Habitat Conservation Plan
Morro Shoulderband Snail
(*Helminthoglypta walkeriana*)
Mammen Parcel (APN 074-325-067)
Los Osos, San Luis Obispo County, California

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Executive Summary

Renee and Kurt Mammen, as the property owners and applicants, are seeking an incidental take permit under section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended, to cover the incidental take of the Morro shoulderband snail (***Helminthoglypta walkeriana***) associated with the construction, maintenance, and occupation of a single-family residence on an existing legal parcel (Assessor Parcel Number 074-325-067) in the Bayview Heights subdivision of Los Osos, County of San Luis Obispo, California.

A 10-year permit term is requested to address incidental take of the Morro shoulderband snail associated with the construction, maintenance, and occupation of a single-family residence on a 15,300 square-foot (~0.35 acre) legal parcel. Project implementation is likely to result in the incidental take of the Morro shoulderband snail in all life stages.

The Morro shoulderband snail is a federally listed endangered terrestrial invertebrate endemic to the Los Osos and Baywood Park areas of the central coast of San Luis Obispo County, California. While several federally listed species are known to occur in this area, only the Morro shoulderband snail has the potential to be affected by the project. Due to the lot's location, small size, and highly degraded habitat, the project is not anticipated to significantly affect the survival and recovery of the Morro shoulderband snail population in the wild. Also due to the parcel's location and small size, onsite conservation or restoration of habitat is not considered to provide meaningful conservation benefit to the species.

The conservation strategy within this habitat conservation plan is consistent with the recovery criteria for the Morro shoulderband snail. Measures to minimize and mitigate take of the species include the following:

- Pre-construction surveys to identify the presence of individual Morro shoulderband snails.
- Capture and moving out of harm's way all Morro shoulderband snails to a pre-selected Service-approved receptor site.
- Pre-construction awareness training for all construction personnel.
- Construction monitoring.
- Payment of costs associated with the identified minimization measures.
- Payment of an in-lieu fee to effect recovery task actions for the Morro shoulderband snail on conserved lands within the known range of the species.

Implementation of these measures will be conducted under a project-specific incidental take permit that will include the deposit of $7,650 into the Impact Directed Environmental Account administered by the National Fish and Wildlife Foundation. The project is also subject to County of San Luis Obispo permit requirements to ensure compliance with the California Environmental Quality Act and the California Coastal Act, both acts will be conditioned to require that an incidental take permit has been secured and payment of the in-lieu fee has been made prior to issuance of the necessary County permits.

Section 1. Introduction and Background

The project involves the construction, maintenance, and occupation of a single family residence on a 15,300 square foot existing legal parcel in the Bayview Heights subdivision of Los Osos, County of San Luis Obispo, California. The habitat conservation plan (HCP) and incidental take permit (ITP) are necessary to meet the conditions of the California Environmental Quality Act and the California Coastal Act and to obtain the County of San Luis Obispo (County) permits required to proceed with the project.

1.1 Applicant and Permit Term

Renee and Kurt Mammen, as the legal owners and applicants, request an ITP to authorize the incidental take of Morro shoulderband snail, a federally listed endangered species, for a period of 10 years commencing upon the date of approval by the U.S. Fish and Wildlife Service (Service). The applicants request this permit pursuant to section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended (Act). If issued, Kurt and Renee Mammen would become the permittees of the ITP.

1.2 Permit Area/Covered Lands

The Mammen parcel is 15,300 square feet in size and located off Covey Lane in the community of Los Osos, an unincorporated portion of San Luis Obispo County, California. The property is found on the United States Geological Survey Morro Bay South 7.5 minute quadrangle map (Figure 1). It is legally identified as County Assessor Parcel Number 074-325-067 and includes access and utility easements (Figure 2). The entire parcel and easements, together, are the covered lands and will be referred to as the "Mammen parcel" herein.

1.3 Species to be Covered by the Permit

The only species addressed in this HCP is the Morro shoulderband snail (*Helminthoglypta walkeriana*), a federally listed endangered terrestrial invertebrate species endemic to Los Osos and its immediately surrounding area.

Figure 1: Project Vicinity Map

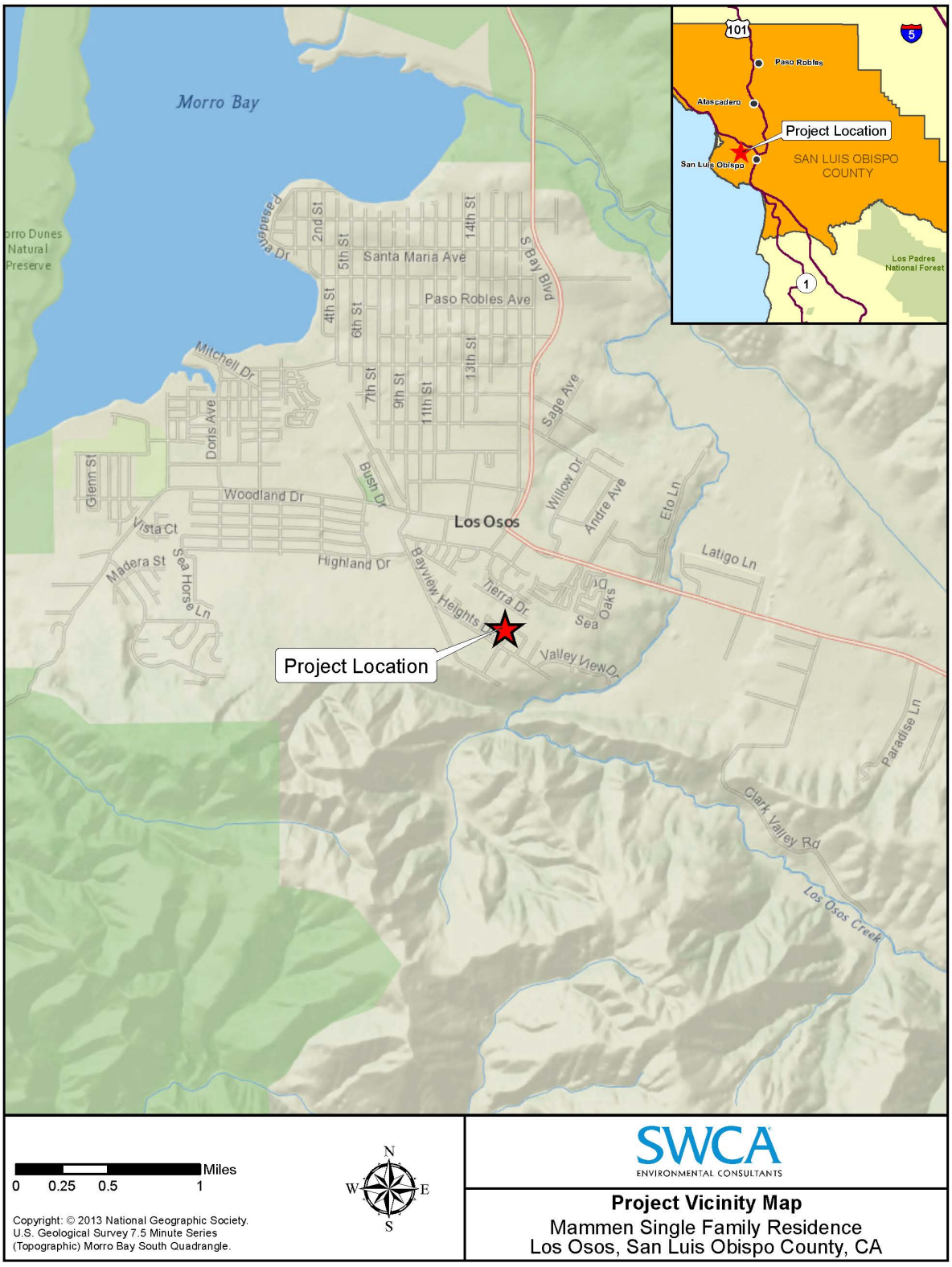

Figure 2: Project Site

1.4 Regulatory Framework

1.4.1 Federal Endangered Species Act

The Service responsibilities include administering the Endangered Species Act of 1973, as amended (Act). Section 9 of the Act prohibits the take of any federally listed endangered or threatened species. Take is defined in Section 3(18) of the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Service regulations in 50 CFR 17.3 further define harm to include significant habitat modification or degradation that actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. Harassment is defined as an intentional or negligent action that creates the likelihood of injury to wildlife by annoying a species to such an extent that its normal behavioral patterns (e.g., breeding, feeding, or sheltering) are significantly disrupted. The Act provides for civil and criminal penalties for the unlawful taking of listed species. Exemptions to the prohibitions against take may be obtained through coordination with the Service in two ways. If a project is to be funded, authorized, or carried out by a Federal agency and may affect a listed species, the Federal agency must consult with the Service pursuant to section 7(a)(2) of the Act.

In order to comply Federal law, private individuals and State and local or other entities who propose an action that is likely to result in the take of federally listed species and for which there is no Federal nexus, may achieve compliance with the Act by applying for an incidental take permit pursuant to section 10(a)(1)(B) of the Act. Such permits are issued by the Service when take is not the intention of and is incidental to otherwise legal activities. An application for an incidental take permit must be accompanied by a habitat conservation plan (HCP). The regulatory standard under section 10(a)(1)(B) of the Act requires that the effects of authorized incidental take be minimized and mitigated to the maximum extent practicable. Under section 10(a)(1)(B) of the Act, a proposed action also must not appreciably reduce the likelihood of survival and recovery of the species in the wild. Adequate funding of identified actions to minimize and mitigate impacts must also be ensured.

Section 7(a)(2) of the Act requires that Federal agencies ensure that their actions, including permit issuance, do not jeopardize the continued existence of listed species or destroy or adversely modify listed species' critical habitat. Pursuant to 50 CFR 402.2, "Jeopardize the continued existence of…" means to engage in an action that would reasonably be expected, directly or indirectly, to appreciably reduce the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species. Issuance of an incidental take permit by the Service, pursuant to section 10(a)(1)(B) of the Act, constitutes a Federal action that is subject to the requirements of section 7. As such, as a Federal agency issuing a discretionary permit, the Service must prepare an internal consultation to address our action.

1.4.2 Section 10(a)(1)(B) Incidental Take Permit Process

The process for obtaining an incidental take permit (ITP) has three primary phases: (1) development of the HCP; (2) processing of the permit; and (3) post-issuance compliance. During development of the HCP, the project applicant prepares a plan that integrates the proposed project or activity with protection of listed species. Every HCP submitted in support of an incidental take permit application must include the following information: (1) those impacts likely to result from the proposed taking of the species for which permit coverage is requested; (2) measures that will be implemented to monitor, minimize, and mitigate impacts; funding that will be made available to undertake such measures; and procedures to deal with unforeseen circumstances; (3) alternatives to the proposed action that would not result in take; and (4) any additional measures Service may require as necessary or appropriate for purposes of the plan.

During the post-issuance phase, the permittee(s) and other responsible entities implement the HCP. The Service monitors the permit compliance as well as the long-term progress and successful implementation of the HCP. The HCP development phase concludes and the permit processing phase begins when a complete application package is submitted to the appropriate permit-issuing office. A complete application package consists of the permit application and its $100 fee, the HCP, and an Implementing Agreement (IA) if determined to be necessary. The Service must also publish a Notice of Availability the application in the *Federal Register* to allow for public comment. The Service also prepares an internal Biological Opinion pursuant to section 7 and prepares Findings to evaluate the section 10(a)(1)(B) permit application to ensure it meets permit issuance criteria. Compliance with the National Environmental Policy Act (NEPA) is ensured by the preparation of an Environmental Action Statement, Environmental Assessment, or Environmental Impact Statement that go out for a 30, 60, or 90-day public comment period, respectively. An implementing agreement is accompanies the HCP except in cases where the HCP is categorically excluded from NEPA and eligible for processing as a low-effect HCP. The ITP is issued upon the Service's determination that all requirements for permit issuance have been met. These criteria require that: (1) the taking will be incidental; (2) the impacts of incidental take will be minimized and mitigated to the maximum extent practicable; (3) the taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild; (4) the applicant will provide additional measures that the Service requires as being necessary or appropriate; and (5) the Service has received assurances, as may be required, that the HCP will be implemented.

During the post-issuance phase, the permittee(s) and any other responsible entities implement the HCP. The Service will monitor compliance with the HCP as well as its long-term progress and success. The public is notified of permit issuance through a publication in the *Federal Register.*

1.4.3 The National Environmental Policy Act

The purpose of NEPA is two-fold: to ensure that Federal agencies examine environmental impacts of their actions (e.g., whether or not to issue an ITP) and to employ public participation. This Federal act serves as an analytical tool to examine direct, indirect, and cumulative impacts

of the proposed project alternatives in order to inform the Service regarding whether or not to issue an ITP pursuant to section 10(a)(1)(B) of the Act. Compliance with NEPA is required for each HCP as part of the ITP application process.

1.4.4 The National Historic Preservation Act

All Federal agencies are required to examine the potential for their considered action to result in impacts to cultural impacts. This requires consultation with the State Historic Preservation Office and any potentially affected American Indian tribe. All ITP applicants are requested to submit a Request for Cultural Resources Compliance form to the Service along with the draft HCP. Depending on the nature of the information provided, the applicant(s) may be required to conduct cultural resource surveys and provide mitigation for any identified significant impacts to cultural resources.

1.4.5 Other Relevant Laws and Regulations

- **California Endangered Species Act:** The California Endangered Species Act (CESA) generally parallels the main provisions of the Act and provides for the designation of native species or subspecies of plants, fish, and wildlife as endangered or threatened. Section 2080 prohibits the take of state listed endangered or threatened species but allows for the incidental take of such species as a result of otherwise lawful development projects under section 2081(b) and (c). The Morro shoulderband snail is not listed under CESA; therefore, a State of California ITP for this species is not required for the Mammen project.

- **California Environmental Quality Act:** The California Environmental Quality Act (CEQA) is a state statute that is generally analogous to NEPA on the Federal level in that it requires the environmental review for projects that may result in impacts to the human environment and environmental resources. It requires public agencies to review the environmental impacts of proposed projects, prepare a categorical exclusion, negative declaration, or environmental impact reports to address these potential effects, provide feasible alternatives, and consider mitigation measures that would reduce environmental impacts to a level that is less than significant. The County is the local lead agency responsible for providing CEQA review and ensuring compliance for projects under its jurisdiction. This includes the unincorporated community of Los Osos. As such, they will evaluate the Mammen's development application; impacts to the Morro shoulderband snail represent one aspect of this review.

- **California Coastal Act of 1976:** A California voter initiative, Proposition 20 (*i.e.*, the Coastal Zone Conservation Act) passed in 1972 creating the California Coastal Commission (Commission). It was later made permanent through the passage of the California Coastal Act of 1976. The Commission is a State agency charged with ensuring that all development within California's coastal zone (CZ) is consistent with the provisions of the Coastal Act of 1976. Commission jurisdiction within the CZ is broad,

applies to both private and public entities, and addresses almost all types of development activities inclusive of division of land, changes in the intensity of use of state waters, and of public access to waters. The regulatory role of the Commission is facilitated through their review of development projects and the issuance of Coastal Development Permits (CDP) that typically include conditions of approval that, if met, will bring the development into compliance with the Coastal Act. In circumstances where a Local Coastal Program (LCP) has been prepared by a local agency and certified by the Commission, it serves, in effect, as the environmental review. In such cases, the issuance of a CDP is the responsibility of the local agency. The Commission retains ultimate oversight and responsibility for compliance through an appeal process. One of the primary provisions of the Coastal Act is to preserve, protect, and enhance environmentally sensitive habitat areas (ESHA). Section 30107.5 of the Coastal Act defines an ESHA as "Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments." The entire community of Los Osos, including the Mammen parcel, lies within the CZ and is considered ESHA based upon its underlying soil substrate, Baywood fine sands.

Section 2. Project Description and Covered Activities

2.1 Project Description

The project involves the construction, maintenance, and occupation of a single-family residence including associated outdoor living areas, landscaping, and required hazard abatement on the Mammen parcel.

2.2 Covered Activities

The project activities that are likely to result in take of the Morro shoulderband snail and, therefore, to be considered covered activities include the following:

Short-Term Impacts:

- Staging area for construction activities.
- Trenching for utilities and other infrastructure.
- Excavation for the septic system.
- Dust and overspray during construction.

Long-Term Impacts:

- Site preparation including clearing vegetation and grading.
- Installation of the foundation and other hardscape such as the driveway, patios, et cetera.
- Installation and maintenance of Landscaping.
- Hazard abatement activities required the local fire protection agency, which are expected to include the clearing of non-native grasses.

Implementation of the Conservation Strategy:

- Capture and relocation of any Morro shoulderband snails out of harm's way to a pre-selected Service-approved receptor site.

All activities described above are legal actions as long as they abide by County ordinances and permit requirements and the terms and conditions of the ITP.

Section 3. Environmental Setting and Covered Species

3.1 Environmental Setting

3.1.1 Climate

The community of Los Osos experiences a coastal Mediterranean climate characterized by long, dry, summers and short, wet, mild winters. Fog is common during the late spring and summer months and moderates summer temperatures. Temperatures range from 48° F to 69° F during the summer, with an average of 58° F and from 42° F to 66° F during the winter months, with an average temperature of 53° F. On current average the warmest month is October and the coolest month is January. Rainfall is highly variable within and between winter seasons with an average of 49 days with measurable precipitation annually. The current average annual precipitation in Los Osos is 17.6 inches with most of the precipitation occurring from November to April and highest rainfall occurring in February.

3.1.2 Topography/Geology

The Mammen parcel is found within an area of rolling, stabilized, pre-Flandrian aged dunes located at the southern end of the Morro Bay Estuary. Underlying soils consist of well-drained sandy loam in the Baywood fine sand (2 to 9 percent slopes) series (NRCS 1984). The site is level, with onsite elevations ranging from 258 to 266 feet above mean sea level.

3.1.3 Hydrology/Streams, Rivers, Drainages

The Mammen parcel occurs within the southwestern region of the Morro Bay watershed and is located approximately 1.5 miles from the southern shore of the Morro Bay Estuary. It lies within a watershed area that drains directly into the Morro Bay Estuary. Surface runoff is conveyed across the parcel to the north. Ther are no wetlands or water features onsite.

3.1.4 Existing and Surrounding Land Uses

The Mammen parcel is a vacant rectangular flag lot bordered on all four sides by existing residences. Onsite vegetation is predominantly (~80%) non-native perennial veldt grass (*Ehrharta calycina*) and bare ground (~20%). There are seven small live oak trees (*Quercus agrifolia*), six of which are less than five inches in diameter at breast height. Six of the trees are found on the northern property line and the seventh is on the western property line. According the Biological Resource Assessment (SWCA 2015) the trees appear to have been planted and do not comprise a coast live oak dominated community.

3.2 Covered Species

The subject of this HCP is the Morro shoulderband snail, also known as the banded dune snail. This section summarizes the limited body of information currently available for the species, including its status and distribution, taxonomy and description, natural history, and its estimated distribution and abundance on the Mammen parcel.

3.2.1 Status and Distribution of the Morro Shoulderband Snail

The Morro shoulderband snail is a native gastropod endemic to the Los Osos area of western San Luis Obispo County. It was listed by the Service as endangered on December 15, 1994 (Service 1994). The original listing recognized two subspecies or interspecific variations of the Morro shoulderband snail, *Helminthoglypta walkeriana* and *H. walkeriana* var. *morroensis*. At the time of listing *H. walkeriana* and *H. w. morroensis* (= *H. w.* var. *morroensis*) were classified as a single species under the taxonomic classification prescribed in Roth (1985). A recent re-examination of the taxonomic status of the two variants by Roth and Tupen (2004) resulted in their classification as separate species, *H. walkeriana* (Hemphill 1911), the Morro shoulderband snail; and *H. morroensis* (Hemphill 1911), the Chorro shoulderband snail. At the time of the listing, the range of *H. walkeriana* was described as being restricted to sandy soils of coastal dune and coastal sage scrub communities near Morro Bay and included areas south of Morro Bay, west of Los Osos Creek, and north of Hazard Canyon. The current known range is slightly expanded and encompasses approximately 7,700 acres, extending from Morro Strand State Beach in northern Morro Bay southward to Montaña de Oro State Park and inland to at least Los Osos Creek in eastern Los Osos (Roth and Tupen 2004; Service 2006). Based on the preliminary findings of Roth and Tupen (2004), the Service issued a position statement announcing that the unintended protection of *H. morroensis* under the Act would be discontinued (Service 2004). Protection under the Act is still provided for *H. walkeriana*, the species that is restricted to sandy soil substrates in and around the community of Los Osos.

A recovery plan for the species, *Recovery Plan for the Morro Shoulderband Snail and Four Plants from Western San Luis Obispo County, California,* was published on September 26, 1998 (Service 1998). The plan identifies four Conservation Planning Areas where conservation and habitat protection efforts will be focused to facilitate the recovery of the Morro shoulderband snail and the four plant species also addressed in the plan. Critical habitat was designated for Morro shoulderband snail on February 7, 2001 (Service 2001). It includes three units that comprise a sum total of 2,566 acres of coastal dune, coastal dune scrub, and maritime chaparral habitats in and around the community of Los Osos and the Morro Bay Estuary (Service 2001). A five-year status review for the Morro shoulderband snail was prepared (Service 2006) and concluded that the Morro shoulderband snail population is stable to increasing and that threats to the species have been reduced considerably; however, recovery criteria have not been fully achieved.

3.2.2 Species Taxonomy and Description

The Morro shoulderband snail belongs to the phylum Mollusca, class Gastropoda, subclass Pulmonata, order Stylommatophora, family Helminthoglyptidae, genus *Helminthoglypta*, subgenus *Charodotes*, species *walkeriana*. It was first described in Hemphill (1911) as *Helix walkeriana* from specimens collected from habitat in "San Luis Obispo, Cal." but reassigned to the genus *Helminthoglypta* by subsequent malacologists (Field 1930; Pilsbry 1939; Roth 1985). The genus *Helminthoglypta* currently contains three subgenera comprising 100 or more species and subspecies with individual ranges located between southwestern Oregon and Baja California, and from the Sierra Nevada and Mojave Desert westward to the Pacific coast, including islands off Baja California and California. In San Luis Obispo County, the genus is represented by six species in two subgenera, *Helminthoglypta* and *Charodotes*. The subgenus *Helminthoglypta* includes two species, *H. cuyama* (Cuyama shoulderband snail) and *H. umbilicata* (Big Sur shoulderband snail), and the subgenus *Charadotes* includes four species: *H. walkeriana* (Morro shoulderband snail), *H. carpenteri*, (San Joaquin shoulderband snail), *H. fieldi* (surf shoulderband snail*)*, and the recently named *H. morroensis* (Chorro shoulderband snail). The shell of the Morro shoulderband snail is described as umbilicated, globose, reddish brown to chestnut in color but thin and slightly translucent (Hemphill 1911; Roth 1985). The shell has five to six whorls and a single, narrow (2 to 2.5 mm [0.08 to 0.1 in.]), dark spiral band on the "shoulder" with thin light yellowish margins above and below. Sculptural features of the shell include incised spiral grooves, spiral and transverse striae that give the surface a checkerboard appearance, and papillae at the intersections of some of the striae (Service 1994). Adult shell dimensions range from 18 to 29 mm (0.7 to 1.1 in.) in diameter and from 14 to 25 mm (0.6 to 1.0 in.) in height (Roth 1985).

Shoulderband snails can be distinguished from the sympatric non-native European garden snail (*Helix aspersa*) and cellar glass snail (*Oxychilus cellarius*) by the presence of both an umbilicus and the single narrow, dark brown spiral band on the "shoulder" of the shell. *Helix aspersa* lacks an umbilicus and has a multi-band, marbled pattern on the shell. An umbilicus is present in *O. cellaruis*, however, the shell lacks any dark banding. Among *helminthoglypid* snails (subgenera *Helminthoglypta* and *Charodotes*) that occur in San Luis Obispo County, species can generally be distinguished by shell morphology, however, the shell morphology, ecological associations, geographic isolation, and analysis of soft tissue are used for more definitive classification.

Two *helminthoglypid* species occur within the known range of the Morro shoulderband snail: the Big Sur shoulderband snail and the Chorro shoulderband snail. The Big Sur shoulderband snail occurs from the Monterey Peninsula in Monterey County south into northern Santa Barbara County and is common in San Luis Obispo County from Atascadero and San Luis Obispo west to the coast, including the range of the Morro shoulderband snail. The Big Sur shoulderband snail and Morro shoulderband snail occur sympatrically at many locations and specimens of each have been found in similar habitat and in relatively close proximity to each other (Dugan, personal observation). The Morro shoulderband snail can be distinguished from the Big Sure shoulderband snail by its more globose shape, the presence of incised striae, papillations over all or most of the body whorl, and half or more of the umbilicus covered by the apertural lip (Roth 1985). The Big Sure shoulderband snail tends to have a more depressed shell shape with a

shinier, malleated surface and little or no occlusion of the umbilicus. The Morro shouldberband snail and the Chorro shoulderband snail were elevated to separate full species status based on differences in soft tissue, shell morphology, and differing habitat associations. The shell of the Chorro shoulderband snail can be distinguished from that of the Morro shoulderband snail by its more depressed shape (ratio of shell height to shell width), larger, less occluded umbilicus, more profusely granulated surface, and weak to absent incised spiral grooves on the body whorl (Tupen and Roth, 2005). Until recently the two species were not known to occur sympatrically, with the Morro shoulderband snail occurring only on Baywood fine sand soils and the Chorro shoulderband snail being also associated with clay or serpentine soils; however, in 2005 the shells of both species were collected at a location with Briones-Tierra complex soils near the northeastern extent of the suspected range of the Morro shoulderband snail, indicating some level of sympatry (Dugan, personal observation, 2005). During 2007, the shells of both species were also collected at two locations with Baywood fine sand soils within the City of Morro Bay (Dugan personal observation, 2007).

3.2.3 Natural History

Despite increased attention due to its status as a federally endangered species, relatively little is known about the demographics and ecology of the Morro shoulderband snail. In its native habitat on Baywood fine sandy soils, the Morro shoulderband snail is typically found in the accumulated leaf litter and the undersides of lower branches of shrub species of coastal dune scrub. The species is associated with Baywood series sandy soils that support coastal dune, coastal dune scrub, and open maritime chaparral plant communities in the Los Osos and Morro Bay region of Central California. Morro shoulderband snails typically inhabit dense, shrubby, or prostrate vegetation that has considerable contact with the ground. The early successional stages of these native plant communities are thought to offer more favorable habitat than mature stands, which may have branches that are too high off the ground to offer good cover (Roth 1985). Within such habitat, Morro shoulderband snail typically occupy shaded areas with accumulated plant litter or the undersides of low shrub branches. These areas provide a microclimate that moderates temperature and moisture loss, and provides refuge from the desiccating effects of wind. It has been suggested that vegetation on north-facing slopes is slightly more dense and shrubby than on south-facing slopes and therefore may support a substantially greater abundance of the species (Roth 1985). Known plant associates include both native and non-native species. Typical native plant associates include dune ragwort (*Senecio blochmaniae*), California sandaster (*Lessingia filaginifolia*), mock heather (*Ericameria ericoides*), buckwheat (*Eriogonum parvifolium*), eriastrum (*Eriastrum densifolium*), silver lupine (*Lupinus chamissonis*), seaside woolly sunflower (*Eriophyllum staechadidfolium*), dune almond (*Prunus fasciculata punctata*), dudleya (*Dudleya* spp.), California croton (*Croton californicus*), black sage (*Salvia melifera*), California sagebrush (*Artemisia californica*), coyote brush (*Baccharis pilularis*), poison-oak (*Toxicodendron diversilobum*), California poppy (*Eschscholtzia californica*), and deerweed (*Lotus scoparius*) (Roth 1985; Service 2003; Roth and Tupen 2004; Dugan, personal observation). The most commonly reported non-native plant associates are perennial veldt grass and sea fig/hotentot fig (*Carpobrotus* spp.); however, Morro shoulderband snails have been found occupying other non-native invasive plants including conicosia (*Conicosia pugioniformis*), pampas-grass (*Cortaderia jubata*), German ivy (*Senecio mikanioides*), fennel (*Foeniculum*

vulgare), and myoporum (*Myoporum laetum* (Dugan, personal observation). Live Morro shoulderband snails and vacant shells have also been found in a variety of ornamental plants including rock-rose (*Cistus* sp.), aloe (*Aloe* sp.), jade plant (*Crassula ovata*), lily of the Nile (*Agapanthus africanus*) (Dugan, personal observation). Individuals have also been found on anthropogenic structures such as fences, construction materials, urban debris, and woodpiles (Belt, pers. comm. 2013; SWCA 2013, SWCA 2014).

Morro shoulderband snails are most active during wet conditions and most feeding, reproduction, and individual growth is thought to occur during the rainy season (Roth 1985). During prolonged dry periods Morro shoulderband snail are inactive and are presumed to enter a state of aestivation (summer dormancy). The species becomes active during rain, as well as periods of heavy fog and dew. Individuals may be particularly active during the evening, night, early morning hours when they emerge to feed and disperse to new habitats. The feeding habits of the Morro shoulderband snail are not well studied, however the mouth parts of the species are consistent with other snail species that feed on decaying matter and micorrhizae. Hill (1974) indicated that, although feeding on decaying plant matter occurs, the primary food source for Morro shoulderband snail was probably fungal mycelia that grow on decaying plant matter. Moisture is reported as important in facilitating the feeding of Morro shoulderband snail (Service 2003). Walgren (2003) reported that the Morro shoulderband snail will eat live vegetable matter when presented in the lab, however, the species is not considered to be a garden pest (Service 2006).

At the time of listing, it was believed that the Morro shoulderband snail was restricted to sandy soils of coastal dune and coastal scrub plant communities (Roth 1973) with Roth (1985) speculating that perhaps as few as several hundred individuals of Morro shoulderband snail remained throughout the geographic range of the species. A very limited survey for the species conducted in 1992 did not identify any live snails (Service 1994); however, subsequent surveys associated largely with proposed development projects conducted since this time reveal the current population is more robust than previous survey results indicated. We also now know the species occupies a diversity of both native and non-native habitats, as well as fairly disturbed habitats if underlain by Baywood fine sand soils (Service files, SWCA 2013, SWCA 2014), throughout its geographic range.

3.2.4 Occurrence in the Project Area

Presence of the Morro shoulderband snail was documented in three surveys conducted by SWCA Environmental Consultants during protocol conditions. Two surveys were conducted in 2010 and one in 2015. During the 2010 surveys one live individual, one Class B shell, and one Class C shell were identified. During the 2015 surveys no live individuals were detected; however, two Class B shells, and two Class C shells were identified. Locations of the live animal and shells can be seen in Figure 3.

Figure 3: Location of Morro Shoulderband Snail in Permit Area

Section 4. Biological Impacts and Take Assessment

4.1 Direct and Indirect Biological Impacts

Construction, maintenance, and occupation of a single-family residence could result in direct and indirect impacts on up to 15,300 square feet of degraded non-native grasslands dominated by non-native perennial veldt grass and considered to be of limited long-term conservation value to the Morro shoulderband snail. Presence, however, has been observed and the potential for take during covered activities exists.

4.2 Anticipated Take of Morro Shoulderband Snail

Due to the parcel's degraded habitat the incidental take of the Morro shoulderband snail expected to result from the covered activities associated with the project is expected to be low and is considered to be insignificant to the recovery and survival of the species. Take that does occur is expected to result primarily from the capture and relocation to a Service-approved receptor site.

4.3 Effects on Critical Habitat

The Mammen parcel is not located within Morro shoulderband snail critical habitat designated on February 7, 2001 (66 FR 9233). For this reason, project implementation will not result in any adverse effects to critical habitat and is not expected to impede recovery of the species.

4.4 Cumulative Impacts

The cumulative impact of the project on the survival and recovery of the Morro shoulderband snail is considered to be negligible due to the project's relatively small size (15,300 square feet) and degraded nature of the habitat that will be lost.

4.5 Anticipated Effects of the Taking

Take of Morro shoulderband snail that is anticipated to result from implementation of those actions necessary implement the proposed project is considered to be low and insignificant to the species' overall survival and recovery. During the three protocol surveys conducted in 2010 and 2015 only one live animal was found (see Section 3). While it is not possible to quantify the actual number of animals subject to incidental take in advance it is expected that the number will be low and result, primarily, from the capture and moving of live animals to a Service-approved receptor site in conjunction with pre-activity surveys intended to minimize take in the form of injury or mortality. In addition, no native habitat for the species will be impacted and the project site is not located in an area that is considered important to the recovery of species (i.e., a critical habitat unit or a conservation planning area). For these reasons, the effects of any take of the Morro shoulderband snail that would result from implementation of the Mammen project is considered negligible.

Section 5. Conservation Program

5.1 Biological Goals and Objectives

Section 10(a)(2)(A) of the Act requires that an HCP specify those measures that the permittee(s) will take to minimize and mitigate to the maximum extent practicable the impacts of the taking of any federally listed animal species as a result of activities addressed by the plan.

As part of the "Five Point" Policy adopted by the Services in 2000, HCPs must establish biological goals and objectives. The purpose of the biological goals is to ensure that the operating conservation program in the HCP is consistent with the conservation and recovery goals established for the species. The goals also provide to the applicant(s) with an understanding of why these actions are necessary. Development of the these goals are based on our knowledge of the species' biology, threats to the species, the likely effects of the Covered Activities, and the scope of the HCP.

Take avoidance is not feasible on the Mammen site due to the parcel size. Even considering various configurations for a single-family residence on this parcel, it is unlikely that construction and occupation could avoid any take of Morro shoulderband snail. There is no project design that would make the conservation of any areas meaningful to recovery of the Morro shoulderband snail. The development of the following goals takes this into consideration

Goal 1: Minimize take, in the form of injury or mortality, of Morro shoulderband snail

Objective 1.1: Conduct pre-activity and construction surveys for Morro shoulderband snail

A Service-approved biologist in possession of a valid recovery permit for the species and with demonstrable survey experience and knowledge of the diversity of habitat types in which Morro shoulderband snails can occur will be retained to conduct pre-activity surveys to identify the location of any Morro shoulderband snails that may be present prior to the commencement of any such activities. The objective of these surveys is to locate as many Morro shoulderband snails as possible so that they can be captured and moved out of harm's way.

The approved biologist will be present during the installation of construction fencing, demolition of existing structures, and initial grading and excavation activities (including clearing of vegetation and stripping of the surface soil layer) to monitor for the presence of Morro shoulderband snail. Live Morro shoulderband snails in any life stage that are encountered during these monitoring surveys will be captured and moved to a Service-approved site by the approved biologist. This biologist will have the authority to order any reasonable measure necessary to avoid injury or mortality of Morro shoulderband snail and stop any work or activity that is not in compliance with the conditions set forth in the ITP. The Service field office in Ventura will be notified of any "stop work" order and this order will remain in effect until the issue has been resolved. Upon completion of site preparation and grading activities, the biologist will periodically visit the project site throughout the construction period. During periods of rain or heavy fog/dew, the biologist will conduct pre-activity surveys to ensure no Morro shoulderband snails have migrated into the work area. No construction work will be initiated until the biologist determines that the work area is clear of Morro shoulderband snails.

As agreed to by the County, this condition will be included in both the Minor Use and Coastal Development permits that are required to obtain grading, construction, or any other discretionary permits.

Objective 1.2: Capture and Moving of Morro Shoulderband Snail

All live Morro shoulderband snails in any life stage that are found during the pre-construction surveys or construction monitoring will be captured and moved to a Service-approved receptor site by the Service-approved biologist.

Objective 1.3: Conduct pre-construction Environmental Awareness training

A Service-approved biologist will develop and conduct a pre-activity training session for all personnel involved in site disturbing activities. The intent of this session is to inform construction crews, field supervisors, and equipment operators about the status and presence of the species, grading and construction-activity restrictions, and the requirement to implement all minimization measures specified in the HCP and ITP. It may be necessary for this training to be given more than once.

Goal 2: To mitigate unavoidable take of Morro shoulderband snail to the maximum extent practicable.

Objective 2.1: Unavoidable take of the Morro shoulderband snail will be mitigated by contributing to the funding of recovery task actions on conserved lands within the known range of the species as identified in the *Recovery Plan for the Morro Shoulderband Snail and Four Plants from Western San Luis Obispo County* (Service 1998).

The primary objective of the mitigation is to facilitate the collection of data to address some of the remaining recovery tasks needed to consider the down and potential delisting of the Morro shoulderband snail. Data resulting from the research will also be useful in the development of habitat management strategies that will be necessary for the eventual delisting of the species. The funding will mitigate the effects of the taking of Morro shoulderband snail by contributing to one or more of the following: (1) population surveys on conserved lands within the range of the Morro shoulderband snail, (2) compilation and analysis of collected data, and/or (3) preparation of a report that presents study results and Morro shoulderband snail population estimates. Section 5.3.4 to follow provides additional detail.

5.2 Take Avoidance Measures

Avoidance of take is not considered feasible for the proposed Mammen project because conservation of onsite areas on a parcel of this size and, in this location, would not contribute to recovery of the Morro shoulderband snail. As such, take avoidance through maintenance of onsite habitat for the species it is not considered to be biologically meaningful and has not been further considered.

5.3 Take Minimization Measures

Pre-activity Surveys

The County of San Luis Obispo will include, as a condition of any discretionary permit(s) they issue for the Mammen project, the requirement that Renee and Kurt Mammen or their legal successor(s) in ownership retain a Service-approved biologist to conduct pre-activity surveys prior to the initiation of each project phase that could result in take. This measure will minimize take (in the form of injury or mortality) of Morro shoulderband snail. As stated earlier, the objective of these surveys is to locate as many Morro shoulderband snails as possible so that they may be captured and moved out of harm's way. These surveys will include detailed, systematic search of all vegetation and objects onsite that could provide suitable shelter for Morro shoulderband snail; the results shall be presented as part of HCP and ITP reporting requirements.

Capture and Moving of Morro Shoulderband Snails

All live Morro shoulderband snails of any life stage that are found during the pre-activity surveys or construction monitoring will be captured and moved out of harm's way to a pre-determined, Service-approved receptor site by a Service-approved biologist.

Environmental Awareness Training

The Service-approved biologist will develop and conduct pre-activity/construction training session(s) for all personnel who will work on-site during project implementation. The intent of this session is to inform construction crews, field supervisors, equipment operators, etc. about the status and presence of the species, grading and construction-activity restrictions, and the protection and minimization measures specified in the HCP and ITP.

Construction Monitoring

A Service-approved biologist will be present daily during the installation of construction fencing, demolition of existing structures, and initial grading and excavation activities (including clearing of vegetation and stripping of the surface soil layer). All live Morro shoulderband snails of any life stage will be captured by the approved biologist and moved out of harm's way. The biologist shall have the authority to order any reasonable measure necessary to avoid the take of Morro shoulderband snail and to stop any work or activity not in compliance with the conditions set forth in the incidental take permit. The biologist will notify the Ventura Fish and Wildlife Office of any "stop work" order issued and this order will remain in effect until the issue has been resolved. Upon completion of site grading activities, the biologist will periodically visit the project site throughout the construction period to ensure that impacts to the project site are consistent with the project description contained in this HCP and the ITP. During periods of rain or heavy fog/dew, the biologist will conduct pre-activity surveys to ensure no Morro shoulderband snails have migrated into the work area. Until the biologist determines that the work area is clear of Morro shoulderband snails, no work will proceed.

5.4 Take Mitigation Measures

Unavoidable take of the Morro shoulderband snail will be mitigated by payment of an in-lieu fee of $7.650 that will be used to fund Morro shoulderband snail recovery task actions on conserved lands within the known range of the species (Table 1). A priority task entails determining the status of populations of the species present on these conserved lands. Currently there are minimal data available for estimating Morro shoulderband snail population levels on these lands. The ***Recovery Plan for the Morro Shoulderband Snail and Four Plants from Western San Luis Obispo County*** (Service 1998) specifies that downlisting of the Morro shoulderband snail can be considered when sufficient populations and suitable occupied habitats from all four Conservation Planning Areas (Morro Spit, West Pecho, South Los Osos, and Northeast Los Osos) are secured and protected. The five-year status review for the Morro shoulderband snail (Service 2006) concludes that sufficient habitat blocks have been secured and protected in order to satisfy this criterion for downlisting. This is primarily based upon existing Morro shoulderband snail population information from presence/absence surveys prompted by applications for changes in land use (*e.g.*, residential development) or anecdotal information. Neither of which provide the type of data suitable for population estimates. Activities on conserved lands do not generally trigger Morro shoulderband snail surveys; no systematic surveys have been conducted in recent years. As such, species presence, abundance, and distribution are currently unknown. On those conserved parcels where Morro shoulderband snail presence has been confirmed, little or no information exists regarding population size or long-term viability. To consider downlisting, the Recovery Plan also specifies that Morro shoulderband snail populations must be large enough to minimize the short-term (*i.e.*, next 50 years) risk of extirpation in any of the four Conservation Planning Areas. Additional data suitable for population estimation would greatly improve the Service's ability to assess whether or not sufficiently large populations exist to meet this recovery criterion.

The primary objective of this mitigation strategy is to facilitate the collection of data that will address recovery task needs for downlisting (and future de-listing) of the Morro shoulderband snail. Data collected will also be useful in the development of habitat management strategies necessary to consider delisting of the species. The mitigation funding provided in this HCP is expected to facilitate (1) implementation of population surveys on conserved lands within the range of the Morro shoulderband snail, (2) the compilation and analysis of the data collected, and (3) the preparation of a final report presenting study results and Morro shoulderband snail population estimates.

Table 1: Conserved Parcels in the Los Osos Area

Assessor Parcel Number (APN)	Name	Ownership	Size (acres)	Conservation Planning Area	Critical Habitat Unit
APN 038-711-016	BLM	BLM[1]	4.7	Northeast Los Osos	3
APN 038-711-016	Powell I	CDPR[2]	15.6	Northeast Los Osos	3
APN 067-012-011	Powell II	CDPR	50.6	Corridor Area[4]	3[5]
APN 038-721-024	Pismo	CDPR	10.9	--	--
APN 074-022-003	Butte	CDPR	18.9	West Pecho	--
APN 074-022-061	Hotel	CDPR	42.4	West Pecho	1
APN 074-229-010	Sweet Springs I	MCAS[3]	24.0	--	--
APN 074-229-009	Sweet Springs II	MCAS	~8	--	--
APN 038-711-015	Attman	CDPR	11.2	Northeast Los Osos	3
APN 038-711-004	Garris	CDPR	~4	Northeast Los Osos	3
APN 074-224-019	Los Osos Oaks	CDPR	~90	A[4]	--

1 Bureau of Land Management
2 California Department of Parks and Recreation, San Luis Obispo Coast
3 Morro Coast Audubon Society
4 Designated as "Other Habitat Area" in Recovery Plan
5 A portion is within critical habitat

5.5 Monitoring

Monitoring tracks compliance with the terms and conditions of the HCP and ITP. There are three types of monitoring: (1) compliance monitoring tracks the permittee's compliance with the requirements specified in the HCP and ITP; (2) effects monitoring tracks the impacts of the covered activities on the covered species; and (3) effectiveness monitoring tracks the progress of the conservation strategy in meeting the HCP's biological goals and objectives (includes species surveys, reproductive success, etc.). Monitoring provides information for making adaptive management decisions.

Pre-construction Monitoring

A Service-approved biologist knowledgeable regarding the Morro shoulderband snail and the diversity of habitats in which can be found will conduct a pre-activity training session for all construction personnel who will be involved in site disturbance activities. The intent of this session is to inform construction crews, field supervisors, and equipment operators, about the status and presence of the species, grading and construction-activity restrictions, and those avoidance and minimization measures specified in the HCP.

Construction Monitoring

A Service-approved biologist will be present during the installation of exclusionary construction fencing, demolition of existing structures, and initial grading and excavation activities (e.g., clearing of vegetation and stripping of the surface soil layer) to monitor for the presence of Morro shoulderband snail. All live Morro shoulderband snails of any life stage encountered during these monitoring events will be captured and moved to a Service-approved receptor site by the approved biologist. This approved biologist will have the authority to order any reasonable measure necessary

to avoid the take (in the form of injury or mortality) of Morro shoulderband snail and to stop any work or activity that is not in compliance with the conditions set forth in the HCP and ITP. The biologist will notify the Ventura Fish and Wildlife Office in Ventura of any "stop work" order; this order will remain in effect until the issue has been resolved. Upon completion of site preparation activities, the biologist will periodically visit the project site throughout the construction period. During periods of rain or heavy fog/dew, the monitor will conduct daily pre-activity surveys to ensure no Morro shoulderband snails have migrated into the work area. No construction will start until the biologist determines that the work area is clear of Morro shoulderband snails.

Access to Project Site

The permittee will allow a representative from the Service access to the project site to monitor compliance with the conditions and authorizations contained in the ITP.

5.6 Reporting

Annual reports will be submitted to the Service by December 31 of each year and include (as necessary): (1) a brief summary or list of project activities accomplished during the reporting year (e.g., inclusive of construction activities and other covered activities); (2) project impacts (e.g., quantification of the area graded.); (3) a description of any take that occurred for each covered species (inclusive of the cause, form, amount, location of take and deposition of dead or injured individuals); (4) a brief description of conservation strategy implemented; (5) results of monitoring results (compliance, effects and effectiveness monitoring) and survey information (if applicable); (6) a description of circumstances that made adaptive management necessary and how it was implemented; (7) a description of any changed or unforeseen circumstances that occurred and how they were addressed; (8) all funding expenditures, balance, and accrual; and (9) a description of any minor or major amendments. It is likely that once construction activities are completed, these reports will be brief in nature and are not anticipated to add significant funding costs.

Section 6. Plan Implementation

6.1 Changed Circumstances

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

Changed circumstances are defined in 50 CFR 17.3 as changes in circumstances affecting a species or geographic area covered by an HCP that can reasonably be anticipated by plan developers and the Service and for which contingency plans can be prepared (e.g., the new listing of species, a fire, or other natural catastrophic event in areas prone to such event). If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances and these additional measures were already provided for in the plan's operating conservation program (e.g., the conservation management activities or mitigation measures expressly agreed to in the HCP or IA), then the permitte will implement those measures as specified in the plan. However, if additional conservation management and mitigation measures are deemed necessary to respond to changed circumstances and such measures were not provided for in the plan's operating conservation program, the Service will not require these additional measures absent the consent of the permittee, provided that the HCP is being "properly implement" (properly implemented means the commitments and the provisions of the HCP and the IA have been or are fully implemented).

The following changed circumstances have been identified for the Mammen HCP: presence of a newly listed species and/or a discovery of a listed species previously unknown to occur onsite.

Newly Listed Species

If a species that is not covered by the HCP, but may be affected by activities covered by, the HCP is discovered onsite or listed under the Act during the term of the ITP, the permit will be re-evaluated by the Service. Based upon the results of this review, covered activities could be modified to ensure that they are not likely to jeopardize or result in take of this. Renee and Kurt Mammen, as the permittee will implement those modifications to covered activities identified by the Service as necessary to avoid the likelihood of jeopardy to or take of the newly listed species. The permittees or their legal successor(s) will continue to implement such modifications until such time as one of two things have been done: 1) application to and receipt of Service approval of an amendment to the ITP to cover the newly listed species or 2) the Service notifies the permittee or their legal successor(s) in writing that the modifications to the HCP covered activities are no longer required to avoid the likelihood of jeopardy of the newly listed species.

Newly Discovered Listed Species Previously Unknown in Covered Area

In the event that an already listed species is discovered at the project site during the permit term, the permittee will cease project activities that are likely to result in take of this species and work with the Service to develop a permit amendment to address said species. For this particular project, it is extremely unlikely that any other listed species will be identified onsite due to its relatively small size, limited area of native habitat within the parcel, and the limited project scope.

6.2 Unforeseen Circumstances

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

In case of an unforeseen event, the permittee will notify their Service staff contact as soon as possible. To determine if the event constitutes an unforeseen circumstance, the Service will consider, but not be limited by, the following factors: size of the current range of the affected species, percentage of range 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 an unforeseen circumstance and the HCP is being properly implemented, additional measures required of the permittee must be as close as possible to those in the HCP and limited to modifications within conserved habitat area(s) or adjustments to lands already set-aside in the HCP's operating conservation program. Additional conservation and mitigation measures would involve the commitment of additional land or financial compensation or restrictions on the use of land or other natural resources otherwise available for development or use under original terms of the HCP only with the consent of the permittee.

6.3 Amendments

Minor Amendments

Minor amendments are defined as those changes that do not affect the scope of the HCP's effects analysis and conservation strategy, change the amount of take, add new species, or change significantly the boundaries of the HCP. Examples of minor amendments include correction of spelling errors, minor corrections in boundary descriptions, or minimal changes to covered activities such that they would not affect the take analysis contained in the supporting documentation. The minor amendment

process is typically conducted through an exchange of letters between the permittees and the Service's field office in Ventura and not subject to additional discretionary and public review.

Major Amendments

Major amendments to the HCP and ITP are changes that do affect the scope of the HCP and conservation strategy, increase the amount or form of take, add new species, or change the boundaries of the HCP in a substantial fashion. Major amendments often require revisions to the Service's decision documents and typically require additional discretionary and public review.

6.4 Permit Suspension/Revocation

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

6.5 Permit Renewal

Upon expiration, the Section 10(a)(1)(B) permit may be renewed without the issuance of a new permit, provided that the permit is renewable and that biological circumstances and other pertinent factors affecting covered species are not significantly different than those described in the original HCP. The permittees or their legal successor(s) will submit the following, in writing, to the Service: (1) a request to renew the permit, inclusive of the original permit number; (2) 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; (3) a detailed of a list of requested changes; (4) a description of any take that has occurred under the existing permit; and (5) a description of any portions of the project still to be completed, if applicable, and which activities under the original permit the renewal is intended to cover.

If the Service concurs with the information provided in the request, it will renew the permit consistent with permit renewal procedures required by Federal regulation found in 50 CFR 13.22. If the permittees or their legal successor(s), files a renewal request and the request is received by the issuing Service office at least 30 days prior to permit expiration, the permit will remain valid while the renewal is being processed, provided the existing permit meets renewal criteria. The permittees or their legal successor(s) may not engage in take above that amount and form authorized by the original ITP. If the renewal request is not submitted within 30 days prior to permit expiration, the permit will become invalid upon expiration. The permittees or their legal successor(s) must have complied with all annual reporting requirements to qualify for a permit renewal.

While permit renewal is not anticipated, its need could result from a variety of circumstances that could include a reduction in prevailing economic climate, delays in approval of project design or inspections, timing or appeal of County permits, or construction delays.

6.6 Permit Transfer

If there is a transfer of ownership during the permit term, the following will be submitted to the Service by the new owner(s): a new permit application and permit fee, written assurances by the new owner(s) that he/they will provide sufficient funding for the HCP and implement all of the ITP conditions inclusive of any outstanding minimization and mitigation measures. Permit transfer is predicated on this commitment unless otherwise specified in writing, and agreed to in advance, by the Service.

The most likely scenario that would require transfer of the permit would be if, after obtaining the ITP, Renee and Kurt Mammen sell or transfer parcel ownership to another party.

Section 7. Funding

7.1 HCP Implementation Costs

Estimated costs to implement the Mammen HCP are provided in Table 2.

Table 2: HCP Funding Costs

Item/Activity	Unit Cost	One-Time Cost	Re-occurring Costs	Total
Mitigation Measure				
Payment of In-Lieu Fee	$7,650	$7,650	n/a	$7,650
Subtotal				**$7,650**
Minimization Measures				
Pre-construction Surveys and MSS Capture and Moving	$131/hr	n/a	Up to 10 hours	$1,310
Environmental Awareness Training	$131/hr	n/a	Up to 5 hours	$655
Construction Monitoring	$131/hr	n/a	Up to 28 hours	$3668
Subtotal				**$5633**
Changed Circumstances	$1,000	n/a	n/a	$1,000
Subtotal				**$1,000**
Reporting				
Annual Report during Construction Year	$131/hr	n/a	Up to 8 hours	$1048
Annual Report for Year Following Construction	$131/hr	n/a	Up to 7 hours	$917
Annual and Final Report (Year 10) for All Other Years	Prepared by permittees	n/a	n/a	$0
Subtotal				**$1965**
Total Estimated Cost				**$16,248**

7.2 Funding Source

Renee and Kurt Mammen, as the permittees, will be responsible for the full cost of implementing the minimization measures, mitigation, and changed circumstances as described in sections 5 and 6 and costed in Table 2. It is recognized that these costs represent an estimate and if additional reoccurring costs of any item/activity herein are necessary to fulfill the intent of the HCP and conditions and authorizations of the ITP, those costs will be funded by the permittees. Both understand that failure to provide adequate funding and/or failure to implement the terms of this HCP in full could result in temporary permit suspension or permit revocation. They will provide a copy of the NFWF receipt for payment of the in-lieu fee in full to the Service's Ventura Fish and Wildlife Office and the County prior to and as a condition of the issuance of any/all necessary permits associated with project implementation.

Section 8. Alternatives

Section 10(a)(2)(A)(iii) of the Act and 50 CFR 17.22(b)(1)(iii) and 17.32(b)(1)(iii) require that alternatives to the species take be considered. The reasons why identified alternatives are not implemented will be provided.

Two alternatives to the proposed project are considered in this HCP: 1) No Action and 2) Project Redesign. The effects of the proposed action (the preferred alternative) have been discussed previously; a discussion of these two alternatives follows below.

8.1 No Action Alternative

Under this alternative, an ITP for the Mammen single-family residence would not be issued. The Mammen single-family residence could not legally be built and the mitigation fee of $7650 would not be available to contribute to recovery actions for Morro shoulderband snail. Since the property is privately owned, there are ongoing economic considerations (e.g., payment of property taxes) associated with continued ownership of a property and its intended use. The sale of the property for purposes (e.g. as a conservation easement) other than the identified activity is not economically feasible. For these reasons the "No Action" alternative has been rejected.

8.2 Project Redesign Alternative

This alternative would involve design of a project that would reduce or avoid altogether take of Morro shoulderband snail. This alternative was not selected due to the small parcels size and marginal value to the long-term conservation of the Morro shoulderband snail of habitat onsite. A reduction or redesign of the project footprint would not meet the applicants' needs and would not significantly reduce the effects of the taking of Morro shoulderband snail such that there would be a greater benefit to species survival and recovery. For these reasons, the "Project Redesign" alternative has also been rejected.

Section 9. Citations

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Appendix A

Biological Resource Assessment (SWCA 2015)

MAMMEN SINGLE-FAMILY RESIDENCE BIOLOGICAL RESOURCES ASSESSMENT

June 2015

PREPARED FOR

Mr. Kurt Mammen
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Los Osos, CA 93402

PREPARED BY

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Biological Resources Assessment
for the
Mammen Single-Family Residence
Los Osos, San Luis Obispo County, California

Prepared for

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SWCA Project No. 31166

June 26, 2015

Reporting Biologist: Travis Belt, SWCA Environmental Consultants

"As a County-approved biologist, I hereby certify that this Biological Resources Assessment was prepared according to the Guidelines established by the County of San Luis Obispo Department of Planning and Building and that the statements furnished in the report and associated maps are true and correct to the best of my knowledge and belief; and I further certify that I was present throughout the site visit(s) associated with this report."

Signature

June 26, 2015

Date

EXECUTIVE SUMMARY/SYNOPSIS

SWCA Environmental Consultants (SWCA) has prepared this Biological Resources Assessment (BRA) at the request of Mr. Kurt Mammen. Mr. Mammen (applicant) is pursuing two project options for his parcel: 1) the sale of his parcel with environmental constraints resolved, or 2) construction of a single-family residence on the parcel. The parcel is zoned for Residential Single Family. Therefore, regardless of which option the applicant chooses, development of the parcel would likely include construction of a single-family residence. The purpose of this BRA is to document the biological resources on the parcel, identify impacts to natural resources that could occur from developing the parcel, and recommend avoidance and mitigation measures. At the time this BRA was produced, the applicant was in the early phases of project planning; therefore, this BRA assumes all project elements would be constructed within a conceptual building envelope that includes the entire parcel. The building envelope allows for sufficient space to construct a single-family residence with outdoor space and landscaped areas. The presence of the federally endangered Morro shoulderband snail (MSS; *Helminthoglypta walkeriana*) on the parcel has been confirmed and the applicant has initiated coordination with the USFWS to develop an HCP with an in-lieu fee mitigation strategy. The location, size, and layout of the conceptual building envelope area are subject to change as the project plans and agency coordination are refined.

SWCA biologists Travis Belt and Barrett Holland conducted a literature review and four surveys on the parcel. The surveys established the presence of live MSS and seven coast live oak (*Quercus agrifolia*) trees on the parcel. The timing of the surveys was sufficient to establish the absence of rare plant species on the parcel. The parcel supports suitable habitat for nesting birds protected under the Migratory Bird Treaty Act and silvery legless lizard (*Anniella pulchra pulchra*). Pre-construction surveys and initial disturbance monitoring are recommended to avoid impacts to nesting birds and minimize impacts to silvery legless lizard. All except one of the coast live oak trees have diameter at breast height less than 5 inches. Based on the conceptual site plan, the construction activities would occur on the southern portion of the parcel and would avoid impacts to the trees. The trees would remain for landscape purposes. Therefore, mitigation for impacts to these trees is not recommended.

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1 INTRODUCTION

1.1 Purpose of Biological Resources Assessment

SWCA Environmental Consultants (SWCA) has prepared this Biological Resources Assessment (BRA) at the request of Mr. Kurt Mammen for his proposed Single-Family Residence project (project). The purpose of this BRA is to document the biological resources on the project parcel and identify impacts that could occur from any reasonably foreseeable single-family residence development. This analysis assumes that the entire 0.35-acre parcel would be developed and has taken into consideration the biological resources that are known to occur within the vicinity of the project site. For those instances where potential impacts to sensitive biological resources may occur, SWCA has proposed mitigation measures and best management practices with the objective of avoiding or minimizing the impacts.

SWCA understands that this BRA would be used by Mr. Mammen, the County of San Luis Obispo Department of Planning and Building (County), and affected state or federal regulatory agencies during the environmental review process for the proposed project. This BRA has been prepared in accordance with the County's *Standard Guidelines for Biological Resources Assessments* (December 2009).

1.2 Project Location and Setting

The proposed project is located on Vista Del Osos just west of Covey Lane in Los Osos, San Luis Obispo County, California (refer to Figure 1). The project parcel (Assessor's Parcel Number 074-325-067) is approximately 0.35 acre situated between single-family residences to the north, east, and west, and an undeveloped parcel to the south. The project parcel is accessed via a dirt driveway and easement that is at the southern boundary of the neighboring parcel and intersects Covey Lane. The orientation of the parcel and driveway creates a classic "flag lot" development area that is situated among other developed parcels (refer to Figures 2 through 4).

1.2.1 Soils, Topography, and Elevation

The soil in the parcel is Baywood fine sand and the topography is nearly flat. Baywood fine sand is associated with stabilized sand dunes and is the dominating soil in the Los Osos area. Undisturbed Baywood fine sand in the Los Osos area typically supports coastal dune scrub, maritime chaparral, or oak woodland habitats. Based on the United States Geological Survey (USGS) Morro Bay South topographic quadrangle map, the parcel elevation is 280 feet above mean sea level (USGS 1994).

1.3 Project Description

Mr. Mammen (applicant) is pursuing two project options for his parcel: 1) the sale of his parcel with environmental constraints resolved, or 2) construction of a single-family residence on the parcel. The parcel is zoned for Residential Single Family. Therefore, regardless of which option the applicant chooses, development of the parcel would likely include construction of a single-family residence. For the purposes of this BRA, it is assumed that the project would develop the entire parcel. Project specifics are yet to be determined; however, the single-family residence would likely include an estimated 1,500- to 1,800-square-foot residence with three bedrooms and two and a half bathrooms, an approximately 500-square-foot attached garage, and outdoor patio space. Portions of the parcel that are not developed would be landscaped with drought tolerant plants, fruit trees, and/or raised beds for gardening.

Gas, electric, and water service would connect at existing mains located on Bay View Heights Drive. An estimated 1,200-gallon septic tank and a leach pit (or field) would be installed for wastewater. Figure 3 includes a conceptual site plan that is the basis for this evaluation; Figure 3 is conceptual and the actual construction plans are subject to change.

Figure 1. Project Vicinity Map

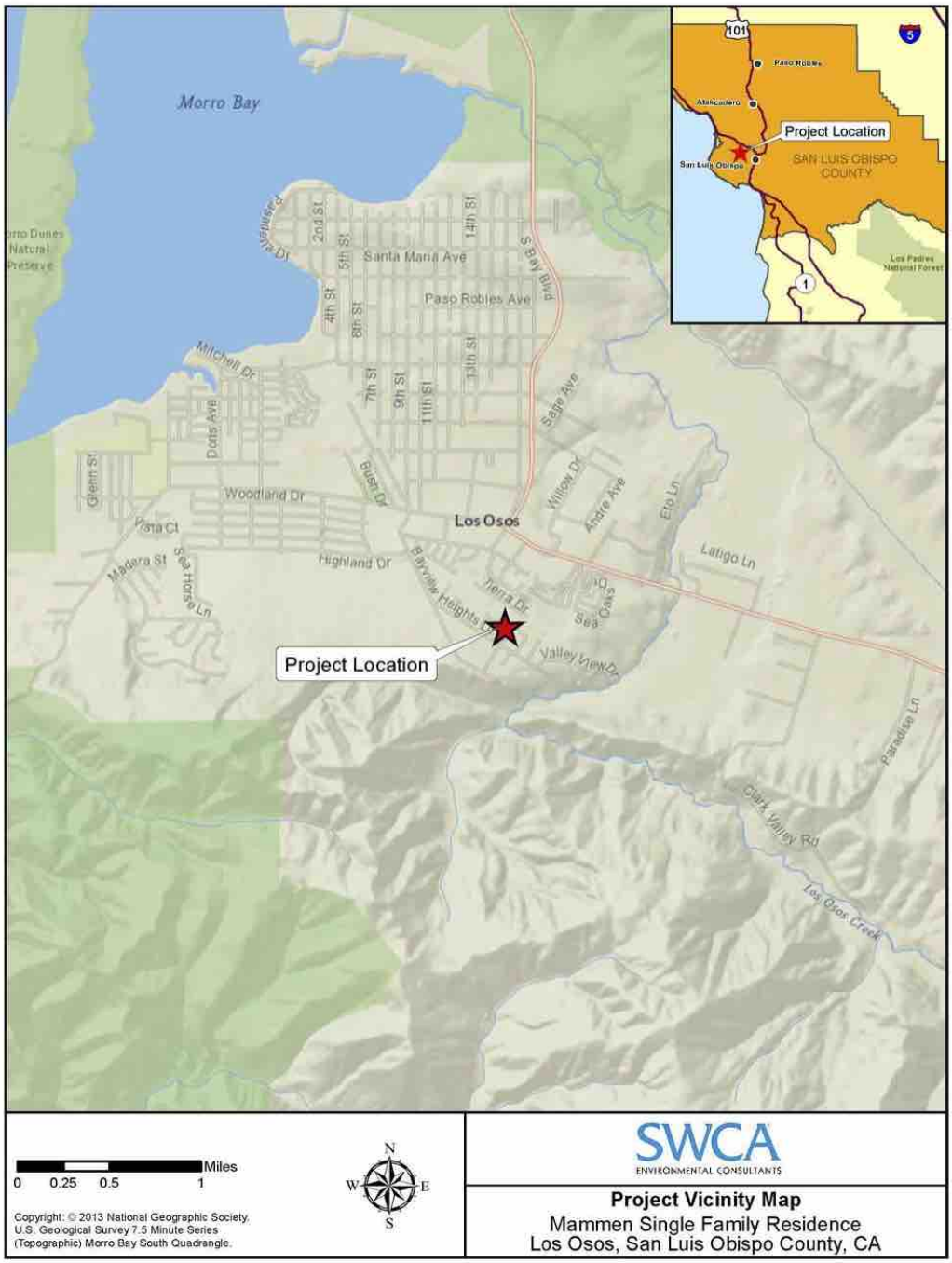

Figure 2. Project Location Map

Figure 3. Conceptual Site Map

2 METHODOLOGY

2.1 Literature Review

Prior to conducting a field survey, SWCA conducted a literature review to gain insight on what species have known occurrences in the project vicinity. The review was initiated with a query of the most recent version of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) to identify reported occurrences of sensitive resources within the Morro Bay South, USGS 7.5-minute quadrangle and the surrounding six quadrangles: Morro Bay North, Atascadero, Port San Luis, Cayucos, San Luis Obispo, and Pismo Beach.

In addition to the CNDDB query, the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Plants of California (CNPS 2015b) was reviewed to provide additional information on rare plants that are known to occur in the area. SWCA has extensive experience with natural resources in Los Osos; therefore, the literature review for this BRA included existing environmental documents and reports prepared by SWCA.

2.2 Field Surveys

SWCA conducted four field surveys on the parcel. SWCA biologists Barrett Holland and Travis Belt timed and conducted the surveys to satisfy Morro shoulderband snail (MSS; *Helminthoglypta walkeriana*) and botanical survey requirements. Table 1 provides the survey dates and conditions. The purpose of the field surveys was to: (1) characterize the existing conditions on the parcel; (2) determine the presence or absence of MSS; (3) determine the presence or absence of sensitive plant species; (4) evaluate the site's potential to support other sensitive wildlife species; and (5) identify those biological resources that could be impacted by the proposed project.

SWCA conducted MSS surveys in accordance with the 2003 United States Fish and Wildlife Service (USFWS) *Protocol Survey Guidelines for the Morro Shoulderband Snail.* The survey effort included walking the parcel over a 60- to 90-minute period and using hand search methods to find MSS under live vegetation, woody debris, and refuse. The entire parcel and access easement was thoroughly examined during each survey to determine the presence of live MSS, empty shells, and suitable MSS habitat. The survey protocol requires that five protocol surveys be performed during rain or heavy fog conditions to establish the absence of MSS. Mr. Belt and Mr. Holland conducted three MSS surveys, under the authorization of federal permit PRT-824123-5, during protocol conditions. Mr. Holland conducted the first two surveys on February 20 and 24, 2010. The presence of MSS was confirmed on the parcel during the second survey; therefore, the applicant delayed the survey efforts and the project. On October 2, 2014, Mr. Belt called and spoke with Julie Vanderwier of the USFWS to discuss the need for completing the remaining protocol surveys. Since the presence and distribution of MSS on the parcel was determined during the first two surveys, Ms. Vanderwier requested that a third protocol survey be conducted to update the survey record (Vanderwier 2014). Mr. Belt conducted the third survey on January 27, 2015, which updated the survey data for this BRA and a pending Habitat Conservation Plan (HCP).

A fourth survey that focused on botanical resources was conducted on May 8, 2014. During the surveys, SWCA inventoried the botanical resources observed on the parcel using dichotomous keys as necessary (Baldwin et al. 2012). The surveys were scheduled to correlate with the blooming period for those rare plant species with potential to occur on the parcel. Wildlife species were documented based on visual observation, auditory cues (i.e., calls and songs), and indirect signs (e.g., tracks, scat, skeletal remains, burrows, etc.). A list of species observed is included in Appendix A (refer to Tables A-1 and A-2).

Table 1. 2010 and 2015 Survey Dates, Time, and Findings

Survey Number	Survey Date and Time	Rainfall Activity	Survey Focus	Findings*	Biologist
1	02/20/2010 10:00 a.m. to 11:45 a.m.	Showers amounting to 0.12 inch on survey day.	MSS and Botanical	MSS: 0 live, 1 Class B, and 1 Class C shells *Helix aspersa*: 3	B. Holland
2	02/24/2010 8:00 a.m. to 9:30 a.m.	Showers amounting to 0.47 inch on survey day.	MSS and Botanical	MSS: 1 live *Helix aspersa*: 3	B. Holland
3	01/27/2015 11:00 a.m. to 12:30 p.m.	Showers amounting to 0.05 inch in 24 hours prior to survey.	MSS and Botanical	MSS: 0 live, 2 Class B and 2 Class C shells Cellar glass: 1 Live *Helix aspersa*: 2	T. Belt
4	05/08/2015 2:00 p.m. to 3:30 p.m.	Clear and dry	Botanical	Refer to Species list in Appendix A	T. Belt

**Helix aspersa* = Common brown garden snail

3 RESULTS

3.1 Habitat Types

The parcel supports non-native grassland that is dominated by veldt grass (*Ehrharta calycina*). The non-native grassland community is discussed in detail below. Seven small planted coast live oak (*Quercus agrifolia*), a pepper tree (*Schinus* sp.), one hop-bush (*Dodonaea* sp.), and a bottlebrush (*Callistemon* sp.) line the northern property boundary. Six of the seven coast live oak trees are less than 5 inches diameter at breast height (dbh); the seventh coast live oak is 8.5 inches dbh. All the coast live oaks appear to be planted and do not comprise a coast live oak dominated community.

The access easement at the southern property boundary includes an unpaved driveway that is bordered with various landscape succulents on the northern edge of the driveway and intact maritime chaparral on the southern edge of the driveway. The maritime chaparral covers most of the neighboring parcel but does not extend into the subject parcel. Veldt grass boarders both sides of Covey Lane between the access drive and Bayview Heights Drive. The habitat conditions are mapped on Figure 4. Site photographs are included in Appendix B.

3.1.1 Veldt Grass- Non-native Grassland

Veldt grass dominates the vegetative cover on the parcel. Veldt grass is a bunch or tussock forming grass that invades disturbed areas in Los Osos, Nipomo, and other sandy areas in San Luis Obispo County. This species is native to Africa and has been introduced for use as ornamentals and erosion control. In Los Osos, veldt grass grasslands typically support remnant patches of native shrubs and harbors common wildlife species including western fence lizard (*Sceloporus occidentalis*) and small rodents such as deer mice (*Peromyscus* spp.) and rabbits (*Sylvilagus* spp.). Some hardy but uncommon native plant species can be found in veldt grass grassland.

Figure 4. Existing Natural Resources Map

The non-native veldt grass grassland on the parcel contains approximately 80% cover of veldt grass with the remaining 20% being comprised of bare ground and some croton (*Croton californicus*) occurrences. The veldt grass has been mowed on an annual basis for fire control purposes. As a result, there is a lack of duff and/or dead material under the veldt grass culms. Other plant species observed in the veldt grass included tansy mustard (*Descurainia pinnata*), rat-tail fescue (*Festuca myuros*), California saltbush (*Atriplex californica*), and California poppy (*Eschscholzia californica*).

3.2 Special-status Species

The following describes those sensitive biotic resources that have been documented within the Morro Bay South USGS Quadrangle and the surrounding six quadrangles. Sensitive biotic resources include sensitive plant and/or animal species as described below.

3.2.1 Special-Status Plant Species

For the purposes of this section, special-status plant species are defined as the following:

- Plants listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (FESA) (50 Code of Federal Regulations [CFR] 17.12 for listed plants and various notices in the Federal Register for proposed species).
- Plants that are candidates for possible future listing as threatened or endangered under the FESA.
- Plants that meet the definitions of rare or endangered species under the California Environmental Quality Act (CEQA) (State CEQA Guidelines §15380).
- Plants considered by the CNPS to be "rare, threatened, or endangered" in California (Ranks 1B and 2 in CNPS 2015a).
- Plants listed by CNPS as plants about which we need more information and plants of limited distribution (Ranks 3 and 4 in CNPS 2015a).
- Plants listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA) (14 California Code of Regulations [CCR] 670.5).
- Plants listed under the California Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.).
- Plants considered sensitive by other Federal agencies (i.e., U.S. Forest Service, Bureau of Land Management), state and local agencies, or jurisdictions.

Based on the literature review for this project, a total of 62 special-status plant species have been documented in the queried quadrangles (refer to Table 2). Because the plant list presented in Table 2 is regional, SWCA evaluated the listed species to identify which special-status plant species have the potential to occur on the parcel. SWCA compared the known habitat requirements of those 62 species to the parcel's existing conditions, elevation, and soils. The analysis determined that the parcel supports suitable conditions for the following plant species:

- Hoover's bent grass (*Agrostis hooveri*)
- Morro Manzanita (*Arctostaphylos morroensis*)
- surf thistle (*Cirsium rhothophilum*)
- popcorn lichen (*Cladonia firma*)
- mesa horkelia (*Horkelia cuneata* ssp. *puberula*)
- coastal goosefoot (*Chenopodium littoreum*)
- compact cobwebby thistle (*Cirsium occidentale* var. *compactum*)
- Blochman's leafy daisy (*Erigeron blochmaniae*)
- southern curly-leaved monardella (*Monardella sinuata* ssp. *sinuata*)
- sand almond (*Prunus fasciculata*)

Although the subject parcel supports suitable soils and or habitats for these species, no rare plant species were observed on the parcel during surveys conducted in the appropriate blooming season. The vegetation on the parcel is dominated by non-native species. The lack of native and rare plant species on the parcel is likely due to annual mowing for fire suppression.

3.2.2 Special-Status Animal Species

For the purposes of this section, special-status animal species are defined as the following:

- Animals listed or proposed for listing as threatened or endangered under the FESA (50 CFR 17.11 for listed animals and various notices in the Federal Register for proposed species).
- Animals that are candidates for possible future listing as threatened or endangered under the FESA.
- Animals that meet the definitions of rare or endangered species under CEQA (State CEQA Guidelines Section 15380).
- Animals listed or proposed for listing by the State of California as threatened and endangered under the CESA (14 CCR 670.5).
- Animal species of special concern to the CDFW (Remsen 1978 for birds; Williams 1986 for mammals).
- Animal species that are fully protected in California (California Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

Based on a CNDDB query and a review of existing literature, a total of 31 sensitive wildlife species have been documented as occurring in the queried quadrangles (refer to Table 3). Because this list of species is regional, an analysis of the range and habitat preferences of those animal species was conducted to identify which sensitive wildlife species have the potential to occur within the parcel. SWCA determined that the following four special-status animal species and migratory birds have potential to occur on the parcel:

- silvery legless lizard (*Anniella pulchra pulchra*)
- black legless lizard (*Anniella pulchra nigra*)
- Morro shoulderband snail (*Helminthoglypta walkeriana*)
- loggerheaded shrike (*Lanius ludovicianua)*
- California horned lark (*Eremophila alpestris actia*)
- Class Aves
  Other migratory bird species (nesting)

Based on presence of suitable foraging, roosting, or nesting habitat, the parcel supports suitable conditions for the species listed above and nesting migratory birds. Although all of the species listed above have potential to occur on the parcel, only MSS was observed during the surveys. MSS is discussed in more detail below.

3.2.2.1 MORRO SHOULDERBAND SNAIL (*HELMINTHOGLYPTA WALKERIANA*)

On December 15, 1994, the USFWS listed MSS as an endangered species under the FESA. MSS are a member of the land snail family Helminthoglyptidae and are found in association with sandy soils of coastal dune and coastal sage scrub communities near Morro Bay. MSS can be found in native and non-native habitats and are routinely observed in disturbed areas throughout Los Osos. MSS require shelter to avoid desiccation; therefore, MSS are closely associated with plants and debris that exhibit dense cover and ample contact with the ground. Plants that MSS are often found in association with include mock heather (*Ericameria ericoides*), seaside golden yarrow (*Eriophyllum staechadifolium*), deerweed (*Acmispon glaber*), sand almond, horkelia (*Horkelia* spp.), and ice plant (*Carpobrotus edulis*). Other plants that commonly occur in areas occupied by this species include black sage (*Salvia mellifera*), dune buckwheat (*Eriogonum parvifolium*), California sagebrush (*Artemisia californica*), dune lupine (*Lupinus chamissonis*), veldt grass, and California croton (*Croton californicus*).

SWCA conducted three MSS surveys on the parcel during protocol conditions (refer to Table 1). One live MSS and six empty shells of varying condition were identified during the surveys. Due to the annual mowing that occurs on the parcel, very few MSS were found on the parcel. The annual mowing does not allow the veldt grass and other vegetation on the site to generate significant duff or woody debris that is necessary for MSS shelter. The individual observed on the parcel likely moved into the area from the adjoining undeveloped parcel located to the south of the subject parcel. The adjoining parcel supports a remnant patch of maritime chaparral that does provide adequate shelter for MSS (refer to Figure 4).

Table 2. Special-Status Plant Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CNPS	Rationale for Expecting Presence or Absence
Hoover's bent grass *Agrostis hooveri*	Sandy sites in chaparral, cismontane woodland, valley and foothill grassland. 60–600 meters.	April–July	--/--/1B.2	**Suitable Conditions Present:** The parcel supports sandy soil. However, routine mowing has reduced the parcels potential to support rare plants. **Species Absent:** Species was not observed during appropriately timed surveys.
Arroyo de la cruz manzanita *Arctostaphylos cruzensis*	Broadleaf upland forest, coastal scrub, closed cone coniferous forest, chaparral, and grassland. On sandy soils. 60–310 meters.	December–March	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not support the appropriate habitats. **Species Absent:** Species was not observed during appropriately timed surveys. No Arctostaphylos species were observed on the parcel.
Santa Lucia manzanita *Arctostaphylos luciana*	Evergreen shrub; occurs on Chaparral with shale outcrops. 350–850 meters.	February–March	--/--/1B.2	**Suitable Conditions Absent:** The parcel is at a lower elevation than this species documented range. **Species Absent:** Species was not observed during appropriately timed surveys. No Arctostaphylos species were observed on the parcel.
Morro manzanita *Arctostaphylos morroensis*	Chaparral, cismontane woodland, coastal scrub, on stabilized coastal dunes. 5–205 meters.	December–March	FT/--/1B.1	**Suitable Conditions Present.** The parcel supports sandy soil. However, routine mowing has reduced the parcels potential to support rare plants. **Species Absent:** Species was not observed during appropriately timed surveys. No Arctostaphylos species were observed on the parcel.

Table 2. Special-Status Plant Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CNPS	Rationale for Expecting Presence or Absence
Oso Manzanita *Arctostaphylos osoensis*	Evergreen shrub; occurs in chaparral and cismontane woodland associated with dacite porphyry (purple/red igneous volcanic rock) on buttes. 300–500 meters.	February–March	--/--/1B.2	**Suitable Conditions Absent:** The parcel is at a lower elevation than this species documented range and does not contain dacite soils or the appropriate community. **Species Absent:** Species was not observed during appropriately timed surveys. No Arctostaphylos species were observed on the parcel.
Pecho manzanita *Arctostaphylos pechoensis*	Closed coniferous forest, chaparral, and coastal scrub on siliceous shale. 125–850 meters.	November–March	--/--/1B.2	**Suitable Conditions Absent:** The parcel is at a lower elevation than this species documented range and does not contain the appropriate soil or habitats. No Arctostaphylos species were observed in the study area.
Santa Margarita manzanita *Arctostaphylos pilosula*	Evergreen shrub; occurs in closed coniferous forest, chaparral, and cismontane woodland on shale soils. 170–1,100 meters.	December–March	--/--/1B.2	**Suitable Conditions Absent:** The parcel is at a lower elevation than this species documented range and does not contain shale soils or the appropriated community. **Species Absent:** Species was not observed during appropriately timed surveys. No Arctostaphylos species were observed in the study area.
dacite manzanita *Arctostaphylos tomentosa* ssp. *daciticola*	Evergreen shrub occurs in chaparral and cismontane woodland associated with dacite porphyry (purple/red igneous volcanic rock) on buttes. 100–300 meters.	March	--/--/1B.1	**Suitable Conditions Absent:** The parcel is at a lower elevation than this species documented range and does not contain dacite soils or the appropriate community. **Species Absent:** Species was not observed during appropriately timed surveys. No Arctostaphylos species were observed in the BSA.

Table 2. Special-Status Plant Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CNPS	Rationale for Expecting Presence or Absence
marsh sandwort *Arenaria paludicola*	Marshes and swamps. Grows through dense mats of *Typha*, *Juncus*, *Scirpus*, etc. in freshwater marsh. 10–170 meters.	May–August	FE/CE/1B.1	**Suitable Conditions Absent:** The parcel does not support any wetland features that would support this species. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
Mile's milk vetch *Astragalus didymocarpus* var. *milesianus*	Annual herb; Occurs in coastal scrub on clay soils. 20–90 meters.	March–June	--/--/1B.2	**Suitable Conditions Absent:** Sandy soil on the parcel is not conducive to this species. **Species Absent:** Species not observed during surveys conducted in the appropriate period.
Coulter's saltbush *Atriplex coulteri*	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland/alkaline or clay. 3–460 meters.	March–October	--/--/1B.2	**Suitable Conditions Absent:** Sand soil on parcel is not conducive to this species. The parcel does not support associated habitats. **Species Absent:** Species not observed during surveys conducted in the appropriate season
San Joaquin spearscale *Atriplex joaquiniana*	Shrub occurs in chenopod scrub, meadows, seeps, playas, and valley and foothill grassland. Often in alkaline soils. 1–835 meters.	April–October	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not contain alkali soils. The last recorded occurrence in the area was 1899. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
twisted horsehair lichen *Bryoria spiralifera*	An epiphytic lichen that is typically associated with conifers. Largest known population is on Samoa Peninsula in Humboldt County. 0–30 meters.	NA	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not support any conifers. **Species Absent:** No lichens were observed on the parcel.

Table 2. Special-Status Plant Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CNPS	Rationale for Expecting Presence or Absence
round-leaved filaree *California macrophylla*	Annual herb occurs in cismontane woodland and valley and foothill grassland with clay soils. 15–1,200 meters	March–May	--/--/1B.1	**Suitable Conditions Absent:** Sand soil on parcel is not conducive to this species. The parcel does not support associated habitats. **Species Absent:** Species not observed during surveys conducted in the appropriate season
San Luis mariposa-lily *Calochortus obispoensis*	Chaparral, coastal scrub, valley and foothill grassland. Often in serpentine grassland. 75–665 meters.	May–July	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not support serpentine soil. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
San Luis Obispo mariposa lily *Calochortus simulans*	Chaparral, cismontane woodlands, lower montane coniferous forest, valley and foothill grassland; often in sandy, granitic, or serpentine soils. 395–1,100 meters.	April–May	--/--/1B.3	**Suitable Conditions Absent:** The parcel is at a lower elevation than this species documented range and does not support the appropriate habitats. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
Cambria morning-glory *Calystegia subacaulis* ssp. *episcopalis*	Grassland and rocky areas associated with chaparral and cismontane woodland. 60–500 meters.	April–May	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not support rocky soil. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
Hardham's evening-primrose *Camissoniopsis hardhamiae*	An annual herb that is typically found in sandy decomposed carbonate soils. Especially in disturbed or burned areas among chaparral and cismontane woodland. 140–945 meters.	March–May	--/--/1B.2	**Suitable Conditions Absent:** The parcel is at a lower elevation than this species documented range and does not support carbonate soil or the appropriate habitat. **Species Absent:** Species not observed during surveys conducted in the appropriate season.

Table 2. Special-Status Plant Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CNPS	Rationale for Expecting Presence or Absence
San Luis Obispo sedge *Carex obispoensis*	Closed-cone coniferous forests, chaparral, coastal prairie, coastal scrub, and valley and foothill grassland. Usually adjacent to seeps, springs, stream sides or other water source with sand, clay or serpentine. 5–790 meters.	April–June	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not contain any wetland features that could support this species. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
San Luis Obispo owls clover *Castilleja densiflora* ssp. *obispoensis*	Valley and foothill grassland. 10–215 meters.	April	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not support valley and foothill grassland. No known occurrences in Baywood fine sand exist. **Species Absent:** Species not observed during appropriately timed surveys.
Congdon's tarplant *Centromadia parryi* ssp. *congdonii*	Depressional areas within valley and foothill grassland. 1–230 meters.	June–November	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not support valley and foothill grassland or depressed areas subject to seasonal ponding.
coastal goosefoot Chenopodium littoreum	Annual herb that occurs on coastal dunes. 10–30 meters.	April–August	--/--/1B.2	**Marginal Conditions Present.** The parcel supports sandy soils and stabilized dunes but is at a higher elevation than the documented occurrences of this species. **Species Absent:** Species not observed during appropriately timed surveys.
dwarf soaproot *Chlorogalum pomeridianum* var. *minus*	Chaparral habitats with serpentine soils. 305–1,000 meters.	May–August	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not contain serpentine soils and is located at a lower elevation than the species documented range. **Species Absent:** Species not observed during surveys conducted in the appropriate season.

Table 2. Special-Status Plant Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CNPS	Rationale for Expecting Presence or Absence
salt marsh bird's-beak *Chloropyron maritimus* ssp. *maritimus*	Annual herb; occurs in marshes and swamps on coastal dunes. 0–30 meters.	May–October	FE/SE/1B.2	**Suitable Conditions Absent:** The parcel does not support any wetland features that could harbor this species. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
Brewer's spineflower *Chorizanthe breweri*	Chaparral, cismontane woodland, coastal scrub, closed-cone coniferous forest; rocky or gravelly serpentine sites; usually in barren areas. 45–800 meters.	May–August	--/--/1B.3	**Suitable Conditions Absent:** Soil on the parcel is not suitable for this species. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
straight-awned spineflower *Chorizanthe rectispina*	Chaparral, cismontane woodland, coastal scrub. Often on granite in chaparral. 355–1,035 meters.	April–July	--/--/1B.3	**Suitable Conditions Absent:** The parcel is at a lower elevation than this species documented range. Soil on the parcel is not conducive to this species. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
San Luis Obispo (Chorro Creek) fountain thistle *Cirsium fontinale* var. *obispoense*	Chaparral, cismontane woodlands; serpentine seeps or bogs. 35–380 meters.	February–July	FE/SE/1B.2	**Suitable Conditions Absent:** The parcel does not contain serpentine soil or wetland areas. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
compact cobwebby thistle *Cirsium occidentale* var. *compactum*	A perennial herb that occurs in chaparral, coastal dunes, coastal prairie, and coastal scrub. Most occurrences of this species on the SLO north coast are on clay soils. 5–150 meters.	April–June	--/--/1B.2	**Marginal Conditions Present.** Stabilized dune habitat is appropriate for the species; however, routine mowing has reduced the sits potential to support rare plants. No documented occurrences in the Los Osos area. **Species Absent:** Species not observed during surveys conducted in the appropriate season.

Table 2. Special-Status Plant Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CNPS	Rationale for Expecting Presence or Absence
Cuesta ridge thistle *Cirsium occidentale* var. *lucianum*	Perennial herb that occurs on steep rocky slopes and disturbed roadsides. Often found in openings among chaparral. Typically associated with serpentinite. 500–750 meters.	April–June	--/--/1B.2	**Suitable Conditions Absent:** The parcel is at a lower elevation than this species documented range. Soil on the parcel and the parcel's topography are not conducive to this species. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
surf thistle *Cirsium rhothophilum*	Coastal dunes, coastal bluff scrub. Open areas in central dune scrub; usually in coastal dunes. 3–60 meters.	April–June	--/CT/1B.2	**Marginal Conditions Present.** Soil on the site may be appropriate for this species. Historically, the parcel likely supported maritime chaparral, which this species is not associated with. The only documented occurrence is in Pismo Beach and is based on reference to the Vascular Plants of SLO County (R.F. Hoover 1970). **Species Absent:** Species not observed during surveys conducted in the appropriate season.
popcorn lichen *Cladonia firma*	A squamulose lichen that occurs on soil, detritus, or moss on stabilized coastal dunes among coastal scrub. Known in CA only from Morro Bay and Baywood-Los Osos areas. 30–75 meters.	NA	--/--/2B.2	**Suitable Conditions Present.** The parcel is located in stabilized dunes within the known range of this species. However, the repeated mowing has disrupted the establishment of lichens, mosses, and other biological soil crusts. **Species Absent.** Species not observed on the parcel.
Pismo clarkia *Clarkia speciosa* ssp. *immaculata*	Sandy soils, openings in chaparral, cismontane woodland, valley and foothill grassland. On ancient sand dunes not far from the coast. 25–185 meters.	May–July	FE/SR/1B.1	**Suitable Conditions Absent:** The parcel is north of this species documented range. There are no known occurrences in the Los Osos area. **Species Absent:** Species not observed during surveys conducted in the appropriate season.

Table 2. Special-Status Plant Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CNPS	Rationale for Expecting Presence or Absence
Eastwood's larkspur *Delphinium parryi* ssp. *eastwoodiae*	Perennial herb. Occurs in openings among chaparral and valley and foothill grassland with serpentinite soils. 75–500 meters.	February–March	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not support the appropriate soil or habitats. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
umbrella larkspur *Delphinium umbraculorum*	Perennial herb. Occurs in cismontane woodland. 400–1,600 meters.	April–June	--/--/1B.3	**Suitable Conditions Absent:** The parcel does not support the appropriate habitats and is located at a lower elevation than this species documented range. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
beach spectaclepod *Dithyrea maritima*	Coastal dunes, coastal scrub. Sea shores, on sand dunes, and sandy places near the shore. 3–50 meters.	March–May	--/ST/1B.1	**Suitable Conditions Absent:** Stabilized sand dunes in the Los Osos area do not constitute sea shore habitats. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
Betty's dudleya *Dudleya abramsii* ssp. *bettinae*	Coastal scrub, valley and foothill grassland, chaparral; rocky barren serpentine exposures. 20–180 meters.	May–July	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not contain serpentine outcrops, rocky places, or the appropriate habitat. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
mouse-gray dudleya *Dudleya abramsii* ssp. *murina*	Serpentine outcrops in chaparral, cismontane woodland. 90–300 meters.	May–June	--/--/1B.3	**Suitable Conditions Absent:** The parcel does not contain serpentine outcrops. **Species Absent:** Species not observed during surveys conducted in the appropriate season.

Table 2. Special-Status Plant Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CNPS	Rationale for Expecting Presence or Absence
Blochman's dudleya *Dudleya blochmaniae* ssp. *blochmaniae*	Coastal scrub, chaparral, and valley and foothill grassland habitats on rocky outcrops in clay or serpentine soils. 5–450 meters.	April–June	--/--/1B.1	**Suitable Conditions Absent:** The parcel does not contain rocky outcrops or clay soil. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
Yellow-flowered eriastrum *Eriastrum luteum*	Annual herb occurs in broadleafed upland forest, chaparral, and cismontane woodland on sandy or gravelly soils. 290–1,000 meters.	May–June	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not support the appropriate communities or soils and is located at a lower elevation than the species documented range. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
Blochman's leafy daisy *Erigeron blochmaniae*	Perennial rhizomatous herb. Occurs in coastal dunes and coastal scrub on sandy soils. 3–45 meters.	July–August	--/--/1B.2	**Marginal Conditions Present.** The parcel supports the appropriate soil; however, may be at a higher elevation than this species range. There are many occurrences in the Los Osos area at lower elevations. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
Indian knob mountainbalm *Eriodictyon altissimum*	Evergreen shrub. Occurs in maritime chaparral, cismontane woodland, and coastal scrub with sandstone substrates. 80–270 meters.	March–June	FE/SE/1B.1	**Suitable Conditions Absent:** The parcel does not contain sandstone substrates. **Species Absent:** Species was not observed during surveys conducted in the appropriate season.
Hoover's button-celery *Eryngium aristulatum* var. *hooveri*	Vernal pools in alkaline depressions near the coast. 5–45 meters.	July	--/--/1B.1	**Suitable Conditions Absent:** The parcel does not support vernal pools or alkaline substrate.

Table 2. Special-Status Plant Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CNPS	Rationale for Expecting Presence or Absence
San Benito fritillary *Fritillaria viridea*	Chaparral on serpentine slopes. 200–1,525 meters.	March–May	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not support chaparral or serpentine substrate and is at a lower elevation than this species documented range. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
mesa horkelia *Horkelia cuneata* ssp. *puberula*	Perennial herb that occurs in chaparral, cismontane woodlands, coastal scrub; in sandy or gravelly sites. 70–810 meters.	February–September	--/--/1B.1	**Suitable Conditions Present.** The parcel supports sandy soil. However, routine mowing has reduced the parcels potential to support rare plants. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
Coulter's goldfields *Lasthenia glabrata ssp. coulteri*	Annual herb occurs in freshwater wetlands coastal salt marshes, wetland-riparian habitat, alkali sink, playas, vernal pools, and swamps. 1–1,220 meters.	February–June	--/--/1B.1	**Suitable Conditions Absent:** the parcel does not contain any wetland features that could support this species. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
Jones's layia *Layia jonesii*	Chaparral and valley and foothill grassland on clay or serpentine outcrops. 5–400 meters.	March–May	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not support the appropriate soil or habitats. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
San Luis Obispo County lupine *Lupinus ludovicianus*	Chaparral, cismontane woodland. Open areas in sandy soils of the Santa Margarita formation. 50–525 meters.	April–July	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not contain sandy soil of the Santa Margarita formation. **Species Absent:** Species not observed during appropriately timed surveys.

Table 2. Special-Status Plant Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CNPS	Rationale for Expecting Presence or Absence
Santa Lucia bush-mallow *Malacothamnus palmeri* var. *palmeri*	Deciduous shrub occurs in chaparral with rocky substrates. 60–360 meters.	May–July	--/--/1B.2	**Suitable Conditions Absent:** Parcel does not contain rocky slopes, hillsides, or chaparral. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
Palmer's monardella *Monardella palmeri*	Chaparral and cismontane woodland on serpentine slopes. 200–800 meters.	June–August	--/--/1B.2	**Suitable Conditions Absent:** The parcel is located at a lower elevation than the species documented range and does not support the appropriate communities or substrate.
southern curly-leaved monardella *Monardella sinuata* ssp. *sinuata*	Annual herb that occurs in sandy soil among chaparral, lower montane coniferous forest, coastal dunes, and coastal scrub with openings. 0–300 meters.	April–September	--/--/1B.2	**Suitable Conditions Present:** The parcel supports the appropriate soil and habitats. **Species Absent:** Repeated mowing has reduced the sites potential to support rare plant species. Species not observed during surveys conducted in the appropriate season.
woodland woollythreads *Monolopia gracilens*	An annual herb associated with serpentine soil. Often found in openings within broadleafed upland forest, chaparral, cismontane woodland, north coast coniferous forest, and valley and foothill grassland. 100–1,200 meters.	February–July	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not support appropriate soil or habitat types and is at a lower elevation than this species range. **Species Absent:** Species was not observed during survey conducted in the appropriate season.
coast woolly-heads *Nemacaulis denudata* var. *denudata*	Annual herb that occurs on coastal dunes. 0–100 meters.	April–September	--/--/1B.2	**Marginal Conditions Absent:** The parcel supports sandy soil in a stabilized dune area. However, routine mowing has reduced the parcels potential to support rare plants. **Species Absent:** Species was not observed during appropriately timed surveys.

Table 2. Special-Status Plant Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CNPS	Rationale for Expecting Presence or Absence
hooked popcorn-flower *Plagiobothrys uncinatus*	Annual herb occurs in chaparral, cismontane woodland, and valley and foothill grassland with sandy soils. 300–760 meters.	April–May	--/--/1B.1	**Suitable Conditions Absent:** The parcel is located at a lower elevation than the species documented range and does not support the appropriate communities. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
Diablo Canyon blue grass *Poa diaboli*	Rhizomatous herb occurs in closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub with shale substrates. 120–400 meters.	March–April	--/--/1B.2	**Suitable Conditions Absent:** The parcel is located at a lower elevation than the species documented range and does not support shale substrates or the associated habitats. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
Sand almond *Prunus fasciculata*	Perennial and deciduous shrub that occurs on sandy soil among maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub 15–200 meters.	March–April	--/--/4.3	**Suitable Conditions Present:** The parcel supports the appropriate soil and habitat and is within the vicinity of many known occurrences. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
adobe sanicle *Sanicula maritima*	Moist seeps within coastal prairie, chaparral, meadows, and valley and foothill grassland habitats in clay or serpentine soils. 30–240 meters.	February–May	--/SR/1B.1	**Suitable Conditions Absent:** The site does not support appropriate habitat types or soils. **Species Absent:** Species not observed during surveys conducted in the appropriate season.

Table 2. Special-Status Plant Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CNPS	Rationale for Expecting Presence or Absence
black-flowered figwort *Scrophularia atrata*	Closed-cone coniferous forest, chaparral, coastal dunes, coastal scrub, riparian scrub. Around swales and in sand dunes. Sand, diatomaceous shale and soils derived from other parent material. 10–250 meters.	March–April	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not support shale derived soil. All documented occurrences of this species are located south of Los Osos. **Species Absent:** Species was not observed during surveys conducted in the appropriate season.
rayless (chaparral) ragwort *Senecio aphanactis*	Chaparral, cismontane woodlands; coastal scrub/alkaline. 15–800 meters.	January–April	--/--/2.2	**Suitable Conditions Absent:** The parcel does not support the appropriate communities or alkaline soil. **Species Absent:** Species not observed during surveys conducted in the appropriate season.
Cuesta pass checkerbloom *Sidalcea hickmanii* ssp. *anomala*	Closed-cone coniferous forest with rocky serpentine slopes. 600–800 meters.	May–June	--/SE/1B.2	**Suitable Conditions Absent:** The parcel does not contain closed-cone coniferous forest or serpentine slopes. The elevation of the parcel is much lower than the range for this species. **Species Absent:** Species not observed during appropriately timed surveys.
most beautiful jewel-flower *Streptanthus albidus* ssp. *peramoenus*	Chaparral, cismontane woodlands, valley and foothill grasslands on serpentine soil. 110–1,000 meters.	April–June	--/--/1B.2	**Suitable Conditions Absent:** The parcel is at a lower elevation than this species documented range. The parcel does not support appropriate habitat types or soils. Species not observed during appropriately timed surveys.
California seablite *Suaeda californica*	Low growing evergreen shrub occurs in coastal salt marshes and swamps. 0–15 meters.	July–October	--/--/1B.1	**Suitable Conditions Absent:** The parcel does not support any coastal salt marsh. **Species Absent:** Species not observed.

Table 2. Special-Status Plant Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CNPS	Rationale for Expecting Presence or Absence
Splitting yarn lichen *Sulcaria isidiifera*	An epiphytic lichen that occurs on branches of old growth oaks and shrubs in coastal scrub and woodland habitats. 20–30 meters.	NA	--/--/1B.1	**Suitable Conditions Absent:** The parcel does not support any old growth shrubs or trees. **Species Absent:** Species not observed on the parcel.
saline clover *Trifolium hydrophilum*	Annual herb that occurs in marshes and swamps, valley and foothill grassland (mesic, alkaline), and vernal pools. 0–300 meters.	April–June	--/--/1B.2	**Suitable Conditions Absent:** The parcel does not support any marshes, other mesic areas, or alkaline substrate. **Species Absent:** Species' not observed during appropriately times surveys.
Natural Communities of Concern				
central dune scrub	A back dune plant community characterized by low growing, drought tolerant shrubs that develop considerable cover. Diagnostic species include *Ericameria ericoides* and *Lupinus chamissonis*.			The parcel does not support central dune scrub community associates.
central foredunes	A foredune plant community characterized by scattered low growing perennial plants including *Abronia* sp. *Ambrosia* sp. and *Cackile* sp. Usually occurring in areas exposed to tidal action.			The parcel does not support any foredune habitats.
central maritime chaparral	A variable scrub community of moderate to high cover dominated by various *Arctostaphylos* sp. Found on well drained sandy soils in areas subject to summer fog.			The parcel does not support central maritime chaparral. However, the parcel likely supported this community in the past
coastal Brackish Marsh	Marsh habitat dominated by perennial, emergent, herbaceous monocots such a *Scirpus* sp. Salinity varies but is brackish from freshwater input. Usually located at interior edges of coastal bays and estuaries or in coastal lagoons.			The parcel does not support any wetland habitats.
coastal and valley freshwater marsh	A wetland community that is found in areas of permanently or prolonged freshwater saturation without significant current or flow. Vegetation is dominated by perennial emergent monocots including cattails and rushes.			The parcel does not support any wetland habitats.

Table 2. Special-Status Plant Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Flower Season	Legal Status Federal/ State/CNPS	Rationale for Expecting Presence or Absence
northern Coastal Salt Marsh	Marsh habitat supporting herbaceous, suffrutescent, salt tolerant hydrophytes often active in summer and dormant in winter. Characteristic species include *Jaumea carnosa*, *Limonium californicum*, and *Frankenia salina*. Developed around Humboldt Bay, Tomales Bay, San Francisco Bay, Elkhorn Slough, and Morro Bay.			The parcel does not support any wetland habitats.
northern interior cypress forest	An open serotinous forest that is often found on dry, rocky soils. Often associated with serpentine soils. Vegetation consists of dense to sparse stands of *Cupressus* species.			The parcel does not support northern interior cypress forest.
serpentine bunchgrass	An open grassland community that is dominated by perennial bunch grasses. Typically, total cover is low but native species' dominate the composition. Associated species include *Nassela cernua*, *N. lepida*, *N. pulchra*, and *Melica californica*. Always occurring on serpentine substrates.			The parcel does not support serpentine soil or native bunch grasses.
valley needlegrass grassland	Grassland reaching up to 2 feet tall and dominated by *Nassella* sp, which is a native tussock forming grass. Annual grasses occur between the perennials, often exceeding the bunch grasses in cover. Usually occurs on fine-textured soils that are wet in the winter and very dry in the summer.			The parcel does not support any native bunch grasses.

General references: CDFW 2015; Hickman (ed.) 1993; Munz 1974; CNDDB 2015.

Status Codes
--= No status

Federal:
FE = Federal Endangered
FT=Federal Threatened

State:
SE=State Endangered
ST= State Threatened
SR= State Rare

California Native Plant Society (CNPS):
List 1B = rare, threatened, or endangered in California and elsewhere.
List 2 = rare, threatened, or endangered in California, but more common elsewhere.
List 3 = plants that about which more information is needed.
List 4 = a watch list plants of limited distribution.

Threat Code:
.1 = Seriously endangered I California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 = Fairly endangered in California (20-80% occurrences threatened)
.3 = Not very endangered I California (<20% of occurrences threatened or no current threats known)

Table 3. Special-Status Wildlife Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Gastropods			
Morro shoulderband snail *Helminthoglypta walkeriana*	The Morro shoulderband snail (MSS) is restricted to Baywood fine sand in coastal dune, coastal sage scrub, and non-native plant communities near Morro Bay. MSS are typically observed taking shelter under shrubs, woody debris, detritus, and other sites that exhibit dense, ground cover. Mock heather, seaside golden yarrow, deerweed, sand almond, and ice plant include some species the MSS utilize.	FE/--/--	**Species is Present:** One live individual observed on the parcel during protocol weather conditions.
Insects			
Monarch butterfly *Danaus plexippus*	Occurs along the coast from northern Mendocino to Baja California, Mexico. Winter roosts in wind protected tree groves (eucalyptus, Monterey pine and cypress), with nectar and water sources nearby.	--/SA/--	**Suitable Conditions Absent:** The parcel does not support eucalyptus, Monterey pine or other trees suitable for winter roosting. Species not observed during surveys.
Brachiopods			
Vernal pool fairy shrimp *Branchinecta lynchi*	Occur in vernal pool habitats including depressions in sandstone, to small swale, earth slump, or basalt-flow depressions with a grassy or, occasionally, muddy bottom in grassland (Eriksen and Belk, 1999).	FT/-- /--	**Suitable Conditions Absent:** The parcel does not support vernal pools.
California linderiella *Linderiella occidentalis*	Seasonal ponds in grasslands, sandstone depressions, and alluvial flats with hardpan beneath.	--/--/--	**Suitable Conditions Absent:** Site does not contain vernal pools or sandstone substrate.
Fish			
Tidewater goby *Eucyclogobius newberryi*	Occurs in brackish shallow lagoons and lower stream reaches where water is fairly still, but not stagnant.	FE/--/CSC	**Suitable Conditions Absent:** The parcel does not support any shallow brackish water.
Southern California coast steelhead DPS *Oncorhynchus mykiss irideus*	Clear, cool water with abundant in-stream cover, well-vegetated stream margins, relatively stable water flow, and a 1:1 pool-to-riffle ratio.	FT, PCH /-- /CSC	**Suitable Conditions Absent:** The parcel does not contain any freshwater streams.

Table 3. Special-Status Wildlife Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Amphibians			
foothill yellow-legged frog *Rana boylii*	Nests in dense colonies on sandy estuarine shores, on levees in salt ponds, and on islands in alkali and freshwater lakes.	--/--/CSC	**Suitable Conditions Absent:** The parcel lacks shoreline with sandy substrate.
California red-legged frog *Rana draytonii*	Aquatic habitats with little or no flow and surface water depths to at least 2.3 feet. Presence of fairly sturdy underwater supports such as cattails.	FT /-- /CSC	**Suitable Conditions Absent:** The parcel does not support freshwater habitat with vegetative structure.
Coast range newt *Taricha torosa torosa*	Breed in ponds, reservoirs, and slow-moving streams. Frequents terrestrial habitats such as oak woodlands.	--/--/CSC	**Suitable Conditions Absent**: The parcel does not support freshwater habitat or woodland community.
Reptiles			
silvery legless lizard *Anniella pulchra pulchra*	Sandy or loose loamy soils with high moisture content under sparse vegetation.	--/--/CSC	**Suitable Conditions Present**: Species not observed during the surveys. However, based on numerous known occurrences in the Los Osos area, this species should be assumed to be present on the parcel.
black legless lizard *Anniella pulchra nigra*	Sandy or loose loamy soils with high moisture content under sparse vegetation.	--/--/CSC	**Suitable Conditions Present**: Species not observed during the surveys.
western pond turtle *Emys marmorata*	Quiet waters of ponds, lakes, streams, and marshes. Typically in the deepest parts with an abundance of basking sites.	--/--/CSC	**Suitable Conditions Absent:** Site does not support freshwater habitat with basking structures.
Coast horned lizard *Phrynosoma coronatum (blainvillii* population)	Frequents a wide variety of habitats, commonly occurring in lowlands along sandy washes, coastal sage scrub and chaparral in arid and semi-arid climate conditions. Species prefers friable, rocky or shallow sandy soils.	--/--/CSC	**Suitable Conditions Absent**: Although the general habitat type on the parcel can support this species, the parcel is isolated from other habitat and heavily disturbed. Due to these conditions, coast horned lizards cannot sustain a population on the parcel.

Table 3. Special-Status Wildlife Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Birds			
Cooper's hawk *Accipiter cooperii*	Deciduous riparian woodland habitat throughout California. Cooper's hawks nest in deciduous, mixed-deciduous, and evergreen forests, as well as in suburban and urban environments. Cooper's hawks tend to nest in more open areas that have older and larger trees.	MBTA/--/--	**Suitable Conditions Absent**: The parcel does not support any tall trees that are suitable for Cooper's hawk nesting.
tricolored blackbird *Agelaius tricolor*	(Nesting colony); requires open water, protected nesting substrate such as cattails or tall rushes, and foraging area with insect prey.	MBTA/--/CSC	**Suitable Conditions Absent:** The parcel does not support any open water habitat with suitable nesting substrate.
golden eagle *Aquila chrysaetos*	Usually occurring in mountainous areas with varying vegetative cover; removed from people. May forage in grasslands and other open habitats. Nests on cliff edges and rarely in tall trees.	MBTA/-- /FP, Sec.3503.5	**Suitable Conditions Absent**: The parcel is not located in mountainous areas or have suitable nesting and foraging habitats.
burrowing owl *Athene cunicularia*	Open, dry grasslands, deserts and scrublands. Subterranean nester, dependent upon burrowing mammals.	MBTA/-- /CSC	**Suitable Conditions Absent:** The parcel does not support a significant burrowing mammal population to provide burrows. This species is an uncommon winter visitor to the coast.
ferruginous hawk *Buteo regalis*	(Wintering) open grasslands, sagebrush flats, desert scrub, low foothills, and fringes of pinyon-juniper habitats; eats lagomorphs, ground squirrels, and mice.	MBTA/--/--	**Suitable Conditions Absent:** The small size and isolation of the parcel make it unsuitable for this uncommon winter visitor.
western snowy plover *Charadrius alexandrinus nivosus*	Occurs on sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	MBTA, FT/ -- /CSC	**Suitable Conditions Absent:** The site does not include any shoreline habitat suitable for snowy plover nesting.
western yellow-billed cuckoo *Coccyzus americanus*	Forests to open riparian woodlands with thick under story.	FC, MBTA/SE/ --	**Suitable Conditions Absent:** The parcel does not support any riparian habitats.
white-tailed kite *Elanus leucurus*	Open grasslands, meadows, or marshlands for foraging close to isolated trees for nesting and perching.	MBTA/--/FP	**Suitable Conditions Absent:** The parcel does not support any trees for nesting and has very limited foraging habitat.

Table 3. Special-Status Wildlife Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
California horned lark *Eremophila alpestris actia*	Occurs in short grass prairies, coastal plains, fallow grain fields and alkali flats. Found in coastal regions from Sonoma to San Diego county, and west to the San Joaquin Valley. .	MBTA/--/--	**Marginal Conditions Present:** This species does not occur in the Los Osos area with any regularity, but could forage or nest on the parcel. Species not observed during the surveys. Nesting bird avoidance measures are recommended.
loggerheaded shrike *Lanius ludovicianua*	A predatory passerine that frequents open areas with scattered shrubs. Commonly observed foraging in grassland, desert scrubs, and waste places. Builds nests in isolated trees or shrubs in the vicinity of foraging areas.	-- / -- / CSC	**Suitable Conditions Present:** Loggerheaded shrike may forage for insects on the parcel. Species not observed during surveys. Nesting bird avoidance measures are recommended.
California black rail *Laterallus jamaicensis coturniculus*	Shore birds known to frequent tidal salt marshes. Utilize densely vegetated mud flats and high tide line in salt water marsh systems.	--/ST/--	**Suitable Conditions Absent:** The parcel does not contain tidal salt marshes or densely vegetated mudflats.
purple martin *Progne subis*	Occupies valley foothill and montane hardwood forests, conifer forests, and riparian habitats. May nest in old woodpecker cavities or in human-made structures such as bridges and culverts. Feeds on insects.	--/--/CSC	**Suitable Conditions Absent:** The parcel does not support suitable nesting substrate. Pre-disturbance nesting bird surveys are proposed to avoid impacts to nesting birds. Species not observed during the surveys.
California clapper rail *Rallus longirostris obsoletus*	Occurs within salt and brackish marshes dominated by pickleweed and Pacific cordgrass. Currently, this species is restricted to marsh areas within the vicinity of San Francisco Bay. The last Califronia clapper rail to be sighted in Morro Bay was documented in 1939.	FE/SE/--	**Suitable Conditions Absent:** The parcel does not contain tidal salt marshes or densely vegetated mudflats.
Class Aves Other migratory bird species (nesting)	Annual grasslands, coastal scrub, chaparral, and oak woodlands may provide nesting habitat.	MBTA/--/--	**Suitable Conditions Present:** Potential nesting habitat occurs throughout the site. Pre-disturbance nesting bird surveys are proposed to avoid impacts to nesting birds.

Table 3. Special-Status Wildlife Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
Mammals			
Pallid bat *Antrozous pallidus*	Prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings. Night roosts may be in more open sites, such as porches and buildings.	--/--/CSC	**Suitable Conditions Absent**: The parcel does not support rocky outcrops or crevices for roosting.
Townsends big-eared bat *Corynorhinus townsendii*	Occurs in a wide variety of habitats; most common in mesic (wet) sites. May use trees for day and night roosts; however, requires caves, mines, rock faces, bridges or buildings for maternity roosts. Maternity roosts are in relatively warm sites.	--/--/CSC	**Suitable Conditions Absent**: The parcel does not support any structures for roosting.
Morro Bay kangaroo rat *Dipodomys heermanni morroensis*	Typically occurs in habitats associated with stabilized dunes and coastal dune scrub communities with dominant vegetation including mock heather, buck brush, and deer weed.	FE/SE/--	**Suitable Conditions Absent:** The parcel is within the historical range of this species. However, the small size, lack of shelter and forage vegetation, and location between developments renders the parcel unsuitable for this species.
Western mastiff bat Eumops perotis	Found in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.; roosts in crevices in cliff faces, high buildings, trees, and tunnels.	--/--/CSC	**Suitable Conditions Absent**: The parcel does not support any structures for roosting.
San Diego desert woodrat *Neotoma lepida intermedia*	Ranges from Baja California northward to northern San Luis Obispo County. Typically occurs in woodlands and coastal scrub habitats. Desert woodrats build nests within cracks and rock crevices, or in clumps of cactus.	--/--/CSC	**Suitable Conditions Absent:** The open habitat with minimal grass cover does not provide suitable shelter for this species. No woodrat dens were observed on the parcel.
big free-tailed bat *Nyctinomops macrotis*	Rare vagrant in California, probable resident in Texas, New Mexico, and southern Arizona. Probably does not breed in California. Prefers rugged, rocky canyons but will roost on buildings or in caves and trees.	--/--/CSC	**Suitable Conditions Absent:** The parcel does not support any suitable roosting structure.

Table 3. Special-Status Wildlife Species Investigated for Potential Occurrence

Species Name	Habitat and Distribution	Legal Status Federal/State/ CDFW	Rationale for Expecting Presence or Absence
American badger *Taxidea taxus*	Occurs in open stages of shrub, forest, and herbaceous habitats; needs uncultivated ground with friable soils.	--/--/CSC	**Suitable Conditions Absent:** The parcel is within the historical range of this species. However, the small size, lack of shelter vegetation, and location between developments renders the parcel unsuitable for this species.

General references: Unless otherwise noted all habitat and distribution data provided by California Natural Diversity Database

Status Codes
--= No status

Federal:
FE = Federal Endangered
FT= Federal Threatened
FC= Federal Candidate
MBTA= Protected by Federal Migratory Bird Treaty Act

State:
SE= State Endangered
ST= State Threatened
California Department of Fish and Game:
CSC= California Special Concern Species
FP= Fully Protected Species
SA= Not formally listed but included in CDFG "Special Animal" List.

4 REGULATORY OVERVIEW

4.1 Federal Policies and Regulations

4.1.1 Federal Endangered Species Act of 1973

The FESA provides legislation to protect federally listed plant and animal species. Impacts to listed species resulting from the implementation of a project would require the responsible agency or the applicant to formally consult with the USFWS or National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) to determine the extent of impact to a particular species. If USFWS or NOAA Fisheries determine that impacts to a federally listed species would likely occur, alternatives and measures to avoid or reduce impacts must be identified. USFWS and NOAA Fisheries also regulate activities conducted in federal critical habitat, which are geographic units designated as areas that support primary habitat constituent elements for listed species.

4.1.2 Migratory Bird Treaty Act of 1918

The Migratory Bird Treaty Act (MBTA) protects all migratory birds, including their eggs, nests, and feathers. The MBTA was originally drafted to put an end to the commercial trade in bird feathers, popular in the latter part of the 1800s. The MBTA is enforced by the USFWS, and potential impacts to species protected under the MBTA are evaluated by the USFWS in consultation with other federal agencies.

4.2 State Policies and Regulations

4.2.1 California Endangered Species Act and Species of Concern

The CESA ensures legal protection for plants listed as rare or endangered, and wildlife species formally listed as endangered or threatened. The state also maintains a list of California Species of Special Concern (SSC). SSC status is assigned to species that have limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. Under state law, the CDFW is empowered to review projects for their potential to impact special-status species and their habitats. Under CESA, CDFW reserves the right to request the replacement of lost habitat that is considered important to the continued existence of CESA protected species.

4.2.2 California Fish and Game Code

California Fish and Game Code Section 3511 includes provisions to protect Fully Protected (FP) species, such as: (1) prohibiting take or possession "at any time" of the species listed in the statute, with few exceptions; (2) stating that "no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to "take" the species; and (3) stating that no previously issued permits or licenses for take of the species "shall have any force or effect" for authorizing take or possession. The CDFW is unable to authorize incidental take of "fully protected" species when activities are proposed in areas inhabited by those species. Sections 3503 and 3503.5 of the Fish and Game Code state that it is unlawful to take, possess, or destroy the nest or eggs of any bird, with occasional exceptions. In addition, Section 3513 states that it is unlawful to take or possess any migratory bird as designated in the MBTA or any part of such migratory birds except as provided by rules and regulations under provisions of the MBTA.

4.2.3 California Coastal Act

The California Coastal Act was enacted in 1976 to provide long-term protection of California's coastal resources. The Act's coastal resources management policies are based on recommendations contained in the California Coastal Plan. One such policy includes:

"Protection, enhancement and restoration of environmentally sensitive habitats, including intertidal and nearshore waters, wetlands, bays and estuaries, riparian habitat, certain wood and grasslands, streams, lakes, and habitat for rare or endangered plants or animals."

5 IMPACT ASSESSMENT AND MITIGATION

This impact assessment focuses on identifying potential impacts associated with implementation of the proposed project. The impact analysis is based on the site's existing conditions, regulatory setting, and conceptual site map (refer to Figure 3). This section focuses on identifying potential biological constraints associated with any reasonably foreseeable development within the parcel. Impact calculations are based on the conceptual site map and are subject to refinement. The emphasis is on determining the potential effects of the project on special-status species, habitats, and jurisdictional areas within the parcel. Adverse impacts could occur if future uses of the parcel would result in temporary or permanent modification to sensitive habitats or to habitats occupied by special-status species. Where potential impacts to sensitive resources have been identified, measures for avoiding, minimizing, or mitigating adverse effects to these resources are recommended. The following section has been formatted to meet the general guidelines set forth by the County (December 2009).

5.1 Sufficiency of Biological Data

The biological surveys conducted in support of this BRA were sufficient to inventory the biological resources on the parcel. No additional field surveys or specialized investigation is needed to determine which resources may be impacted by the proposed project and the appropriate avoidance/mitigation measures. However, the impact calculations to habitat types are based on a conceptual building envelope that provides a reasonably foreseeable development area. Upon refinement of the project plans, the building envelope may change, which would result in changes to habitat impact calculations.

5.2 Impacts

5.2.1 Project Effect on Unique or Special-status Species or their Habitats

5.2.1.1 SPECIAL-STATUS PLANT SPECIES

The subject parcel does not support any special-status plant species. Therefore, the proposed project would not impact any plants considered sensitive under CEQA, CESA, or FESA.

5.2.1.2 WILDLIFE

The parcel provides suitable habitat for nesting bird species (including loggerheaded shrike and horned lark), silvery legless lizard, black legless lizard, and MSS. Common passerines may use the non-native grassland for nesting and/or foraging. The available nesting habitat would be impacted by project activities including grading and vegetation removal. If the project activities are conducted between March and September, birds may be nesting within or adjacent to the affected area and the individuals could be directly or indirectly impacted. Direct impacts may include loss of active nests during vegetation removal. Noise or other disturbances may cause an individual to abandon a nest resulting in an indirect impact. BIO-1 recommends measures to avoid impacts to nesting birds during development of the parcel.

Silvery legless lizard is relatively common in areas of Los Osos that contain Baywood fine sand. Silvery legless lizard is a fossorial species. Fossorial species spend most of their lives underground; therefore, they are difficult to detect without shallow excavation of the soil surface. Although silvery or black legless lizards were not observed on the parcel during the surveys, the presence of silvery legless lizard on

the parcel should be assumed. Grading for development of the parcel could result in the direct take of silvery and/or black legless lizard. Direct take may include being struck by equipment, entrapped in stockpiled materials or trenches, or trampled or collected by construction personnel. BIO-2 includes a measure to minimize impacts to silvery and black legless lizards during development of the parcel.

The non-native grassland on the parcel supports live MSS. Direct take of MSS may occur during development and future use of the parcel. Direct take during project development may include being struck by equipment, stepped on by crewmembers, or being uncovered and left to desiccate in the sun. The individual MSS that remain on the parcel after development is complete could be directly taken by landscape maintenance activities, being struck by resident's cars, or trampled by residents. BIO-3 includes the recommendation for the applicant to obtain an Incidental Take Permit (ITP) from USFWS to cover the project for impacts to MSS during and after development of the parcel.

At the time that this BRA was prepared, the applicant had already initiated coordination with the USFWS to develop a HCP and obtain an ITP for the project. Early coordination with USFWS has indicated that an ITP could be issued for the project provided mitigation in the form of monetary payment of an in-lieu fee is agreed upon by USFWS and the applicant.

5.2.2 Project Effect on Extent, Diversity, or Quality of Native or Other Important Vegetation

The parcel contains seven small coast live oak trees on the northern portion of the parcel. The County's stock *Project Specific Standard Mitigation Measures for Tree Removal and Protection* (County of San Luis Obispo 2005) requires mitigation/replacement of impacted or removed oak trees that are 5 inches or greater dbh. All except one of the coast live oak trees have dbh less than 5 inches. Based on the conceptual site plan, construction of the residence would occur on the southern portion of the parcel and would avoid impacts to the trees. The trees would be remain on the parcel for landscape purposes. Since construction activities would avoid the seven trees on the parcel, mitigation for impacts to these trees is not recommended.

5.2.3 Project Effect on Wetland or Riparian Habitat

The parcel does not contain any wetland or riparian habitats.

5.2.4 Project Effect on Movement of Resident or Migratory Fish and Wildlife Species

The proposed project will have no direct or indirect effect on the movement of resident or migratory fish and wildlife species.

5.3 Avoidance and Mitigation Measures

BIO-1 To the maximum extent possible, site preparation, ground disturbing, and construction activities should be conducted outside of the migratory bird breeding season. If such activities are required during this period, the applicant should retain a County-approved biologist to conduct a nesting bird survey and verify that migratory birds are not occupying the site. If nesting activity is detected, the following measures should be implemented:

a. The project should be modified or delayed as necessary to avoid direct take of identified nests, eggs, and/or young protected under the MBTA;

b. The County-approved biologist should contact the USFWS and CDFW to determine an appropriate biological buffer zone around active nest sites. Construction activities within the established buffer zone will be prohibited until the young have fledged the nest and achieved independence; and,

c. The County-approved biologist should document all active nests and submit a letter report to the County, USFWS, and CDFW, documenting project compliance with the MBTA and applicable project mitigation measures.

BIO-2 Within 30 days prior to site grading and during site grading, a County-approved biologist should conduct surveys for silvery legless lizards and other reptiles. The surveyor should utilize hand search or cover board methods in areas of disturbance where legless lizards are expected to be found (e.g., under shrubs, other vegetation, or debris). If cover board methods are used, they should commence at least 30 days prior to the start of construction. Hand search surveys should be completed immediately prior to and during grading activities. During grading activities, the County-approved biologist should walk behind the grading equipment to capture silvery legless lizards that are unearthed by the equipment. The surveyor should capture and relocate any legless lizards or other reptiles observed during the survey effort. The captured individuals should be relocated from the construction area and placed in suitable habitat on the parcel but outside of the work area. Following the survey and monitoring efforts, the County-approved biologist should submit to the County a project completion report that documents the number of silvery legless lizards captured and relocated, and the number of legless lizards taken during grading activities.

BIO-3 The proposed project would likely result in direct take of MSS. Prior to developing the parcel, the applicant should Consult with the USFWS to obtain an ITP to cover the project for take of MSS. Assuming the proposed project has no federal nexus (federal funding or other federal involvement), obtaining an ITP would require the development of an individual HCP or participation in a community-wide HCP. There are three potential options to consider for the development or participation in an HCP: (1) Development of an Individual HCP that mitigates project impacts through participation in an in-lieu fee program; (2) Development of an HCP that mitigates project impacts through MSS habitat preservation, or (3) Participation in a Community-wide HCP.

At the time that this BRA was prepared, the applicant had initiated coordination with the USFWS and begun preparing an HCP that includes mitigation through the in-lieu fee program. Therefore, this BRA and associated measure BIO-3 discusses the project mitigation with the assumption that the applicant will mitigate impacts to MSS via the in-lieu fee program.

1. HCP WITH AN IN-LIEU FEE PROGRAM

USFWS has established an in-lieu fee program that would provide funds to affect the recovery of MSS. This program requires preparation of an HCP with a mitigation mechanism that allows the applicant to contribute funds towards projects that include recovery actions for the species.

The in-lieu fee program is available to applicants with projects that can be categorically excluded from the National Environmental Policy Act (NEPA); this determination is made by the USFWS. Assuming the proposed project would not

significantly affect sensitive cultural resources, it is likely that it would be categorically excluded. If the project is determined to be categorically excluded from NEPA, it must also meet criteria A through D below to be eligible for the in-lieu fee program. SWCA's opinion is that the project does meet the following criteria and has provided reasons supporting our opinion.

A. *The project site is outside of the boundaries of critical habitat units for MSS designated on February 7, 2001; 66 FR 9233 and/or Conservation Planning Areas intended to serve as defacto recovery units for the species, as identified in the Recovery Plan for Morro shoulderband snail and four plants from western San Luis Obispo County.*

   The Mammen parcel is not located in any Critical Habitat Units for MSS Conservation or Planning Areas identified in the Species Recovery Plan. The parcel is approximately one-third of an acre, is currently zoned for residential uses, and located between existing developments. The Mammen parcel is within a developed area and is not connected to any larger tracks of land. Therefore, the value of on-site conservation to MSS is relatively low.

B. *The project site does not provide habitat suitable to sustain a population of Morro shoulderband snail of sufficient size to withstand the risk of extirpation in the short-term (i.e., 50 years).*

   The project site supports limited shelter opportunities for MSS and very few live MSS (only one observed). This is due to the annual fire suppression that is required because the parcel is situated among other residential structures. Considering the isolated situation of the relatively small MSS population and the marginal habitat conditions, it is reasonable to assume that the population is not of sufficient size to withstand the risk of extirpation in the short term.

C. *The project would not result in take of any other state- or federally-listed species.*

   Based on the four surveys conducted in support of this BRA, the parcel does not support any other species protected by FESA or CESA.

D. *Impacts to Morro shoulderband snail and its habitat must be minimized to the maximum extent practicable and the result of otherwise lawful activities.*

   The proposed project is subject to discretionary approval by the County. Issuance of building permits would require the project to be conducted in accordance with all pertinent regulations, including the ESA. Permit requirements and the established HCP would include measures designed to minimize impacts to MSS and its habitat. The following measures are anticipated to be included in the HCP and ITP conditions:

   I. Environmental Awareness Training

      The monitoring biologist will conduct an orientation program for all persons who will work on-site during grading and construction. The program will consist of a brief presentation about the biology of the MSS and the terms and conditions of the ITP/HCP. The purpose of the orientation will be to inform contractors and equipment operators of construction activity

restrictions and the ramifications of non-compliance. There will also be a discussion of the appropriate protocol should MSS be encountered during construction activities.

II. Pre-construction Survey and MSS Capture and Relocation

To reduce the potential for direct injury or mortality of individual snails, a USFWS-approved biologist holding a valid Section 10(a)(1)(A) permit for MSS will survey the impact areas and clear them, to the greatest extent feasible, of all live snails in all life stages as well as empty shells of the species. All living snails, in all life stages, that are identified will be captured and moved to suitable areas to be established in coordination with the USFWS. The size, age-class, location of capture, and release site location will be recorded for each individual MSS moved from the affected work area. Empty shell locations will be noted on a map, and shells will be counted and classified by size and age. These shells will be left in place on the site. The biologist will document all activities associated with all surveys, and reports will be submitted to the USFWS in accordance with the ITP conditions.

Surveys will be conducted immediately prior to commencement of initial ground disturbance activities. If pre-construction surveys occur during the summer months (April through October), when MSS are aestivating, one intensive survey conducted by at least two permitted biologists immediately prior to construction should be sufficient to remove the MSS from the impact areas. The survey process will involve moving and searching under all vegetation and other shelter present (e.g., woodpiles, debris), and will result in destruction or uprooting of vegetation. If pre-construction surveys occur during the rainy season (November through March), multiple surveys prior to initial disturbance may be needed to remove MSS.

The intent of the pre-construction survey(s) is to remove all MSS observed during an intensive search of the impact area. However, previous experience has shown that due to the small size and cryptic nature of the species, some individuals can be missed during even the most thorough effort, and may then become visible during ground disturbance. To address this possibility, a permitted biologist will be present to capture and move any additional MSS discovered during all grading and grubbing activities.

If major construction activities that have the potential to affect MSS or their habitat, such as grading and cement pouring, occur during the rainy season, daily surveys will be conducted at the beginning of each work day to check for and remove any MSS that may have entered the construction area.

III. Exclusion Fencing

Before equipment work begins at the project site, the development area will be fenced to establish the limits of construction. The fencing will be installed along the southern property boundary including the boundary of the access drive. This fence location is intended to exclude construction-related disturbances to the maritime chaparral that is located on the adjacent parcel and outside the impact area. The fencing will consist of temporary orange construction fencing.

IV. Construction Monitoring

The applicant will retain a USFWS-approved MSS biologist to conduct compliance monitoring during construction of the project. This monitoring biologist will ensure that the required minimization measures, such as protective fencing, environmental training, and construction monitoring, are implemented. Results of the compliance monitoring will be reported in the first annual report for the project.

6 REFERENCES

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Appendix A.
List of Species Observed

Table A-1. Plant Species Observed on the Mammen Parcel

Scientific Name	Common Name	Native	Species Status / Notes
Vascular Plants nomenclature follows " The Jepson Manual" and http://ucjeps.berkeley.edu/interchange.html			
ANGIOSPERMS (DICOTS)			
Aizoaceae	***Fig-marigold Family***		
Aptenia cordifolia	red apple	No	
Conicosia pugioniformis	false ice plant	No	Invasive weed
Tetragonia tetragonioides	New Zealand spinach	No	
Agavaceae	***Century Plant Family***		
Agave americana	century plant		
Anacardiaceae	***Sumac Family***		
Schinus molle	Peruvian pepper tree	No	
Asteraceae	***Sunflower Family***		
Heterotheca grandiflora	telegraph weed	Yes	
Logfia gallica	narrow-leafed filago	No	
Brassicaceae	***Mustard Family***		
Descurainia pinnata	yellow tansy mustard	No	
Caryophyllaceae	***Pink Family***		
Cardionema ramosissimum	sand mat	Yes	
Chenopodiaceae	***Goosefoot Family***		
Chenopodium californicum	California pigweed	Yes	
Crassulaceae	***Stonecrop Family***		
Crassula ovata	jade plant	No	
Cucurbitaceae	***Gourd Family***		
Marah fabaceus var. *fabaceus*	wild cucumber	Yes	
Euphorbiaceae	***Spurge Family***		
Croton californicus	croton	Yes	
Fabaceae	***Pea Family***		
Acmispon glaber	deer weed	Yes	
Fagaceae	***Oak Family***		
Quercus agrifolia	coast live oak	Yes	
Geraniaceae	***Geranium Family***		
Erodium cicutarium	red-stemmed filaree	No	

Scientific Name	Common Name	Native	Species Status / Notes
Malvaceae	***Mallow Family***		
Malva neglecta	common mallow	No	
Oxalidaceae	***Woodsorrel Family***		
Oxalis pes-caprae	Creeping woodsorrel	No	
Papaveraceae	***Poppy Family***		
Eschscholzia californica	California poppy	Yes	
Phrymacaea	***Lopseed Family***		
Mimulus auranticus	sticky monkeyflower	Yes	
Rosaceae	***Rose Family***		
Horkelia cuneata ssp. *cuneata*	Coast horkelia	Yes	
Solanaceae	***Nightshade Family***		
Solanum nigrum	black nightshade	No	
Urticaceae	***Nettle Family***		
Urtica urens	dwarf nettle	No	
Poaceae	***Grass Family***		
Avena barbata	oats	No	
Bromus diandrus	ripgut brome	No	
Bromus hordeaceus	soft chess brome	No	
Bromus madritensis	red brome	No	
Ehrharta calycina	veldt grass	No	
Festuca myuros	rattail fescue	No	
Lamarkia aurea	goldentop	No	
Xanthorrhoeaceae	***Grass Family***		
Phorium sp.	New Zealand flax		Escaped cultivar

Table A-2. Wildlife Species Observed on Mammal Parcel

Scientific Name	Common Name	Notes
BIRDS		
Diurnal Raptors		
Cathartes aura	turkey vulture	Fly over
Buteo jamaicensis	red-tailed hawk	Fly over
Upland Game Birds		
Callipela californica	California quail	
Pigeons and Doves		
Zenaida macroura	mourning dove	Fly over
Hummingbirds		
Calypte anna	Anna's hummingbird	
Woodpeckers		
Melanerapes formicivorus	acorn woodpecker	call
Jays, Crows, and Allies		
Corvus brachyrhynchos	American crow	Fly over
Chickadees, Nuthatches, and Allies		
Baeolophus inornatus	oak titmouse	call
Psaltriparus minimus	bush tit	
Dipper and Wrentit		
Chamaea fasciata	wrentit	call
Thrushes		
Toxostoma redivivum	California thrasher	call
Mimids		
Mimus polyglottos	northern mockingbird	Call and fly over
Emberizine Sparrows and Allies		
Zonotrichia leucophrys	white-crowned sparrow	
Finches, and Old World Sparrows		
Carpodacus mexicanus	house finch	
MAMMALS		
Felidae		
Felis catus	domestic cat	
Lagomorphs		
Sylvilagus bachmanii	brush rabbit	

Scientific Name	Common Name	Notes
REPTILES		
Sceloporus occidentalis	western fence lizard	
GASTROPODS		
Helminthoglypta walkeriana	Morro shoulderband snail	
Heliix aspersa	common garden snail	
Oxychilus cellarius	cellar glass snail	

Appendix B.
Photo Documentation

PHOTO 1:

Photo of the realtors sign showing the spatial situation of the parcel.

Photo taken on January 27, 2015.

PHOTO 2:

View of the parcel looking north from the southern boundary. The photographer is standing at the sign seen in Photo 1.

Photo taken on January 27, 2015.

PHOTO 3:

View of the parcel from the northern boundary looking south toward the access driveway.

Photo taken on January 27, 2015.

PHOTO 4:

View of the southern parcel boundary and the maritime chaparral that is located on the adjacent parcel. The sign observed in the left of the picture is at the end of the access drive.

Photo taken on January 27, 2015.

PHOTO 5:

View of the oaks that line the northern border of the parcel.

Photo taken on January 27, 2015.

PHOTO 6:

View of the largest oak (8.5-inch dbh).

Photo taken on January 27, 2015.

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Appendix B

In-Lieu Fee Deposit Agreement

NATIONAL FISH and WILDLIFE FOUNDATION

SAN FRANCISCO OFFICE
90 New Montgomery Street Suite 720
San Francisco, CA 94105
P 415-778-0999 F 415-778-0998 nfwf.org

November 5, 2009

Diane K. Noda
Field Supervisor, U. S. Fish and Wildlife Service
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003

RE: Letter of Direction for Deposit into National Fish and Wildlife Foundation
Morro Shoulderband Snail In-Lieu Fee Account

Dear Ms. Noda:

The purpose of this letter is to outline the agreement reached between the National Fish and Wildlife Foundation (NFWF) and the U.S. Fish and Wildlife Service (Service) regarding payments (Payments) of funds into an account with NFWF that originate from the Service's Endangered Species Habitat Conservation Planning Program for the federally endangered Morro shoulderband snail (*Helminthoglypta walkeriana*). NFWF hereby agrees to accept the Payments and deposit them into an account at NFWF to be named the "Morro Shoulderband Snail In-Lieu Fee Account" (Account).

Monies deposited into the Account will be disbursed by NFWF at the direction of the Service to fund efforts that would contribute to the recovery of the Morro shoulderband snail. These monies are intended to compensate for unavoidable impacts to the species associated with the issuance of incidental take permits supported by low-effect Habitat Conservation Plans. These efforts would be consistent with recovery tasks as identified in the Recovery Plan for the Morro Shoulderband Snail and Four Plants from Western San Luis Obispo County, California (Service 1998) and may include, but are not necessarily limited to, the development of monitoring strategies, population surveys, and non-native species removal and habitat enhancement. The efforts would be conducted only on lands identified by the Service and with the consent of the land owner/manager (e.g., California State Parks, California Department of Fish and Game). We understand that Julie M. Vanderwier will serve as the Service point of contact for communications regarding the Account (including the specification of projects to be funded) at the address listed above or, alternatively, via telephone (805) 644-1766 extension 222 or e-mail (julie_vanderwier@fws.gov). The Service agrees to advise NFWF in the event this point of contact information changes.

Please arrange to have the Payments delivered to NFWF, Attention Chief Financial Officer, 1133 15th Street, NW, Suite 1100, Washington DC, 20005. All checks should be made payable to the "National Fish and Wildlife Foundation" taxpayer ID # 52 138 4139, and make reference to the "Morro Shoulderband Snail In-Lieu Fee Account." If the Payments are to be

deposited with the Foundation via electronic funds transfer, we request that they be directed to NFWF, c/o Bank of America, 730 15th Street, NW, Washington, DC 20005, ABA Bank Transit Number 026009593, Account Number 2260 0322 6791.

Upon receipt of the Payments, NFWF will deposit the funds into the Account and invest them in accordance with NFWF's prevailing investment policies pending project selection. Any interest earned will be credited back to the principal of the Account, and applicable bank charges will be debited from the Account. We will disburse amounts from the Account in accordance with the terms outlined above, at the direction of the Service.

We shall submit Account activity reports to the Service semi-annually by June 15 and December 15 of each year the Account is in existence. The activity will include all information relative to deposits, disbursements, fees, and investment income during each semi-annual period, with a reconciliation of the remaining unobligated balance in the Account.

As compensation for its fiduciary obligations, NFWF will assess and collect an annual management fee of 2% of the balance of the Account during each fiscal year in which the Account is in existence. We may assess and collect the fee either quarterly (in which event the fee will be calculated as 0.5% per quarter) or annually, in either case based on the Foundation's fiscal year. (Please note that NFWF's current practice is to *accrue* the annual fee quarterly for accounting purposes based on quarter-end account balances, but to actually *draw and collect* the annual fee only once annually.) We may also assess additional fees if requested by the Service to perform functions beyond those outlined in this letter, as determined to be reasonable in consultation with the Service.

We look forward to applying the Payments through the Account for the purposes outlined above. If the foregoing accurately reflects your understanding of the manner in which the Payments should be administered, please sign as indicated below and return a copy of this letter to NFWF, attention: Liz Epstein, Senior Manager, Impact-Directed Environmental Accounts, at 90 New Montgomery Street, Suite 720, San Francisco, CA, 94105 at your convenience. Please feel free to contact Liz (415-243-3102) with any questions or concerns.

Sincerely,

for Timothy J. Dicintio
Director, Impact Directed Environmental Accounts
National Fish and Wildlife Foundation

Agreed and Acknowledged:

U.S. Fish and Wildlife Service

Diane K. Noda — 11/12/09

By: Diane K. Noda — Date

Title: Field Office Supervisor

cc: Liz Epstein, Senior Manager, Impact Directed Environmental Accounts, NFWF
David Pereksta, Service