Low –Effect Habitat Conservation Plan

for the Smith's Blue Butterfly,

Sarment Parcel, Carmel Highlands, Monterey County, California

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EXECUTIVE SUMMARY

Daniel Keig has applied 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) (Act), as amended from the U.S. Fish and Wildlife Service (USFWS) for the incidental take of the endangered Smith's blue butterfly (*Euphilotes enoptes smithi*). The potential taking would occur incidental to the development of one single-family residence within the 6.10-acre parcel (APN 241-221-005) known as the Sarment parcel, owned by Daniel Keig and located in the Carmel Highlands (Monterey County), CA. Approximately 5.1 acres of the 6.10-acre parcel are now protected from development due to policies of the Carmel Area Land Use Plan, as the topography at the project site is too steep for building (i.e., > 30% slopes).

The proposed development area measures 13,178 ft.^{2} (0.3 acres), which includes the footprint of the proposed new residence and garage (3,200 ft.^{2}), driveway, leach pits, drainage and erosion control improvements, and site grading to accommodate these improvements. Within the proposed development area, only 7,906 ft.^{2} (0.149 acres of coastal sage scrub habitat and 0.023 acres of closed-cone coniferous forest habitat for a total of 0.18 acres) of actual ground disturbing activities will occur to accommodate the new home and driveway. The remaining 5,272 ft.^{2} (0.12 acres) within the development area supports primarily coastal sage scrub habitat, including food plants of the Smith's blue butterfly. Although the 0.12 acres will be retained intact and no direct impacts due to the project are anticipated, indirect impacts may possibly occur. For this reason, the applicant has assumed that development of this portion of the Sarment parcel site will result in the direct loss of 0.149 acres and potential indirect loss of 0.12 acres of coastal sage scrub habitat (i.e., a total of 0.27 acres), which supports approximately 650 individuals of seacliff buckwheat (*Eriogonum parvifolium*), the foodplant for the Smith's blue butterfly. Adults of the Smith's blue were observed at the project site during status surveys for the butterfly that were conducted in July 2000 and July 2003, and were also observed during botanical surveys August 2005.

As a result of these anticipated impacts, Daniel Keig has applied for a section 10 (a)(1)(B) permit and proposes to implement this HCP as described herein, which provides measures for minimizing and mitigating adverse effects on the Smith's blue butterfly. Dan Keig is requesting the section 10 (a)(1)(B) permit be issued for a period of 5 years.

This HCP summarizes the project and identifies the responsibilities of the U.S. Fish and Wildlife Service and the applicant. The biological goals of the HCP are:

a) to compensate for the loss of the 0.149 acres of directly impacted coastal sage scrub habitat and the potential loss of the 0.12 acres of indirectly impacted coastal sage scrub habitat, by designating a 1.04 acre area with existing seacliff buckwheat plants containing approximately three times the affected amount (at least 2000 plants)
b) To permanently protect this designated area, by placing it under a recorded deed restriction; and
c) to enhance existing habitat by removal of Hottentot fig, ripgut brome, and other invasive plants from the entire 6.10 acre parcel, (except adjacent to the existing

private paved road where invasive species may be maintained within 10 ft. buffers on each side of the road for erosion control),

This HCP also describes measures that will be implemented by the applicant to minimize and mitigate the impacts of the project to the Smith's blue butterfly and its habitat and to further the conservation of this species. These measures include:

a) dust control during grading and construction;

b) fencing during grading and construction activities to protect the butterfly's habitat;

c) eradication of various invasive plants;

d) placement of a deed restriction on 1.04 acres at the site; and

e) post-construction monitoring for a period of five years.

The net effect of these measures is that a 1.04 acre area of existing dense coastal sage scrub habitat (containing at least 2,000 or more buckwheat plants) will be designated and preserved under a recorded deed restriction in perpetuity, in addition to eradicating invasive plants threatening the habitat, all to benefit the endangered butterfly. The HCP also describes measures to ensure that the elements of the HCP are implemented in a timely manner. Funding sources for implementation of the HCP, actions to be taken for changed circumstances and unforeseen events, alternatives to the proposed action and other measures required by the USFWS are also discussed. This designated Habitat Preserve area is located in the northeast corner of the Sarment Parcel. (See attached Site/Habitat Map, Figure 2.) The Habitat Preserve Area is on a steep slope, contains healthy coastal scrub habitat and is virtually free of invasive non-native species.

1.0 INTRODUCTION

This Low-effect Habitat Conservation Plan (HCP), for the proposed development of a single-family residence on a 6.10-acre parcel owned by Daniel Keig and located in Carmel Highlands, Monterey County, 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 the applicant, to allow incidental take (see Section 6.0) of Smith's blue butterfly (*Euphilotes enoptes smithi*), a federally-listed endangered species, potentially resulting from development of the proposed project. The U.S. Fish and Wildlife Service (herein referred to as the Service) has concluded that the site provides potential habitat for this species. The applicant requests a permit for 5 years commencing on the date of permit approval.

This HCP provides an assessment of the existing habitat on the site relative to the Smith's blue butterfly, it evaluates the effects of the proposed development on this species, and it presents a mitigation plan to offset habitat losses and/or direct harm to this species that could result from development of a single family residence on the property. The biological goals of this HCP are:

a) to compensate for the loss of approximately 0.149 acres of coastal sage scrub habitat directly impacted by the project and 0.12 acres potentially indirectly impacted by the project by designating a 1.04 acre area that will contain at least 2000 buckwheat plants (approximately three times the number of plants affected by the project)

b) To permanently protect this designated area, by placing it under a recorded deed restriction; and

c) To enhance existing habitat by removal of Hottentot fig, ripgut brome, and other invasive plants from the entire 6.10 acre parcel, such that they would cover no more than 1 percent of the HCP area, except adjacent to the existing private paved road access where invasive species may be maintained within 10 ft. buffers on each side of the existing paved road access for erosion control.

1.1 PROJECT LOCATION

The 6.10-acre Sarment site is located in Carmel Highlands, a community located along the Pacific Coast that lies approximately four miles south of Carmel in Monterey County (**Figure 1**). Specifically, the project site lies east of Yankee Point, off Upper Walden Road. The project parcel (APN 241-221-005) is located within Soberanes Point 7.5" U.S. Geological Survey (USGS) topographic quadrangle, in Township 17 S. and Range 1 W of the Mt Diablo Meridian. No section numbers are identified in this portion of the topographic quadrangle. **Figure 1**, which is adapted from the Soberanes Point USGS topo map, illustrates the location of the project site.

1.2 PROJECT SITE

Boundaries of the project site resemble those of an inverted state of Washington (**Figure 2**). The site is partially developed, including an electrical transformer, utility conduits (electricity, telephone and television cable), a water distribution system and an existing paved road (16-foot wide paved access road within a 60-foot wide roadway easement) that traverses a portion of the western boundary and the entire southern boundary of the site. The road that traverses the site is a private, paved road, and this portion of the paved roadway and its associated right-of-way (granted via an easement) includes 0.516 acres of the Sarment parcel.

The northern approximately 5.5 acres of the site consists of a steep east-west trending canyon and steep side slopes. Slopes in the southern portion of the site are more gradual, hence the proposed home site is located within this portion of the parcel. Elevation at the site ranges from 650 to 960 feet.

Two native plant communities are evident at the site, including coastal sage scrub, and closed-cone coniferous forest. A third plant community consists of disturbed areas at the site, such as the existing access road and a few locations where invasive exotic plants are dominant. **Figure 2** is a vegetation map of the Sarment parcel.

Surrounding properties consist of single-family residences and a ranch. The Sarment parcel is an in-holding within a ranch owned by Dan Keig. In the immediate vicinity of the project site, steep slopes surround the site and are undeveloped. Similarly, approximately 5.1 acres, or 84% of the 6.10-acre parcel, are slopes that are equal to or greater than (>) 30%.

2.0 PROJECT DESCRIPTION

The project site measures 6.10 acres in size. Inherent characteristics of the site limit where a residence and associated improvements to the property can be located.

The homesite was selected to minimize impacts to the habitat for the Smith's blue butterfly and to comply with slope restrictions of Monterey County. The applicant proposes to grade the lower portion of a gently sloping plateau, located between approximately 850-890 feet elevation in the southwestern corner of the property to provide an area suitable for construction of one single-family residence and for the driveway. Paul Davis, AIA, the architect for this project, has estimated that about 900 cubic yards of soil will be graded and most of this material will be exported offsite. The residence will be set into the slope to minimize its height from projecting into the view from Highway One.

Other proposed improvements to the site include landscaping, an all-weather driveway from an already existing paved private access road, leach pits for the septic system, drainage and erosion control improvements.

The areas that would be graded for construction and where drainage improvements for erosion control would be installed are collectively referred to as the "building footprint" or "impact area" and are illustrated in **Figure 2**. All of the aforementioned site improvements will occur within the impact area.

In addition, landscaping within the impact area and fire clearance activity, if any, will be done in a manner that does not require any vegetation clearing outside of the impact area, except as otherwise provided or required by California law (as discussed in Changed Circumstance Section 9.1**).** Thus, all activities that will require alteration or removal of vegetation are expected to occur within the boundaries of the illustrated impact area.

An all-weather driveway will be installed to provide access to the residence from the private existing paved road access. Curbs and gutters will be installed to prevent erosion due to runoff from the driveway. Erosion control will be placed on the cut bank on the upper side of the driveway, between the roadway and the residence. Additional drainage for surface runoff from the impact area and erosion controls will be installed around the periphery of the new home but within the boundaries of the impact area, as appropriate, to minimize potential erosion within the protected habitat portions of the property. Utilities (i.e., electrical, cable TV, water, and telephone) for the residence were installed several years ago in an underground trench and are ready to hook-up within the impact area. An in-ground septic system will provide sewer service, with leach pits, immediately below the new residence and within the impact area.

The project also includes future maintenance and repair of drainage and erosion control facilities, potential fire clearance activity, and potential slope repair due to erosion damage. The building footprint has been designed such that, with reasonable placement, size and building materials for the structure, fire clearance activity is anticipated to be minimal to comply with local, state and federal fire district regulations. Although it is anticipated that these activities will be confined to the identified impact area, this HCP provides a mitigation and monitoring mechanism for impacts specific to these activities, as described in Sections 7 and 8.

Due to the ground character of the hillside on which this project and the private access road are located, the applicant is going to maintain the Hottentot Fig within a ten-foot buffer area on both sides of the existing paved road access for erosion and fire control. The applicant has tried to use native plants for these purposes, however the natives did not work as well as the ice plant. Maintaining the ice plant buffer prevents silt and sand from running down the existing paved road access during rains and invading buckwheat plant areas. Further and more importantly, the ice plant buffer prevents landslides. The applicant experienced one of the El Ninos without the ice plant buffer and experienced landslides. Additionally, due to the plants' high water content, they provide for substantial fire control. Since they are located adjacent to the existing paved road access, the ice plant will prevent a spark from a vehicle from becoming a wildfire. Consequently, the ice plant presents the best erosion and fire control.

Although a specific landscape plan has yet to be prepared, all landscaping will be restricted to the impact area and will include plants indigenous to the coastal sage scrub and closed-cone coniferous forest habitats. If any trees are planted, only native species will be used. Furthermore, they will be located within the impact area to prevent shading of protected habitat portions of the property. No trees are intended to be removed under this plan.

Altogether, these activities will disturb approximately 0.3 acres of the site, including 0.27 acres of buckwheat-dominated coastal sage scrub habitat. Approximately 650 individual plants

of *Eriogonum parvifolium*, considered to be suitable habitat for the Smith's blue, grow within the impact area.

In addition, the HCP recognizes that potential maintenance and repair of the drainage and erosion control improvements and fire clearance requirements or due to unforeseen erosion may result in additional impacts to seacliff buckwheats that grow outside of the impact area. These impacts will be discussed in the Changed Circumstances section of this HCP.

To minimize any adverse impacts to the Smith's blue butterfly and its habitat at the project site, several measures will be employed before, during, and after construction activities. . Each of the following measures is discussed in greater detail in Section 7.0 Minimization and Mitigation Measures.

1) Temporary fencing will be erected to limit where grading equipment can move on the site, before any grading activities occur;

2) Appropriate dust control measures, such as periodically wetting down the graded areas, will be used as necessary during grading of the areas for building footprints and in other portions of the impact area during construction, landscaping, or any other activities that generate dust;

3) Hottentot fig, ripgut brome, sweet fennel and other invasive plants will be removed throughout the 6.10 acre property except for within 10 ft. buffers on each side of the existing paved road access where invasive species will be contained for fire and erosion control;

4) Appropriate weed control measures will be employed to prevent establishment of weeds or other invasives in the vicinity of the leach pits; and

5) Designating a 1.04 acre area containing at least 2000 buckwheat plants, which is about three times the number of buckwheats contained within the impact area

6) This area will then be placed under a recorded deed restriction that will run with the land.

2.1 PROJECT HISTORY

The formal habitat conservation planning process for the 6.10-acre site began in the summer of 2000. Paul Davis, architect for the Sarment project, contacted Dr. Richard Arnold, an entomologist familiar with the Smith's blue, in June, 2000. Dr. Arnold visited the Sarment parcel, with botanist Jeff Norman, on June 25, 2000 and observed the endangered butterfly there. Since the butterfly was found to occur at the site, Dr. Arnold, Richard Nystrom, and Paul Davis hosted a meeting at the site with David Pereksta and Dianne Pratt, biologists from the Ventura office of the Service, on August 24th. Upon touring the site and learning more about the proposed project, Mr. Pereksta and Ms. Pratt recommended that Mr. Nystrom apply for a section 10(a)(1)(B) incidental take permit, pursuant to provisions of the Endangered Species Act. This

recommendation was based on the likelihood that take of Smith's blue butterfly could occur through the loss of its food plants growing within that portion of the property proposed for development. However, the Service acknowledged that the potential take would be limited and that habitat would remain in undeveloped portions of the property. Thus, a low effect HCP was considered the appropriate instrument for securing the 10(a) permit.

2.2 PERMIT HOLDER/PERMIT BOUNDARY

Dan Keig, present owner of the Sarment parcel, will be the holder of the section 10(a) permit. Additional contact persons will be reported to the Service in the future as necessary. Any transfer of the permit shall be processed in accordance with the procedures set forth in Section 10.4 herein below.

The permit boundaries are the same as the boundaries of the 6.10-acre parcel. These boundaries are illustrated in **Figure 2**.

3.0 FEDERAL ENDANGERED SPECIES ACT OF 1973

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 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 "exempted" or "permitted" pursuant to either Section 7 or Section 10(a)(1)(B) of the Act respectively. 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 USFWS.

"Take" as defined by the ESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct". "Harm" is further defined to mean an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding or sheltering (50 CFR 17.3).

Activities otherwise prohibited under ESA Section 9 and subject to the civil and criminal enforcement provisions under ESA Section 11 may be exempted under ESA Section 7 for actions by federal agencies and may be permitted under ESA Section 10 for nonfederal entities. In the 1982 amendments to the ESA, Congress established a provision in Section 10 (a)(1)(B) that allows for the incidental take of endangered and threatened species of wildlife by non-Federal entities. Incidental take is defined by the ESA as the take that is incidental to, and not the purpose of, carrying out of an otherwise lawful activity. The 10(a)(1)(B) provisions establish a mechanism for permitting incidental take of federally-listed species. However, in order to receive an incidental take permit, the permit applicant must submit a Habitat Conservation Plan (HCP) which describes, among other things, the effects of the taking and the measures the applicant will implement to mitigate for these effects. The USFWS and the National Marine Fisheries Service (NMFS) have joint authority under the ESA for administering the incidental

take program. NMFS has jurisdiction for anadromous fish species and the USFWS has jurisdiction for all other fish and wildlife species.

The Service has established a special category of low-effect HCPs for projects involving minor or negligible impacts on federally-listed, proposed, or candidate species and their habitats covered under the HCP; and minor or negligible effects on other environmental values or resources (U.S. Fish & Wildlife Service and National Marine Fisheries Service 1996). Low-effect HCPs and their associated incidental take permits are expected to have a minor or negligible effect, individually and cumulatively, on the species covered in the HCP. The determination of whether a HCP qualifies for the low-effect category must be made prior to implementation of the associated mitigation plan. This category is intended for projects with inherently low impacts, not for projects with significant potential impacts that are subsequently reduced through mitigation programs.

Section 7 of the Endangered Species Act requires all federal agencies to ensure that any action they permit, 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 its habitat. Technically, the issuance of an incidental take permit is permission for take by a federal agency; in conjunction with issuing a permit, USFWS must conduct an internal Section 7 consultation on the proposed HCP. The internal consultation is conducted after an HCP is developed by a nonfederal entity and submitted for formal processing and review. 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, effects on federally listed plants, and effects on critical habitat. (The ESA requires that the Service identify critical habitat to the maximum extent that it is prudent and determinable when a species is listed as threatened or endangered.) The internal consultation results in a Biological Opinion prepared by the Service regarding whether implementation of the HCP will result in jeopardy to any listed species or adversely modify critical habitat.

4.0 BIOLOGY

The following section describes the existing biotic resource conditions on the Sarment project site.

4.1 HABITAT TYPES

The project site supports primarily two native plant communities, namely coastal sage scrub, which extends over approximately 3.100 acres **(Table 1)** of the 6.10-acre parcel, and closed-cone coniferous forest, which covers approximately 2.344 acres. Invasive plants at the site include a small strip of Hottentot Fig (*Carpobrotis edulis*) along the shoulder of the existing paved road access and a few other locations on the property. This and other invasives are estimated to cover approximately 0.210 acres. **Figure 2** is a vegetation map of the project site.

The acreage of coastal sage scrub equates to about 57% of the entire parcel. Indicator plant taxa for this community observed at the parcel include: coyote brush (*Baccharis pilularis)*, Carmel ceanothus (*Ceanothus griseus*), golden yarrow (*Eriophyllum convertiflorum*), pine bush

(*Ericameria pinifolia*), California sagebrush (*Artemisia californica*), silver bush lupine (*Lupinus albifrons* var. *douglasii*), and sticky monkeyflower (*Mimulus aurantiacus*). The food plant for the Smith's blue, seacliff buckwheat (*Eriogonum parvifolium*), is a member of this plant community.

Approximately 2.344 acres (38%) of the site is characterized by Closed-cone Coniferous forest (**Figure 2**), which is indicated by the presence of Monterey pine (*Pinus radiata*). Understory plants observed at the site include Pacific pea (*Lathyrus vestitus* ssp. *puberulus*), California blackberry (*Rubus ursinus*), gambleweed (*Sanicula crassicaulis*), and hedge nettle (*Stachys bullata*).

The only federal or state recognized sensitive species present on the site is the Federally-listed, endangered Smith's blue butterfly. In addition, the Smith's blue is known from several nearby locations, namely about 0.25 mi. to the northwest (Kellner 1989), south (Arnold 1986; Kellner 1989) and east of the site (Arnold 1991a).

Botanical surveys of the site, conducted by Monterey County botanist, Jeff Norman (2000), did not yield any federal or state-listed plant species. Jeff Norman observed one range-limited plant, Lewis' clarkia (*Clarkia lewissi*), growing in association with the coastal sage scrub plant community. This species is recognized by the California Native Plant Society (CNPS) as a List 4 taxon. Plant species on the CNPS List 4 are those with limited distribution, and the CNPS considers this category as a "watch list" (California Native Plant Society 1994).

Monterey pine is included on the CNPS List 1B, which consists of plants that are rare, threatened or endangered in California and elsewhere (California Native Plant Society 1994). Trees at the project site appear to generally be mature and healthy. No tree removal is planned for the site or impact area.

Although the site is undeveloped, one invasive plant, Hottentot (also known as ice plant) fig, has become established there. At this time, the Hottentot fig grows along the shoulder of the private paved road and elsewhere on the property. The landowner proposes to retain and provide containment of Hottentot fig within a 10-foot buffer along the shoulders of the existing private paved road access for erosion control and fire protection, as previously discussed, which comprises approximately 0.11 acres and to remove all other occurrences of Hottentot fig from other areas of the project site.

4.2 COVERED SPECIES: SMITH'S BLUE BUTTERFLY

The species addressed in this HCP and covered by the HCP's associated Section 10(a)(1)(B) permit (hereinafter referred to as covered species) is the federally-listed Smith's blue butterfly, that is known to occur on the site and for which suitable habitat exists on the site, and will be directly affected by the project. A discussion of the biology of this species and its actual or potential occurrence on the project site follows.

4.2.1 CONSERVATION STATUS

The Smith's blue butterfly is a federally-listed endangered species. Throughout most of its range, the primary threat to the butterfly is urbanization. In a few instances, other types of land uses, such as overgrazing, and development in park lands, have also threatened the butterfly. For these reasons, the butterfly was recognized as an endangered species by the Service (U.S. Fish & Wildlife Service 1976) in 1976. Critical habitat was proposed (U.S. Fish & Wildlife Service 1976) but never finalized. A recovery plan was published by the Service (U.S. Fish & Wildlife Service 1984).

The State of California does not recognize insects as endangered or threatened species. The International Union for the Conservation of Nature (1996) recognizes the Smith's blue as endangered.

4.2.2 DESCRIPTION AND TAXONOMY

The Smith's blue is a small lycaenid butterfly (Insecta: Lepidoptera: Lycaenidae), whose adult wingspan measures about one inch. Larvae are slug-shaped and vary in color from cream to pale yellow or rose, to match the buckwheat flowerheads on which they feed.

Smith's blue butterfly was originally described in the genus *Philotes* by Mattoni (1954), and referred to as *Philotes enoptes smithi*. Shields (1975) realigned several genera of blues, resulting in the placement of the species *enoptes* in the genus *Shijimiaeoides*. Thus, the scientific name of the Smith's blue, when it was first recognized as an endangered species (U.S. Fish & Wildlife Service 1976), was *Shijimiaeoides enoptes smithi.* Mattoni (1977) subsequently made a number of nomenclatural rearrangements in several genera of the blue butterfly tribe Scolititandini, which resulted in the placement of *enoptes* in the genus *Euphilotes*. Today, the Smith's blue is known scientifically by the name, *Euphilotes enoptes smithi*; however, all of these names may be encountered in the literature.

Smith's blue is one of eight described subspecies of *Euphilotes enoptes*, which ranges from throughout California and Nevada (Langston 1969; Miller and Brown 1981; Pratt and Emmel 1998). All of the subspecies of *E. enoptes* are closely associated with their larval (i.e., caterpillar) and adult foodplants, different species of buckwheat (*Eriogonum*: Polygonaceae). Generally, each subspecies is restricted to one or a few closely-related species of *Eriogonum*.

Populations of the Smith's blue butterfly can be distinguished from other infraspecific taxa of *Euphilotes enoptes* by the following morphological characters:

1) the wide marginal band on the dorsal forewings of males;

2) the faint terminal line on the underside of both wings;

3) the prominent checkering of the fringe on both dorsal and ventral facies; and

4) a light underside with larger, prominent macules

Color illustrations of the adult and larval stages are presented in Arnold (1983a).

1. 2. 3.

1. Male Smith's Blue Butterfly back view, 2. Male Smith's Blue Butterfly side view, and 3. Female Male Smith's Blue Butterfly back view.

Photos by Dale Hameister 2005

Other illustrations of the adult butterfly can be found in Arnold (1983b), U.S. Fish & Wildlife Service (1984), Howe (1975), Scott (1986), Steinhardt (1990), Lowe *et al.* (1990), and Thelander and Crabtree (1994).

Mattoni (1954) described *Euphilotes enoptes smithi* from specimens that he and Claude Smith collected at Burns Creek, near California State Highway 1, in Monterey County in 1948. Two colonies, in the vicinity of Big Sur, were known at the time of its description. Langston (1963, 1965) noted the occurrence of several additional colonies in particular, the sand dune inhabiting populations that occur north of Ft. Ord. More recently, additional populations have been found on dunes south of Ft. Ord (Arnold1983b and 1986), along the Big Sur coastline (Arnold 1986 and 1994; Kellner 1989; Norman 1994), in the Carmel Valley at Garland Ranch Regional Park (Walsh 1975; Arnold 1991a), and in the Santa Lucia Mountains at Rancho San Carlos (Arnold 1991b). Other inland populations have been reported from Laurelles Grade, Paraiso Springs, Cone Peak, and the Hastings Reservation operated by the University of California (Arnold 1983a; U.S. Fish & Wildlife Service 1984).

4.2.3 DISTRIBUTION AND HABITATS

In Monterey County, *smithi* is found on coastal sand dunes in association with Coast Buckwheat (*Eriogonum latifolium*), although recent studies by Pratt and Emmel (1998) suggest that these populations should be referred to as *E. enoptes arenicola*. From the southern portion of Fort Ord to Monterey, there are several sand-dune inhabiting populations that occur in association with seacliff (also commonly known as dune) buckwheat (*Eriogonum parvifolium*). South of Monterey, into northern San Luis Obispo County, at least as far as San Carpoforo Creek, *smithi* is found at several dozen locations in the Santa Lucia Mountains and along the

immediate coastline, where there is coastal sage scrub or cliff chaparral habitats and *E. parvifolium*. Similarly, inland populations of the butterfly, such as those occurring in the Carmel River Valley, are primarily associated with coastal sage scrub and cliff chaparral habitats, and feed on *E. parvifolium*. At some interior locations, adults of the Smith's blue have also been observed nectaring on naked buckwheat (*E. nudum*), but it is not known if larvae feed on this buckwheat (Arnold 1991b).

4.2.4 NATURAL HISTORY

Smith's blue butterfly is univoltine, i.e., it has only one generation per year. Adult emergence and seasonal activity is synchronized with the blooming period of the particular buckwheat used at a given site. At a particular location, adults are active for about four to eight weeks, but the adult activity period and duration can vary dramatically from year-to-year and from one location to another.

Individual adult males and females live approximately one week, and both sexes spend the majority of their time on *Eriogonum* flowerheads (Arnold 1983a, 1983b, and 1986). There they perch, bask (i.e., thermoregulate), forage for nectar, search for mates, copulate, and lay their eggs. Females lay single eggs on the buckwheat flowers. Larvae hatch in about one week and begin feeding in the buckwheat flowerheads. Young larvae feed on the pollen and developing flower parts, while older larvae feed on the seeds. Older larvae are tended by ants, which may provide some protection from parasites and predators. Upon maturing in about one month, the larvae pupate in the flowerheads or in the leaf litter and sand at the base of the buckwheat plant. Pupae that form in the flowerheads later drop to the ground.

Dispersal data from capture-recapture studies (Arnold 1983b and 1986) indicate that most adults are quite sedentary, with home ranges no more than a few acres. However, a small percentage of adults disperse farther and exhibited home ranges between 20-30 acres (Arnold 1986).

All populations of the three buckwheat foodplants, within the range of the Smith's blue, are not always used by the butterfly at a particular point in time. Lycaenids that feed on *Eriogonum* flowers favor mature, robust individuals of the perennial buckwheats because they produce more flowers (Arnold 1983a and 1983b; Arnold and Goins 1987; Arnold 1990). Thus, buckwheat stands that consist of younger or older, senescent individuals, which produce fewer flowers, may not be visited by the butterfly until these plants mature or are augmented by robust, flowering specimens.

Among butterflies, it is somewhat unusual for both the adult and larval stages to feed only on one plant, and, in particular, only on just the flowers. Most butterflies feed as caterpillars on one or a few closely-related plants, and then as adults obtain nectar from flowers that are generally unrelated to what the caterpillars fed on. Because of the Smith's blue's dual dependency on the flowers of its buckwheat foodplants, it is more susceptible to habitat degradation. Although it is more extinction prone because of its total dependence upon the flowers of buckwheats, conservation efforts are greatly simplified because resource managers

only need worry about a single plant rather than several plants to maintain this endangered butterfly.

4.2.5 OCCURRENCE AT THE PROJECT SITE VICINITY

Adults of the endangered Smith's blue butterfly were first observed at the 6.10-acre project site in Carmel Highlands on June 25, 2000, by Richard A. Arnold and Jeff Norman. Norman also observed additional adults of the endangered butterfly at the site during his subsequent visits during the summer of 2000 to map the buckwheat and inventory the plant species present. All Smith's blues were observed in several different portions of the project site in association with mature specimens of *E. parvifolium*. Due to abundance of *E. parvifolium* in association with the coastal sage scrub habitat at the site and the proximity of nearby known populations (Kellner 1989 #2 and #2.1) and at the neighboring Keig Ranch (Arnold, Retterer, and Zander 2001) the butterfly population is likely to be robust. Although the proposed project will remove 0.149 acres and indirectly impact 0.12 acres of coastal sage scrub habitat utilized by the Smith's blue at this site, this acreage (0.27 acres total) is estimated to represent less than 0.001 percent of the butterfly's currently known geographic range.

At least one invasive plant taxon, Hottentot fig (*Carpobrotus edulis)* is present at the project site. This invasive plant is especially well established along the shoulders of the existing private paved road access and also occurs in small, scattered patches in other portions of the project site. At other locations where the Smith's blue butterfly occurs, this invasive species has displaced the buckwheat food plants of the butterfly (Arnold 1983a and 1986). For this reason, this invasive plant poses a threat to the maintenance of the Smith's blue butterfly at the project site, if not contained.

5.0 ENVIRONMENTAL COMPLIANCE (Internal Sec. 7 Assessment)

The following information is provided to assist the Service in complying with consultation requirements of Section 7 of the ESA.

5.1 DIRECT AND INDIRECT EFFECTS

Direct and indirect impacts to the Smith's blue butterfly, its buckwheat foodplant, and its preferred habitat are expected to be minimal. Only 0.27 acres of coastal sage scrub habitat, which supports seacliff buckwheats, will be removed or indirectly impacted. As previously discussed in this HCP, the project site is situated in a region where neighboring and nearby parcels support extensive stands of coastal sage scrub habitat, including seacliff buckwheats and the Smith's blue butterfly

5.1.1 DIRECT IMPACTS

Most direct impacts to the Smith's blue butterfly of the project will occur during grading and digging of the impact area, installation of drainage and erosion control improvements, and construction of leach pits. Lesser impacts are expected to occur outside of the impact area during the removal of invasive plants plus habitat restoration and enhancement activities. Other

actions impacting the butterfly may include such activities as the preparation of the site for construction, the actual construction, the collisions of the butterfly with construction equipment and people walking on the seacliff buckwheat plants located in the building envelope.

Grading, development, and installation of drainage, erosion control, and leach pit improvements within the 0.303-acre impact area, will result in the removal of approximately 0.149 acres of coastal sage scrub habitat and approximately 0.023 of closed-cone coniferous forest habitat. An additional 0.121 acres of coastal sage scrub habitat occurs within the easement for the existing private paved road access, but only indirect impacts to this portion of the impact area are anticipated. These activities will result in the direct removal of or potential indirect impacts to approximately 650 *E. parvifolium* plants, which support an unknown number of the endangered Smith's blue butterfly. The approximately 650 impacted buckwheats represent approximately 10% of the estimated 6,500 buckwheats resident on the entire 6.10-acre project site.

No more than 20 buckwheat plants will be lost outside the impact area as invasive plants are removed, and during enhancement activities. However, this potential loss will be compensated for by the designated preserved area that will be placed under the recorded deed restriction. All future routine maintenance and repair activities of the aforementioned improvements will be conducted within the impact area.

5.1.2 INDIRECT IMPACTS

Indirect impacts to the Smith's blue butterfly would occur due to the additional traffic near the Sarment property due to the construction. Since more vehicles, equipment and people will be in the area, they may indirectly affect the Smith's blue butterfly and its habitat. The habitat and butterfly may also be indirectly affected by such activities as the removal of invasive plants and habitat enhancement activities. Future maintenance may also affect the butterfly.

Another potential indirect impact of the project is dust that is generated from grading activities and vehicular traffic on the driveway (until it is paved), landscaping, and other construction activities. Dust will be controlled as necessary by watering down to minimize any adverse impacts on the life stages of the butterfly or its buckwheat food plant. Any dust generated by grading activities will pose only a temporary problem that will be eliminated once the site is revegetated. Upon completion of grading and construction work, the driveway will be replaced by an all-weather surface.

The majority of grading activities are proposed to occur in the spring months before the butterfly's activity period or in the fall months after the butterfly's activity period. To minimize the potential for collisions between the adult Smith's blue butterfly and vehicles and equipment, pre-activity surveys will be conducted to determine the presence of the Smith's blue butterfly. . Grading involving motor vehicles, heavy equipment, or ground disturbance will be scheduled outside the potential flight period of the Smith's blue butterfly (defined specifically as June 15 - September 15), unless the pre-activity surveys indicate that the seacliff buckwheat is not in bloom and adult Smith's blue butterflies are not present.

5.2 CUMULATIVE IMPACTS

According to the National Environmental Policy Act, 40 CFR 1508.7, a "cumulative impact" is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR 1508.7.)

In the past this site was partially developed with the installation of electrical transformers, utility conduits (electricity, telephone and television cable), a water distribution system and a paved road.

Presently, there do not exist any actions which would significantly impact or have impacted the project site, the Smith's Blue butterfly or its habitat other than the invasion of the ice plant (Hottentot fig) in some areas of the property.

However, in the near future, the construction of a 2-bedroom single family residence will impact the project site. At this time, there do not seem to be any other projects in the area that would affect the butterfly's habitat cumulatively. Even though 0.149 acres of coastal sage scrub habitat will be permanently removed along with an unknown number of Smith's blues, these losses are not expected to affect the survival of the butterfly or its food plant due to the occurrence and abundance of its food plant elsewhere on the project site and on several neighboring and nearby locations, as well as elsewhere throughout the Smith's blue's entire geographic range. Additionally, threats to the habitat, such as Hottentot fig, will be removed from the remainder of the parcel, except for within the 10-foot wide buffers adjacent to the existing paved road access, thereby enhancing the long term habitat viability of the coastal sage scrub.

To summarize, impacts to the Smith's blue butterfly and its habitat will occur during grading of the site and the installation of various improvements to the site associated with the construction of a single residence. As discussed in greater detail in Section 7.0 on Minimization and Mitigation Measures, the direct loss of 0.149 acres of coastal sage scrub and potential indirect impacts to 0.12 acres of coastal sage scrub and 0.023 acres of closed-cone coniferous forest habitats within the impact area will be offset by the designation of an area of existing seacliff buckwheat plants with at least 2,000 plants to be placed under a recorded deed restriction for preservation and maintenance to benefit the Smith's blue butterfly.

5.3 EFFECTS ON CRITICAL HABITAT

Although critical habitat was proposed (U.S. Fish & Wildlife Service 1976) for the Smith's blue, it was never finalized. Thus, no areas of critical habitat will be affected by this project.

Table 1. Existing (i.e., pre-construction) acreages and proposed impacted acreages for each plant community at APN 241-221-005.		
Plant Community	Existing Acreage	Impacted Acreage
Coastal Sage Scrub	3.1	0.149[a]
Closed-Cone Coniferous Forest	2.3 0.023	[b]
Invasives & H.fig	0.21	0.001
Road (easement & existing paved road access)	0.51 0.130	
Totals	6.10	0.303[c]

Notes:

[a] The 0.15 acres of coastal sage scrub habitat located within the building footprint and the four locations of drainage, potential fire clearance, slope repair and erosion control improvements will be impacted. Landowner will contain and maintain hottentot fig to within a 10-foot buffer of the existing private paved road access for erosion and fire protection along the road.

[b] Although 0.023 acres of closed-cone coniferous forest will be impacted by grading and construction of the new home, no Monterey pine trees will be removed and any residual impact of grading and construction will be minimized by restoration around the trees.

[c] The net impacted acreage will be only 0.125 acres, as most coastal sage scrub growing within the private road easement will be retained, invasives will be contained within the 10 foot buffers adjacent to the existing paved road access .

6.0 TAKE OF THE COVERED SPECIES

Incidental take of Smith's blue butterfly will result from the direct or indirect impacts to approximately 0.27acres of coast sage scrub habitat, which supports approximately 650 individuals of seacliff buckwheat (*Eriogonum parvifolium*), the foodplant for the Smith's blue butterfly, on the project site within the impact area. In addition, butterfly eggs, larvae, pupae, or adults may be directly harmed during initial grading activities or by construction equipment and vehicles or indirectly by dust. An undetermined, but limited number of buckwheats and life stages of the Smith's blue may be lost during habitat management activities, including during the removal of non-native plants in other portions of the entire 6.10-acre parcel.

The maximum levels of take of the Smith's blue butterfly anticipated to occur under this HCP, and hereby permitted by its associated Section 10(a)(1)(B) permit, are as follows:

1) any Smith's blue butterflies that may be associated with up to 0.27 acres of foraging habitat that will be removed or otherwise impacted by the project. Such impacts include the preparation of the site for construction, the resulting dust and dirt, the implementation of various construction equipment and the actual construction of the dwelling itself;

2) any Smith's blue butterflies that may be killed or injured as a result of impacts by construction equipment or vehicles, activities related to construction, or dust; and

3) any Smith's blue butterflies that may be killed or injured during habitat management, including during the removal of non-native plants on other portions of the parcel.

Since there are no estimates of the numbers of Smith's blue butterflies that reside at the project site, it is not possible to quantify the exact number of individual butterflies that could be taken by the removal of or potential indirect impacts to its food plant within the impact area. Also, since the numbers of seacliff buckwheats that will be removed or indirectly impacted have been estimated, the level of incidental take of the Smith's blue is expressed as the acreage (0.27 acres) of habitat that will be impacted. Thus, the incidental take permit associated with this HCP will authorize all such take of Smith's blue as will occur as a result of the removal of or indirect impacts to 0.27 acres of seacliff buckwheats within the impact area of the proposed project to construct one single-family residence.

In addition, weed control may result in occasional loss of individual seacliff buckwheat plants outside the impact area. The Applicant has determined that no more than 20 seacliff buckwheat plants would be lost due to weed control over the permit term. Thus, the incidental take permit would also address potential take of those Smith's blue butterflies associated with up to 20 seacliff buckwheat plants that may be removed outside the impact area.

The level of take of Smith's blue butterfly at the Sarment parcel, as described above, is expected to have negligible effects on the species' overall survival. This is because the actual number of butterflies incidentally taken will likely be low; the percentage of the species habitat relative to the species entire range is very small; and its relative importance to the species both regionally and range wide is very minor.

These incidental take limits are subject to full implementation of all minimization and mitigation measures described in Section 7.0. If any of these take limits are exceeded, the applicant/owner shall cease all construction and habitat management operations and contact the Service immediately.

7.0 MINIMIZATION AND MITIGATION MEASURES

The following measures have been incorporated into the proposed project to minimize and mitigate potential incidental take of the Smith's blue butterfly.

7.1 BIOLOGICAL MONITOR

A knowledgeable, experienced biologist, approved by the Service, shall be present during initial grading activities (i.e., clearing of vegetation and stripping of the surface soil layer), in areas of potential Smith's blue butterfly habitat. The biological monitor shall be informed of the project starting date at least 7 days prior to the onset of construction. The monitor shall be present on site beginning with the installation of temporary fencing prior to clearing of vegetation, and shall conduct inspections of the project site during the initial grading period to

ensure compliance with the mitigation measures provided in this HCP. The biological monitor will also periodically visit the project site during construction to insure that no impacts occur in protected portions of the property. The biological monitor shall have authority to stop immediately any activity that is not in compliance with this HCP, and to order any reasonable measure to avoid the take of an individual of Smith's blue butterfly.

7.2 DELINEATION OF IMPACT AREA

Prior to the initiation of grading and construction, a temporary fence will be installed along the limits of grading adjacent to the coastal scrub zones, and signs will be posted warning grader operator not to proceed beyond the fence. This fencing will remain in place until all construction and other site improvements, including landscaping within the impact area and re-vegetation activities in protected portions of the property, are completed. All project-related parking and equipment storage shall be confined to the construction site (i.e., the impact area). Undisturbed areas shall not be used for parking or equipment storage.

7.3 CONSTRUCTION AND OPERATIONAL REQUIREMENTS

Project-related vehicle traffic shall be restricted to established roads and the impact area. Temporary fencing will be installed along the perimeter of the impact area, and construction vehicles and equipment will be excluded from the fenced protected portions of the property.

7.4 CONTRACTOR AND EMPLOYEE ORIENTATION

The applicant shall conduct an orientation program for all persons who will work on-site during grading and construction. The program shall consist of a brief presentation from a person knowledgeable about the biology of the Smith's blue butterfly and the terms of the HCP. The purpose of the orientation will be to inform equipment operators and field supervisors of the grading limit and construction activity restrictions. There will also be a discussion of the appropriate protocol should the covered species be encountered during construction activities.

7.5 ACCESS TO THE PROJECT SITE

The applicant shall allow representatives from the Service access to the project site to monitor compliance of this HCP.

7.6 HABITAT PROTECTION

7.6.1 PROTECTION DURING CONSTRUCTION

Prior to initial grading, temporary fencing will be erected to protect existing coastal sage scrub habitat and buckwheat plants to prevent accidental disturbance during grading of the building site and construction of the new home. 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."

All equipment operators and field supervisors will attend a pre-construction conference to be conducted by a qualified biologist who will oversee the construction activities. The purpose of the conference will be to inform all grading and construction workers of the presence of endangered species on and adjacent to the project site, to conduct a site visit to show participants where grading can and cannot occur, to inform operators of appropriate protocol should they encounter the butterfly during grading and construction activities, and to advise operators of the penalties they may incur if harm to the butterfly or its protected habitat on site occurs beyond what is authorized in the Service's incidental take permit.

The majority of grading activities are proposed to occur in the spring months before the butterfly's activity period or in the fall months after the butterfly's activity period (defined specifically as June 15-September 15). Appropriate dust control measures, such as periodically wetting down the dirt access road and graded area, will be used as necessary during grading of the areas for building footprints and in other portions of the impact area during construction, landscaping, or any other activities that generate dust to minimize any adverse impacts on the life stages of the butterfly or its buckwheat food plant. Any dust generated by grading activities will pose only a temporary problem. The methods appropriate for dust control will be determined by consultation between the construction foreman and project biologist.

The patches of *E. parvifolium* located in the undeveloped portions of the site will remain unaffected and will continue to provide potential habitat for the butterfly at the project site during the grading and construction. Increased equipment traffic in the vicinity of any occupied butterfly habitat during grading and construction could result in increased collisions with adult butterflies. However, since the adults are weak fliers and tend to stay in close proximity to their buckwheat food plants, and since the majority of grading activities are proposed to occur in the spring months before the butterfly's activity period or the fall months after the butterfly's activity period, the potential for collisions with equipment is greatly reduced.

Drainage improvements will be installed to prevent potential erosion in protected habitat areas from runoff originating in the impact area. These improvements will include curbs, gutters, and other appropriate erosion control measures within the impact area.

The biologist will be on site during the initial grading activities (i.e., clearing of vegetation and stripping of the surface soil layer), in areas of potential Smith's blue butterfly habitat. The biological monitor shall be informed of the project starting date at least 7 days prior to the onset of construction. The monitor shall be present on site beginning with the installation of temporary fencing prior to clearing of vegetation and shall conduct weekly inspections of the project site during the remainder of the activities to ensure compliance with the mitigation measures provided in this HCP. The biological monitor will also periodically visit the project site during construction to ensure that no impacts occur in protected portions of the property. Should any violation occur, a "stop work" order will be issued immediately. The Ventura office

of the Service will be contacted and the "stop work" order will remain in effect until the issue is resolved.

7.7 HABITAT MANAGEMENT

The primary goal of the management program is to provide for an area 1.04 acres containing a minimum of 2,000 seacliff buckwheat plants for maintenance and preservation. The area will be kept free of the invasive plant species listed on Table 2 and those appearing in the California Invasive Plant Council's Exotic Pest Plants of Greatest Ecological Concern in California and California Invasive Plant Inventory. The publications may be accessed at: http://www.cal-ipc.org/publications. This is to compensate for any loss of plants within the impact area. Further, this designated area will be maintained and protected as described within a recorded deed restriction.

Specific management goals can be enumerated as follows:

a) Siting of some features of the project to avoid sensitive habitats and resources;

b) Slope stabilization, if needed;

c) Removal and control of exotic vegetation to less than 1% cover at the site and the deed restricted mitigation area, except for within 10 foot wide buffers adjacent to the existing paved road access .;

d) Designation of a 1.04 acre area containing at least 2000 plants of the coastal sage scrub habitat

e) Placing this area under a recorded deed restriction to run with the land

f) Habitat protection during grading and construction; and

g) Monitoring and maintenance of habitat values during and after construction.

The management goals and techniques described in this section are intended to minimize and mitigate the take of Smith's blue butterflies and mitigate impacts to coastal sage scrub habitat. The remainder of this section discusses the array of management techniques that will be used to meet the management goals of the HCP for the Sarment project site.

Adaptive management practices will provide the basis for long-term stewardship of the mitigation site and is considered fundamental to the successful implementation of the conservation measures set forth in this HCP. The flexibility inherent in the adaptive management approach allows adjustments to be made throughout the management of the mitigation site and ensures that the biological goals of the HCP will be met. For example, if new information about the Smith's blue butterfly, its buckwheat food plant, or site conditions becomes available during the life of the permit, management techniques may be altered to incorporate this new information. The key to adaptive management of the protected habitat will

be the monitoring program, which will identify where management efforts are successful and where remedial measures need to be implemented to achieve success.

7.7.1 AVOIDANCE OF SENSITIVE HABITAT

The majority of the coastal sage scrub habitat on the project site, consisting of approximately 3.0 acres, will be avoided during grading and construction activities for the new home. Only about 0.149 acres of buckwheat-dominated coastal sage scrub habitat will be directly affected by project development.

7.7.2 SLOPE STABILIZATION

Grading of the new home site will occur on the flatter portions of the southwestern portion of the site and only minor slope stabilization needs, within the impact area, are anticipated. Grading and backfill operations will be conducted to avoid slope failures in neighboring protected habitat areas that currently support stands of buckwheat. A temporary fence will be constructed between the limit of grading and existing buckwheat stands that lie outside of the impact area. Heavy equipment will not be permitted beyond the fence. Equipment operators will be informed of the reasons for installation of the fence and will be required to stop work and notify the project biologist or engineer immediately should slope failure that threatens existing buckwheat plants be imminent.

7.7.3 CONTROL OF EXOTIC PLANTS

Hottentot fig is one of the invasive non-native plants that has invaded approximately 0.11 acres at the project site. In order to expand the cover of native plant species and enhance habitat values, it will be eliminated from the project site, except for within a 10-foot buffer adjacent to the existing paved road access, where the Landowner will contain said species for erosion and fire protection. This invasive plant will be eliminated using a combination of manual and mechanical removal techniques, with the particular method used being that which is most appropriate for each situation. Solitary individuals or small patches of these plants will be eliminated by manual removal, while larger stands will be removed mechanically using the bucket of a backhoe only at the periphery of the impact area and in a manner that will not disturb surrounding habitat for the endangered butterfly. No herbicides will be used. Other eradication techniques, such as the use of black plastic, may be used if appropriate.

Special care is required in areas where Hottentot fig and native plants, such as buckwheat, are growing together. The weed eradicator shall be informed of the need to protect native plants Native plants will be flagged by an authorized biologist or otherwise plant knowledgeable person for avoidance. Manual removal of Hottentot fig and other nonnative plants will be necessary within a five-foot radius of *Eriogonum parvifolium* plants.

Weed control will generally be done in the spring to ensure that the invasive annual species do not set seed.

Table 2: Target Invasive Species

This is a list of the most common invasive species on the property, and the ones that have to most potential to negatively compete with seacliff buckwheat (*Eriogonum parvifolium*) on the Sarment Parcel.

Scientific Name	Common Name
Avena fatua	Slender Wild Oats
Bromus diandrus	Ripgut Brome
Bromus mollis	Soft Chess
Carpobrotus edulis	Hottentot Fig
Centaurea solstitialis	Yellow Star Thistle
Conium maculatum	Poison Hemlock
Cortaderia jubata	Jubata grass (pampas grass)
Foeniculum vulgare	Sweet Fennel

7.7.4 HABITAT CONSERVATION

To compensate for the direct and/or potential indirect loss of the 650 seacliff buckwheat plants, an area containing 2,000 or greater number of buckwheat plants will be dedicated and placed under a recorded deed restriction for conservation and maintenance. The invasive plant species listed on Table 2 and those appearing in the California Invasive Plant Council's Exotic Pest Plants of Greatest Ecological Concern in California and California Invasive Plant Inventory (the publications may be accessed at: http://www.cal-ipc.org/publications/) will be eradicated from the conserved area via previously discussed eradication techniques.

Furthermore, in some of the undeveloped portions of the site existing habitat quality is degraded by the presence of invasive plant species. Appropriate weed control practices will be utilized to eradicate these invasives from the project site and provide additional habitat for the endangered butterfly. Approximately 0.11acres of the site presently support invasive plants such as Hottentot fig and ripgut Brome. Areas currently occupied by invasives will be cleared of the invasives thereby providing the space for the existing buckwheat to expand and flourish.

By implementing the weed control, habitat conservation and protection measures described in this HCP, the quality of habitat for the Smith's blue butterfly on the project site is expected to improve over existing conditions. On the other hand, in the absence of the weed eradication and conservation programs, the invasive plant species may eventually override the existing seacliff buckwheat habitat to the detriment of the Smith's blue butterfly.

7.7.5 PERMANENT HABITAT PROTECTION

To provide for long term protection of the existing seacliff buckwheat habitat areas on the project site, the applicant shall record a deed restriction over a 1.04 acre area in the north east corner of the Sarment Parcel containing a minimum of 2,000 seacliff buckwheat plants. This area will be kept free of invasive plant species and maintained to further the growth of the

buckwheat plants as habitat for the Smith's blue butterfly. As described elsewhere in this HCP, the extensive preservation, enhancement and maintenance activities that will occur throughout the permit term will provide long term benefits to the endangered butterfly. Once the success criteria are achieved and the permit term ends, the seacliff buckwheat will be preserved and protected in perpetuity pursuant to the perpetual deed restriction. The deed restriction shall prohibit any activity that is incompatible with the preservation efforts.

The applicant shall create a fund, in the form of a non-wasting endowment or other monetary instrument (i.e. cash deposit, a certificate of deposit, irrevocable letter of credit or surety bond) in favor of a third party approved by the Service in an amount sufficient to carry on the management of the seacliff buckwheat habitat in perpetuity (including monitoring and weeding as necessary). Prior to the expiration of the permit term, the fund shall be transferred to the third party who will be responsible for the long term management of the seacliff buckwheat habitat.

The applicant, on behalf of his successors, understands that a failure to comply with the terms of the deed restriction shall be deemed in violation of the HCP and the Service may pursue any legal or equitable remedies against the applicant or his successor to enforce its terms.

Smith's Blue Butterfly Habitat Preservation Area

7.7.6 MONITORING AND MAINTENANCE

The applicant will provide funding, subject to the transfer provisions of Section 10, herein below, for a qualified individual to monitor implementation of this HCP for a period of five years, depending on the success of the conservation effort. It is anticipated that this individual would visit the site weekly during the period of grading, and periodically during project construction and during the initial stages of implementation of the various management measures. This will allow for timely solutions to problems that may arise during construction or mitigation implementation.

Since an area with existing buckwheat plants has been selected and dedicated for conservation, an assessment of the success of these mitigation measures will be necessary. The individual responsible for monitoring will visit the site annually for five years. The monitor will annually provide a brief written report to the property owners and USFWS, which describes:

1) an assessment of the condition of the on-site Seacliff buckwheat;

2) an estimate of the non-native species cover;

3) a brief discussion of conservation efforts for the past year, including all monitoring activities that were performed and whether conservation goals are being achieved;

4) incidental take occurrences;

5) any mitigation problems and any corrective measures undertaken to insure conservation success;

6) recommendations to solve any problems; and

7) butterfly sightings.

7.7.7 SUCCESS CRITERIA

The success criteria for this HCP are to maintain a healthy self sustaining population of at least 2,000 individual seacliff buckwheat plants within the 1.04 acre Preservation Area, and to ensure that the Preservation Area is free of invasive species. Special care will be made to control all target invasive species.

In addition, by the end of the second year after permit issuance, invasive exotic vegetation cover will be reduced by at least 90 percent from pre-project levels, throughout the HCP area, except for within the 10 foot wide buffers adjacent to the existing paved road access. By the end of the fifth year after permit issuance, invasive exotic vegetation will be reduced by 99 percent within the HCP area except for within the 10 foot buffers adjacent to the existing paved road access.

If, at the end of five years, or at any point during the monitoring period, the success criteria are not met, the biological monitor will provide an analysis of the cause(s) of failure, and

in consultation with the Service, propose remedial action(s) appropriate to deal with the causal factor(s). If specific factors become apparent that may preclude the establishment or success of buckwheats at the site, they will be described.

7.7.8 SCHEDULE FOR IMPLEMENTATION

The various management techniques described in this document will be implemented according to the following schedule.

Concurrent with the issuance of an incidental take permit, an area with 2,000 or more buckwheat plants will be designated and placed under a recorded deed restriction to compensate for the loss of the approximately 650 plants due to the construction.

Control and eradication of invasive plants will be achieved by manual and mechanical removal for each target invasive species. The timing of these activities will be determined by the phenology of the targeted invasive plants. The majority of the invasive species control will be done in the spring. Summer checks for yellow star thistle and other later blooming species will be done in June or July.

Temporary fencing will be erected to protect existing habitat for the Smith's blue butterfly prior to the start of grading. A qualified biologist will assist in staking the limit of grading and the alignment of the fence. This biologist will conduct pre-construction meetings with grading and construction personnel to inform them about the presence of special status species at the project site and appropriate protocol should the butterfly be encountered. The biological monitor will periodically visit the site to insure that all grading and construction activities comply with the parameters established in this HCP.

A monitoring program will continue for a period of five years. The first year will begin when conservation activities in response to grading and construction activities are initiated. In the second through fifth year, i.e., immediately following construction, the biological monitor will visit the project site annually and prepare annual reports. Further, monitoring and adaptive management should be employed until success criteria are met. The reports will describe the monitoring activities performed, the results, and recommendations for any necessary remedial actions to achieve the goals of the HCP. Reporting requirements are discussed further in Section 8.6.

8.0 PLAN IMPLEMENTATION

8.1 BIOLOGICAL GOALS AND OBJECTIVES

The overall goals and objectives of this HCP are

a) to compensate for the loss of 0.149 acres of directly impacted coastal sage scrub habitat and the potential adverse effects to 0.12 acres of coastal sage scrub habitat, by designating a 1.04 acre area with existing seacliff buckwheat plants containing approximately three times the affected amount (at least 2000 plants) and

b) To permanently protect this designated area, by placing it under a recorded deed restriction; and

c) To enhance existing habitat by the removal of Hottentot fig, ripgut brome, and other invasive plants that threaten the existing coastal sage habitat from the entire 6.10 acre parcel, such that invasive plants cover no more than 1 percent of the area (except adjacent to the existing private paved road where invasive species may be maintained within 10 ft. buffers on each side of the road for erosion control.)

8.2 IDENTIFICATION OF PROJECT REPRESENTATIVE

Prior to initiating ground-disturbing activities, the applicant shall designate a representative responsible for communications with the Service and for overseeing compliance with the Section 10 (a)(1)(B) permit. Initially, the designated representative is Anthony Lombardo of Lombardo & Gilles, PLC, 318 Cayuga Street, Salinas, CA 93902-2119, (831) 754-2444, email: tony@lomgil.com. The Service shall be notified in writing of the representative's name, business address and telephone number, and shall be notified in writing if a substitute representative is designated.

8.3 IDENTIFICATION OF BIOLOGICAL MONITOR

At least 30 days prior to any activities that would include ground disturbance or handling of Smith's blue butterflies, Mr. Keig will nominate a biological monitor to perform the monitoring duties outlined in this HCP. Mr. Keig will include contact information, a resume, and any other pertinent information regarding the proposed monitor's experience working with Smith's blue butterflies and their habitat. The Service will review this information and provide written approval of the proposed monitor, if he or she has appropriate qualifications. The same procedure will be followed if Mr. Keig proposes to change monitors over the course of the permit term.

8.4 RESPONSIBILITIES

As specified in the Service Habitat Conservation Planning Handbook (1996), an Implementing Agreement (IA) is not required for a low-effect HCP unless requested by the permit applicant. Dan Keig understands that he is responsible for implementing this HCP in accordance with the specifications for mitigation.

Dan Keig will satisfy his mitigation responsibilities by designating an area with at least 2,000 existing buckwheat plants, by placing such an area under a recorded deed restriction for continuous preservation, by establishing a fund for perpetual monitoring and management of that area, and by removal of invasive species outside of the impact area that threaten the remainder of the coastal sage scrub. Dan Keig will assume all responsibilities for monitoring, conservation, and maintenance of the protected and conserved habitat areas, and reporting, as described herein. Dan Keig will also complete obligations assigned to him within the Section 10(a)(1)(B) permit and the HCP.

8.5 PLAN DURATION

The applicant seeks a five (5) year permit from the Service to cover those activities associated with the direct and indirect impacts to 0.27 acres of coastal sage scrub habitat at the project site. The 5-year period is necessary to insure that the mitigation is implemented successfully and benefits the endangered Smith's blue butterfly. The permittee may request termination of the permit from the Service any time after the mitigation is completed and the monitoring and success criteria for the conservation have been met.

The permittee may request such a termination of the permit from the Service in writing and must demonstrate that all the mitigation objectives have been met.

8.6 REPORTING

8.6.1 POST-CONSTRUCTION COMPLIANCE REPORT

A post-construction compliance report prepared by the monitoring biologist shall be forwarded to the Ventura Office of the U.S. Fish and Wildlife Service 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 permittee's 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) occurrence of incidental take of federally-listed species, if any; and

6) other pertinent information;

7) results from monitoring;

8) changed and unforeseen circumstances-if they occurred and how were they dealt with.

8.6.2 MONITORING REPORTS

The monitoring reports will commence at the time of project implementation and when the effects anticipated in this HCP begin. The monitoring reports will be prepared and submitted to USFWS by December 31st of each year the permit is in effect. These reports shall include:

1) an assessment of the condition of the on-site seacliff buckwheat;

2) evidence of erosion control or function;

3) an estimate of non-native species cover;

4) a brief discussion of conservation and monitoring efforts over the past year;

5) incidental take occurrences;

6) any mitigation problems and any corrective measures undertaken to insure conservation success;

7) recommendations to solve problems; and

8) butterfly sightings.

8.7 FUNDING

The applicant will provide funding for the implementation of the minimization and mitigation measures as specified in this HCP. The applicant understands that a failure to provide adequate funding, and a consequent failure to implement the terms of this HCP in full, could result in temporary permit suspension or permit revocation.

All funds required for the minimization and mitigation measures and monitoring during the permit term will be provided by the applicant and secured by a cash deposit. Because the purpose of this deposit will be to assure adequate funding to implement the HCP, withdrawals from the deposited amount will not be made unless they are approved in writing by the Service.

The applicant has established a budget to fund

- take avoidance measures including monitoring, employee orientation, etc.
- Construction and post construction monitoring
- Removal of invasive non-native plants as specified in this HCP

The estimated costs for these activities as described in this HCP and for the 5-year permit period are itemized in **Table 3**.

The total cost estimate for all implementation tasks during the permit term is Seventeen Thousand Dollars ($17,000): this includes various initial costs such as construction monitoring and eradication of exotics. This amount will be provided by the applicant. This amount will also be assured by a deposit as discussed above. Before the end of the permit term, the deposited amount will be moved into an endowment (Fish and Wildlife Foundation or to another third party designated by the Service) for permanent management of the 1.04 acre habitat preservation area.

It is agreed between the applicant and the Service that should it become apparent that the $17000 endowment exceeds the amount of funding necessary for the long term management called for in the HCP, the applicant shall inform the Service, and the amount of the endowment

shall then be reduced by an amount to be determined in consultation with, and with the concurrence of, the Service. Excess funds will be returned to the applicant.

Applicant proposes to establish this endowment to realize the goals and objectives of this HCP. Setting up funding for maintenance and conservation will bind the HCP by the "No Surprises" rule, meaning that if a fund has been established but more funding becomes necessary to establish the proposed goals due to unforeseen circumstances, the additional funding can not be requested from the applicant.

Table 3. Estimated costs for habitat monitoring.			
Task	**Assumptions**	**Unit Cost***	**Total Cost***
Implementation Tasks			
Construction and Monitoring reporting	Biological Monitor	6 days @ $ 400.00/day	$ 2,400.00
Eradication of exotics	Contractor	$ 1,000.00	$ 1,000.00
Monitoring Reporting (After Construction on success criteria)	Biological Monitor	$1,200.00/year (2 Days-Buckwheat, Invasive and Butterfly monitoring ($800) 1-day Report ($400))	$12,000.00 (est.)
Maintenance	Exotics Control	2 days @ $80.00/day	$1600.00
Subtotal for Implementation			$ 17,000.00

**** Note: the actual costs may be more or less than these estimates.***

9.0 CHANGED AND UNFORESEEN CIRCUMSTANCES

Section 10 regulations [50 CFR 17.22 (b)(2)] require that an HCP specify the procedures to be used for dealing with changed and unforeseen circumstances that may arise during the implementation of the HCP. In addition, the Habitat Conservation Plan Assurances (No Surprises) Rule (69 Federal Register 71723, December 10, 2004 as codified in 50 Code of Federal Regulations (C.F.R.), Sections 17.22[b] and 17.32[b]) defines changed and unforeseen circumstances and describes the obligations of the permittee and the Service. 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 consent of the permittee. Should any changed or unforeseen circumstances occur, the Applicant will notify the Service immediately.

9.1 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 (e.g., the new listing of a species, a fire, or other natural catastrophic event in areas prone to such an event). If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances and these additional measures were already provided for in the plan's operating conservation program (e.g., the conservation management activities or mitigation measures expressly agreed to in the HCP or IA), then the permittee will implement those measures as specified in the plan.

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

Other reasonably anticipated actions that may impact the seacliff buckwheat are fire clearance requirements, maintenance and repair of drainage facilities, wildfires, and landslides and erosion

The Fire District ultimately determines the fire clearance, if any, for the future residence on this site. It is expected that any required fire clearance will occur in the impact area; however, if any is required outside the impact area and causes destruction of seacliff buckwheat, this would constitute a changed circumstance.

The project includes the installation of drainage improvements. Repair and maintenance of drainage facilities are anticipated to be necessary only within the impact area. However, if they are required outside the impact area and cause destruction of seacliff buckwheat, this would constitute a changed circumstance.

Although a wildfire may actually enhance habitat values in the long term because seacliff buckwheat regenerates well after such fires, nonetheless, some intrusion into the habitat area may be necessary to protect the residence. Should a wildfire occur, the permittee is responsible for restoration (replanting or reseeding) if, during a wildfire, degradation of the preserved area and take of the Smith's blue butterfly should occur during attempts to protect and preserve the residence.

Winter storms could cause landslide or erosion problems within the preservation area that would require subsequent repairs, such as slope stabilization, and revegetation; this would constitute a changed circumstance.

In the unlikely event that the changed circumstances stated above should occur, the applicant agrees to add to the Preservation Area an area equal in size and amount of seacliff buckwheat to the destroyed or damaged area, in this way compensating for any reasonable foreseeable losses due to any aforementioned actions.

9.2 UNFORESEEN CIRCUMSTANCES

Unforeseen circumstances are changes in circumstances that affect a species or geographic area covered by the HCP that could not reasonably be anticipated by plan developers and the Service at the time of the plan's negotiation and development and that result in a substantial and adverse change in status of the covered species. 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 permittee.

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

If the Service determines that additional conservation and mitigation measures are necessary to respond to the unforeseen circumstance 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 are 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 the original terms of the HCP, only with the consent of the permittee.

10.0 PERMIT AMENDMENT/RENEWAL PROCESS

10.1 MAJOR AMENDMENTS TO THE PERMIT

During the specified permit period, amendment of the Section 10(a)(1)(B) permit for the Sarment project would be required for any of the following changes:

a) significant revision of the permit area boundary;

b) modification of any important project action or mitigation component under the HCP, including funding, that may significantly affect authorized take levels, effects of the project, or the nature or scope of the mitigation program; or

c) any other modification of the project likely to result in significant effects to the Smith's blue butterfly not addressed in the original HCP and permit application.

To request a major amendment to the HCP and/or section 10(a)(1)(B) permit, the permittee must submit to the Service in writing a description of the proposed amendment, an explanation of why the amendment is necessary and desirable, and an explanation of the potential impacts to the covered species, associated habitat, and human environment. Major amendments may require a change in one or more of the Service's decision documents, including the Biological Opinion, Findings, and NEPA document. If the Service concurs with the amendment proposal, it shall authorize the HCP and/or section 10(a)(1)(B) permit amendment in writing, and the amendment shall be considered effective upon the date of the Service's written authorization.

10.2 MINOR AMENDMENTS TO THE HCP

This HCP may, under certain circumstances, be amended without amending its associated permit, provided that such amendments are of minor or technical nature and that the effect on the species involved and the levels of take resulting from the amendment are not significantly different from those described in the original HCP. Examples of minor amendments to the HCP for the Sarment project that would not require permit amendment include:

a) minor revisions to monitoring or reporting protocols;

b) minor revisions of the HCP's plan area or boundaries; and

c) minor revisions in project design and construction procedures.

To amend the HCP without amending the permit, the applicant must submit to the Service in writing a description of the proposed amendment, an explanation of why the amendment is necessary or desirable, and an explanation of why effects of the proposed amendment are believed not to be significantly different from those described in the original HCP. If the Service concurs with the amendment proposal, it shall authorize the HCP

amendment in writing, and the amendment shall be considered effective upon the date of the Service's written authorization.

10.3 PERMIT RENEWAL

Upon expiration, the Sarment project's Section 10 (a)(1)(B) permit may be renewed, if necessary, without the issuance of a new permit, provided that the permit is renewable, and that biological circumstances and other pertinent factors affecting Smith's blue butterfly at the site are not significantly different than those described in the original HCP. At least thirty (30) days prior to the expiration of this permit, the applicant or current permit holder shall submit to the Service, in writing:

a) a request to renew the permit;

b) reference to the original permit number;

c) certification that all statements and information provided in the original HCP and permit application, together with any approved HCP amendments, are still true and correct, or inclusion of a list of changes;

d) a description of what take has occurred under the existing permit; and

e) a description of what portions of the project are still to be completed, if applicable, or what activities under the original permit the renewal is intended to cover.

10.4 PERMIT TRANSFER

In the event of sale or transfer of ownership of the property, transfer of the permit shall be governed by the Service's regulations in force at the time, as explained in Section 2.2 Permit Holder/Permit Boundary.

11.0 ALTERNATIVES CONSIDERED

11.1 ALTERNATIVE 1: NO-ACTION

Under the No-Action alternative, the Sarment project would not be implemented and the Service would not issue an incidental take permit. As a result, incidental take of Smith's blue butterfly associated with removal of vegetation from the property and from initial grading activities would be avoided, and no Section 10 (a)(1)(B) permit and HCP would be required. Without this HCP, the deed restriction establishing a habitat protection area onsite for permanent protection and management of 1.04 acres of existing habitat of the Smith's blue would not be created, and there would be no parameters established for the removal or containment of invasive non-native plant species that are a threat to the buckwheat foodplants of the Smith's blue butterfly.

The No-Action Alternative would not meet the needs of the applicant. The Smith's blue butterfly and its habitat would have fewer protections and would be worse off in the long run in the absence of this HCP. For these reasons, this alternative has been rejected.

11.2 ALTERNATIVE 2: REDESIGNED PROJECT

Under this alternative, the development footprint of the project would be relocated to another portion of the site. The steep slopes (>30%) that characterize most of the 6.1 acres Sarment site cannot be developed due to local regulations.

There is one other possible homesite on the property: this is located in the southeastern portion of the site, directly uphill from and adjacent to the proposed location. This location was considered at one time by the architect and the applicant as a potential homesite. However, there is a greater density of buckwheat plants at this uphill location. While incidental take of the Smith's blue butterfly would occur at either location during initial grading and construction, the amount of grading needed to prepare the uphill building site would be greater, resulting in a greater impact to the habitat of the Smith's blue butterfly.

To minimize impacts to the Smith's blue butterfly and its habitat, this site was rejected and the currently proposed location was chosen. For these reasons, this alternative has been rejected.

11.3 ALTERNATIVE 3: PROPOSED ACTION (permit issuance)

Under the Proposed Action alternative, the Sarment parcel project would be developed as described in Section 2.0. The Proposed Action requires the issuance of a Section 10(a)(1)(B) permit to allow construction of the project and a Habitat Conservation Plan to assure that the applicant will minimize any direct and indirect impacts of the project and mitigate for adverse effects to the Smith's blue butterfly and its habitat, the coastal sage scrub, to the fullest extent practicable. The benefits of this HCP are these:

> This HCP establishes procedures to minimize the impacts created by the project. The HCP also compensates for the direct loss of 0.149 acres of coastal sage scrub habitat by establishing a habitat protection area onsite, a 1.04 acre area which will be protected in perpetuity by a recorded deed restriction for the permanent protection and management of the existing habitat. It also establishes an endowment to fund management of the area.
>
> In addition, the HCP provides for the removal of invasive non-natives throughout the HCP area, and containment of the Hottentot fig to within the 10 ft. buffers adjacent to the existing paved road access, thus removing or containing 0.21 acres of invasive non-natives that would displace the buckwheat foodplant of the butterfly (Arnold 1983a and 1986).
>
> This HCP will offset the adverse effects to the habitat of the Smith's blue butterfly caused by the project, and will benefit the Smith's blue butterfly in the long run because of the conservation programs it establishes and the long-term assurances it provides.

For these reasons and because this proposed alternative best meets the goals of the applicant, this is the preferred alternative.

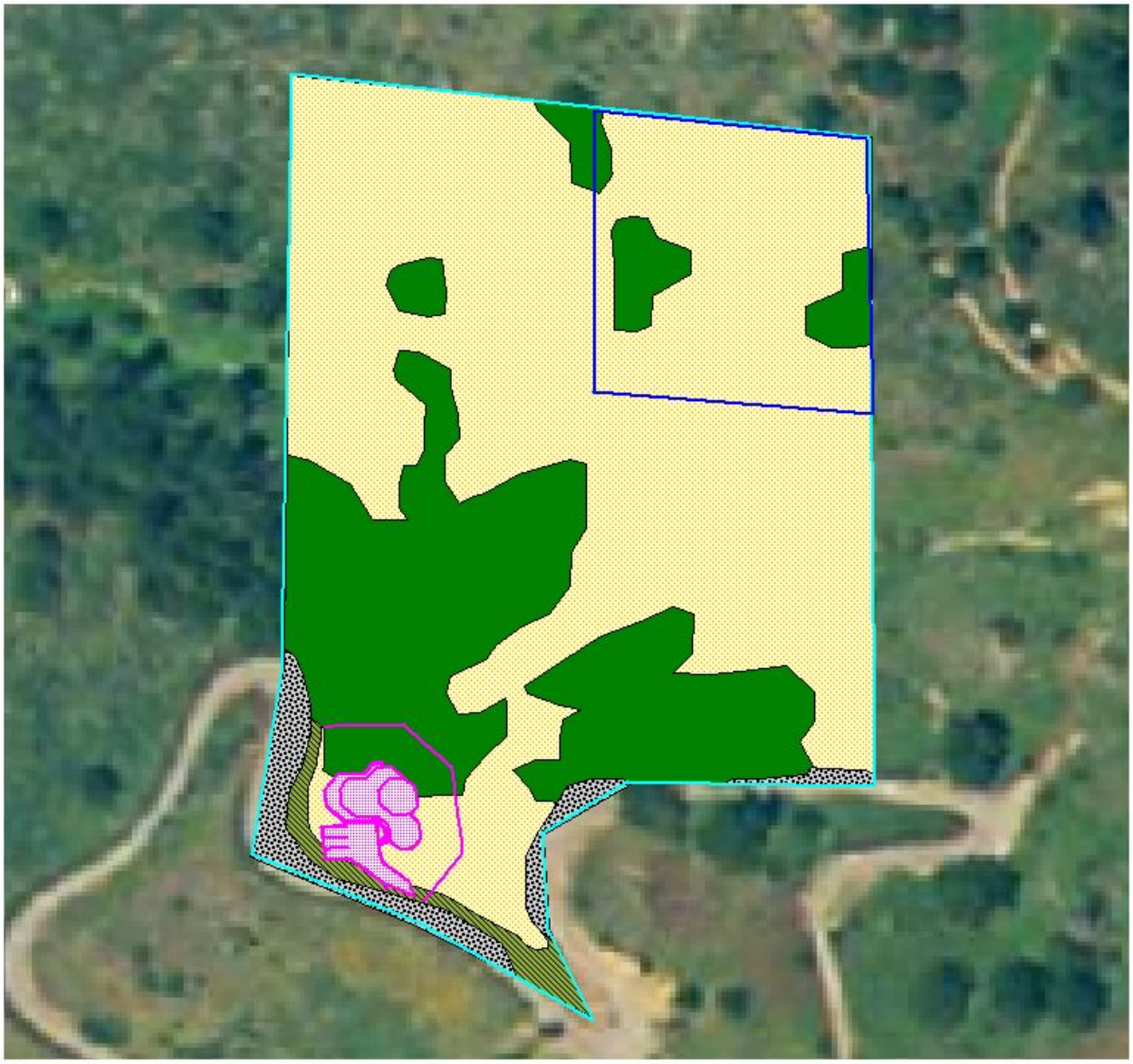
12.0 HABITAT CONSERVATION PLAN PREPARERS

Dale Hameister of Dale Hameister Biological Consulting prepared this HCP as modified by Sheri L. Damon, Esq. of Lombardo & Gilles and Miriam Schakat, Esq. of Lombardo & Gilles. Dr. Richard A. Arnold, Paul E. Davis, and Richard Nystrom supplied background information and early draft materials. Dale Hameister is a biologist located in Monterey, CA. Dr. Arnold is the President of Entomological Consulting Services, Ltd., of Pleasant Hill, CA. Mr. Davis is the Principal of The Paul Davis Partnership, located in Monterey, CA.

Figure 1

Natural Diversity Database 1 Mile Query Map

Dale Hameister Biological Consulting	Keig Property Sarment Parcel



Legend

Aerial Photo - June 2000

- Proposed Seacliff Buckwheat / Smith's Blue Butterfly Preservation Area (1.04acres)
- Proposed Development
- Parcel Lines

Sarment Parcel Vegetation

- Coastal Scrub
- Disturbed/Iceplant
- Monterey Pine
- Road

Graphic Scale

100 0 100 200 Feet

Site / Habitat Map (Figure 2)

Dale Hameister Biological Consulting	Keig Property Sarment Parcel

N

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