. 884), from the U.S. Fish & Wildlife Service (Service) for the incidental take of the threatened Bay checkerspot butterfly (*Euphydryas editha bayensis*), threatened California red-legged frog (*Rana aurora draytonii)* (CRLF), threatened California tiger salamander (*Ambystoma californiense)* (CTS) and impacts on serpentine grassland habitats in which the endangered Santa Clara Valley dudleya (*Dudleya setchellii*) (SCD) and the most beautiful jewelflower ((*Streptanthus albidus* ssp. *peramoenus*) (MBJF). (collectively Covered Species). The potential taking would occur incidental to construction of a proposed single family residence and related utilities on a currently undeveloped 9.2 acre (ac) (3.72 hectares (ha)) site (APN 708-47-022) located at 22599 County View Lane, San Jose, California, and owned by the Applicant.

The proposed residential development area is approximately 0.70 ac (0.28 ha), which includes the footprint of the new single family residence, detached garage, residential landscaped area, underground water line, and driveway. This development is proposed at the crest of the property, within serpentine and non-serpentine grassland that provides habitat for the Bay checkerspot butterfly, California red-legged frog, California tiger salamander, and the Santa Clara Valley dudleya. Adult and larval Bay checkerspot butterflies were observed on the site in 1998 and Santa Clara Valley dudleya have been observed on the adjacent parcel. The proposed septic leach field area encompasses an additional area of approximately 0.63 ac (0.25 ha); this area of serpentine grassland will be permanently impacted during placement of the leach lines. A septic system will be installed between the house and the leach field area.

Therefore, the Applicant has applied for a Section 10(a)(1)(B) permit and proposed to implement the habitat conservation plan (HCP) described herein, which provides for measures for mitigating adverse effects on the Bay checkerspot butter fly for activities associated with the loss of 1.33 ac (0.54 ha) of serpentine and serpentine like grassland habitats necessary to construct the residence. The Applicant requests that the Section 10(a)(1)(B) permit be issued to cover a period of three years.

This HCP summarizes the project and identifies the responsibilities of Hossain Ahmadi, his successors and assigns, and the Service for implementing the actions described herein to benefit the BCB and other serpentine species. The biological goals of the HCP are to:

Goal 1: Permanently preserve on-site habitats for Bay checkerspot butterfly, California red-legged frog, California tiger salamander, Santa Clara Valley dudleya and most beautiful jewelflower.
Goal 2: Manage preserved lands to benefit all five covered species.
Goal 3: Implement actions that will protect all five covered species during residential construction activities.

This HCP describes measures that will be implemented to avoid, minimize and mitigate impacts of the residential project on the butterfly and plants and their habitats and to further the conservation of these species. These measures include:

a. Permanent protection of approximately 6.83 ac (2.76 ha) of the project site in a form of deed restriction, consisting of serpentine grassland;
b. Install protective fencing around perimeter of the protected serpentine grassland to prohibit unauthorized access to the habitat that supports the three special status species;
c. Support the protected serpentine grassland to maintain populations of the three special status species;
d. Undertake various measures during grading and construction activities of the residential development to avoid/minimize impacts to the three special status species and their habitats;
e. Control invasive, non-native annual and perennial grasses and weeds from the protected serpentine grassland area if they pose a threat to the persistence of the three special status species;
f. Implement habitat management actions within the protected serpentine grassland to facilitate germination and growth of dwarf plantain to benefit habitat for the bay checkerspot butterfly;
g. Prior to site development, transplant all available individuals of Santa Clara Valley dudleya from the residential development area to suitable areas of the protected serpentine management area to achieve an overall goal of 1:1 plant replacement;
h. Provide a post-construction monitoring report to the Service, describing all avoidance and minimization measures implemented and any recommended remedial actions; and,
i. Provide annual monitoring reports for a period of five (5) years to the Service, describing the status of mitigation measures outlined in the HCP and any recommended remedial actions.

The net effect of these measures is that the protected serpentine grassland will be protected and managed in perpetuity to benefit the Covered Species.

Approval of this low-effect HCP would not have adverse effects on unique geographic, historic, or cultural sites, involve unique or unknown environmental risks, or have significant adverse impacts on public health or safety.

The proposed single family residence does not require compliance with Executive Order 11988 (Floodplain Management), Executive Order 11990 (Protection of Wetlands), or the Fish and Wildlife Coordination Act, and it does not threaten to violate a Federal, State, local, or tribal law or requirement imposed for the protection of the environment. Finally, approval of the low-effect HCP for the proposed single family residence would not establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects.

1.0 INTRODUCTION AND BACKGROUND

This Low-effect Habitat Conservation Plan (HCP) for the proposed development of a single family residence and other planned improvements on a 9.2-acre property (APN 708-47-022) located in San Jose, California, has been prepared pursuant to the requirements of section 10(a) of the Federal Endangered Species Act (ESA). The HCP is intended to provide the basis for issuance of a section 10(a)(1)(B) permit to Hossain Ahmadi, the permit applicant, to authorize incidental take of the threatened Bay checkerspot butterfly (BCB), threatened California red-legged frog (CRLF), threatened California tiger salamander (CTS) and impacts on serpentine grassland habitats in which the endangered Santa Clara Valley dudleya (SCD) and the most beautiful jewelflower (MBJF) (collectively Covered Species) occur. The Applicant requests a permit for a period of three years commencing on the date of permit approval.

This HCP provides an assessment of the existing BCB, CRLF, CTS, SCD, MBJF, and serpentine grassland habitat at the proposed residential site, evaluates the effects of the proposed project on the BCB, CRLF, CTS, SCD, MBJF, and serpentine grasslands, and presents a mitigation plan to offset habitat losses and/or direct harm to these species that could result from grading and construction activities at the project site. The biological goal of this HCP is to mitigate for the affected BCB, CRLF, CTS, SCD, MBJF, and serpentine grasslands by permanently protecting 6.83 ac (2.76 ha) of serpentine grassland habitat. The mitigation will be achieved through placement of a deed restriction or conservation easement on 6.83 ac (2.76 ha) and preparation and implementation of a Service approved habitat management plan.

1.1 PROJECT LOCATION

The property is located at 22599 Country View Lane within an unincorporated portion of Santa Clara County. The site is located within a primarily undeveloped 270 ac (109.27 ha) subdivision known as Calero Lakes Estates, located off McKean Road in the southern portion of the county (Figure 1). The 270 ac site has been subdivided into 27 approximately 10 ac (4.05 ha) parcels and the proposed project is located on Lot 23 (Harvey 1998). The property consists of one parcel located within the Santa Teresa Hills 7.5" U.S. Geological Survey (USGS) topographic quadrangle, in Township 8 S., Range 2 E., Mt. Diablo Base Meridian. No section numbers are identified in this portion of the topographic quadrangle map.

The current development proposal for the property has evolved based on previous environmental studies conducted for the site and informal discussions between Mr. Ahmadi and the Service. Due to the presence of the BCB along the slopes of the property, the proposed residential area and driveway are confined to the ridge top of the property. SCD and MBJF have been documented in patches throughout the site and measures to salvage and transplant individuals from the impact area to protected portions of the property are proposed. The proposed project is within CRLF and CTS modeled upland and dispersal habitat as identified in the Santa Clara Valley HCP/NCCP (ICFJSA 2008).

The existing resources on the site, based on previous surveys, are depicted on Figure 2. The proposed site development plan, depicting both impact and preservation areas, is presented on Figure 3.

1.2 PROJECT SITE CHARACERTISTICS

The proposed single family residence is located north of Calero Lake and south of the Santa Teresa County Park in the foothills of the Santa Cruz Mountains. The project site is primarily comprised of grassland communities including a mixture of native and non-native species. A few coast live oaks (Quercus agrifolia) are also located on site. The site is currently unoccupied, but was historically used for livestock grazing, which ceased in the mid to late 1990s. Most recently the site has experienced vandalism including dumping of trash, removal of stone from rocky outcrops, off road vehicle use, and one instance of fire resulting from vandalism of an abandoned vehicle.

1.3 ZONING AND SURROUNDING LAND USES

Existing surrounding land uses include rural single family homes to the south and undeveloped private and County-owned open space/parklands to the north.

The parcel is zoned Hillside (HS) in the Santa Clara County Zoning Ordinance (2008), which allows low-density residential, agriculture and grazing. According to the Santa Clara County Zoning Ordinance (2008), the Hillside district is to preserve mountainous areas unplanned or unsuited for urban development primarily in open space. In addition, the designation promotes uses that support and enhance a rural character, protect and promote wise use of natural resources, and avoid risks from natural hazards found in these areas. These lands are watersheds may also provide such important resources as minerals, forests, rare or locally unique plant and animal communities, historic and archeological sites, scenic beauty, grazing lands, and recreational areas. The designation also defines the setting or view shed for the urban portion of the county.
The proposed development is consistent with the zoning designation.

2.0 REGULATORY FRAMEWORK

2.1. FEDERAL REGULATIONS

2.1.1. FEDERAL ENDANGERED SPECIES ACT

The Endangered Species Act of 1973 (ESA), 15 United States Code (U.S.C.) Section 1531 et seq., provides for the protection and conservation of various species of fish, wildlife, and plants that have been federally listed as threatened or endangered. Section 9 of the ESA prohibits the "take" of any fish or wildlife species that is listed as endangered under the ESA unless such take is otherwise specifically authorized pursuant to either section 7 or section 10(a)(l)(B) of the Act. Pursuant to the implementing regulations of the ESA, the take of fish or wildlife species listed as threatened is also prohibited unless otherwise authorized by the Service.

“Take” is defined in the ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Federal regulations (50 CFR 17.3) further defines the term "harm" in the “take” definition as “any act that kills or injures the species, including significant habitat modification where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering” (50 CFR 17.3). This can include significant habitat modification or degradation. Activities otherwise prohibited under ESA section 9 and subject to the civil and criminal enforcement provisions under ESA section 11 may be authorized under ESA section 7 for actions by federal agencies and under ESA section 10 for non-federal entities.

Section 10(a) of the ESA establishes a process for obtaining an "incidental take permit," that authorizes non-federal entities to take federally listed wildlife or fish incidental to an otherwise legal activity and subject to certain conditions. “Incidental take” is defined by the ESA as “take of listed fish or wildlife species that results from , but is not the purpose of, carrying out an otherwise lawful activity conducted by a Federal agency or applicant” (50 CFR 402.02). Preparation of a conservation plan, generally referred to as a habitat conservation plan (HCP), is required for all section 10(a) permit applications. The Service and the National Marine Fisheries Service (NMFS) have joint authority under the ESA for administering the incidental take program.

Section 7 of the Endangered Species Act requires all federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any species listed under the ESA or result in the destruction or adverse modification of critical habitat. Issuance of an incidental take permit is an authorization for take by a federal agency; before it issues an incidental take permit, the Service must conduct an internal section 7 consultation on the proposed HCP. The internal consultation is conducted after an HCP has been developed by a non-federal entity, in this case Mr. Hossain Ahmadi, and submitted for formal processing and review to the Service.

Provisions of sections 7 and 10 of the ESA are similar, but section 7 requires consideration of several factors not explicitly required by section 10. Specifically, section 7 requires consideration of the indirect effects of a project, impacts on federally listed plants, and effects on critical habitat. At the conclusion of its internal consultation, the Service prepares a Biological Opinion that includes a determination as to whether or not the HCP will result in jeopardy to any listed species or adversely modify critical habitat.

During the HCP development phase, the project applicant prepares a plan that integrates the proposed project or activity with the protection of listed species. An HCP must include the following information:

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

The HCP development phase concludes and the permit-processing phase begins when a complete application package is submitted to the appropriate permit-issuing office of the Service. The complete application package for a low-effect HCP consists of:

- An HCP.
- A completed permit application.
- A $100 permit fee from the applicant.

Once the Service has received a complete HCP package they must publish a "Notice of Availability" of the draft HCP in the Federal Register for a 30 day public comment period; prepare a section 7 Intra-Service Biological Opinion; prepare a Set of Findings that evaluates the section 10(a)(1)(B) permit application in the context of permit issuance criteria (see below); and prepare an Environmental Action Statement, a brief document that serves as the Service's record of compliance with NEPA for categorically excluded actions (see below). An implementing agreement is not required for a low-effect HCP. A section 10 incidental take permit is granted upon determination by Service that all requirements for permit issuance have been met. Statutory criteria for issuance of the permit are as follows:

- The taking will be incidental.
- The impacts of incidental take will be minimized and mitigated to the maximum extent practicable.
- Adequate funding for the HCP and procedures to handle unforeseen circumstances will be provided.

- The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild.
- The applicant will provide additional measures that the Service requires as being necessary or appropriate.
- Service has received assurances, as may be required, that the HCP will be implemented.

During the post-issuance phase, the permittee and other responsible entities implement the HCP and the Service monitors the permittee's compliance with the HCP and the long-term progress and success of the HCP.

2.1.2 NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act of 1969, as amended (NEPA), requires that federal agencies analyze the environmental impacts of their proposed actions (i.e., issuance of an incidental take permit) and include public participation in the planning and implementation of their actions. Although Section 10 of the ESA and NEPA requirements overlap considerably, the scope of NEPA also considers the impacts of the proposed action on non-biological resources, such as water and air quality and cultural resources. Depending on the scope and impact of the HCP, NEPA compliance is obtained through one of three actions:

- Preparation of an Environmental Impact Statement (EIS) (generally for high-effect HCPs).
- Preparation of an Environmental Assessment (generally for moderate-effect HCPs).
- A categorical exclusion (allowed for low-effect HCPs).

The NEPA process helps Federal agencies make informed decisions with respect to the environmental consequences of their actions and ensures that measures to protect, restore, and enhance the environment are included, as necessary, as a component of their actions.

Low-effect HCPs, as defined in the Service's (1996) Habitat Conservation Planning Handbook, are categorically excluded under NEPA, as defined by the Department of Interior Manual 516DM2, Appendix 1, and Manual 516DM6, Appendix 1.

2.2. CALIFORNIA REGULATIONS

2.2.1 CALIFORNIA ENDENGERED SPECIES ACT

The California Endangered Species Act (CESA) prohibits take of wildlife and plants listed as threatened or endangered by the California Fish and Game Commission. “Take” as defined under the California Fish and Game Code is as any action or attempt to “hunt, pursue, catch, capture, or kill.” Like the ESA, CESA allows exceptions to the take

prohibition for take that occurs during otherwise lawful activities. The requirements of an application for incidental take under CESA are described in Section 2081 of the California Fish and Game Code. Incidental take of state-listed species may be authorized if an applicant submits an approved plan that minimizes and "fully mitigates" the impacts of this take.

2.2.2 CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.), is analogous at the state's equivalent to the federal NEPA. CEQA applies to projects that require approval by state and local public agencies. It requires that such agencies disclose a project's significant environmental effects and provide mitigation whenever feasible. This environmental law covers a broad range of environmental resources. With regard to wildlife and plants, those that are already listed by any state or federal governmental agency are presumed to be endangered for the purposes of CEQA and impacts to such species and their habitats may be considered significant.

3.0 PROJECT DESCRIPTION

3.1 PROJECT DESCRIPTION

The project is the development of a single family residence and related facilities on the undeveloped 9.2-acre parcel. The proposed development or permanent impact area of the project site (i.e., limits of grading) measures approximately 0.68 acres, which includes the driveway, footprint of the new single family residence, a detached garage, and all other planned improvements (underground utilities, 15-foot wide landscape area, and animal husbandry activities). The proposed project also includes a septic leach field area that encompasses approximately 0.63 acre. Figure 3 depicts the site plan for this development. Table 1 displays the existing, impacted, and protected habitat types.

Upon completion of the construction of the residence the property owner proposes to implement a serpentine management plan. The management plan will be developed prior to completion of the proposed project and will be submitted to the Service for approval. The plan may include a grazing strategy utilizing cattle or goats. If goats are used there would be a maximum of 10 goats to browse/graze the undeveloped portions of the property, including the approximately 6.8-acre protected serpentine grassland. Normal animal husbandry activities, including corrals and supplemental feeding and stabling of the goats will be conducted within the designated development area. The goats will be allowed to periodically browse in the protected grassland for habitat management purposes. The management plan will also include a manure management plan, prior to retaining any domestic grazing/browsing animals on the property. The Management Plan will include an adaptive management component to allow for changes in grazing animals, density of grazers, or to include mechanical removal (such as hand removal, use of weed eaters, trimmers, etc.) of non-native vegetation.

3.2 PERMIT HOLDER/PERMIT BOUNDARIES

Mr. Hossain Ahmadi will hold the section 10(a)(1)(B) permit. The proposed project is located entirely within Lot 23 of the Calero Lake Estates subdivision located at 22599 Country View Lane, San Jose, California.

4.0 ENVIRONMENTAL SETTING/BIOLOGICAL RESOURCES

4.1 ENVIRONMENTAL SETTING

4.1.1 Climate

Climate in Santa Clara County is Mediterranean and is characterized by a hot summer dry season and cool wet winters. The average temperature ranges from 41^0F to 83^0F with record lows of 19^0F and highs of 109^0F. The average growing season is between 250 and 300 days. The rainy season typically begins in October and extends through April. Rainfall in the San Francisco Bay area can vary dramatically (Weiss et al. 1988) depending on several factors including topography. Some areas in Santa Clara County receive an average of 50 inches of rainfall per year while others (Santa Clara Valley) may only receive 13 to 14 inches. In addition, site specific characteristics such that result in those areas receiving less solar radiation (i.e., north/east facing slopes) stay moist longer than other areas (i.e., south/west facing slopes); these areas are also typically cooler. In the project area annual precipitation is 14 inches with the majority of rainfall occurring in January and February.

4.1.2 TOPOGRAPHY/GEOLOGY/SOILS

The 9.2-acre property is presently undeveloped and is characterized by a predominantly north-facing slope and level ridge top. Elevations at the site range from 640 feet to 800 feet NGVD (Ahmadi Site Plan, dated 2006). Slopes that range between 15% and 30% characterize much of the property. A previous biological survey prepared for the project found that the southern portion of the property supports Altamont clay, 30-50% slopes (ACF). The majority of the property however is mapped as Montara rocky clay loam, 15-30% slopes (MwF2); a small area in the northeast corner is mapped as Montara stony clay loam, 30 to 50% slopes, severely eroded (MxF3) (H.T. Harvey & Associates, 1998).

The Altamont soil series consists of well-drained, fine-textured soils underlain by calcareous sediments. These are non-serpentine soils. The Montara soil series are excessively drained, moderately fine-textured soils underlain by serpentine bedrock. The Montara soils, in general, are known to support numerous serpentine endemic plant and animal species throughout Santa Clara valley due to the soils high concentration of iron and manganese and low levels of calcium.

Within the San Francisco Bay Area, serpentine soils are known in the eight Bay Area counties (Alameda, Contra Costa, Main, Napa, San Francisco, San Mateo, Santa Clara, and Sonoma) (Jennings 1977). Bay Area serpentine soils are derived from intrusive igneous rocks associated with fault zones in sedimentary Franciscan formations. Serpentine soils that occur in the western Bay Area counties are associated with the San Andreas Fault, while those found in the east Bay counties are found within the Hayward Fault Zone (McCarten 1987).

Serpentine outcrops can be found south of the Bay in Santa Clara County; west of the Bay in the Edgewood Nature Preserve, near Crystal Springs Reservoir, Jasper Ridge

Preserve near Stanford University in San Mateo County, and at the Presidio in San Francisco County; east of the Bay in the Oakland Hills, Sunol Regional Wilderness, Cedar Mountain, and Man Ridge areas of Alameda County and at Mt. Diablo State Park in Contra Costa County; in the north Bay Area on the Tiburon Peninsula in eastern Main County; at Mt. Tamalpais, Carson Ridge, and near Nicasio Reservoir in western Main County; and in Sonoma and Napa Counties.

Serpentine soils are derived from weathered ultramafic rocks such as serpentinite, dunite, and peridotite and include soils from the Montara, Climara, Henneke, Hentine, and Obispo soil series; these soils are characterized as shallow, low nutrient (lacking in nitrogen, calcium, phosphorous, etc.); high concentrations of magnesium; low water-holding capacity; and patches of heavy metals (i.e., chromium, magnesium, and nickel). These characteristics create a refuge for many rare native plants, because other plant species are not capable of surviving in these soils (nitrogen is often a limiting factor in plant growth). Several nonserpentine soils have characteristics that allow them to support grassland communities similar to those on serpentine soils, such as low water-holding capacity, slight to moderate acidity (pH 5.8), and varied topography (slopes ranging from 5 to 75 percent) and include Inks, Candlestick, Los Gatos, Fagan, and the Barnabe soil series.

4.1.3 HYDROLOGY

The property encompasses a ridge top and primarily a north-facing slope. Drainage from the property is limited to rain-driven surface and subsurface runoff, with such runoff entering an unnamed intermittent drainage north of the property. Flows in this drainage flow into Arroyo Calero Creek, a perennial waterway that is a tributary to the Guadalupe River. Arroyo Calero Creek flows northward from Calero Reservoir; the reservoir is located approximately 1 mile south of the Ahmadi property, as depicted on Figure 1. The subject property is not subject to flooding.

4.1.4 EXISTING LAND USE AND HABITATS

The property is currently undeveloped. It has been historically used for cattle grazing; however, grazing ceased in the mid to late 1990's. Grassland dominates the landscape. Non-native grasslands occur along the southern edge of the property, inhabiting non-serpentine soils. The majority of the property supports serpentine grassland. While this grassland type historically was dominated by native perennial bunchgrasses, the community is now dominated by annual, non-native grass species, with small, widely scattered inclusions of native, perennial grass species. Previous reports for the property documented the presence of dense areas of dwarf plantain (*Plantago erecta)* on the north and northeast-facing slopes (H.T. Harvey & Associates, 1998).

Within the project area, the plantain grew more sparsely on the ridge top portion of the property. MBJF was documented from the lowermost slopes. Individuals of SCD were documented amid serpentine rock outcroppings throughout the site (H.T. Harvey & Associates, 1998).

During a limited field visit in February 2007, the grassland was observed to support annual, non-native grasses, including annual ryegrass (*Lolium multiflorum)*, soft chess (*Bromus hordeaceus)*,and rattail fescue (*Vulpia myuros).* Other plant species include sun cups (*Camissonia ovata)*, naked stemmed buckwheat (*Eriogonum nudum*), soap plant (*Chlorogalum pomeridianum),* California poppy (*Eschscholtzia californica)* and wild rye (*Elymus sp).*

Approximately 7.5 acres of serpentine grassland occur on the 9.2-acre parcel, as depicted on Figure 2; additional serpentine grassland occurs on the adjacent parcels to the east and north. Small serpentine rock outcrops occur amid the grassland on the property. SCD were documented around many of these outcrops and on thin-soil areas between outcroppings (H.T. Harvey & Associates, 1998); these occurrences are depicted on Figure 2. A few shrubs also occur in the grassland of the property.

Grasslands provide an important foraging resource for a wide variety of wildlife species. The grasses and forbs produce an abundance of seeds and attract numerous insects, providing food for granivorous and insectivorous wildlife. Sparrows, rabbits and rodents are commonly found in this habitat. Consequently, grasslands are valuable foraging sites for raptors such as hawks and owls, and other predators including coyote, fox, skunk and snakes. Species that forage aerially over grasslands include bats and swallows.

Common wildlife species that are expected to utilize grassland habitat on this property, include: western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis melanoleucus*), turkey vulture (*Cathartes aura*), red-tailed hawk *(Buteo jamaicensis)*, western bluebird (*Sialia mexicana*), house finch *(Carpodacus mexicanus)*, cliff swallow *(Hirundo pyrrhonota)*, California ground squirrel *(Spermophilus beecheyi)*, California meadow vole (*Microtus californicus*), and Botta's pocket gopher (*Thomomys bottae*). Special status wildlife species that occur in the serpentine grassland include BCB. The BCB is found in the grassland habitat, primarily on north and east facing slopes supporting dwarf plantain, as documented by H.T. Harvey & Associates in 1998.

4.2 COVERED SPECIES

4.2.1 BAY CHECKERSPOY BUTTERFLY

The BCB was Federally listed as a threatened species in 1987 (USFish & Wildlife Service 2007). The BCB inhabits grasslands with soils derived from serpentine ultramafic rock or similar non-serpentine soils. Historical records indicate the BCB formerly occurred around the San Francisco Bay, west of the Bay from Twin Peaks and San Bruno Mountain, east of the Bay in Contra Costa County, south to Santa Clara County. Currently the species range is much reduced and the BCB occurs in open grassland habitats of the San Francisco Bay in Santa Clara and San Mateo counties. The only remaining core population is along the eastern ridge line of Santa Clara Valley referred to as Coyote Ridge (in the past it has been called

The adult butterflies typically emerge from the chrysalis in early spring (typically between March and April, but may emerge as early as mid February or as late as May). During their brief adult stage of about two weeks, they feed on nectar, mate, and the females lay eggs during a flight season that lasts from 4 to 6 weeks generally starting in March and ending in early May. Adults feed on nectar from the flowers of a variety of plants including tidy tips (*Layia platyglossa*), California goldfields (*Lasthenia californica*), sea muilla (*Muilla maritima*), scytheleaf onion (*Allium falcifolium*), false babystars (*Linanthus androsaceus*), intermediate fiddleneck (*Amsinckia intermedia*) and desert parsley (*Lomatium* spp.). Eggs are usually laid in March and April at the base of their larval host plants. In 10-14 days, the caterpillars hatch from the eggs and begin feeding on their primary host plant dwaft plantain (*Plantago erecta*) or on a secondary host plant purple owl's-clover (*Castilleja densiflora*) or exserted paintbrush (*Castilleja exserta*). The need for a secondary host plant is related to the timing of senescence of the primary host plant. In many years, the primary host plant dries up before larvae have reached their fourth instar (larval development stage/molt) and entered diapause (period of dormancy). Because purple owl's-clover and exserted paintbrush tend to senesce later than the plantain, larvae that switch to these plants may extend their feeding season long enough to reach their fourth instar. Larvae feed for approximately 10 to 14 days until they reach their fourth instar and enter a dormant phase called "diapause" until winter rainfall moistens the soil and the larvae's host plants germinate. The caterpillars then break diapause and become active again, feeding until approximately 2.5 inches long. The caterpillars then pupate in a chrysalis for two weeks, before once again emerging as adults (USFWS 1998).

Adult BCB butterflies and larvae were confirmed on the subject property in 1998 (H.T. Harvey & Associates, 1998). At that time, only the dwarf plantain on the north-facing slopes were deemed usable for the BCB (i.e., dense plants). The gaps in dwarf plantain growth on the west, south and level portions of the property were deemed too great for butterfly utilization (H.T. Harvey & Associates, 1998). However, adult BCB use a variety of nectar plants, which occur throughout the project area, therefore the entire site maybe utilized by the BCB. In addition, year to year variation in the density and distribution of both the primary and the secondary host plants indicates that a single botanical survey may not adequately reflect the distribution of the larval host plants in another year nor the distribution of the BCB. Further, because the BCB is characterized as having a metapopulation dynamic, its exact distribution varies through time and sites that are occupied one year may not be occupied the following year and visa versa. The proposed project will result in loss of 1.33 ac (0.54 ha) (0.70 ac + 0.63 ac) of grassland habitat.

The primary threats to this species are loss of habitat and deterioration of suitable habitat through site disturbances and invasion of non-native vegetation resulting from deposition of atmospheric nitrogen, which fertilizes the nutrient poor serpentine soils and allows non-native vegetation to outcompete native serpentine species. Critical habitat was designated for BCB in 2003. Critical habitat was revised in 2008. The Calero Lakes Lot 23 property is located within Unit 14 (USFWS, 2008). This unit is located north of Calero Reservoir, encompassing the subject project area, surrounding lands and lands

northward, including portions of Santa Teresa County Park. According to the Service, this geographical area is considered to provide satellite or secondary habitat for the BCB (*Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area,* USFWS, 1998). Satellite or secondary areas are generally smaller and contain less high-quality habitat than core areas, yet can be valuable for BCB dispersal and as habitat refuges if unforeseen events damage core habitat areas. Core areas, such as Coyote Ridge, are thought to provide the most important habitat for the survival of the species due to the large expanse of intact habitat and short flight distances between separated habitats. In terms of recovery strategies, the Santa Teresa Hills area has been identified as a potential core area, pending habitat management actions that would benefit the BCB. The area is also identified as an existing stepping stone (satellite) area considered essential to the recovery of the species (USFWS, 1998).

4.2.2 SANTA CLARA VALLEY DUDLEYA

The Santa Clara Valley dudleya was Federally listed as an endangered species in 1995 (USFWS 1995). SCD is limited to rocky outcrops within serpentine grasslands and oak woodlands between 300 and 900 feet in the greater Coyote Valley of Santa Clara County. The species was first described by Willis Jepson as *Cotyledon laxa* var *setchelliiin* (Jepson, 1901) from specimens collected in 1896 on or in the vicinity of Tulare Hill (CNDDB, 2008). According to the California Natural Diversity Database (2008) the species is currently known from 47 occurrences in and around the Santa Clara Valley.

The SCD is a low-growing perennial with characteristic fleshy, oblong-triangular leaves covered with a whitish to bluish waxy film. Flowering stalks arise from the root crown in mid to late spring, yielding clusters of pale yellow flowers. The roots are capable of extending into rock crevices, often reaching 6 inches long.

In 1998 H.T. Harvey & Associates surveyed all 27 lots within Calero Lake Estates for special status species. Approximately 322 individual SCD were observed on Lot 23 (H.T. Harvey & Associates, 1998), while the largest numbers of individual SCD (445) were observed outside of the proposed project area on adjacent Lot 24 (H.T. Harvey & Associates, 1998).

The primary threats to this species are loss of habitat by development and deterioration of suitable habitat through site disturbances, overgrazing, and encroachment by weedy, non-native plant species.

Recovery strategies for the species identify preservation of at least 14 populations in the center of the species range, which includes the Santa Teresa Hills area (USFWS, 1998).

4.2.3 MOST BEAUTIFUL JEWLFLOWER

The Most beautiful jewelflower is a Federal species of concern, but is not currently afforded any protection under the ESA. The MBJF was first described by Edward Greene in 1887 as *Streptanthus peramoenus* (Greene 1887). The MBJF is endemic to the

northern South Coast Ranges of Contra Costa, Alameda, and Santa Clara Counties (CNDDB, 2008; USFWS 1998). The subspecies is generally found in grasslands dominated by native perennial grasses or in non-native grasslands with relatively low cover between 360 to 3,280 feet in elevation. The subspecies is also found in rock outcrops or grassy openings in serpentine chaparral, transitional areas between serpentine grassland or chaparral and oak woodland; it has also been observed on road cuts through serpentine habitats.

The MBJF is an annual herb in the mustard family that grows 8 to 32 inches tall with fleshy and glaucous stems and leaves bristly hairs at the base. The flowers have lilac-lavender sepals and purplish petals (Hickman, 1993). The subspecies is distinguished from the federally endangered Metcalf Canyon jewelflower (*Streptanthus albidus* ssp. *albidus*) by the color of their sepals, which are greenish white with a purple-tinged base.

In 1998 H.T. Harvey & Associates surveyed all 27 lots within Calero Lake Estates for special status species. The MBJF was observed on approximately 1.31 ac (0.53 ha) of the proposed project (Lot 23) (H.T. Harvey & Associates, 1998). The same report also observed MBJF on 4.71 ac (1.91 ha) of adjacent Lot 22 and 1.30 ac (0.53 ha) of Lot 24.

The primary threats to this species are loss of habitat due to development, over grazing (although certain grazing regimes can significantly improve habitat conditions), and invasion of non-native vegetation. Some occurrences in Mt. Diablo State Park have been threatened due to illegal collection and off-trail hiking (USFWS 1998). Other threads include illegal trash dumping, off road vehicle use, and feral pigs.

4.2.4 CALIFORNIA RED-LEGGED FROG

The California red-legged frog was Federally listed as a threatened species in 1996. The red-legged frog is the largest native frog in the western United States (Wright and Wright 1949), ranging from 1.5 to 5.1 inches in length (Stebbins 1985). The abdomen and hind legs of adults are largely red; the back is characterized by small black flecks and larger irregular dark blotches with indistinct outlines on a brown, gray, olive, or reddish background color. Adult CRLF typically use dense, shrubby, or emergent riparian vegetation closely associated with deep (>0.7 meter or 2.3 feet), still, or slow-moving water (Hayes and Jennings 1988). However, frogs also have been found in ephemeral creeks and drainages and in ponds that may or may not have riparian vegetation.

Dispersal distances to and from breeding habitat are typically less than 0.5 mile, with a few individuals moving up to 1-2 miles (Fellers 2005). Movements are typically along riparian corridors, however dispersal from breeding habitats to riparian areas often requires the species to traverse across less desirable habitats such as open fields where grazing, farming or other high intensity management activities may be occurring (Fellers 2007). Dispersing frogs in northern Santa Cruz County traveled distances from 0.25 miles to more than 2 miles without apparent regard to topography, vegetation type, or riparian corridors (Bulger *et al*. 2003). During the non-breeding season, habitat includes nearly any area within 1-2 miles of a breeding site that stays moist and cool through the

summer (Fellers 2005). Sheltering habitat for red-legged frogs is potentially all aquatic, riparian, and upland areas within the range of the species and includes any landscape features that provide cover, such as existing animal burrows, boulders or rocks, organic debris such as downed trees or logs, and industrial debris. The nearest CRLF occurrence is located approximately 2 miles to the southwest. Historically the CRLF was known through out Santa Clara County and the proposed project is located within modeled CRLF dispersal habitat.

4.2.5 CALIFORNIA TIGER SALAMANDER

The California tiger salamander was Federally listed as a threatened species in 2004. The CTS is a large, stocky, terrestrial salamander with a broad, rounded snout. Adults may reach a total length of 8.2 inches (Petranka 1998; Stebbins 2003). The coloration of the tiger salamander is white or yellowish markings against black. Adults tend to have creamy yellow to white spotting on the sides with much less on the dorsal surface of the animal, whereas other tiger salamander species have brighter yellow spotting that is heaviest on the top of the animals.

Although larval CTS develop in vernal pools and ponds in which they were born, they are otherwise terrestrial salamanders that spend most of their postmetamorphic lives in widely dispersed underground retreats (Shaffer *et al*. 2004; Trenham *et a*l. 2001). Subadult and adult CTS spend the dry summer and fall months of the year in the burrows of small mammals, such as California ground squirrels (*Spermophilus beecheyi*) and Botta's pocket gopher (*Thomomys bottae*) (Storer 1925; Loredo and Van Vuren 1996; Petranka 1998; Trenham 1998a).

CTS are known to travel large distances from breeding ponds into upland habitats. Maximum distances moved are generally difficult to establish for any species, but CTS in Santa Barbara County have been recorded to disperse 1.3 miles from breeding ponds (Sweet 1998). The nearest known CTS occurrence is located approximately 1.47 miles to the southeast. The proposed project is located within modeled CTS upland habitat.

5.0 EFFECTS AND ENVIRONMENTAL COMPLIANCE

5.1 DIRECT AND INDIRECT EFFECTS

Table 1. Existing, Impacted and Preserved Habitat, Calero Lake Estates, Lot 23.

Habitat Type	Existing (acres)	Effects		Preserved and managed with deed restriction
		Residential development area	Septic leach area	
Non-serpentine grassland	1.7 acres	0	0	0.0
Serpentine grassland	7.5 acres	0.70 acre	0.63 acre	6.80
Total	**9.2 acres**	**0.70 acre**	**0.63 acre**	**6.8 acres**
Santa Clara Valley Dudleya	322 plants	4 patches/ind.	0	Approx 322 plants (incl. salvage and transplant from impact area)
Most beautiful Jewelflower	1.31 acre	None	None	1.31 acre

P.S. The existing road going through the sloped area will be closed and will return to serpentine grassland.

Direct and indirect effects to BCB, CRLF, CTS, SCD, and MBJF are expected on the entire 9.2 ac site as a result of both construction and operation/maintenance of the single family residence as well as the management of the conservation area. Implementation of the HCP will minimize and mitigate these effects by permanently protecting and managing 6.8 ac (2.75 ha) of serpentine grassland as well as restoration of approximately 0.14 ac (0.06 ha) associated with the removal of the existing road. Implementation of the HCP is also expected to improve habitat quality by eliminating illegal trash dumping, off road vehicle use, and removal of serpentine rock for landscaping.

5.1.2 RESIDENTIAL CONSTRUCTION PERIOD

The proposed project will result in direct effects to 0.70 ac (0.28 ha) of BCB, CRLF, CTS, SCD, and MBJF grassland habitat resulting from construction of the single family home and its associated features, including the house, garage, underground utilities, and animal husbandry activities (corrals, feeding, and stabling areas). The proposed project will also result in direct and indirect effects to 0.63 ac (0.25 ha) of BCB, CRLF, CTS, SCD, and MBJF grassland habitat resulting from construction and operation of the proposed septic system including the leach field. The septic system and leach field is expected to remain moist throughout the summer months and will likely introduce a variety of chemicals including nutrients (phosphorous, nitrogen, etc) into an otherwise dry and nutrient poor environment; this will likely result in changes to the vegetative communities in the vicinity

of the leach field as well as down slope. Measures will be implemented to ensure that initial grading activities, construction equipment, vehicles, materials storage or construction activity will not occur during the BCB adult flight season (to minimize take of BCB.) Measures will also be implemented during the residential construction period (see section 4 below) to ensure that effects from construction activities are minimized. Direct effects to SCD are also expected as a result of salvage of plants from within construction areas

The residential development project will remove 4 patches/individuals of SCD that occur within the limits of grading and construction. These plants will be salvaged and transplanted into suitable areas of the approximately 6.8-acre protected serpentine grassland.

5.1.3 RESIDENTIAL USES AND MANAGEMENT OF PROTECTED SERPENTINE GRASSLAND

Direct and indirect effects to 6.8 ac (2.75 ha) of BCB, CRLF, CTS, SCD, and MBJF will occur as a result of management of the proposed conservation area. Direct effects could occur as a result of construction of fencing and introduction of grazing animals. Fence construction could result in crushing and killing larval BCB and individual SCD and MBJF plants and uncover CRLF and CTS. Grazing animals may step on and crush larval BCB or consume host plants and SCD. Indirect effect may occur as a result of manure from grazing animals. Grazing animals are known to transport seeds from nonnative vegetation in manure as well as increasing existing nutrient levels in the soils where animals are kept. These effects will be minimized by controlling the timing and duration of browsing/grazing, controlling the timing and techniques for weed control, limiting pesticide applications, and installing browse protection around SCD colonies/outcrops. Effects from family recreation will also be minimized by limiting the type of recreational uses allowed within the preserved lands to only private hikes by the family members.

5.1.4 EFFECTS ON CRITICAL HABITAT

Critical habitat for the BCB was revised in August 2008 (Service 2008). The proposed project is located within Critical Habitat Unit 7 (Santa Teresa Hills Unit). This critical habitat designation includes serpentine and serpentine-like grasslands totaling 3,278 ac (1,327 ha). The proposed construction of a single family home will result in the loss of 0.70 ac (0.28 ha) of critical habitat. In addition, 0.63 ac (0.25 ha) of critical habitat will be degraded due to the proposed septic leach field. The proposed project will result in the loss of a total of 1.33 ac (0.53 ha) or 0.0004 percent of Bay checkerspot butterfly Critical Habitat Unit 7. No critical habitat has been established for SCD. The proposed project is not located within critical habitat for the CRLF or CTS.

5.2 CUMULATIVE EFFECTS

Cumulative effects result from the proposed actions' incremental impact when viewed together with past, present, and reasonably foreseeable future actions. Cumulative effects/impacts are defined differently under the ESA and National Environmental Policy

Act. HCPs do not require a discussion of cumulative effects as analyzed under NEPA. However, the HCP handbook recommends that cumulative effects be addressed in the HCP. Therefore, this Plan addresses the cumulative effects of state or private activities that could result from individual non-federal actions that take place over time. Cumulative effects of projects with a federal nexus will be analyzed separately under the ESA and will not be addressed in this Plan in accordance with regulatory guidelines.

Cumulative effects on BCB, CRLF, CTS, SCD, and MBJF will arise from ongoing and future conversion of suitable serpentine grassland habitat resulting from urban and rural development within Santa Clara County. Most future urban and rural development is expected to be covered under the Santa Clara Valley HCP/NCCP (SCVHCP). The remaining undeveloped lots surrounding the proposed project fall within the boundaries of the SCVHCP; however, the SCVHCP is not expected to be permitted until early 2010. As such, some of the parcels surrounding the proposed project may be developed with single family residences (one house per 10 acres) prior to completion of the SCVHCP.

Land use practices surrounding the Calero Lake Estates are expected to continue to be primarily ranching and grazing. Grazing may facilitate the movement of exotic and/or invasive species, which may out compete larval and adult food plants of BCB. Additionally, exotic/invasive species can serve as a vector for pathogens. The continued spread and increased density of exotic/invasive species that compete for resources degrade or eliminate habitat, and increase the occurrence of disease is an ongoing and significant threat to the BCB, CRLF, CTS, SCD, and MBJF. However, grazing is currently the most effective means used to control exotic and invasive plant species in serpentine grasslands. The enrichment of these soils with nitrogen has allowed nonnative grasses to invade these traditionally nutrient poor habitats, and the result is a thick mat of standing vegetation (thatch). Dense thatch has been reported to inhibit the growth of native forbs. Enrichment of nutrient poor serpentine grasslands as a result of nitrogen deposition, primarily caused by air pollution, is an ongoing threat to the BCB, SCD, and MBJF. As part of this HCP, a management Plan will be developed and implemented to reduce the effect non-native vegetation is having on all three covered species.

Another threat to listed butterflies is their illegal collection for commercial and personal purposes. Adult specimens of these species are highly valued by private collectors, and an international market exists for illegally collected specimens, as well as other listed and rare butterflies. Butterflies in small populations are vulnerable to harm from collection of adult butterflies. A population may be reduced to below sustainable numbers (Allee effect) by removal of females, reducing the probability that new colonies will be founded. The protection of 6.8 ac as part of the proposed project is expected to reduce the likelihood of illegal collection.

5.3 TAKE OF THE COVERED SPECIES

An unknown number of CRLF, CTS, and diapausing BCB larvae may be killed or injured by construction of the single family home and installation of the septic system. Larvae may also be killed or injured as a result of foot traffic associated with construction and

ongoing occupancy within the action area. SCD may be damaged or killed by construction of the single family home and salvage of individual SCD. Because the precise number of BCB, CRLF, CTS, SCD, and MBJF occurring in the project area is unknown, estimates of habitat acreage affected by the proposed project have been used to assess the extent of take of these species. However, because the total acreage of take is relatively small compared to the total habitat acreage available for the butterfly within the action area as well as within Critical Habitat Unit 7, which include Santa Teresa County Park, the impacts of this take is expected to result in a small overall population effect. Take is expected to occur to all individuals of BCB, CRLF, and CTS, within 1.33 ac (0.52 ha). Take is expected to be in the form of harm, harassment, and mortality to BCB, CRLF, and CTS and in the form of habitat loss and modification, construction-related disturbance, relocation, increased predation, and by ongoing occupancy of the single family residence. Take is also expected to occur to all individuals of BCB, CRLF, and CTS within the 6.8 ac (2.75 ha) preserve as a result of management actions. Take is expected to be in the form of harm, harassment, and mortality to BCB, CRLF, and CTS.

In addition to the BCB, CRLF, and CTS, this HCP and its associated Section 10(a)(1)(B) permit also includes one listed plant, the SCD and one unlisted plant, the MBJF. The take prohibition for federally listed plants under the ESA is more limited than for listed animals (Sections 7(b)(4) and 7(o)(2) of the ESA), and cannot be authorized under a Section 10(a)(1)(B) permit. The SCD and MBJF are proposed to be included on the incidental take permit in recognition of the conservation benefits provided for it under the HCP. Assurances provided under the No Surprises Rule at 50 CFR 17.3, 17.22(b)(5), and 17.32(b)(5) extend to all species named on the incidental take permit.

6.0 MEASURES TO AVOID, MINIMIZE AND MITIGATE IMPACTS

The following measures have been identified to avoid, minimize, and mitigate impacts to BCB, CRLF, CTS, SCD, and MBJF. The successful implementation of these measures conducted prior to, concurrent with, and following residential development, will enable the project to achieve its overall biological goal of the protection and management of serpentine grasslands for the benefit of the Covered Species.

This section identifies the specific actions to be implemented to avoid adverse impacts to BCB, CRLF, CTS, SCD, and MBJF during the residential construction period, residential land uses, and habitat management activities.

6.1 MINIMIZATION MEASURES DURING CONSTRUCTION

The following minimization measures will be implemented during the residential construction-related activities within the 0.70-acre residential development area and 0.63-acre septic leach field area.

6.1.1 CONSTRUCTION CONSULTANT

A qualified biologist knowledgeable about the BCB, CRLF, CTS, SCD, and MBJF and their habitats, and approved by the Service, shall be consulted for all grading and excavation activities (i.e., clearing of vegetation, stripping of the surface soil layer, trenching for septic leach lines). The owner shall implement the consultant's recommendations including the installation of temporary construction-limit fencing prior to clearing of vegetation, and shall implement the consultant's recommendations during the grading period to ensure compliance with the minimization measures provided in this HCP. The owner will keep the consultant throughout the construction period to insure that impacts to the project site are consistent with the project description of this HCP. The owner shall immediately stop any activity that is not in compliance with this HCP, and to order any reasonable measures to avoid impacts to BCB, CRLF, CTS, SCD, and MBJF. To the maximum extend practicable, construction will be limited to the period between July 1 and November 30, when BCB adults are inactive. If construction during this period is necessary the applicant will contact the Service to determine if any additional minimization measures are necessary.

6.1.2 DEMOLITION OF THE IMPACT AREA

Prior to the initiation of construction the landowner will install a temporary construction fence along the boundaries of the 0.70-acre residential development area and 0.63-acre septic leach field area. All heavy equipment, vehicles, and construction work will be confined to designated work areas.

6.1.3 CONSTRUCTION AND OPERATIONAL REQUIREMENTS

All project-related traffic, parking and equipment storage shall be confined to the 0.70-

acre residential impact area or existing paved roads in the adjacent neighborhood.

6.1.4 EMPLOYEE ORIENTATION

The qualified biologist shall conduct a training program for all persons who will work on-site prior to initiation of ground breaking activities. The purpose of the training will be to inform workers of the working limits and construction activity restrictions. The program will also include a brief presentation on the biology of the BCB, CRLF, CTS, SCD, and MBJF and the penalties for not complying with the terms of this HCP. The training will also include photos of the three species.

6.1.5 ACCESS TO PROJECT SITE

The landowner shall allow representatives from the Service access to the project site to monitor compliance with the terms and conditions of this HCP.

6.1.6 HABITAT PROTECTION DURING CONSTRUCTION

Prior to initial grading permanent fencing, including an access gate, will be erected around the perimeter of the protected serpentine grassland to protect this area from disturbance during residential construction. Signs will be placed on the fence at locations within 15 feet of the grading footprint, informing operators of the grading equipment of the presence of an endangered species. Signs will include the following language:

"NOTICE: SENSITIVE HABITAT AREA. GRADING PROHIBITED."

The owner is to provide reports to the County on a regular basis during the grading. Should any violation occur, a "stop work" order will be issued immediately and the "stop work" order will remain in effect until the issue is resolved. The Service will be notified within 24 hours of a violation.

Because of their proximity to occupied BCB habitat, construction will be scheduled to occur between July 1 and November 30, which is outside the adult flight season of the BCB. If construction during this period is necessary the applicant will contact the Service to determine if any additional minimization measures are necessary.

6.1.7 SALVAGE OF SANTA CLARA VALLEY DUDLEYA

Immediately prior to construction, all available SCD plants within the 0.70-acre residential development area and 0.63-acre septic leach field area will be excavated, using hand labor to dig up the plant, roots, and the surrounding soil. Efforts will be made to keep the rootball and soil intact. Each plant will be placed into a 1-gallon container and watered. Container plants will be watered and maintained in healthy condition until the onset of winter rains. At the beginning of the rainy season (typically the beginning of November), the salvaged plants will be transplanted into suitable areas within the designated 6.8-acre protected serpentine grassland. Standard planting techniques will be employed.

Installed transplants will be watered-in and flagged for purposes of monitoring plant growth and survival in the subsequent summer. All salvage and transplant work will be completed prior to the BCB adult flight season (typically March through May).

6.1.8 CONSTRUCTION GRADING

Although the impact area of the project site is fairly level, some grading for the new home and other amenities may occur. Grading and backfill operations will be conducted to avoid slope failures in neighboring, protected habitat areas of the property. A temporary construction-limit fence will be constructed around the perimeter of the 0.70-acre residential development area. A separate temporary construction-limit fence will be erected around the 0.63-acre septic leach field area. Heavy equipment will be restricted to areas within the construction-limit fencing. Equipment operators will be informed of the reasons for installation of the fencing and will be required to stop work and notify the inspector and engineer immediately should activities threaten to impact the protected grassland area on the property.

6.2 MITIGATION MEASURES

The intent of the mitigation program is to preserve and maintain native plant communities within the protected serpentine grassland that will be self-perpetuating and will continue to provide habitat for the BCB, SCD, and MBJF.

6.2.1 DEED RESTRICTION OR CONSERVATION EASEMENT

To offset impacts to serpentine grassland the BCB, CRLF, CTS, SCD, and MBJF at the project site, the landowner will place a deed restriction or conservation easement on the 6.8 ac preserved area. The deed restriction or conservation easement will be reviewed and approved by the Service. This protected area is depicted on Figure 3.

6.2.2 HABITAT PROTECTION,MANAGEMENT, AND MONITORING ACTIVITIES

In addition to establishing a deed restriction or conservation easement on the 6.8-acre serpentine grassland, the landowners, including all successors or assigns, will implement measures to insure that the 6.8-acre grassland is protected and managed to benefit the BCB, CRLF, CTS, SCD, and MBJF in perpetuity. The primary goal of the management is to permanently maintain and protect 6.8 acres of serpentine grassland habitat that will support the threatened BCB, threatened CRLF, threatened CTS, endangered SCD, as well as the MBJF. The habitat within the protected grassland supports the species, but the quality of the habitat can be improved to benefit all covered species. The Management Plan will include an adaptive management component to allow for changes in grazing animals, density of grazers, or to include mechanical removal (such as hand removal, use of weed eaters, trimmers, etc.) of non-native vegetation.

Best management plan actions have been developed that avoid/minimize impacts to the covered species and their habitat during implementation of the HCP.

The following Management Actions will be completed in Year 1:

1) Salvage and transplant available SCD plants from the residential development area and septic leach field area into the protected grassland area; census of SCD and MBJF within 6.8-acre serpentine grassland.
2) Preparation of a Management Plan, including measures for manure management and animal stabling/husbandry reviewed and approved by the Service.
3) Implementation of invasive, non-native plant control measures from the 6.8-acre serpentine grassland area.

The following Management Actions will occur during Years 2-pepetuity:

1) Install fencing (4-5 ft. tall), with a maintenance access gate, around the perimeter of the 6.8-acre protected serpentine grassland area.
2) Install four (4) signs along the boundaries of the 6.8-acre grassland area to inform area residents and others on the purpose of the management area and all use restrictions.
3) In years 2, 4, 6, and 8-5 conduct yearly site inspections of the 6.8-acre serpentine grassland to document any significant impact to habitats from unauthorized access/ trespass, condition of fencing, and inspections of any necessary repairs. If impacts from trespassing (e.g., motorbike riders, mountain bike riders, hikers) are documented, the landowner will post additional signs, fencing, or install other barriers (i.e., logs, brush) to discourage these unauthorized activities. At each yearly site visit, document the condition of the 6.8-acre protected serpentine grassland in photographs. Use the photographs to document changes in vegetation and other site conditions.
4) A minimum of once a year, remove any illegally dumped items and other inorganic debris from the 6.8-acre serpentine grassland.
5) Prohibit pesticide use (including all herbicides or rodenticides) within the 6.8-acre serpentine grassland and 0.58-acre septic leach field area, unless approved by the Service prior to use. Pesticide use within the 0.70 residential development area will be limited to topical applications (i.e., painting of plant parts) or other methods that avoid airborne drift and potential impacts to BCB.
6) Implement seasonal grazing program to manage the 6.8-acre protected serpentine grassland and promote the growth of the larval and adult nectar plants of the BCB (i.e., dwarf plantain, owls clover) and limit the cover of non-native grasses/forbs. The landowner will consult with a qualified entomologist and the Service on specific site conditions relating and management of areas for the BCB, SCD, and MBJF to properly implement the grazing management plan.
7) In years 2, 4, 6, and 8 conduct spring/summer census of the transplanted SCD to document plant survival, with the goal to maintain 80% survival of transplanted individuals for a period of 8 years.

8) In years 2, 4, 6, and 8 document the continued presence of the BCB, SCD, and MBJF within the 6.8-acre protected serpentine grassland through presence/absence surveys
9) Prohibit installation of landscape plantings within 6.8-acre protected serpentine grassland and 0.63-acre septic leach field area.
10) In years 2, 4, 6, and 8, submit monitoring reports to Service, describing all activities that occurred on site during the previous years, results of biological surveys and grazing program, photographs of the serpentine grassland and any remedial actions taken to meet the HCP goals and objectives.

Implementing these activities at the frequencies listed above, habitat that presently supports the three species is expected to be maintained in its current condition or improved as a result of increased management activities.

6.2.3 SPECIES MONITORING ACTIVITIES

Presently, the 6.8-acre protected serpentine grassland area supports populations of the BCB, CRLF, CTS, SCD, and MBJF. Management activities will be performed to maintain the quality of habitat to benefit these species. For this reason, monitoring of the BCB, SCD, and MBJF will be a component of the mitigation efforts to demonstrate that the management actions maintain these species, to document the success of the mitigation program, and to identify remedial actions or contingency measures if the planned mitigation activities do not meet the biological goals. The landowner will be responsible for funding the services of consultant and range managers (i.e., grazing specialists) for a period of five (5) years. Monitoring of the three species will provide data to assure that the biological goals of this HCP are met and will provide information to the Service regarding the distribution and abundance of the BCB, SCD, and MBJF. Since the site only provides upland dispersal habitat for the CRLF and CTS, no monitoring for these two species is proposed due to the difficulty in adequately assessing population size solely within upland habitat for both species. Management of the 6.8-acre protected serpentine grassland for the BCB, SCD, and MBJF will also benefit CRLF and CTS.

6.2.3.1 BAY CHECKERSPOT BUTTERFLY

Existing baseline data on the BCB consists of presence-absence adult and larvae surveys in 1989, which was used to identify occupied habitat. During the adult activity season, adult numbers will be monitored by transect counts in areas of the 6.8-acre serpentine grassland area. One or more transects will be established and counts of adults will be performed on days when weather conditions are appropriate for adult BCB activity.

Transect counts, conducted at approximately 5-7 day intervals from the beginning through the end of the annual adult activity period will provide information on the seasonal occurrence of the BCB and the total numbers per season

Management thresholds will serve as a guide to adjusting management actions for BCB within the 6.8-acre serpentine grassland area.

Preliminary Management Thresholds for BCB:

1. Increase intensity of grazing if any of the following preliminary thresholds are measured in vegetation transects or estimated within the occupied BCB habitat:
    a. More than 25% increase in coverage by non native vegetation within the 6.8 ac preserve.
2. Decrease intensity of grazing if any of the following preliminary thresholds are measured in vegetation transects or estimated within the occupied BCB habitat:
    a. More than 25% decrease in dwarf plantain within grassland area over two monitoring periods (i.e., years 2 and 4 or 4 and 6 or 6 and 8).

6.2.3.2 SANTA CLARA VALLEY DUDLEYA AND MOST BEAUTIFUL JEWLFLOWER

Existing baseline data on the SCD and MBJF consists of population data from 1998. At that time, 322 individuals of SCD and 1.31 acres of area inhabited by MBJF were documented (H.T. Harvey & Associates, 1998). In Year 1 the number of individuals of SCD and aerial extent of MBJF will be documented to establish the current conditions. The surveys will be repeated in Year 2, 4, 6, and 8. Each species will be documented during its peak flowering period (SCD: May – June; MBJF: April – June).

Management thresholds will serve as a guide to adjusting management actions for SCD and MBJF within the 6.8-acre serpentine grassland area.

Preliminary Management Thresholds for SCD and MBJF:

1. Increase intensity of grazing, or other management action if any of the following preliminary thresholds are measured in populations of MBJF:
    a) More than 25% decrease in population of MBJF from Year 1 level.
    b) Establishment of any invasive, non-native trees, shrubs or sub shrubs within areas occupied by MBJF.
2. Decrease intensity of grazing or install browse protection devices if any of the following preliminary thresholds are measured in populations of SCD:
    a) More than 25% decrease in population of SCD from Year 1 baseline level within extant and salvaged colony(s).

6.2.4 ANNUAL MONITORING REPORT

An annual monitoring report will be prepared by the landowner in Years 1, 2, 4, 6, and 8 and submitted to the Service and the County of Santa Clara Planning Department.

6.3 SCHEDULE FOR IMPLEMENTATION

Upon County issuance of a building permit and the Service concurrence on the projects effect on BCB, CRLF, CTS, SCD and MBJF, the various avoidance, minimization and mitigation measures described in this HCP will occur at the project site in both the impact areas as well as the adjacent protected serpentine grassland. The various management

techniques described in this document will be implemented according to the schedule detailed in Table 2.

6.3.1 YEAR 1

A form of deed restriction or conservation easement will be placed on the approximately 6.8-acre serpentine grassland prior to completion of the over all project. If possible the deed restriction will be placed on the 6.8-ac serpentine grassland before any construction activities at the project site commence. Salvage of all available SCD plants from the impact area will occur prior to grading within the impact area. Permanent fencing will be erected around the perimeter of the 6.8-acre serpentine grassland area prior to completion of the over all project. Temporary construction fencing will be erected around the perimeter of the 0.70-acre residential construction area and 0.63-acre septic leach field area. The consultant will conduct pre-construction meetings with the owner and the workers to inform them about the presence of special status species at the project site and appropriate protocol should the BCB, SCD, or MBJF be encountered. Report will be provided about all grading and construction activities so as to comply with the parameters established in this HCP. The owner will provide the Year 1 census monitoring of BCB, SCD and MBJF within the 6.8-acre serpentine grassland area, implement the initial goat browsing/grazing program with the range manager. A Management Plan will be developed by a range manager and approved by the Service and the County of Santa Clara Planning Department prior to placement of any grazing animals within the 6.8-acre serpentine grassland and within 12 months of issuance of the incidental take permit by the Service.

A Year 1 monitoring report will be prepared and submitted to the Service and the County of Santa Clara Planning Department for their review and approval. The report will describe the monitoring activities performed, the results, and recommendations for any necessary remedial actions to achieve the goals of the HCP.

6.3.2 YEARS 2 TO PERPETUITY

Habitat management activities will focus upon the protection and management of the BCB and its habitat, maintenance of the grassland to benefit the BCB, CRLF, CTS, SCD and MBJF, and control of invasive, non-native plant species within the 6.8-acre serpentine grassland area. Control of invasive, non-native plant species will be achieved by manual removal methods appropriate for each target invasive species, and habitat management techniques, such as seasonal grazing to favor the indigenous plant species, particularly dwarf plantain.

Annual monitoring of the 6.8-acre serpentine grassland area and the status of the three species within the area will occur yearly in Years 2, 4, 6, and 8 and a field survey will be performed during the BCB adult activity period and larval stage to document species presence. The survey will monitor BCB habitat features (i.e., extent of dwarf plantain, owls clover, weed cover, etc.) to detect and correlate BCB responses to habitat management actions. Monitoring of SCD and MBJF will be conducted during the

peak flowering periods wherein the plant populations will be recorded. SCD and MBJF population data in conjunction with the amount of plant cover will be used to detect and correlate plant responses to habitat management actions.

During Years 2, 4, 6, and 8, an annual report will be prepared by the landowner and submitted to the Service and the County of Santa Clara Planning Department. This report will describe the monitoring activities performed, the results, and recommendations for any necessary remedial actions to achieve the goals of the HCP

Table 2. Implementation Schedule for Habitat Management Activities, Calero Lake Estates, Lot 23 (Years 1-perpetuity)

Management Action	Year 1				Years 2, 4, 6, 8				Years 9-Perpetuity			
	W	Sp	Su	F	W	Sp	Su	F	W	Sp	Su	F
Install Permanent Fencing, Access Gate and Signs around 6.8-acre Serpentine Grassland					—							
Install Signs Around 6.8-acre Serpentine Grassland					—							
Install Temporary Construction Fencing around Residential and Septic Impact Area			—									
Transplant SCD into 6.8-acre Serpentine Grassland				—								
Develop Invasive Vegetation Management Plan					—							
Implement Seasonal Grazing of Serpentine Grassland							—				—	
Remove Invasive, Non-Native Plant Species from Serpentine Grassland			—	—			—				—	
Monitor BCB within 6.8-acre Serpentine Grassland					—	—						
Monitoring SCD and MBJF within 6.8-acre Serpentine Grassland						—	—					
Prepare and Submit Annual Reports to Service and County				—				—				

Note: W= Winter, Sp=Spring, Su=Summer, F=Fall

7.0 PLAN IMPLEMENTATION

7.1 BIOLOGICAL GOALS AND OBJECTIVES

The overall goal of this HCP is to maintain and improve the serpentine grassland community on 6.8 acres (Preserve) at the project site, while allowing construction of a single family residence and related structures on 1.33 ac along the top of the ridge; this will be accomplished through the following:

Objective 1: Permanently protect 6.8 acres of serpentine grassland at the project site.

Conservation Action 1.1: Establish a deed restriction or conservation easement on the 6.8 acre Preserve.

Conservation Action 1.2: Install fencing with maintenance gate around the 6.8 acre Preserve.

Objective 2: Develop a management plan that will reduce the density of non-native vegetation and increase native serpentine vegetation in the 6.8 acre Preserve.

Conservation Action 2.1: Implement a seasonal grazing program or mechanical removal of non-native vegetation.

Objective 3: Implement a management plant that includes removal of trash.

Conservation Action 3.1: Annually remove any illegally dumped trash from the Preserve.

Finally, the landowner will implement the measures identified in section 6 of this HCP, during grading and construction at the project site to avoid and minimize impacts to the three species.

7.2 IDENTIFICATION OF CONSULTANT

Prior to project construction, the landowner shall identify a consultant for the project. Such consultant shall be subject to approval by the Service prior to project construction.

7.3 RESPONSIBILITIES

The landowner understands that he, his successors or assigns, are responsible for implementing this HCP in accordance with the specifications for mitigation. The landowners will satisfy their mitigation responsibilities by permanently protecting 6.8 acres of serpentine habitat in a form of deed restriction and implementing the various habitat protection, management, restoration, and monitoring activities outlined in this HCP.

7.4 REPORTING

7.4.1 POST-CONSTRUCTION COMPLIANCE REPORT

A post-construction compliance report shall be forwarded to the Service (Sacramento office) and County of Santa Clara (Planning Department) within 60 calendar days of the completion of construction. This report shall provide the following information:

1) Dates that construction occurred;
2) Pertinent information concerning the landowners success in meeting the project's mitigation measures;
3) An explanation of failure to meet such measures, if any;
4) Known project effects on Federally-listed species, if any;
5) Other pertinent information.

7.4.2. MITIGATION MONITORING REPORTS (YEARS 2, 4, 6, AND 8)

Site inspections, non-native plant removal/control, re-establishment of salvaged plant species, habitat management activities, fence repairs, and yearly monitoring for the BCB, SCD, and MBJF will occur annually within the 6.8-acre serpentine grassland area in Years 2, 4, 6, and 8. The monitoring reports will be submitted to the Service (Sacramento office) and County of Santa Clara (Planning Department) by December 31st of each monitoring year. This report shall include:

1) An assessment of the condition of the habitat within the 6.8-acre serpentine grassland area;
2) Dates and results of BCB monitoring;
3) Dates and results of SCD and MBJF monitoring;
4) Dates and results of animal browsing /grazing;
5) A brief discussion of other monitoring efforts that occurred during the past year and whether habitat management goals are being achieved;
6) Identify any problems and any corrective measures undertaken to insure that the biological goals are met;
7) Recommendations to solve existing or anticipated problems; and Copies of any photos used for photo-documentation purposes.

7.5 FUNDING

The landowner will provide funding for implementation of avoidance, minimization, and mitigation measures as specified in this HCP. The landowner, his successors or assigns, will provide funds required for habitat management and monitoring in perpetuity. Habitat management activities within the 6.8-acre serpentine grassland area will include, site inspections, removal and control of invasive, non-native plant species, seasonal grazing, fence repairs, and other actions necessary to maintain the area in conditions suitable for the protection of its habitat value in perpetuity.

8.0 CHANGED AND UNFORSEEN CIRCUMSTANCES

8.1 CHANGED AND UNFORSEEN CIRCUMSTANCES

Section 10 regulations (50 CFR 17.22(b)(2)(iii)) require that an HCP specify the procedures to be used for dealing with changed and unforeseen circumstances that may arise during the implementation of the HCP. In addition, the Habitat Conservation Plan Assurances ("No Surprises") Rule (50 CFR 17.2, 17.22 (b)(5) and (6); 63 F.R. 8859) defines "unforeseen circumstances" and "changed circumstances" and describes the obligations of the Applicant and the USFWS. The purpose of the Assurances Rule is to provide assurances to non-federal landowners participating in habitat conservation planning under the ESA that no additional land restrictions or financial compensation will be required for species adequately covered by a properly implemented HCP, in light of unforeseen circumstances, without the consent of the Applicant. "Changed circumstances" means changes in circumstances affecting a species or geographic area covered by a conservation plan that can reasonably be anticipated by plan developers and the USFWS and that can be planned for (e.g., the listing of new species, or a fire or other natural catastrophic event in areas prone to such events). The policy defines "unforeseen circumstances" as changes in circumstances that affect a species or geographic area covered by the HCP that could not reasonably be anticipated by plan developers and the USFWS at the time of the plan's negotiation and development and that result in a substantial and adverse change in the status of the covered species.

8.2 CHANGED CIRCUMSTANCES

Changed circumstances are those situations and events that are reasonable foreseeable and are provided for in the HCP. The following changed circumstances may occur during the life of the HCP: 1) fire and 2) drought. If these circumstances occur, the Applicant shall implement the measures described below or will otherwise consult with the USFWS to determine what additional mitigation measures shall be implemented. The Applicant acknowledges that the situations or circumstances described below are changed circumstances, not unforeseen circumstances and, therefore, may require additional mitigation or restrictions on project activities, as described in the HCP.

8.2.1 FIRE

Fire is a natural component of California grassland ecosystems. The frequency and intensity of fire is highly variable. For an estimate of drought frequency, this HCP relied on the analysis conduced for by Jones and Stokes and Associates for the larger Santa Clara Valley HCP/NCCP (Valley Plan) (JSA 2008). Fire history data indicate for Santa Clara County indicates that the average number of fires per year over the last 50 years is less than one (0.58) and the average size was 975 acres. These data suggest that, during the three year permit term, at most one wildlife fire would be expected to occur within the permit area. In the event of a fire, the Permitte will follow protocols established in the vegetation management plans and will work closely with local fire response crews to ensure that impacts to the preserve area and the covered species are minimized. In

addition, landscape-level monitoring will assess changes to land cover type, and natural community–level monitoring will assess the response of invasive plants. In conjunction with the USFWS, through adaptive management, the Permittee will modify the vegetation management plan by adjusting the timing or type of vegetation management activities (i.e., graze or mow earlier or later in the season).

8.2.2 DROUGHT

Drought is a natural part of a Mediterranean climate to which species and natural communities have adapted. However, a prolonged drought could cause a reduction in the population size of the covered species, especially the Bay checkerspot. For an estimate of drought frequency, this HCP relied on the analysis conduced for by Jones and Stokes and Associates for the larger Santa Clara Valley HCP/NCCP (Valley Plan) (JSA 2008). According to the Valley Plan, droughts of 2 years or more in Santa Clara Couny occurred on average 4.2 times over a period of 50 years, or every 11.9 years. Droughts of 3 years or more occurred less than once (0.6 times) over the same period of time. The permit term for this HCP is three years and we are currently in the second year of a drought. The current drought could extend into the 2009 season, which would be the third year. Droughts of longer duration are not expected to occur during the three year permit term. If the current drought continues into the permit term, the applicant, in conjunction with the USFWS, through adaptive management will modify the vegetation management plan by adjusting the timing or type of vegetation management activities (i.e., graze or mow earlier or later in the season).

8.3 UNFORSEEN CIRCUMSTANCES

In the event of unforeseen circumstances during the permit term, amendments to the HCP may be proposed by either the Applicant or the USFWS to address these circumstances. The Applicant and the USFWS would work together to identify opportunities to redirect management activities and resources to address unforeseen circumstances. However, consistent with the No Surprises Regulation, the USFWS will not require the commitment of additional land, water, or financial compensation by the Applicant in response to unforeseen circumstances other than those agreed to elsewhere in the HCP or impose additional restrictions on the use of land, water, or natural resources otherwise available for use by the Applicant under the terms of the HCP to mitigate the effects of the covered activities or in response to unforeseen circumstances.

9.0 ALTERNATIVES

9.1 NO ACTION

Under the No Action alternative, the proposed single family home and associated facilities would not be constructed and the Applicant would not implement this HCP or receive an incidental take permit from the USFWS. The project site would remain undeveloped or sold and the existing Bay checkerspot butterfly (and other Covered Species) habitat would continue to be degraded due to illegal trash dumping, off road vehicle use, removal of serpentine rocks, and continued degradation due to invasion of nonnative vegetation. The No Action alternative would also result in substantial loss of financial resources by the Applicant, due to the current low value of real-estate.

The No Action alternative does not offer an ecologically superior alternative to the proposed project nor does it meet the needs of the Applicant; therefore, this alternative was rejected.

9.1 PROPOSED ACTION

Under the Proposed Action alternative, the Applicant would construct the proposed single family home and associated facilities as described in Section 3.0 and the UFWSF issue a section 10(a)(1)(B) permit to allow development of the project site. The project would result in the net loss of 1.33 acres of habitat for the Covered Species. Impacts on the Bay checkerspot butterfly and other Covered Species would be minimal due to the majority of the project area being previously graded and currently maintained by illegal off road vehicle use. The Proposed Action would result in implementation of this HCP and would improve habitat conditions on 6.80 acres by reducing nonnative vegetation, removal of trash, prevention of illegal dumping and off road vehicle use. Therefore, the Proposed Action is the preferred alternative.