County of San Mateo - Planning and Building Department

ATTACHMENT A

FLORISTIC ANALYSIS
FOR THE BEESON PROPERTY,
SAN MATEO COUNTY, CALIFORNIA

September 30, 2007

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SUMMARY

This report presents the results of a focused floristic study of the 60-acre Beeson property, situated in unincorporated San Mateo County, California. The conclusions contained herein are based on a three-season floristic study of the entire property.

The study site is situated on the east side of Crystal Springs Road north and east of the junction with Polhemus Road and west of Parrott Drive, in unincorporated San Mateo County. The undeveloped subject property is situated on mostly steep terrain with west to southwest-facing slopes. A suburban residential neighborhood borders the site to the east and southeast. Similar undeveloped canyon slopes are present on the opposite side of Crystal Springs Road with suburban residential neighborhoods beyond to the west.

Plant communities occurring within the study site include coast live oak woodland, chamise chaparral, northern coastal scrub, and northern coyote brush scrub. Also present to a lesser degree are Central Coast riparian scrub, northern coastal scrub, non-native grassland, native bunchgrass grassland, and a small freshwater seep.

Based on a multiple-season study, the subject property was found to support populations of a total of six special-status plant species. These include one federally and State-listed endangered plant species (San Mateo woolly sunflower [*Eriophyllum latilobum*]); four CNPS List 1B species (western leatherwood [*Dirca occidentalis*], Franciscan onion [*Allium peninsulare* var. *fransiscanum*], San Francisco collinsia [*Collinsia multicolor*], and arcuate bush mallow [*Malacothamnus arcuatus*]), and one CNPS List 4 species (California bottle-brush grass [*Elymus californicus*]).

Impacts to federally and State-listed species are regulated under the California and federal endangered species acts. Impacts to species that are federally or State listed as endangered, or that appear on the CNPS List 1B would be considered significant under the guidelines of the California Environmental Quality Act (CEQA). Impacts to CNPS List 4 species would not be considered significant under CEQA guidelines.

1.0 INTRODUCTION

This report presents the results of a focused, multiple-season floristic study of the Beeson property, a 60-acre site located in unincorporated San Mateo County (Figure 1). The study area is situated on the east side Crystal Springs Road, just across from the intersection with Polhemus Road (Figure 2). The objectives of this study were to document all vascular plant species occurring on the subject property and to determine the presence or absence of any special-status plant species.

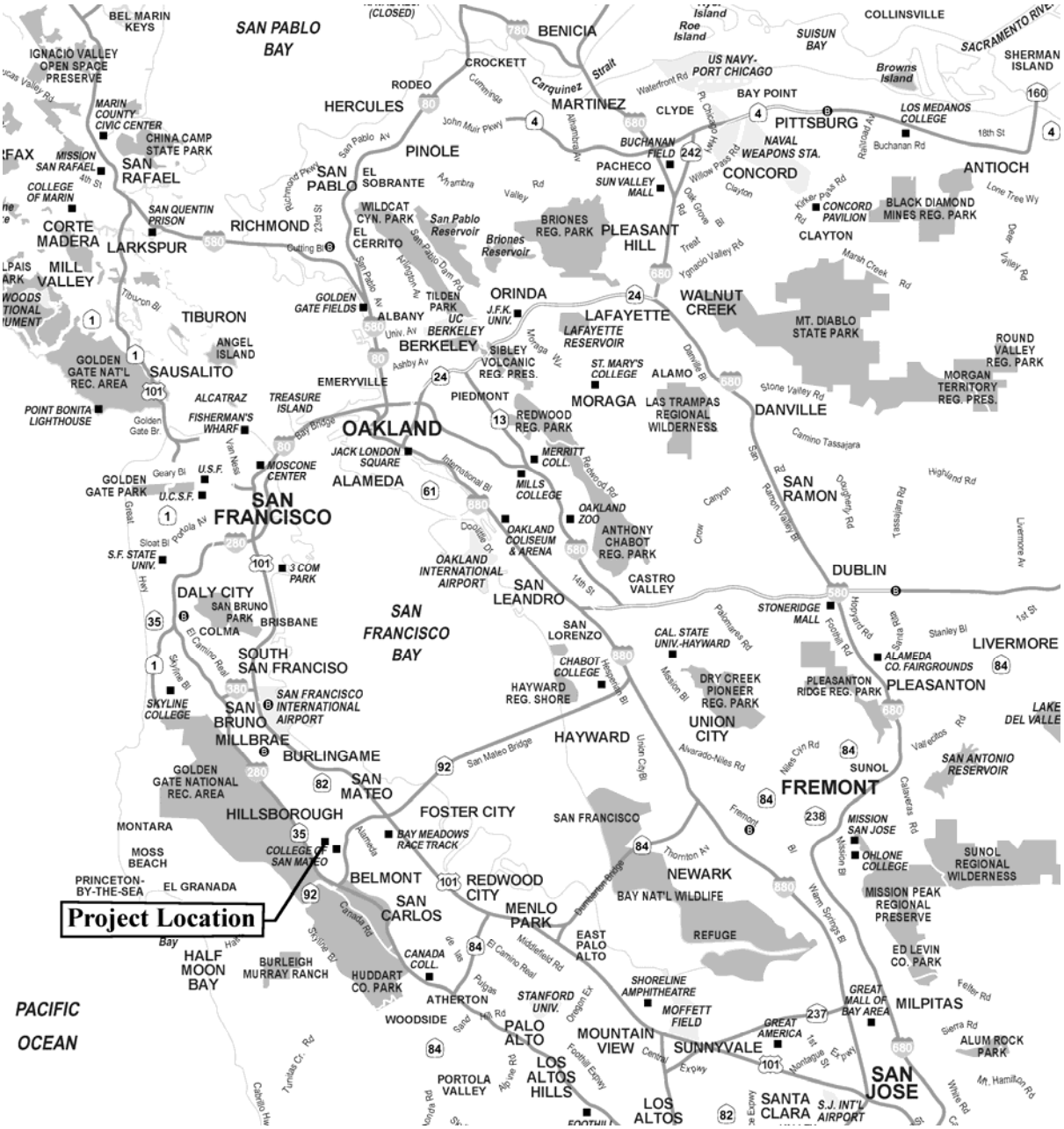
2.0 METHODS AND LIMITATIONS

A list of target special-status plant species was prepared by reviewing database printouts for the San Mateo, Woodside, Montara Mountain, Palo Alto, and South San Francisco 7.5-minute USGS quadrangles maintained by the California Natural Diversity Database (CNDDB 2007) and the California Native Plant Society (CNPS 2007). An initial habitat assessment was performed and presented in a separate biological constraints analysis report (Wood Biological Consulting 2007a); the current report supersedes all conclusions regarding special-status plant species presented in that earlier document. However, all references to sensitive natural communities occurring within the Beeson Property, including their regulatory relevance, can be found in Wood Biological Consulting (2007a) with the exception of Native Bunchgrass Grassland which is described herein.

A reconnaissance-level site survey was performed by botanist Michael Wood on December 7, 2006. Focused floristic surveys were conducted by Mr. Wood and botanist Heath Bartosh on March 5, March 22, and March 29, and May 10 and 14, 2007, and by Mr. Bartosh, Erin McDermott, and Brett Stevenson on July 19, 2007. A wetland delineation was also conducted in conjunction with the site visit on March 5, 2007. The results of that study are presented in a separate report (Wood Biological Consulting 2007b).

All surveys were conducted on foot and the entire property was covered. All plant species observed were recorded; specimens that could not be positively identified in the field were collected and identified in the office. The locations of all populations of special-status plants were mapped in the field using a Trimble GeoXT Geographic Positioning System using the NAD 1983 State Plane Zone CA Zone III projection (see map pocket). The approximate size of each population was enumerated. California native species field survey forms were completed for each occurrence and submitted to the California Natural Diversity Database; copies are provided in Appendix D. The methodology followed in the course of this study conforms to published guidelines for the conduct of floristic surveys (USFWS 2000, CDFG 2000, CNPS 2001).

Additional information regarding special-status plants was compiled through a review of published literature by the California Department of Fish and Game (CDFG 2007a,b), U.S. Fish and Wildlife Service (USFWS 1996, 1999, 2007), and Corelli and Chandik (1995). Nomenclature for common, widespread plants conforms to Hickman (1993). Nomenclature for special-status plants conforms to CDFG (2007a). In this report, nomenclature for all



Source: SFGate.com

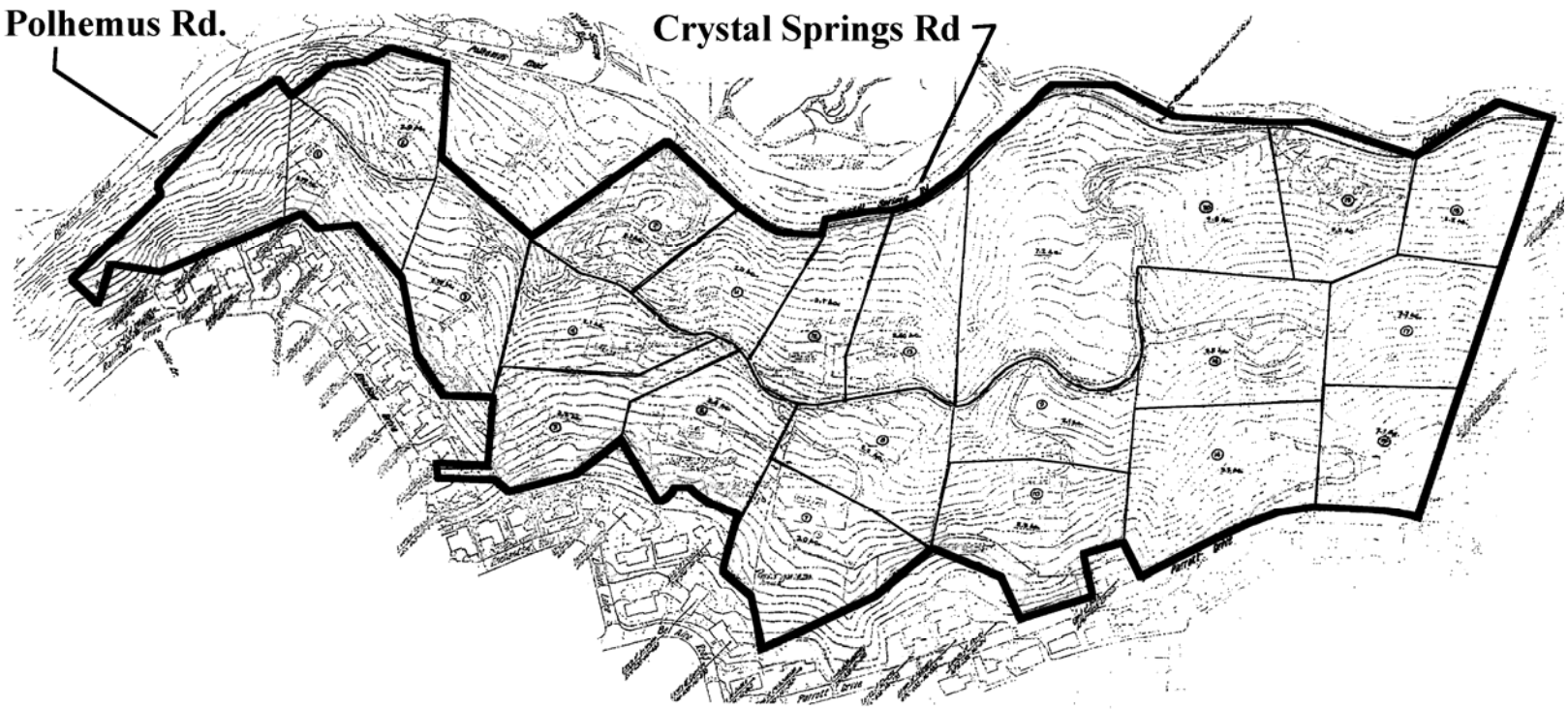
WOOD BIOLOGICAL CONSULTING

Figure 1. Project Location

NORTH

Scale: 1" = 5 miles

Source: Earth Metrics



WOOD
BIOLOGICAL
CONSULTING

Figure 2. Project Vicinity

NORTH

Scale: 1" = 400'

common plant species has been updated following the Jepson Online Interchange[1]. Plant community names conform to CDFG (2003), Sawyer and Keeler-Wolf (1995), and Cowardin, *et al.* (1979). A table of special-status target species and species inventory were prepared using the CalBiota database, version 2.1.

3.0 EXISTING CONDITIONS

3.1 Setting

The study site covers approximately 60 acres situated on the east side of Crystal Springs Road north and east of the junction with Polhemus Road and west of Parrott Drive, in unincorporated San Mateo County. The subject property is situated on mostly steep terrain with west to southwest-facing slopes. Elevations range from 112-512 feet above mean sea level (msl). Six ephemeral stream channels cross the study area, draining the slopes to San Mateo Creek, which lies just to the west but does not intersect with the property. One single-family residence is present on the site. A suburban residential neighborhood borders the site to the east and southeast. Similar undeveloped canyon slopes are present on the opposite side of Crystal Springs Road with suburban residential neighborhoods beyond to the west. An aerial view of the study area is provided in Figure 3.

Soils over a majority of the study area belong to the Los Gatos series, with a small portion of the site at its northern end consisting of Fagan series (USDA 1991). The underlying geology at the project site is Sheared Franciscan Rock, mélange, which consists predominantly of graywacke, siltstone and shale, and other Franciscan rock types (Brabb *et al.* 1998).

3.2 Characterization of the Vegetation

Within the study area, the predominant vegetation associations are coast live oak woodland, chamise chaparral, northern coastal scrub, and northern coyote brush scrub. Other plant associations present on site are Central Coast riparian scrub, native bunchgrass grassland, and non-native grassland. Each of these plant communities is described, below. A map of the plant communities occurring on site is presented in Figure 4.

<u>Coast Live Oak Woodland</u>

Coast live oak woodland is typically found on north-facing slopes and shaded ravines in the southern and inland portions of the state and on more exposed, mesic sites in the north. This community is dominated by coast live oak (*Quercus agrifolia*), which frequently occurs in pure, dense stands with a closed canopy. Coast live oak woodland is restricted primarily to the coast side of the state and is distributed from Sonoma County to Baja California. It occurs throughout the outer South Coast ranges and coastal slopes of the Transverse and Peninsular ranges, usually below 4,000 feet in elevation.

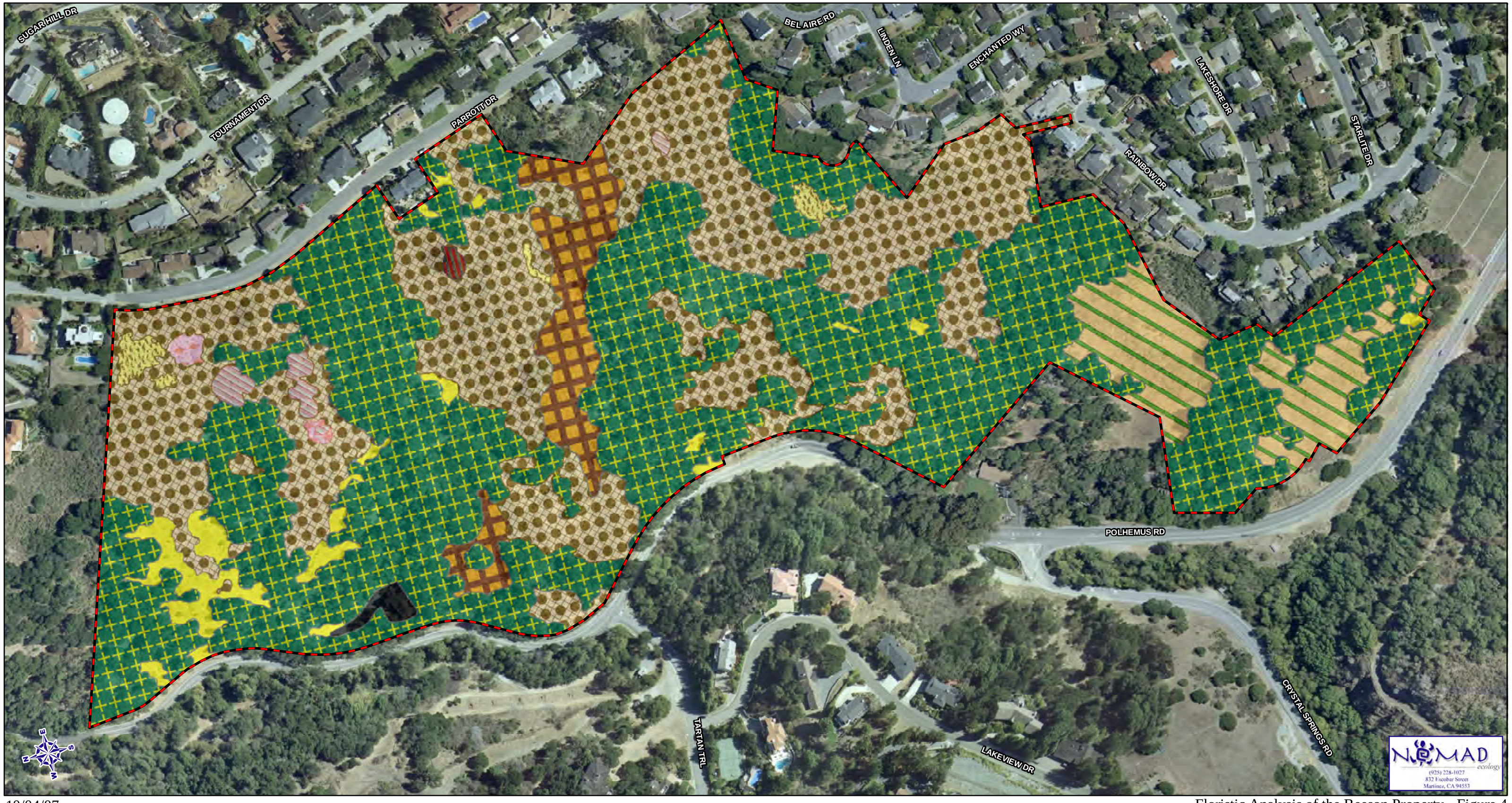
[1] Available on line at http://ucjeps.berkeley.edu/ interchange.html

WOOD BIOLOGICAL CONSULTING

Figure 3. Aerial View of Study Area
(February 27, 2004)

NORTH

Scale: 1" = ca 600'



10/04/07

Floristic Analysis of the Beeson Property - Figure 4

Legend

Beeson Property Boundary

Vegetation Communities

- Chamise Chaparral
- Coast Live Oak Woodland
- Eucalyptus globulus
- Native Bunchgrass Grassland
- Non-native Annual Grassland
- Northern Coastal Scrub
- Northern Coyote Brush Scrub
- Pampass Grass
- Anthropogenic
- Freshwater Seep
- Central Coast Riparian Scrub

Plant Communities
Beeson Property

1:2,700
0 112.5 225
Feet

Aerial photography provided by the California Spatial Information Library. Road Data provided by ESRI. Vegetation mapped with Trimble's GeoXT during spring and summer of 2007. Projection: NAD 83 SP CA Zone III.

San Mateo County, California

Within the study area, coast live oak woodland covers approximately one-quarter of the site, occurring on the lower slopes and extending upslope along the drainages. This habitat is dominated by coast live oak (*Quercus agrifolia*). Other trees commonly found on site include California bay (*Umbellularia californica*), California buckeye (*Aesculus californica*), with scattered individuals of big-leaf maple (*Acer macrophyllum*), and madrone (*Arbutus menziesii*). Native shrub and vine species commonly encountered include toyon (*Heteromeles arbutifolia*), Mexican elderberry (*Sambucus mexicana*), hillside gooseberry (*Ribes californicum* var. *californicum*), poison oak (*Toxicodendron diversilobum*), common snowberry (*Symphoricarpos albus* var. *laeviagtus*), creeping snowberry (*Symphoricarpos mollis*), California blackberry (*Rubus ursinus*), California honeysuckle (*Lonicera hispidula* var. *vacillans*), and wood rose (*Rosa gymnocarpa*), among others. Native herbaceous species present include hound's tongue (*Cynoglossum grande*), Indian warrior (*Pedicularis densiflora*), wood fern (*Dryopteris arguta*), California polypody (*Polypodium californicum*), goldback fern (*Pentagramma triangularis*), California fescue (*Festuca californica*), blue wildrye (*Elymus glaucus*), osmorhiza (*Osmorhiza chilensis*), yerba buena (*Satureja douglasii*), coyote mint (*Monardella villosa*), bedstraw (*Galium aparine*), woodland strawberry (*Fragaria vesca*), California bedstraw (*Galium californicum* ssp. *californicum*), and Pacific sanicle (*Sanicula crassicaulis*), among many others.

On site, this vegetation type conforms to the Coast Live Oak series as described by Sawyer and Keeler-Wolf (1995) and would be considered as an upland as classified in Cowardin, *et al.* (1979).

Chamise Chaparral

Chamise chaparral is typically a dense shrub community overwhelmingly dominated by a single species (*Adenostoma fasciculatum*), with shrubs reaching up to ten feet high. Other species typically contribute little to canopy cover, and in very dense stands, herbaceous understory species may be completely lacking. Chamise chaparral occurs throughout California, but it is most abundant in the southern part of the state. It occupies very dry, shallow soils of steep, usually south-facing slopes, and is subject to a regime of periodic fire.

Within the study area, chamise chaparral occurs in two patches on spur ridges extending to the upper portions of the west-facing slopes. At the down-slope edge, chamise chaparral intergrades with coast live oak woodland. The shrub canopy is dominated by chamise, with scattered individuals of coyote brush (*Baccharis pilularis*), blue blossom (*Ceanothus thyrsiflorus*), sticky monkeyflower (*Mimulus aurantiacus*), California sagebrush (*Artemisia californica*), hollyleaf cherry (*Prunus ilicifolia*), poison oak, hillside gooseberry, and California broom (*Lotus scoparius*), among others. Herbaceous species present include yerba santa (*Eriodictyon californicum*), coffee fern (*Pellaea andromedifolia*), and foothill needlegrass (*Nassella lepida*), among others.

Within the study area, this plant community corresponds to the Chamise Chaparral series as described in Sawyer and Keeler-Wolf (1995) and is an upland following Cowardin, *et al.* (1979).

Northern (Franciscan) Coastal Scrub

Northern coastal scrub consists of a dense cover of low shrubs up to six feet high with a well-developed herbaceous or low woody understory. It is frequently interspersed with coastal terrace prairie grassland. Northern coastal scrub is most extensive on windy, exposed sites with shallow, rocky soils. This vegetation community is distributed in a discontinuous strip from southern Oregon to Point Sur, Monterey County within the immediate coastal zone and at elevations up to 1,500 feet (Holland 1986; Holland and Keil 1990).

Within the study area, northern coastal scrub is restricted to two large patches in openings in and at the edges of the coast live oak woodland canopy and intergrading with stands of northern coastal scrub and northern coyote brush scrub on the southern portion of the property. The dominant characteristic plant species are California sagebrush and sticky monkeyflower. Other common constituents include bee plant (*Scrophularia californica*), goldback fern, toyon, poison oak, sticky cinquefoil (*Potentilla glandulosa*), yerba buena, and pitcher sage (*Lepechinia calycina*), among others.

Within the study area, northern coastal scrub most closely corresponds to the California Sagebrush series as described by Sawyer and Keeler-Wolf (1995) and would be classified as an upland following Cowardin, *et al.* (1979).

Northern Coyote Brush Scrub

Northern coyote brush scrub is generally considered a sub-type of various coastal and inland scrub habitats. In general, coyote brush can form dense stands following disturbance of somewhat mesic sites on heavy soils. This scrub community consists of shrubs to eight feet tall with a well-developed herbaceous or low woody understory. Vegetative cover is mostly dense with scattered grassy openings. An increase in soil depth and moisture availability seems to favor dominance by coyote brush. This vegetation community is found in patches on coastal bluffs, slopes, and terraces within the fog incursion zone from southern Oregon to the Central Coast and South Coast of California. Northern coyote brush scrub frequently intergrades with such plant assemblages as northern (Franciscan) coastal scrub, coast live oak woodland, coastal terrace prairie, perennial needlegrass grasslands, non-native annual grasslands, cismontane woodland, and coniferous forests near the coast, and can even occur in openings in chaparral.

Several extensive stands of northern coyote brush scrub are present within the study area, occurring on the upper slopes, especially where surface moisture is present or on sites that have been disturbed by land slippage or historic site clearing. On site, northern coyote brush scrub intergrades with northern coastal scrub and coast live oak woodland. The vegetation is dense and tall (to 8 feet) and mostly impenetrable. This plant community is also dominated by poison oak. Other plant species commonly encountered include soap plant (*Chloragalum pomeridianum* var. *pomeridianum*), Italian thistle (*Carduus pycnocephalus*), poison hemlock (*Conium maculatum*), ripgut brome, soft chess, bull thistle, Fuller's teasel (*Dipsacus sativus*), Mediteranean barley (*Hordeum marinum* ssp. *gussoneanum*), and pampas grass (*Cortaderia selloana*).

On site, Northern Coyote Brush Scrub conforms to the coyote brush series as described in Sawyer and Keeler-Wolf (1995) and would be classified as an upland following Cowardin, *et al.* (1979).

Central Coast Riparian Scrub

Central Coast riparian scrub typically consists of scrubby streamside, open to impenetrable thickets composed of any of several species of willows. This plant community occurs close to river channels and near the coast on fine-grained sand and gravel bars with a high water table. It is distributed along and at the mouths of most perennial and many intermittent streams of the South Coast Ranges, from the Bay Area to near Point Conception (Holland 1986). Central Coast riparian scrub is generally regarded as early seral, meaning that it typically precedes the development of other riparian woodland or forest communities in the absence of severe flooding. However, outside of riparian situations, that is, near groundwater seeps on slopes, willow-dominated scrub represents a relatively stable plant community and is not considered seral.

Within the study area, Central Coast riparian scrub exists in several isolated stands on the steep upper slopes at the tops of draws and where ground water reaches the surface. Characteristic native species occurring on site include arroyo willow (*Salix lasiolepis*), California blackberry (*Rubus ursinus*), coyote brush, small-fruited bulrush (*Scirpus microcarpus*), spreading rush (*Juncus patens*), Pacific rush (*Juncus effusus*), and brown-headed rush (*Juncus phaeocephalus*), among others. Non-native species present include Himalayan blackberry (*Rubus discolor*), pampas grass, evergreen thornless blackberry (*Rubus ulmifolius* var. *inermis*) and poison oak, among others.

On site, Central Coast riparian scrub conforms to the arroyo willow series as described in Sawyer and Keeler-Wolf (1995) and palustrine shrub-scrub wetland following Cowardin, *et al.* (1979).

Non-Native Annual Grassland

Non-native annual grassland is generally found in open areas in valleys and foothills throughout coastal and interior California (Holland 1986). It typically occurs on soils consisting of fine-textured loams or clays that are somewhat poorly drained. This vegetation type is dominated by non-native annual grasses and weedy annual and perennial forbs, primarily of Mediterranean origin, that have replaced native perennial grasslands, scrub and woodland as a result of human disturbance. Scattered native wildflowers and grasses, representing remnants of the original vegetation may also be common.

Within the study area, patches of non-native annual grassland are present at the upper reaches of slopes where brush has been cleared for fire control or slope repair. Non-native annual grassland intergrades with northern coyote brush scrub and coast live oak woodland.

Characteristic non-native annual grasses commonly found on site include wild oats, soft chess, ripgut brome grasses, wild barley (*Hordeum* spp.), big quaking grass (*Briza maxima*), Italian ryegrass (*Lolium multiflorum*), and rattail fescue (*Vulpia myuros*), among others. Common non-native forbs include yellow star thistle (*Centaurea solstitialis*), bristly ox-

tongue (*Picris echioides*), and long-beaked storksbill (*Erodium botrys*), among others. Native species detected include hayfield tarweed (*Hemizonia congesta* ssp. *luzulifolia*), foothill needlegrass, soap plant, tall willowherb (*Epilobium brachycarpum*), and California brome (*Bromus carinatus*), among others.

Non-native annual grassland conforms to the California Annual Grassland series as described in Sawyer and Keeler-Wolf (1995), and would be classified as an upland, following Cowardin, *et al.* (1979).

Native Perennial Bunchgrass Grassland

Native perennial bunchgrass grassland is a composite of several types of native grassland communities, typically dominated by perennial, tussock-forming grass species from several general. In California, the most widespread native grassland if valley needlegrass grassland, dominated by species in the genera *Nassella*. This plant assemblage is typically found on fine-textured, often clayey soils that remain moist or even water-logged after winter rains but are very dry during the summer. Frequently, stands will consist of 50 percent cover or more of non-native grasses and forbs. Native grassland communities originally covered about 13 percent of the land area of California. The most extensive areas of grasslands were located in the San Joaquin, Sacramento and Salinas valleys, the Los Angeles Basin, the Transverse and Peninsula ranges, to the Mojave Desert and Baja California in areas too hot and dry to support woodland vegetation. Valley needlegrass grassland represents a natural resource that has been greatly diminished since the introduction of grazing livestock and Eurasian grasses and forbs, cultivation and development. Introduced annual grasses and forbs are much more tolerant of intense grazing than the native perennial grasses. As a result, the extent of native grasslands has been greatly reduced while the non-native annual grasses have become naturalized and widespread.

Within the study area, several relatively small patches of native bunchgrass grassland are present. These minor plant associations blend into non-native annual grassland, northern coyote brush scrub, and northern coastal scrub. Scattered individuals of native grasses are present throughout the non-native annual grassland. However, several areas distinctly dominated by native perennial bunchgrasses are present. One site, located near the top of the slope at the northern edge of the study area, is dominated by California oatgrass (*Danthonia californica*). The remaining locations support relatively intact stands of purple needlegrass (*Nassella pulchra*). The locations of these grassland areas are shown on Figure 4.

On site, grassland dominated by California oatgrass conforms to the California oatgrass series as described by Sawyer and Keeler-Wolf (1995). Grasslands dominated by purple needlegrass grassland conforms to the purple needlegrass series as described by Sawyer and Keeler-Wolf (1995). Both grassland types would be classified as uplands following Cowardin, *et al.* (1979).

Seep

A single small seep dominated by herbaceous marsh species is present on site, located on an exposed slope immediately below a stand pampas grass and in line with a seep that supports a stand of Central Coast riparian scrub further upslope. The seep is dominated by such wetland species as brown-headed rush, spreading rush, and dense sedge (*Carex densa*). This isolated seep was soggy at the surface during multiple visits.

4.0 RESULTS

Based on a review of special-status plant species in San Mateo County (CNDDB 2007, CNPS 2007), a total of 78 special-status plant species have been recorded from the project region. A summary of the status, habitat affinities, blooming period, and potential for occurrence within the study area for each of the target plant species is presented in Appendix A. An explanation of all rarity status codes is provided in Appendix B.

During floristic surveys of the property, a total of six special-status plant species were detected in the study area. The presence of one federally and State-listed endangered plant species (San Mateo woolly sunflower [*Eriophyllum latilobum*]) was confirmed. Also detected were populations of four CNPS List 1B species (western leatherwood [*Dirca occidentalis*], Franciscan onion [*Allium peninsulare* var. *fransiscanum*], San Francisco collinsia [*Collinsia multicolor*], and arcuate bush mallow [*Malacothamnus arcuatus*]), and one CNPS List 4 species (California bottle-brush grass [*Elymus californicus*]). The remaining 72 target species were determined to be absent from the subject property. The location of each significant rare plant population is presented in Figure 5. A discussion of these species is presented below.

San Mateo Woolly Sunflower

San Mateo woolly sunflower (*Eriophyllum latilobum*) is a bushy perennial in the sunflower family (Asteraceae). It forms a low, rounded subshrub from less than one to almost two feet high with loosely woolly stems and leaves. Leaves are deeply divided and about two inches long. Flowers have bright yellow rays and disks, arising in loose clusters of up to ten flower-heads on long peduncles. Flowering occurs from April through June.

San Mateo woolly sunflower occurs on grassy or rocky sparsely wooded slopes below 500 feet in elevation. It is a local endemic, restricted to the region around Crystal Springs Reservoir. Although usually considered to be restricted to ultramafic soils, it can also be expected on greywacke sandstone, chert, siltstone, and shale derived from bedrock in the Franciscan Complex. San Mateo woolly sunflower is listed as endangered under the federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA) and, and it is on the CNPS List 1B.1.

San Mateo woolly sunflower was recorded in scattered locations primarily near the central western margin of the site. Three individuals were also detected near the northwestern corner of the property. An estimated total of 56 individuals of San Mateo woolly sunflower were counted and mapped (see Figure 5).

09/24/07

Floristic Analysis of the Beeson Property - Figure 5

Legend

Beeson Property Boundary

Special-Status Plants Observed (Points)

- Franciscan Onion CNPS 1B Allium peninsulare var. franciscanum
- San Francisco Collinsia CNPS 1B Collinsia multicolor
- Western Leatherwood CNPS 1B Dirca occidentalis
- San Mateo Woolly Sunflower FE Eriophyllum latilobum
- Arcuate Bush Mallow CNPS 1B Malacothamnus arcuatus

Special-Status Plants Observed (Polygons)

- Franciscan Onion
- San Francisco Collinsia
- Western Leatherwood
- San Francisco Collinsia/Franciscan Onion
- San Mateo Woolly Sunflower/Franciscan Onion

1:2,700

0 112.5 225 Feet

Location of Special-Status Plant Species

Beeson Property

Aerial photography provided by the California Spatial Information Library. Road Data provided by ESRI. Special-status plants mapped with Trimble's GeoXT during spring and summer of 2007. Projection: NAD 83 SP CA Zone III.

San Mateo County, California

Western Leatherwood

Western leatherwood (*Dirca occidentalis*) is a deciduous shrub in the mezereum family (Thymelaeaceae). It occurs on moist sites in broadleafed upland forest, chaparral, cismontane woodland, closed-cone coniferous forest, closed-cone pine forest, foothill woodland, mixed evergreen forest, north coast coniferous forest, north coastal coniferous forest, riparian forest, and riparian woodland, at between 150 and 1,300 feet in elevation. It has been recorded from Alameda, Contra Costa, Marin, San Mateo, Santa Clara, and Sonoma counties. Western leatherwood flowers from January through April.

Western leatherwood is listed as a special plant by the CDFG and is on the CNPS List 1B.2. as a species that is moderately endangered in California. In general, under the guidelines of the California Environmental Quality Act (CEQA), plants appearing on CNPS List 1A, 1B, or 2 meet the criteria for listing as endangered, rare or threatened[2] and impacts to these species would meet the criteria for being considered significant[3]. Additionally, plants appearing on CNPS List 1A, 1B, or 2 also meet the definition endangered or rare under the Native Plant Protection Act[4] and CESA[5].

During the present survey, scattered stands of western leatherwood were detected, primarily in the central and northern central portions of the site. An estimated total of 660 individuals of western leatherwood were counted and mapped (see Figure 5).

San Francisco Collinsia

San Francisco collinsia (*Collinsia multicolor;* formerly *C. franciscana*), also known as Franciscan blue-eyed Mary, is a member of the figwort family (Scrophulariaceae). It is an annual herb producing loosely branched stems ten to 20 inches tall. Leaves are narrowly triangular, about one inch long and form in pairs that clasp both sides of the stem. Flowers appear March through May, and are lavender to violet-blue with a whitish upper lip. They form a series of whorls, one stacked on top of the other, forming a very showy inflorescence as much as ten inches high. San Francisco collinsia, which is related to Chinese houses (*C. heterophylla*), inhabits moist, shady woods and is recorded from San Francisco, San Mateo, Santa Cruz and Monterey counties (Corelli and Chandik 1995).

San Francisco collinsia is listed as a special plant by the CDFG (CDFG 2007a) and is on the CNPS List 1B.2. as a species that is moderately endangered in California (CNPS 2007). In general, under the guidelines of the California Environmental Quality Act (CEQA), plants appearing on CNPS List 1A, 1B, or 2 meet the criteria for listing as endangered, rare or threatened[6] and impacts to these species would meet the criteria for being considered significant[7]. Additionally, plants appearing on CNPS List 1A, 1B, or 2 also meet the definition endangered or rare under the Native Plant Protection Act[8] and CESA[9].

[2] pursuant to CEQA §15380
[3] pursuant to CEQA §15065
[4] §1901, chapter 10
[5] California Fish and Game Code, §2062 and §2067 (California Endangered Species Act).
[6] pursuant to CEQA §15380
[7] pursuant to CEQA §15065
[8] §1901, chapter 10

During the present survey, scattered stands of San Francisco collinsia were detected on the north-facing side slopes of the steep ravines. An estimated total of 6,666 individuals of San Francisco collinsia were counted and mapped (see Figure 5).

Franciscan Onion

Franciscan onion (*Allium peninsulare* var. *franciscanum*) is a bulb-forming perennial belonging to the lily family (Liliaceae). The bulbs are ovoid to spheric with a herring-bone pattern on the bulb coat. Plants produce 2-3 curved and channeled leaves. The red-purple flowers develop on short pedicels 8-20 mm long, atop peduncles 12-45 cm long. Flowering occurs May through June. Franciscan onion occurs in cismontane woodland and valley/foothill grassland, on clay, volcanic or serpentinitic soils. It is extant in Mendocino, Sonoma, San Mateo and Santa Clara counties.

Franciscan onion is listed as a special plant by the CDFG (CDFG 2007a) and is on the CNPS List 1B.2. as a species that is moderately endangered in California (CNPS 2007). In general, under CEQA guidelines, plants appearing on CNPS List 1A, 1B, or 2 meet the criteria for listing as endangered, rare or threatened[10] and impacts to these species would meet the criteria for listing as endangered, rare or threatened[11] and impacts to these species would meet the criteria for being considered significant[12]. Additionally, plants appearing on CNPS List 1A, 1B, or 2 also meet the definition endangered or rare under the Native Plant Protection Act[13] and CESA[14].

During the present study, scattered stands of Franciscan onion were detected, located primarily at lower elevations of the site on steep, rocky soils. An estimated total of 2,373 individuals were counted and mapped (see Figure 5).

Arcuate Bush Mallow

Arcuate bush mallow (*Malacothamnus arcuatus*) is an evergreen, perennial shrub in the mallow family (Malvaceae). Plants are erect, woody at the base, and range in height from three to 16 feet. Branches are generally long and flexuous, and loosely pubescent to densely white tomentose. Leaves are ovate, only shallowly lobed, with blades about three-quarters to two inches in length, and are greenish above and densely canescent-tomentose below. Flowers are showy, have five rose-pink petals, and are borne in spikes or open, panicle-like clusters (Munz 1968). The blooming period is from April to September. This species inhabits chaparral and cismontane woodland between 50 and 1,100 feet in elevation, and is restricted to Santa Clara, Santa Cruz, and San Mateo counties (CNPS 2007).

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[9] California Fish and Game Code, §2062 and §2067 (California Endangered Species Act).
[10] pursuant to CEQA §15380
[11] pursuant to CEQA §15380
[12] pursuant to CEQA §15065
[13] §1901, chapter 10
[14] California Fish and Game Code, §2062 and §2067 (California Endangered Species Act).

Arcuate bush mallow is listed as a special plant by the CDFG (2007a) and is on the CNPS List 1B.2, indicating it is fairly endangered in California (CNPS 2007). As such, it is eligible for State listing as endangered, rare or threatened[15] and impacts to it would be regarded as significant under CEQA guidelines. However, it is noteworthy that this taxon is not recognized in the Jepson Manual (Hickman 1993), the current standard reference for botany in California. Instead, arcuate bush mallow is considered to be synonymous with the common and widespread chaparral bush mallow (*Malacothamnus fasciculatus*), which has no special status.

Nevertheless, arcuate bush mallow is currently listed as a special plant by the CDFG (CDFG 2007a) and is on the CNPS List 1B.2. as a species that is moderately endangered in California (CNPS 2007). In general, under CEQA guidelines, plants appearing on CNPS List 1A, 1B, or 2 meet the criteria for listing as endangered, rare or threatened (§15380) and impacts to these species would meet the criteria for listing as endangered, rare or threatened[16] and impacts to these species would meet the criteria for being considered significant[17]. Additionally, plants appearing on CNPS List 1A, 1B, or 2 also meet the definition endangered or rare under the Native Plant Protection Act[18] and CESA[19].

During the present study, arcuate bush mallow was detected at a single location among chamise near the center of the study area. A total of three individuals were counted and mapped (see Figure 5).

<u>California Bottle-Brush Grass</u>

California bottle-brush grass (*Elymus californicus*) is a herbaceous species belonging to the grass family (Poaceae). This perennial grass produces flat leaf blades up to 2 cm wide. Flower spikes 1 to 2 meters high develop May through August. California bottle-brush grass is distinguished from other members of the genus by a lack of glumes below the florets, with straight lemma awns up to 2 cm long. California bottle-brush grass has been recorded from Marin, Santa Cruz, San Mateo and Sonoma counties. It occurs in broadleafed upland forest, cismontane woodland, North Coast coniferous forest, and riparian woodland, between 15 and 470 meters in elevation.

California bottle-brush grass is on the CNPS List 4.3, indicating that it is a plant of limited distribution but not very endangered in California; this is considered a "watch" list and is included on the CDFG's list of special plant species (CDFG 2007a). Very few CNPS List 4 species meet the definitions of the Native Plant Protection Act[20] or the CESA[21] and few, if any, are eligible for State listing (NCPS 2001). California bottle-brush grass does not meet the criteria for listing as endangered, rare or threatened (CEQA §15380) and impacts to this species do not meet the criteria for being considered significant pursuant to CEQA

[15] pursuant to CEQA §15380
[16] pursuant to CEQA §15380
[17] pursuant to CEQA §15065
[18] §1901, chapter 10
[19] California Fish and Game Code, §2062 and §2067 (California Endangered Species Act).
[20] §1901, chapter 10
[21] California Fish and Game Code, §2062 and §2067 (California Endangered Species Act).

guidelines[22]. Because this species lacks any formal status as a regulated species, the extent of this species on site were not mapped.

5.0 CONCLUSIONS

Special-status plant species include those listed as endangered, threatened, rare, or as candidates for listing by the USFWS (1996, 1999, 2007), the CDFG (2007a,b), and the CNPS (2007). The CNPS *Inventory of Rare and Endangered Plants* (2007) focuses on native plants that are rare in California or that face the threat of extinction or extirpation in the state. The *Inventory* includes five "lists" based on the level of concern by state botanists regarding the continued existence of certain species. Regardless of whether or not a species is included on any State or federal lists, species included on the CNPS List 1A, 1B, and 2 are considered to meet the criteria for listing as a rare species in California.

As described above, the subject property supports one species, San Mateo woolly sunflower, listed under the FESA and CESA. Impacts to this species would be regarded as significant under CEQA guidelines (§15065). If any federal permits (*e.g.*, Clean Water Act, §404) are required, the lead agency would initiate consultation with the USFWS regarding potential impacts to this species. The USFWS has authority over federally listed species under FESA. Consultation with the CDFG for unavoidable impacts to this species is required under CESA. The concerns of these agencies regarding impacts on this species would be incorporated into the federal permit, or, if no federal permit is required, in consultation with the CDFG. These concerns are generally addressed by incorporation of mitigation measures which include, in descending order of preference by the regulating agencies, 1) impact avoidance by project redesign, 2) impact minimization, and 3) compensation for unavoidable impacts. Compensation may take the form of habitat preservation and enhancement on site or off site, in combination with plant propagation and restoration, and/or monetary contributions for habitat acquisition and preservation

In addition, the subject property also supports four species, *e.g.*, San Francisco Collinsia, Franciscan Onion, Western leatherwood, and Arcuate bush mallow, on CNPS List 1B and listed as special-status species by the CDFG (2007a). Impacts to these species are generally regarded as significant under CEQA guidelines (§15065). Mitigation measures for unavoidable impacts would be required pursuant to CEQA guidelines; such measures should be developed in consultation with the CDFG. Although one of these, arcuate bush mallow, is not currently recognized as a valid taxon (Jepson Online Interchange), it remains listed by the CDFG as a special status species. As such, for purposes of completing an analysis of impacts under CEQA, impact to this species should be regarded as significant and mitigated appropriately. California bottle-brush grass does not meet the criteria for listing as endangered, rare or threatened and impacts to this species do not meet the criteria for being considered significant pursuant to CEQA guidelines.

[22] §15065

6.0 LITERATURE CITED

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APPENDIX A

POTENTIALLY OCCURRING SPECIAL-STATUS PLANT SPECIES AT THE BEESON PROPERTY

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

Sep 6, 2007

Wood Biological Consulting

FAMILY *Scientific Name* Common Name	Status		Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Apiaceae - Carrot Family					
Eryngium aristulatum var. *hooveri* Hoover's button-celery	Federal State CNPS Other	none none 1B.1 DFG: Special Plant	Occurs in vernal pools Moisture: vernally-flooded. Recorded from Alameda, San Benito, San Luis Obispo, Santa Clara.	July Annual/perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.
Perideridia gairdneri ssp. *gairdneri* Gairdner's yampah	Federal State CNPS Other	none none 4.2 DFG: Special Plant	Occurs in broadleafed upland forest, chaparral, coastal prairie, mixed evergreen forest, valley and foothill grassland, vernal pools Moisture: moist. Recorded from Contra Costa, Kern, Los Angeles, Marin, Mendocino, Monterey, Napa, Orange, San Benito, San Diego, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma.	Jun-Oct Perennial Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Sanicula maritima adobe sanicle	Federal State CNPS Other	none SR 1B.1 DFG: Special Plant	Occurs in chaparral, coastal prairie, meadows, valley and foothill grassland Substrate: serpentine, Habitats Note: clay. Recorded from Alameda, Monterey, San Francisco, San Luis Obispo.	Feb-May Perennial Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Asteraceae - Sunflower Family					
Centromadia parryi ssp. *congdonii* Congdon's tarplant	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in valley and foothill grassland. Substrate: alkaline. Recorded from Alameda, Contra Costa, Monterey, San Luis Obispo, Santa Clara, Santa Cruz, Solano.	May-Nov Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

Wood Biological Consulting

FAMILY *Scientific Name* Common Name	Status		Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Centromadia parryi ssp. *parryi* pappose tarplant	Federal State CNPS Other	none none 1B.2	Occurs in coastal prairie, meadows, seeps, coastal salt marsh, valley and foothill grassland. Moisture: vernally mesic,Substrate: often alkaline, Recorded from Butte, Colusa, Glenn, Lake, Napa, San Mateo, Solano, Sonoma.	May-Nov Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Cirsium andrewsii Franciscan thistle	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub, mixed evergreen forest, northern coastal scrub Substrate: serpentine. Recorded from Contra Costa, Marin, San Francisco, San Mateo, Sonoma.	Mar-Jul Perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.
Cirsium fontinale var. *fontinale* fountain thistle	Federal State CNPS Other	FE SE 1B.1 DFG: Special Plant	Occurs in chaparral, valley and foothill grassland Substrate: serpentine. Recorded from San Mateo.	Jun-Oct Perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.
Cirsium occidentale var. *compactum* compact cobwebby thistle	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in chaparral, coastal dunes, coastal prairie, coastal sage scrub, coastal scrub, coastal strand, northern coastal scrub. Recorded from Monterey, San Francisco, San Luis Obispo.	Apr-Jun Perennial Herb	None: suitable habitat present. Would have been detectable during present survey.
Cirsium praeteriens lost thistle	Federal State CNPS Other	none none 1A DFG: Special Plant	Habitat affinities unknown. Recorded from Santa Clara. Presumed extinct. Not seen since 1901.	Jun-Jul Perennial Herb	None: Would have been detectable during present survey.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

FAMILY *Scientific Name* Common Name	Status		Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Eriophyllum latilobum San Mateo woolly sunflower	Federal State CNPS Other	FE SE 1B.1 DFG: Special Plant	Occurs in cismontane woodland, foothill woodland Substrate: often on serpentine, roadcuts. Recorded from San Mateo. Recorded from SFPUC pipeline right-of-way on west side of Crystal Springs Road.	May-Jun Perennial Herb	Detected: suitable habitat present. Detected on site; see report for details.
Grindelia hirsutula var. *maritima* San Francisco gumplant	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in coastal bluff scrub, coastal sage scrub, coastal scrub, northern coastal scrub, valley and foothill grassland Substrate: serpentine, Habitats Note: sandy. Recorded from Marin, Monterey, San Francisco, San Luis Obispo, San Mateo, Santa Cruz.	Aug-Sep Perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.
Helianthella castanea Diablo helianthella	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, foothill woodland, northern coastal scrub, riparian woodland, valley and foothill grassland. Recorded from Alameda, Contra Costa, Marin, San Francisco, San Mateo.	Apr-Jun Perennial Herb	None: suitable habitat present. Would have been detectable during present survey.
Hesperevax sparsiflora var. *brevifolia* short-leaved evax	Federal State CNPS Other	none none 2.2 DFG: Special Plant	Occurs in coastal bluff scrub, coastal dunes, coastal strand, northern coastal scrub. Recorded from Humboldt, Marin, Mendocino, San Francisco, Santa Cruz, Sonoma.Also recorded from Oregon.	Mar-Jun Annual Herb	None: suitable habitat present. Would have been detectable during present survey.
Holocarpha macradenia Santa Cruz tarplant	Federal State CNPS Other	FT SE 1B.1 DFG: Special Plant	Occurs in coastal prairie, coastal scrub, valley and foothill grassland Habitats Note: clay. Recorded from Alameda, Contra Costa, Marin, Monterey, Santa Cruz.	Jun-Oct Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

FAMILY *Scientific Name* Common Name	Status		Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Layia carnosa beach layia	Federal State CNPS Other	FE SE 1B.1 DFG: Special Plant	Occurs in coastal dunes, coastal scrub, coastal strand. Recorded from Humboldt, Marin, Monterey, San Francisco, Santa Barbara.	Mar-Jul Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Lessingia arachnoidea Crystal Springs lessingia	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in cismontane woodland, coastal scrub, foothill woodland, northern coastal scrub, valley and foothill grassland. Substrate: serpentinite. Recorded from San Mateo, Sonoma.	Jul-Oct Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Lessingia germanorum San Francisco lessingia	Federal State CNPS Other	FE SE 1B.1 DFG: Special Plant	Occurs in coastal scrub, northern coastal scrub. Habitats Note: on remnant dunes. Recorded from San Francisco, San Mateo.	Jun-Nov Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Lessingia hololeuca woolly-headed lessingia	Federal State CNPS Other	none none 3 DFG: Special Plant	Occurs in broadleafed upland forest, coastal scrub, lower montane coniferous forest, northern coastal scrub, valley and foothill grassland, yellow pine forest. Substrate: serpentinite, clay. Recorded from Alameda, Marin, Monterey, Napa, San Mateo, Santa Clara, Solano, Sonoma, Yolo.	Jun-Oct Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Micropus amphibolus Mt. Diablo cottonweed	Federal State CNPS Other	none none 3.2 DFG: Special Plant	Occurs in broadleafed upland forest, chaparral, cismontane woodland, foothill woodland, mixed evergreen forest, valley and foothill grassland. Substrate: rocky. Recorded from Alameda, Colusa, Contra Costa, Lake, Marin, Monterey, Napa, Santa Barbara, Santa Clara, Santa Cruz, Solano, Sonoma.	Mar-May Annual Herb	None: suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

FAMILY *Scientific Name* Common Name	Status		Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Microseris paludosa marsh microseris	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in cismontane woodland, closed-cone coniferous forest, coastal scrub, valley and foothill grassland. Recorded from Marin, Mendocino, Monterey, San Benito, San Francisco, San Luis Obispo, San Mateo, Santa Cruz, Sonoma.	Apr-Jul Perennial Herb	None: suitable habitat present. Would have been detectable during present survey.
Pentachaeta bellidiflora white-rayed pentachaeta	Federal State CNPS Other	FE SE 1B.1 DFG: Special Plant	Occurs in valley and foothill grassland. Substrate: serpentinite. Recorded from Marin, San Mateo, Santa Cruz.	Mar-May Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Stebbinsoseris decipiens Santa Cruz microseris	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in broadleafed upland forest, chaparral, closed-cone coniferous forest, closed-cone pine forest, coastal prairie, coastal scrub, mixed evergreen forest, northern coastal scrub, valley and foothill grassland. Substrate: serpentinite. Recorded from Marin, Monterey, Santa Cruz.	Apr-May Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Boraginaceae - Borage Family					
Amsinckia lunaris bent-flowered fiddleneck	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in cismontane woodland, coastal bluff scrub, foothill woodland, valley and foothill grassland. Recorded from Alameda, Colusa, Contra Costa, Lake, Marin, Napa, San Mateo, Santa Cruz, Shasta, Siskiyou, Sonoma.	Mar-Jun Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Plagiobothrys chorisianus var. *chorisianus* Choris's popcorn-flower	Federal none State none CNPS 1B.2 Other DFG: Special Plant	Occurs in chaparral, coastal prairie, coastal scrub, northern coastal scrub Moisture: moist. Recorded from Alameda, San Francisco, San Mateo, Santa Cruz.	Mar-Jun Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Plagiobothrys diffusus San Francisco popcorn-flower	Federal none State SE CNPS 1B.1 Other DFG: Special Plant	Occurs in coastal prairie, valley and foothill grassland. Recorded from Alameda, San Francisco, Santa Cruz.	Mar-Jun Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Plagiobothrys glaber hairless popcorn-flower	Federal none State none CNPS 1A * Other DFG: Special Plant	Occurs in coastal salt marsh, meadows. Substrate: alkaline, Habitats Note: coastal salt marsh. Recorded from Alameda, Marin, Merced, San Benito, Santa Clara.	Mar-May Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Brassicaceae - Mustard Family				
Arabis blepharophylla coast rock cress	Federal none State none CNPS 4.3 Other DFG: Special Plant	Occurs in broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub, mixed evergreen forest, northern coastal scrub. Recorded from Contra Costa, Marin, Monterey, San Francisco, San Mateo, Santa Cruz, Sonoma.	Feb-May Perennial Herb	None: marginally suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Erysimum franciscanum San Francisco wallflower	Federal none State none CNPS 4.2 Other DFG: Special Plant	Occurs in coastal dunes, coastal scrub, coastal strand, northern coastal scrub, valley and foothill grassland Substrate: serpentine granitic. Recorded from Marin, San Francisco, San Mateo, Santa Clara, Santa Cruz, Sonoma.	Mar-Jun Perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.
Tropidocarpum capparideum caper-fruited tropidocarpum	Federal none State none CNPS 1B.1 Other DFG: Special Plant	Occurs in valley and foothill grassland Substrate: alkaline. Recorded from Alameda, Contra Costa, Glenn, Monterey, San Joaquin, San Luis Obispo, Santa Clara. Additional distribution: Rediscovered in 2000 on Ft. Hunter Liggett.	Mar-Apr Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Caryophyllaceae - Pink Family				
Arenaria paludicola marsh sandwort	Federal FE State SE CNPS 1B.1 Other DFG: Special Plant	Occurs in bogs and fens, freshwater marsh, marshes and swamps. Recorded from Los Angeles, Mendocino, San Bernardino, San Francisco, San Luis Obispo, Santa Cruz.Also recorded from Washington.	May-Aug Perennial Herb (stoloniferous)	None: no suitable habitat present. Would have been detectable during present survey.
Silene verecunda ssp. *verecunda* San Francisco campion	Federal none State none CNPS 1B.2 Other DFG: Special Plant	Occurs in chaparral, coastal bluff scrub, coastal prairie, coastal scrub, northern coastal scrub, valley and foothill grassland. Recorded from San Francisco, San Mateo, Santa Cruz.	Mar-Aug Perennial Herb	None: suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

FAMILY *Scientific Name* Common Name	Status		Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Chenopodiaceae - Goosefoot Family					
Suaeda californica California seablite	Federal State CNPS Other	FE none 1B.1 DFG: Special Plant	Occurs in coastal salt marsh, marshes and swamps. Recorded from Alameda, San Luis Obispo, Santa Clara.	Jul-Oct Shrub (evergreen)	None: no suitable habitat present. Would have been detectable during present survey.
Cyperaceae - Sedge Family					
Carex comosa bristly sedge	Federal State CNPS Other	none none 2.1 DFG: Special Plant	Occurs in coastal prairie, freshwater marsh, marshes and swamps, valley and foothill grassland. Recorded from Contra Costa, Lake, Mendocino, San Bernardino, San Francisco, San Joaquin, Santa Cruz, Shasta, Sonoma.Also recorded from Idaho, Oregon, Washington.	May-Sep Perennial Herb (rhizomatous)	None: no suitable habitat present.
Equisetaceae - Horsetail Family					
Equisetum palustre marsh horsetail	Federal State CNPS Other	none none 3 DFG: Special Plant	Occurs in freshwater marsh, marshes and swamps. Recorded from Lake, Napa, San Francisco, San Mateo.Also recorded from Idaho, Oregon, Washington.	Unknown Perennial Herb (rhizomatous)	None: marginally suitable habitat present. Would have been detectable during present survey.
Ericaceae - Heath Family					
Arctostaphylos andersonii Santa Cruz manzanita	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in broadleafed upland forest, chaparral, mixed evergreen forest, North Coast coniferous forest, redwood forest. Recorded from San Mateo, Santa Clara, Santa Cruz.	Nov-Apr Shrub (evergreen)	None: suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

Wood Biological Consulting

FAMILY

Scientific Name Common Name	Status		Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Arctostaphylos hookeri ssp. *franciscana* Franciscan manzanita	Federal State CNPS Other	none none 1A DFG: Special Plant	Occurs in coastal scrub, northern coastal scrub Substrate: serpentine. Recorded from San Francisco.	Feb-Apr Shrub (evergreen)	None: no suitable habitat present. Would have been detectable during present survey.
Arctostaphylos hookeri ssp. *ravenii* Presidio manzanita	Federal State CNPS Other	FE SE 1B.1 DFG: Special Plant	Occurs in chaparral, coastal prairie, coastal scrub, northern coastal scrub Substrate: serpentine. Recorded from San Francisco.	Feb-Mar Shrub (evergreen)	None: no suitable habitat present. Would have been detectable during present survey.
Arctostaphylos imbricata San Bruno Mountain manzanita	Federal State CNPS Other	none SE 1B.1 DFG: Special Plant	Occurs in chaparral, coastal scrub. Recorded from San Mateo.	Feb-May Shrub (evergreen)	None: marginally suitable habitat present. Would have been detectable during present survey.
Arctostaphylos montaraensis Montara manzanita	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in chaparral, coastal scrub, northern coastal scrub. Recorded from San Mateo.	Jan-Mar Shrub (evergreen)	None: suitable habitat present. Would have been detectable during present survey.
Arctostaphylos regismontana Kings Mountain manzanita	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in broadleafed upland forest, chaparral, mixed evergreen forest, North Coast coniferous forest. Substrate: granitic sedimentary sandstone. Recorded from San Mateo, Santa Clara, Santa Cruz.	Jan-Apr Shrub (evergreen)	None: no suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Fabaceae - Legume Family				
Astragalus pycnostachyus var. *pycnostachyus* coastal marsh milk-vetch	Federal none State none CNPS 1B.2 Other DFG: Special Plant	Occurs in coastal dunes, marshes and swamps. Moisture: mesic, Habitats Note: coastal salt marshes, streamsides. Recorded from Humboldt, Marin, San Mateo.	Apr-Oct Perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.
Astragalus tener var. *tener* alkali milk-vetch	Federal none State none CNPS 1B.2 Other DFG: Special Plant	Occurs in alkali sink, playas, valley and foothill grassland, vernal pools. Substrate: adobe clay, alkaline. Recorded from Alameda, Contra Costa, Merced, Monterey, Napa, San Benito, San Francisco, San Joaquin, Santa Clara, Solano, Sonoma, Stanislaus, Yolo.	Mar-Jun Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Lupinus eximius San Mateo tree lupine	Federal none State none CNPS 3.2 Other DFG: Special Plant	Occurs in chaparral, coastal scrub, northern coastal scrub. Recorded from Marin, Monterey, San Luis Obispo, San Mateo, Sonoma.	Apr-Jul Shrub	None: suitable habitat present. Would have been detectable during present survey.
Trifolium depauperatum var. *hydrophilum* saline clover	Federal none State none CNPS 1B.2 Other DFG: Special Plant	Occurs in marshes and swamps, valley and foothill grassland, vernal pools. Moisture: mesic,Substrate: alkaline, Recorded from Alameda, Colusa, Monterey, Napa, San Benito, San Luis Obispo, San Mateo, Santa Clara, Solano, Sonoma.	Apr-Jun Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Geraniaceae - Geranium Family				
California macrophylla round-leaved filaree	Federal none State none CNPS 2.1 Other DFG: Special Plant	Occurs in cismontane woodland, foothill woodland, valley and foothill grassland. Substrate: clay. Recorded from Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Kern, Kings, Lake, Lassen, Los Angeles, Merced, Monterey, Napa, Riverside, San Benito, San Diego, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Solano, Sonoma, Stanislaus, Tehama, Ventura, Yolo.Santa Cruz Island.Also recorded from Baja California, Oregon, Utah.	Mar-May Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Lamiaceae - Mint Family				
Acanthomintha duttonii San Mateo thorn-mint	Federal FE State SE CNPS 1B.1 Other DFG: Special Plant	Occurs in valley and foothill grassland, chaparral. Substrate: serpentinite. Recorded from San Mateo.	Apr-Jun Annual Herb	None: suitable habitat present. Would have been detectable during present survey.
Monardella villosa ssp. *globosa* robust monardella	Federal none State none CNPS 1B.2 Other DFG: Special Plant	Occurs in broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, foothill woodland, valley and foothill grassland. Recorded from Alameda, Contra Costa, Humboldt, Lake, Marin, Mendocino, Napa, San Mateo, Santa Clara, Sonoma. Recorded from SFPUC pipeline right-of-way on west side of Crystal Springs Road.	Jun-Jul Perennial Herb (rhizomatous)	None: suitable habitat present. Would have been detectable during present survey.
Liliaceae - Lily Family				
Allium peninsulare var. *franciscanum* Franciscan onion	Federal none State none CNPS 1B.2 Other DFG: Special Plant	Occurs in cismontane woodland, valley and foothill grassland. Substrate: clay, often serpentinite. Recorded from San Mateo, Santa Clara, Sonoma.	May-Jun Perennial Herb (bulbiferous)	Detected: suitable habitat present. Detected on site; see report for details.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Fritillaria biflora var. *ineziana* Hillsborough chocolate lily	Federal none State none CNPS 1B.1 Other DFG: Special Plant	Occurs in cismontane woodland, foothill woodland, valley and foothill grassland Substrate: serpentine. Recorded from San Mateo.	Mar-Apr Perennial Herb (bulbiferous)	None: no suitable habitat present. Would have been detectable during present survey.
Fritillaria liliacea fragrant fritillary	Federal none State none CNPS 1B.2 Other DFG: Special Plant	Occurs in cismontane woodland, coastal prairie, coastal scrub, northern coastal scrub, valley and foothill grassland. Substrate: often serpentinite. Recorded from Alameda, Contra Costa, Marin, Monterey, San Benito, San Francisco, San Mateo, Santa Clara, Solano, Sonoma.	Feb-Apr Perennial Herb (bulbiferous)	None: marginally suitable habitat present. Would have been detectable during present survey.
Lilium maritimum coast lily	Federal none State none CNPS 1B.1 Other DFG: Special Plant	Occurs in broadleafed upland forest, closed-cone coniferous forest, closed-cone pine forest, coastal prairie, coastal scrub, marshes and swamps, mixed evergreen forest, North Coast coniferous forest, northern coastal scrub. Recorded from Marin, Mendocino, San Francisco, San Mateo, Sonoma.	May-Jul Perennial Herb (bulbiferous)	None: marginally suitable habitat present. Would have been detectable during present survey.
Limnanthaceae - Meadowfoam Family				
Limnanthes douglasii ssp. *sulphurea* Point Reyes meadowfoam	Federal none State SE CNPS 1B.2 Other DFG: Special Plant	Occurs in coastal prairie, freshwater marsh, marshes and swamps, meadows, vernal pools Moisture: moist. Recorded from Marin, San Mateo.	Mar-May Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

FAMILY *Scientific Name* Common Name	Status		Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Linaceae - Flax Family					
Hesperolinon congestum Marin western flax	Federal State CNPS Other	FT ST 1B.1 DFG: Special Plant	Occurs in chaparral, valley and foothill grassland. Substrate: serpentinite. Recorded from Marin, San Francisco, San Mateo.	Apr-Jul Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Malvaceae - Mallow Family					
Malacothamnus aboriginum Indian Valley bush mallow	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in chaparral, cismontane woodland, foothill woodland Habitats Note: rocky. Recorded from Fresno, Monterey, San Benito.	Apr-Oct Shrub (deciduous)	None: suitable habitat present. Would have been detectable during present survey.
Malacothamnus arcuatus arcuate bush mallow	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in chaparral. Recorded from San Mateo, Santa Clara, Santa Cruz.	Apr-Sep Shrub (evergreen)	Detected: suitable habitat present. Detected on site; see report for details.
Malacothamnus davidsonii Davidson's bush mallow	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in chaparral, cismontane woodland, coastal sage scrub, coastal scrub, northern coastal scrub, riparian woodland. Recorded from Los Angeles, Monterey, San Luis Obispo, San Mateo, Santa Clara.	Jun-Jan Shrub (deciduous)	None: suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

FAMILY *Scientific Name* Common Name	Status		Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Malacothamnus hallii Hall's bush mallow	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in chaparral, coastal scrub. Recorded from Alameda, Contra Costa, Mendocino, Merced, San Mateo, Santa Clara, Stanislaus.	May-Sep Shrub (evergreen)	None: suitable habitat present. Would have been detectable during present survey.
Onagraceae - Evening Primrose Family					
Clarkia franciscana Presidio clarkia	Federal State CNPS Other	FE SE 1B.1 DFG: Special Plant	Occurs in coastal scrub, northern coastal scrub, valley and foothill grassland Substrate: serpentine. Recorded from Alameda, San Francisco.	May-Jul Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Poaceae - Grass Family					
Elymus californicus California bottle-brush grass	Federal State CNPS Other	none none 4.3 DFG: Special Plant	Occurs in broadleafed upland forest, cismontane woodland, closed-cone pine forest, Douglas-fir forest, foothill woodland, mixed evergreen forest, North Coast coniferous forest, redwood forest, riparian woodland. Recorded from Marin, Monterey, San Mateo, Santa Cruz, Sonoma.	May-Nov Perennial Herb	Detected: suitable habitat present. Detected on site; see report for details.
Polemoniaceae - Phlox Family					
Gilia capitata ssp. *chamissonis* dune gilia	Federal State CNPS Other	none none 1B.1 DFG: Special Plant	Occurs in coastal dunes, coastal scrub. Recorded from Marin, San Francisco, Sonoma.	Apr-Jul Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

FAMILY *Scientific Name* Common Name	Status		Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Gilia millefoliata dark-eyed gilia	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in coastal dunes, coastal strand. Recorded from Del Norte, Humboldt, Marin, Mendocino, San Francisco, Sonoma.Also recorded from Oregon.	Apr-Jul Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Leptosiphon croceus coast yellow linanthus	Federal State CNPS Other	none none 1B.1 DFG: Special Plant	Occurs in coastal bluff scrub, coastal prairie. Recorded from Marin, Monterey, San Mateo. Additional distribution: presumed extirpated in Marin County.	Apr-May Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Leptosiphon rosaceus rose leptosiphon	Federal State CNPS Other	none none 1B.1 DFG: Special Plant	Occurs in coastal bluff scrub. Recorded from Marin, San Francisco, San Mateo, Sonoma. Additional distribution: presumed extirpated from San Francisco and Sonoma.	Apr-Jul Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Polygonaceae - Buckwheat Family					
Chorizanthe cuspidata var. *cuspidata* San Francisco Bay spineflower	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub, coastal strand, northern coastal scrub. Substrate: sandy. Recorded from Alameda, Marin, San Francisco, San Mateo, Santa Clara, Sonoma.	Apr-Aug Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Chorizanthe robusta var. *robusta* robust spineflower	Federal FE State none CNPS 1B.1 Other DFG: Special Plant	Occurs in cismontane woodland, coastal dunes, coastal scrub, coastal strand, foothill woodland, northern coastal scrub. Substrate: sandy, gravelly. Recorded from Alameda, Monterey, San Mateo, Santa Clara, Santa Cruz.	Apr-Sep Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Chorizanthe valida Sonoma spineflower	Federal FE State SE CNPS 1B.1 Other DFG: Special Plant	Occurs in coastal prairie Habitats Note: sandy. Recorded from Marin, Sonoma.	Jun-Aug Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Eriogonum luteolum var. *caninum* Tiburon buckwheat	Federal none State none CNPS 3.2 Other DFG: Special Plant	Occurs in chaparral, coastal prairie, valley and foothill grassland. Substrate: serpentinite. Recorded from Alameda, Colusa, Lake, Marin, Napa, San Mateo, Santa Clara, Sonoma.	Jun-Sep Annual Herb	None: suitable habitat present. Would have been detectable during present survey.
Potamogetonaceae - Pondweed Family				
Stuckenia filiformis slender-leaved pondweed	Federal none State none CNPS 2.2 Other DFG: Special Plant	Occurs in freshwater marsh, marshes and swamps Moisture: shallow-water. Recorded from Contra Costa, Lassen, Merced, Mono, Santa Clara, Sierra. Also recorded from Arizona, Nevada, Oregon, Washington.	May-Jul Perennial Herb (rhizomatous), Aquatic	None: no suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

FAMILY *Scientific Name* Common Name	Status		Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Pottiaceae					
Triquetrella californica coastal triquetrella	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in coastal bluff scrub, coastal scrub. Recorded from Contra Costa, Mendocino, San Diego, San Francisco counties.Also recorded from Oregon.	n/a Moss	None: no suitable habitat present. Would have been detectable during present survey.
Rosaceae - Rose Family					
Horkelia cuneata ssp. *sericea* Kellogg's horkelia	Federal State CNPS Other	none none 1B.1 DFG: Special Plant	Occurs in closed-cone coniferous forest, closed-cone pine forest, coastal sage scrub, coastal scrub, northern coastal scrub. Recorded from Alameda, Marin, Monterey, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, Santa Cruz.	Apr-Sep Perennial Herb	None: suitable habitat present. Would have been detectable during present survey.
Horkelia marinensis Point Reyes horkelia	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in coastal dunes, coastal prairie, coastal scrub, coastal strand, northern coastal scrub. Recorded from Marin, Mendocino, San Mateo, Santa Cruz.	May-Sep Perennial Herb	None: suitable habitat present. Would have been detectable during present survey.
Potentilla hickmanii Hickman's cinquefoil	Federal State CNPS Other	FE SE 1B.1 DFG: Special Plant	Occurs in closed-cone coniferous forest, closed-cone pine forest, coastal bluff scrub, freshwater marsh, marshes and swamps, meadows, northern coastal scrub. Recorded from Monterey, San Mateo, Sonoma.	Apr-Aug Perennial Herb	None: marginally suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Scrophulariaceae - Figwort Family				
Collinsia corymbosa round-headed Chinese houses	Federal none State none CNPS 1B.2 Other DFG: Special Plant	Occurs in coastal dunes, coastal strand. Recorded from Humboldt, Marin, Mendocino, San Francisco, Sonoma.	Apr-Jun Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Collinsia multicolor San Francisco collinsia	Federal none State none CNPS 1B.2 Other DFG: Special Plant	Occurs in closed-cone coniferous forest, closed-cone pine forest, coastal scrub, northern coastal scrub. Substrate: sometimes serpentinite. Recorded from Monterey, San Francisco, San Mateo, Santa Clara, Santa Cruz.	Mar-May Annual Herb	Detected: marginally suitable habitat present. Detected on site; see report for details.
Cordylanthus maritimus ssp. *palustris* Point Reyes bird's-beak	Federal none State none CNPS 1B.2 Other DFG: Special Plant	Occurs in coastal salt marsh, marshes and swamps. Habitats Note: coastal salt marsh. Recorded from Alameda, Humboldt, Marin, San Mateo, Santa Clara, Sonoma. Also recorded from Oregon.	Jun-Oct Annual Herb, Hemiparasitic	None: no suitable habitat present. Would have been detectable during present survey.
Pedicularis dudleyi Dudley's lousewort	Federal none State SR CNPS 1B.2 Other DFG: Special Plant	Occurs in chaparral, cismontane woodland, North Coast coniferous forest, redwood forest, valley and foothill grassland. Recorded from Monterey, San Luis Obispo, San Mateo, Santa Cruz.	Apr-Jun Perennial Herb	None: suitable habitat present. Would have been detectable during present survey.
Triphysaria floribunda San Francisco owl's-clover	Federal none State none CNPS 1B.2 Other DFG: Special Plant	Occurs in coastal prairie, coastal scrub, valley and foothill grassland Substrate: serpentine. Recorded from Marin, San Francisco, San Mateo.	Apr-Jun Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.

Potentially Occurring Special-status Plant Species Evaluated At The Beeson Property

FAMILY *Scientific Name* Common Name	Status		Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Thymelaeaceae - Mezereum Family					
Dirca occidentalis western leatherwood	Federal State CNPS Other	none none 1B.2 DFG: Special Plant	Occurs in broadleafed upland forest, chaparral, cismontane woodland, closed-cone coniferous forest, closed-cone pine forest, foothill woodland, mixed evergreen forest, north coast coniferous forest, riparian forest, riparian woodland. Moisture: moist. Recorded from Alameda, Contra Costa, Marin, San Mateo, Santa Clara, Sonoma.	Jan-Apr Shrub (deciduous)	Detected: suitable habitat present. Detected on site; see report for details.

APPENDIX B

EXPLANATION OF RARITY STATUS CODES

EXPLANATION OF RARITY STATUS CODES

ENDANGERED SPECIES ACT (ESA) LISTING CODES

FE = federally listed as Endangered
FT = federally listed as Threatened
FPE = federally proposed for listing as Endangered
FPT = federally proposed for listing as Threatened
FPD = federally proposed for delisting
FC = federal candidate; former Category 1 candidates
FSC = federal species of concern; receives no legal protection. Use of the term does not necessarily mean that a species will eventually be proposed for listing.

CALIFORNIA ENDANGERED SPECIES ACT (CESA) LISTING CODES

SE = State-listed as Endangered
ST = State-listed as Threatened
SR = State-listed as Rare
SCE = State candidate for listing as Endangered
SCT = State candidate for listing as Threatened

CALIFORNIA NATIVE PLANT SOCIETY DESIGNATIONS (CNPS)

List 1: Plants of highest priority
List 1A: Plants presumed extinct in California
List 1B: Plants rare and endangered in California and elsewhere
List 2: Plants rare and endangered in California but more common elsewhere
List 3: Plants about which additional data are needed
List 4: Plants of limited distribution

CNPS Threat Code Extensions (replaces the RED code)

.1 - Seriously endangered in California

.2 – Fairly endangered in California

.3 – Not very endangered in California

OTHER CODES

AFS: American Fisheries Society categories of risk for marine, estuarine and diadromous fish stocks.

Audubon: Watch List: Bird species facing population declines and/or threats such as loss of breeding and wintering grounds, or species with limited geographic ranges.

BLM: Sensitive: Bureau of Land Management. Includes species under review by FWS or NMFS, species whose numbers are declining so rapidly that federal listing may become necessary, species with small and widely dispersed populations, or species inhabiting refugia or other unique habitats.

CDF: Sensitive: California Department of Forestry and Fire Protection. Includes species that warrant special protection during timber operations.

DFG: CSC: California species of Special Concern.

DFG: Special Animal: Species included by the Department of Fish and Game in their special species lists.

DFG: Fully Protected: Species protected under Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code.

FS: Sensitive: USDA Forest Service. Species identified by a regional forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density, or in habitat capability that would reduce a species' existing distribution.

FWS: BCC: Birds of Conservation Concern: migratory and non-migratory bird species (beyond listed species) that represent the FWS's highest conservation priorities.

FWS: BEPA: Bald Eagle Protection Act

FWS: MBTA: International Migratory Bird Treat Act

FWS: MNBMC: US Fish and Wildlife Service: Migratory Nongame Birds of Management Concern. Species considered to be of concern in the U.S. due to documented or apparent population declines, small or restricted populations, or dependence on restricted or vulnerable habitats.

USMC Watch List: US Bird Conservation Watch List.

WBWB: Priority: The Western Bat Working Group. Species imperiled or at high, medium, or low risk of imperilment based on available information on distribution, status, ecology, and known threats.

APPENDIX C

INVENTORY OF VASCULAR PLANT SPECIES RECORDED AT THE BEESON PROPERTY

Preliminary Inventory Of Vascular Plants Occurring At The Beeson Property

10/4/2007

Sorted by CLASS, Family

Scientific Name	Common Name	Note
FILICOPSIDA – FERNS		
Dryopteridaceae - Wood Fern		
Dryopteris arguta	wood fern	
Polystichum munitum	western sword fern	
Polypodiaceae - Polypody		
Polypodium californicum	California polypody	
Pteridaceae - Fern Family		
Adiantum jordanii	maidenhair fern	
Pellaea andromedifolia	coffee fern	
Pentagramma triangularis ssp. *triangularis*	goldback fern	
DICOTYLEDONES - DICOTS		
Aceraceae - Maple Family		
Acer negundo var. *californicum*	box elder	
Anacardiaceae - Sumac		
Malosma laurina	laurel sumac	
Toxicodendron diversilobum	poison oak	
Apiaceae - Carrot Family		
Anthriscus caucalis	bur-chervil	•
Conium maculatum	poison-hemlock	•
Daucus carota	Queen Anne's lace	•
Daucus pusillus	rattlesnake weed	
Heracleum lanatum	cow parsnip	
Lomatium californicum	California lomatium	
Osmorhiza chilensis	mountain sweetcicely	
Perideridia kelloggii	Kellogg's yampah	
Sanicula crassicaulis	Pacific sanicle	
Scandix pecten-veneris	shepherd's needle	•
Torilis arvensis	hedgeparsley	•

Footnotes:

1 = federal or State listed Species 2 = other special-status species 3 = CALEPPC Listed Invasive Species

* = Species not indigenous to CA ** = Native Species not indigenous to site AG = agricultural species HORT = horticultural species

Preliminary Inventory Of Vascular Plants Occurring At The Beeson Property

10/4/2007

Sorted by CLASS, Family

Scientific Name	Common Name		Note
Apocynaceae - Dogbane			
Vinca major	big periwinkle	•	
Asteraceae - Sunflower Family			
Achillea millefolium	yarrow		
Anisocarpus madioides	woodland madia		
Artemisia californica	California sagebrush		
Artemisia douglasiana	mugwort		
Baccharis pilularis	coyote brush		
Carduus pycnocephalus	Italian thistle	•	
Centaurea melitensis	tocalote	•	
Centaurea solstitialis	yellow starthistle	•	
Cirsium occidentale var. *venustum*	Venus thistle		
Cirsium vulgare	bull thistle	•	
Conyza floribunda	horseweed	•	
Deinandra corymbosa ssp. *corymbosa*	Central Coast tarweed		
Dittrichia graveolens	stinkwort		
Erechtites minima	Australian fireweed	•	
Eriophyllum confertiflorum	golden-yarrow		
Eriophyllum latilobum	San Mateo woolly sunflower		1
Eurybia radulina	rough-leaved aster		
Gnaphalium californicum	California everlasting		
Gnaphalium ramosissimum	pink everlasting		
Helenium puberulum	sneezeweed		
Hemizonia congesta ssp. *luzulifolia*	hayfield tarweed		
Hesperevax sparsiflora var. *sparsiflora*	short-leaved evax		
Hypochaeris radicata	rough cat's-ear	•	
Lactuca virosa	wild lettuce	•	
Layia hieracioides	tall tidy-tips		
Logfia gallica	narrow-leaf filago	•	
Madia exigua	threadstem madia		

Footnotes:

1 = federal or State listed Species 2 = other special-status species 3 = CALEPPC Listed Invasive Species

* = Species not indigenous to CA ** = Native Species not indigenous to site AG = agricultural species HORT = horticultural species

Preliminary Inventory Of Vascular Plants Occurring At The Beeson Property

10/4/2007

Sorted by CLASS, Family

Scientific Name	Common Name	Note
Madia gracilis	slender tarweed	
Micropus californicus	slender cottonweed	
Picris echioides	bristly ox-tongue	•
Psilocarphus tenellus	woolly-heads	
Rafinesquia californica	California chicory	
Senecio aronicoides	California butterweed	
Senecio vulgaris	common groundsel	•
Silybum marianum	milkthistle	•
Solidago californica	California goldenrod	
Sonchus asper ssp. *asper*	prickly sowthistle	
Symphyotrichum chilense	common California aster	
Boraginaceae - Borage Family		
Cryptantha clevelandii	Cleveland's cryptantha	
Cryptantha micromeres	pygmyflower cryptantha	
Cynoglossum grande	hound's tongue	
Myosotis latifolia	common forget-me-not	•
Pectocarya pusilla	little combseed	
Brassicaceae - Mustard Family		
Barbarea orthoceras	American wintercress	
Brassica nigra	black mustard	•
Cardamine oligosperma	bitter-cress	
Caprifoliaceae - Honeysuckle		
Lonicera hispidula var. *vacillans*	California honeysuckle	
Sambucus mexicana	blue elderberry	
Symphoricarpos albus var. *laevigatus*	common snowberry	
Symphoricarpos mollis	creeping snowberry	
Caryophyllaceae - Pink Family		
Cerastium arvense	field chickweed	
Polycarpon tetraphyllum	four-leaved allseed	•

Footnotes:

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* = Species not indigenous to CA ** = Native Species not indigenous to site AG = agricultural species HORT = horticultural species

Preliminary Inventory Of Vascular Plants Occurring At The Beeson Property

10/4/2007

Sorted by CLASS, Family

Scientific Name	Common Name	Note
Sagina apetala	dwarf pearlwort	
Silene gallica	common catchfly	•
Stellaria media	common chickweed	•
Cistaceae - Rock-rose Family		
Cistus creticus	pink rock-rose	
Convolvulaceae -		
Calystegia subacaulis	hill morning-glory	
Crassulaceae - Stonecrop		
Crassula connata	pygmyweed	
Cucurbitaceae - Gourd Family		
Marah fabaceus	California man-root	
Dipsacaceae - Teasel Family		
Dipsacus sativus	Fuller's teasel	•
Ericaceae - Heath Family		
Arbutus menziesii	madrone	
Euphorbiaceae - Spurge		
Euphorbia peplus	petty spurge	•
Fabaceae - Legume Family		
Acmispon wrangelianus	Chile trefoil	
Astragalus gambelianus	Gambel's dwarf locoweed	
Genista monspessulana	French broom	•
Lathyrus vestitus	Pacific pea	
Lathyrus vestitus var. *vestitus*	common Pacific pea	
Lotus corniculatus	broadleaf bird's-foot trefoil	•
Lotus scoparius	California broom	
Lotus subpinnatus	bird's-foot trefoil	
Lupinus albifrons var. *albifrons*	silver bush lupine	
Lupinus latifolius	broad-leaf lupine	
Lupinus succulentus	succulent annual lupine	

Footnotes:

1 = federal or State listed Species 2 = other special-status species 3 = CALEPPC Listed Invasive Species

* = Species not indigenous to CA ** = Native Species not indigenous to site AG = agricultural species HORT = horticultural species

Preliminary Inventory Of Vascular Plants Occurring At The Beeson Property

10/4/2007

Sorted by CLASS, Family

Scientific Name	Common Name	Note
Medicago polymorpha	burclover	•
Trifolium dubium	little hop clover	•
Trifolium hirtum	rose clover	•
Trifolium microcephalum	small head clover	
Trifolium willdenovii	tomcat clover	
Vicia sativa	common vetch	•
Vicia tetrasperma	slender vetch	•
Fagaceae - Oak Family		
Quercus agrifolia	coast live oak	
Garryaceae - Silk Tassel		
Garrya elliptica	wavyleaf silk tassel	
Gentianaceae - Gentian Family		
Centaurium muehlenbergii	Muhlenberg's centaury	
Geraniaceae - Geranium		
Erodium botrys	long-beaked storksbill	•
Erodium cicutarium	red-stemmed filaree	•
Geranium dissectum	cut-leaved geranium	•
Geranium molle	dove's-foot geranium	•
Grossulariaceae - Gooseberry		
Ribes californicum	hillside gooseberry	
Hippocastanaceae - Buckeye		
Aesculus californica	California buckeye	
Hydrophyllaceae - Waterleaf		
Eriodictyon californicum	yerba santa	
Nemophila parviflora var. *parviflora*	woodland nemophila	
Phacelia distans	common phacelia	
Phacelia malvifolia	stinging phacelia	
Lamiaceae - Mint Family		
Lepechinia calycina	pitcher sage	

Footnotes:

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Preliminary Inventory Of Vascular Plants Occurring At The Beeson Property

10/4/2007

Sorted by CLASS, Family

Scientific Name	Common Name		Note
Marrubium vulgare	white horehound	•	
Monardella villosa ssp. *villosa*	coyote mint		
Pogogyne serpylloides	thyme-leaved pogogyne		
Rosmarinus officinalis	rosemary		Hort
Satureja douglasii	yerba buena		
Scutellaria tuberosa	Danny's skullcap		
Stachys ajugoides var. *rigida*	rigid hedge nettle		
Lauraceae - Laurel Family			
Umbellularia californica	California bay		
Linaceae - Flax Family			
Linum bienne	narrow-leaved flax	•	
Malvaceae - Mallow Family			
Malacothamnus arcuatus	arcuate bush mallow		2
Myrtaceae - Myrtle Family			
Eucalyptus globulus	Tasmanian blue gum	•	
Oleaceae - Olive Family			
Fraxinus sp.	ash		
Onagraceae - Evening			
Camissonia ovata	sun cups		
Clarkia rubicunda	farewell-to-spring		
Epilobium brachycarpum	tall willowherb		
Papaveraceae - Poppy Family			
Stylomecon heterophylla	windpoppy		
Plantaginaceae - Plantain			
Plantago lanceolata	English plantain	•	
Plantago major	broadleaf plantain	•	
Polygonaceae - Buckwheat			
Pterostegia drymarioides	woodland pterostegia		

Footnotes:

1 = federal or State listed Species 2 = other special-status species 3 = CALEPPC Listed Invasive Species

* = Species not indigenous to CA ** = Native Species not indigenous to site AG = agricultural species HORT = horticultural species

Preliminary Inventory Of Vascular Plants Occurring At The Beeson Property

10/4/2007

Sorted by CLASS, Family

Scientific Name	Common Name	Note
Portulacaceae - Purslane		
Claytonia perfoliata	miner's lettuce	
Primulaceae - Primrose Family		
Anagallis arvensis	scarlet pimpernel	•
Ranunculaceae - Buttercup		
Aquilegia formosa	red columbine	
Clematis lasiantha	pipestems	
Ranunculus californicus	California buttercup	
Ranunculus hebecarpus	slender annual buttercup	
Thalictrum fendleri var. *polycarpum*	Fendler's meadow-rue	
Rhamnaceae - Buckthorn		
Ceanothus thyrsiflorus	blue blossom	
Rhamnus californica ssp. *californica*	California coffeeberry	
Rosaceae - Rose Family		
Adenostoma fasciculatum	chamise	
Aphanes occidentalis	western lady's mantle	
Cotoneaster sp.	cotoneaster	
Fragaria vesca	woodland strawberry	
Heteromeles arbutifolia	toyon	
Horkelia cuneata ssp. *cuneata*	wedge-leaved horkelia	
Oemleria cerasiformis	oso berry	
Potentilla glandulosa	sticky cinquefoil	
Prunus cerasifera	cherry plum	•
Prunus ilicifolia	hollyleaf cherry	
Rosa californica	California rose	
Rubus discolor	Himalayan blackberry	•
Rubus ursinus	California blackberry	
Rubiaceae - Madder Family		
Galium aparine	goose grass	

Footnotes:

1 = federal or State listed Species 2 = other special-status species 3 = CALEPPC Listed Invasive Species

* = Species not indigenous to CA ** = Native Species not indigenous to site AG = agricultural species HORT = horticultural species

Preliminary Inventory Of Vascular Plants Occurring At The Beeson Property

10/4/2007

Sorted by CLASS, Family

Scientific Name	Common Name	Note
Galium californicum	California bedstraw	
Sherardia arvensis	field madder	•
Salicaceae - Willow Family		
Salix lasiolepis	arroyo willow	
Saxifragaceae - Saxifrage		
Lithophragma affine	San Francisco woodland-star	
Scrophulariaceae - Figwort		
Castilleja affinis ssp. *affinis*	Wight's Indian Paint-brush	
Castilleja exserta	purple owl's-clover	
Castilleja wightii	Wight' Indian paintbrush	
Collinsia multicolor	San Francisco collinsia	2
Mimulus aurantiacus	sticky monkeyflower	
Pedicularis densiflora	Indian warrior	
Scrophularia californica	California figwort	
Veronica peregrina ssp. *xalapensis*	purslane speedwell	
Solanaceae - Nightshade		
Solanum umbelliferum	blue-witch nightshade	
Thymelaeaceae - Mezereum		
Dirca occidentalis	western leatherwood	2
Urticaceae - Nettle Family		
Hesperocnide tenella	western nettle	
Valerianaceae - Valerian		
Plectritis ciliosa	plectritis	
MONOCOTYLEDONES - MONOCOTS		
Cyperaceae - Sedge Family		
Carex densa	dense sedge	
Carex gracilior	slender sedge	
Carex tumulicola	foothill sedge	

Footnotes:

1 = federal or State listed Species 2 = other special-status species 3 = CALEPPC Listed Invasive Species

* = Species not indigenous to CA ** = Native Species not indigenous to site AG = agricultural species HORT = horticultural species

Preliminary Inventory Of Vascular Plants Occurring At The Beeson Property

10/4/2007

Sorted by CLASS, Family

Scientific Name	Common Name		Note
Cyperus eragrostis	umbrella sedge		
Schoenoplectus californicus	California bulrush		
Scirpus microcarpus	small-fruited bulrush		
Iridaceae - Iris Family			
Crocosmia x crocosmiiflora	montbretia	•	
Iris douglasiana	Douglas iris		
Sisyrinchium bellum	blue-eyed grass		
Juncaceae - Rush Family			
Juncus effusus var. *pacificus*	Pacific bog rush		
Juncus patens	spreading rush		
Juncus phaeocephalus	brown-headed rush		
Luzula comosa	Pacific wood rush		
Liliaceae - Lily Family			
Agave americana	century plant	•	
Allium peninsulare var. *franciscanum*	Franciscan onion		2
Calochortus albus	fairy lantern		
Chlorogalum pomeridianum var. *pomeridianum*	wavyleaf soap plant		
Dichelostemma capitatum ssp. *capitatum*	blue dicks		
Disporum hookeri	Hooker's fairy bells		
Fritillaria affinis var. *affinis*	checker lily		
Smilacina racemosa	false Solomon's seal		
Smilacina stellata	false Solomon's seal		
Trillium chloropetalum	giant trillium		
Triteleia laxa	Ithuriel's spear		
Zigadenus fremontii	Fremont's deathcamas		
Orchidaceae - Orchid Family			
Corallorhiza striata	striped coralroot		
Epipactis helleborine	broadleaf helleborine		

Footnotes:

1 = federal or State listed Species 2 = other special-status species 3 = CALEPPC Listed Invasive Species

* = Species not indigenous to CA ** = Native Species not indigenous to site AG = agricultural species HORT = horticultural species

Preliminary Inventory Of Vascular Plants Occurring At The Beeson Property

10/4/2007

Sorted by CLASS, Family

Scientific Name	Common Name		Note
Poaceae - Grass Family			
Aira caryophyllea	silver European hairgrass	•	
Avena fatua	wild oats	•	
Brachypodium distachyon	purple false-brome	•	
Briza maxima	big quaking grass	•	
Briza minor	little quaking grass	•	
Bromus carinatus	California brome		
Bromus hordeaceus	soft chess	•	
Bromus madritensis ssp. *rubens*	red brome	•	
Cortaderia selloana	pampas grass	•	
Cynosurus echinatus	hedgehog dogtail		
Dactylis glomerata	orchardgrass	•	
Danthonia californica	California oatgrass		
Deschampsia cespitosa ssp. *holciformis*	coastal tufted hairgrass		
Elymus californicus	California bottle-brush grass		2
Elymus glaucus ssp. *glaucus*	blue wildrye		
Festuca californica	California fescue		
Gastridium ventricosum	nit grass	•	
Melica californica	California melic		
Melica imperfecta	Coast Range melic		
Melica torreyana	Torrey melic		
Nassella lepida	foothill needlegrass		
Polypogon monspeliensis	annual rabbitsfoot grass	•	
Vulpia bromoides	six-weeks fescue	•	
Vulpia myuros	rattail fescue	•	

Footnotes:

1 = federal or State listed Species 2 = other special-status species 3 = CALEPPC Listed Invasive Species

* = Species not indigenous to CA ** = Native Species not indigenous to site AG = agricultural species HORT = horticultural species

APPENDIX D

CALIFORNIA NATIVE PLANT FIELD SURVEY FORMS

California Native Species Survey Form

Mail to:
Natural Diversity Data Base
California Department of Fish and Game
1416 Ninth Street, 12th Floor
Sacramento, California 95814

For office use only

Source Code_____ Quad Code _____

Elm Code_____ Occ # _____

Copy to _____ Map Index # _____

Date of field work *March, May, July, 2007*
mo day year

Scientific Name: *Allium peninsulare var. franciscanum*
Common Name: Franciscan onion

Species Found? *Yes*

Total # of Individuals 2,373 Subsequent visit? yes
Is this an existing NDDB occurrence? unknown
Yes, Occ. #
Collection? If yes: _____ _____
number *Museum/Herbarium*

Reporter: Heath Bartosh & Mike Wood

Wood Biological Consulting
Address: 65 Alta Hill Way
Walnut Creek, CA 94595
Phone: (925) 899-1282

Plant Information
Phenology: 20% vegetative 80% flowering %fruiting

Animal Information
Age Structure: _____ _____ _____
adults # juveniles # unknown ___

___ ___ ___ ___ ___ ___ ___
nesting breeding foraging wintering roosting burrow site other

Location **(Please also attach or draw map on back.)**
60-Acre property on east side of Crystal Springs Rd. and San Mateo Creek
County: San Mateo Landowner/Mgr: Private
Quad Name: San Mateo Lat/Long: 37.538225 N / -122.348537 W

T _____ R _____ _____ 1/4 of _____ 1/4 Sec _____ T_____ R _____ _____ 1/4 of _____ 1/4 Sec _____

Habitat Description (Plant communities, dominants, associates, substrate/soils, aspects/slope**)**

Coast live oak woodland, northern coastal scrub, rocky soils. Soils are mapped as Fagan loam, 15 to 50 percent slopes. West to southwest-facing slopes. Elevations range from 100-500 feet.

other rare spp.? *Collinsia multicolor, Eriophyllum latilobum, Dirca occidentalis, Malacothamnus arcuatus*

Site Information Overall site quality: Good
Current/surrounding land use: Suburban residential and undeveloped canyon slopes on private property

Visible disturbances, possible threats: a few single-family residences are proposed for these canyon slopes.

Comments:

See Map Attached

Determination: **(Check one or more, fill in the blanks)**
X Keyed in a site reference: Jepson, Thomas and Munz
___ **Compared with specimen housed at:** _____
___ **Compared with photo/drawing in:** _____
___ **By another person (name):** _____
___ **Other:**

Photographs: (Check one or more) Slide Print

	Slide	Print
Plant/animal	___	___
Habitat	___	___
Diagnostic Feature	___	___

May we obtain duplicates at our expense? __yes __no

FG/NHD/1747 Revised 12/95

California Native Species Survey Form

Mail to:
Natural Diversity Data Base
California Department of Fish and Game
1416 Ninth Street, 12th Floor
Sacramento, California 95814

Date of field work *March, May, July, 2007*
mo day year

For office use only

Source Code_____ Quad Code _____

Elm Code_____ Occ # _____

Copy to _____ Map Index # _____

Scientific Name: Collinsia multicolor
Common Name: San Francisco collinsia

Species Found? *Yes*

Total # of Individuals 6,666 Subsequent visit? yes
Is this an existing NDDB occurrence? unknown

Collection? If yes: _____ _____
number *Museum/Herbarium*

Reporter: Heath Bartosh & Mike Wood

Wood Biological Consulting
Address: 65 Alta Hill Way
Walnut Creek, CA 94595
Phone: (925) 899-1282

Plant Information
Phenology: % vegetative +/- 100% flowering in late March
% fruiting

Animal Information
Age Structure: _____ _____ _____
adults # juveniles # unknown ___

___ ___ ___ ___ ___ ___ ___
nesting breeding foraging wintering roosting burrow site other

Location **(Please also attach or draw map on back.)**
60-Acre property on east side of Crystal Springs Rd. and San Mateo Creek
County: San Mateo Landowner/Mgr: Private
Quad Name: San Mateo Lat/Long: 37.538225 N / -122.348537 W

T _____ R _____ _____ 1/4 of _____ 1/4 Sec _____ T_____ R _____ _____ 1/4 of _____ 1/4 Sec _____

Habitat Description (Plant communities, dominants, associates, substrate/soils, aspects/slope**)**

Coast live oak woodland. Soils are mapped as Fagan loam, 15 to 50 percent slopes. West to southwest-facing slopes. Elevations range from 100-500 feet.

other rare spp.? *Allium peninsulare* v.*franciscanum, Eriophyllum latilobum, Dirca occidentalis, Malacothamnus arcuatus*

Site Information Overall site quality: Good
Current/surrounding land use: Suburban residential and undeveloped canyon slopes on private property

Visible disturbances, possible threats: a few single-family residences are proposed for these canyon slopes.

Comments:

See Map Attached

Determination: **(Check one or more, fill in the blanks)**
X Keyed in a site reference: Jepson, Thomas and Munz
___ **Compared with specimen housed at:** _____
___ **Compared with photo/drawing in:** _____
___ **By another person (name):** _____
___ **Other:**

Photographs: (Check one or more) Slide Print

	Slide	Print
Plant/animal	___	___
Habitat	___	___
Diagnostic Feature	___	___

May we obtain duplicates at our expense? __yes __no

FG/NHD/1747 Revised 12/95

California Native Species Survey Form

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Natural Diversity Data Base
California Department of Fish and Game
1416 Ninth Street, 12th Floor
Sacramento, California 95814

Date of field work *March, May, July, 2007*
mo day year

For office use only

Source Code_____ Quad Code _____

Elm Code_____ Occ # _____

Copy to _____ Map Index # _____

Scientific Name: Dirca occidentalis
Common Name: **western leatherwood**

Species Found? *Yes*

Total # of Individuals _660_Subsequent visit? yes
Is this an existing NDDB occurrence? unknown
Yes, Occ. #
Collection? If yes: _____ _____
number *Museum/Herbarium*

Reporter: Heath Bartosh & Mike Wood

Wood Biological Consulting
Address: 65 Alta Hill Way
Walnut Creek, CA 94595
Phone: (925) 899-1282

Plant Information

Phenology:
100% vegetative 10% flowering 10% %fruiting

Animal Information

Age Structure: _____ _____ _____
adults # juveniles # unknown ___

___ ___ ___ ___ ___ ___ ___
nesting breeding foraging wintering roosting burrow site other

Location **(Please also attach or draw map on back.)**
60-Acre property on east side of Crystal Springs Rd. and San Mateo Creek
County: San Mateo Landowner/Mgr: Private
Quad Name: San Mateo Lat/Long: 37.538225 N / -122.348537 W

T _____ R _____ _____ 1/4 of _____ 1/4 Sec _____ T_____ R _____ _____ 1/4 of _____ 1/4 Sec _____

Habitat Description (Plant communities, dominants, associates, substrate/soils, aspects/slope**)**

Coast live oak woodland, northern coastal scrub, rocky soils. Soils are mapped as Fagan loam, 15 to 50 percent slopes. West to southwest-facing slopes. Elevations range from 100-500 feet.

other rare spp.? *Allium peninsulare var. franciscanum, Collinsia multicolor, Eriophyllum latilobum, Malacothamnus arcuatus*

Site Information Overall site quality: Good
Current/surrounding land use: Suburban residential and undeveloped canyon slopes on private property

Visible disturbances, possible threats: a few single-family residences are proposed for these canyon slopes.

Comments:

See Map Attached

Determination: **(Check one or more, fill in the blanks)**
X Keyed in a site reference: Jepson, Thomas and Munz
___ Compared with specimen housed at: _____
___ Compared with photo/drawing in: _____
___ By another person (name): _____
___ Other:

Photographs: (Check one or more) Slide Print

	Slide	Print
Plant/animal	___	___
Habitat	___	___
Diagnostic Feature	___	___

May we obtain duplicates at our expense? __yes __no

California Native Species Survey Form

Mail to:
Natural Diversity Data Base
California Department of Fish and Game
1416 Ninth Street, 12th Floor
Sacramento, California 95814

Date of field work *March, May, July, 2007*
mo day year

For office use only

Source Code_____ Quad Code _____

Elm Code_____ Occ # _____

Copy to _____ Map Index # _____

Scientific Name: Eriophyllum latilobum
Common Name: **San Mateo wooly sunflower**

Species Found? *Yes*

Total # of Individuals 56 Subsequent visit? yes
Is this an existing NDDB occurrence? unknown
Yes, Occ. #
Collection? If yes: _____ _____
number *Museum/Herbarium*

Reporter: Heath Bartosh & Mike Wood

Wood Biological Consulting
Address: 65 Alta Hill Way
Walnut Creek, CA 94595
Phone: (925) 899-1282

Plant Information

Phenology:
%vegetative 100% flowering %fruiting

Animal Information

Age Structure: _____ _____ _____
adults # juveniles # unknown ___

___ ___ ___ ___ ___ ___ ___
nesting breeding foraging wintering roosting burrow site other

Location **(Please also attach or draw map on back.)**
60-Acre property on east side of Crystal Springs Rd. and San Mateo Creek
County: San Mateo Landowner/Mgr: Private
Quad Name: San Mateo Lat/Long: 37.538225 N / -122.348537 W

T _____ R _____ _____ 1/4 of _____ 1/4 Sec _____ T_____ R _____ _____ 1/4 of _____ 1/4 Sec _____

Habitat Description (Plant communities, dominants, associates, substrate/soils, aspects/slope**)**

Coast live oak woodland, northern coastal scrub, rocky soils, on road cut along Crystal Springs Road. Soils are mapped as Fagan loam, 15 to 50 percent slopes. West to southwest-facing slopes. Elevations range from 100-500 feet

Other rare spp.? *Allium peninsulare var. franciscanum, Collinsia multicolor, Dirca occidentalis*

Site Information Overall site quality: Good
Current/surrounding land use: Suburban residential and undeveloped canyon slopes on private property

Visible disturbances, possible threats: a few single-family residences are proposed for these canyon slopes.

Comments

See Map Attached

Determination: **(Check one or more, fill in the blanks)**
X Keyed in a site reference: Jepson, Thomas and Munz
___ **Compared with specimen housed at:** _____
___ **Compared with photo/drawing in:** _____
___ **By another person (name):** _____
___ **Other**

Photographs: (Check one or more) Slide Print

	Slide	Print
Plant/animal	___	___
Habitat	___	___
Diagnostic Feature	___	___

May we obtain duplicates at our expense? __yes __no

California Native Species Survey Form

Mail to:
Natural Diversity Data Base
California Department of Fish and Game
1416 Ninth Street, 12th Floor
Sacramento, California 95814

For office use only

Source Code_____ Quad Code _____

Elm Code_____ Occ # _____

Copy to _____ Map Index # _____

Date of field work *March, May, July, 2007*
mo day year

Scientific Name: *Malacothamnus arcuatus*
Common Name: arcuate bush mallow

Species Found? *Yes*

Total # of Individuals 3 Subsequent visit? yes
Is this an existing NDDB occurrence? unknown

Collection? If yes: _____ _____
number *Museum/Herbarium*

Reporter: Heath Bartosh & Mike Wood

Wood Biological Consulting
Address: 65 Alta Hill Way
Walnut Creek, CA 94595
Phone: (925) 899-1282

Plant Information

Phenology: % vegetative +/- 100% flowering % fruiting

Animal Information

Age Structure: _____ _____ _____
adults # juveniles # unknown ___

___ ___ ___ ___ ___ ___ ___
nesting breeding foraging wintering roosting burrow site other

Location **(Please also attach or draw map on back.)**
60-Acre property on east side of Crystal Springs Rd. and San Mateo Creek
County: San Mateo Landowner/Mgr: Private
Quad Name: San Mateo Lat/Long: 37.538225 N / -122.348537 W

T _____ R _____ _____ 1/4 of _____ 1/4 Sec _____ T_____ R _____ _____ 1/4 of _____ 1/4 Sec _____

Habitat Description (Plant communities, dominants, associates, substrate/soils, aspects/slope**)**

Chamise chaparral. Soils are mapped as Fagan loam, 15 to 50 percent slopes. West to southwest-facing slopes. Elevations range from 100-500 feet.

other rare spp.? *Allium peninsulare* v.*franciscanum, Eriophyllum latilobum, Dirca occidentalis, Collinsia multicolor*

Site Information Overall site quality: Good
Current/surrounding land use: Suburban residential and undeveloped canyon slopes on private property

Visible disturbances, possible threats: a few single-family residences are proposed for these canyon slopes.

Comments:

See Map Attached

Determination: **(Check one or more, fill in the blanks)**
X Keyed in a site reference: Jepson, Thomas and Munz
___ **Compared with specimen housed at:** _____
___ **Compared with photo/drawing in:** _____
___ **By another person (name):** _____
___ **Other:**

Photographs: (Check one or more) Slide Print

	Slide	Print
Plant/animal	___	___
Habitat	___	___
Diagnostic Feature	___	___

May we obtain duplicates at our expense? __yes __no

FG/NHD/1747 Revised 12/95

County of San Mateo - Planning and Building Department

ATTACHMENT B

COAST RIDGE ECOLOGY LLC

BIOLOGICAL SURVEYS • MONITORING • PERMITTING • RESEARCH

July 22, 2016

Michael Wood
Wood Biological Consulting, Inc.
65 Alta Hill Way
Walnut Creek, CA 94595

Subject: *Letter Report for Mission Blue Butterfly Habitat Survey at Lands of Zmay Property, Hillsborough, California.*

Dear Mr. Wood:

On July 20, 2016, I conducted a survey for habitat of the federally endangered mission blue butterfly (*Icaricia icarioides missionensis*) at parcel 1 and parcel 2 of the Lands of Zmay, along Parrot Road in Hillsborough, California. I am familiar with the host plants of the mission blue butterfly, having conducted surveys for the species for over 20 years, including 13 years of managing and monitoring a population of the species on San Bruno Mountain.

The mission blue butterfly is a member of the gossamer-winged butterfly family (Lycaenidae), and is a federally listed endangered animal. The mission blue butterfly is restricted to grasslands within the coastal fogbelt of San Mateo County, San Francisco County and Marin County. The subspecies is a small butterfly with wingspan approximately 1 inch across. It is a non-migratory butterfly whose lifecycle is closely tied to its larval host plants which consist of three perennial lupines; summer lupine (*Lupinus formosus*), silver lupine (*Lupinus albifrons*), and varied-color lupine (*Lupinus variicolor*). Mission blue adult females lay eggs on the lupines in the spring, and after 4-10 days the caterpillars hatch and begin feeding on the lupine leaves. The caterpillars go into an extended dormancy (diapause) through late summer, fall and winter, and commence feeding again in the early spring of the following year. Once the caterpillars reach the fifth and final instar, they pupate for approximately three weeks and then emerge as adults. The adult phase of mission blue butterflies lasts for approximately 6-10 days (Arnold 1983).

Mission blue habitat consists of open grasslands with host plants and a variety of herbaceous and shrubby nectar plants. Habitats where mission blues are found include native and non-native grasslands, rocky outcrops and disturbed road cuts. Lupines are early successional species that add soil nitrogen through nitrogen fixation, and often colonize disturbed eroded areas that have poor soil conditions (i.e. barren rocky areas, landslides, and manmade disturbed areas).

For mission blues to be present at a site, at least one of the three larval host plant lupine species needs to be present, along with suitable nectar sources. A sizeable patch of lupines with at least 100 plants is typically necessary to support a mission blue colony (San Mateo County 2008). Mission blues typically do not fly more than ¼ mile between habitat areas (San Mateo County 1982). Mission blues use a variety of nectar plants in any given area. Favored nectar plants include coastal buckwheat (*Eriogonum latifolium*), hairy false goldenaster (*Heterotheca sessiliflora ssp. bolanderi*), bluedicks (*Dichelostemma capitatum*), Ithuriel's spear (*Triteleia laxa*), California phacelia (*Phacelia californica*), California horkelia (*Horkelia californica*), and a variety of native and non-native thistles.

1410 31ST AVENUE – SAN FRANCISCO CA 94122 – PH: 415-404-6757 – CELL: 650-269-3894
EMAIL: CRECOLOGY@GMAIL.COM – WWW.CRECOLOGY.COM

METHODS

The daytime survey of the project site consisted of conducting an evaluation for mission blue habitat. Surveys were conducted by walking all grassland areas on site for approximately 1 hour on July 20, 2016. Weather was warm and clear, and all grassland patches on site were walked and searched for mission blue butterfly host plant presence.

RESULTS

One individual silver lupine (*Lupinus albifrons var. albifrons*) plant was observed on site. No other lupines were observed. The predominant vegetation on site is coastal scrub vegetation, a large infestation of jubata grass (*Cortaderia jubata*), and some smaller, isolated patches of grassland. Previous comprehensive floristic surveys conducted by Wood Biological, LLC did not detect any other host plants for the species on site.

CONCLUSIONS

Surveys for mission blue butterfly were conducted at an appropriate time to detect mission blue butterfly host plants, and only one individual lupine plant was observed. This one plant would not be enough to support a colony of mission blue butterflies on the site, as the butterfly requires a sizeable patch of lupines with approximately 100 host plants to support a mission blue colony (San Mateo County 2008). Furthermore, I have not observed a mission blue butterfly using *Lupinus albifrons var. albifrons*. In all areas where I have detected and monitored the species using *Lupinus albifrons*, where present, the mission blues have been associated with *Lupinus albifrons var. collinus*. Based on these results, I do not believe any further surveys are warranted. The site does not have suitable habitat to support the mission blue butterfly, and I do not believe the species is present on site.

If you have any questions, please don't hesitate to contact me.

Sincerely,

Patrick Kobernus
Senior Biologist
CRE, LLC

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County of San Mateo - Planning and Building Department

ATTACHMENT C

WETLAND DELINEATION AND PRELIMINARY JURISDICTIONAL DETERMINATION FOR THE BEESON PROPERTY, SAN MATEO COUNTY, CALIFORNIA

June 18, 2007

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SUMMARY

This report presents the results of a formal delineation of waters of the U.S./waters of the State, including wetlands, potentially falling under federal and/or State jurisdiction at the Beeson property, located in unincorporated San Mateo County. The study area covers approximately 60 acres situated on the east side of Crystal Springs Road, just across from the intersection with Polhemus Road, and west of Parrott Drive. The subject property is situated on mostly steep terrain with west to southwest-facing slopes.

The study area is situated adjacent to San Mateo Creek. Plant communities occurring within the study site include coast live oak woodland, chamise chaparral, northern coastal scrub, and northern coyote brush scrub. Other plant associations present on site are Central Coast riparian scrub, northern coastal scrub, and non-native grassland.

Soils over a majority of the study area are mapped as Los Gatos Loam, 30 to 75 percent slopes, with an area of Fagan loam, 15 to 50 percent slopes.

The study area is situated in the upper reaches of San Mateo Creek, a perennial "blue-line" stream course. The principal hydrologic features within the study area include surface tributaries to San Mateo Creek and seeps and springs.

Based on this survey, the project site supports a total 0.21 acre (9,160 sq. ft.) of wetland habitat and 0.40 acre (4,624 lin. ft.; 8,336 sq. ft.) of unvegetated "waters" potentially falling under federal and State jurisdiction. In addition, the study area supports 0.21 acre (9,164 sq. ft. of isolated wetland habitat expected to fall under State jurisdiction only.

These conclusions must be regarded as preliminary and must be confirmed in consultation with each agency before performing any work that would impact aquatic habitats on site. A copy of this wetland delineation should be submitted to the USACE for verification and for a jurisdictional determination. Impacts to any of these habitats should be presumed to be regulated under federal or State law, and permits are required before initiating any work that would affect them.

1.0 INTRODUCTION

This report presents the results of a formal delineation of waters of the U.S./waters of the State, including wetlands, potentially falling under State or federal jurisdiction at the Beeson Property, a 60-acre site located in unincorporated San Mateo County. The study area is situated on the east side Crystal Springs Road, just across from the intersection with Polhemus Road (figures 1 and 2).

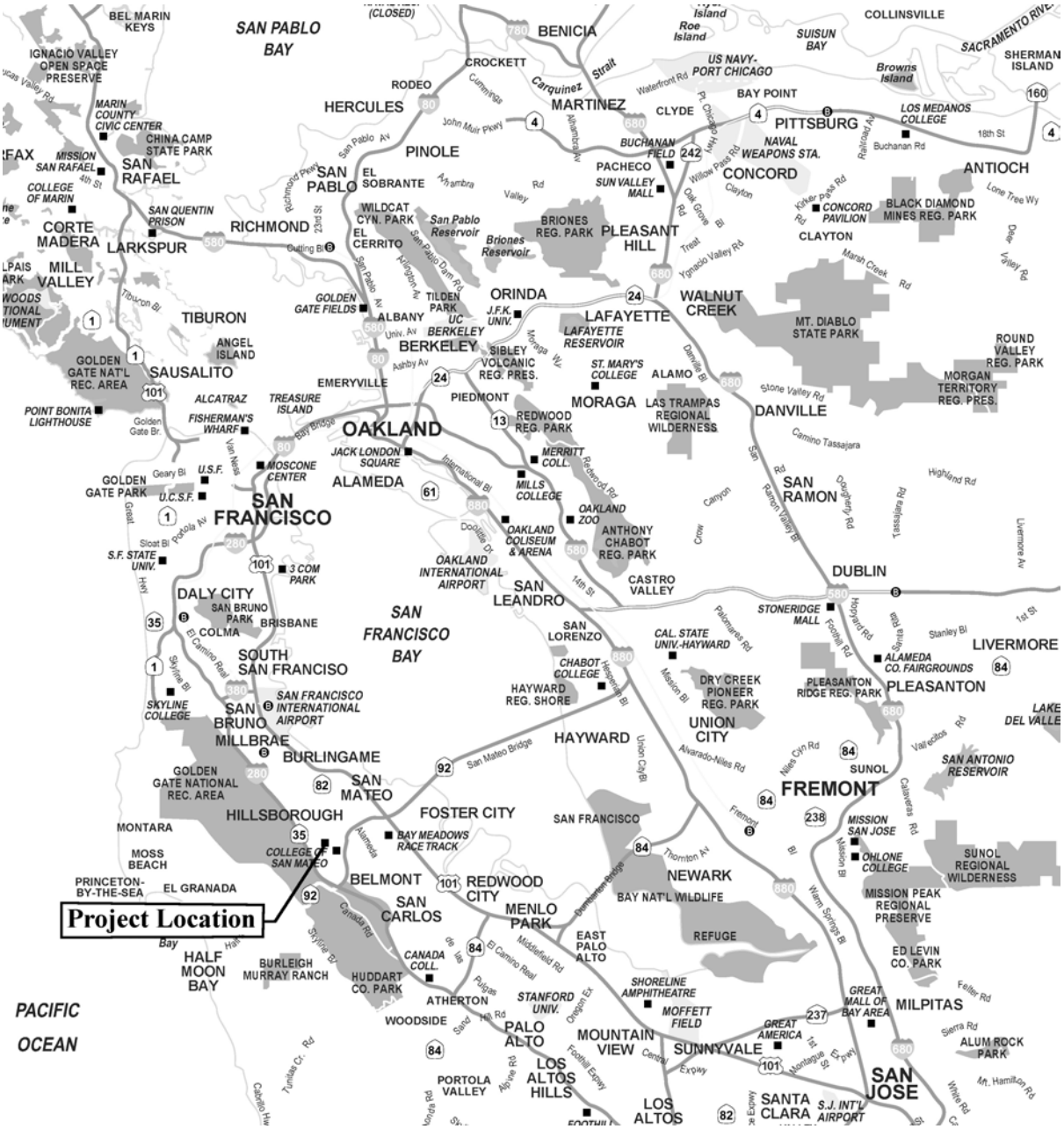
2.0 METHODS AND LIMITATIONS

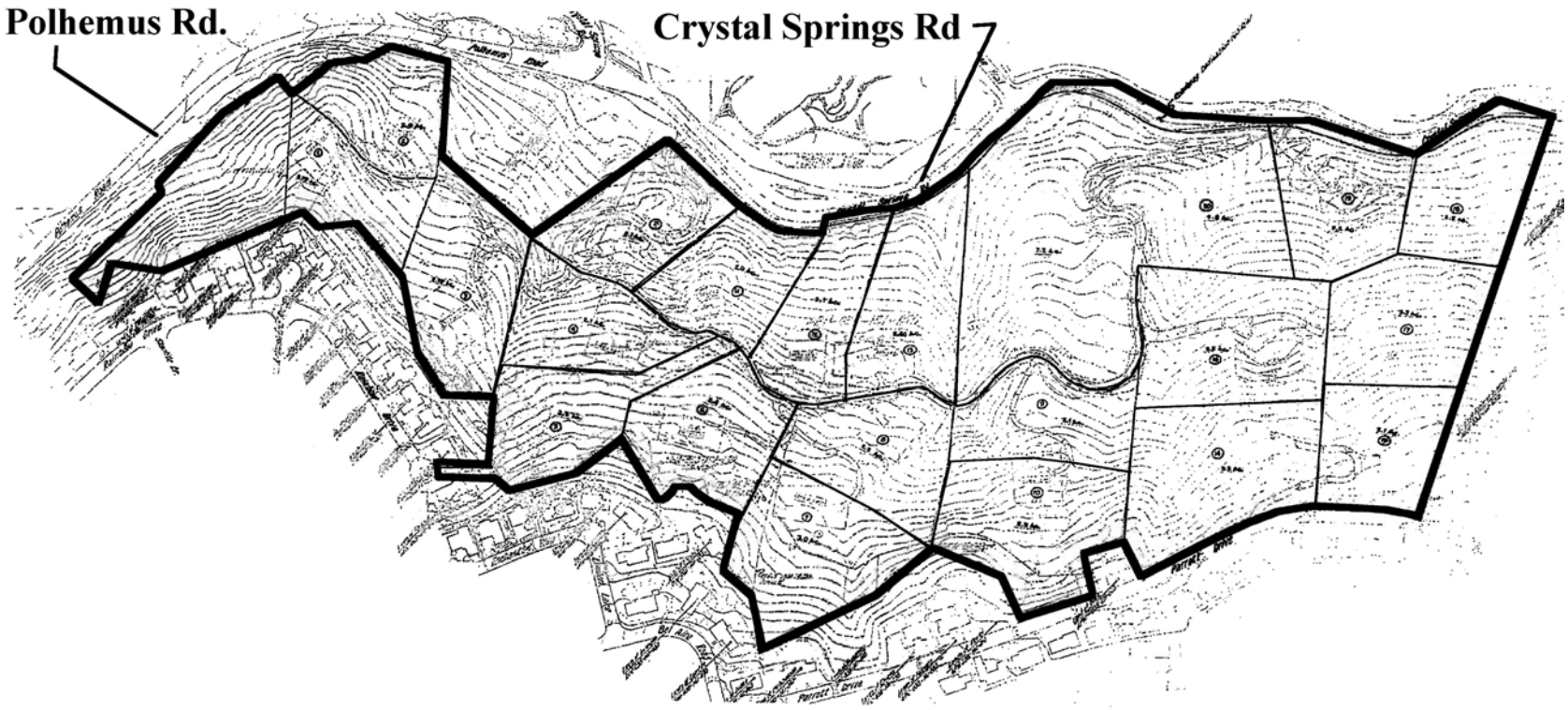
A formal wetland delineation and preliminary jurisdictional determination of the study area was conducted by biologists Michael Wood and Heath Bartosh on March 5, 2007, in accordance with the procedures outlined in the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2006a). The limits of the ordinary high water mark (OHWM) conformed with procedures outlined in USACE (2006b). The project boundaries are exhibited in figures 2, 3 and 5.

A preliminary determination of jurisdiction was based on the presence of aquatic habitats or landscape features such as "waters of the United States", wetlands meeting the federal three-parameter definition, "waters of the State", and other wetland or riparian habitats. Federally jurisdictional non-tidal waters of the U.S. must connect ultimately to a "navigable waters" and must include a clear, natural line impressed on the bank, shelving, changes in the character of the soil, scouring of terrestrial vegetation, or the presence of litter and debris (USACE 2006b). Federally jurisdictional wetlands include aquatic habitats that are dominated by wetland indicator plant species, exhibit indicators of hydric soils, and show evidence of wetland hydrology. Waters of the State include waters of the U.S. but also include surface tributaries and isolated wetlands not connected to navigable waters. In many cases, wetlands or riparian habitats dominated by wetland indicator species but lacking field indicators of hydric soils or hydrophytic vegetation also fall under State jurisdiction.

The extent of potential wetlands, riparian habitats, and waters of the U.S./waters of the State were mapped in the field using a Trimbal GeoXT Geographic Positioning System in March 2007 Projection, NAD 1983 State Plane Zone CA Zone III (Figure 5, map pocket). Data on vegetation, soils and hydrology in potential wetlands were collected at seven sample points within the study area (Appendix A). Wetland or riparian habitats not meeting the federal three-parameter definition of wetlands but potentially falling under State jurisdiction were also mapped.

Nomenclature used in this report conforms to Hickman (1993) for plants. Plant community names conform to Holland (1986), Sawyer and Keeler-Wolf (1995) and/or the California Department of Fish and Game (CDFG 2003); wetland community names conforming to Cowardin, *et al.* (1979) are also given. The wetland indicator status of plant species conforms to Reed (1988). Wetland data forms were compiled using CalBiota, Version 2.1.


Project Location
SAN PABLO BAY
SAN FRANCISCO BAY
PACIFIC OCEAN
BEL MARIN KEYS
IGNACIO VALLEY OPEN SPACE PRESERVE
MARIN COUNTY CIVIC CENTER
CHINA CAMP STATE PARK
SAN RAFAEL
CORTE MADERA
LARKSPUR
MILL VALLEY
TIBURON
ANGEL ISLAND
SAUSALITO
GOLDEN GATE NAT'L REC. AREA
POINT BONITA LIGHTHOUSE
ALCATRAZ
FISHERMAN'S WHARF
TREASURE ISLAND
EMERYVILLE
OAKLAND
ALAMEDA
SAN FRANCISCO
GOLDEN GATE PARK
DALY CITY
COLMA
BRISBANE
SOUTH SAN FRANCISCO
SAN BRUNO
MILLBRAE
BURLINGAME
SAN MATEO
HILLSBOROUGH
BELMONT
SAN CARLOS
REDWOOD CITY
MENLO PARK
PALO ALTO
MOUNTAIN VIEW
SUNNYVALE
SAN JOSE
SANTA CLARA
MILPITAS
FREMONT
NEWARK
UNION CITY
HAYWARD
SAN LEANDRO
ALAMEDA
BERKELEY
EMERYVILLE
PIEDMONT
ORINDA
LAFAYETTE
WALNUT CREEK
CONCORD
PITTSBURG
ANTIOCH
MARTINEZ
BENICIA
RICHMOND
SAN PABLO
EL CERRITO
HERCULES
PINOLE
RODEO
CROCKETT
PLEASANT HILL
DANVILLE
SAN RAMON
DUBLIN
LIVERMORE
PLEASANTON
SUNOL
MORAGA
COLLINSVILLE
SHERMAN ISLAND
BAY POINT
CLYDE
CLAYTON
MT. DIABLO STATE PARK
BLACK DIAMOND MINES REG. PARK
ROUND VALLEY REG. PARK
MORGAN TERRITORY REG. PRES.
LAKE DEL VALLE
SAN ANTONIO RESERVOIR
SUNOL REGIONAL WILDERNESS
MISSION PEAK REGIONAL PRESERVE
ED LEVIN CO. PARK
ALUM ROCK PARK
HALF MOON BAY
MOSS BEACH
MONTARA
PRINCETON-BY-THE-SEA
EL GRANADA
FOSTER CITY
SAN FRANCISCO INTERNATIONAL AIRPORT
OAKLAND INTERNATIONAL AIRPORT
OAKLAND COLISEUM & ARENA
OAKLAND ZOO
ANTHONY CHABOT REG. PARK
CASTRO VALLEY
HAYWARD REG. SHORE
DRY CREEK PIONEER REG. PARK
PLEASANTON RIDGE REG. PARK
ALAMEDA CO. FAIRGROUNDS
STONERIDGE MALL
CAL. STATE UNIV.-HAYWARD
CHABOT COLLEGE
SAN LORENZO
BAY NAT'L WILDLIFE REFUGE
SHORELINE AMPHITHEATRE
MOFFETT FIELD
GREAT AMERICA
GREAT MALL OF BAY AREA
MISSION SAN JOSE
OHLONE COLLEGE
SAN FRANCISCO
BAY MEADOWS RACE TRACK
COLLEGE OF SAN MATEO
CANADA COLL.
HUDDART CO. PARK
ATHERTON
WOODSIDE
STANFORD UNIV.
PORTOLA VALLEY
LOS ALTOS HILLS
LOS ALTOS
S.J. INT'L AIRPORT
BURLEIGH MURRAY RANCH
SKYLINE COLLEGE
3 COM PARK
MOSCONE CENTER
JACK LONDON SQUARE
MERRITT COLL.
MILLS COLLEGE
SIBLEY VOLCANIC REG. PRES.
ST. MARY'S COLLEGE
LAS TRAMPAS REGIONAL WILDERNESS
REDWOOD REG. PARK
BRIONES REG. PARK
WILDCAT CYN. PARK
TILDEN PARK
UC BERKELEY
J.F.K. UNIV.
LAFAYETTE RESERVOIR
GOLDEN GATE FIELDS
SAN QUENTIN PRISON
MISSION SAN RAFAEL
COLLEGE OF MARIN
CONCORD PAVILION
LOS MEDANOS COLLEGE
NAVAL WEAPONS STA.
US NAVY-PORT CHICAGO
BUCHANAN FIELD
PACHECO
SUN VALLEY MALL
Carquinez Strait
SUISUN BAY
SACRAMENTO RIVER
Roe Island
Browns Island
Bay Bridge
San Mateo Bridge
Dumbarton Bridge
Richmond Pkwy
San Pablo Av
Cutting Bl
Ashby Av
Univ. Av
Tiburon Bl
Golden Gate Br.
Van Ness
Geary Bl
Great Hwy
Sloat Bl
Potrero Av
Skyline Bl
El Camino Real
Alameda
Canada Rd
Middlefield Rd
Foothill Expwy
Central Expwy
Alvarado-Niles Rd
Niles Cyn Rd
Fremont Bl
Mission Bl
Warm Springs Bl
Calaveras Rd
Vallecitos Rd
Stanley Bl
Foothill Rd
Hopyard Rd
Santa Rita
Dougherty Rd
Tassajara Rd
Livermore Av
Highland Rd
Camino Tassajara
Stone Valley Rd
Danville Bl
Ygnacio Valley Rd
Treat
Oak Grove Rd
Clayton
Marsh Creek Rd
Lone Tree Wy
Deer Valley Rd
Buchanan Rd
Railroad Av
18th St
Waterfront Rd
Willow Pass Rd
Kirker Pass Rd
Alhambra Av
John Muir Pkwy
Cummings
Pt. Chicago Hwy
Mt. Hamilton Rd
Sierra Rd
Felter Rd
Montague St
Ortega Rd
Sand Hill Rd
Pulgas
Oregon Ex
Tunitas Cr. Rd
Cabrillo Hw
Alpine Rd
Stevens Cr. Rd
Water Rd
Lucas Valley Rd
Sloat Bl
Stanford Rd
Ocean Av
Geneva Av
Bayshore Bl
Junipero Serra Bl
Hillsborough Bl
Crystal Springs Rd
Cañada Rd
Alameda de las Pulgas
Skyline Bl
Bay Meadows Dr
Ralston Av
Hillsdale Bl
Delaware St
Ridge Rd
Alameda de las Pulgas
Sand Hill Rd
Page Mill Rd
Arastradero Rd
Foothill Expwy
Stevens Creek Blvd
Lawrence Expwy
Kifer Rd
Lafayette St
Montague Expwy
Trimble Rd
Zanker Rd
Mabury Rd
Berryessa Rd
Capitol Expwy
Tuolumne St
Alum Rock Av
Jackson St
Monterey Hwy
Bernal Rd
Santa Teresa Blvd
Almaden Expwy
Blossom Hill Rd
Camden Av
Curtner Av
Branham Ln
Hellyer Av
Coyote Hwy
Cottle Rd
Monterey Rd
Tennant Av
Dunne Av
Burnett Av
Foothill Expwy
Tilton Av
Sycamore Av
Ridgemont Dr
Ridgeway Dr
Ridge Rd
Cypress Av
Cypress Pt
Cypress Av
Ridgeway Dr
Ridge Rd
Ridgemont Dr
Tilton Av
Sycamore Av



Source: Earth Metrics

WOOD BIOLOGICAL CONSULTING

Figure 2. Project Vicinity

NORTH

Scale: 1” = 400’

3.0 SETTING

The study site covers approximately 60 acres situated on the east side of Crystal Springs Road and west of Parrott Drive, in unincorporated San Mateo County. The subject property is situated on mostly steep terrain with west to southwest-facing slopes. Elevations range from 112-512 feet above mean sea level (msl). Five ephemeral stream channels cross the property, draining the slopes to San Mateo Creek, which does not intersect with the property. A suburban residential neighborhood borders the site to the east and southeast. Similar undeveloped canyon slopes are present on the opposite side of Crystal Springs Road with suburban residential neighborhoods beyond to the west. An aerial view of the study area is provided in Figure 3.

3.1 Characterization of the Vegetation

Within the study area, the predominant vegetation associations are coast live oak woodland, chamise chaparral, northern coastal scrub, northern coyote brush scrub. Other plant associations present on site are Central Coast riparian scrub, northern coastal scrub, and non-native grassland. Each of these plant communities is described, below.

Coast Live Oak Woodland

Coast live oak woodland is typically found on north-facing slopes and shaded ravines in the southern and inland portions of the state and on more exposed, mesic sites in the north. This community is dominated by coast live oak (*Quercus agrifolia*), which frequently occurs in pure, dense stands with a closed canopy. Coast live oak woodland is restricted primarily to the coast side of the state and is distributed from Sonoma County to Baja California. It occurs throughout the outer South Coast ranges and coastal slopes of the Transverse and Peninsular ranges, usually below 4,000 feet in elevation.

Within the study area, coast live oak woodland covers approximately one-quarter of the site, occurring on the lower slopes and extending upslope along the drainages. This habitat is dominated by coast live oak (*Quercus agrifolia*). Other trees commonly found on site include California bay (*Umbellularia californica*), California buckeye (*Aesculus californica*), with scattered individuals of big-leaf maple (*Acer macrophyllum*), and madrone (*Arbutus menziesii*). Native shrub and vine species commonly encountered include toyon (*Heteromeles arbutifolia*), Mexican elderberry (*Sambucus mexicana*), hillside gooseberry (*Ribes californicum*), poison oak (*Toxicodendron diversilobum*), common snowberry (*Symphoricarpos albus* var. *laeviagtus*), creeping snowberry (*Symphoricarpos mollis*), California blackberry (*Rubus ursinus*), California honeysuckle (*Lonicera hispidula* var. *vacillans*), and wood rose (*Rosa gymnocarpa*), among others. Native herbaceous species present include hound's tongue (*Cynoglossum grande*), Indian warrior (*Pedicularis densiflora*), wood fern (*Dryopteris arguta*), California polypody (*Polypodium californicum*), goldback fern (*Pentagramma triangularis*), California fescue (*Festuca californica*), giant wildrye (*Leymus condensatus*), blue wildrye (*Elymus glaucus*), osmorhiza (*Osmorhiza chilensis*), yerba buena (*Satureja douglasii*), coyote mint (*Monardella villosa*), bedstraw (*Galium aparine*), woodland strawberry

WOOD BIOLOGICAL CONSULTING

Figure 3. Aerial View of Study Area
(February 27, 2004)

NORTH

Scale: 1" = ca 600'

(*Fragaria vesca*), California bedstraw (*Galium californicum* ssp. *californicum*), and Pacific sanicle (*Sanicula crassicaulis*), among many others.

On site, this vegetation type conforms to the Coast Live Oak series as described by Sawyer and Keeler-Wolf (1995) and would be considered as an upland as classified in Cowardin, *et al.* (1979).

Chamise Chaparral

Chamise chaparral is typically a dense shrub community overwhelmingly dominated by a single species (*Adenostoma fasciculatum*), with shrubs reaching up to ten feet high. Other species typically contribute little to canopy cover, and in very dense stands, herbaceous understory species may be completely lacking. Chamise chaparral occurs throughout California, but it is most abundant in the southern part of the state. It occupies very dry, shallow soils of steep, usually south-facing slopes, and is subject to a regime of periodic fire.

Within the study area, chamise chaparral occurs in patches on spur ridges extending to the upper portions of the west-facing slopes. At the down-slope edge, chamise chaparral intergrades with coast live oak woodland. The shrub canopy is dominated by chamise, with scattered individuals of coyote brush (*Baccharis pilularis*), blue blossom (*Ceanothus thyrsiflorus*), sticky monkeyflower (*Mimulus aurantiacus*), California sagebrush (*Artemisia californica*), hollyleaf cherry (*Prunus ilicifolia*), poison oak, hillside gooseberry, and California broom (*Lotus scoparius*), among others. Herbaceous species present include yerba santa (*Eriodictyon californicum*), coffee fern (*Pellaea andromedifolia*), and foothill needlegrass (*Nassella lepida*), among others.

Within the study area, this plant community corresponds to the Chamise Chaparral series as described in Sawyer and Keeler-Wolf (1995) and is an upland following Cowardin, *et al.* (1979).

Northern (Franciscan) Coastal Scrub

Northern coastal scrub consists of a dense cover of low shrubs up to six feet high with a well-developed herbaceous or low woody understory. It is frequently interspersed with coastal terrace prairie grassland. Northern coastal scrub is most extensive on windy, exposed sites with shallow, rocky soils. This vegetation community is distributed in a discontinuous strip from southern Oregon to Point Sur, Monterey County within the immediate coastal zone and at elevations up to 1,500 feet (Holland 1986; Holland and Keil 1990).

Within the study area, northern coastal scrub is restricted to relatively small patches in openings in and at the edges of the coast live oak woodland canopy and intergrading with stands of northern coastal scrub and northern coyote brush scrub. The dominant characteristic plant species are California sagebrush and sticky monkeyflower. Other common constituents include bee plant (*Scrophularia californica*), goldback fern, toyon,

poison oak, sticky cinquefoil (*Potentilla glandulosa*), yerba buena, and pitcher sage (*Lepechinia calycina*), among others.

Within the study area, northern coastal scrub most closely corresponds to the California Sagebrush series as described by Sawyer and Keeler-Wolf (1995) and would be classified as an upland following Cowardin, *et al.* (1979).

Northern Coyote Brush Scrub

Northern coyote brush scrub is generally considered a sub-type of various coastal and inland scrub habitats. In general, coyote brush can form dense stands following disturbance of somewhat mesic sites on heavy soils. This scrub community consists of shrubs to eight feet tall with a well-developed herbaceous or low woody understory. Vegetative cover is mostly dense with scattered grassy openings. An increase in soil depth and moisture availability seems to favor dominance by coyote brush. This vegetation community is found in patches on coastal bluffs, slopes, and terraces within the fog incursion zone from southern Oregon to the Central Coast and South Coast of California. Northern coyote brush scrub frequently intergrades with such plant assemblages as northern (Franciscan) coastal scrub, coast live oak woodland, coastal terrace prairie, perennial needlegrass grasslands, non-native annual grasslands, cismontane woodland, and coniferous forests near the coast, and can even occur in openings in chaparral.

Several extensive stands of northern coyote brush scrub are present within the study area, occurring on the upper slopes, especially where surface moisture is present or on sites that have been disturbed by land slippage or historic site clearing. On site, northern coyote brush scrub intergrades with northern coastal scrub and coast live oak woodland. The vegetation is dense and tall (to 8 feet) and mostly impenetrable. Stands are located on sites that appear to have been subjected to historic surface disturbances, possibly the result of slope failures or historic grading. this plant community is also dominated by poison oak. Other plant species commonly encountered include soap plant (*Chloragalum pomeridianum*), Italian thistle (*Carduus pycnocephalus*), poison hemlock (*Conium maculatum*), ripgut brome, soft chess, bull thistle, Durango root (*Datisca glomerata*), Mediteranean barley (*Hordeum marinum* ssp. *gussoneanum*), and pampas grass (*Cortaderia selloana*).

On site, Northern Coyote Brush Scrub conforms to the coyote brush series as described in Sawyer and Keeler-Wolf (1995) and would be classified as an upland following Cowardin, *et al.* (1979).

Central Coast Riparian Scrub

Central Coast riparian scrub typically consists of scrubby streamside, open to impenetrable thickets composed of any of several species of willows. This plant community occurs close to river channels and near the coast on fine-grained sand and gravel bars with a high water table. It is distributed along and at the mouths of most perennial and many intermittent streams of the South Coast Ranges, from the Bay Area to near Point Conception (Holland 1986). Central Coast riparian scrub is generally regarded as early seral, meaning that it

typically precedes the development of other riparian woodland or forest communities in the absence of severe flooding. However, outside of riparian situations, that is, near groundwater seeps on slopes, willow-dominated scrub represents a relatively stable plant community and is not considered seral.

Within the study area, Central Coast riparian scrub exists in several isolated stands on the steep upper slopes at the tops of draws and where ground water reaches the surface. Characteristic native species occurring on site include arroyo willow (*Salix lasiolepis*), California blackberry (*Rubus ursinus*), coyote brush, small-fruited bulrush (*Scirpus microcarpus*), spreading rush (*Juncus patens*), Pacific rush (*Juncus effusus*), and brown-headed rush (*Juncus phaeocephalus*), among others. Non-native species present include Himalayan blackberry (*Rubus discolor*), pampas grass, evergreen thornless blackberry (*Rubus ulmifolius* var. *inermis*) and poison oak, among others.

On site, Central Coast riparian scrub conforms to the arroyo willow series as described in Sawyer and Keeler-Wolf (1995) and palustrine shrub-scrub wetland following Cowardin, *et al.* (1979).

Non-native Annual Grassland

Non-native annual grassland is generally found in open areas in valleys and foothills throughout coastal and interior California (Holland 1986). It typically occurs on soils consisting of fine-textured loams or clays that are somewhat poorly drained. This vegetation type is dominated by non-native annual grasses and weedy annual and perennial forbs, primarily of Mediterranean origin, that have replaced native perennial grasslands, scrub and woodland as a result of human disturbance. Scattered native wildflowers and grasses, representing remnants of the original vegetation may also be common.

Within the study area, patches of non-native annual grassland are present at the upper reaches of slopes where brush has been cleared for fire control or slope repair. Non-native annual grassland intergrades with northern coyote brush scrub and coast live oak woodland.

Characteristic non-native annual grasses commonly found on site include wild oats, soft chess, ripgut brome grasses, wild barley (*Hordeum* spp.), big quaking grass (*Briza maxima*), Italian ryegrass (*Lolium multiflorum*), and rattail fescue (*Vulpia myuros*), among others. Common non-native forbs include yellow star thistle (*Centaurea solstitialis*), bristly ox-tongue (*Picris echioides*), and long-beaked storksbill (*Erodium botrys*), among others. Native species detected include hayfield tarweed (*Hemizonia congesta* ssp. *luzulifolia*), foothill needlegrass, soap plant, tall willowherb (*Epilobium brachycarpum*), and California brome (*Bromus carinatus*), among others.

Non-native annual grassland conforms to the California Annual Grassland series as described in Sawyer and Keeler-Wolf (1995), and would be classified as an upland, following Cowardin, *et al.* (1979).

Seep

A single small seep dominated by herbaceous marsh species is present on site, located on an exposed slope immediately below a stand pampas grass and in line with a seep that supports a stand of Central Coast riparian scrub further upslope. The seep is dominated by such wetland species as brown-headed rush, spreading rush, spreading rush, and dense sedge (*Carex densa*). This isolated seep was soggy at the surface during multiple visits.

3.2 Characterization of the Soils

Soils over a majority of the study area belong to the Los Gatos series, with a small portion of the site at its northern end consisting of Fagan series. Descriptions of these soil types are presented below.

Los Gatos

The Los Gatos series consists of moderately deep, well-drained soils on uplands. These soils formed in material weathered from hard, fractured sandstone. Slopes ranges from 30 to 75 percent.. Soils of the Los Gatos series are fine-loamy, mixed, mesic Typic Argixerolls (USDA 1991).

The specific map unit occurring on site is Los Gatos loam, 30 to 75 percent slopes. The native vegetation is mainly oaks, California laurel, brush, annual grasses and forbs. Elevations range from 200 to 400 feet. The average annual precipitation is 25 to 35 inches, the average annual air temperature is 54 to 56°F, and the average frost-free period is 275 to 330 days. Typically, the surface layer is dark grayish brown and light yellowish brown loam about 22 inches thick. Included in this unit are small areas of Fagan, Maymen, and Obispo soils, Rock outcrop and Urban land. Permeability is moderately slow. The available water capacity is low or moderate. Effective rooting depth is 20 to 40 inches. Runoff is rapid or very rapid, and the hazard of water erosion is high or very high. This map unit is not considered hydric (USDA 2004).

Within the study area, virtually the entire slope is mapped as Los Gatos loam, with the exception of the northern most portion of the site, which is mapped as Fagan loam.

Fagan

The Fagan series consists of deep, well-drained soils on uplands. These soils formed in material weathered dominantly from soft sandstone and shale. Slopes range from 15 to 50 percent. Soils of the Fagan series are fine, montmorillonitic, thermic Typic Argixerolls (USDA 1991).

The specific map unit occurring on site is Fagan loam, 15 to 50 percent slopes (USDA 1991). Elevations range from 200 to 2,000 feet. The average annual precipitation is 25 to 35 inches, the average annual air temperature is 56 to 58°F, and the average frost-free period is 275 to 330 days. Typically, the surface layer is brown loam over grayish brown clay loam

about 19 inches thick. Included in this unit are small areas of soils that are similar to the Fagan soil but are less than 40 inches deep to bedrock, have slopes less than 15 percent, or have a lighter colored surface layer. Permeability is slow in the Fagan soil. The available water capacity is moderate or high. Effective rooting depth is 40 to 60 inches. Runoff is rapid or very rapid, and the hazard of water erosion is high or very high. The soil is susceptible to slippage when it is wet, especially in steeper areas. Also included are small areas of Obispo and Maymen soils and Rock outcrop. Fagan soils are not considered hydric (USDA 2004).

Within the study area, Fagan soils are occur at the northern end of the site, extending from Crystal Springs Road to the top of the slope.

3.3 Characterization of the Hydrology

The study area is situated on moderately steep to steep west-facing slopes on the east side of San Mateo Creek. The property boundaries do not overlap with San Mateo Creek, a perennial "blue-line" stream, which runs parallel to the long axis of the property. A total of six incised channels cross the property. Four of these empty directly into San Mateo Creek via buried pipes beneath Crystal Springs Road; these are presumed to be intermittent. The remaining two channels originate and terminate on site with no direct connection to San Mateo Creek, emptying onto the roadside of Crystal Springs Road; these are presumed to be ephemeral (see Figure 5). Although none of the channels on site is mapped as a "blue-line" stream as seen on the 1998 USGS topographic map, three are shown as "blue-line" channels on the 1915 USGS topographic map (Figure 4).

Because the ridgetop above the site has been highly altered as a result of residential development, the natural overland flows have been greatly altered. Increased impervious paving, contributions to ground water from landscaping irrigation, and possible leaky pipes and sewer lines have likely increased surface and subsurface flows over the slopes on site from its natural condition. This is apparent by evidence of surface ground movement, the presence of surface water and soggy ground, and shifts in vegetation patterns.

The intermittent channels cross steep slopes and show evidence of a pattern of repeating blockage from minor slope failures in some locations. Hydrology is affected by direct precipitation, sheet flow, and ground water seepage. Some surface flows in the tributaries originates upslope (*i.e.*, off site) from road runoff. Other than very small pools and riffles within the very steep live channels of the tributaries themselves, there is no evidence of any significant ponding on site.

On the slopes, outside of the intermittent channels, hydrology consists ground water seepage. As stated above, some of the ground water might be natural, although it is likely to be contributed to by irrigation water and leaky pipes. A 8-inch PVC sewer line, connecting four or five homes at the top of the slope to a sewer main broke in the last year as a result of land movement (San Mateo County worker, pers. comm., to M. Wood, 3/5/07). The broken sewer line has since been repaired.

3.4 Wetlands and Other Waters of the U.S.

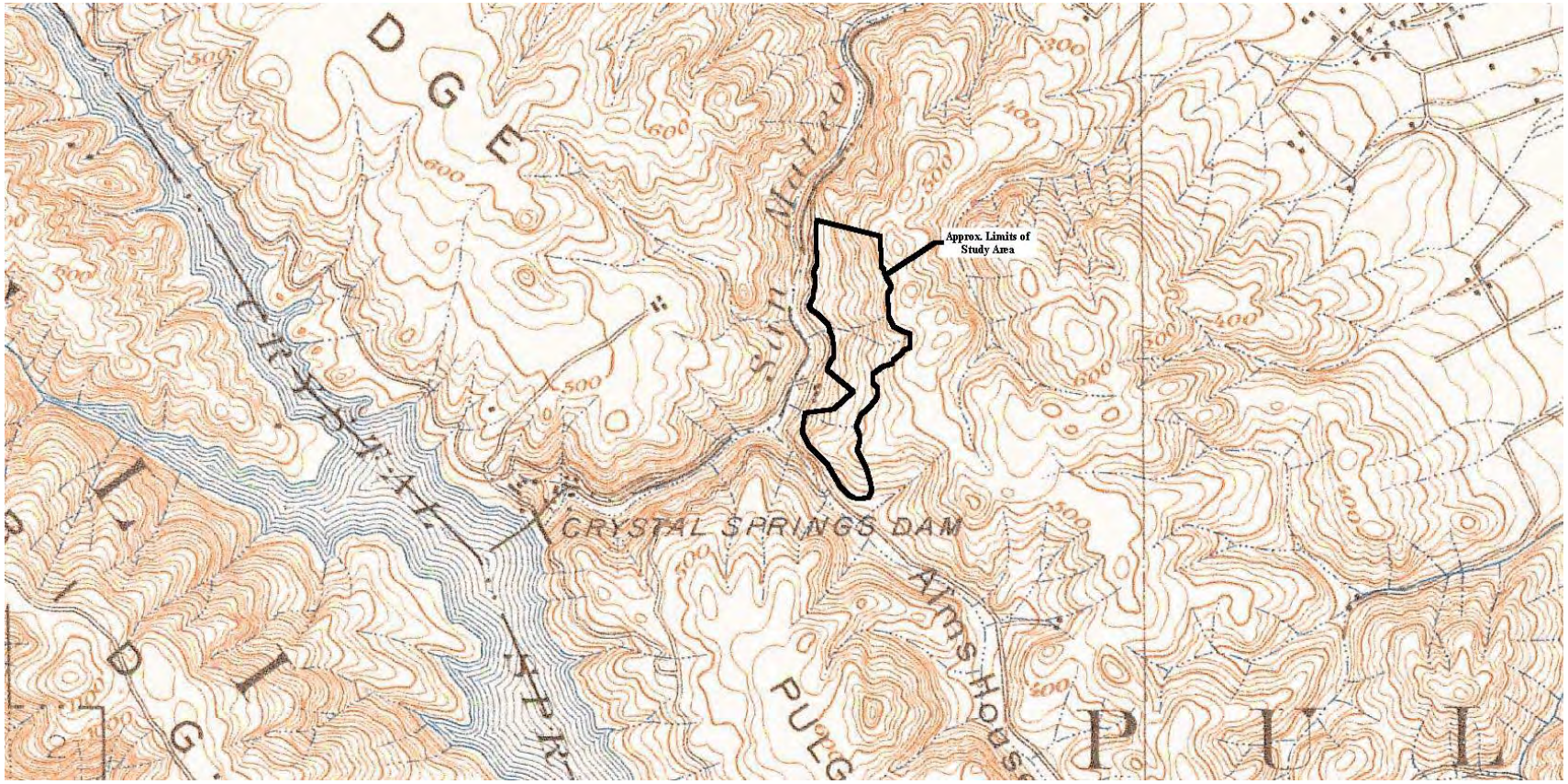
There are seven categories of Waters of the United States [1]. These include:

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
(2) All interstate waters including interstate wetlands;
(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
   a) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
   b) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
   c) Which are used or could be used for industrial purposes by industries in interstate commerce;
4) All impoundments of waters otherwise defined as waters of the United States under the definition;
5) Tributaries of waters identified in paragraphs (1) through (4) of this section;
6) The territorial seas; and
7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6) of this section. Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act (other than cooling ponds[2], which also meet the criteria of this definition) are not waters of the United States

In the absence of adjacent wetlands, the extent of USACE jurisdiction over non-tidal waters is defined by the ordinary high water mark (OHWM). The OHWM is the line on the shores established by the fluctuations of water and indicated by physical characteristics such as[3]:

- a clear natural line impressed on the bank;
- shelving;
- changes in the character of the soil;
- destruction of terrestrial vegetation;
- the presence of litter and debris;
- or other appropriate means that consider the characteristics of the surrounding areas.

[1] 33 CFR 328.3(a); 40 CFR 230.3(s)
[2] as defined in 40 CFR 123.11(m)
[3] USACE 2006b



Source: USGS

WOOD BIOLOGICAL CONSULTING

Figure 4. Historic Topography
(ca 1915)

NORTH

Scale: 1”=2500’

Under the Porter-Cologne Act, waters of the State are broadly defined as “any surface water or groundwater, including saline waters, within the boundaries of the State[4]. This definition includes all wetlands, including isolated wetlands, and drainage features such as dry and ephemeral/seasonal stream beds and channels outside USACE jurisdiction.

Under the State Fish and Game Code[5], the definition of waters of the State emphasizes habitats associated with riparian zones bordering streams and lakes, and the extent of CDFG jurisdiction extends to drip line or edge of canopy. For unvegetated perennial, intermittent, or ephemeral surface waters, CDFG jurisdiction extends top of bank to top of bank.

Wetlands are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions"[6]. Indicators of all three wetlands parameters (hydric soils, hydrophytic vegetation, wetlands hydrology) must be present for a site to be classified as a wetland (Environmental Laboratory 1987, USACE 2006). These parameters are described in more detail below.

Hydrophytic Vegetation

Hydrophytic vegetation includes those plant species that possess physiological features or reproductive adaptations that allow them to persist in soils subject to prolonged inundation and anaerobic soil conditions. Plant species are classified by their probability of being associated with wetlands or uplands. Obligate (OBL) species almost always (>99% of the time) occur in wetlands. Facultative Wetland (FACW) species occur in wetlands 67-99% of the time. Facultative (FAC) species have an equal probability 33-66% to occur in wetlands. Facultative Upland (FACU) and Obligate Upland (UPL) species occur in wetlands 1-33% and <1% of the time, respectively. For a sample point to meet this criterion, more than 50 percent of the dominant plant species in each of the strata must be OBL, FACW, or FAC indicator species.

All plant species within the study area were identified and their wetland indicator status recorded. The wetland indicator status of each was obtained from the National List of Plant Species that Occur in Wetlands, Region 0, California (Reed 1988). Dominant plant species were determined using the "50/20 Rule". For plant communities that fail the dominance test, but indicators of hydric soils and wetland hydrology are both present, the prevalence index was used to determine dominance by wetland or upland indicator species. The wetland indicator status of commonly encountered plant species detected in or near wetlands on site, along with their wetland indicator status, are summarized in Table 1, below.

[4] Water Code Section 13050(e)
[5] §1600, *et seq.*
[6] §404 Clean Water Act

TABLE 1
WETLAND INDICATOR STATUS OF
COMMON PLANT SPECIES DETECTED WITHIN POTENTIAL WETLANDS

Scientific Name	Common Name	Indicator Status[b]
Baccharis pilularis	coyotebrush	none
Carex densa	dense sedge	OBL
Cortaderia selloana	pampas grass	none
Cyperus eragrostis	umbrella sedge	OBL
Eleocharis macrostachya	creeping spikerush	OBL
Juncus bufonius	toad rush	FACW+
Juncus effusus	common bog rush	OBL
Juncus phaeocephalus	brown-headed rush	FACW
Juncus patens	spreading rush	FAC
Picris echioides[a]	bristly ox-tongue	FAC*
Polypogon monspeliensis[a]	rabbitfoot grass	FACW+
Salix lasiolepis	arroyo willow	FACW
Scirpus microcarpus	small-fruited bulrush	OBL
Toxicodendron diversilobum	poison oak	none

[a]indicates non-native species [b]per Reed 1988

Hydric Soils

Hydric soils are those that have formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA 2006). The criteria for hydric soils include:

1. All Histels except for Folistels, and Histosols except for Folists, or
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   a. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
   b. are poorly drained or very poorly drained and have either:
      (1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
      (2) a water table at a depth of 0.5 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or

      (3) a water table at a depth of 1.0 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is less than 6.0 in/hr in any layer within a depth of 20 inches, or

3. Soils that are frequently ponded for long or very long duration during the growing season, or
4. Soils that are frequently flooded for long or very long duration during the growing season.

Hydric soil indicators are formed as a result of the accumulation or loss of iron, manganese, sulfur, or carbon compounds. Some characteristic field indicators of hydric soils include the presence of histic epipedon (*i.e.*, a thick organic layer at the surface), sulfidic odor, stratified layers of muck and mineral soils, muck, gleyed soils or soils with a low matrix chroma, redox depletions or concentrations, iron or manganese concretions, and soils listed as hydric by the USDA. Soils information for the project site was obtained from the *Soil Survey of San Mateo County, Eastern part, and San Francisco County* (USDA 1991). Classified hydric soils for San Mateo County are listed by the USDA (2004).

During the present survey, field indicators of hydric soils detected at sample points P 1-1, P 1-2, P 2-2, P 2-3, and P 3-1 included saturated soils within 12 inches of the surface, the presence of a depleted matrix (F3), sulfidic odor (A4), depleted matrix below dark surface (A11).

Wetland Hydrology

For the hydrology parameter to be met, a wetland site must be seasonally inundated or saturated to within 12 inches of the soil surface for at least 12.5 percent of the growing season; areas inundated or saturated to within 12 inches of the soil surface for 5-12.5 percent of the growing season might or might not meet the parameter.

Considering the steepness of the slopes on site and the lack of opportunity for ponding, the most obvious indicator of wetland hydrology, the presence of surface water is not expected. However, numerous seeps are present, most notably in the northeastern end of the study area. Whether cause by the truncation of natural ground water sources or attributable to street runoff, irrigation, or leaky water or sewer lines, the presence of ground water is evidenced by the presence of water-dependent (*i.e.*, hydrophytic) plant species and land movements. Furthermore, surveys of the site conducted during the dry season found saturated soils at or near the surface that are not the result of recent rainfall. The presence of saturated soils at these site indicates that they are likely to be inundated or saturated to within 12 inches of the soil surface for around 41 consecutive days during the growing season to meet the wetland hydrology criterion (0.125 x 330 frost free days [worst-case scenario]).

4.0 RESULTS

Based on this survey, the project site supports a 9,160 sq. ft. (0.21 acre) of wetland habitat potentially falling under federal and State jurisdiction. In addition, the study area includes six surface tributaries to San Mateo Creek, representing federally and State-jurisdictional waters of the U.S./waters of the State. A total of 8,336 sq. ft. (4,624 lin. ft.; 0.19 acre) of unvegetated "waters" are present on site. In addition, the project site supports a total of 9,164 sq. ft. (0.21 acre) of isolated wetland habitat that is presumed to fall under State jurisdiction only. A summary of potentially regulated habitats on site is presented in Table 2.

TABLE 2

SUMMARY OF JURISDICTIONAL HABITATS ON SITE

Habitat Type	**Federal and State Jurisdiction***		**State Jurisdiction****	
	lin. ft.	**sq. ft.**	**lin. ft.**	**sq. ft.**
Waters of the U.S./State	4,624	8,336	0	0
Central Coast riparian scrub	0	9,160	0	9,031
freshwater marsh (seep)	0	0	0	133
Total	4,624	17,496	0	9,164

* Regulated by the USACE, RWQCB and CDFG

** Regulated only by the RWQCB and/or CDFG (in addition to areas regulated by the USACE)

5.0 PERMITTING IMPLICATIONS

In general, waters of the U.S. including wetlands and waters of the State, including isolated wetlands and riparian habitats are considered sensitive biological resources and typically fall under the jurisdiction of several regulatory agencies. Impacts to these habitats may require federal, State, and/or local permits or agreements. The permits required vary depending upon the location of the project and the type and extent of impacts. However, prior to the issuance of any permit for actions that would result in impacts to wetlands, waters, or special-status species or communities, notification to each of the following agencies is appropriate:

- U.S. Army Corps of Engineers (USACE), San Francisco District
- Regional Water Quality Control Board (RWQCB), San Francisco District
- California Department of Fish and Game (CDFG), Central Coast Region (Region 3)

An overview of the jurisdiction, application requirements and required permits for each of the above-listed agencies is provided below.

U.S. Army Corps of Engineers

Section 404 of the Clean Water Act of 1972

Section 404 of the federal Clean Water Act (CWA) of 1972 regulates activities that result in the discharge of dredged or fill material into waters of the U.S., including wetlands. Section 10 of the Rivers and Harbors Act authorizes the USACE to regulate dredging, filling, and construction activities in navigable waters. The primary intent of the CWA is to authorize the United States Environmental Protection Agency (USEPA) to regulate water quality through the restriction of pollution discharges. The USACE has the principal authority to regulate discharges of dredged or fill material into waters of the U.S. However, the USEPA has oversight authority over the USACE and retains veto power over the USACE's decision to issue permits. Waters of the U.S. include:

- All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of tide;
- All interstate waters, including interstate wetlands;
- All other waters, such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce;
- Tributaries of the above;
- Territorial seas; and
- Wetlands adjacent to waters defined above.

Under Section 404 projects may be authorized under existing general permits (a nationwide permit) or may require an individual permit. A nationwide permit is a more streamlined

permit process than an individual permit, although supporting compliance efforts, such as for the federal Endangered Species Act, are identical regardless of permit type. If the USACE decides that the project is ineligible for a nationwide permit, then a Section 404 Individual Permit would be required. The requirements of some Section 404 Nationwide Permits allow for impacts to less than 0.5 acre of federally jurisdictional wetlands and/or 300 linear feet of surface tributaries. Projects that would exceed these thresholds typically must be processed under a Section 404 Individual Permit. As a part of the Section 404 Individual Permit process, an Alternatives Analysis[7] and National Environmental Policy Act (NEPA) review would also be required.

Regional Water Quality Control Board

Section 401 Certification

The RWQCB has authority over projects that could result in adverse effects on waters of the state and wetlands, including isolated wetlands not falling under USACE jurisdiction. The RWQCB typically requires mitigation for permanent effects on all wetlands or waters of the state, based on area as well as linear measurements. A condition of the nationwide permit or individual permit is compliance with Section 401 of the CWA. Pursuant to Section 401 of the CWA and USEPA Section 404(b)(1) Guidelines, an applicant for a federal permit to conduct any activity that may result in a discharge into navigable waters must provide a certification from the RWQCB that such discharge will comply with the state water quality standards[8]. The RWQCB's policy of no net loss of wetlands typically requires mitigation for all impacts on wetlands before it will issue a water quality certification or waiver.

Under the Porter-Cologne Water Quality Control Act[9], the RWQCB is authorized to regulate the discharge of waste that could affect the quality of the State's waters. "Waste" is broadly defined by the Porter-Cologne Act to include "sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation of whatever nature…."[10]. Concentrated silt or sediment associated with human habitation and harmful to the aquatic environment is "waste" under this section. In addition, the California Attorney General has interpreted this definition to include extraction of sand, gravel or other minerals from a streambed, because it may cause an increase in turbidity and silt in the waters of the stream downstream from the operations. Therefore, even if a project does not require a federal permit (*i.e.*, a Nationwide Permit for the USACE), it may require review and approval of the RWQCB.

When reviewing applications, the RWQCB focuses on ensuring that projects do not adversely affect the "beneficial uses" associated with waters of the state. Generally, the RWQCB defines beneficial uses to include all of the resources, services and qualities of aquatic ecosystems and underground aquifers that benefit the state of California. Numerous

[7] Clean Water Act Section 404(b)(1)
[8] 23 CCR 3830 *et seq.*
[9] Cal. Water Code §§13000-14920
[10] Cal. Water Code §13050

beneficial uses have been identified, including agricultural supply, wildlife habitat, recreation, groundwater recharge, and municipal and domestic water supply. In most cases, the RWQCB seeks to protect these beneficial uses by requiring the integration water quality control measures into projects that will result in discharge into waters of the state. For most construction projects, RWQCB requires the use of construction and post-construction best management practices (BMPs). In the case of constructing new impervious surfaces, incorporation of BMPs such as detention ponds, grassy swales, sand filters, modified roof drains, and other features, will speed project approval from RWQCB. Development setbacks from creek are also favored by RWQCB as they often lead to less creek-related impacts in the future. Proper integration of these and other features into project design will greatly decrease the necessary negotiation with RWQCB and speed the project approval process.

California Department of Fish and Game

Streambed Alteration – Section 1600 Series Permit

The CDFG administers Section 1600 *et seq.* of the California Fish and Game Code. These sections address any project that will "(1) divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake designated by the department [the CDFG] in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit, (2) use materials from the streambeds designated by the department, or (3) result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass in to any river, stream, or lake designated by the department"[11]. The extent of CDFG jurisdiction is usually bounded by the tops-of-bank or the outermost edges of adjacent riparian vegetation.

6.0 CONCLUSIONS

The study area supports four intermittent and two ephemeral surface tributaries that are presumed to fall under the jurisdiction of the USACE pursuant to §404 of the CWA, the CDFG pursuant to California Fish and Game Code §1600 *et seq.*, and the RWQCB pursuant to §401 of the CWA and the Porter-Cologne Act. In addition, isolated stands of willows and a single freshwater seep present on site are presumed to fall under State jurisdiction.

These conclusions must be regarded as preliminary and must be confirmed in consultation with each agency before performing any work that would impact aquatic habitats on site.

[11] §1601;www.dfg.ca.gov/1600/

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APPENDIX A

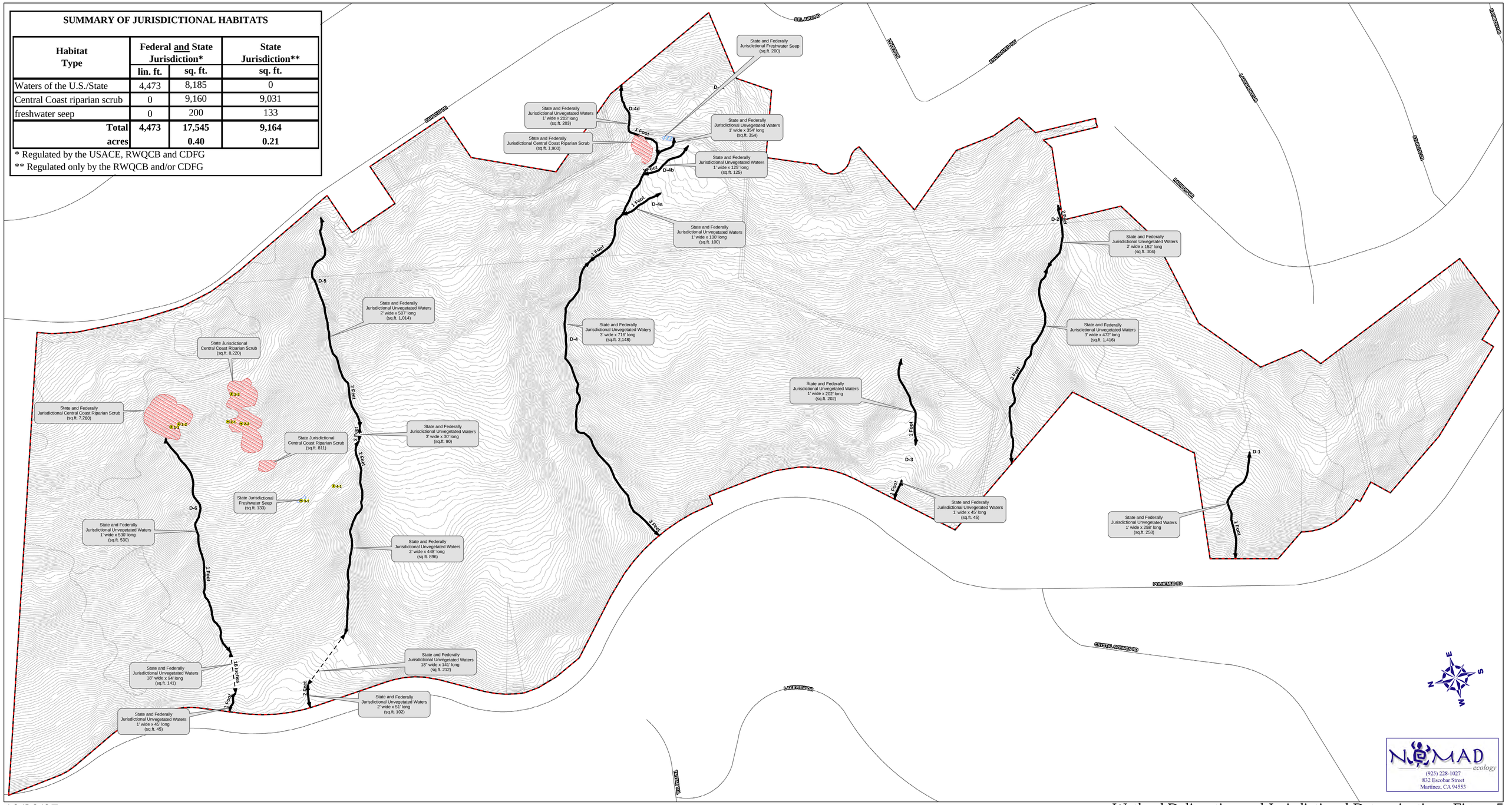
WETLAND DELINEATION FORMS

SUMMARY OF JURISDICTIONAL HABITATS

Habitat Type	Federal and State Jurisdiction*		State Jurisdiction**
	lin. ft.	sq. ft.	sq. ft.
Waters of the U.S./State	4,473	8,185	0
Central Coast riparian scrub	0	9,160	9,031
freshwater seep	0	200	133
Total	**4,473**	**17,545**	**9,164**
acres		**0.40**	**0.21**

* Regulated by the USACE, RWQCB and CDFG

** Regulated only by the RWQCB and/or CDFG



NOMAD ecology
(925) 228-1027
832 Escobar Street
Martinez, CA 94553

10/30/07

Wetland Delineation and Jurisdictional Determination - Figure 5

Beeson Property Boundary

Wetland Data Points

Wetland Data Points

Aquatic Resources

Freshwater Seep

Central Coast Riparian Scrub

Open Watercourse

Culverted Watercourse

1:1,200

0 50 100 200 Feet

Wetland Delineation Map of the Beeson Property

Aerial photography, topographic isolines and property boundary provided by BkF Engineering. Road data provided by ESRI. Aquatic features mapped with Trimble's GeoXT in March 2007 Projection: NAD 1983 State Plane Zone CA Zone III.

San Mateo County, California

County of San Mateo - Planning and Building Department

ATTACHMENT D

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March 11, 2015
Revised June 6, 2017

Mr. Nick Zmay
Z Enterprise LP
P.O. Box #409
San Carlos, CA 94070

RE: Revised Wetlands Evaluation, Zmay Property Subdivision, San Mateo County

Dear Mr. Zmay:

(Note: subsequent to the issuance of this memorandum, modifications to the grading plan were made to address comments by the County of San Mateo.[1] Figure 2, Attachment A illustrates the revised site plan and limits of grading.)

This memorandum presents an evaluation of the channels and wetland habitats present in the vicinity of the proposed four-lot residential subdivision on your property in unincorporated San Mateo County. This evaluation is based on a wetland delineation and jurisdictional determination prepared by me for the Zmay (formerly Beeson) property in 2007 (Wood Biological Consulting, 2007b). The purpose of this analysis is to review of the wetland delineation report. The objective of this effort is to determine whether or not on-the-ground conditions have changed substantially and if the conclusions contained in our previous report are still valid.

Because seven years have passed since the completion of that wetland survey, a re-evaluation of these resources is warranted to permit the County of San Mateo to conduct an adequate analysis of environmental effects pursuant to the California Environmental Quality Act (CEQA). This memo is intended to assistance the County in that regard.

[1] Meeting was held on July 12, 2016 at the office of Planning and Building Department; it was attended by Erica Adams and Camille Leung (San Mateo County), Nick Zmay (applicant), and Michael Wood (biological consultant for the applicant.)

The previous analysis addressed the entire 60-acre site. Since that time, the proposed project was reduced to include only four single-family residences on four subdivided lots in the northeastern corner of the property, downslope of Parrott Drive. A reduced study area, confined to only the proposed four-lot subdivision and covering a total of approximately eight acres (Lots 1-4), was analyzed in August 2014. The proposed four-lot subdivision has since been further reduced in size to cover a total of 2.93 acres. This reduced four-lot subdivision is the focus of this analysis. The remainder of the property, designated at Lot #5 and covering 57 acres, would be designated as open space protected by an open space easement; the proposed Lot #5 was not re-surveyed as part of this effort. The location of the proposed four residential lots is also shown in Figures 1 and 2 (Attachment A).

PROJECT BACKGROUND

In early 2007, S.W. Syme Properties, Inc. contracted with Wood Biological Consulting to prepare a biological constraints analysis (Wood Biological Consulting, 2007a) of the 60-acre Beeson property (Figures 1 and 2, Attachment A). At the time, the owners were contemplating a 20-lot subdivision and wished to understand how the site could be developed while avoiding or minimizing impacts on regulated biological resources.

One of the recommendations contained in that report was the preparation of a formal wetland delineation and its submittal to the U.S. Army Corps of Engineers (USACE) for verification. Based on that recommendation, a wetland delineation of the entire 60-acre property was performed by biologists Michael Wood and Heath Bartosh on March 5, 2007. The survey was performed in accordance with the procedures outlined by the USACE (2006 a, b). The results of that survey were presented in a separate technical report (Wood Biological Consulting, 2007b). The USACE conducted a field inspection of the subject property on September 26, 2007. Based on that inspection, minor revisions to the jurisdictional map were recommended. The revised map, as verified, is presented in Attachment B. A copy of the verification letter from the USACE[2] is provided in Attachment C.

The verified jurisdictional determination expired five years after the date of the USACE verification letter (i.e., on November 6, 2012). In order to permit the County of San Mateo to conduct an adequate analysis of environmental effects pursuant to the California Environmental Quality Act (CEQA), a re-evaluation of wetland features resources is warranted. This memo is intended to assistance the County in that regard.

Subsequent to the completion of the 2007 biological studies, the owners put forth a revised project consisting of a five-lot subdivision, with four lots, approximately two acres in size each, to accommodate four new single-family residences. The fifth lot, covering the reminder of the property, would be designated as open space protected by an open space easement. The location of the proposed four residential lots is shown in Figure 3 (Attachment A).

[2] USACE File Number 400705S

METHODS

A reconnaissance-level survey of eight acres comprising the proposed four residential lots was performed by Mr. Wood on June 26, 2014. The objective of this survey was to determine whether or not on-the-ground conditions had substantially changed since the performance of the 2007 survey. A formal wetland delineation survey was not repeated as part of this effort and is not considered necessary to enable an appropriate analysis of impacts. The remainder of the property, that which is to be designated as open space, was not surveyed.

During the site reconnaissance survey, a broad swath covering eight acres encompassing the proposed four new lots was traversed on foot. Areas mapped as supporting wetlands and stream channels in 2007 were revisited and the extent and dimensions were confirmed visually.

RESULTS

In 2007, the total area of aquatic features falling under both federal and State jurisdiction was 0.42 acre and included 4624 linear feet of stream channels. The property was found to support another 0.21 acre of non-wetland riparian habitat falling under State jurisdiction only.

During the 2014 reconnaissance survey of the reduced study area, it was found that site conditions had not changed notably since verified in 2007. Regulated aquatic features are present on lots 2, 3, and 4; no such features are present on Lot 1 (Figure 3, Attachment A).

CONCLUSIONS

A wetland delineation and preliminary jurisdictional determination was prepared and verified by the USACE in 2007. During the 2014 site reconnaissance, conditions in the reduced study area were not found to have appreciably changed since 2007; a re-delineation of wetlands or channels is not warranted.

The procedures followed during the performance of the 2007 delineation conformed to the guidelines (USACE, 2006) that were current at that time. Similarly, the wetland indicator status for plant species (Reed, 1988) was also current at that time. Subsequently, the "interim guidelines" for delineation were finalized (USACE, 2008) and a revision of the wetland indicator status plant list was also released (Lichvar, et al. 2014). Despite these changes in procedures, the extent of federally jurisdictional habitat within the reduced study area would not change.

No jurisdictional stream channels occur within the boundaries of the four proposed lots (Figure 3, Attachment A). However, canopies of Central Coast riparian scrub, a habitat type found to meet the federal definition of a wetland, overlaps the down-slope boundaries of Lots 2, 3, and 4. This habitat falls under both federal and state jurisdiction. However, the riparian

canopy is no less than 80 feet from the nearest building envelopes. Construction within these building envelopes would not impact riparian habitat.

The anticipated grading needed to repair the documented slide on Parcel 2 (see Figure 2, Attachment A) does not overlap with the mapped limits of the protected riparian scrub. To ensure that unauthorized impacts to riparian habitat does not occur during slide repair, the following measures shall be undertaken:

1. The contractor and the biologist shall meet in the field to identify the limits of riparian habitat.
2. The limits of riparian habitat shall be marked in the field with high visibility construction fencing, and it shall be designated as an environmentally sensitive area (ESA). No equipment shall be permitted to operate within the ESA without prior coordination with and inspection by the project biologist.

If, during the course of excavation, it becomes clear that excavation within the ESA is necessary to satisfy geotechnical concerns, the following measures shall be undertaken:

1. The contractor, geotechnical consultant and biologist shall meet in the field to discuss the likely extent to which excavation within the ESA is needed.
2. If excavation would extend within the canopy of the willows but would not require the removal of any willow trees, grading may be permissible. The pruning of willow branches is not prohibited and prior authorization by the regulatory agencies is not required.
3. However, if excavation would require the removal of willows, or may be reasonably expected to result in the demise of any willows, regulatory permits are required. At this point, work may not proceed until all appropriate permits have been issued by the USACE and Regional Water Quality Control Board (RWQCB) pursuant to the Clean Water Act[3], and by the California Department of Fish and Wildlife (CDFW)[4].
4. Regulatory permits may be expected to require mitigation for temporal or permanent impacts to riparian habitat. Mitigation may include *in situ* restoration by planting, and long-term monitoring for plant survival and habitat restoration. With the issuance of regulatory permits and the implementation of all permit conditions and mitigation measures, impacts to riparian habitat would be reduced to a less-than-significant level pursuant to the guidelines of the California.
5. Copies of all regulatory permits and proof of the successful implementation of all permit conditions and mitigation measures shall be provided to the Planning and Building Department.

[3] CWA sections 404 and 401, respectively

[4] Cal. Fish and Game Code Section 1600, *et seq*. "Lake and Streambed Alteration Program"

If you have any questions, don't hesitate to contact me.

Sincerely,

Michael Wood

Enclosures: Literature Cited
Attachment A – Project Figures and Maps
Attachment B – Verified Jurisdictional Map
Attachment C – USACE Verification Letter

LITERATURE CITED

Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2014. *The National Wetland Plant List*: *2014 Update of Wetland Ratings – Arid West.* Phytoneuron 2014-41: 1-42. Available online at http://rsgisias.crrel.usace.army.mil/NWPL/.

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United States Army Corps of Engineers (USACE). 2006b. *Distribution of Ordinary High Water Mark (OHWM) Indicators and their Reliability in Identifying the Limits of "Waters of the United States" in Arid Southwest Channels.* Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Technical Report TR-06-05. February. Available online at http://www.crrel.usace.army.mil/techpub/CRREL_Reports/reports/TR06-5.pdf.

United States Army Corps of Engineers (USACE). 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0); Final Report.* ERDC/EL TR-08-28. U.S. Army Engineer Research and Development Center, Vicksburg, MS. Available online at http://www.usace.army.mil/CECW/Documents/cecwo/reg/trel08-28.pdf.

Wood Biological Consulting (WBC). 2007a. *Biological Constraints Analysis for the Beeson Property, Town of Hillsborough, San Mateo County, California.* Unpublished technical report prepared for S.W. Syme Properties, Inc., San Mateo. January 15.

Wood Biological Consulting (WBC). 2007b. *Wetland Delineation and Preliminary Jurisdictional Determination for the Beeson Property, San Mateo County, California.* Unpublished technical report prepared for S.W. Syme Properties, Inc., San Mateo. June 18.

ATTACHMENT A

PROJECT MAPS AND FIGURES

NOTES:

1) ALL DISTANCES SHOWN ARE GRID DISTANCES. TO OBTAIN GROUND DISTANCES MULTIPLY BY 1.00007500.

2) AREAS WITH DENSE VEGETATION HAVE CONTOURS DEPICTED BY A DASHED LINETYPE AND THESE AREAS MAY NOT MEET NATIONAL MAP ACCURACY STANDARDS.

3) DATE OF AERIAL PHOTOGRAPHY WAS NOVEMBER 1, 2006, CONTOUR INTERVAL = 2 FEET.

4) SITE AREA IS 60.26 ACRES±.

BASIS OF BEARINGS:

THE BEARINGS SHOWN ON THIS MAP ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD 83) CCS83, EPOCH 2002.75, CALIFORNIA ZONE 3.

BENCHMARK:

SURVEY DISK ENCASED IN PVC PIPE WITH ACCESS COVER SET IN CONCRETE FLUSH WITH THE GROUND. LOCATED ON THE WEST SIDE OF SKYLINE BLVD, BETWEEN HIGHWAY 280 AND LOWER CRYSTAL SPRINGS RESERVOIR, ABOUT 284 FEET SOUTHEAST OF THE INTERSECTION OF GOLF COURSE DRIVE AND SKYLINE BLVD, 39.2 FEET NORTHWEST OF A 50-MILE PER HOUR SPEED LIMIT SIGN, 6.8 FEET NORTHEAST OF A 6 FOOT HIGH STRAND BARBED WIRE FENCE AND LEVEL WITH SKYLINE BLVD. THE DISK IS 0.2 FEET BELOW THE LID OF THE ACCESS COVER.

NGS PID = AB7675
ELEVATION = 634.4 FEET
DATUM: NAVD 88

OWNER AND SUBDIVIDER:

STEVE ZMAY AND NICK ZMAY
751 LAUREL STREET, # 409
SAN CARLOS, CA 94070
TEL: (650) 430-0075

CIVIL ENGINEER / LAND SURVEYOR:

DAN MacLEOD
MacLEOD & ASSOCIATES, INC.
965 CENTER STREET
SAN CARLOS, CA 94070
TEL: (650) 593-8580

ASSESSOR'S PARCEL NUMBER:

038-131-110

EXISTING AND PROPOSED ZONING:

RM

FLOOD ZONE:

ZONE X

UTILITIES:

WATER:	CAL WATER
SANITARY SEWER:	COUNTY OF SAN MATEO
GAS & ELECTRICAL:	PG & E
TELEPHONE:	AT&T COMMUNICATIONS
FIRE:	CAL FIRE

EASEMENTS

① 10' SANITARY SEWER EASEMENT
5626 O.R. 113
5626 O.R. 116

② 10' SANITARY SEWER EASEMENT
3958 O.R. 236

③ 15' STORM DRAIN EASEMENT
3293 O.R. 649

④ 15' PUBLIC UTILITY AND WATER LINE EASEMENT
2450 O.R. 48

REV.	DESCRIPTION	BY:	DATE:

LICENSED LAND SURVEYOR No. 5304 STATE OF CALIFORNIA

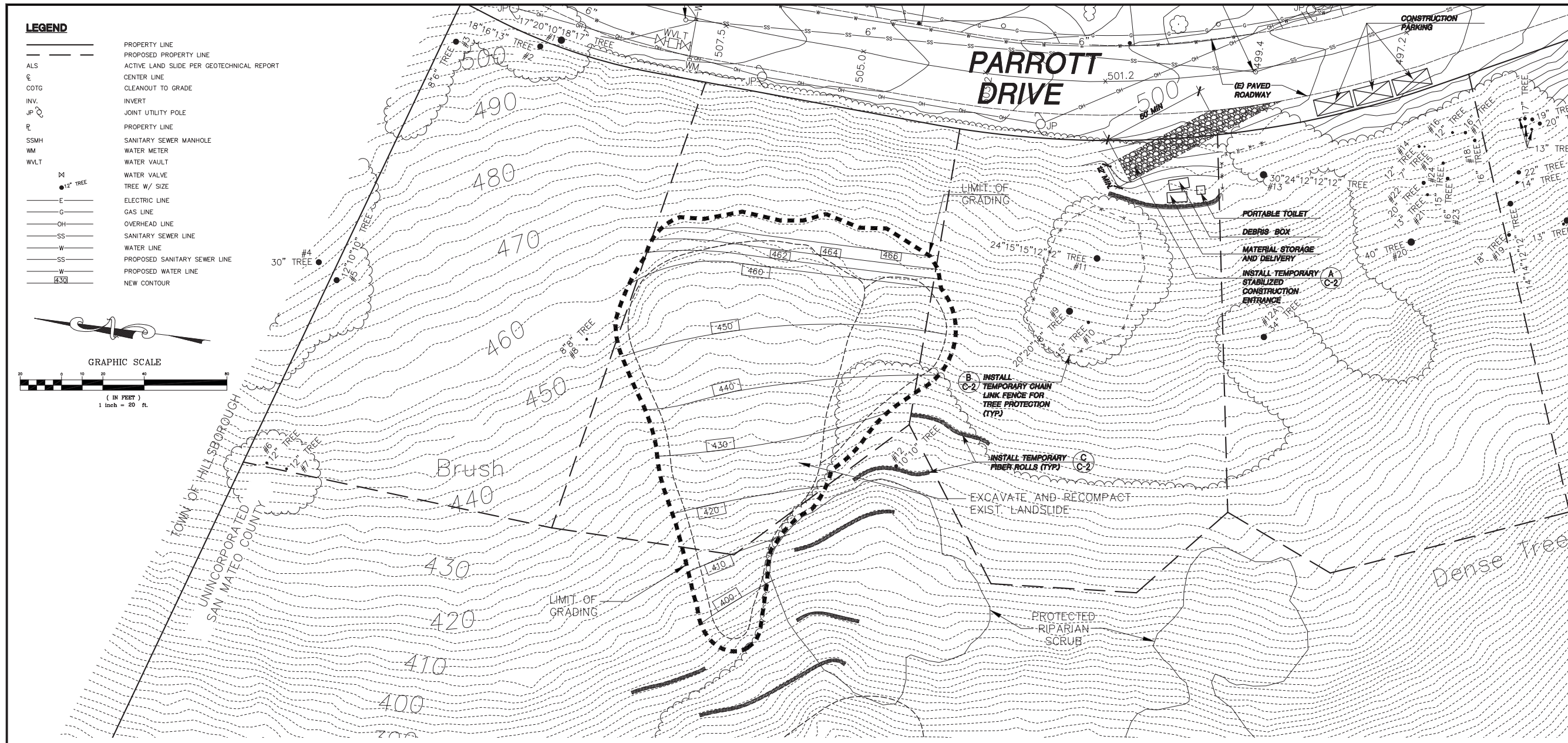
MacLEOD AND ASSOCIATES
CIVIL ENGINEERING • LAND SURVEYING
965 CENTER STREET•SAN CARLOS•CA 94070•(650) 593-8580

PREPARED FOR:
STEVE & NICK ZMAY

VESTING TENTATIVE PARCEL MAP
LANDS OF ZMAY

BEING A PORTION OF PARCEL "A", 53 PM 58
1551 CRYSTAL SPRINGS ROAD
SAN MATEO COUNTY
CALIFORNIA
UNINCORPORATED

DRAWN BY:	DJK
DESIGNED BY:	---
CHECKED BY:	DGM
SCALE:	1"=100'
DATE:	02-17-15
DRAWING NO.	3949-TM
SHEET	1 OF 2



EROSION CONTROL NOTES:

1. THE INTENT OF THE EROSION CONTROL PLAN IS TO MINIMIZE ANY WATER QUALITY IMPACTS IN THE FORM OF SEDIMENT POLLUTION TO MAIN CREEK & TRIBUTARIES.
2. A CONSTRUCTION ENTRANCE WILL BE INSTALLED PRIOR TO OF GRADING. LOCATION OF THE ENTRANCE MAY BE ADJUSTED BY THE CONTRACTOR TO FACILITATE GRADING OPERATIONS. ALL CONSTRUCTION TRAFFIC ENTERING THE PAVED ROAD MUST CROSS THE CONSTRUCTION ENTRANCE. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITION DEMAND, AND REPAIR OF ANY MEASURES USED TO SEDIMENTS.
3. WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH THE USE OF SAND BAGS, GRAVEL, BOARDS OR OTHER APPROVED METHODS.
4. THE EROSION AND SEDIMENT CONTROL MEASURES WILL BE OPERABLE ALL YEAR LONG, UNTIL GRADING AND INSTALLATION OF STORM DRAINAGE AND PERMANENT EROSION AND SEDIMENT CONTROL FACILITIES WILL BE COMPLETED. NO GRADING WILL OCCUR BETWEEN OCTOBER 1 AND APRIL 30 UNLESS AUTHORIZED BY THE CITY REPRESENTATIVE.
5. DURING THE RAINY SEASON, ALL PAVED AREAS WILL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE WILL BE MAINTAINED SO THAT A MINIMUM OF SEDIMENT-LADEN RUNOFF ENTERS THE STORM DRAINAGE SYSTEM.
6. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL FIELD MANUAL OF THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, 4TH EDITION, DATED AUGUST 2002.
7. INSTALL TEMPORARY EROSION CONTROL OVER DISTURBED AREAS UTILIZING STRAW MULCH.
8. USE SEDIMENT CONTROLS OR FILTRATION TO REMOVE SEDIMENT WHEN DEWATERING SITE AND OBTAIN REGIONAL WATER QUALITY CONTROL BOARD (RWQCB) PERMIT(S) AS NECESSARY

SAN MATEO COUNTY STANDARD NOTES:

1. EROSION CONTROL POINT OF CONTACT:

   OWNER: NICK ZMAY
   EMAIL: NICKZ93@SBCGLOBAL.NET
   TEL: (650) 430-0075

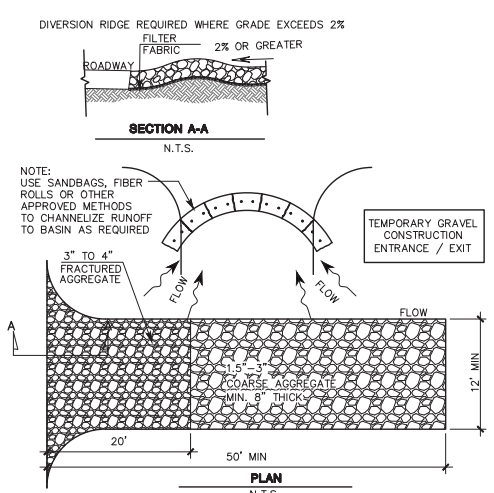
2. PERFORM CLEARING AND EARTH-MOVING ACTIVITIES ONLY DURING DRY WEATHER. MEASURES TO ENSURE ADEQUATE EROSION AND SEDIMENT CONTROL SHALL BE INSTALLED PRIOR TO EARTH-MOVING ACTIVITIES AND CONSTRUCTION.
3. STABILIZE ALL DENUDED AREAS AND MAINTAIN EROSION CONTROL MEASURES CONTINUOUSLY BETWEEN OCTOBER 1 AND APRIL 30.
4. STORE, HANDLE, AND DISPOSE OF CONSTRUCTION MATERIALS AND WASTES PROPERLY, SO AS TO PREVENT THEIR CONTACT WITH STORMWATER.
5. CONTROL AND PREVENT THE DISCHARGE OF ALL POTENTIAL POLLUTANTS, INCLUDING PAVEMENT CUTTING WASTES, PAINTS, CONCRETE, PETROLEUM PRODUCTS, CHEMICALS, WASH WATER OR SEDIMENTS AND NON-STORMWATER DISCHARGES TO STORM DRAINS AND WATERCOURSES.
6. AVOID CLEANING, FUELING, OR MAINTAINING VEHICLES ON-SITE, EXCEPT IN A DESIGNATED AREA WHERE WASH WATER IS CONTAINED AND TREATED.
7. LIMIT AND TIME APPLICATIONS OF PESTICIDES AND FERTILIZERS TO PREVENT POLLUTED RUNOFF.
8. LIMIT CONSTRUCTION ACCESS ROUTES TO STABILIZED, DESIGNATED ACCESS POINTS.
9. AVOID TRACKING DIRT OR OTHER MATERIALS OFF-SITE; CLEAN OFF-SITE PAVED AREAS AND SIDEWALKS USING DRY SWEEPING METHODS.
10. TRAIN AND PROVIDE INSTRUCTION TO ALL EMPLOYEES AND SUBCONTRACTORS REGARDING THE WATERSHED PROTECTION MAINTENANCE STANDARDS AND CONSTRUCTION BEST MANAGEMENT PRACTICES.
11. THE AREAS DELINEATED ON THE PLANS FOR PARKING, GRUBBING, STORAGE ETC., SHALL NOT BE ENLARGED OR "RUN OVER".
12. CONSTRUCTION SITES ARE REQUIRED TO HAVE EROSION CONTROL MATERIALS ON-SITE DURING THE "OFF-SEASON".
13. DUST CONTROL IS REQUIRED YEAR-ROUND.
14. EROSION CONTROL MATERIALS SHALL BE STORED ON-SITE.
15. CONSTRUCTION SITES ARE REQUIRED TO HAVE EROSION CONTROL MATERIALS ON-SITE DURING THE "OFF-SEASON".
16. THE TREE PROTECTION SHALL BE IN PLACE BEFORE ANY GRADING, EXCAVATING OR GRUBBING IS STARTED.

REVEGETATION NOTE:

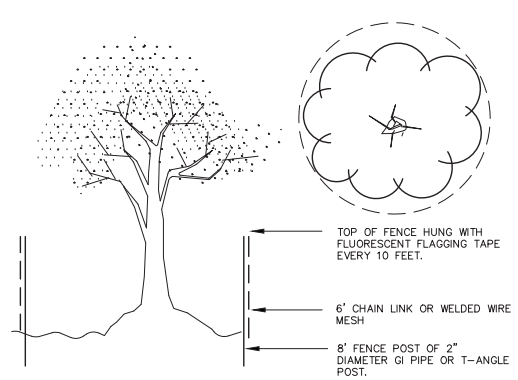
AFTER COMPLETION OF GRADING, ALL DISTURBED AREAS SHALL BE HYDRO-SEEDED WITH A COSTAL MIX AT A MINIMUM RATE OF 50 POUNDS PER ACRE.

CONSTRUCTION SCHEDULE:

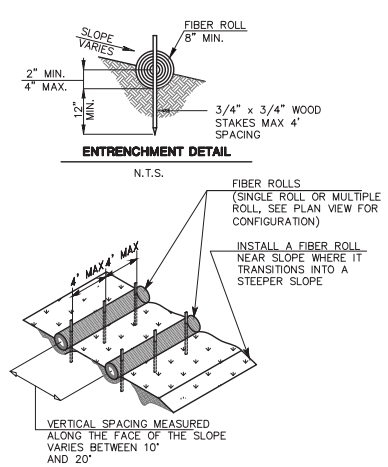
START OF PROJECT : APRIL 2015
ESTIMATED PROJECT : JULY 2015
COMPLETION



A CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE



B TYPICAL TREE PROTECTION DETAIL
(NOT TO SCALE)



NOTE:
INSTALL FIBER ROLL ALONG A LEVEL CONTOUR

C FIBER ROLL DETAIL
NOT TO SCALE

C-2

REV.	DESCRIPTION	BY:	DATE:
-	REVISE LOT LINES	DGM	11/02/15

EUGENE J. MACLEOD III
REGISTERED PROFESSIONAL ENGINEER
No. 35048
CIVIL
STATE OF CALIFORNIA

MacLEOD AND ASSOCIATES
CIVIL ENGINEERING • LAND SURVEYING
965 CENTER STREET • SAN CARLOS • CA 94070 • (650) 593-8580

PREPARED FOR:
STEVE & NICK ZMAY

EROSION AND SEDIMENTATION CONTROL PLAN WITH TREE PROTECTION
1551 CRYSTAL SPRINGS ROAD
SAN MATEO COUNTY
CALIFORNIA
UNINCORPORATED

DRAWN BY:	AAP
DESIGNED BY:	VPG
CHECKED BY:	DGM
SCALE:	1"=20'
DATE:	03-20-15
DRAWING NO.	3949-14
SHEET	2 OF 2

Wetland Delineation Legend

Wetland Data Points

- Data Points

Aquatic Resources

- Open Watercourse
- Culverted Watercourse
- Freshwater Seep
- Central Coast Riparian Scrub

Summary of Jurisdictional Habitats

Habitat Type	Federal and State Jurisdiction*		State Jurisdiction**
	lin. ft.	sq. ft.	sq. ft.
Waters of the U.S./State	4,473	8,185	0
Central Coast riparian scrub	0	9,160	9,031
freshwater seep	0	200	133
Total	4,473	17,545	9,164
acres		0.40	0.21

* Regulated by the USACE, RWQCB and CDFG
** Regulated only by the RWQCB and/or CDFG

Geologic Legend

- fsr — Franciscan Sheared rock (melange)
- Fill — Artificial Fill
- Qls — Quaternary Landslide
- df — Debris Flow
- Rock outcrop
- Zones of soil creep
- Directions of soil movements
- Springs and seeps
- "Generalized Section" line from BAGG geologic and geotechnical report

Boring Legend

- B-# Auger Boring
- RWB-# Rotary Wash Boring

Tree Status Legend

Healthy Trees — Tree T# in Green

Dead or Unhealthy to be removed — Tree T# in Red

Special-Status Plant Species Legend

Special-Status Plants Observed (Points)

- Franciscan Onion CNPS 1B — Allium peninsulare var. franciscanum
- San Francisco Collinsia CNPS 1B — Collinsia multicolor
- Western Leatherwood CNPS 1B — Dirca occidentalis
- San Mateo Woolly Sunflower FE — Eriophyllum latilobum

Special-Status Plants Observed (Polygons)

- Franciscan Onion
- San Francisco Collinsia
- Western Leatherwood
- San Francisco Collinsia/Franciscan Onion

OPPORTUNITIES AND CONSTRAINTS MAP
LANDS OF ZMAY

HILLSBOROUGH — SAN MATEO COUNTY — CALIFORNIA

No.	Revisions
1	3/10/15 NEW LOT LAYOUT

Date: 08/19/14
Scale: 1"=100'
Design: DGM
Drawn: DJK
Approved:
Job No: 3949-14

Drawing Number:

1 OF 1

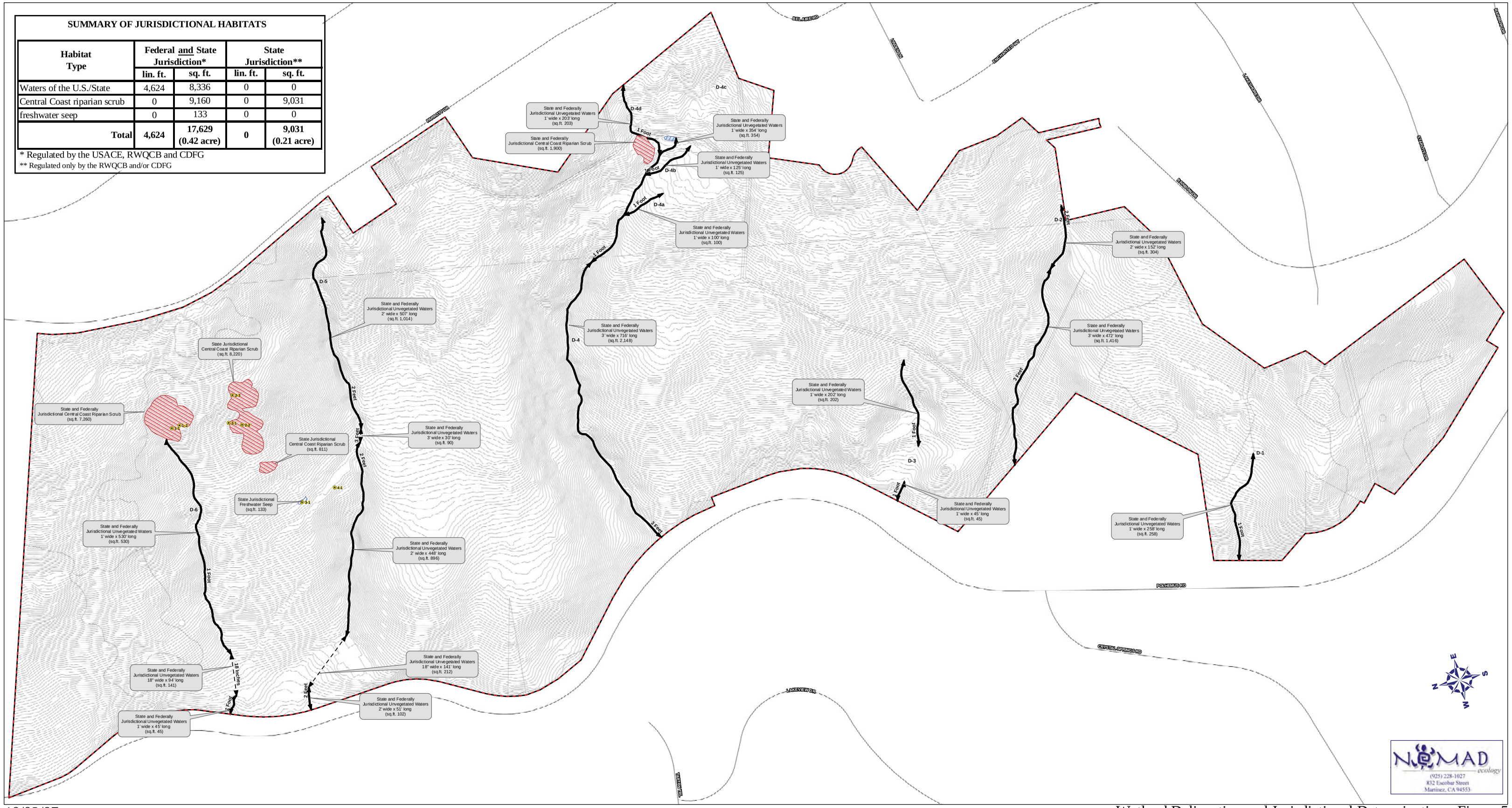
ATTACHMENT B

VERIFIED JURISDICTIONAL MAP

SUMMARY OF JURISDICTIONAL HABITATS

Habitat Type	Federal and State Jurisdiction*		State Jurisdiction**	
	lin. ft.	sq. ft.	lin. ft.	sq. ft.
Waters of the U.S./State	4,624	8,336	0	0
Central Coast riparian scrub	0	9,160	0	9,031
freshwater seep	0	133	0	0
Total	**4,624**	**17,629 (0.42 acre)**	**0**	**9,031 (0.21 acre)**

* Regulated by the USACE, RWQCB and CDFG
** Regulated only by the RWQCB and/or CDFG



10/02/07

Wetland Delineation and Jurisdictional Determination - Figure 5

Beeson Property Boundary

Wetland Data Points

Wetland Data Points

Aquatic Resources

Freshwater Seep

Central Coast Riparian Scrub

Open Watercourse

Culverted Watercourse

1:1,200

0 50 100 200 Feet

Wetland Delineation Map of the Beeson Property

Aerial photography, topographic isolines and property boundary provided by BKF Engineering. Road data provided by ESRI. Aquatic features mapped with Trimble's GeoXT in March 2007 Projection: NAD 1983 State Plane Zone CA Zone III.

San Mateo County, California

ATTACHMENT C

VERIFICATION LETTER FROM THE U.S. ARMY CORPS OF ENGINEERS

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

NOV 7 2007

Regulatory Branch

SUBJECT: File Number 400705S

S.W. Syme Properties, Inc.
Attn: Scott Syme
400 South El Camino Real, Suite 640
San Mateo, California 94402

Dear Mr. Syme:

This letter is written in response to your submittal of June 18, 2007 requesting confirmation of the extent of Corps of Engineers' jurisdiction at the 'Besson Property' situated on the east side of Crystal Springs Road, west of Parrot Drive, in unincorporated San Mateo County, California (APN: 038-131-110).

Enclosed is a map showing the extent and location of Corps of Engineers' jurisdiction. We have based this jurisdictional delineation on the current conditions on the site as verified during a site visit performed by our staff on September 26, 2007. A change in conditions may also change the extent of our jurisdiction. This jurisdictional delineation will expire in five years from the date of this letter. If there has been a change in circumstances that affects the extent of Corps' jurisdiction, however, a revision may be completed before that date.

All proposed discharges of dredged or fill material into waters of the United States must be authorized by the Corps of Engineers pursuant to Section 404 of the Clean Water Act (CWA) (33 U.S.C. Section 1344). Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands. Your proposed activity is within our jurisdiction and a permit will be required for your project. Application for Corps authorization should be made to this office using the application form available at our website (http://www.spn.usace.army.mil/regulatory/index.html). To avoid delays it is essential that you enter the file number at the top of this letter into Item No. 1 of the application. The application must include plans showing the location, extent and character of the proposed activity, prepared in accordance with the requirements. You should note, in planning your project, that upon receipt of a properly completed application and plans, it may be necessary to advertise the proposed work by issuing a Public Notice for a period of 30 days.

You are advised that the Corps has established an Administrative Appeal Process, as described in 33 C.F.R. Part 331 (65 Fed. Reg. 16,486; March 28, 2000), and outlined in the enclosed flowchart and "Notification of Administrative Appeal Options, Process, and Request for Appeal" form (NAO-RFA). If you do not intend to accept the approved jurisdictional determination, you may elect to provide new information to the District Engineer for reconsideration or submit a completed NAO-RFA form to the Division Engineer to initiate the appeal process. You will relinquish all rights to appeal, unless the Corps receives new information or a completed NAO-RFA form within sixty (60) days of the date of the NAO-RFA.

Should you have any questions regarding this matter, please call Paula C. Gill of our Regulatory Branch at (415) 503-6776. Please address all correspondence to the Regulatory Branch and refer to the File Number at the head of this letter. If you would like to provide comments on our permit review process, please complete the Customer Survey Form available through the Forms and Contacts Block on our website: http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

Mark D'Avignon
Chief, South Section
Regulatory Branch

Enclosures

Copies Furnished (w/o Enclosures):

Wood Biological Consulting, Attn: Mike Wood, 65 Alta Hill Way, Walnut Creek, CA 94595
CA RWQCB, Oakland, CA
CA SWRCB, Sacramento, CA

County of San Mateo - Planning and Building Department

ATTACHMENT E

WOOD BIOLOGICAL CONSULTING, INC.
65 Alta Hill Way
Walnut Creek, CA 94595
Tel: (925) 899-1282
Fax: (925) 939-4026
e-mail: mike@wood-biological.com
www.wood-biological.com

August 16, 2017

Mr. Nick Zmay
Z Enterprise LP
P.O. Box #409
San Carlos, CA 94070

RE: Revised Wetlands Evaluation, Zmay Property Subdivision, San Mateo County

Dear Mr. Zmay:

This memorandum presents an evaluation of the channels and wetland habitats present in the vicinity of the proposed four-lot residential subdivision on your property in unincorporated San Mateo County. This evaluation is based on a wetland delineation and jurisdictional determination prepared by me for the Zmay (formerly Beeson) property in 2007 (Wood Biological Consulting, 2007b).

The primary purpose of this effort is to fine-tune the limits of jurisdiction of a stand of willows growing below Parcels 2 and 3. The need for this arises from the identification of a landslide located predominantly on Parcel 2; repair of this landslide is required to enable the development of the parcel. And while the geotechnical engineer has mapped the likely limits of slope repair as not encroaching upon the willow habitat, the County has expressed concerns regarding the potential for impacts. This effort is also warranted because ten years have passed since the completion of the original wetland survey.

The previous analysis addressed the entire 60-acre site. Since that time, the proposed project was reduced to include only four single-family residences on four subdivided lots in the northeastern corner of the property, downslope of Parrott Drive (see Attachment A, Figure 1). The proposed four-lot subdivision has been reduced in size to cover a total of 2.93 acres. The remainder of the property includes 48 acres to be designated as open space protected by a conservation easement and 9 acres excluded from the conservation easement and to remain buildable at a future date.

PROJECT BACKGROUND

In early 2007, S.W. Syme Properties, Inc. contracted with Wood Biological Consulting to prepare a biological constraints analysis (Wood Biological Consulting, 2007a) of the 60-acre Beeson property (see Attachment A, Figure 2). At the time, the owners were contemplating a 20-lot subdivision and wished to understand how the site could be developed while avoiding or minimizing impacts on regulated biological resources.

One of the recommendations contained in that report was the preparation of a formal wetland delineation and its submittal to the U.S. Army Corps of Engineers (USACE) for verification. Based on that recommendation, a wetland delineation of the entire 60-acre property was performed by biologists Michael Wood and Heath Bartosh on March 5, 2007. The survey was performed in accordance with the procedures outlined by the USACE (2006 a, b). The results of that survey were presented in a separate technical report (Wood Biological Consulting, 2007b). The USACE conducted a field inspection of the subject property on September 26, 2007. Based on that inspection, minor revisions to the jurisdictional map were recommended. The revised map, as verified, is presented in Attachment B. A copy of the verification letter from the USACE[1] is provided in Attachment C. The verified jurisdictional determination expired five years after the date of the USACE verification letter (i.e., on November 6, 2012).

Subsequent to the completion of the 2007 biological studies, the owners put forth a revised project consisting of a five-lot subdivision, with four lots to accommodate four new single-family residences. The location of the proposed four residential lots is shown in Figure 3 (Attachment A). In support of the County's environmental review process, an evaluation of site conditions was performed to determine if development of the four parcels is likely to impact any of the identified biological constraints. The results were presented in separate memoranda covering botanical resources (Wood Biological Consulting, Inc., 2015a), wetlands (Wood Biological Consulting, Inc., 2015b), and creek setbacks (Wood Biological Consulting, Inc., 2015c).

METHODS

As discussed above, the identification of a landslide on Parcel 2 have led to concerns on the part of the County that the proposed repairs could result in direct impacts on wetlands falling under the jurisdiction of the USACE. Furthermore, as the verified delineation has expired, County staff felt that a revised delineation is needed. Therefore, a formal wetland delineation was undertaken by Wood Biological Consulting, Inc. The focus of this effort is solely on the willow habitat located immediately below Parcels 2 and 3, and adjacent to the landslide (see Attachment A, Figure 3). A formal wetland delineation was performed in conformance to the guidelines of the guidelines of the USACE (2006, 2008) and Environmental Laboratory (1987). Utilizing field data, site observations and recent and

[1] USACE File Number 4007055

historic aerial photographs, the wetland/upland boundary was mapped (see Attachment A, Figure 3). A total of two data points were sampled and data on vegetation, soils and hydrology were collected and recorded (field data forms are attached as Attachment D). In addition to the limits of jurisdiction of the USACE, the limits of jurisdiction of the California Department of Fish and Wildlife (CDFW) were also mapped.

RESULTS AND DISCUSSION

In 2007, the total area of aquatic features falling under both federal and State jurisdiction was 0.42 acre and included 4624 linear feet of stream channels. The property was found to support another 0.21 acre of non-wetland riparian habitat falling under State jurisdiction only.

During the 2014 reconnaissance survey of the reduced study area, it was found that site conditions had not changed notably since verified in 2007. However, due to concerns raised by the County regarding the proximity of a stand of willows to the anticipated limits of grading associated with a slide repair area, an effort was undertaken to refine the delineation of habitat features falling under federal versus state jurisdiction.

The U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (USEPA) assert jurisdiction over "non-navigable tributaries of traditional navigable waters (TNW) that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)" and "wetlands that abut such tributaries" (USEPA/USACE, 2008). Such areas are referred to collectively as "waters of the U.S."[2] The extent of USACE jurisdiction corresponds to the Ordinary High Water Mark (OHWM).[3] Wetlands are defined as "those areas that are inundated or

[2] As defined in 40 CFR 230.3(s), Waters of the U.S. include:

- All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of tide;
- All interstate waters, including interstate wetlands;
- All other waters, such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce;
- Tributaries of the above;
- Territorial seas; and
- Wetlands adjacent to waters defined above.

  Although isolated wetlands no longer fall under USACE jurisdiction, impacts to isolated wetlands continue to be regulated under State law (see below).

[3] The OHWM is the line on the shores established by the fluctuations of water and indicated by physical characteristics such as: a clear natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas (USACE, 2006).

saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."[4] Indicators of all three wetland parameters (e.g., hydric soils, hydrophytic vegetation, and wetland hydrology) must be present for a site to be classified as a wetland (Environmental Laboratory, 1987; USACE, 2006a). As such, the placement of fill into waters of the U.S. is regulated pursuant to the CWA[5] and falls under the jurisdiction of the USACE and the San Francisco Regional Water Quality Control Board (RWQCB).

The CDFW also asserts jurisdiction over water courses and water bodies. Pursuant to the Lake and Streambed Alteration Program (LSAP)[6], entities must notify the CDFW prior to commencing any of the following activities:

- Substantially divert or obstruct the natural flow of any river, stream or lake[7];
- Substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or
- Deposit debris, waste or other materials that could pass into any river, stream or lake.

In addition, the extent of CDFW jurisdiction extends to the top of bank or beyond if an overhanging riparian canopy is present. Such habitat features are classified as waters of the State[8].

In order to distinguish federally jurisdictional wetlands from potential waters of the State, a formal wetland delineation of the riparian habitat nearest the proposed slide repair was performed. Field data from two sample points were collected and recorded (see Attachment D). The upland/wetland boundary was flagged in the field, surveyed and mapped. The outer canopy edge of the willows was also surveyed and mapped.

As shown in Figure 3, the area in which field indicators of all three federal wetland parameters is smaller than that defined by the outer edge of the willow canopy. In total, the area of waters of the U.S. occupies 1,810 square feet while the area of willow canopy occupies 9,760 square feet (inclusive of the waters of the U.S.).

---

[4] CWA §404

[5] CWA § 404 and CWA § 401

[6] CFGC §§ 1600, et seq.

[7] These include those that are episodic (they are dry for periods of time) as well as those that are perennial (they flow year round). This includes ephemeral streams, desert washes, and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a body of water.

[8] As defined under California Water Code §13050(e), Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state". These include nearly every surface or ground water in California, or tributaries thereto, and include drainage features outside USACE jurisdiction (e.g., dry and ephemeral/seasonal stream beds and channels, etc.), isolated wetlands (e.g., vernal pools, seeps, springs and other groundwater-supplied wetlands, etc.), and storm drains and flood control channels.

CONCLUSIONS

Based on the current wetland delineation, the anticipated limits of grading for the proposed slide repair would not encroach upon habitat features regulated under the CWA (i.e., waters of the U.S.). As long as grading for the slide repair avoids the limits of the wetland as shown in Figure 3, a federal permit would not be required.

Regarding encroachment into the canopy of the willows, trimming of willow branches is not typically regulated if no other impacts to waters of the U.S. or waters of the State are proposed. Willows grow back rapidly after pruning. The litmus test for this work should be whether or not any willow trees would need to be graded out completely. Before any willow trees rooted outside of the limits of federal jurisdiction are removed, the CDFW should be contacted.

To satisfy the concerns of the County regarding the slope repair project as it might affect riparian habitat and wetlands, the following measures shall be undertaken:

1. The contractor and the biologist shall meet in the field to identify the limits of riparian habitat.
2. The limits of riparian habitat shall be marked in the field with high visibility construction fencing, and it shall be designated as an environmentally sensitive area (ESA). No equipment shall be permitted to operate within the ESA without prior coordination with and inspection by the project biologist.

If, during the course of excavation, it becomes clear that excavation within the ESA is necessary to satisfy geotechnical concerns, the following measures shall be undertaken:

1. The contractor, geotechnical consultant and biologist shall meet in the field to discuss the likely extent to which excavation within the ESA is needed.
2. If excavation would extend within the canopy of the willows but would not require the removal of any willow trees, grading may be permissible. The pruning of willow branches is not prohibited and prior authorization by the regulatory agencies is not required.
3. If excavation would require the removal of willows outside of the limits of federal jurisdiction, the CDFW will be notified and appropriate mitigation measures developed.
4. If excavation would require the removal of willows within the limits of federal jurisdiction, a federal permit is required. At this point, work may not proceed until all appropriate permits have been issued by the USACE and Regional Water Quality Control Board (RWQCB) pursuant to the Clean Water Act[9], and by the California Department of Fish and Wildlife (CDFW)[10].

[9] CWA sections 404 and 401, respectively

[10] Cal. Fish and Game Code Section 1600, *et seq.* "Lake and Streambed Alteration Program"

5. Regulatory permits may be expected to require mitigation for temporal or permanent impacts to riparian habitat. Mitigation may include *in situ* restoration by planting, and long-term monitoring for plant survival and habitat restoration. With the issuance of regulatory permits and the implementation of all permit conditions and mitigation measures, impacts to riparian habitat would be reduced to a less-than-significant level pursuant to the guidelines of the California.
6. Copies of all regulatory permits and proof of the successful implementation of all permit conditions and mitigation measures shall be provided to the Planning and Building Department.

Prior to any pruning of willows or other trees or shrubs, a preconstruction survey for nesting migratory birds is warranted if such work would occur between February 1 and August 31. An inspection for nesting San Francisco dusky-footed woodrats should also be performed. All impact avoidance, minimization and mitigation measures outlined in the Mitigated Negative Declaration must be conformed to.

If you have any questions, don't hesitate to contact me.

Sincerely,

Michael Wood

Enclosures: Literature Cited
Attachment A – Project Figures and Maps
Attachment B – Verified Jurisdictional Map
Attachment C – USACE Verification Letter
Attachment D – Wetland Delineation Field Forms

LITERATURE CITED

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Wood Biological Consulting (WBC). 2007b. *Wetland Delineation and Preliminary Jurisdictional Determination for the Beeson Property, San Mateo County, California.* Unpublished technical report prepared for S.W. Syme Properties, Inc., San Mateo. June 18.

ATTACHMENT A

PROJECT MAPS AND FIGURES

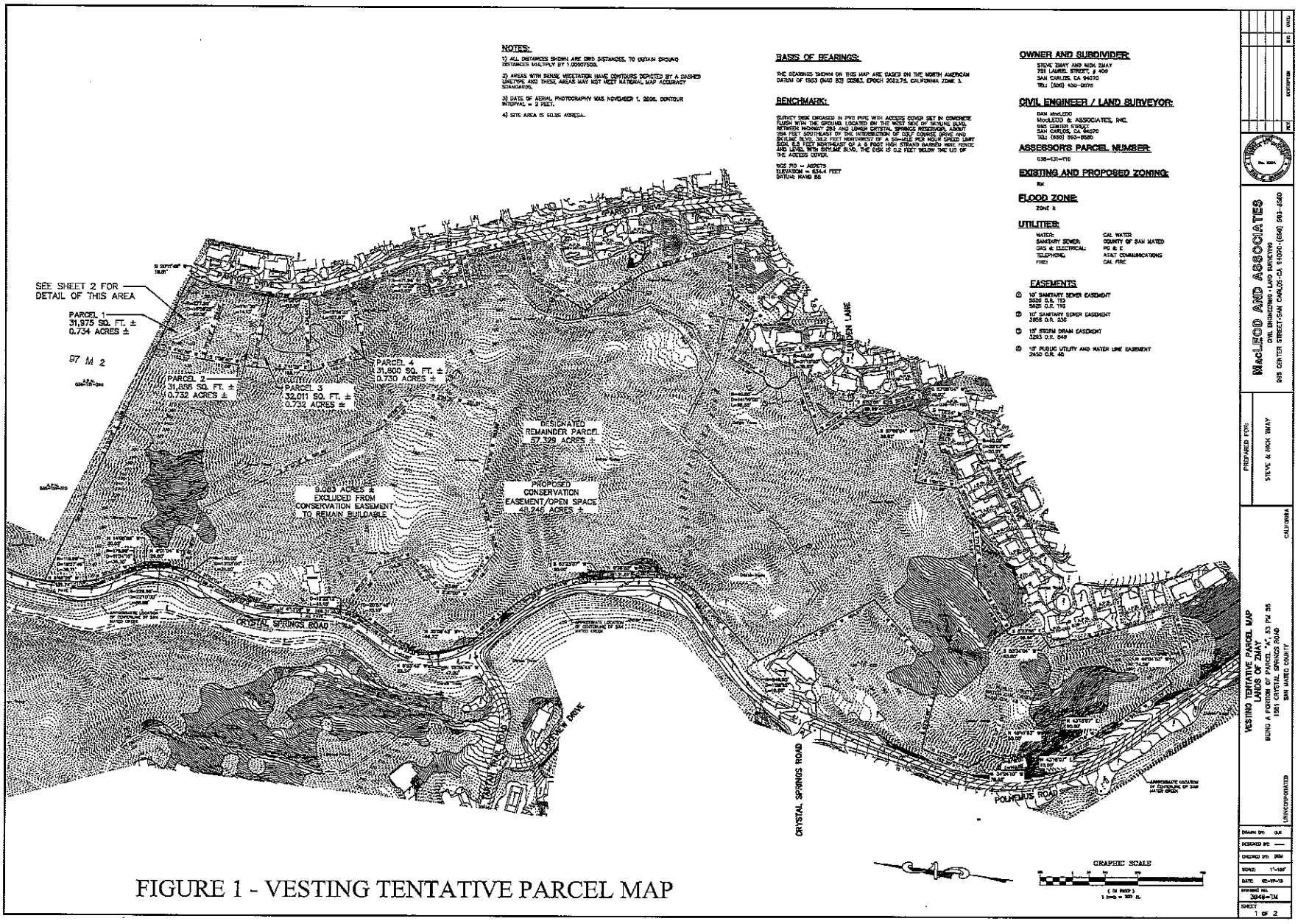


FIGURE 1 - VESTING TENTATIVE PARCEL MAP

Figure 2. Aerial View of the Subject Property with Biological Constraints

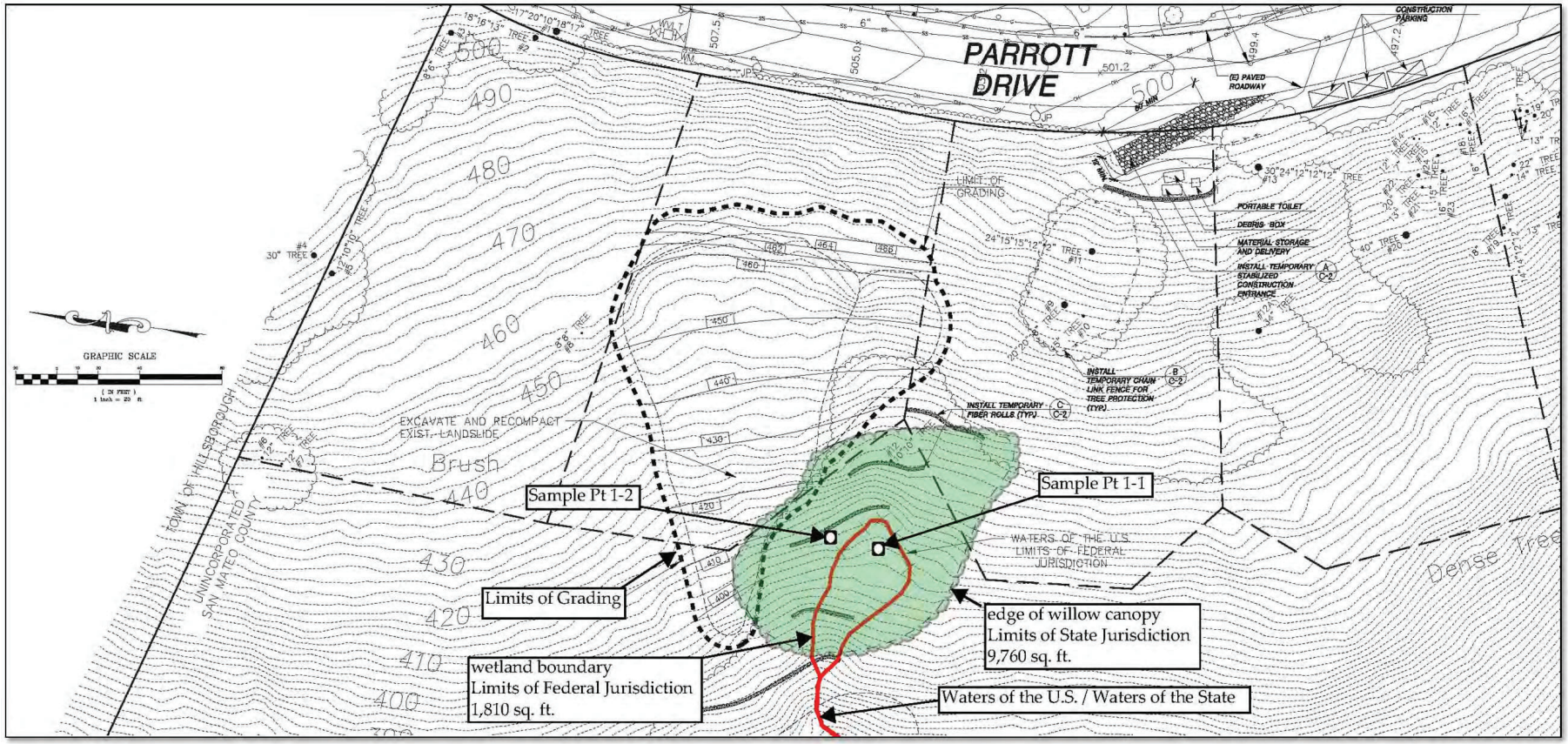


Figure 3. Preliminary Limits of Jurisdiction

ATTACHMENT B

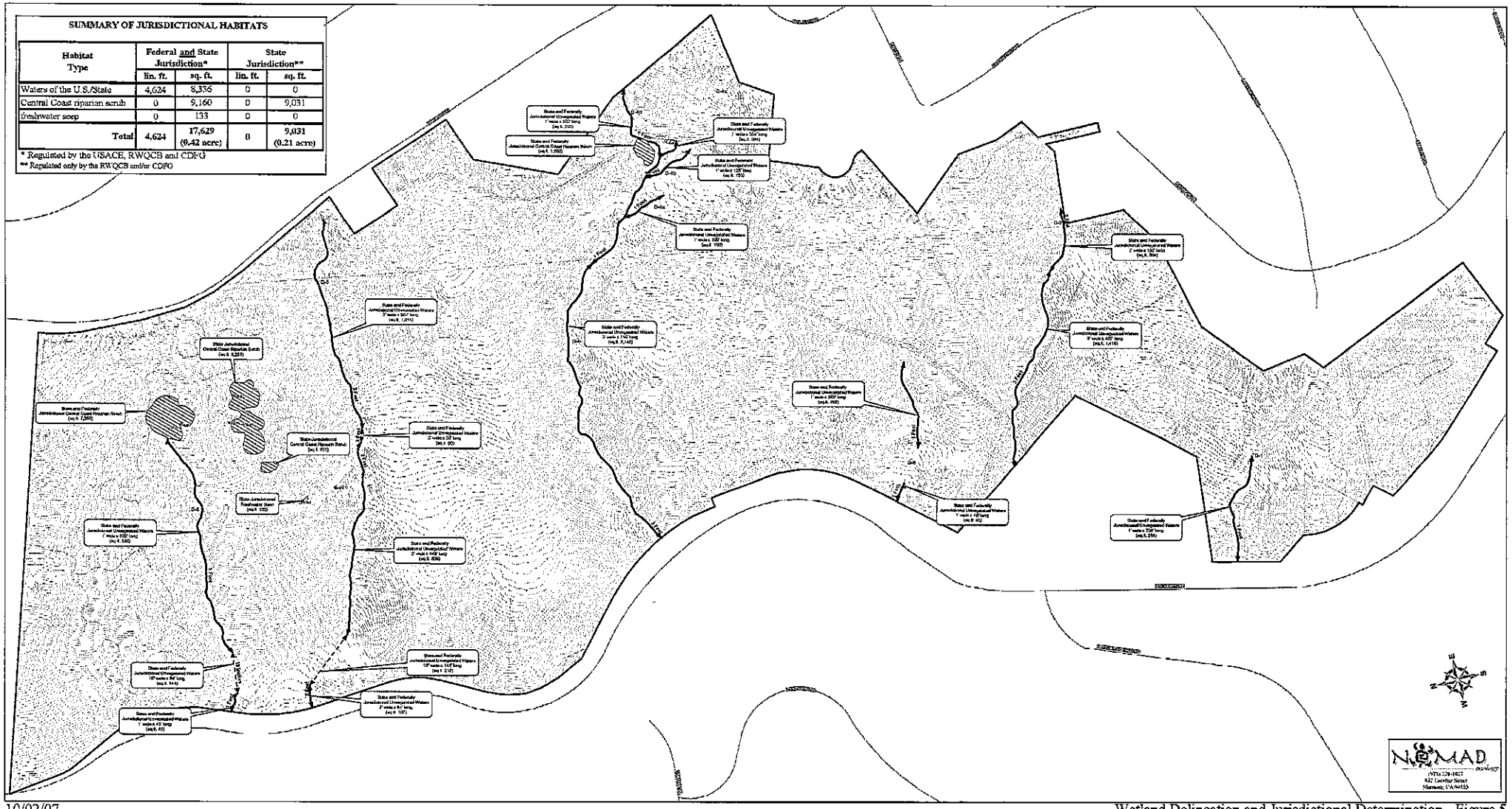
VERIFIED JURISDICTIONAL MAP

SUMMARY OF JURISDICTIONAL HABITATS

Habitat Type	Federal and State Jurisdiction*		State Jurisdiction**	
	lin. ft.	sq. ft.	lin. ft.	sq. ft.
Waters of the U.S./State	4,624	8,336	0	0
Central Coast riparian scrub	0	9,160	0	9,031
freshwater seep	0	133	0	0
Total	4,624	17,629 (0.42 acre)	0	9,031 (0.21 acre)

* Regulated by the USACE, RWQCB and CDFG

** Regulated only by the RWQCB and/or CDFG



10/02/07

Wetland Delineation and Jurisdictional Determination - Figure 5

Beeson Property Boundary

Wetland Data Points

Wetland Data Points

Aquatic Resources

Freshwater Seep

Central Coast Riparian Scrub

Open Watercourse

Culverted Watercourse

1:1,200

0 50 100 200 Feet

Wetland Delineation Map
of the Beeson Property

Aerial photography, topographic features and property boundary provided by BAF Engineering. Road data provided by ESRI. Aquatic features mapped with Trimble's GeoXT in March 2007 Projection: NAD 1983 State Plane Zone CA Zone III.

San Mateo County, California

ATTACHMENT C

VERIFICATION LETTER FROM THE U.S. ARMY CORPS OF ENGINEERS

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

NOV 7 2007

Regulatory Branch

SUBJECT: File Number 400705S

S.W. Syme Properties, Inc.
Attn: Scott Syme
400 South El Camino Real, Suite 640
San Mateo, California 94402

Dear Mr. Syme:

This letter is written in response to your submittal of June 18, 2007 requesting confirmation of the extent of Corps of Engineers' jurisdiction at the 'Besson Property' situated on the east side of Crystal Springs Road, west of Parrot Drive, in unincorporated San Mateo County, California (APN: 038-131-110).

Enclosed is a map showing the extent and location of Corps of Engineers' jurisdiction. We have based this jurisdictional delineation on the current conditions on the site as verified during a site visit performed by our staff on September 26, 2007. A change in conditions may also change the extent of our jurisdiction. This jurisdictional delineation will expire in five years from the date of this letter. If there has been a change in circumstances that affects the extent of Corps' jurisdiction, however, a revision may be completed before that date.

All proposed discharges of dredged or fill material into waters of the United States must be authorized by the Corps of Engineers pursuant to Section 404 of the Clean Water Act (CWA) (33 U.S.C. Section 1344). Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands. Your proposed activity is within our jurisdiction and a permit will be required for your project. Application for Corps authorization should be made to this office using the application form available at our website (http://www.spn.usace.army.mil/regulatory/index.html). To avoid delays it is essential that you enter the file number at the top of this letter into Item No. 1 of the application. The application must include plans showing the location, extent and character of the proposed activity, prepared in accordance with the requirements. You should note, in planning your project, that upon receipt of a properly completed application and plans, it may be necessary to advertise the proposed work by issuing a Public Notice for a period of 30 days.

You are advised that the Corps has established an Administrative Appeal Process, as described in 33 C.F.R. Part 331 (65 Fed. Reg. 16,486; March 28, 2000), and outlined in the enclosed flowchart and "Notification of Administrative Appeal Options, Process, and Request for Appeal" form (NAO-RFA). If you do not intend to accept the approved jurisdictional determination, you may elect to provide new information to the District Engineer for reconsideration or submit a completed NAO-RFA form to the Division Engineer to initiate the appeal process. You will relinquish all rights to appeal, unless the Corps receives new information or a completed NAO-RFA form within sixty (60) days of the date of the NAO-RFA.

Should you have any questions regarding this matter, please call Paula C. Gill of our Regulatory Branch at (415) 503-6776. Please address all correspondence to the Regulatory Branch and refer to the File Number at the head of this letter. If you would like to provide comments on our permit review process, please complete the Customer Survey Form available through the Forms and Contacts Block on our website: http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

Mark D'Avignon
Chief, South Section
Regulatory Branch

Enclosures

Copies Furnished (w/o Enclosures):

Wood Biological Consulting, Attn: Mike Wood, 65 Alta Hill Way, Walnut Creek, CA 94595
CA RWQCB, Oakland, CA
CA SWRCB, Sacramento, CA

ATTACHMENT D

WETLAND DELINEATION FORMS

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Zmay Property City /County: Hillsborough San Mateo Sampling Date: Jul 16, 2017

Applicant / Owner: Nick Zmay State: CA Sampling Point: 1-1

Investigator(s): Mike Wood Section Township Range:

Landform (hillslope, terrace, etc.): hillslope Local Relief (concave, convex, none): sloping Slope(%) 20

Subregion (LRR): LRR C Lat: 37.539180° Long: 122.346976° Datum: NAD 83

Soil Map Unit Name: Fagan loam 15-50% slopes NWI Classification: SS-6

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (If no, explain in Remarks)

Are Vegetation No, Soil No, or Hydrology No, significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil Yes, or Hydrology No, naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, imortant features, etc.

Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Wetland Hydrology Present? Yes	**Is the Sampled Area within a Wetland?** Yes

Remarks:
Strong field indicators of wetland hydrology and hydrophytic vegetation; soils are considered naturally problematic and only weakly hydric.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	95	Yes	FACW
2.			
3.			
4.			
Total Cover:	95		
Sapling/Shrub Stratum			
1. *Cortaderia selloana*	3	Yes	none
2. *Toxicodendron diversilobum*	2	Yes	none
3.			
4.			
5.			
Total Cover:	5		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust 0

Dominance Test worksheet

Number of Dominant Species That are OBI, FACW or FAC 1 (A)

Total Number of Dominant Species Across All Strata 3 (B)

Percent of Dominant Species That are OBI, FACW or FAC 33.3% (A/B)

Prevalence Index worksheet

Total % Cover of:		Multipy by:	
OBL species		x 1 =	
FACW species	1	x 2 =	2
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals	1 (A)		2 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

No Dominance Test is > 50%

Yes Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present

Hydrophytic Vegetation Present? Yes

Remarks:
Vegetation is entirely distinct from surrounding oak woodland and scrub on steep slope. Clearly dominated by FACW indicator species. Willow canopy is nearly complete.

SOIL

Sampling Point: 1-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 5/3	85	none				Silty clay loam	
	10YR 4/1	15						
2-18	10YR 4/1	85	none				Silty clay loam	
	10YR 5/3	15						

[1] Type: C=Concentration, D=Depletion, RM=Reduced matrix. [2] Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to al LRR's, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon(A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers ((A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic hydric Soils[3]

- ☐ 1 cm Muck (A9) (**LLR C**)
- ☐ 2 cm Muck (A10) (**LLR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☒ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive layer (if present)

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:
Sample point is located at a point where ground water discharges on a steep slope (seep). Due to a preponderance of evidence of hydrophytic vegetation and wetland hydrology, site is considered to support naturally problematic hydric soils.

HYDROLOGY

Wetland hydrology Indicators Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☒ Sediment Deposits (B2) (**Nonriverine**)
- ☒ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves
- ☐ Salt Crust (B1
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidixed Rhizospheres along living roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Depsits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present	No	Depth (inches)	_____
Water Table Present?	No	Depth (inches)	_____
Saturation Present (includes capillary fringe)	No	Depth (inches)	_____

Wetlands Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, prevous inspections) if available

Remarks:
Sample point is situated in a topographic fold on a steep slope, and at the site of a historic slide. There is clear evidence of concentrated sheet flow across the site.; downslope of the sample point is a head cut and incised channel. Sample point is clearly dominated by FACW species.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Zmay Property City /County: Hillsborough San Mateo Sampling Date: Jul 16, 2017

Applicant / Owner: Nick Zmay State: CA Sampling Point: 1-2

Investigator(s): Mike Wood Section Township Range:

Landform (hillslope, terrace, etc.): hillslope Local Relief (concave, convex, none): sloping Slope(%) 20

Subregion (LRR): LRR C Lat: 37.539224° Long: 122.346948° Datum: NAD 83

Soil Map Unit Name: Fagan loam 15-50% slopes NWI Classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (If no, explain in Remarks)

Are Vegetation No, Soil No, or Hydrology No, significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No, naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, imortant features, etc.

Hydrophytic Vegetation Present? No Hydric Soil Present? No Wetland Hydrology Present? No	**Is the Sampled Area within a Wetland?** No

Remarks:
Based on topography and dominant vegetation, sample point is clearly not located in a wetland.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	40	Yes	FACW
2.			
3.			
4.			
Total Cover:	40		
Sapling/Shrub Stratum			
1. *Toxicodendron diversilobum*	40	Yes	none
2. *Artemisia californica*	20	Yes	none
3. *Mimulus aurantiacus*	15	Yes	none
4.			
5.			
Total Cover:	75		
Herb Stratum			
1. *Clinopodium douglasii*	5	Yes	none
2. *Iris douglasiana*	2	Yes	none
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	7		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust 0

Dominance Test worksheet

Number of Dominant Species That are OBI, FACW or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That are OBI, FACW or FAC: 16.7% (A/B)

Prevalence Index worksheet

Total % Cover of:		Multipy by:	
OBL species		x 1 =	
FACW species	1	x 2 =	2
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals	1 (A)		2 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

- No Dominance Test is > 50%
- Yes Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present

Hydrophytic Vegetation Present? No

Remarks:
Sample point is located on a slope change above a seepage area, and on the face of an historic landslide. Willow canopy is overhanging from trees rooted in the seep, and therefore not indicative of the ground conditions. Vegetation rooted at the sample point is scrub, and typical of a non-wetland situation.

SOIL

Sampling Point: 1-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 5/3	100	none				Silty clay loam	
2-12	10YR 5/3	80	none				Silty clay loam	
	10YR 4/2	20						

[1] Type: C=Concentration, D=Depletion, RM=Reduced matrix. [2] Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to al LRR's, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon(A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers ((A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic hydric Soils[3]

- ☐ 1 cm Muck (A9) (**LLR C**)
- ☐ 2 cm Muck (A10) (**LLR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive layer (if present)

Type: _____

Depth (inches): _____

Hydric Soil Present? No

Remarks:
No field indicators of hydric soils are evident.

HYDROLOGY

Wetland hydrology Indicators Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves
- ☐ Salt Crust (B1
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidixed Rhizospheres along living roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Depsits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present	No	Depth (inches)	_____
Water Table Present?	No	Depth (inches)	_____
Saturation Present (includes capillary fringe)	No	Depth (inches)	_____

Wetlands Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, prevous inspections) if available

Remarks:
Sample point is situated on the face of an historic slide. There is no evidence of sheet flow or subsurface seepage. Sample point is not likely to be inundated or saturated within 12 inches of the surface for a significant portion of the growing season.