GLENN LUKOS ASSOCIATES
Regulatory Services

February 15, 2008

David Reznick
Malibu Bay Company
23705 West Malibu Road
Suite D-2
Los Angeles, California 90265

SUBJECT: Results of Focused Surveys for the Silvery Legless Lizard (*Anniella pulchra pulchra*) for the 2.08-Acre Broad Beach Property, Malibu, Los Angeles County, California.

Dear Mr. Reznick:

This letter report summarizes the methodology and findings of a habitat evaluation and focused presence/absence survey for the silvery legless lizard (*Anniella pulchra pulchra*) on a parcel covering 2.08 acres at 30743 Pacific Coast Highway in the City of Malibu, Los Angeles County, California (see Exhibits 1, 2). The Malibu Bay Company has retained Glenn Lukos Associates, Inc. (GLA) to conduct this habitat evaluation and survey as one component of a suite of comprehensive biological and geomorphological studies that are being conducted on this parcel (hereafter the "Project Site").

1.0 INTRODUCTION

On January 31 and February 6, 2008 biologists' of Glenn Lukos Associates, Inc. (GLA) conducted a habitat assessment that included a focused survey for the silvery legless lizard throughout the entire project site [Exhibit 3]. Photographs to document the topography and vegetative communities are provided as Exhibit 4.

1.1 Project Description

The Malibu Bay Company proposes to subdivide the site into four properties that would support residential development on their northerly portions and ecological preserves on their southerly portions.

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1.1 Project Description

The Malibu Bay Company proposes to subdivide the site into four properties that would support residential development on their northerly portions and ecological preserves on their southerly portions.

1.2 Site Description

The topography of the Project Site consists of flat lands and a foredune ridge adjacent to the Pacific Ocean. The Project Site is composed mostly of ruderal vegetation and beach, but includes developed land, primrose/lupine, foredune ridge, mobile hummocks, and stable hummocks (*Biological Resources Assessment, 30732 Pacific Coast Highway, Malibu, California* by Robert A. Hamilton [working draft]). The Project Area is bordered by Pacific Coast Highway to the north, residential housing to the east and west, and the Pacific Ocean to the south.

The Project Site was used as a yacht club from 1972 to into the 1990's in which the Project Site functioned as 1) a base for the day use of sailboats, primarily catamarans, which were stored on trailers in a fenced boat yard located in the northern part of the site, 2) weekend races for up to 200 boats and usually stored 50 to 70 in the boat yard, 3) a small, roofless structure with a dance floor, changing rooms, lockers, showers, a small kitchen, and "chemical" toilets, 4) and the yacht club used an all-terrain vehicle to haul the boats on their trailers through a wide path through the dunes to the surf line for launching (*Biological Resources Assessment, 30732 Pacific Coast Highway, Malibu, California* by Robert A. Hamilton [working draft]). In September of 2002, the entire northern undeveloped area was used as a staging area for crews constructing the homes located on either side of the project site. Thus, this portion of the site showed signs of ongoing disturbance in 1977, 1980, and 2002 (*Biological Resources Assessment, 30732 Pacific Coast Highway, Malibu, California* by Robert A. Hamilton [working draft]).

1.2.1 Soils

The Soil Conservation Service (SCS)[1] has mapped the following soil types as occurring in the general vicinity of the Project Site:

Abaft-Beaches-Urban Land Complex, 0 to 5 Percent Slopes (151)

This soil is comprised of 55 percent Abaft and similar soils, 30 percent beaches, and 15 percent urban land that is generally located in coastal urban areas within the Southern California coastal plain. It is associated with a shore complex from 0 to 25 feet above mean sea level (msl) and is usually associated with wildlife habitat, recreation, and building site development.

Abaft

This somewhat excessively drained soil formed from Eolian sand derived from sandstone. Slopes are 0 to 5 percent, dominantly east to southwest, associated with dunes that support beach

[1] SCS is now known as the National Resource Conservation Service or NRCS.

suncup. A typical profile is 0-4 inches of loamy sand and 4 to 60 inches of stratified, fine sand to loamy coarse sand to loamy sand.

Beaches

This soil is dominantly on east to southwest in sandy alluvium derived from sandstone, and is typically associated with chaparral.

Urban

This soil is associated with houses and other buildings, streets, parking lots, and associated landscaped areas.

Urban Land-Xerorthents, Landscaped, Complex, Rarely Flooded, 0 to 5 Percent Slopes (252)

This soil is comprised of 70 percent Urban land, 25 percent Xerorthents, and similar soils, and 5 percent minor components of Elder, coastal, Typic Argixerolls, and Xerorthents that is generally located in urban areas within the Southern California mountains. Major uses include wildlife habitat, recreation, and building site development. It is associated with mountain valleys and canyons from 30 to 1,965 feet above msl.

Urban Land

This soil is described as houses and other buildings, streets, parking lots, and associated landscaped areas with no vegetation type or ecological information.

Xerorthents, Landscaped

This well-drained soil formed in Colluvium and residuum derived from sedimentary rock and other mixed sources. Slopes range from 2 to 5 percent, on leveled areas dominantly facing northeast to west. Vegetation typically associated with this soil includes ornamental plants and lawns. A typical profile consists of 0 to 52 inches of loam and 52 to 62 inches of weathered bedrock.

Danville-Urban Land Complex, 0 to 9 Percent Slopes (390)

This soil is comprised of 80 percent of Danville, coastal, and similar soils, 15 percent urban land, and 5 percent minor components of Xerorthents, escarpements and Danville, very gravelly surface that is generally located in urban areas within the Southern California mountains. Major uses include wildlife habitat, recreation, and building site development. It is associated with coastal plains and shore complex from 45 to 295 feet above msl.

Danville, Coastal

This well-drained soil formed in alluvium derived from metavolcanic and/or sedimentary rock. Slopes range from 2 to 9 percent on dominantly facing east to southwest alluvial fans and terraces. Vegetation typically associated with this soil includes California sagebrush. A typical profile consists of 0 to 4 inches clay loam and 4 to 60 inches clay.

Urban Land

This soil is described as houses and other buildings, streets, parking lots, and associated landscaped areas with no vegetation type or ecological information.

1.2.2 Plant Communities

The Project Site is composed mostly of ruderal vegetation and beach, but includes developed land, primrose/lupine association, foredune ridge, mobile hummocks, and stable hummocks (*Biological Resources Assessment, 30732 Pacific Coast Highway, Malibu, California* by Robert A. Hamilton [working draft]).

Developed

The developed northerly portion of the project site, consisting of an access road, wall, and planter, covers approximately 0.25 acre. Vegetation in this area consists of plantings of three non-native species, Myoporum (*Myoporum laetum*), coral tree (*Erythrina* sp.), Indian Hawthorn *(Rhaphiolepis indica*), and Heartleaf Iceplant (*Aptenia cordifolia*) along the shoulder of Pacific Coast Highway.

Ruderal

The ruderal portion of the site, an area that has been filled with imported soil and gravel material, covers approximately 0.61 acre at the site's northern end (0.57 acre north of the stringline, 0.04 acre south of it). The Malibu Yacht Club's boatyard and two structures occupied this part of the site starting in 1972 and ending some time in the 1990s, and construction crews used it as a staging area in 2002. This area is dominated by introduced weeds, such as Highway Iceplant (*Carpobrotus edulis*) and Australian Saltbush (*Atriplex semibaccata*), and introduced annual grasses, such as Italian Ryegrass (*Lolium multiflorum*) and Ripgut Brome (*Bromus diandrus*). Native plant species present in low numbers include two shrub species, Coast Goldenbush (*Isocoma menziesii* var. *menziesii*) and California Sagebrush (*Artemisia californica*), and the perennial herb, Telegraph Weed (*Heterotheca grandiflora*).

Primrose/Lupine

The area designated as primrose/lupine covers approximately 0.10 acre. This area's mixed substrate includes sand, coarser sand, silt, and some gravel. The area is dominated by the native, sand-dependent species, Beach Primrose (*Camissonia cheiranthifolia* ssp. *suffruticosa*) and the native Succulent Lupine (*Lupinus succulentus*) along with various introduced weedy species. The sand in this area is darker and coarser than the white, eolian sand of the foredunes, and is mixed with imported material as an apparent result of past site disturbance. It appears that this area historically was part of the broad foredune system; white sand evident in this part of the site as of August 1976 had been removed by July 1977 as a result of activities associated with operation of the Malibu Yacht Club. Degradation resulting from human activities during that period, including the importation of silt and gravel into this area, as well as blockage of

substantial sand transport into this part of the site, stripped this area of most of its dune processes and features.

Foredune Ridge

A foredune ridge is a geomorphological feature that is in active exchange of sand with the beach. It is at the inland margin of the free sand beach and the seaward margin of pioneer vegetation[2]. The pioneer vegetation serves as a sediment trap that causes sand to accumulate in a ridge parallel to the shoreline. The site's "broken foredune ridge" covers a total of approximately 0.13 acre, and supports native Red Sand Verbena (*Abronia maritima*), Beach Bursage (*Ambrosia chamissonis*), and Beach Primrose, as well as introduced Highway Iceplant. The biologically sensitive Globose Dune Beetle (*Coelus globosus*) was found mainly in this part of the site. The Ciliate Dune Beetle (*Coelus ciliatus*), however, was found mainly on Stable Hummocks located a short distance inland. Eolian sand can travel inland through breaches and blowouts in a foredune ridge. The subsequent topographical forms created inland of the ridge produce geomorphological features that are referred to as secondary coastal dunes[3]. Psuty (2007) referred to the site's broken foredune ridge and the secondary coastal dunes as the "foredune system." On the project site, Psuty identified two classes of secondary coastal dunes:

- **Mobile hummocks** that extend up to tens of feet inland of the broken foredune ridge. These are 0.5–1.5 feet high, often supporting a small amount of vegetation, with intervening bare areas called "lag surfaces." Mobile hummocks cover approximately 0.09 acre on the site.

- **Stable hummocks**, generally 30–90 feet inland from the broken foredune ridge. On the site, these hummocks form a zone of secondary coastal dunes approximately 0.21 acre in size that is oriented from west to east, with an increasing inland distance toward the east. They are the topographical features, less than 1.0 foot high and in the range of 5–8 feet across, formed near the margin of the eolian-transported accumulation in contact with stabilizing vegetation. The zone of stable hummocks is transitional between the actively-moving sand and the ruderal and primrose/lupine zones located farther inland.

Beach

The southernmost part of the site, defined as beach, covers approximately 0.74 acre. This, the intertidal and supratidal portion of the site, is a flat, mostly unvegetated area with occasional piles of ocean wrack and driftwood.

[2] Martínez, M. L., Psuty, N. P., and Lubke, R. A. 2004. A Perspective on Coastal Dunes. Pp. 1–10 in M. L. Martínez and N. P. Psuty (eds.), Coastal Dunes: Ecology and Conservation. Springer-Verlag (Berlin).

[3] Psuty, N. P., 2004. The Coastal Foredune: A Morphological Basis for Regional Coastal Dune Development. Pp. 11–27 in M. L. Martínez and N. P. Psuty (eds.), Coastal Dunes: Ecology and Conservation. Springer-Verlag (Berlin).

1.3 Silvery Legless Lizard Background

1.3.1 Silvery Legless Lizard: Taxonomy, Distribution, and Legal Status

The oldest fossil records of the genus *Anniella* date back to the Miocene in the San Francisco Bay area (Bell et al. 1995). The only other recognized genus of the Anniellidae, *Apodosauriscus minutus*, was found in Sweetwater County, WY dating back to the Eocene (Gauthier 1982). The silvery legless lizard was first described by Gray in 1852 and placed in the family Scincidae, but was changed to Anniellidae by Cope (1864). *Anniella pulchra* was formerly split into two subspecies – *Anniella pulchra pulchra* – silvery legless lizard, and *Anniella pulchra nigra* – black legless lizard. However, recent research by Crother et al. (2003) states that "The existence and extent of genetic continuity between melanistic and silvery populations, as well as between northern and southern halotype clones, deserves further studies."

The silvery legless lizard (*Anniella pulchra pulchra*) is a near-endemic to California, ranging from the vicinity of Antioch (Contra Costa County), California south through the Coast, Transverse, and Peninsular ranges: parts of the San Joaquin Valley, and the western edge of the Sierra Nevada Mountains and Mojave Desert to El Consuelo (Baja California Norte), Mexico (CDFG 1994). The known elevational range extends from near sea level on the Monterey Peninsula to about 5,900 feet in the Sierra Nevada foothills.

The silvery legless lizard, a slender limbless lizard in the family Anniellidae, has a shovel-shaped snout, a counter-sunk lower jaw, smooth, polished scales, and a blunt tail (Stebbins 1985). Dorsal coloration varies from metallic silver, beige, dark brown, to black. Ventral coloration varies from whitish to bright yellow. Typically there is a dark line along the back and several thin stripes between scale rows along the sides where the dorsal and ventral colors meet (CDFG 1994).

The silvery legless lizard is designated as a CDFG California Species of Concern (CDFG 2007). "It is the goal and responsibility of the Department of Fish and Game to maintain viable populations of all native species. To this end, the Department has designated certain vertebrate species as "Species of Special Concern" because declining population levels, limited ranges, and/or continuing threats have made vulnerable to extinction. The goal of designating species as "Species of Special Concern" is to halt or reverse their decline by calling attention to their plight and addressing the issues of concern early enough to secure their long term viability."

1.3.2 Silvery Legless Lizard Behavior

The silvery legless lizard occurs primarily in areas with sandy or loose loamy soils under the sparse vegetation of beaches, chaparral, pine-oak woodland, and sycamores, cottonwoods, and oaks that grow on stream terraces (Stebbins 1985). Occasionally it occurs in desert scrub. The sandy loam soils of stabilized dunes on which bush lupine (*Lupinus arboreus*), mock heather (*Eriogonum parviflorum*), mock aster (*Ericameria ericoides*), and other native coastal shrubs occur seems especially favorable habitat (CDFG 1994).

Silvery legless lizards burrow in washes, dune sand of beaches, and loose soil near the base of slopes and near permanent or temporary streams, and regions of alluvial soils in the inland where

the substrate is suitable for the lateral undulations used by the lizard in sand-swimming (Cogger and Zweifel 1992). Soil moisture is essential for legless lizard, as it prevents desiccation, conserves energy at high temperatures, and aids in shedding of the outer skin (CDFG 1994).

Legless lizards forage in leaf litter by day and may emerge on the surface at dusk or at night. They have been documented to be active at temperatures between 7°C and 30°C, however the preferred temperature range ranges from between 15°C and 25°C (Brattstrom 1965) and between 21°C and 28°C (Bury and Balgooyen 1976). Legless lizards have been found in many different microhabitats and as deep as 11.5 cm (4.5 inches) in the soil, within the depth they presumably reside most of the time (Miller 1944 and Smith 1946). They are insectivorous, feeding primarily on larval insects, but includes adult beetles, termites, and spiders. Legless lizards are viviparous, giving birth to small litters (one to four young), which are relatively large when born in the fall (Cogger and Zweifel 1992).

2.0 METHODOLOGY

GLA biologists conducted a site reconnaissance on January 31, 2008 to evaluate the Project Site for silvery legless lizard suitable habitat. Potentially suitable habitat was initially determined to be located within the areas mapped as foredune ridge and mobile hummocks, and marginally suitable habitat was located within the stable hummocks area and the primrose/lupine area. The site reconnaissance included walking transect lines covering 100 percent of the Project Site to determine the presence of silvery legless lizard tracks, which are distinguishable by the undulating pattern left in the sand. Transect surveys were completed during favorable weather conditions.

On February 6, 2008 GLA biologists conducted surveys for the silvery legless lizard using standard methods: 1) transects, 2) use of coverboards, and 3) raking of sand. Transects covering 100 percent of the study area were walked to determine the presence of silvery legless lizard tracks.

Coverboards are commonly used for inventorying silvery legless lizards, which is appropriate for the current study. Thirty-two coverboards were placed on January 31, 2008 within the study area to increase moisture and humidity under the boards, which will bring moisture closer to the surface, making it much easier to find the silvery legless lizard, if present, as they are attracted to the moisture [Exhibit 3]. Soils were carefully examined under the coverboards (including driftwood and rocks within the property) to a depth of approximately ten to twelve inches deep, hand digging only, to determine the presence/absence of the silvery legless lizards. The soil was replaced and groomed after each examination.

A plastic yard rake was used to carefully rake the study area in areas lacking vegetation in order to survey the subsoil (approximately 3-5 inches). Raking of the soil will indicate if any silvery legless lizards are present within the rest of the study area, excluding the areas using coverboards.

TABLE 1. SUMMARY OF SURVEY CONDITIONS

Date	Start/End Time	Surveyors	Air Temp ˚F (Start/End)	Windspeed (mph)	Cloud Cover % (Start/End)
1-31-08	0900/1130	Jeff Ahrens Justin Meyer	60/66	0-1	15/40
2-06-08	0900/1140	Jeff Ahrens Justin Meyer	61/66	0-1	0/0

3.0 RESULTS OF FOCUSED SURVEY

No silvery legless lizards, or sign of silvery legless lizard activity, were observed during the site reconnaissance and focused survey.

Invertebrates commonly observed within the Project Site include darkling beetles, garden snails, and earwigs.

Herpetofauna commonly detected on site include the side-blotched lizard (*Utta stansburiana*). Bird species commonly observed on the site or flying over include European starling (*Sturnis vulgaris*), California brown pelican (*Pelecanus occidentalis californicus*) [carcass on foredune ridge], western gull (*Larus occidentalis*), Heermann's gull (*Larus heermanni*), lesser goldfinch (*Carduelis psaltria*), yellow-rumped warbler (*Dendroica coronata*), rock dove (*Columba livia*), and house finch (*Carpodacus mexicanus*).

Mammals commonly detected on site either by direct observation or physical evidence includes domestic dog (*Canis lupus familiaris*), Audubon cottontail (*Sylvilagus audubonii*), and Botta's pocket gopher (*Thomomys bottae*).

TABLE 2. SUMMARY OF COVERBOARD RESULTS

Station Number	UTM X[4] Coordinates	UTM Y[5] Coordinates	Survey February 6, 2008
2A	329800.9684	3767015.7446	-
2B	329788.9988	3767021.4402	-
2C	329787.8154	3767011.0153	-
2D	329795.2257	3767011.5098	-
2E	329801.1514	3767009.2169	-
2F	329798.3112	3767006.7279	-
2G	329800.3032	3767001.3782	-
2H	329805.7268	3767001.7251	-
2I	329809.8989	3767012.7449	-
2J	329814.4836	3767013.5501	1 side-blotched lizard
2K	329808.7643	3767007.3993	-
2L	329806.1504	3766997.9007	-

[4] The coordinates are in UTM Zone 11.
[5] The coordinates are in UTM Zone 11.

Station Number	UTM X[4] Coordinates	UTM Y[5] Coordinates	Survey February 6, 2008
2M	329816.7722	3766991.5710	-
2N	329823.1357	3766991.8082	-
2O	329823.1631	3766986.9669	-
2P	329824.3016	3766996.9628	-
2Q	329830.3888	3767010.5855	1 side-blotched lizard
2R	329836.2314	3767008.7184	-
2S	329830.7992	3766996.2902	-
2T	329817.8549	3767002.7823	-
4A	329828.0886	3767014.4810	1 side-blotched lizard, garden snails
4B	329818.7461	3767013.2123	3 darkling beetles
4C	329800.1845	3767019.8698	2 darkling beetles
4D	329812.2798	3767036.4600	2 side-blotched lizards, earwigs
4E	329820.4472	3767034.0429	earwigs, garden snails
4F	329824.0097	3767045.5521	earwigs, garden snails
4G	329825.5498	3767056.1279	earwigs, garden snails, 1 darkling beetle
4H	329855.2200	3767027.0773	earwigs, garden snails
4I	329839.1595	3767023.1010	garden snails
4J	329837.1587	3767041.5472	earwigs, garden snails
4K	329842.7632	3767051.4484	garden snails
4L	329850.1449	3767036.9300	earwigs, garden snails
Driftwood 1	329810.7179	3766991.3051	-

4.0 CONCLUSION AND RECOMMENDATION

No silvery legless lizards, or sign of silvery legless lizard activity, were observed during the site reconnaissance and focused survey. Although suitable habitat exists within the foreridge dune and mobile hummocks area, and marginally suitable habitat within the stable hummocks area and primrose/lupine area, the Project Site has been historically disturbed and altered from human uses.

The Project Site was used as a yacht club from 1972 to into the 1990's in which the Project Site functioned as 1) a base for the day use of sailboats, primarily catamarans, which were stored on trailers in a fenced boat yard located in the northern part of the site, 2) weekend races for up to 200 boats and usually stored 50 to 70 in the boat yard, 3) a small, roofless structure with a dance floor, changing rooms, lockers, showers, a small kitchen, and "chemical" toilets, 4) and the yacht club used an all-terrain vehicle to haul the boats on their trailers through a wide path through the dunes to the surf line for launching (*Biological Resources Assessment, 30732 Pacific Coast Highway, Malibu, California* by Robert A. Hamilton [working draft]). In September of 2002, the entire northern undeveloped area was used as a staging area for crews constructing the homes located on either side of the project site. Thus, this portion of the site showed signs of ongoing disturbance in 1977, 1980, and 2002 (*Biological Resources Assessment, 30732 Pacific Coast Highway, Malibu, California* by Robert A. Hamilton [working draft]).

According to CDFG 1994, "Rocky soils or areas disturbed by agriculture, sand mining, or other human uses apparently lack legless lizards (Miller 1944, Bury 1972a, Hunt 1983, Stebbins 1985)." Situations representing human uses include circumstances where the top soil is removed, modified, or redistributed using machinery. Past activities within the Project Site are consistent with these described human uses.

Legless lizards prefer stabilized dunes, which support bush lupine (*Lupinus arboreus*), mock heather (*Eriogonum parviflorum*), mock aster (*Ericameria ericoides*), and other native coastal shrubs. The dominant vegetation that exists within the foreridge dune, mobile hummocks, stable hummocks, and primrose/lupine areas is heartleaf iceplant (*Aptenia cordifolia*), highway iceplant (*Carpobrotus edulis*), beach primrose (*Camissonia cheiranthifolia* ssp. *suffruticosa*), succulent lupine (*Lupinus succulentus*), and red-stemmed filaree (*Erodium cicutarium*). Iceplant is known to negatively affect invertebrate communities on sand dunes thus potentially impacting the legless lizard (Slobodchikoff and Doyen 1977). Kuhnz et al. (2005) has stated that legless lizard density was high near shrubs and where soil moisture was greater but lower in disturbed soil and in iceplant.

On the Project Site, loose, sandy soils appropriate for use by the silvery legless lizard occur on the foredune ridge and in the mobile hummocks, but these areas do not support the native plant species preferred by legless lizards. Based on the site reconnaissance and one focused survey, it is GLA's opinion that the silvery legless lizard is not expected to occur within the foredune ridge or mobile hummocks areas due to the past disturbance of the Project Site, encroachment of surrounding development, the lack of native plant species typically found in areas occupied by the silvery legless lizard, and the presence of Highway Iceplant as the dominant plant on the dunes.

The ruderal area of the Project Site does not provide suitable habitat for the silvery legless lizard due to the coarse soil that includes cobbles, rocks, and pieces of asphalt, as the soil is too compacted and prevents the legless lizard from burrowing through the soil. Based on the site reconnaissance and one focused survey, it is GLA's opinion that silvery legless lizards do not occur within the ruderal area due to the lack of sandy soils, high soil compaction, and the lack of the native plant species typically found in areas occupied by the silvery legless lizard.

The stable hummocks area and primrose/lupine area of the Project Site only provides marginally suitable habitat for the silvery legless lizard due to the increase in coarse soil that includes cobbles and rocks that is mixed with loose, sandy soils, and lacks the preferred plant species typically found in areas occupied the silvery legless lizard. Based on the site reconnaissance and one focused survey, the stable hummocks area and primrose/lupine area are not expected to support silvery legless lizards due to the increase in coarse soil, that includes cobbles and rocks, mixed with sandy loam soil which results in a higher soil compaction (preventing the legless lizard from burrowing through the soil), and the lack of the native plant species typically found in areas occupied by the silvery legless lizard.

5.0 CERTIFICATION

*"**CERTIFICATION**: I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief."*

DATE: 2/15/08 SIGNED: Justin Meyer

s:0832-1d.leglesslizard.doc

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Adapted from USGS Los Angeles Quadrangle

BROAD BEACH PROPERTY

Regional Map

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Exhibit 1

Adapted from USGS Point Dume quadrangle

NORTH

0 1,000 2,000 3,000

FEET

BROAD BEACH PROPERTY

Vicinity Map

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Exhibit 2

Legend

- Approximate Project Boundary
- 2ft x 2ft Coverboard Station
- 4ft x 4ft Coverboard Station
- Driftwood

N

0 30 60

Feet

BROAD BEACH PROPERTY

California Leggless Lizard Survey Map

GLENN LUKOS ASSOCIATES

Exhibit 3

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February 7, 2008

Photograph 1: A southern view of the southeastern foredune ridge with the stable hummocks area in the foreground.

Photograph 2: A northern view of the project site with the mobile hummocks and stable hummocks area in the foreground and the ruderal area in the background.

Photograph 3: A southern view of the ruderal area adjacent to the developed area.

Photograph 4: A northern view of the ruderal area looking towards the developed area.

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EXHIBIT 4 Page 1

BROAD BEACH PROPERTY

Site Photographs

Photograph 5: Placement of 2ft x 2 ft coverboard station in mobile hummocks area of property.

Photograph 6: Burying 2ft x 2 ft coverboard station in foredune area of property. Each location was mapped by a Trimble GPS unit.

Photograph 7: Placement of 4ft x 4ft coverboard stations within the ruderal area lacking dense vegetation.

Photograph 8: Soil examination of 2ft x 2ft coverboard station. Note hand digging only, no tools were used during soil excavation.

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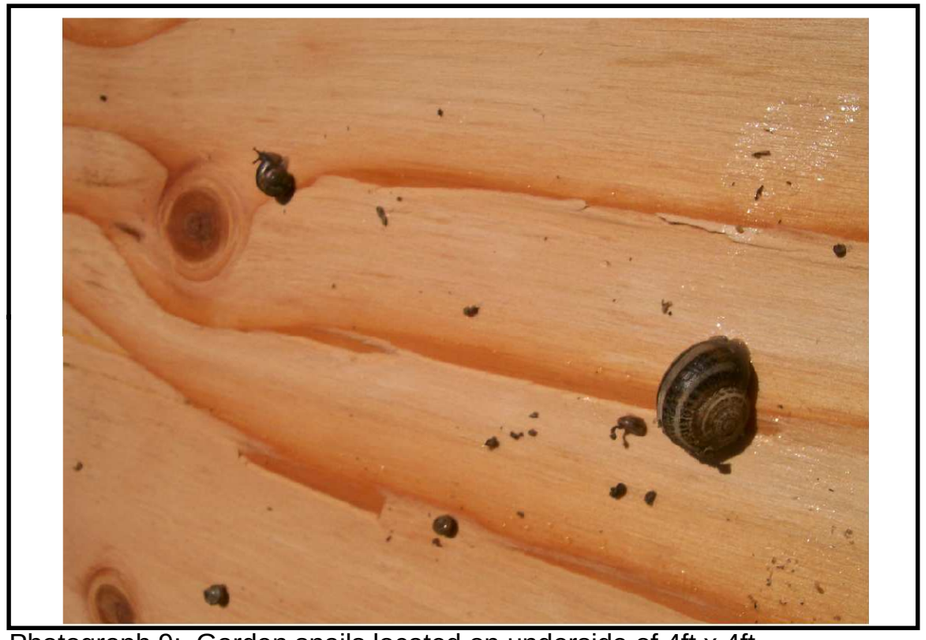
BROAD BEACH PROPERTY

Site Photographs



Photograph 9: Garden snails located on underside of 4ft x 4ft coverboard.

Photograph 10: Garden snails located on soil surface under coverboard station.

Photograph 11: Juvenal side-blotch lizard located under 2ft x 2ft coverboard station within mobile hummocks area.

Photograph 12: Darkling beetle located under 2ft x 2ft coverboard station within mobile hummocks area.

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BROAD BEACH PROPERTY

Site Photographs