

Appendix G

Biological Resources:
Oak Tree Protection and Replacement Plans

OAK TREE PROTECTION PLAN

EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT SANTA BARBARA COUNTY, CALIFORNIA

PROJECT NO. 1002-0455

Prepared for:

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1.0 INTRODUCTION

The following Oak Tree Protection Plan (Plan) has been prepared by Padre Associates, Inc. (Padre) for Aera Energy LLC (Aera) for the proposed East Cat Canyon Oil Field Redevelopment Project (Project). The 2,100-acre Project site is located within the Solomon Hills northeast of the Gato Ridge mountain ranges within Cat Canyon, approximately 10 miles southeast of the City of Santa Maria and the community of Orcutt, in northern Santa Barbara County, California. The main property entrance is located at 6516 Cat Canyon Road, south of the community of Sisquoc, California. The California Division of Oil, Gas, and Geothermal Resources divides the Cat Canyon Oil Field into four distinct areas: East Area, West Area, Central Area, and Sisquoc Area. The entire Project site lies within the Cat Canyon Oil Field (East Area) boundaries.

The Project will re-establish oil production in the existing oil field by drilling and operating oil/gas production wells, steam injection wells, observation wells, water production wells, water injection wells, and fresh water wells. The Project will also construct and operate a steam generator plant, a central processing plant, pipelines, and associated utilities (electrical transmission lines and gas pipeline). The "Project footprint" (i.e., areas of disturbance associated with grading and construction of facilities, well pads, pipeways, and other infrastructure) will be focused predominantly on the southwest portion of the Project site, where a greater density of existing roads, well pads, and previous facility footprints already exist.

The purpose of this Plan is to provide tree protection guidelines for Project activities, including grading, trenching, ground disturbance, and construction activities in an effort to minimize impacts to native coast live oak trees (*Quercus agrifolia*) occurring throughout the Project site. Based on site-wide biological surveys, coast live oak trees are the only species of oak that occur on the Project site. This Plan is focused on the protection of the coast live oak trees within the Project footprint not proposed to be removed as part of the Project activities. The goal of this Plan is to provide guidance for oak tree protection during Project activities while following all applicable regulatory oak tree protection standards.

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2.0 DEFINITIONS

To provide a uniform understanding of the terms and concepts used throughout this Oak Tree Replacement Plan, the following terms are defined below.

Acorn	The fruit and viable seed of an oak tree
Canopy	Where more than one tree's branches touch or overlap, they form one continuous cover or 'canopy'
Coast live oak	A non-deciduous oak tree that inhabits coastal (<i>Quercus agrifolia</i>) valleys and woodlands in Santa Barbara County
County	Santa Barbara County
DBH	Diameter at Breast Height is the total cross-sectional diameter between the outside bark of an oak tree measured in inches at a height 4.5 feet above the ground on the uphill side of the tree. In the case of trees with multiple stems (trunks), the diameter of all stems at breast height shall be combined to calculate the diameter at breast height of the tree
Drip line	A vertical line extending from the outermost edge of the oak tree's natural canopy to the ground
Mature live oak tree	Coast live oak trees of eight inch DBH or greater
Oak tree removal	Causing an oak tree to die, be uprooted or removed from the ground by any means, including, but not limited to, cutting, uprooting, poisoning, burning (unrelated to controlled burns), or excessively pruning/topping or severing an oak tree's roots so as to lead to the death of the tree. Death by natural causes (e.g. sudden oak death syndrome) or regulatory requirements shall not be considered a removal
OPU	Oak Planting Unit – a manageable planting unit pre-determined by an oak tree specialist
Protected tree	Mature coast live oak trees
Tree Protection Zone	The area extending from the trunk(s) of a Protected Tree out to six (6) feet past the tree's dripline
Woodland	A community of oak trees with a contiguous canopy

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3.0 REGULATORY SETTING

The following section provides an overview of regulations that govern the protection of deciduous and non-deciduous oak trees, woodlands, and savannas within Santa Barbara County, California; however, it is important to note that the oak trees within the Project site are exclusively non-deciduous coast live oaks, based on tree inventory surveys completed by Padre Biologists. Based on review of these regulations, it has been determined that the guidelines of SB 1334, Chapter 35 Article III – Inland Zoning Ordinance, the County Environmental Thresholds and Guidelines Manual, the Conservation Element-Oak Tree Protection in the Inland Rural Areas of Santa Barbara County, and the Planner’s Guide to Conditions of Approval and Mitigation Measures, apply to this Project. The subsection of each document as it pertains to oak trees and oak woodland is provided in Attachment 2-Regulatory Text.

3.1 STATE OF CALIFORNIA – SB 1334

State of California laws specific to oak tree protection are included in State Senate Bill (SB) SB 1334, which was introduced by Senator Sheila James Kuehl and filed in September of 2004. SB 1334 subjects such oak woodland conversions to the California Environmental Quality Act (CEQA). Pursuant to SB 1334, a County shall determine whether a project may result in a conversion of oak woodlands that will have a significant effect on the environment. If a County determines that there may be a significant effect to oak woodlands, the County shall require one or more of the following oak woodland mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands:

1. Conserve oak woodlands through the use of conservation easements.
2. Plant an appropriate number of trees, including maintaining plantings and replacing dead or diseased trees:
 - a. The requirement to maintain trees pursuant to this paragraph terminates seven years after the trees are planted;
 - b. Mitigation pursuant to this paragraph shall not fulfill more than one-half of the mitigation requirements for the project; and
 - c. The requirements imposed pursuant to this paragraph also may be used to restore former oak woodlands.
3. Contribute funds to the Oak Woodlands Conservation Fund, and;
4. Other mitigation measures developed by the County.

SB 1334 provides that a County may prepare “an oak conservation element for a general plan, an oak protection ordinance, or an oak woodlands management plan, or protection ordinance, or amendments thereto, that meets the requirements of this section [SB 1334].”

3.2 SANTA BARBARA COUNTY OAK – RELATED CODES AND ZONING ORDINANCES

The Santa Barbara County Land Use and Development Code and zoning ordinances contain general regulations and permit regulations which further describe the way property may be development and the conditions under which projects may be approved. Specifically, two chapters, Chapter 14 – Grading Code, and Chapter 35 – Zoning, include codes and ordinances specific to oak tree protection.

Chapter 35 Article III – Inland Zoning Ordinance. Article III - Inland Zoning Ordinance serves to implement the adopted Santa Barbara County Comprehensive Plan by classifying and regulating the uses of land, buildings, and structures within the applicable unincorporated area of the County of Santa Barbara. This document specifies items that are to be reviewed prior to issuance of any Land Use Permits, including potential impacts to natural resources, such as oak woodlands, which may require mitigation.

Chapter 35 Article IX - Deciduous Oak Tree Protection and Regeneration Ordinance (2003). The Deciduous Oak Tree Protection and Regeneration Ordinance addresses deciduous oak tree removal in the inland rural areas if such removal is not associated with development that requires a permit under Section 35-1 and Section 35-2 of Chapter 35 of the County Code or Ordinance 661. This ordinance does not apply to the Project due to the lack of deciduous oaks within the Project site.

Chapter 14 Appendix A – Grading Ordinance Guidelines for Native Oak Tree Removal (2003). The guidelines contained within the Santa Barbara County Grading Ordinance (Chapter 14 of the County Code), govern deciduous and live oak removals, replacing the County of Santa Barbara Environmental Thresholds and Guidelines Manual for agricultural and non-agricultural practices not requiring a discretionary permit. This ordinance does not apply to the Project because a discretionary permit is required for the Project.

3.3 SANTA BARBARA COUNTY COMPREHENSIVE PLAN

The Santa Barbara County Comprehensive Plan includes a long-term general plan that outlines physical development of the County. The Comprehensive Plan’s Conservation Element addresses the conservation, development, and use of natural resources including water, forests, soils, rivers, and mineral deposits.

The Conservation Element - Oak Tree Protection in the Inland Rural Areas of Santa Barbara County (republished in May 2009) amends the Conservation Element Mapped Areas and Communities Section addressing “Oak Tree Protection in the Inland Rural Areas of Santa Barbara County”. This document provides goals, policies, actions, and development standards for the protection of oak trees and applies to this Project. The Conservation Element applies to development in rural areas of the County requiring a permit, defines mature oak trees as “live oak trees six inches or greater diameter at breast height”, and requires replanting of oak trees in accordance with the County’s Standard Conditions and Mitigation Measures (presented in the Planner’s Guide to Conditions of Approval and Mitigation Measures, 2011).

3.4 SANTA BARBARA COUNTY ENVIRONMENTAL THRESHOLDS AND GUIDELINES MANUAL

The guidelines set forth in the Santa Barbara County Environmental Thresholds and Guidelines Manual (County of Santa Barbara Planning and Development Department, Published October 2008, Revised July 2015), are based on the Comprehensive Plan and serve to assist in understanding the use and application of various environmental impact thresholds, as they relate to proposed projects. The document describes specific habitats, such as oak woodlands, and provides guidelines for evaluating and determining significant impacts to those resources. The impact assessment for oak woodlands considers: “habitat fragmentation, removal of understory, alteration to drainage patterns, disruption of the canopy, [and] removal of a significant number of

trees that would cause a break in the canopy or disruption in animal movement in and through the woodland.”

For the assessment of individual oak tree removals, the document states that “the loss of 10 percent or more of the trees of biological value on a project site is considered potentially significant” (County, 2008).” For oak tree protection, the document states that “the preferred method of protecting native trees is to avoid any disturbance within the area 6 feet away from their driplines (the outermost edge of a tree’s foliage) and drainage patterns above and below the tree” (County, 2008). This document applies to the Project.

3.5 CONDITIONS OF APPROVAL AND MITIGATION MEASURES

The Planner’s Guide to Conditions of Approval and Mitigation Measures (2011) recommends conditions of approval for projects subject to discretionary permits. It is based upon State and local regulations including the Subdivision Map Act, Zoning Regulations, Coastal Act Regulations, Comprehensive Plan policies, and Community Plan development standards. Many of the conditions are used as mitigation measures for commonly occurring impacts. This guide specifies the content (as BIO-01, BIO-02, BIO-03, BIO-04, and BIO-05), that is required in tree protection, mitigation and replacement plans. That content includes impact avoidance and minimization measures, location maps, mitigation requirements, and tree replacement methods. This guide has been used in the development of this Plan.

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4.0 OAK TREE PROTECTION MEASURES

The design of the Project includes the protection in place of 420 acres (93.5 percent) of the existing coast live oak woodland throughout the Project site. Based on an average calculation of 46 mature coast live oak trees per acre, it is estimated that approximately 19,320 out of a total of 20,663 trees will be protected in place. This does not include the numerous seedlings and saplings that are present in the understory throughout the protected portions of the coast live oak woodland at the Project site. Preservation of oak woodland throughout the Project site will focus on corridor retention. Oak corridors provide continuity of canopy that support movement of wildlife, and assists in survival, breeding, and reproductive success of wildlife, and provides suitable conditions for associated understory plant species.

While the Project was specifically designed to minimize oak tree removals, the development of roads, well pads, processing facilities, buildings, pipelines, and utility corridors, will result in the removal of coast live oak trees, totaling 29.2 acres (6.5 percent) of coast live oak woodland throughout the Project site. Mitigation for removed trees is addressed in a separate Project Oak Tree Replacement Plan. The following measures are provided for the protection of oak trees that are within proximity of the Project grading and construction areas and are *not* proposed for removal. Implementation of these measures prior to and during Project construction activities will avoid and minimize impacts to live oak trees located on-site.

1. Oak tree protection areas will be depicted on Project plans and field verified by a qualified biologist prior to the initiation of Project grading and construction activities. Equipment storage, construction staging, and construction parking areas will be located outside of the oak tree protection areas and depicted on Project plans. For the purposes of this Plan, oak tree protection areas are defined as areas of the Project site adjacent to the Project footprint where oak trees not proposed for removal may have the potential to be damaged by Project grading or construction activities. Project activities that encroach within designated oak tree protection areas will be documented and any oak tree removals will be replaced per the recommendations of the Project Oak Tree Replacement Plan.
2. Prior to and during grading and construction activities, oak tree protection areas will be established and maintained as follows:
 - Fencing at least six feet outside the drip line will be installed around oak trees or contiguous groups of oak trees that are located within designated oak tree protection areas. This perimeter fencing will define the oak tree protection areas.
 - Fencing will be three feet high, at minimum, and secured to the ground to prevent collapse. Signs, placed at regular intervals, will be attached to the fencing identifying the protection area.
 - Oak tree protection area fencing and signage will be maintained throughout the grading activity.
3. Grading within proximity of oak tree protection areas will be designed to avoid ponding and ensure proper drainage for nearby oak trees.
4. All oak trees located within 25 feet of buildings will be protected from stucco and/or paint splatter during construction.

5. Irrigation of landscaping plants will not occur within six feet of the drip line of any protected oak tree, to avoid overwatering and proliferation of oak root fungus.
6. Trimming of oak tree limbs will be minimized to the greatest extent feasible. Trimming should be limited to less than ten percent of the canopy and no more than 25 percent, if required. Significant trimming will be scheduled during the dry summer months, if feasible. Necessary trimming of oak tree limbs for fire management and/or road clearance will be conducted under the direction of a certified arborist to reduce the potential for over-trimming that could result in tree mortality. Trees that die because of trimming will be considered a removed tree and replaced per the recommendations of the Project Oak Tree Replacement Plan.
7. In the event that any trenching must occur within the drip line (sensitive root zone) of an oak tree located within the oak tree protection areas, roots shall be cleanly cut (i.e., avoid use of “ditch witch” or other equipment that would tear the root) and trimming of branches will be completed by hand (i.e., avoiding the use of heavy equipment) under the direct supervision of a qualified arborist. Trenches will be backfilled, compacted, and stabilized with hydromulch or other suitable measure to prevent downslope trench washout as soon as possible.
8. All roots over 1-inch diameter that are cut will be treated by a certified arborist and/or licensed pest control applicator (PCA) with knowledge and experience in oak root treatment. All severed roots will be given a clean cut by handsaw or sawsall. Temporarily exposed roots will be kept damp until backfilled by spraying water or covering with damp burlap. Exposed roots of mature trees will be treated by a licensed PCA to prevent fungal or insect damage.
9. An Environmental Sensitivity Orientation will be prepared and included into Project orientations and presented to Project personnel prior the start of initial Project activities. The orientation will include information regarding oak tree protection measures, permit obligations, and further information regarding the importance of retaining oak trees and oak woodlands.

5.0 MONITORING

All mature coast live oak trees that are damaged (roots cut or more than ten percent of the canopy trimmed) during Project activities will be monitored for a period of seven years to assess health. Monitoring will occur quarterly for the first year and annually thereafter, to assess tree health and identify remedial actions, as warranted. The Oak Tree Health Assessment Worksheet (refer to Attachment 2) will be used to evaluate and record the health and vigor of each tree. If a mature coast live oak tree shows significant decline (changes from excellent or good health to poor health) or dies during this period, it will be replaced according to the Project Oak Tree Replacement Plan.

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6.0 REFERENCES

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- Dagit, Rosi, A. James Downer. 1997. USDA Forest Service Gen. Tech. Rep. PSW-GTR-160. Mahall, Bruce E., Frank W. Davis, Claudia M. Tyler. 2005. Santa Barbara County Oak Restoration Program August 1994 – August 2005 Final Report. University of Santa Barbara. Santa Barbara, CA.
- Senate Bill (SB) 1334. Bill Analysis. Date of Hearing: June 14. 2004. Assembly Committee on Natural Resources. Available online at: http://www.leginfo.ca.gov/pub/03-04/bill/sen/sb_1301-1350/sb_1334_cfa_20040610_162331_asm_comm.html

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ATTACHMENT 1

REGULATORY TEXT

SB 1334, KUEHL. OAK WOODLANDS CONSERVATION: ENVIRONMENTAL QUALITY.

(1) The Oak Woodlands Conservation Act provides funding for the conservation and protection of California's oak woodlands.

The California Environmental Quality Act (CEQA) requires a lead agency to prepare, or cause to be prepared, and certify the completion of, an environmental impact report on a discretionary project that it proposes to carry out or approve that may have a significant effect on the environment, as defined, or to adopt a negative declaration if it finds that the project will not have that effect. CEQA also requires a lead agency to prepare a mitigated negative declaration for a project that may have a significant effect on the environment if revisions in the project would avoid or mitigate that effect and there is no substantial evidence that the project, as revised, would have a significant effect on the environment. CEQA provides some exemptions from its requirements for specified projects.

This bill would require a county, in determining whether CEQA requires an environmental impact report, negative declaration, or mitigated negative declaration, to determine whether a project in its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment, and would require the county, if it determines there may be a significant effect to oak woodlands, to require one or more of specified mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands. The bill would exempt specified activities from its requirements. By imposing new duties on local governments with respect to oak woodlands mitigation, the bill would impose a state-mandated local program.

(2) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

The people of the state of California do enact as follows:

SECTION 1.

Section 21083.4 is added to the Public Resources Code, to read:

21083.4.

(a) For purposes of this section, "oak" means a native tree species in the genus *Quercus*, not designated as Group A or Group B commercial species pursuant to regulations adopted by the State Board of Forestry and Fire Protection pursuant to Section 4526, and that is 5 inches or more in diameter at breast height.

(b) As part of the determination made pursuant to Section 21080.1, a county shall determine whether a project within its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment. If a county determines that there may be a significant effect to oak woodlands, the county shall require one or more of the following oak woodlands mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands:

(1) Conserve oak woodlands, through the use of conservation easements.

(2) (A) Plant an appropriate number of trees, including maintaining plantings and replacing dead or diseased trees.

(B) The requirement to maintain trees pursuant to this paragraph terminates seven years after the trees are planted.

(C) Mitigation pursuant to this paragraph shall not fulfill more than one-half of the mitigation requirement for the project.

(D) The requirements imposed pursuant to this paragraph also may be used to restore former oak woodlands.

(3) Contribute funds to the Oak Woodlands Conservation Fund, as established under subdivision (a) of Section 1363 of the Fish and Game Code, for the purpose of purchasing oak woodlands conservation easements, as specified under paragraph (1) of subdivision (d) of that section and the guidelines and criteria of the Wildlife Conservation Board. A project applicant that contributes funds under this paragraph shall not receive a grant from the Oak Woodlands Conservation Fund as part of the mitigation for the project.

(4) Other mitigation measures developed by the county.

(c) Notwithstanding subdivision (d) of Section 1363 of the Fish and Game Code, a county may use a grant awarded pursuant to the Oak Woodlands Conservation Act (Article 3.5 (commencing with Section 1360) of Chapter 4 of Division 2 of the Fish and Game Code) to prepare an oak conservation element for a general plan, an oak protection ordinance, or an oak woodlands management plan, or amendments thereto, that meets the requirements of this section.

(d) The following are exempt from this section:

(1) Projects undertaken pursuant to an approved Natural Community Conservation Plan or approved subarea plan within an approved Natural Community Conservation Plan that includes oaks as a covered species or that conserves oak habitat through natural community conservation preserve designation and implementation and mitigation measures that are consistent with this section.

(2) Affordable housing projects for lower income households, as defined pursuant to Section 50079.5 of the Health and Safety Code, that are located within an urbanized area, or within a sphere of influence as defined pursuant to Section 56076 of the Government Code.

(3) Conversion of oak woodlands on agricultural land that includes land that is used to produce or process plant and animal products for commercial purposes.

(4) Projects undertaken pursuant to Section 21080.5 of the Public Resources Code.

(e) (1) A lead agency that adopts, and a project that incorporates, one or more of the measures specified in this section to mitigate the significant effects to oaks and oak woodlands shall be deemed to be in compliance with this division only as it applies to effects on oaks and oak woodlands.

(2) The Legislature does not intend this section to modify requirements of this division, other than with regard to effects on oaks and oak woodlands.

(f) This section does not preclude the application of Section 21081 to a project.

(g) This section, and the regulations adopted pursuant to this section, shall not be construed as a limitation on the power of a public agency to comply with this division or any other provision of law.

SECTION 2.

No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because a local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service mandated by this act, within the meaning of Section 17556 of the Government Code.

REGULATORY TEXT

CONSERVATION ELEMENT

**Oak Tree Protection in the Inland Areas of Santa Barbara
County**



SANTA BARBARA COUNTY
COMPREHENSIVE PLAN

CONSERVATION ELEMENT

OAK TREE PROTECTION IN THE INLAND RURAL AREAS OF SANTA BARBARA COUNTY

SUPPLEMENT TO THE MAPPED AREAS AND COMMUNITIES SECTION

ADOPTED 2003

REPUBLISHED MAY 2009



County of Santa Barbara
Planning and Development
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The electronic version of the Santa Barbara County Comprehensive Plan can be found at: <http://longrange.sbcountyplanning.org>

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**SUPPLEMENT TO THE MAPPED AREAS AND COMMUNITIES SECTION
OF THE CONSERVATION ELEMENT**

**OAK TREE PROTECTION IN THE INLAND RURAL AREAS OF
SANTA BARBARA COUNTY**

I. INTRODUCTION ¹

A. Purpose and Organization

This section of the Santa Barbara County Comprehensive Plan Conservation Element provides for the protection of native oak trees in the inland rural areas of Santa Barbara County. To achieve protection of the remaining oak tree resource, the County will regulate the removal of oak trees; seek financial assistance for landowners, incentives and purchase toward their conservation; and distribute information about oak trees and their propagation to promote oak woodland restoration.

Part I provides an introduction and background to the development of this section of the Conservation Element, including a history of the process that generated the oak tree protection Goals, Policies, Actions, and Development Standards. Part II is an overview of oak tree resources in Santa Barbara County. Part III contains the Goals, Policies, Actions, and Development Standards that address oak trees in the inland rural areas of the county.

B. Process History

Outside of the coastal zone boundary, the County of Santa Barbara has no regulations specifically written to address the removal of native oak trees unless the removal is associated with another action requiring a permit. On February 10, 1998 the County's Board of Supervisors initiated a collaborative public process to develop recommendations for oak protection. This decision was made in response to the accelerated clearing of native oak trees on the county's rural lands to prepare ground for planting new crops. The County's Planning & Development Department estimated that more than 2,000 oak trees were removed for agricultural intensification in the eighteen months preceding the February 1998 hearing, more than had been removed for urban development in the previous ten years.

The County invited over 400 people to participate in the collaborative discussions, including grape growers, vintners, farmers, ranchers, Agricultural Advisory Committee members, scientists, environmentalists, and other interested parties. In sixteen public meetings over 14 months, a balanced core group of approximately 25 participants and many other occasional participants came close to agreeing on recommendations to address large-scale oak removal. However, the group was ultimately unable to unanimously approve final recommendations.

In September of 1999 the Board recognized that complete consensus was not forthcoming. The Board directed Planning & Development to hold another series of public workshops and to develop oak protection regulations based on public comment, the work of the Oak Protection Collaborative Process, and County policies that call for the encouragement of agricultural expansion and the protection of natural resources.

The regulations were prepared and an Environmental Impact Report prepared by spring of 2001.

In July of 2001, after five public hearings, the County Planning Commission recommended that the Board of Supervisors adopt the Oak Protection Program. When Planning & Development brought the program to the Board in spring of 2002, however, the Board chose instead to encourage a small group of farming and environmental representatives to work on another consensus based alternative. After several meetings supported and facilitated in part by County staff, the group now known as the Oak Working Group produced the recommendations that are the basis for the Oak Tree Protection and Regeneration Program that was adopted in April 2003.

The uniqueness of the Oak Tree Protection and Regeneration Program produced by the Oak Working Group, which calls for stewardship and cooperation, has received support and buy-in from both the agricultural and environmental communities. Such bipartisan support is critical for the success of this type of program.

The goal, policies, development standards and implementing actions in Section III below are based on the work of the collaborative process and on other input from the community. They were subsequently refined and finalized by the Oak Working Group.

II. OVERVIEW OF OAK TREE RESOURCES IN THE SANTA BARBARA COUNTY RURAL AREA

A. Oak Trees in California

Oak savannas, woodlands, forests, and the grassland and riparian systems that complement them are California's most biologically diverse ecosystems and integral parts of the state's cultural and historical heritage. Santa Barbara County is fortunate to retain a significant, though reduced, distribution of the oak habitats that once blanketed the Central Coast.

Oak habitats contribute greatly to the ecological diversity of California. In terms of species diversity, California's native oak woodlands provide habitat for approximately 2,000 species of plants, 170 birds, 100 mammals (approximately one-third of all mammals native to California), 60 amphibians and reptiles, and 5,000 species of insects (University of California 1993 and 1996). These species include eagles, owls, hawks, reptiles, bobcats, foxes, deer, and 300 or more other vertebrate species that depend on oak habitats during their breeding seasons. In terms of ecological function, intact oak habitats stabilize the soil on which they occur, serving to help prevent the erosion of topsoil and protect water quality. Oak trees also provide shade, influencing the temperature and growth conditions for understory species. The community of oak-associated plants, vertebrates, invertebrates, and soil microbes varies from site to site, in response to site-specific conditions and the extent of influence by the dominant oaks. Within these communities, structural complexity is enhanced by the presence of riparian areas, downed and woody debris, snags, and diverse ages and conditions in oaks and other plants (Merrick et al. 1999).

California's oaks are also important for their aesthetic, economic, historical, and cultural values. Oak trees and their habitats are woven into California and Santa Barbara County's cultural heritage, beginning with the indigenous peoples that utilized oak tree products and valued the oak woodlands in their cultural traditions. After European settlement in California, oak habitats have continued to be an enduring symbol of the state's rich ranching tradition, and to be valued economically and aesthetically. The presence of oak trees on a property can increase the property's value by 20% or more (University of California 1993). They are one of the county's and the state's most widely recognized and admired visual assets. In both the urban and rural areas of Santa Barbara County, oak woodlands and large, individual oak trees contribute significantly to the scenic beauty for which the county is known.

B. Distribution and Characteristics of Oak Trees in Santa Barbara County Distribution

Oaks in Santa Barbara County are widely distributed and occur in a variety of diverse biological communities. Some oak species always occur as trees, others occur as shrubs, and for some, size and growth form depends on site conditions and genetics.

The tree-sized oak species in Santa Barbara County include coast live oak trees (*Quercus agrifolia*), valley oak trees (*Quercus lobata*), blue oak trees (*Quercus douglasii*), canyon live oak trees (*Quercus chrysolepis*), black oak trees (*Quercus kelloggii*), and interior live oak trees (*Quercus wislizenii*). Table 1 provides the inventory of each of the different oak woodland and forest communities occurring in Santa Barbara County.

Coast live oak trees occur predominantly in coastal areas, and throughout the county on north-facing slopes and along perennial and intermittent creeks. Multi-trunked coast live oak trees are often a component of the sensitive Burton Mesa chaparral community in the Lompoc Valley. In the Santa Ynez Valley, stands of coast live oak trees mingle with relatively widely spaced valley oak trees on rolling savannas. Beginning on the cool, north-facing slopes of the upper Santa Ynez Valley and extending northward, blue oak woodlands become prevalent. Canyon live oak, black oak, and interior live oak trees occur in montane and interior areas of the County, largely on lands included within Los Padres National Forest.

Table 1: Oak Woodland and Forest Communities in Santa Barbara County

Oak Community	Approximate Acreage
Coast Live Oak Forest*	71,381
Canyon Live Oak Forest	12,325
Interior Live Oak Forest	1,902
Valley Oak Woodland	9,682
Blue Oak Woodland	22,872
Coast Live Oak Woodland	80,077
Total Oak Woodlands and Forests	198,239
<i>Source:</i> ICESS, U.C. Santa Barbara; (personal communication, Davis 2000)	
*Includes central coast live oak riparian forest and south coast live oak riparian forest	

Of the oak trees occurring in Santa Barbara County, the valley oak trees (*Quercus lobata*), blue oak trees (*Quercus douglasii*), and black oak trees (*Quercus kelloggii*), are deciduous, losing their leaves in winter. Coast live oak trees (*Quercus agrifolia*), canyon live oak trees (*Quercus chrysolepis*), and interior live oak trees (*Quercus wislizenii*) are live oak trees, retaining their foliage throughout the year. Some of the other characteristics of the oak trees of Santa Barbara County are described below.

Characteristics

Coast live oak (*Quercus agrifolia*): Coast live oak trees are generally low trees, with trees in open stands ranging from 20 to 40 feet tall. However, trees in dense stands can reach 80 feet tall. A dense, layered canopy is characteristic, and coast live oak trees often have multiple trunks when the stumps re-sprout after fire. They commonly reach greater than 250 years in age (Pavlik et al. 1991) and occur from Northern Baja

California to Mendocino County along the coast as well as in inland areas where fog provides adequate moisture (Pavlik et al. 1991).

Valley oak (*Quercus lobata*): Valley oak trees are thought to be the largest oak species in North America, reaching up to 100 feet in height (though they are most typically 40 to 50 feet tall) with canopies that are generally 40 to 50 feet wide (Pavlik et al. 1991). The limbs are relatively large and often droop near the ground, especially on trees that occur in open savannas rather than on trees in more dense riparian habitats. Valley oak trees can live to be 400 to 600 years old. Their distribution is limited to California, in the Central Valley and the inner coast and transverse ranges. Within their range, they occur on deep, rich soils in riparian areas, alluvial fans and valleys, and upland terraces (University of California 1993).

Blue oak (*Quercus douglasii*): Blue oak trees average 30 to 40 feet in height, and have a compact canopy (Pavlik et al. 1991). The tree's name indicates the blue-ish color of the upper leaf surfaces, which is most dramatic in the late summer (Pavlik et al. 1991). Blue oak trees are thought to live for 200 to 300 years, though trees as old as 390 years have been reported (White 1966). Blue oaks occur only in California, from Santa Barbara to Shasta counties (University of California 1993), mainly in foothills bordering interior valleys (Pavlik et al. 1991).

Canyon live oak (*Quercus chrysolepis*): Canyon live oak trees can grow to be between 15 and 60 feet tall (University of California 1993), with the taller trees generally occurring in dense stands. The species approaches a shrub stature in open, harsh conditions (Pavlik et al. 1991). Canyon live oak trees generally live for 250 to 300 years (Plumb and Gomez 1983). They are found from central Baja California to southwestern Oregon, Nevada, and central Arizona (Pavlik et al. 1991) in foothills and coastal canyons, and on mountain ridges (University of California 1993).

Black oak (*Quercus kelloggii*): Black oak trees occurring in dense stands can reach 100 feet in height, while trees occurring in more open stands are generally 30 to 80 feet tall (Little 1980, Plumb and Gomez 1983). The trees do not usually dominate the communities in which they occur, but are often subordinate to the pines, firs, and cedars in the landscape (Pavlik et al. 1991). Black oaks live for approximately 200 to 300 years (McDonald 1969, Plumb and Gomez 1983). Found in mountains and fairly distant from the coast, black oak trees are distributed from southern San Diego County to central Oregon.

Interior live oak (*Quercus wislizenii*): A dense, round tree, interior live oaks are usually between 30 and 75 feet tall (University of California 1993). They generally live for approximately 150 to 200 years and are capable of vigorous re-sprouting after fire (Plumb and Gomez 1983). The species is common in the Klamath and southwestern Cascade ranges and scattered in the Coast, inner Transverse, and Peninsular ranges (Pavlik et al. 1991). Within its range, interior live oak trees occur away from the coast and can tolerate both extremely wet and extremely dry conditions (University of California 1993).

C. Changes in Oak Tree Distribution in California and Santa Barbara County

California's oak woodlands are declining in both viability and distribution. The state's original 10-12 million acres of oak woodland have been reduced to approximately 7 million acres today (Thomas 1997). The greatest concentrations of oak woodlands remain in the foothills of the coast and valleys (University of California 1993). Though millions of acres remain, there is concern regarding the viability of some relict populations of older oak trees that do not appear capable of regenerating the aging stands in which they occur (Pavlik et al. 1991, University of California 1993). After the existing oak trees die, these areas will be added to the tally of acreage where oak woodlands have been lost.

Santa Barbara County's oak populations have not been spared from the declines observed in the rest of the state. A large percentage of coast live oak, valley oak, and blue oak habitats occur on private lands within the jurisdiction of the County of Santa Barbara. Santa Barbara County's populations of black oak, canyon live oak, and interior live oak are concentrated within the boundaries of Los Padres National Forest. As a result, valley oak, blue oak, and coast live oak woodland have experienced the most severe contractions in their populations and are of the most concern.

Valley oak savannas and woodlands in the county, naturally occurring on the deep, fertile soils also preferred by agriculture and development, have been especially affected. The California Department of Fish and Game considers virtually every valley oak community threatened and of high priority (Davis 1999). Countywide, valley oak savanna and woodland is estimated to have declined from 62,000 acres in the 1700's to approximately 10,000 acres today (Davis 1999).

In the San Antonio Creek watershed, including the Los Alamos Valley and exclusive of Vandenberg Air Force Base, approximately 4,100 acres of coast live oak woodlands and forests were cleared between 1930s and 1999. Approximately 2,200 acres of blue oak woodland have been lost in the same area. This study area represents approximately 10% of the privately owned land in the jurisdiction of the County of Santa Barbara and it includes much of the area of vineyard development in the county (Davis 1999).

Much of the historic and current declines in oak tree populations in Santa Barbara County and the rest of the state have been due to direct removal for the purposes of urban development and cultivated agriculture. Livestock raising, wood cutting, flood control and fire suppression have also had a hand in the clearing of oak trees in California during the last 200 years (Rossi 1980). Some oak trees continue to be lost to urban expansion in the county. However, agriculture, especially vineyard expansion, made a notable contribution to oak tree clearing in Santa Barbara County in the mid to late 1990's. Planning and Development estimates that approximately 2,000 oak trees were removed by agricultural operations between 1996 and 1998.

In addition to the direct effects of tree removal on oak communities, many oak populations in Santa Barbara County and throughout the state are known for their lack of successful natural recruitment. Recruitment is the transition of oak seedlings to saplings and young adults that will eventually serve to replace the older trees. In Santa Barbara County, savannas and woodlands dominated by valley oak and blue oak trees are particularly lacking young trees.

This less direct and less visible threat to the county's oak woodlands cannot be attributed to any one simple cause. A number of determinants appear to be involved in the lack of oak tree saplings. Competition with annual grasses (originally introduced during European settlement) for scarce moisture, and the cumulative effects of numerous rodents, livestock, and other herbivorous species such as deer are thought to be the main factors (Sweicki and Bernhardt 1991). The native perennial grasses remove moisture from the soil over a longer growing season relative to introduced annual grasses that more quickly deplete soil moisture during a crucial period of oak seedling growth (Danielson 1990). Increases in the number of livestock and in deer and rodent populations further impact oak seedling survival (Griffin 1976 and 1980). Fire suppression and ground water depletion are also thought to play a role in altering the natural conditions of oak tree communities, leading to an effect on their reproductive capabilities (Muick and Bartolome 1986).

D. Protection and Restoration of Oak Trees in Santa Barbara County

The goal of oak preservation in California can best be achieved through an approach that includes preservation of the remaining savannas, woodlands and forests, replacement and restoration of oak resources, and education (Pavlik et al. 1991). Santa Barbara County's Oak Tree Protection and Regeneration Program promotes the protection of the existing oak tree populations, and seeks to increase the acreage of oak woodlands, forests and savannas using a variety of methods and approaches.

With the large percentage of oak woodlands occurring on private lands, it is important for oak protection strategies, especially regulations, to take the property owners' needs into consideration. The oak tree protection policies and standards that are now part of Santa Barbara County's Comprehensive Plan were adopted to provide protection for our county's important oak resources while allowing for continued reasonable use of agricultural properties and other lands.

Restoration of oak habitats to approximate historic oak tree populations and extent will require more than project by project regulatory protection. To accomplish this goal, the program calls for the development of incentives for landowners to protect and increase oak resources, including funding for conservation easements. Funding for oak tree restoration projects is another incentive option. Long-term enhancement and restoration could also be accomplished through outright public acquisition of important oak resources on the properties of willing landowners.

The program also highlights the importance of public education and outreach. This component of the program will provide information on the importance of oak trees, oak habitats, and methods for their successful protection and restoration. These non-regulatory approaches will further the goal of protecting, enhancing, and increasing oak tree populations and habitats in Santa Barbara County.

III. GOAL, POLICIES, AND IMPLEMENTING ACTIONS

OAK TREE PROTECTION GOAL

Santa Barbara County shall promote the conservation and regeneration of oak woodlands in the County over the long term, and, where feasible, shall work to increase the native oak population and extent of woodland acreage. The highest priority for conservation, protection and regeneration shall be for valley oak trees, valley oak woodlands and valley oak savanna.

Intent

Defines the county's overall objective for oak protection and regeneration.

OAK TREE PROTECTION POLICY 1

Native oak trees, native oak woodlands and native oak savannas shall be protected to the maximum extent feasible in the County's rural and/or agricultural lands. Regeneration of oak trees shall be encouraged. Because of the limited range and increasing scarcity of valley oak trees, valley oak woodlands and valley oak savanna, special priority shall be given to their protection and regeneration.

Intent

Establishes the basis for implementation of the Oak Protection Goal; promotes replanting or restoration of degraded oak woodlands to offset loss of oak trees through removals and defines approach to protect valley oaks.

DEVELOPMENT STANDARDS FOR DEVELOPMENT

The following standards shall apply to all development (as defined in the Land Use Element of the Comprehensive Plan) in the rural areas of the County requiring a permit.

Development Standard 1: Protection of all species of mature oak trees

All development shall avoid removal of or damage to mature oak trees, to the maximum extent feasible. Mature oak trees are considered to be live oak trees six inches or greater diameter at breast height and blue oak trees four inches or greater diameter at breast height, or live and blue oaks six feet or greater in height. Native oak trees that cannot be avoided shall be replanted on site. When replanting oak trees on site is not feasible, replanting shall occur on receiver sites known to be capable of supporting the particular oak tree species, and in areas contiguous with existing woodlands or savannas where the removed species occurs. Replanting shall conform to the County's *Standard Conditions and Mitigation Measures*. (This development standard applies to oak trees other than valley oaks. Valley oak trees are addressed in separate Development Standards.)

Development Standard 2: Protection of valley oak trees

All development shall avoid removal of or damage to protected valley oak trees. Development shall not encroach within six feet of the dripline of any protected valley oak trees. Protected valley oak trees are those valley oak trees two inches or greater diameter at breast height, or six feet or taller in height. Valley oak trees that cannot be avoided shall be appropriately replaced on site. If replanting valley oak trees on site is not feasible, replanting shall occur on receiver sites known to be capable of supporting valley oaks, and that allow re-planting in areas contiguous with existing woodlands or savannas where valley oaks occur. All oak tree replanting shall conform to the County's *Standard Conditions and Mitigation Measures*.

Development Standard 3: Restoration of the valley oak tree population

Where development is proposed within historic valley oak tree habitat (even if no valley oak trees would be removed), mitigation of the loss of historic habitat shall be required, where feasible, through planting of locally obtained valley oaks as part of the project landscaping.

OAK TREE PROTECTION ACTION 1

Concurrent with the adoption of these amendments, the County shall amend the Santa Barbara County Code to include oak tree protection regulations developed by the Oak Working Group consistent with the Oak Tree Protection Goal and Oak Tree Protection Policy 1, and endorse a voluntary oak conservation and regeneration program.

OAK TREE PROTECTION POLICY 2

The County shall pursue funding for conservation easements, incentive programs and funding or other assistance for landowners to retain and regenerate native oak trees.

Intent

Contributes to the protection of some oak woodlands.

OAK TREE PROTECTION ACTION 2

The County shall establish a fund to pursue grants for creating conservation easements, or to acquire property for protection of oaks from willing landowners. These efforts should target the most significant oak resources, especially valley oak woodlands and savanna. The Oak Tree Specialist shall work with other agencies and County departments to prepare a conservation program which will identify priorities for acquisition, funding and other means to preserve selected oak habitat, and outline the steps to achieve the program goals.

OAK TREE PROTECTION ACTION 3

The County shall support and, where appropriate, directly carry out public education and outreach (e.g. to private landowners) regarding oak trees, management, incentives and other relevant topics, and seek funding for oak tree regeneration projects on public and private land.

OAK TREE PROTECTION ACTION 4

The County shall monitor the Oak Tree Protection and Regeneration Program, particularly the effectiveness of the regulations, and report to the Board of Supervisors initially at two years and five years following adoption of the Program and then again every five years.

OAK TREE PROTECTION ACTION 5

The County shall pursue funding and staffing for an Oak Tree Specialist to assist with regeneration and management plans, seek incentive funding, carry out education and outreach, monitor the program and report to the Board of Supervisors on program effectiveness.

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CITATIONS

¹ [Resolution No. 03-120](#) (Case No. 00-GPA-6) Adopted April 15th, 2003 (Adopted Supplement to the Mapped Areas and Communities Section, Oak Tree Protection In the Inland Rural Areas of Santa Barbara County)

REGULATORY TEXT

SANTA BARBARA COUNTY ENVIRONMENTAL THRESHOLDS AND GUIDELINES MANUAL



COUNTY OF SANTA BARBARA

Planning and Development

Environmental Thresholds and Guidelines Manual

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NOTE:

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6. BIOLOGICAL RESOURCES (Approved by the Board of Supervisors September 27, 1994)

A. Introduction.

Federal and State laws and adopted County policies require the protection of natural habitats and associated wildlife and vegetation in recognition of their many values, including maintaining a healthy balance between urban built areas and supportive natural environment, nutrient recycling, providing for watershed protection, protection against erosion, cleansing of air and water, food chain support, scientific and medical research, education, recreation, aesthetics, and for the intrinsic value of wildlife and vegetation and their natural ecosystems.

Santa Barbara County has a wide diversity of habitat types, including chaparrals, oak woodlands, wetlands and beach dunes. Preservation of large contiguous habitat areas is the key to preserving biodiversity and avoiding additional species becoming rare, endangered or extinct.

Due to the complexities of ecosystems and the many factors involved in assessing the value of biological resources and project impacts, general qualitative guidelines rather than numerical thresholds are provided.

B. Legal Authority.

1. **CEQA Guidance for Biological Impact Assessment.** The following sections of the State CEQA Guidelines provide general direction for the evaluation of biological resource impacts as a part of the environmental review of proposed projects.

California Environmental Quality Act (CEQA) Section 15065 states that a Lead Agency shall find that a project may have a significant effect on the environment and thereby require an Environmental Impact Report (EIR) to be prepared for the project where the project has the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal.

CEQA Appendix G states that a project will normally have a significant effect on the environment if it will:

- “(a) Conflict with adopted environmental plans and goals of the community where it is located;
- (c) Substantially affect a rare or endangered species of animal, plant or the habitat of the species;
- (d) Interfere substantially with the movement of any resident or migratory fish or wildlife species; and
- (e) Substantially diminish habitat for fish, wildlife or plants.”

2. **Federal and State Requirements for Protection of Biological Resources.** Environmental impact analysis and mitigation needs to take into account Federal and State biological resource regulations.. The Federal Endangered Species Act and California Endangered Species Act formally list plant and animal species determined to be rare, threatened or endangered, or candidate species, and establish regulations for protecting these species and their habitats. Additional information regarding these statutes is provided in a separate technical document (Planning and Development Department Biological Resources Technical References, 1994).

Other federal statutes include the National Environmental Policy Act (NEPA), the Clean Water Act Section 404 (for protection of wetlands), Bald Eagle Protection Act, Migratory Bird Treaty Act, Executive Order 11990 (wetlands protection), Rivers and Harbors Act Section 10, Marine Protection, Sanctuary and Research Act, Marine Mammal Protection Act, and Section 1601 and 1603 Stream Alteration Agreements.

3. **County Biological Resources Policies.** Requirements for the protection of biological resources in the unincorporated area of Santa Barbara County are provided by the Comprehensive Plan Conservation Element, Environmental Resource Management Element (ERME), Land Use Element, Community Plans, and the Coastal Land Use Plan. These documents identify sensitive habitats and species, and provide measures to direct project design and policies to protect biological resources.

C. **Guidelines for Assessment of Biological Resources Impacts.**

1. **Initial Study Review Process.** The term "biological resources" refers to plant and animal species and habitats that support plant and animal species.

The value of a habitat and the resources present on the project site and potential project impacts are assessed preliminarily during the initial study review process. The first task in the assessment of biological impacts is an evaluation of the plant and animal resources on the project site and the second focuses on the project impact itself, using a series of assessment factors. The initial study evaluation determines whether an EIR or Mitigated Negative Declaration should be prepared based upon substantial evidence (not public controversy) that there is the potential for significant adverse biological impacts to occur as a result of a proposed project.

Based on a preliminary site assessment and review of existing historical resource information (designated environmentally sensitive habitat (ESH) areas, biological resource maps, reports, surveys, and Natural Diversity Data Base maps, available in the Planning and Development Department), staff utilizes the methodologies described below to determine whether resources on a site are biologically valuable, and whether a project may result in a significant impact to biological resources. In some instances a biological consultant survey of the site is required to determine the presence or absence of sensitive species and the value of habitat on and surrounding the project site, and to identify potential project impacts and feasible measures which could be incorporated into the project design to avoid or minimize the potentially significant impacts. Guidelines for performance of biological studies and sensitive resource definitions are provided in a separate technical document.

The determination of impact is done on a case-by-case basis. Because of the complexity of biological resource issues, substantial variation can occur between cases. The following sections identify questions and factors used in assessing the value of biological resources, and the significance of project impacts.

2. **Evaluation of Resources on the Project Site.**

- a. **Resources Inventory.**

- (1) What biological communities are on the site? What size area?
- (2) Is the habitat type relatively common? Is it rare and occurring in only a few places in the region, or significantly declining in extent and/or quality? Is the habitat designated as an ESH area on County planning documents, or designated

as "critical habitat" for listed species by Federal or State agencies?

- (3) Is the site in an urban, rural or outlying area? What are the uses surrounding the site? Is the habitat isolated or is it contiguous with adjacent habitat or close enough to provide a link between habitats?
- (4) Does the habitat support resident species or migratory species? Are there protected species (e.g., endangered or threatened), or species of candidate, special, or local concern or healthy rare species?

b. Condition and Quality.

- (1) Is the habitat pristine or disturbed? How much or to what degree?
- (2) How biologically productive is it? Does it support an especially rich and diverse plant and/or wildlife population?
- (3) Is the habitat resource (including the surrounding area if it is related) large enough to be viable?

3. Evaluation of Project Impacts. Assessment of impacts must account for both short-term and long-term impacts. Thus the assessment must account for items such as immediate tree removal and longer-term, more subtle impacts such as interruption of the natural fire regime or interference with plant or animal propagation.

a. Types of Impacts to Biological Resources. Disturbance to habitats or species may be significant, based on substantial evidence in the record (not public controversy or speculation), if they substantially impact significant resources in the following ways:

- (1) Substantially reduce or eliminate species diversity or abundance
- (2) Substantially reduce or eliminate quantity or quality of nesting areas
- (3) Substantially limit reproductive capacity through losses of individuals or habitat
- (4) Substantially fragment, eliminate, or otherwise disrupt foraging areas and/or access to food sources
- (5) Substantially limit or fragment range and movement (geographic distribution or animals and/or seed dispersal routes)
- (6) Substantially interfere with natural processes, such as fire or flooding, upon which the habitat depends.

b. Less Than Significant Impacts. There are many areas in the County where there is little or no importance to a given habitat and it is presumed that disruption would not create a significant impact. Examples of areas where impacts to habitat are presumed to be insignificant include:¹

- (1) Small acreages of non-native grassland if wildlife values are low.
- (2) Individuals or stands of non-native trees if not used by important animal species such as raptors or monarch butterflies.
- (3) Areas of historical disturbance such as intensive agriculture.

¹ Pursuant to CEQA, a presumption based upon County thresholds that a project's impact is insignificant is rebutted if there is substantial evidence in light of the whole record before the lead agency that the project may have a significant impact on the environment (Pub. Res. Code §21082.2).

- (4) Small pockets of habitats already significantly fragmented or isolated, and degraded or disturbed.
- (5) Areas of primarily ruderal species resulting from pre-existing man-made disturbance.

c. Impact Assessment Factors. In addition to the criteria listed in a. "Types of Impacts to Biological Resources" above, the following questions and factors are used in assessing the significance of project impacts on biological resources.

(1) Size.

How much of the resource in question both on and off the project site would be impacted? (percentage of the whole area and square footage and/or acreage are both useful to know)

How does the area or species that would be impacted relate to the remaining populations off the project site? (percentage of total area or species population, either quantitatively or qualitatively.)

(2) Type of Impact.

Would it adversely indirectly affect wildlife (light, noise, barriers to movement, etc.)?

Would it remove the resource or cause an animal to abandon the area or a critical activity (e.g., nesting) in that area?

Would it fragment the area's resource?

(3) Timing.

Would the impact occur at a critical time in the life cycle of an important plant or animal (e.g., breeding, nesting, or flowering periods)?

Is the impact temporary or permanent? If it is temporary, how long would the resource take to recover?

Would the impact be periodic, of short duration, but recur again and again?

D. Habitat-Specific Impact Assessment Guidelines.

The following section provides additional impact assessment guidelines specific to several biological communities. These guidelines are to be used in conjunction with the general impact assessment guidelines described in Section III. (Note: Not all habitat types found in Santa Barbara County are addressed by these habitat-specific guidelines. Habitat types not addressed here are assessed with the general impact assessment guidelines in Section III.)

1. Wetlands.

a. Description. Wetlands are among the most biologically productive of habitats, and the County's wetlands have been diminished both in areal extent and quality from the historic condition. As a result, naturally-occurring wetlands are an important resource, and projects with potential impacts to wetlands must be carefully evaluated. Examples of wetlands include coastal salt and brackish marshes, fresh water marshes, and vernal pools. Special cases include seasonal wetlands, vegetated flats, inter-dunal swale wetlands, and vegetated river bars and flats (riparian areas).

- b. **Definition.** For the purposes of determining potentially significant effect, Santa Barbara County uses the following wetland definition that has been adopted by most resource protection agencies (U.S. Fish and Wildlife Service, the California Coastal Commission, the California Fish and Game Commission and the California Department of Fish and Game).² This definition reads:

"For purposes of this classification wetlands must have one or more of the following three attributes:

- a) At least periodically, the land supports predominantly hydrophytes, that is plants adapted to moist areas.
- b) The substrate is predominantly un-drained hydric soil, and
- c) The substrate is non soil and is saturated with water or covered by shallow water at some time during the growing season of each year. (Cowardin 1979)"

In order to ensure that wetland protection standards are applied equitably to affected property owners, wetlands which have only one of the defining three characteristics, especially those defined only by seasonal ponding, require careful review to ensure that highly disturbed areas with artificially compacted soils which do not have true wetland characteristics are not mistakenly identified as wetlands.

- c. **Wetland/Upland Boundary Definition.** The same category used to delineate wetland is used to delineate the boundary between wetland and upland.³ The upland limit of wetland is designated as 1) the boundary between land with predominantly hydrophytic cover and land with predominantly mesophytic (semi-dry) or xerophytic (dry) cover; or 2) the boundary between soil that is predominantly hydric and soil that is predominantly nonhydric; or 3) in the case of wetlands without vegetation or soil, the boundary between land that is flooded or saturated at some time each year and land that is not.
- d. **Wetland Impact Assessment Guidelines.** The following types of project-created impacts may be considered significant:
- (1) Projects which result in a net loss of important wetland area or wetland habitat value, either through direct or indirect impacts to wetland vegetation, degradation of water quality, or would threaten the continuity of wetland-dependant animal or plant species are considered to have a potentially significant effect on the environment (California Environmental Quality Act: Guidelines, Appendix G; items c, d, and t).
 - (2) Wildlife access, use, and dispersal in wetland habitats are key components of their ecosystem value. For example, many upland species of wildlife could not persist without access to water. Movement between contiguous habitats through riparian areas (e.g.: from mountainous chaparral to valley grassland or coastal mesa) allows for many species to continue to persist and prevents genetic isolation. Projects which substantially interrupt wildlife access, use and dispersal

² It is the goal of Santa Barbara County to maintain a definition of wetlands consistent with Federal and State resources agencies listed above.

³ Methodologies used in delineating wetlands are consistent with those utilized by Federal and State resources agencies referenced above.

in wetland areas would typically be considered to have potentially significant impacts.

- (3) The hydrology of wetlands systems must be maintained if their function and values are to be preserved. Therefore, maintenance of hydrological conditions, such as the quantity and quality of run-off, etc., must be assessed in project review.

e. Coastal Salt Marsh Impact Assessment Guidelines. Project-created impacts may be considered significant due to the potential to change species composition and habitat value as outlined below.

- (1) Substantial alteration of tidal circulation or decrease of tidal prism.
- (2) Adverse hydrologic changes (e.g., altered freshwater input), substantial increase of sedimentation, introduction of toxic elements or alteration of ambient water temperature.
- (3) Construction activity which creates indirect impacts such as noise and turbidity on sensitive animal species, especially during critical periods such as breeding and nesting.
- (4) Disruption of wildlife dispersal corridors.
- (5) Disturbance or removal of substantial amounts of marsh habitats. Because of the high value and extremely limited extent of salt marsh habitat in the County, small areas of such habitat may be considered significant.

f. Vernal Pools Impact Assessment Guidelines: The following types of project-related impacts may be considered significant:

- (1) Direct removal of vernal pool or vernal pools complex.
- (2) Direct or indirect adverse hydrologic changes such as altered freshwater input, changes in the watershed area or run-off quantity and/ or quality, substantial increase in sedimentation, introduction of toxic elements or alteration of ambient water temperature.
- (3) Disruption of larger plant community (e.g., grassland) within which vernal pool occurs, isolation or interruption of contiguous habitat which would disrupt animal movement patterns, seed dispersal routes or increase vulnerability of species to weed invasion or local extirpation. For example, fragmentation of habitat may interrupt interaction between the habitat and the organisms within the pools (pollination, seed, invertebrate and vertebrate dispersal, provision of drinking and bathing water, etc.). These types of direct and indirect impacts are potentially significant.

2. Riparian Habitats.

a. Description. Riparian habitat is the terrestrial or upland area adjacent to freshwater bodies, such as the banks of creeks and streams, the shores of lakes and ponds, and aquifers which emerge at the surface such as springs and seeps (Bowland and Ferren 1992). A rich assemblage of wildlife series, including birds, mammals and amphibians are found in riparian habitats. In Santa Barbara County, riparian habitat occurs in and along the County's four major rivers (Santa Ynez, Santa Maria, Cuyama and Sisquoc) and in and along the County's many creeks and streams. This habitat can

also occur along arroyos and barrancas, and other types of drainages throughout the County.

b. Riparian Impact Assessment Guidelines, The following types of project-related impacts may be considered significant:

- (1) Direct removal of riparian vegetation.
- (2) Disruption of riparian wildlife habitat, particularly animal dispersal corridors and or understory vegetation.
- (3) Intrusion within the upland edge of the riparian canopy (generally within 50 feet in urban areas, within 100 feet in rural areas, and within 200 feet of major rivers listed in the previous section), leading to potential disruption of animal migration, breeding, etc. through increased noise, light and glare, and human or domestic animal intrusion
- (4) Disruption of a substantial amount of adjacent upland vegetation where such vegetation plays a critical role in supporting riparian-dependent wildlife species (e. g., amphibians), or where such vegetation aids in stabilizing steep slopes adjacent to the riparian corridor, which reduces erosion and sedimentation potential.
- (5) Construction activity which disrupts critical time periods (nesting, breeding) for fish and other wildlife species.

3. Native Grasslands.

a. Description: Native Grassland in California once occurred over 8 million acres in the Central Valley and in scattered patches along the Coast Ranges (Heady, 1977). Few stands of native grasslands remain in the state and the habitat is considered rare both in the state and within the county.

b. Native Grassland Habitat Impact Assessment Guidelines:

- (1) For purposes of resource evaluation in Santa Barbara County, a native grassland is defined as an area where native grassland species comprise 10 percent or more of the total relative cover.^{4,5}
- (2) Removal or severe disturbance to a patch or patches of native grasses less than one-quarter acre, which is clearly isolated and is not a part of a significant native grassland or an integral component of a larger ecosystem, is usually considered insignificant.

4. Oak Woodlands and Forests.

a. Description. There are three primary types of oak woodlands in Santa Barbara County: Valley Oak, Coast Live Oak, and Blue Oak woodlands. The number, type,

⁴ The California Department of Fish and Game, Natural Heritage Division uses the 10 percent relative cover figure in determining acreages of remaining native grasslands (Keeler-Wolf, Natural Diversity Data Base, personal communication May 1992). (Relative cover is the cover of a particular species as a percentage of total plant cover of a given area. [Barbour, Burk & Pitts 1980].)

⁵ Native grasslands which are dominated by perennial bunch grasses such as purple needlegrass (*Stipa pulchra*) tend to be patchy (the individual plants and groups of plants tend to be distributed in patches). Therefore, for example, where a high density of small patches occur in an area of one acre, the whole acre should be delineated if native grassland species comprise 10 percent or more of the total relative cover, rather than merely delineating the patches that would sum to less than one acre.

and density of oak trees, and the relationship between trees and understory are principal characteristics which define the various types of woodlands. Oak habitats support a diverse wildlife population, and offer abundant resources to wildlife including food sources, shade in summer, shelter in winter, perching, roosting, nesting, and food storage sites.

b. Impact Assessment Guidelines for Woodlands and Forest Habitat Areas.⁶ Project-created impacts may be considered significant due to changes in habitat value and species composition such as the following:

- (1) Habitat fragmentation.
- (2) Removal of understory.
- (3) Alteration to drainage patterns.
- (4) Disruption of the canopy
- (5) Removal of a significant number of trees that would cause a break in the canopy or disruption in animal movement in and through the woodland

5. Impact Assessment for Individual Native Trees.⁶

a. Description. Native specimen trees, regardless of size, are potentially significant, and rare native trees, which are very low in number or isolated in distribution (such as Island Oak) may be particularly significant. This significance evaluation is done on a case-by-case basis and considers tree size, numbers, location, relationship to habitat, etc.

b. Definition. Specimen trees are defined, for biological assessment purposes, as mature trees that are healthy and structurally sound and have grown into the natural stature particular to the species.

c. Native Tree Impact Assessment. In general, the loss of 10 percent or more of the trees of biological value on a project site is considered potentially significant.⁷

E. General Mitigation Guidelines for Biological Impacts.

1. Mitigation Hierarchy. The following general approaches to reducing biological impacts are presented in the order of their effectiveness.

a. Avoidance.

Avoid direct or indirect impacts to significant biological resources through project design.

Focus on maintaining large, contiguous habitat areas and animal movement corridors. A project design which clusters development on a relatively limited portion of the project site may reduce the habitat area disturbed by the project.

b. Onsite Mitigation.

⁶ The impact assessment guidelines for oak trees, woodlands and forest habitat do not apply to non-discretionary level oak tree removal of protected and unprotected size under the Grading Ordinance Guidelines for Native Oak Tree Removal that are incorporated as Appendix A in County Code, Chapter 14. Non-discretionary-level oak tree removal of protected and unprotected size that is subject to and in compliance with these Guidelines has been previously analyzed in the program EIR, 00-EIR-07 RV1.

⁷ The number of trees present onsite from which the 10 percent is measured may be calculated either by counting individual trees or by measuring the area of the tree canopy with a planimeter.

Minimize or reduce impacts through on-site design and resource protection measures.

Measures may include vegetative spatial buffer between project and habitat areas; revegetation; habitat enhancement; erosion and water quality protection; on-site replacement/compensation; maintenance and management measures such as fencing, weed control, use of building envelopes, and dedication of areas through open space or conservation easements or grant deed of development rights; short-term measures to protect against construction impacts (e.g., fencing, timing of construction to avoid nesting season).

c. Off-Site Mitigation.

Compensate for on-site impacts through off-site measures.

When avoidance or on-site mitigation is infeasible or inadequate to reduce impacts, measures such as those listed under on-site mitigation can be considered in off-site locations, or may be accomplished through in-lieu fees. Off-site approaches may be appropriate at times if a greater ecological value may be clearly gained than with on-site mitigation. (i.e., where on-site habitat is of low quality or highly fragmented).

- 2. Habitat Replacement/Compensation Guidelines.** The mitigation approach of replacing habitat either on-site or off-site, to compensate for habitat loss, is generally not a preferred approach because it always results in some habitat loss (either short-term or long-term), and because prospects for successful habitat replacement are problematic.

Replacement mitigation should involve the same habitat type, location(s) within the same watershed and as close as possible to the site of impact, and should result in comparable and compensating size and habitat value.

Beneficial ecological restoration projects, where the purpose of the project is to enhance or restore biological or habitat resources, compensate replacement at a minimum ratio of 1:1. Refer to the *County Guidelines for the Implementation of the California Environmental Quality Act of 1970, As Amended*, revised January 8, 2008, for the definition and requirements for beneficial ecological restoration projects.

3. Consultation on Mitigation and Project Design.

a. Biological Information. County biological information available to project applicants, consulting biologists and the public by appointment includes resource and wetland maps, historical aerial photographs, and a library of previous biological surveys and reports. More specific mitigation guidance is provided in a separate technical document augmenting these Guidelines.

b. Consultants. County staff is available through consultations and pre-application meetings to advise project applicants on project design measures to minimize biological impacts. Project sponsors may consult informally with California Department of Fish and Game and/or area consulting biologists at the preliminary review or initial study stage to determine what wildlife and vegetation resource information is available or needed and how the necessary information can be obtained.

F. Technical Background Document.

A separate technical document (Appendix A) contains the following additional information:

- A. Summary of Biological Resources Statutes

- B. Biological Survey Guidelines
- C. Detailed Biological Habitat Descriptions
- D. Biological Mitigations
- E. References

APPENDIX A

Santa Barbara County Planning and Development Department Biological Resources Guidelines Technical Background Document September 1994

Synopsis:

As an appendix to the Biological Resources Guidelines (September 1994) of the County Environmental Thresholds and Guidelines Manual, this document provides additional technical background information about biological resources, which may be useful when evaluating development proposals for impacts on vegetation, wildlife, and biological habitats.

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A. Summary of Biological Resource Statutes (September 1994)

The Biological Resources Guidelines provides a short summary of legal authority under the California Environmental Quality Act (CEQA) for evaluating biological resource impacts, and Federal, State and County requirements and polices for the protection of biological resources.

Following are additional excerpts describing the statutory basis for the protection of individual plant and animal species, and biological habitats.

1. The legal basis for protection of threatened, endangered and candidate species.

The following text is excerpted from a "Revised Memorandum of Law Demonstrating Continuing Compliance by the State of California with USC Section 1535(c) of the Federal Endangered Species Act of 1973", originally prepared in 1974 by Evelle Younger, Boronkay and Mok with revisions made by John K. Van de Kamp, Attorney General of California and others in 1990.

"The authority of the state to conserve resident species of fish, wildlife or plants determined by the state agency to be endangered or threatened is granted in the Federal Endangered Species Act (ESA) 16 USC section 1535(c)(1)(A) and (2) (A).

California Fish and Game Code Section 200 grants general authority to the Fish and Game Commission to regulate the taking or possession of birds, mammals, fish, amphibians and reptiles subject to more specific statutory restrictions...."

a. Regulations and statutory authority. "Important state authority for the conservation of endangered and threatened species of fish, wildlife and plants is found in California Endangered Species Act (CESA) enacted in 1984. California Fish and Game Code Section 2051 et seq. ... In addition for a complete picture the California Endangered Species Act (CESA) must be read with the Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.) which also governs the preservation, protection and enhancement of endangered or rare native plants...."

- b. California Endangered Species Act (California Fish and Game Code Sections 2051 et seq.)** "This important conservation legislation declares State policy regarding threatened and endangered species, provides for a listing and review process, prohibits certain acts damaging to listed species, and provides a consultation process whereby state projects are reviewed for impacts on listed species. Both the Commission and Department are given important powers and duties vis-à-vis protection of subject species.

The CASE declares the State's interest in threatened and endangered species (California Fish and Game Code Section 2051) and unequivocally sets out the State's policy in California Fish and Game Code Section 2052:

"The Legislature further finds and declares that it is the policy of the state to conserve, protect, restore, and enhance any endangered species or any threatened species and its habitat and that it is the intent of the Legislature, consistent with conserving the species, to acquire lands for habitat for these species."

Toward that end state agencies in approving projects are required to seek out feasible alternatives to avoid jeopardizing the continued existence of listed species or provide appropriate mitigation and enhancement measures. California Fish and Game Code Sections 2053 - 2054. The California thresholds for endangered and threatened status (California Fish and Game Code Sections 2062 and 2067) are equivalent to Federal definitions. See 16 USC Sections 1532(6) and 1532(20). Also the tools listed for "conserving" resources (California Fish and Game Code Section 2061) are identical to the federal model. 16 U.S.C. Section 1532(3)."

"...Species to be so conserved must first be listed. That responsibility rests with the Fish and Game Commission upon consideration of sufficient scientific information. California Fish and Game Code Section 2070. The listing process may be initiated by petition from any interested person (California Fish and Game Code Section 2071, 2072 and 2072.3) or on recommendation of the Department of Fish and Game (California Fish and Game Code Section 2072.7. Petitions are evaluated by the Department which makes a recommendation to the Commission as to whether the petition contains sufficient information to determine if action is warranted. California Fish and Game Code Section 2073.5. Petitions and Department-initiated recommendations are then acted upon by the Commission, which decides whether to require formal review of the request. California Fish and Game Code Section 2074.2. Formal review and the corresponding "candidate species" status triggers substantial opportunities for public participation through the notification of interested parties. See California Fish and Game Code Section 2074, 2074.2, 2075, 2077 and 2078. This notification and opportunity to participate continues throughout the designation process. Formal review itself may take up to one year and results in a Department report on listing including, if appropriate, a preliminary identification of the habitat that may be essential to the continued existence of the species and recommendation as to management activities and other recommendations for recovery of the species. California Fish and Game Code Section 2074.6."

"Currently California's list of threatened or endangered plants and animals is set out in 14 Section Code Choosy. Sections 670.2 and 670.5. This listing is subject to periodic Department review and appropriate Commission response. California Fish and Game Code Section 2077...."

"Once a species is listed "[N]o person shall import into this state, export out of this state,

or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission determines to be an endangered species or a threatened species, or attempt any of those acts," subject to some exceptions principally involving plants. California Fish and Game Code Section 2080....**This prohibition generally applies to candidate species undergoing formal review.** [emphasis added] California Fish and Game Code Section 2085..."

"In the event a project is being carried out by a local agency the Department [of Fish Section Game] may participate in the environmental review process as a responsible or trustee agency as appropriate. In that regard the status of threatened or endangered is recognized in the environmental review process (14 Section Code Choosy. 15380) and a project impact is normally considered significant, thus requiring the consideration of alternatives and mitigation, if a project will substantially affect a threatened or endangered species of animal or plant or the habitat of the species. 14 Section Code Choosy. Causa. 6, Chap. 3, Cheesy. G(c)."

"The Native Plant Protection Act [California Fish and Game Code Section 1900 et seq.] provides further authority to conserve plant species and conduct investigations in support of conservation in accordance with 16 U.S.C. sections 1535(c)(2)(A)(C).

- c. **Wildlife and Natural Areas Conservation Act (California Fish and Game Code Section 2700 et seq.).** This legislation became effective November 9, 1988 and provides money for habitat protection for California species including those designated as threatened or endangered. California Fish and Game Code Section 2701. The principal protection focus is acquisition...."

"California Fish and Game Code Section 1700 et seq., entitled "Conservation of Aquatic Resources," declares State policy to encourage conservation of the living resources of the ocean and other state waters, including species preservation.

Similarly California Fish and Game Code section 1750 et seq. (Native Species Conservation and Enhancement Act) declares a policy of maintaining sufficient populations of all species of wildlife and native plants and the habitat necessary to insure their continued existence at optimum levels and establishes an account to manage private donations toward that end....California Fish and Game Code Section 1800 et seq. provides that the policy of the State, inter alia, is "to encourage the conservation and maintenance of wildlife resources" including the maintenance of "sufficient populations of all species of wildlife and the habitat necessary to ...perpetuate all species of wildlife for their intrinsic and ecological values...." Lastly, California Fish and Game Code Sections 1930-1933 establishes the significant natural areas program to protect and preserve important habitats and ecosystems through developing information with respect to natural resources (the California Natural Diversity Data Base)....[and other mechanisms]."

- d. **Public Resources Code.** "California Public Resources Code Section 21000 et seq. was [enacted] in 1970 as the [California] Environmental Quality Act of 1970 (CEQA), to promote the declared legislative intent to maintain a quality environment including the protection of natural resources.

Section 21001(c) of the code provides that it is the policy of the State to "Prevent the elimination of fish or wildlife species due to man's activities, insure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future

generations representations of all plant and animal communities and examples of the major periods of California history."

The Act goes on to provide for an environmental impact report, similar to the provisions in the National Environmental Policy Act of 1969 and for the preparation of environmental impact reports by all local agencies, state agencies, boards, and commissions on any project which would have a significant effect on the environment."

- e. **California Coastal Act.** "California Public Resources Code Section 30000 et seq. was added by statute in 1976 as the California Coastal Act. The act sets out various policies protecting marine and land resources including species and habitat. To this end, the California Coastal Commission was established to regulate development with local government along the coast to insure that development will be consistent with conservation policies."
- f. **Authority and jurisdiction over wetlands.** The Federal Clean Water Pollution Control Act of 1972, ("Clean Water Act") requires a permit for the discharge of pollutants into the waters of the United States. The Clean Water Act defines pollutants to include dredge and fill materials (33 U.S.C. S 1362). Section 404 of the Clean Water Act authorizes the Army Corps of Engineers to issue permits to discharge dredge and fill materials into waters of the United States (33 U.S.C. S 1344(a). Federal Regulations define waters of the United States to include wetlands (33 CFR S 328.3(a)(7).

Due to the widely recognized high economic and biologic value of wetlands, the California Coastal Act mandates governmental regulation of these areas. The Act requires that the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes be maintained and, where feasible, restored. Sections of the Act provide general policies for development in and adjacent to wetlands, and specific policies for protecting these areas (California Coastal Commission, 1981).

Fish and Game Sections 1601 and 1603 prohibit any person or governmental agency, or public utility from substantially diverting or obstructing the natural flow or substantially change the bed, channel or bank of any river, stream or lake designated by the department, or use any material from the streambeds without obtaining the appropriate permit from the California Department of Fish and Game.

It is generally advisable to consult with representatives of these agencies prior to submittal of an application to the County, so that impacts to Wetlands and Deepwater Habitats are avoided or minimized to the greatest extent feasible.

- 2. **The legal basis for the protection of habitats.** California Fish and Game Code Section 1750 et seq. (Native Species Conservation and Enhancement Act) declares a policy of maintaining sufficient populations of all species of wildlife and native plants and the habitat necessary to ensure their continued existence at optimum levels.

California Fish and Game Code Section 1800 et seq. states that it is the policy of the state "to encourage the conservation and maintenance of wildlife resources" including the maintenance of "sufficient population of all species of wildlife and the habitat necessary to ... perpetuate all species of wildlife for their intrinsic and ecological values...."

Furthermore, CEQA (Public Resources Code section 21000(c) states that it is the policy of the state to: "...prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for

future generations representations of all plant and animal communities and examples of the major periods of California history."

CEQA Appendix G, items (c), (d), and (t) specifically mention or refer to habitat.

The California legislature has further recognized the need to conduct habitat-based land use planning through adoption of the *Natural Community Conservation Planning Act of 1991 (NCCP)* (California Fish and Game Code Section 2800 et. seq.). The purpose of this Act is to provide for regional protection and perpetuation of natural wildlife diversity while allowing compatible land use and appropriate development and growth. The NCCP process is designed to provide an alternative to current "single species" conservation efforts by formulating regional, natural community-based habitat protection programs to protect the numerous species inhabiting each of the targeted natural communities.

In 1986, the U.S. District Court for Hawaii (*Palila v. Hawaii Department of Land and Natural Resources and Sportsmen of Hawaii*, 649 F.Supp.1070 [1986] (*Palila II*)) issued a ruling regarding destruction of habitat of an endangered bird known as "Palila" in the State of Hawaii. Regarding the term "harm" within the definition of "take" of the Federal Endangered Species Act, the Court concluded:

"A finding of "harm" does not require death to individual members of the species; nor does it require a finding that habitat degradation is presently driving the species further toward extinction. Habitat destruction that prevents the recovery of the species by affecting essential behavioral patterns causes actual injury to the species and effects a taking under Section 9 of the Act."

"The key to the Secretary's [of the Interior] definition is harm to the species as a whole through habitat destruction or modification. If the habitat modification prevents the population from recovering, then this causes injury to the species and should be actionable under Section 9."

See also *Sierra Club v. Lyng*, 694 F.Supp.1260 (E.D. Tex. 1988) and *Sierra Club v. Yeutter*, 926 F.2d 429 (5th Cir.1991). Further discussion of habitat protection under the Endangered Species Act is provided by Sidle and Bowman (1988).

B. Biological Survey Guidelines.

1. Initial assessment of biological resources (Initial Studies, EIRs and Mitigated NDs).

During the overall land use permit process, an on-site inspection is conducted by the Planning and Development Department to determine if critical or sensitive biological resources may be impacted by a proposed project. Should the on-site investigation indicate the presence, or a high potential for the presence, of critical or sensitive biological resource, a biological survey may be required, pursuant to CEQA Section 15064 (Determining Significant Impacts). The biological survey could be completed as part of an EIR or it could be used to develop a Mitigated Negative Declaration as provided for by CEQA Section 15070:

- a. The Initial Study shall be used to provide a written determination of whether a Negative Declaration or an EIR shall be prepared for a project.
- b. Where a project is revised in response to an Initial Study so that potential adverse effects are mitigated to a point where no significant environmental effects would occur, a Negative Declaration shall be prepared instead of an EIR. If the project would still result in one or more significant effects on the environment after mitigation measures are added to the project, an EIR shall be prepared.

- c. The EIR shall emphasize study of the impacts determined to be significant and can omit further examination of those impacts found to be clearly insignificant in the Initial Study.

Biological survey reports are conducted and written by professional biologists under contract to the County. Payment for the study is accomplished by a deposit with the County from the applicant in an amount equal to the cost estimate of the consulting biologist. In some cases, work is performed by a Planning and Development Department-qualified biologist under contract to the applicant.

All biological surveys are subject to review and acceptance by Planning and Development Department staff and may require reexamination by an outside consulting biologist acceptable to the Planning and Development Department. If a disagreement among experts occurs, review by an independent biologist may be required.

In a majority of cases, applicants work with the staff of the Development Review Division to modify the project design for the purpose of reducing impacts to biological resources to an acceptable level. Project design modifications, with the applicant's consent, then become a part of the project description and the basis for issuing a Mitigated Negative Declaration. However, if design modifications are not acceptable to an applicant, then additional biological analysis (and possibly development of additional mitigation measures) would be required as a component of an EIR pursuant to the above citation from CEQA.

2. **Qualifications to perform the biological survey.** Biological consultants must be on the Planning and Development Department list of qualified biologists or on staff of a Planning and Development Department-qualified consulting firm or otherwise be acceptable to Planning and Development Department. A file is retained in the Planning and Development Department which tracks the performance of each consultant. Consultants should be selected on the basis of possessing objectivity and the following qualifications, in order of importance:
 - a. A BA/BS in biological sciences or other degree specializing in the natural sciences.
 - b. Professional or academic experience as a biological field investigator, with a background in field sampling design and field methods;
 - c. Taxonomic experience and a knowledge of plant or animal (whichever is appropriate) ecology;
 - d. Familiarity with plants, animals, or both (whichever is appropriate) of the area, including the species of concern; and
 - e. Familiarity with the appropriate county, state and federal policies related to special status species and biological surveys.
 - f. In addition, the County of Santa Barbara requires that a consultant, hired to perform a biological survey, presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed. Therefore, to avoid a real or perceived appearance of a conflict of interest, a biological survey submitted by a consultant shall be subject to verification of the Planning and Development Department staff biologists or a third outside consulting biologist.
3. **Guidelines for preparation of biological survey reports.** These guidelines were prepared by James R. Nelson, a botanist with the California Energy Commission, published in its original form by the California Department of Fish and Game (1984) and supplemented by Planning and Development Department staff in consultation with local biologists.

- a. When to conduct a biological survey.** It is appropriate to conduct a biological field survey to determine if, or the extent to which, sensitive plants or animals or a habitat of concern will be affected by a proposed project when:
- (1) Based upon an initial biological assessment, it appears that the project may damage potential special status plant or animal habitats;
 - (2) Special status species have historically been identified on the project site and adequate information for impact assessment is lacking; or
 - (3) No initial biological assessment by the Planning and Development Department biologist has been conducted and it is not known which habitats or the quality of habitats exist on the site, nor what the potential impacts of the project may be.
- b. Guidelines and goals of the biological survey.** Biological surveys that are conducted to determine the environmental impacts of development activities should include particular attention to all rare, threatened, and endangered species and habitats. The species and habitats are not necessarily limited to those that have been "listed" by state and federal agencies, but include any species that, based upon all available data, can be shown to be rare, threatened and/or endangered. These can include "federal candidate" species, "state special concern" species, and those of local concern such as those species which are endemic, rare in the region, or declining in number.

Field searches should be conducted in such a manner that they will locate any listed or special status plant or animal species that may be present/a resident or that may utilize the site on a seasonal rather than year-round basis. Specifically:

- (1) Investigations should be conducted at the proper season and time of day when special status species are both evident and identifiable. Field surveys should be scheduled to coincide with known flowering periods, and/or during periods of phenological development that are necessary to identify plants of concern, and during periods critical to the species such as nesting for birds or larval development for amphibians.
- (2) Investigations should be both predictive in nature and based upon field inspection. Surveys should predict the presence of rare plants and animals (which may not be present every year or which may use it infrequently) based upon the occurrence of habitats or other physical features, in addition to actual field observation. The survey should not be limited to a description of those species that are actually observed in the field. Every species noted in the field should be identified to the extent necessary to ensure that it is neither a listed nor special status species.
- (3) Investigations should be conducted in such a manner that they are consistent with conservation ethics. Collections of voucher specimens or rare (or suspected rare) plants or animals should be made only when such actions do not jeopardize the continued existence of the population and in accordance with applicable state and federal regulations. All voucher specimens should be deposited at local public herbaria or recognized museums of natural history for proper storage and future reference. Photography should be used to document plant identifications and habitat whenever possible, especially when rare plant populations cannot withstand collection of vouchers.
- (4) Investigations should be conducted using systematic field techniques in all habitats of the site to ensure a reasonably thorough coverage of potential impact areas.

- (5) Investigations should be well-documented. When rare or endangered plants or animals or unusual plant communities are located, a California Native Plant Field Survey Form or its equivalent must be completed and sent to the Natural Diversity Data Base and a copy attached to the report sent to the Planning and Development Department.
- c. Contents of the biological survey.** Reports of biological field surveys and reports must contain the following information with the exception of items 10 through 12 which are recommended for inclusion but may not be necessary in all cases.
- (1) A detailed map of the project regional location and specific study area;
 - (2) A written description of the biological setting, referencing the plant community and a detailed map of the vegetation and/or animal habitat areas.
 - (3) A detailed description of the survey methodology;
 - (4) The dates and times of field visits;
 - (5) An assessment of all potential direct and indirect impacts;
 - (6) A discussion of the status, distribution, and habitat affinities of all special status plants or animals found at the project site;
 - (7) A discussion of the quality of the habitat considering: its ability to support species diversity, its ability to be self-sustaining (in the context of the surrounding area, not just the project boundaries), how common or rare it is (see Table 3 for example), how good a representative it is (plant community), the degree of previous disturbance, and other history of the site, etc.
 - (8) Recommended mitigation measures to reduce impacts to the maximum extent feasible and to protect the resource(s) by considering a range of possibilities, including: avoidance, fencing, open space easements, clustering and off-site mitigation;
 - (9) Suggestions for monitoring and evaluating the effectiveness of the mitigation measures;
 - (10) Solutions which, when feasible, work toward regional protection of the resources, including: combining open space easements with adjacent ownerships, maintenance of open space corridors; attempting to preserve as much contiguous habitat as possible;
 - (11) Recommended methods for the restoration of damaged habitats, where appropriate and feasible, and suggested success criteria to be achieved at the end of the proposed monitoring period;
 - (12) A list of all listed or special status plant or animal species observed or expected to occur on site. A list of additional species observed or expected should also be included. This may be representative of the communities present rather than exhaustive. Division by taxonomic group is not necessary.
 - (13) Copies of all Natural Diversity Data Base Field Survey Forms sent to Sacramento and Natural Community Field Survey Forms, for sensitive species or communities found on the project site;
 - (14) The name(s) of the field investigator(s); and

- (15) A list of references cited, persons contacted, herbaria and museums visited, and the location of voucher specimens.

C. Biological habitat descriptions and project design suggestions.

The following provides brief descriptions of some, though not all, of the habitats occurring in Santa Barbara County, an explanation of the habitat's importance, and project design suggestions for minimizing impacts to habitats, as well as individual plant and animal species. These habitats are by no means the only priority habitats in the County, rather, they represent the habitats where conflicts with land use developments most often occur.

1. **Wetlands.** All naturally occurring wetlands are considered significant resources because they provide a high number of functional values in a generally dry, arid region, and because of their extremely rare occurrence within the region. Examples include, but may not be limited to coastal salt and brackish marshes, fresh water marshes and vernal pools.

Wetlands, due to the presence of water, support the most diverse assemblages of plants and animals found in the southwestern United States. Because of the high biological productivity in wetlands and the historic elimination of 90 percent of California's wetlands, the highest numbers of threatened and endangered species most often occur here. Wetlands are utilized by a large number of organisms including invertebrate larvae, large mammals and plants that may only survive in wetland areas. Wetlands provide food, cover for protection against predators, and habitat for breeding of some species. Because Santa Barbara County is located along the Pacific Flyway, the County not only has a diverse resident bird population, but also those migrating birds that over-winter in Santa Barbara County (migrants). Wetlands provide seasonal and year-round habitat to several migrating bird species along the Pacific Flyway and fish utilize some of these areas as spawning and foraging habitat.

Wetlands also provide a number of public benefits¹ including: 1) protection of the shore from erosion (typically applicable to marshes, sloughs, and other estuaries), 2) Water Quality/Hydrology which support groundwater recharge, surface water availability, and water purification/filtration, 3) food chain support, 4) nutrient cycling, and 5) Socio-Economic benefits which include aesthetics, ethno-botany, recreation, research, education, economic benefit, etc.

a Coastal Salt Marsh

- (1) **Description.** Coastal salt marshes are restricted to the upper intertidal zone of protected shallow bays, estuaries, and coastal lagoons. Physical conditions are dominated by the tides and variances in elevation which influence the frequency and duration of tidal flooding. The harsh, tidal environment of a salt marsh results in zones of different indicator plants. The environment includes tidal inundations of salt or brackish water, water-saturated soils containing few air spaces and hence reduced oxygen levels, and an environment fully exposed to sun, wide temperature fluctuations, wind, etc. The lowest zone is inundated twice daily; whereas the middle or upper zones may be inundated only once or twice a month, or even by only the highest spring tides (Faber, 1982).

Because tides are so important in providing moisture for coastal marshes, any interruption in tidal circulation can have drastic effects on these communities. The total area of marsh habitat may be correlated with the tidal prism (the total volume

¹ Bowland and Ferren (1992), and Sather and Smith (1984)

of water moving in and out of the slough\marsh\lagoon, etc). As tidal prisms are reduced through sedimentation due to urban and agricultural development or for road construction, the likelihood of closure at the mouth increases. This event can change the soil and water salinity and water levels. This in turn affects many salt-tolerant plants adapted to this type of environment and convert salt-marsh habitat to upland habitats available to species such as the Belding's Savannah sparrow. Additionally, wildlife species such as the tidewater goby, depend on brackish waters to survive.

In addition to sedimentation, increases of fresh water inputs into the system due to urban and agricultural runoff may reduce salinity levels, while upstream dams may have the opposite effect. This runoff may also introduce toxic elements into the marsh such as fertilizers, septic effluent, pesticides, oil, grease, etc. Other potential impacts include changes in depth of enclosed water, elevated temperatures and decreased oxygen from algal blooms often associated with high nitrogen levels from polluting sources. These changes can alter the number and diversity of wildlife species. (Zedler, J. 1982). Development adjacent to the area could also disrupt wildlife behavioral patterns due to noise, neighboring domestic dogs and cats and other physical disturbances.

(2) Project design suggestions

- (a) Maintain tidal prism.
- (b) Minimize adverse hydrologic changes, sedimentation, and introduction of any toxic elements.
- (c) Timing of construction activity should be carefully planned to minimize indirect impacts such as noise and turbidity on sensitive animal species during critical periods such as breeding and nesting.
- (d) Maintain wildlife dispersal corridors.
- (e) Enhancement and restoration of salt marshes that can be incorporated into the project include: removal of existing fill, improving tidal circulation through grading, channel excavation, or removing other impediments to circulation, and cleanup.

b. Vernal Pools and associated features

- (1) Description.** Vernal pools are perhaps the most unique, rare, and endangered type of wetlands in California according to a number of studies cited in the Ferren and Pritchett 1988 report (p. 3). In fact, these wetlands are found only in a few places in the world outside California, namely southern Oregon and in the Cape Province of South Africa (Faber, P. 1982).

A vernal pool is a small depression that fills with water during the winter (gradually drying during the spring and becoming completely dry in the summer) and supports a unique assemblage of plants.

V.L. Holland and David Keil (1990) add: "Vernal pool vegetation is characterized by herbaceous plants that begin their growth as aquatic or semi aquatic plants and make a transition to a dry-land environment as the pool dries. This generally results in the development of concentric rings of vegetation that develop around the margins of the drying pool. Most vernal pool plants are annual herbs. The

relatively few perennial species grow from deeply seated rhizomes or rootstocks. Shrubs and trees are absent from vernal pool communities. Some species from vernal pool communities have very showy flowers and act as aspect dominants."

"Vernal Flat" is used to describe areas that are not easily definable as discrete basins (vernal pools) and whose wetland/upland affiliations fluctuate corresponding to changing precipitation trends from year to year. Following several years of average to above-average rainfall, these tend to support vernal pool species and exclude upland species. Following several years of low rainfall, these areas tend to be characterized by upland species (Olson, 1992).

"Swales" are low moist areas, that when associated with vernal pools, may support vernal pool species including invertebrates (for example: U.S. Fish Section Wildlife Service, 1992). They may also be important because they transport rain water to a vernal pool or complex of pools.

Wildlife species, such as the Western Spadefoot Toad and California Tiger Salamander utilize these seasonal wetlands for breeding and egg-laying during the first rains of the year (December through April). The Tiger Salamander can spend several months in the larval stage, metamorphosing to adult salamanders as late as May through August when the pools dry up and then dispersing to rodent burrows in adjacent grassland areas. Spadefoot toads breed later in the year than tiger salamanders (March through April) and are dependent upon grass pollen and other vegetation for food and to conserve moisture during the tadpole stage. This species also metamorphoses to adults and disperses to surrounding rodent burrows in adjacent grasslands. Furthermore, other amphibians utilize these seasonal ponds as habitat.

Direct and indirect impacts to the pool itself may result in adverse changes to either the physical or chemical properties of the pool. Impacts to the watershed or community in which it functions may also impact the pool. For example, fragmentation of habitat may interrupt interaction between the habitat and the organisms within the pools (pollination, seed, invertebrate and vertebrate dispersal, provision of drinking and bathing water, etc.).

(2) Project design suggestions.

- (a) Because vernal pools do not exist by themselves as isolated units, and instead function within a larger plant community such as a grassland, the surrounding upland habitat should be preserved to the maximum degree feasible. If the vernal pools occur in a dispersed pattern throughout an upland community, the entire community should be preserved as one unit.
- (b) Design developments to provide a buffer around all vernal pools (with the possible exception of artificially created pools), or include enough of a buffer to protect the topographic watershed, whichever is greater. Typical buffer area: 100-250 feet from edge of pool.
- (c) Vernal Pool "complexes" (groupings of several pools have swales according to hydrology and topography) should be avoided and buffered (minimum of 100 feet) or enough of a buffer to protect the topographic watershed of the entire complex, whichever is greater.
- (d) Restoration and enhancement can include removal of exotic (non-native)

species, planting of appropriate native species (seeding), removal of fill, relocation of foot and bike paths around rather than through the pools, etc.

- (e) Disturbance to vernal pools or vernal pool complexes should be timed to avoid breeding seasons of sensitive wildlife species.

c. Riparian Habitats

- (1) **Description.** Riparian habitat is generally considered as the terrestrial or upland area adjacent to freshwater bodies, such as the banks of linear watercourses (e.g.: creeks and streams), the shores of lakes and ponds, and aquifers which emerge at the surface such as springs and seeps (Bowland and Ferren 1992). The habitat is typically thought of as a corridor from stream bank to bank (from edge of riparian vegetation to edge of riparian vegetation) which may include a wetland portion in the center.²

Riparian habitat occurs in and along the County's four major rivers (Santa Ynez, Santa Maria, Cuyama and Sisquoc) and in and along the County's many creeks and streams. This habitat can also occur along arroyos and barrancas, and other types of drainages throughout the County.

Riparian habitat is particularly rich in wildlife species, in that water is present at least during some part of the year in these corridors and the dense plants of varying heights provide a diverse food source and safety from predators. In particular, riparian habitat provides forage, cover, water, migration and fawning for Santa Barbara County's resident deer herd. Various types of cover are required by deer including protective cover, for fawning, feeding and resting, escape cover from predators, and thermal cover to provide temperature regulation in the winter and summer. Riparian habitats typically provide all these habitat requirements. Deer also require a variety of food types in their diet, depending upon the time of year and will utilize oak woodlands, chaparral and grasslands adjacent to riparian corridors in order to obtain a sufficient diet. The shade of bank side vegetation can keep a stream cold enough for migratory sport fish such as steelhead trout.

Less obvious species that utilize the riparian corridors are the amphibians that require plunge pools in which to reproduce, seek protection from predation and maintain a constant body temperature. Pool and riffle sequences within streams and creeks are necessary for successful spawning for many species of fish. Specialized bird species such as Cooper's hawks and a great variety of songbirds utilize riparian habitat for breeding, nesting and foraging due to the diversity of structural heights and continuity of vegetation along the drainages.

- (2) **Project design suggestions.**

- (a) Incorporate into project design a vegetated buffer from the upland edge of the riparian canopy at least 50 feet in width.
- (b) Inclusion of adjacent upland vegetation in the buffer. Upland vegetation is important as habitat for a large number of species, particularly amphibians,³

² The Cowardin classification system does not use the term "riparian". Cowardin categories for riparian systems are palustrine and riverine.

³ Some species such as the western pond turtle may utilize upland habitat as much as 1/4 mile away from the riparian wetland (Sweet 1992).

and also aids in stabilizing the banks, which reduces erosion and sedimentation potential.

- (c) Retain animal dispersal corridors, including the understory.
- (d) Construction activity can be planned to avoid critical time periods (nesting, breeding) for fish and other wildlife species.
- (e) Careful siting of some projects such as bridges and pipelines can limit the disturbance area to previously disturbed locations.
- (f) Restoration or enhancement of riparian habitat on a project site can enhance the ecological value of the creek, stream, or river, both upstream and downstream.

2. Chaparral. Chaparral is composed mainly of woody, evergreen shrubs. It forms extensive shrub lands that occupy most of the hills and lower mountain slopes of Santa Barbara County and throughout California. It is adapted to drought and fire, passing through cycles of burning and re-growth approximately every 30 years. Even though chaparral has no commercial value, it provides the most highly valued watershed cover of any vegetation community in the state (Hanes, 1977). Chaparral occurs throughout Santa Barbara County and is further broken down into a number of categories.

a. Burton Mesa Chaparral.

(1) Description. Central Maritime Chaparral, also known as Sandhill or Burton Mesa Chaparral is a unique form of chaparral that is restricted to the aeolian sands of the Orcutt soils formation north of Lompoc. Many of the species unique to Burton Mesa Chaparral are narrowly restricted in distribution (Odion, Storrer and Semonsen 1993, Ferren et. al 1984, Smith 1976, Dames and Moore 1985). Because of the high number of endemic species (many of which are dominants in the community), the unusual oaks, and a rich herbaceous understory, Burton Mesa Chaparral has been recognized as a valuable biological resource by local biologists and the County of Santa Barbara. Various land uses have reduced its original limited extent which has been estimated as follows:

Original Central Chaparral Habitat	22,153 acres
1938 Central Maritime Chaparral	14,563 acres
1987 Central Maritime Chaparral	8,618 acres

In 1988 it was reported that of the 39 percent of original habitat that remains, two-thirds is found within Vandenberg Air Force base, where it is severely threatened by military development and land management practices that have resulted in the invasion of vigorous exotic (non-native) species particularly ice plant. These trends are continuing at a rapid rate (Odion, Hickson and D'Antonio 1992, Philbrick and Odion 1988).

Since the time the 1988 report was written a 5,125 acre property was acquired by the State of California. This land contains roughly 3,250 acres of semi-pristine to pristine, and roughly 150 acres of degraded Central Maritime Chaparral, in addition to substantial acreages of other important plant communities (Odion, Storrer and Semonsen 1993). Mitigation efforts are now being focused on acquisition of adjacent lands and funding of habitat restoration and management within the preserve.

b. Coastal Sage Scrub.

- (1) **Description.** Coastal sage scrub is a drought-tolerant, Mediterranean habitat characterized by soft-leaved, shallow-rooted sub-shrubs such as California sagebrush, (*Artemisia californica*), several sage species (*Salvia spp.*), California buckwheat (*Eriogonum spp.*), and California encelia (*Encelia californica*) (Bowler, 1990). Commonly called "soft chaparral", Coastal sage scrub is highly fire adapted, and increases in species richness following fires, but a second wave in the number of species (mostly understory species that are not fire successional) occurs 15-25 years after burning (Westman 1987).

Coastal sage scrub and the related coastal succulent scrubs in northern Baja California originally extended from San Francisco to El Rosario in Baja California and has been divided into four floristic associations, two of which occur in Santa Barbara County: Diablan (San Francisco to Point Conception) and Venturan (Point Conception to Los Angeles). Coastal sage scrub is limited to the lower elevations of both the coastal and interior regions of the mountains where moist maritime air penetrates inland.

More than a decade ago it was estimated that 85 to 90 percent of the original coastal sage scrub habitat (Westman, 1981) had been eliminated as a result of urban development and agriculture (O'Leary, 1989). Other factors contributing to loss of this habitat have been reported to be increased air pollution and changes in fire frequency due to fire suppression activities. Coastal sage scrub is being reduced in its overall extent and fragmented by road and urban development particularly in Orange and San Diego Counties.

(2) **Project design suggestions.**

- (a) The basic principles of preserving biodiversity apply to this habitat type. Design the project so that continuous, unbroken habitat areas are preserved to the greatest extent feasible.
- (b) Retain corridors to connect with other undisturbed areas to preserve wildlife travel corridor.
- (c) Removal of invasive exotic species such as freeway ice plant (Zedler and Scheid 1988) and pampas grass improves the quality of the remaining habitat.
- (d) Consider indirect effects of chaparral removal, including reduction of groundwater recharge, increased erosion and sedimentation to adjacent creeks and streams which may affect riparian habitats and wildlife.
- (e) Balance between design measures for habitat protection and for fire management.

c. Native grasslands.

- (1) **Description.** Native grasslands which are dominated by perennial bunch grasses such as purple needlegrass (*Stipa pulchra*) tend to be patchy (the individual plants and groups of plants tend to be distributed in patches). Valley Grassland in California once occurred over 8 million acres in the Central Valley and in scattered patches along the Coast Ranges (Heady, 1977). Few stands of native grasslands remain in the state and the habitat is considered rare both in the state and within the

county. Even among the "pristine" grasslands in the state, the vegetative cover of native grassland species is reportedly rarely greater than 50 percent, and in many of these reserves it is commonly found between 15 and 25 percent of the total vegetative cover (Keeler-Wolf, 1992). A study commissioned by the County in 1989 reported that native grassland areas are exceedingly rare in the County, except on the Channel Islands and inside Gaviota State Park (Odion, 1989).

(2) Project design suggestions.

- (a) Design the project so that continuous habitat areas are preserved to the greatest extent feasible.
- (b) Incorporation of restoration and enhancement measures, including weeding, intentional burning, revegetation (planting of seeds or plugs), or other procedures will facilitate natural regeneration of the grassland.

d. Woodlands and Forests.

- (1) Description.** Generally speaking, there are three types of oak woodlands in Santa Barbara County. Valley Oak Woodland is typically characterized by scattered trees surrounded by grassland, whereas trees in live oak and blue oak woodlands tend to be more closely spaced. Coast Live Oak (*Quercus agrifolia*) forms dense groves of trees on north-facing slopes and is the primary oak species found in southern oak woodlands. Deep alluvial soils in interior valleys support grasslands and Valley Oak Woodland (*Quercus lobata* and *Quercus agrifolia*). The foothills of the inner coast ranges are inhabited by Blue Oak (*Quercus douglasii*), Coast Live Oak (*Quercus agrifolia*), Digger Pine (*Pinus sabiniana*), and other components of blue oak woodland. The number, type, and density of oak trees, are principal characteristics which define the various types of woodlands; further, the relationship between trees and vegetation in the understory below in woodlands also define variety in woodland habitats. In addition to oak forests, a variety of pine and other coniferous forests also occur in the county. Oak communities are emphasized in the following discussion because they so frequently occur in the same areas in which developments are proposed.

Oak habitats offer diverse resources to wildlife: shade in summer, shelter in winter, perching, roosting, nesting, and food storage sites. Acorns are the most plentiful food source, but oak catkins, twigs, leaves, buds, sap, galls, fungi, lichens, and roots all provide important foods. Other species associated with the oak woodland include redberry, coffeeberry, toyon, mistletoe, poison oak, forbs and grasses which are also important foods for wildlife. Insects feeding in oak habitats are eaten by birds, reptiles, amphibians, mammals and other insects which in turn feed larger predators such as owls, hawks, snakes, bobcats, coyotes, mountain lions and bears. Some oak trees are "granary trees" in which acorn woodpeckers store acorns. Scrub jays and magpies inadvertently "plant" acorns when they store them in the ground. Dead trees, or snags, provide perching, feeding and nesting sites for raptors as well as thermal cover for smaller mammals, reptiles and amphibians. Oaks provide wildlife habitat from the seedling through the snag (dead tree) stages of succession in the woodland. This habitat type supports a diverse wildlife population, and disruption of the woodland often indirectly results in disrupting wildlife breeding, nesting, foraging, and dispersal.

(2) **Project design suggestions for Woodlands and Forests.**

- (a) Retain contiguous blocks of habitat area particularly where adjacent to offsite habitat areas.
- (b) Retain animal migration corridors to other habitat areas.
- (c) Retain understory.

(3) **Project design suggestions for individual native trees.**

- (a) **Avoidance.** The preferred method of protecting native trees is to avoid any disturbance within the area 6 feet away from their driplines (the outermost edge of a tree's foliage) and drainage patterns above and below the tree. Although the stabilizing structural roots generally occur within the dripline, numerous and highly significant "feeder roots" which facilitate gas and water exchange and uptake of nutrients occur outside the dripline.

For management purposes, it is useful to think of a tree's root zone as being one third larger than the drip line area (University of California Cooperative Extension, no date). As a general rule, avoid grading and impervious surfaces within 6 feet of the dripline of all significant trees where ever feasible. This may be adjusted upwards or downwards depending on the size of the tree. It is advisable to include a margin of safety to account for unintentional errors during the construction phase of the project. The most vulnerable parts of a mature tree are the root crown (at the base of the trunk) and the entire root zone.

- (b) **Broad scale irrigation.** Avoid irrigation with rainbirds beneath previously un-irrigated oaks because it is likely to create conditions favorable to oak root fungus. It is advised that irrigation water, if necessary, be infrequent (i.e., once a week), be done by hand or drip method (Semonsen 1992, Doud 1992), and be no closer than 6 to 10 feet (depending on the size) from the trunk of the tree.
- (c) **Hard surfaces.** Any hard surfaces under oaks would better consist of paving blocks or other material which will allow air and rain water to reach the roots.
- (d) **Ground disturbance.** As a general guideline, disturb no more than 20 percent of the total area beneath the dripline of any one tree.

(4) **Project design guidelines for non-native trees**

- (a) Monarch butterfly wintering sites can be preserved by keeping the grove of trees in a state so that shelter from wind and temperature extremes are retained. This may include other trees outside the main grove that affect wind exposure.
- (b) Where possible, preserve other non-native trees that have value to important wildlife species.

D. Biological Mitigation Measures.

Please refer to the conditions of approval or mitigation measures in the biology section of the Santa Barbara County *A Planners Guide to Conditions of Approval and Mitigation Measures* which contains a listing of model measures containing standard language used when such measures are applied as

conditions of permit approval. Please note that these measures are not applicable to all cases and projects. In addition, the wording of measures may be customized as appropriate to address specific project circumstances.

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REGULATORY TEXT

SANTA BARBARA COUNTY PLANNER'S GUIDE TO CONDITIONS OF APPROVAL AND MITIGATION MEASURES



COUNTY OF SANTA BARBARA

Planning and Development

**A Planner's Guide to
Conditions of Approval
And
Mitigation Measures**

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BIOLOGY**BIOLOGY-TREES**

The following conditions are for the replacement of trees removed and/or to ensure existing trees are not damaged during construction. Prior to selecting applicable conditions, the project must be carefully reviewed to ensure that everything that might damage trees (e.g., drainage, access road(s), utilities, accessory structure(s), construction vehicle width and height, etc) is taken into consideration. Conditions Bio-03, -04, and -05 apply to all native trees and shrubs.

Bio-01 *[Planner: Use this condition instead of “Tree Protection Plan” when no trees are proposed for removal, very limited tree protection is needed and measures are straightforward, e.g., a residential project with a few trees or tree areas that need to be fenced, but construction will not directly impact the health of the tree.]*

Bio-01 Tree Protection Without a Tree Protection Plan. All grading, trenching, ground disturbance, construction activities and structural development shall occur beyond six feet of the dripline of all [NATIVE / OAK / SPECIMEN / VALLEY OAK] trees.

- a. Prior to the [APPROVAL / ISSUANCE] of a [LAND USE PERMIT / COASTAL DEVELOPMENT PERMIT / ZONING CLEARANCE] for grading or construction, all [NATIVE / OAK / SPECIMEN / VALLEY OAK] trees shall be fenced at least six feet beyond the dripline as shown on the approved exhibit dated [XXX]. Fencing shall be at least three feet in height of chain link or other material acceptable to P&D and shall be staked every six feet. The Owner/Applicant shall place signs stating “tree protection area” at 15 foot intervals on the fence. Fencing and signs shall remain in place throughout all grading and construction activities.
- b. No tree removal or damage is authorized by this permit. However, any unanticipated damage to trees or sensitive habitats from construction activities shall be mitigated in a manner approved by P&D. This mitigation shall include but is not limited to posting of a performance security, tree replacement on a 10:1 (15:1 for Valley or Blue Oaks) ratio and hiring of an outside consulting biologist or arborist to assess damage and recommend mitigation. The required mitigation shall be done under the direction of P&D prior to any further work occurring onsite. Any performance securities required for installation and maintenance of replacement trees will be released by P&D after its inspection and confirmation of such installation and maintenance.
- c. To help ensure the long term survival of [NATIVE / OAK / VALLEY OAK] trees, no permanent irrigation systems are permitted within six feet of the dripline of [NATIVE / OAK / VALLEY OAK] trees. Any landscaping must be of compatible species requiring minimal irrigation. Drainage plans shall be designed so that tree trunk areas are properly drained to avoid ponding.

PLAN REQUIREMENTS: Fencing shall be graphically depicted on project plans.

TIMING: This condition shall be printed on project plans submitted for [LAND USE PERMIT / COASTAL DEVELOPMENT PERMIT / ZONING CLEARANCE] approval [and shall be recorded with the final map], and installed prior to Grading or Building Permit issuance.

[INCLUDE IF SUBJECT TO PERMIT COMPLIANCE] **MONITORING:** P&D compliance monitoring staff shall review plans and confirm fence installation. Compliance staff shall conduct site inspections to ensure compliance during grading and construction.

Bio-01a

[Planner: Tree Protection Condition broken into two components(1a and 1b); both with same plan requirements, timing and monitoring. See Bio-02 for Tree Restoration. Planner: Choose those components applicable to your project, carefully considering whether each is feasible. Examine plans closely. Be certain access, utilities, water supply and sanitation lines will not go through trees. If they will, so state and specify resulting requirements. If you choose 2a unaltered, then 2b and 2c do not apply. If you require only pervious material for driveways or roads, be certain fire dept approves. Use only 3 "d" or "e" or unless both are clearly needed, in which case, describe! For example, if trimming is expected & allowed, but trenching is not.]

Bio-01a Tree Protection Plan-Site Plan Component. The Owner/Applicant shall submit a Tree Protection Plan (TPP) prepared by a P&D-approved arborist and/or biologist and designed to [ADD PURPOSE LANGUAGE]. The plan shall include the following site plan components *[PLANNER: SELECT, ADD AND DELETE AS APPROPRIATE]*:

1. The Owner/Applicant shall comply with and depict the following on the TPP exhibit and Grading and Building Plans.
 - a. All [OR STATE EXCEPTIONS] trees shall be preserved. No grading for buildings, accessways, easements, subsurface grading sewage disposal and well placement shall take place within the area within six feet of the dripline of any of these trees.
 - b. [XX] trees [DESCRIBE LOCATION(S)] will be removed per approved plans. Depict location of these trees.
 - c. [XX] trees [DESCRIBE LOCATION(S)] will be removed per approved plans. Depict location of these trees.
 - d. [XX] trees [DESCRIBE LOCATION(S)] shall be boxed and replanted. Depict original and new location for these trees.
 - e. Depict approved [DEVELOPMENT / BUILDING] envelopes. Include utility corridors, irrigation lines, roadways, driveways. *[PLANNER: If utilities may go through trees, require a utility corridor designed to minimize impacts – if you are not certain, you must alter language.]*
 - f. Depict equipment storage (including construction materials, equipment, fill soil or rocks) and construction staging and parking areas outside of the protection area.

- g. Depict the type & location of protective fencing (see below) or other barriers to be in place to protect trees in protection areas during construction.
- h. Depict the location of all tree wells or retaining walls. These shall be located outside the area within six feet of the dripline of all protected trees unless authorized by P&D.
- i. Depict the location of all paths [DRIVEWAYS, SIDEWALKS] within 25 feet of dripline areas. Only pervious paving materials (gravel, brick without mortar, turf block) are permitted within 6 feet of dripline areas.

PLAN REQUIREMENTS: The Owner/Applicant shall: (1) Submit the TPP; (2) Include all applicable components in Tree Replacement Plan and/or Landscape and Irrigation Plans if these are required; (3) include as notes or depictions all plan components listed above, graphically depicting all those related to earth movement, construction, and temporarily and/or permanently installed protection measures.

TIMING: The Owner/Applicant shall comply with this measure prior to [APPROVAL / ISSUANCE] of [LAND USE PERMIT / COASTAL DEVELOPMENT PERMIT / ZONING CLEARANCE]. Plan components shall be included on all plans prior to the issuance of [GRADING / BUILDING] permits. The Owner/Applicant shall install tree protection measures onsite prior to issuance of [GRADING / BUILDING] permits and pre-construction meeting.

MONITORING: The Owner/Applicant shall demonstrate to P&D compliance monitoring staff that trees identified for protection were not damaged or removed or if damage, or removal occurred, that correction is completed as required by the TPP prior to Final Building Inspection Clearance.

Bio-01b

Bio-01b Tree Protection Plan – Construction Component. The Owner / Applicant shall submit a Tree Protection Plan (TPP) prepared by a P&D-approved arborist and/or biologist and designed to [ADD PURPOSE LANGUAGE]. The Owner Applicant shall comply with and specify the following as notes on the TPP and Grading and Building Plans [PLANNER: SELECT, ADD, AND DELETE AS APPROPRIATE]:

1. Fencing of all trees to be protected at least six feet outside the dripline with chain-link (or other material satisfactory to P&D) fencing at least 3 ft high, staked to prevent any collapse, and with signs identifying the protection area placed in 15-ft intervals on the fencing.
2. Fencing/staking/signage shall be maintained throughout all grading and construction activities.
3. All trees located within 25 ft of buildings shall be protected from stucco and/or paint during construction.
4. No irrigation is permitted within 6 ft of the dripline of any protected tree unless specifically authorized.
5. The following shall be completed only by hand and under the direction of a P&D approved arborist/biologist:
 - a. Any trenching required within the dripline or sensitive root zone of any specimen.

- b. Cleanly cutting any roots of one inch in diameter or greater, encountered during grading or construction.
 - c. Tree removal and trimming.
- 6. Special equipment: If the use of hand tools is deemed infeasible by P&D, P&D may authorize work with rubber-tired construction equipment weighing five tons or less. If significant large rocks are present, or if spoil placement will impact surrounding trees, then a small tracked excavator (i.e., 215 or smaller track hoe) may be used as determined by P&D staff and under the direction of a P&D approved biologist.
- 7. The following are not permitted:
 - a. Any trenching within the dripline or sensitive root zone of any specimen.
 - b. Cutting any roots of one inch in diameter or greater.
 - c. Tree removal and trimming.
- 8. Grading shall be designed to avoid ponding and ensure proper drainage within driplines of oak trees.

PLAN REQUIREMENTS: The Owner/Applicant shall: (1) submit the TPP; (2) Include all applicable components in Tree Replacement Plan and/or Landscape and Irrigation Plans if these are required; (3) include as notes or depictions all plan components listed above, graphically depicting all those related to earth movement, construction, and temporarily and/or permanently installed protection measures.

TIMING: The Owner/Applicant shall comply with this measure prior to [APPROVAL / ISSUANCE] of [LUP / CDP / ZCI]. Plan components shall be included on all plans prior to the issuance of [GRADING / BUILDING] permits. The Owner/Applicant shall install tree protection measures onsite prior to issuance of grading/building permits and pre-construction meeting.

MONITORING: The Owner/Applicant shall demonstrate to P&D compliance monitoring staff that trees identified for protection were not damaged or removed or, if damage or removal occurred, that correction is completed as required by the TPP prior to Final Building Inspection Clearance.

Bio-01c Tree Protection Plan-Unexpected Damage and Mitigation. In the event of unexpected damage or removal, this mitigation shall include but is not limited to posting of a performance security and hiring an outside consulting biologist or arborist to assess damage and recommend mitigation. The required mitigation shall be done under the direction of P&D prior to any further work occurring on site. Any performance securities required for installation and maintenance of replacement trees will be released by P&D after its inspection and approval of such installation and maintenance.

Damaged trees shall be mitigated on a minimum 10:1 ratio [PLANNER: 10:1 RATIO IS FOR OAK TREES, BUT OTHER TREES CAN BY 1:1. ALSO, DEPENDING ON URBAN OR RURAL SETTING, THE REPLACEMENT TREE PROGRAM MIGHT BE CASE SPECIFIC. VERIFY WITH YOUR SUPERVISING PLANNER]. If it becomes necessary to remove a tree not planned for removal, if feasible, the tree shall be boxed and replanted. If a P&D approved arborist certifies that it is not feasible to replant the tree, it shall be replaced on a 10:1 basis (15:1 for Blue or Valley Oaks) with trees with 10-gallon or larger size saplings grown from locally obtained seed. If replacement trees cannot all be accommodated on site, a plan must be approved by P&D for replacement trees to be planted off site [PLANNER: VERIFY WITH YOUR SUPERVISING PLANNER].

[See Bio-01 or Bio-01a for Tree Protection.]

Bio-02 Tree Replacement. The Owner/Applicant shall submit for P&D approval a [NATIVE] Tree Replacement Plan prepared by a P&D-approved arborist/biologist and designed to [ADD PURPOSE LANGUAGE] and including the following components *[PLANNER SELECT AND ADD AS APPROPRIATE]*:

1. The replacement trees shall be [STATE] species, [INDICATE DENSITY OF PLANTS PER MEASURED AREA OR]:
 - a. [XX] gallon size [INSERT SPECIES] trees obtained from locally occurring saplings or seed stock 10 [15 FOR VALLEY AND BLUE OAKS] for every [NATIVE] tree approved to be removed or significantly disturbed. Show replanting location on plans.
 - b. [XX] trees removed from the construction area and boxed for replanting on the property. Show replanting location on plans.
2. *[OPTIONAL:]* Species shall be from locally obtained plans and seed stock.
3. The trees shall be gopher fenced.
4. The trees shall be irrigated with drip irrigation on a timer until established (a period to be established by the P&D approved arborist).
5. The trees shall be weaned off of irrigation over a period of two to three years.
6. No permanent irrigation shall occur within the dripline of [ANY OR DESCRIBE EXCEPTIONS] tree.
7. If replacement trees cannot all be accommodated on site, the Owner/Applicant shall submit a plan for P&D approval for replacement trees to be planted off site.

8. *[ADD IF NECESSARY:]* All [NEW AND REPLANTED] trees shall be protected from predation by wild and domestic animals and from human interference by the use of staked, chain link fencing and gopher fencing during the maintenance period.

PLAN REQUIREMENTS: *[OPTIONAL: Include the components of the plan in Landscape and Irrigation Plans if these are required].*

TIMING: Plans shall be submitted prior to [APPROVAL / ISSUANCE] of [LAND USE PERMIT / COASTAL DEVELOPMENT PERMIT / ZONING CLEARANCE]. The Owner/Applicant shall post a performance security to ensure installation prior to Final Building Inspection Clearance and maintenance for [MINIMUM THREE OR FIVE] years.

MONITORING: The Owner/Applicant shall demonstrate to P&D compliance monitoring staff that all required components of the approved plan(s) are in place as required prior to Final Inspection Clearance [AND MAINTAINED THROUGHOUT MAINTENANCE PERIOD]. P&D compliance monitoring staff signature is required to release the installation security upon satisfactory installation of all items in approved plans and maintenance security upon successful implementation of this plan.

Bio-03

Bio-03 Arborist Report Requirement. The Owner/Applicant shall hire a P&D-approved arborist/biologist to evaluate all proposed native tree and shrub removals within 25 ft of potential ground disturbances. The arborist/biologist report shall present biologically favorable options for access roads, utilities, drainages and structure placement taking into account native tree and shrub species, age, and health with preservation emphasized. All development and potential ground disturbances shall be designed to avoid the maximum number of natives possible.

PLAN REQUIREMENTS: The Owner/Applicant shall submit the above report to P&D for review and approval.

TIMING: The Owner/Applicant shall submit the above report prior to [INSERT TIMING]. Recommendations in the report shall be incorporated into the project prior to [INSERT TIMING].

MONITORING: P&D processing planner shall check all plans for incorporation of recommendations and P&D compliance monitoring staff shall site inspect as appropriate.

Bio-03a

Bio-03a Onsite Arborist/Biologist. The Owner/Applicant shall designate a P&D-approved arborist/biologist to be onsite throughout all grading and construction activities which may impact [NATIVE] trees. Duties include the responsibility to ensure all aspects of the approved Tree Protection & Tree Replacement Plans are carried out. [ADD OTHER DETAILED DUTIES AS NEEDED.]

MONITORING: The Owner/Applicant shall submit to P&D compliance monitoring staff the name and contact information for the approved arborist/biologist prior to commencement of construction / pre-construction meeting. P&D compliance monitoring staff shall site inspect as appropriate.

Bio-04 **Bio-04 Ag Pamphlet.** The Owner/Applicant shall include in CC&Rs a copy of the State Department of Agriculture pamphlet, “Living Among the Oaks.”

Bio-05 *[PLANNER: Use this only if a Tree Replacement Plan is not required. If you require a TRP and need to apply this condition, make it a component of the TRP.]*

Bio-05 Tree Planting and Maintenance. The Owner/Applicant shall plant 10 [15 FOR VALLEY AND BLUE OAKS] [XX] gallon size [INSERT SPECIES] oak trees obtained from locally occurring saplings or seed stock for every oak tree removed, relocated or damaged. The trees shall be planted, gopher fenced and irrigated (drip irrigation on a time) for a [INSERT PERIOD] year maintenance period.

PLAN REQUIREMENTS: This requirement shall be shown on a landscape plan to be reviewed and approved by P&D.

TIMING: A performance security shall be required prior to [INSERT TIMING]. Prior to [INSERT TIMING] trees shall be planted, fenced and irrigated.

MONITORING: P&D compliance monitoring staff shall ensure tree installation and maintenance. Performance security release requires P&D staff sign-off.

BIOLOGY-OPEN EASEMENT

There are three types of easements for protection of resources such as biological, agricultural, and watershed resources: Open Space, Conservation and Development Rights Easements. This condition applies to open space and conservation easements. Before applying an easement, ask yourself how the easement will benefit the property beyond, say, a construction envelope. If you have a map that will have a common open space, you may use this condition. If your intent is to have the easement managed by a non-profit land preservation agency such as the Land Trust, you must use a conservation easement. And remember: The Land Trust and most similar agencies will not accept management of properties if they are very small, isolated from all other like-resources, surrounded by development, etc. Always consult with County Counsel and the non-profit before finalizing the wording of the condition and agreements.

Bio-06

Bio-06 Easements. The Owner/Applicant shall dedicate an [OPEN SPACE / CONSERVATION] easement [RECORDED ON THE PROPERTY TITLE] reviewed and approved by P&D and County Counsel for the [INDICATE WHAT EASEMENT COVERS AND PURPOSE] to [INDICATE TO WHOM THE LAND SHALL BE DESIGNATED (E.G., COUNTY, LAND TRUST, ETC)]. In addition, the Owner/Applicant shall *[PLANNER: IF THIS IS TO BE MANAGED BY AN OUTSIDE AGENCY, BE SURE THESE REQUIREMENTS ARE CONSISTENT WITH THAT AGENCY'S GOALS, MISSION]*:

1. Construct and maintain in perpetuity a [INSERT HEIGHT] foot high fence suitable to preclude encroachment into the [OPEN SPACE / CONSERVATION] area [DETERMINE TIMING IF OTHER THAN FINAL INSPECTION CLEARANCE].
2. Erect and maintain in perpetuity signs [INSERT LOCATION(S), HEIGHT, SIZE, MATERIALS OR REQUIRE DESIGN APPROVAL BY BAR, IF APPLICABLE] to limit encroachment and/or prohibited uses [DETERMINE TIMING IF OTHER THAN FINAL INSPECTION CLEARANCE].
3. *[PLANNER: INSERT IF PLANTINGS ARE NEEDED]*
4. Provide a subordination agreement for long term monitoring and establish an endowment for monitoring costs reviewed and approved by P&D and County Counsel and docketed with the Board of Supervisors. [REQUIRE PRIOR TO MAP RECORDATION OR PRIOR TO LAND USE PERMIT / COASTAL DEVELOPMENT PERMIT / ZONING CLEARANCE]. Unless otherwise stated, the [HOA / OWNER] shall maintain the easement and all required fencing, signs and plantings in good repair. The [HOA / OWNER] shall allow County staff or designees to inspect and photo document condition of the easement area, fencing, signs, plantings at least once per year and the [HOA / OWNER] must complete any repairs required by the County or designees.
5. Record a buyer notification that reads as follows: **“IMPORTANT: BUYER NOTIFICATION:** [Insert easement details including purpose,

location, restrictions, maintenance requirements, whether easement is open for public use...]. The County or designee may periodically inspect to ensure the intent of the easement is being met. The [HOA / OWNER] shall permit County staff or authorized agency staff to conduct and photo document condition of easement area, fencing, signs as needed and shall complete repairs...as required by County staff.”

6. [FOR MAPS WITH “COMMON OPEN SPACE” ADD THE FOLLOWING TO THE BUYER NOTIFICATION] Title to the common open space shall be held by a non-profit association of homeowners or by any other non-profit group on such reasonable terms and conditions as the Board of Supervisors may prescribe. If the common open space is conveyed to a group other than the homeowners association, the right to develop such property with anything except open space or noncommercial recreation shall be conveyed to the County of Santa Barbara.

TIMING: The [RECORDED AGREEMENTS / OFFERS TO DEDICATE / SUBORDINATION AGREEMENTS / ENDOWMENTS] shall be in place prior to [LAND USE PERMIT / COASTAL DEVELOPMENT PERMIT / FINAL MAP CLEARANCE]. Any required [FENCING / SIGNAGE, PLANTINGS] shall be installed prior to Final Building Inspection Clearance.

MONITORING: P&D compliance monitoring staff or designees will inspect and photo document condition of easement area, fencing, signs, plants, etc prior to Final Building Inspection Clearance and ANNUALLY or as often as deemed necessary by the County thereafter.

- Rules-32 **Rules-32 Contractor and Subcontractor Notification.** The Owner/Applicant shall ensure that potential contractors are aware of County requirements. Owner / Applicant shall notify all contractors and subcontractors in writing of the site rules, restrictions, and Conditions of Approval and submit a copy of the notice to P&D compliance monitoring staff.
- Rules-33 **Rules-33 Indemnity and Separation.** The Owner/Applicant shall defend, indemnify and hold harmless the County or its agents or officers and employees from any claim, action or proceeding against the County or its agents, officers or employees, to attack, set aside, void, or annul, in whole or in part, the County's approval of this project. In the event that the County fails promptly to notify the Owner / Applicant of any such claim, action or proceeding, or that the County fails to cooperate fully in the defense of said claim, this condition shall thereafter be of no further force or effect.
- Rules-34 **Rules-34 Legal Challenge.** In the event that any condition imposing a fee, exaction, dedication or other measure is challenged by the project sponsors in an action filed in a court of law or threatened to be filed therein which action is brought in the time period provided for by law, this approval shall be suspended pending dismissal of such action, the expiration of the limitation period applicable to such action, or final resolution of such action. If any condition is invalidated by a court of law, the entire project shall be reviewed by the review authority and no approval shall be issued unless substitute feasible conditions/measures are imposed.
- Rules-35 **Rules-35 Limits-Except DPs.** This approval does not confer legal status on any existing structures(s) or use(s) on the property unless specifically authorized by this approval.
- Rules-36 **Rules-36 Map/LLA Expiration.** This [TENTATIVE MAP / LOT LINE ADJUSTMENT] shall expire three years after approval by the final county review authority unless otherwise provided in the Subdivision Map Act and Chapter 21 of the Santa Barbara County Code.
- Rules-37 **Rules-37 Time Extensions-All Projects.** The Owner / Applicant may request a time extension prior to the expiration of the permit or entitlement for development. The review authority with jurisdiction over the project may, upon good cause shown, grant a time extension in compliance with County rules and regulations, which include reflecting changed circumstances and ensuring compliance with CEQA. If the Owner / Applicant requests a time extension for this permit, the permit may be revised to include updated language to standard conditions and/or mitigation measures and additional conditions and/or mitigation measures which reflect changed circumstances or additional identified project impacts.

ATTACHMENT 2

OAK TREE HEALTH ASSESSMENT

Oak Tree Health Assessment Worksheet

Oak Id:

Date:

New growth

0	No new growth, cracks of death (black) on trunk
1	Less than 50% of canopy with new growth, few growth cracks (red/brown) on trunk
2	Greater than 50% of canopy with new growth, many growth cracks (red/brown) on trunk

Canopy Color

0	10% or more leaves brown
1	Less than 10% brown leaves
2	All leaves green

Crown Rating

0	Severe thinning/dieback
2	Minor thinning/twig dieback
4	Healthy, full crown

Pest Infestation

0	Severe infestation
1	Minor infestation
2	No infestation

Fungal Infection

0	Greater than 30% fungal cover
1	5-30% fungal cover
2	Less than 5% fungal cover

Total:

Health Rating

9-12	Excellent
7-8	Good
0-6	Poor

OAK TREE REPLACEMENT PLAN

EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT SANTA BARBARA COUNTY, CALIFORNIA

Project No. 1002-0455

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ATTACHMENTS

- Attachment 1. Vegetation Mapping Datasheets
- Attachment 2. Regulatory Text
- Attachment 3. Oak Tree Health Assessment Worksheet

DEFINITIONS

To provide a uniform understanding of the terms and concepts used throughout this Oak Tree Replacement Plan, the following terms are defined below.

Acorn	The fruit and viable seed of an oak tree
Canopy	Where more than one tree's branches touch or overlap, they form one continuous cover or canopy
Coast live oak (<i>Quercus agrifolia</i>)	A slow growing non-deciduous oak tree that inhabits coastal valleys and woodlands in Santa Barbara County
County	Santa Barbara County
DBH	Diameter at breast height is the total cross-sectional diameter between the outside bark of an oak tree measured in inches at a height 4.5 feet above the ground on the uphill side of the tree. In the case of trees with multiple stems (trunks), the diameter of all stems at breast height shall be combined to calculate the diameter at breast height of the tree
Drip line	A vertical line extending from the outermost edge of the oak tree's natural canopy to the ground
Mature live oak tree	Coast live oak trees of six inch DBH or greater (per Santa Barbara County's Development Standard 1 [County of Santa Barbara, 2009])
Oak tree removal	Causing a mature oak tree to die, be uprooted or removed from the ground by any means, including, but not limited to, cutting, uprooting, poisoning, burning (unrelated to controlled burns), or excessive pruning/topping or severing an oak tree's roots enough to lead to the death of the tree. Death by natural causes (e.g. sudden oak death syndrome) or regulatory requirements shall not be considered a removal
Oak Planting Unit	A manageable planting unit as determined by an oak tree specialist
Nurture Tree	A coast live oak tree between six inches and six feet in height that is intentionally guarded or protected from removal by natural or anthropogenic causes.
Protected tree	Mature coast live oak trees of six inch DBH or greater (County of Santa Barbara, 2009)
Tree Protection Zone	The area extending from the trunk(s) of a Protected Tree out to six (6) feet past the tree's dripline
Woodland	A community of oak trees with a contiguous canopy

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1.0 INTRODUCTION

The following Oak Tree Replacement Plan (Plan) has been prepared by Padre Associates, Inc. (Padre) for Aera Energy LLC (Aera) for the East Cat Canyon Oil Field Redevelopment Project (Project) located in northern Santa Barbara County, California. The Project will re-establish oil production in the existing oil field by drilling and operating oil/gas production wells, steam injection wells, observation wells, water production wells, water injection wells, and fresh water wells. The Project will also construct and operate a steam generator plant, a central processing plant, pipelines, and associated utilities (an electrical transmission line and a natural gas pipeline). The Project site consists of 2,107.8 acres of Aera-owned parcels and an additional 3.9 acres of land located on adjacent parcels.

The Project has been designed to minimize grading and land disturbance by maximizing the use of existing roads, well pads, cleared areas, and contours wherever possible. Care was taken to avoid oak tree removals by minimizing the number and size of new well pads, by routing new roads around canopies, and by designing the new facility campus as a network of smaller parking lot and building spaces that better fit in the existing spaces between oak tree canopies. Some mature live oak tree removals will be unavoidable; therefore, this Plan lays out an adaptive roadmap for successful mitigation, consistent with Santa Barbara County guidance documents, standards, and ordinances, and with Senate Bill 1334. This Plan establishes an oak tree removal mitigation strategy, potential on-site planting areas, planting guidelines, and maintenance and monitoring practices. The goal of this Plan is to mitigate the ecological impacts of oak woodland removal by replacing not only individual oak trees but also the functions and value of woodland habitat.

The locations identified in this Plan for oak tree mitigation will be protected as part of a larger Conservation Area. A Draft Long-Term Management and Conservation Strategy has been developed to provide guidelines for the management, monitoring, and maintenance of the Conservation Area. More detailed landscape plans will be developed for each location identified in this Plan for replacement planting. The landscape plan will include details for the planting layout, irrigation, mulch, and protective cages and/or fencing. These landscape plans will follow the general guidelines set forth in this Plan but will incorporate additional details and adaptive strategies to improve the success of replacement planting. In addition, a pilot planting effort is scheduled for the fall/winter of 2017 to test the proposed replacement planting methods included in this Plan. Information gleaned from the pilot will be used to improve the landscape plans for larger scale planting efforts. Approximately two acres of the Conservation Area will be planted with acorns and/or saplings during the pilot. Further details for the pilot planting will be developed in cooperation with local oak tree restoration specialists, and therefore are not included in this Plan.

A separate Project Oak Tree Protection Plan has been prepared to address the protection of oak trees within the Project site that are not proposed for removal. The Project Oak Tree Protection Plan will be implemented during construction and operation of the Project to minimize impacts to oak trees. If mature oak trees that are not scheduled for removal are damaged during implementation of the Project Oak Tree Protection Plan, these trees will be mitigated according to the Oak Tree Replacement Plan.

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2.0 SETTING

The Project site is located within the Solomon Hills northeast of the Gato Ridge mountain range within East Cat Canyon, approximately 10 miles southeast of the communities of Santa Maria and Orcutt, in northern Santa Barbara County (Figure 2-1 – Project Location). The Project development activities that involve oak tree removals are exclusively located on the portions of the Project site located west of Long Canyon Road. Much of the Project area is already extensively disturbed by a long history of oil production operations and cattle grazing. The Project oak tree mitigation area is located east of Long Canyon Road (Figure 2-2 – Planting Area) within the proposed 686.4-acre Conservation Area. This area has been used for grazing and some oil production, but is relatively undisturbed. Existing oak woodlands within the Conservation Area will be preserved (96.9 acres) and the replacement oak trees will be planted and monitored to ensure long-term establishment.

The topography of the Project site is generally comprised of steeply to moderately incised canyons and drainages, and moderate to steep hills and valleys. Elevation ranges between approximately 550 feet to 1,120 feet. Drainages throughout the Project site consist of dry, loose sand and rock with moderate to dense scrub and scattered oak woodland habitat. The Sisquoc River and its associated floodplain is located to the northeast of the Project site. This floodplain consists of large agricultural parcels primarily cultivated with grape vineyards.

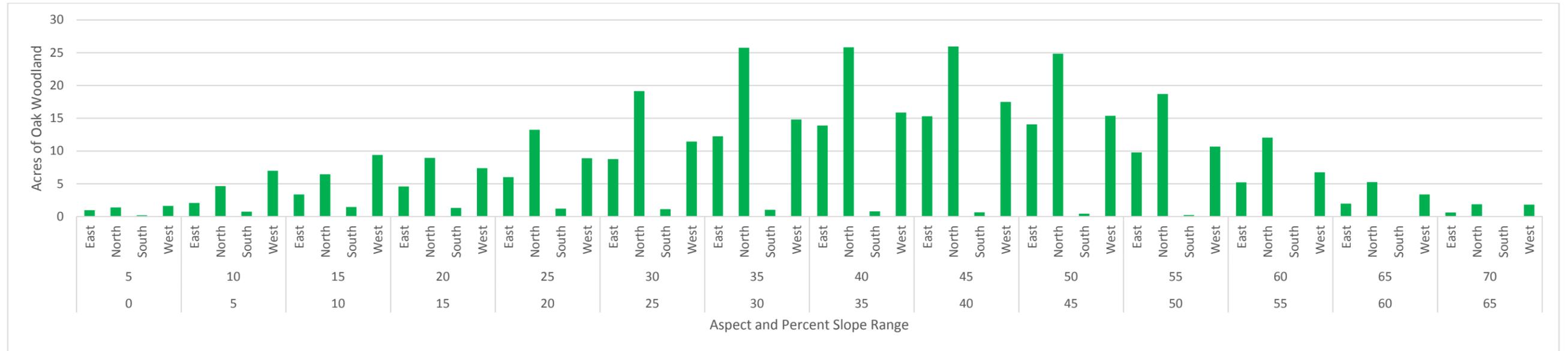
A preliminary desktop soil survey resulted in a total of 10 different soil types with different degrees of slope throughout the Project site, including Arnold sand, Chamise sandy loam, Chamise shaly loam, Corralitos sand, Corralitos loamy sand, Elder sandy loam, Positas fine sandy loam, rough broken land, San Andreas-Tierra complex, and sandy alluvial land (Figure 2-3 – Soil Survey). These are consistent with the soil types identified in the Project Storm Water Pollution Prevention Plan (TJ Cross Engineers, 2014) and the Project Preliminary Hydrology Report (TJ Cross Engineers, 2014). Live oak trees occur on all soil types identified throughout the Project site. Refer to Table 2-1, Soil Types, for the percent of each soil type that supports oak woodland, the total acreage of each soil type, and the total acreage of oak woodland for each soil type, within the Project site. Refer to Chart 2-1, Oak Woodland by Percent Slope and Aspect for details on the occurrence of oak woodland on varying degrees of slope within the Project site.

Based on the species composition, life form, and community membership rules described in *A Manual of California Vegetation, Second Edition* (MCSVII) (Sawyer et al., 2009), and extensive field observations from Padre Biologists, the vegetation identified within the Project site has been classified into annual grassland, California coastal scrub, coast live oak woodland, scattered eucalyptus groves, and portions located west of Long Canyon Road with extensive disturbance consisting of bare ground and non-native grasses and forb species tolerant of disturbance.

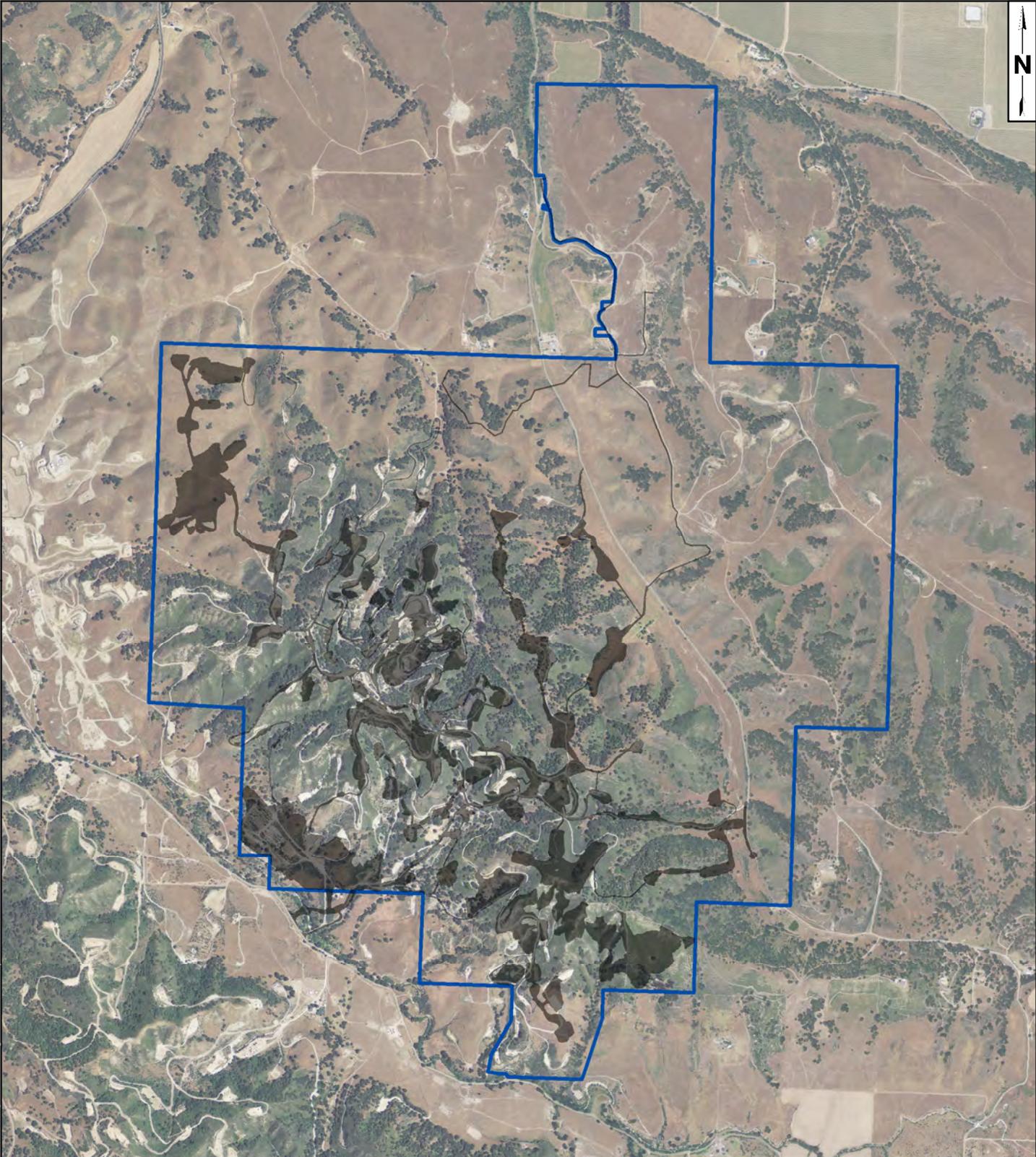
Table 2-1. Soil Types

Soil Type	Percent of Soil with Oak Woodland	Total Acreage on Site	Total Acreage with Oak Woodland
San Andreas-Tierra complex	35.3%	415.6	146.5
Chamise shaly loam	17.4%	760.1	132.4
Arnold sand	26.9%	469.6	126.4
Elder sandy loam	12.7%	80.7	10.3
Rough broken land	6.3%	153.8	9.7
Chamise sandy loam	45.2%	19.5	8.8
Positas fine sandy loam	12.1%	52.5	6.4
Corralitos loamy sand	4.2%	109.6	4.6
Corralitos sand	5.1%	41.6	2.1
Sandy alluvial land	0.2%	4.5	0.0

Chart 2-1. Oak Woodland by Percent Slope and Aspect

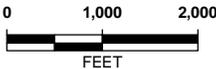


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LEGEND:

- Project Footprint
- Project Site Area



Source: USGS Topo Quad
 Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
 Notes: This map was created for informational and display purposes only



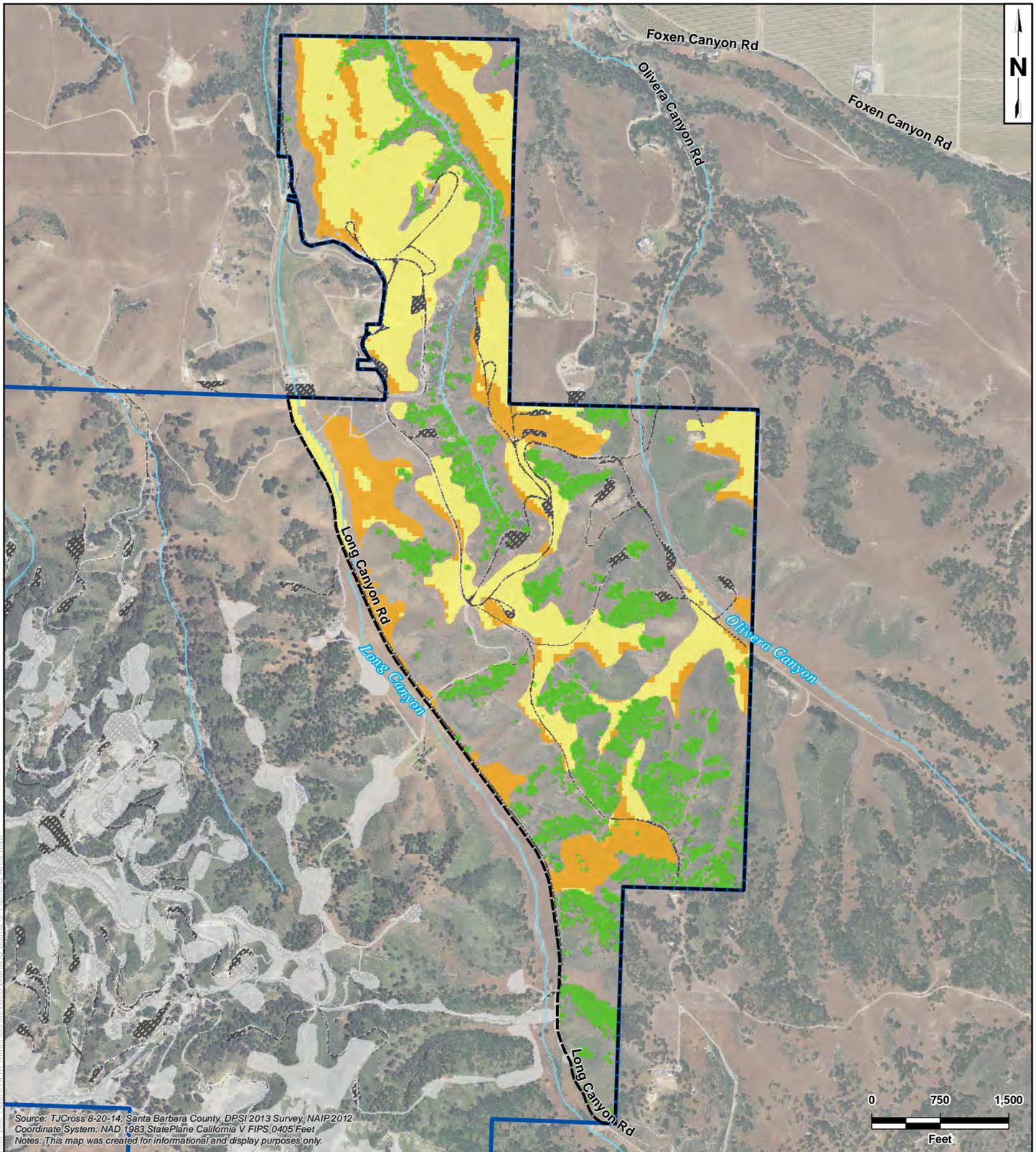
PROJECT NAME: EAST CAT CANYON SANTA BARBARA COUNTY, CA	
PROJECT NUMBER: 1002-0455	DATE: September 2014

PROJECT LOCATION

**FIGURE
2-1**

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Source: TJCross 8-20-14; Santa Barbara County, DPSI 2013 Survey, NAIP 2012
 Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
 Notes: This map was created for informational and display purposes only.

- Aera Energy LLC Property Boundary
- Long Canyon Conservation Area (686.4ac)
- Existing Channel
- 100ft Buffer of Existing Channels
- Existing Disturbed or Developed Area
- Project Footprint
- Proposed Oak Planting Area (215.4ac; maximum of 15,040 trees)
- Primary Planting Area (162.59ac; maximum of 11,341 trees)
- Secondary Planting Area (84.57ac; maximum of 5,899 trees)
- Existing Oak Woodland to be Conserved (96.9 ac)



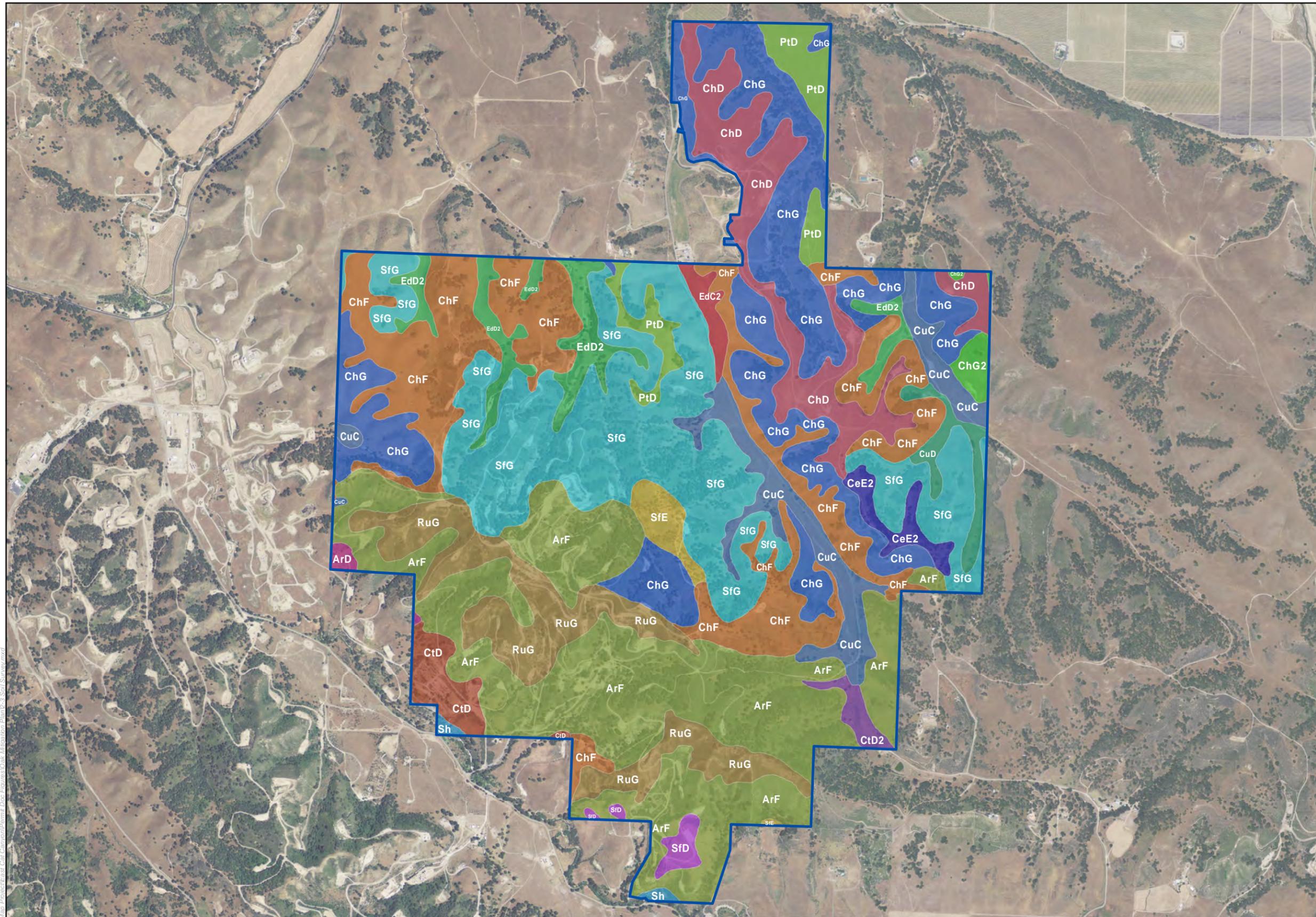
PROJECT NAME: EAST CAT CANYON SANTA BARBARA COUNTY, CA	
PROJECT NUMBER: 1002-0455	DATE: July 2017

PLANTING AREA

**FIGURE
2-2**

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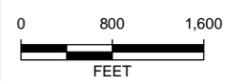


LEGEND:

Project Site Area

Soil Type

- ArD - Arnold sand, 5 to 15 percent slopes
- ArF - Arnold sand, 15 to 45 percent slopes
- CeE2 - Chamise sandy loam, 5 to 30 percent slopes, eroded
- ChD - Chamise shaly loam, 9 to 15 percent slopes
- ChF - Chamise shaly loam, 15 to 45 percent slopes
- ChG - Chamise shaly loam, 45 to 75 percent slopes
- ChG2 - Chamise shaly loam, 30 to 75 percent slopes, eroded
- CtD - Corralitos sand, 2 to 15 percent slopes
- CtD2 - Corralitos sand, 2 to 15 percent slopes, eroded
- CuC - Corralitos loamy sand, 2 to 9 percent slopes
- CuD - Corralitos loamy sand, 9 to 15 percent slopes
- EdC2 - Elder sandy loam, 2 to 9 percent slopes, eroded
- EdD2 - Elder sandy loam, 9 to 15 percent slopes, eroded
- PtD - Positas fine sandy loam, 9 to 15 percent slopes
- RuG - Rough broken land
- SfD - San Andreas-Tierra complex, 5 to 15 percent slopes
- SfE - San Andreas-Tierra complex, 15 to 30 percent slopes
- SfG - San Andreas-Tierra complex, 30 to 75 percent slopes
- Sh - Sandy alluvial land



Source: SSURGO, NAIP 2012, County of Santa Barbara
 Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
 Notes: This map was created for informational and display purposes only



PROJECT NAME: EAST CAT CANYON
 SANTA BARBARA COUNTY, CA
 PROJECT NUMBER: 1002-0455
 DATE: September 2014

SOIL SURVEY

**FIGURE
2-3**

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3.0 REGULATORY SETTING

The following section provides an overview of regulations that govern the protection of deciduous and non-deciduous oak trees, woodlands, and savannas within Santa Barbara County, California. It is important to note that the oak trees within the Project site consist exclusively of non-deciduous coast live oaks, based on tree inventory surveys completed by Padre Biologists. Based on review of these regulations, it has been determined that the guidelines of SB 1334, Chapter 35 Article III – Inland Zoning Ordinance, the County Environmental Thresholds and Guidelines Manual, the Conservation Element-Oak Tree Protection in the Inland Rural Areas of Santa Barbara County, and the Planner’s Guide to Conditions of Approval and Mitigation Measures, apply to this Project. The subsection of each document as it pertains to oak trees and oak woodland is provided in Attachment 2-Regulatory Text.

3.1 STATE OF CALIFORNIA – SB 1334

State of California laws specific to oak tree protection are included in State Senate Bill SB1334 which was introduced by Senator Sheila James Kuehl and filed in September of 2004. SB 1334 subjects such oak woodland conversions to the California Environmental Quality Act (CEQA). Pursuant to SB 1334, a County shall determine whether a project may result in a conversion of oak woodlands that will have a significant effect on the environment. If a County determines that there may be a significant effect to oak woodlands, the County shall require one or more of the following oak woodland mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands:

1. Conserve oak woodlands through the use of conservation easements.
2. Plant an appropriate number of trees, including maintaining plantings and replacing dead or diseased trees:
 - a. The requirement to maintain trees pursuant to this paragraph terminates seven years after the trees are planted;
 - b. Mitigation pursuant to this paragraph shall not fulfill more than one-half of the mitigation requirements for the project; and
 - c. The requirements imposed pursuant to this paragraph also may be used to restore former oak woodlands.
3. Contribute funds to the Oak Woodlands Conservation Fund, and;
4. Other mitigation measures developed by the County.

SB 1334 provides that a County may prepare “an oak conservation element for a general plan, an oak protection ordinance, or an oak woodlands management plan, or protection ordinance, or amendments thereto, that meets the requirements of this section [SB 1334].” This Plan has been designed to satisfy the requirements of SB 1334 by conserving oak woodlands within conservation easements.

3.2 SANTA BARBARA COUNTY OAK –RELATED CODES AND ZONING ORDINANCES

The Santa Barbara County Land Use and Development Code and Zoning Ordinances contain general regulations and permit regulations that further describe the way property may be

developed and the conditions under which projects may be approved. Specifically, Santa Barbara County Chapter 14 – Grading Code and Chapter 35 – Zoning includes codes and ordinances specific to oak tree protection:

Chapter 35 Article III – Inland Zoning Ordinance. Article III Inland Zoning Ordinance serves to implement the adopted Santa Barbara County Comprehensive Plan by classifying and regulating the uses of land, buildings, and structures within the applicable unincorporated area of the County of Santa Barbara. Article III specifies items that are to be reviewed prior to issuance of any Land Use Permits, including potential impacts to natural resources, such as oak woodlands, which may require mitigation.

Chapter 35 Article IX - Deciduous Oak Tree Protection and Regeneration Ordinance (2003). The Deciduous Oak Tree Protection and Regeneration Ordinance addresses deciduous oak tree removal in the inland rural areas if such removal is not associated with a development project that requires a permit under Section 35-1 and Section 35-2 of Chapter 35 of the County Code or Ordinance 661. This ordinance does not apply to the Project due to the lack of deciduous oaks within the Project site.

Chapter 14 Appendix A – Grading Ordinance Guidelines for Native Oak Tree Removal (2003). The guidelines contained within the Santa Barbara County Grading Ordinance (Chapter 14 of the County Code) govern deciduous and live oak removals. It replaced the County of Santa Barbara Environmental Thresholds and Guidelines Manual for agricultural and non-agricultural practices not requiring a discretionary permit. This ordinance does not apply to the Project because a discretionary permit is required for the Project.

3.3 SANTA BARBARA COUNTY COMPREHENSIVE PLAN

The Santa Barbara County Comprehensive Plan includes a long-term general plan that outlines physical development of the County. The Comprehensive Plan’s Conservation Element addresses the conservation, development, and use of natural resources including water, forests, soils, rivers, and mineral deposits. The *Conservation Element-Oak Tree Protection in the Inland Rural Areas of Santa Barbara County* (Conservation Element), republished in May 2009, amends the Conservation Element Mapped Areas and Communities Section addressing “Oak Tree Protection in the Inland Rural Areas of Santa Barbara County”. This document provides goals, policies, actions, and development standards for the protection of oak trees and applies to this Project. The Conservation Element applies to development in rural areas of the County requiring a permit, defines mature oak trees as “live oak trees six inches or greater diameter at breast height”, and requires replanting of oak trees in accordance with the County’s *Standard Conditions and Mitigation Measures* (presented in the Planner’s Guide to Conditions of Approval and Mitigation Measures, 2011).

3.4 SANTA BARBARA COUNTY ENVIRONMENTAL THRESHOLDS AND GUIDELINES MANUAL

The guidelines set forth in this manual, prepared by the County of Santa Barbara Planning and Development Department (Published October 2008, Revised July 2015), are based on the Comprehensive Plan and serve to assist in understanding the use and application of various environmental impact thresholds as they relate to proposed projects. The document describes specific habitats, such as oak woodlands, and provides guidelines for evaluating and determining

significant impacts to those resources. The impact assessment for oak woodlands considers: “habitat fragmentation, removal of understory, alteration to drainage patterns, disruption of the canopy, [and] removal of a significant number of trees that would cause a break in the canopy or disruption in animal movement in and through the woodland.”

For the assessment of individual oak tree removals, the document states that “the loss of 10 percent or more of the trees of biological value on a project site is considered potentially significant” (County, 2008). For oak tree protection, the document states that “the preferred method of protecting native trees is to avoid any disturbance within the area 6 feet away from their driplines (the outermost edge of a tree’s foliage) and drainage patterns above and below the tree” (County, 2008). This document applies to the Project.

3.5 PLANNER’S GUIDE TO CONDITIONS OF APPROVAL AND MITIGATION MEASURES

The Planner’s Guide to Conditions of Approval and Mitigation Measures (2011) provides recommended conditions of approval and mitigation measures for projects subject to discretionary permits. The Guide is based upon State and local regulations including the Subdivision Map Act, Zoning Regulations, Coastal Act Regulations, Comprehensive Plan policies, and Community Plan development standards. Many of the conditions can and have been used as mitigation measures for commonly occurring impacts. This guide provides content (as BIO-01, BIO-02, BIO-03, BIO-04, and BIO-05), that is required in tree protection plans, mitigation plans, and tree replacement plans for unavoidable impacts to protected oak trees. Content includes, but is not limited to, avoidance and minimization measures, figures depicting relevant tree information (i.e., location), mitigation requirements, and replacement methods. This guide has been used in the development of this Plan.

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4.0 OAK TREE SURVEYS

Oak tree surveys were conducted to determine the location of oak trees during the Project planning and design phase. The location of the oak trees informed decisions made while creating the Project's grading plans so that trees would be avoided whenever possible. Tree surveys provided additional information on the density and size classes of coast live oak trees within the Project site.

4.1 OAK TREE SURVEY METHODOLOGY

Tree survey inventories were completed within the Project site, documenting all trees greater than eight (and some greater than six) inches DBH, using a calibrated DBH measuring tape. In the case of trees with multiple trunks, the DBH of all trunks was combined to calculate the DBH of the tree. Individual oak tree locations were documented with a GPS, the location, size, and species were recorded on data sheets, and each tree was tagged with a specific number corresponding to the data entry. On May 9, 2014, at the County's request, the inventory was expanded to include trees six inches in DBH and greater for the remaining Project grading limits. This subset of data, having both six-inch and greater and eight-inch and greater DBH trees, was used to establish the typical ratio of six-inch to eight-inch trees. The ratio was then applied to the eight-inch or greater DBH inventory in each canopy to estimate the number of additional trees (six inches in DBH to less than eight inches in DBH) that were not inventoried in the field. Refer to Figure 4-1 – Oak Inventory Study Areas for the locations that were inventoried and/or estimated.

Further, in conjunction with MCVII, the California Native Plant Society and California Department of Fish and Wildlife (CDFW) Protocol for Combined Vegetation Rapid Assessment and Relevè Sampling (VRAP) (version May 13, 2011) was utilized during vegetation mapping surveys to classify the vegetation types within the Project site. Specifically, a representative stand or sample plot of each vegetation type was sampled, recorded, and subsequently classified to the alliance and/or association level as defined in the MCVII. Coast live oak woodland was identified as an alliance and mapped using aerial photographs and field data. To further analyze oak canopy with the Project site, GIS imaging tools were used to narrowly identify oak canopy, excluding areas of grassland or shrub land between open canopy coast live oak woodland. The oak canopy layer was used to extrapolate the number of oak trees within an area that was not inventoried.

4.2 OAK TREE SURVEY RESULTS

Most oak trees within the Project site have multiple stems at breast height, in which case, the sum of the DBH of all stems is used to calculate the total DBH for determining protection status. Table 4-1 – Oak Tree Inventory by Stem Count lists the number of oak trees that were surveyed during Project planning by the number of stems recorded at breast height. It should be noted that these numbers do not represent the proposed oak tree removals but are presented to demonstrate the abundance of multi-stemmed trees. Based on the partial inventory of the Project site and the site-wide vegetation mapping, there are approximately 22,973, coast live oak trees (six inches or greater DBH) estimated to be within the Project site's approximately 449 acres of coast live oak woodland.

Coast live oak woodland (*Quercus agrifolia* Woodland Alliance) occurs on alluvial terraces, canyon bottoms, stream banks, slopes, or flats, with soils that are deep, sandy or loamy with high organic matter. This alliance is characterized by coast live oak as dominant or co-dominant in the tree canopy; canopy is open to continuous, shrub layer is sparse to intermittent, and herbaceous layer is sparse (Sawyer et al., 2009). Coast live oak woodland is particularly important for its ability to support a wide variety of wildlife species due to its high value as foraging habitat and protective cover (e.g., acorn production, forest canopy, etc.).

Coast live oak woodland was identified during field surveys throughout the Project site on all topographic settings, ranging in cover from dense to intermittent. The quantitative vegetation assessments (Attachment 1: Data Sheets ECC0004 and ECC0009) identified native and non-native shrubs, forbs and grasses, with coast live oak as the dominant species within this vegetation type. Component species include non-native, Italian thistle (*Carduus pycnocephalus*), ripgut grass (*Bromus diandrus*), slender wild oat (*Avena barbata*), Italian ryegrass (*Festuca perennis*), geranium (*Geranium molle*), and native, miner’s lettuce (*Claytonia perfoliata*), woodmint (*Stachys bullata*), poison oak (*Toxicodendron diversilobum*), and California hummingbird sage (*Salvia spathacea*).

Table 4-1. Oak Tree Inventory by Stem Count

No. of Stems	No. of Oak Trees Inventoried ¹	No. of Oak Trees Inventoried within the Proposed Project Footprint ²
1	1,387	427
2	1,198	396
3	812	254
>3	1,341	331

Notes:

¹ Includes all oak trees inventoried in support of project planning regardless of impact.

² Includes only oak trees that were inventoried within the Proposed Project Footprint but does not include all oak trees within the size class of six to less than eight inches DBH due to lack of inventory data.

Figure 4-1. Oak Inventory Study Areas

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5.0 OAK TREE IMPACTS AND MITIGATION

For the purposes of this Plan, a protected tree is a mature live oak tree with a diameter at breast height (DBH) of six inches or more (per the Development Standard 1 of the Conservation Element). The Plan proposed to comply with Santa Barbara County's Development Standard 1 through on-site replacement planting. The Plan proposes to comply with SB 1334 by preserving oak woodland in perpetuity within a Conservation Area located east of Long Canyon on the Project site.

5.1 OAK TREE IMPACTS

The Project will result in temporary and permanent impacts to coast live oak woodland. Of the total 449.2 acres of coast live oak woodland occurring within the Project site, approximately 29.2 acres, or 6.5 percent, will be impacted (temporarily and permanently) by Project activities.

Temporary Impacts. Approximately 6.2 acres of oak woodlands will be temporarily impacted by fuel management activities (Table 5-2). These activities are required by the State of California (State Board of Forestry, 2006) and Santa Barbara County (SBCFD, 2014) to limit fire hazards, and will include pruning tree branches and reducing fuels on the ground. No individual oak trees will be removed for these purposes. An additional 1.3 acres of oak woodlands will be temporarily impacted by Project activities including above-ground pipeline and electrical transmission line installation (Table 5-2), also without the removal of individual oak trees. In addition, during initial grading and construction activities, individual coast live oak trees within proximity of the Project footprint may be temporarily impacted from soil compaction within the critical root zone (use of heavy equipment, piling of debris, soil fill, or parking vehicles), trenching/excavation activities that may cut into the root structure, or tree limbing. These activities could cause a tree to die by significantly damaging its root structure; however, an Oak Tree Protection Plan has been incorporated into Project design plans to avoid the critical root zone of coast live oak trees that are not planned for removal and provide measures to ensure these oak trees will not result in death. In addition, a Fuel Management Plan has been incorporated into the Project and provides guidance for vegetation removal activities to minimize impacts to oak trees to the greatest extent possible. With the incorporation of the Oak Tree Protection Plan, and minimization and avoidance measures of the Project Fuel Management Plan, temporary impacts to oak trees not proposed for removal will be less than significant.

During grading, drilling, and maintenance activities, increased dust due to ground disturbance and vehicle traffic may create indirect impacts along the immediate road shoulders. Dust that accumulates on the leaves of oak trees blocks sunlight and reduces photosynthesis. Dust will be a temporary impact reduced to less than significant with the incorporation of dust control methods into Project design plans. Dust control will include the watering of soils within Project work areas during heavy construction and periodic watering of roads during periods of heavy vehicle traffic.

Permanent Impacts. The Project will result in the permanent removal of 21.7 acres of coast live oak woodland. Based on the County's thresholds of significance for "Woodlands and Forest Habitat Areas", the Project may result in a potentially significant impact by substantially impacting local wildlife resources through fragmentation of the oak woodland canopy. Fragmentation of the woodland landscape may result in the disruption of foraging and nesting

habitat for much of the local wildlife species that utilize the Project area. The removal of oak trees will be a permanent loss in the Project footprint and replaced by well pads, roads, and facilities that do not support wildlife habitat.

Oak tree field inventories and desktop estimations were completed within the Project site and a total of approximately 1,500 coast live oak trees six inches or greater in DBH were identified for removal (1,004 trees in Phase I and 496 trees in Phase II) (Table 5-2). Oak tree locations within the Project footprint were gathered during field inventories utilizing GPS units and are depicted in Figure 4-1 – Oak Inventory Study Areas. Due to a change in survey methodology, not all oak trees six inches or greater DBH were inventoried in the field. In some instances, desktop estimation was used to calculate the number of six-inch (or greater) oak trees in these locations (using the ratio of six inch to eight inch of 0.1003), as depicted in Figure 4-1. No deciduous oaks were identified within the Project site. Trees recorded within the Project footprint were observed within dense to intermittent stands of young and mature oak trees.

The removal of 1,500 coast live oak trees will result in the loss of an estimated 6.5 percent of the total number of trees within the Project site (include off-property entrance and loop road), which is less than the ten percent threshold of significance for “Individual Native Trees” identified by the County. This is an estimated percent impact because the entire Project site was not physically inventoried for oak trees. The estimate was calculated based upon a desktop canopy study completed using aerial imagery and geographical information system (GIS) techniques. Canopy areas and the tree inventory data collected within them were used to determine the typical number of trees per canopy acre (approximately 46 mature live oak trees per canopy acre). Based on that ratio and the total canopy areas measured using GIS (not the oak woodland layer used for calculating vegetation type impacts), the estimated total number of mature live oak trees (six inches in DBH or greater) within the Project site, entrance and loop roads (based on a total oak canopy cover of 498.32 acres) is 22,973 mature live oak trees.

The Project is designed to minimize land disturbance by maximizing the use of existing roads, well pads, cleared areas, and contours wherever possible. Care was taken to avoid oak tree removals by minimizing the number and size of new well pads, by routing new roads and pipeline corridors around canopies, and by designing the new facility campus as a network of smaller parking lot and building spaces that better fit in the existing spaces between oak tree canopies.

Table 5-2. Oak Tree Impacts

Impact Type (Estimated Timing)	Proposed Project
Permanent Phase I (Year 1 - 2018)	
Trees Removed	1,004
Acres Removed	13.4
Permanent Phase II (Year 7 - 2025)	
Trees Removed	496
Acres Removed	8.3
Temporary Phase I (Year 1 - 2018)	
Trees Impacted ¹	184
Acres Impacted	4.0
Temporary Phase II (Year 7 - 2025)	
Trees Impacted	161
Acres Impacted	3.5
Total Permanent	
Trees Removed	1,500
Acres Removed	21.7
Total Temporary	
Trees Impacted	345
Acres Impacted	7.5
Total Project Acres	29.2
Percent of Project site's Oak Woodland	6.5%

Notes:

¹ Trees impacted is calculated by multiplying (46) the typical number of trees located within one acre of oak canopy by the number of acres of oak canopy impacted.

5.2 OAK TREE REPLACEMENT

The Project will plant replacement coast live oak trees within the Potential Oak Planting Area (Figure 2-2 – Planting Area). The Potential Planting Area is defined as the area within the proposed conservation easement area (east of Long Canyon Road) that is deemed suitable to support oak woodland habitat based on the soil types, aspects, and slope ranges that support existing oak woodland on the site. There are also oak tree mitigation opportunities within other areas of the Project site, including the west side of Long Canyon Road in closer proximity to the Project facilities and infrastructure. On-site replacement planting is preferable because it maximizes the “likeness” of the resource being replaced and is, in this instance, also a feasible method for mitigation. However, off-site mitigation alternatives may also be considered by Aera and the County of Santa Barbara during the land use permitting process. The measures outlined in this Plan are based on codes, regulations, and guidelines set forth by the County of Santa Barbara and SB 1334, as outlined in the Regulatory Section 3.0.

Project removals of mature live oak trees will be mitigated as follows (in accordance with BIO-02 of the Standard Conditions and Mitigation Measures):

- For every mature live oak tree removed, ten acorns or ten one gallon saplings or smaller containers that support a longer taproot, will be planted within the Potential Oak Planting Area. Saplings may include those salvaged from the Project disturbance areas (10:1 - acorns or young saplings), and/or
- For every mature live oak tree removed, three 15 gallon saplings will be planted within the Potential Oak Planting Area (3:1 – 15 gallon saplings), and/or
- For every mature live oak tree removed, ten naturally occurring oak tree saplings between six inches and six feet tall will be protected and nurtured within Potential Oak Planting Area or in the Project site (10:1 – sapling/nurture trees), and/or
- Mature oak trees identified within the Project disturbance area and proposed for removal, will be transplanted to the Potential Oak Planting Area in order to salvage the tree (1:1 – transplanted mature oak trees); and/or
- Some amount of off-site planting and nurturing, in other conservation or restoration areas, such as La Purisima, or in burn areas of public lands, as agreed to by the County, may also be considered as a portion of the mitigation for on-site removals.

The primary approach for oak tree mitigation will be the on-site planting of replacement acorns, saplings, or trees within the Potential Oak Planting Area. The Potential Oak Planting Area currently includes established live oak woodland communities mixed with non-native annual grasslands. The oak trees will be planted in the grassland communities adjacent to existing oak woodland to expand the canopy, targeting the northwest to north east facing aspects, sandy, loamy, and shaly soil types, and 0- 58 percent slope ranges.

The objective of the Plan is to ensure the successful establishment of planted trees, overall preservation and stewardship of the Potential Oak Planting Area, a creation of oak woodland habitat. The Potential Oak Planting Area will be protected from significant erosion, overgrazing, and intensive agricultural and development activities as part of the Conservation Area. Additionally, the existing and planted trees within the Potential Oak Planting Area are addressed in the Draft Long-Term Management and Conservation Strategy.

5.3 OAK WOODLAND REPLACEMENT AND CONSERVATION

This Plan acknowledges that the impact of oak tree removal is greater than simply the loss of individual oak trees; it also includes the loss of oak woodland habitat. To replace the function and value of oak woodland habitat, the Plan proposes to restore approximately three acres of oak woodland habitat for each acre of oak woodland impact. In addition, the Conservation Area will be dedicated for the protection of oak woodland in perpetuity, through a conservation easement. Preservation and management of the oak woodland within the Conservation Area will satisfy the mitigation requirements of SB 1334, and compensate for the temporal loss of habitat resulting from oak woodland removal prior to maturation of the oak woodland restoration. Currently, the Conservation Area is comprised of 96.9 ac of existing oak woodland and has the potential to support an additional 247.2 ac of created oak woodland. To create oak woodland habitat, the Plan proposes to install wildlife habitat elements such as large woody debris, raptor perch sites, and understory vegetation.

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6.0 PLANTING AREA

The 247.2-acre replacement planting area within the Conservation Area (Figure 2-2 – Planting Area) was selected from within the Project site based on a desktop evaluation of planting suitability (i.e., slope, plant community, soil conditions, and aspect), property access/ownership constraints, and existing and future land use considerations. The Conservation Area is currently grazed by cattle and consists of existing oak woodlands and non-native annual grasslands. The annual grassland communities will be the areas proposed for planting (Figure 2-2) and will be protected in a conservation easement, as addressed in the Draft Long-Term Management and Conservation Strategy.

Coast live oak woodland typically occurs on steep, north-facing slopes and shaded ravines or along raised stream banks and terraces, where it forms open to relatively closed canopy stands dominated by coast live oak (Holland, 1986; Sawyer and Keeler-Wolf, 1995). Coast live oaks grow in a variety of soils ranging from silts and clays to weathered granite (Bornyasz, 2002 and Downie, 1997). The replacement planting area is comprised of soils classified as sand, sandy loam, shaly loam, and loamy sand (USDA, 2014). These soil types are suitable for coast live oak establishment based on the correlation of oak woodland observed on-site within Arnold sand, Corralitos sand, Chamise sandy loam, Elder sandy loam, Positas fine sandy loam, Chamise shaly loam, and Corralitos loamy sand (refer to Table 2-1).

A desktop ArcGIS evaluation of slope and aspect was considered when determining potential planting areas. Additionally, Vegetation Rapid Assessment Protocols were completed for the Project site by Padre in 2013 (Padre, 2014b). The results of these surveys suggest that the coast live oaks within the Project Site occur on varying slopes and aspects, most predominantly on 10 to 65 percent slopes (Chart 2-1 – Oak Woodland by Percent Slope and Aspect). Steep slopes (greater than 58 percent) were used as a constraint for designating the replacement planting area due to accessibility limitations, and increase in drainage and run-off potential.

The Primary and Secondary Planting Areas comprise a total area of 247.16 acres and have the potential to support 17,240 coast live oak trees. The Primary Planting Area represents the area within the Conservation Area that has the most ideal planting conditions for coast live oak, including ideal soil types (sand, sandy loam, shaly loam, and loamy sand), slopes from 0 to 65 percent, and aspects from 270 degrees through North to 136 degrees (i.e. West, Northwest, North, East, and Southeast). The Secondary Planting Area has ideal soil types and slopes, but incorporates additional aspects (Southern and Southwestern aspects). These trees will be planted in stages and grouped into smaller management areas referred to as Oak Planting Units (refer to Section 6.1). The use of 20-foot centers is based on the recommendation of the County (County, 2003), but will only be used as a guide for density when forming more natural clusters to avoid creating orchard-like groves. The Oak Planting Unit locations and the appropriate number of trees per Oak Planting Unit will be determined with the guidance of an Oak Tree Specialist. An Oak Tree Specialist is a qualified biologist experienced in oak tree regeneration methods, knowledgeable of the ecological resources within the regional, and approved by the County of Santa Barbara.

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7.0 OAK TREE PLANTING AND NURTURING SPECIFICATIONS

The following provides specifications on oak tree propagation and installation methods as recommended in *How to Grow California Oaks* published by the University of California (1995), and as recommended in the *Santa Barbara County Oak Restoration Program 1994-2005 Final Report* published by the University of California Santa Barbara (Mahall et al., 2005). These reports documented the results of restoration experiments conducted in Santa Barbara County on oak seedling regeneration. The planted live oak trees will be nurtured for at least seven years (or longer if extended irrigation is necessary during drought conditions), the last two years without supplemental watering to determine sustainability. Nurturing will include measures to promote tree survival and growth such as watering (for the first three years), weeding, browse protection, mulching, and fertilizing.

7.1 SCHEDULE

The planting of Oak Planting Units will likely occur in stages over a multi-year oak planting program as outline in Table 7-1 – Phased Planting Schedule. The Phased Planting Schedule describes the timing for the planting of live oak trees to mitigate the anticipated oak impacts of each Project Phase. Table 7-2 – General Implementation Schedule provides the sequence of planting activities for each planting phase.

Table 7-1. Phased Planting Schedule

Phase	Timing
Collect and plant 140 acorns or saplings as Pilot Study	Fall/winter of 2017
Collect and plant 7,400 acorns or saplings and transplant up to 100 live oak trees for Phase I impacts	After Project approval, following acorn collection in the fall. (Estimated: Fall/winter 2018)
Collect and plant 2,500 ¹ acorns or saplings for Phase I impacts	Two years after initial Phase I planting. (Estimated: Fall/winter 2020)
Collect and plant 4,960 acorns or saplings for Phase II impacts	Prior to initiating Phase II of the project. (Estimated: Fall/winter 2022)

Notes:

¹ The actual number planted will reflect the total mitigation required for mitigation of Phase I impacts which may include mature oak tree losses that were unanticipated or unsuccessful replacement plantings.

Table 7-2. General Implementation Schedule

Action	Timing
Implement pilot planting.	Fall/winter 2017
Collect acorns from the Project site and perform float test to remove non-viable acorns.	After Project approval, completed in the fall.
Propagate acorns in a nursery and/or store for direct planting.	After Project approval, following acorn collection in the fall.
Develop detailed planting and maintenance plan and schedule including watering/irrigation system, plant protections, etc. with guidance from oak tree specialist and/or qualified biologist	After Project approval.
Prepare site for planting.	After Project approval.
Installation of protection fencing, as necessary.	Prior to planting (depending on need for underground protection) or during planting.
Installation of irrigation, as necessary.	Prior to planting, following site preparation activities. Expected to continue through at least the first three years.
Installation of container stock and/or planting of acorns (up to 3 acorns per hole).	Following site preparation activities, preferably in early November after the first rains.
Maintenance and Monitoring.	During Project activities, through the seven-year monitoring and nurturing period.

7.2 ACORN COLLECTION AND PROPAGATION

Acorns will be collected from mature trees occurring within the Project site in sufficient numbers to support the subsequent planting layout. Approximately ten percent more acorns than needed should be collected to account for non-viable specimens and nursery loss. Acorns will be collected during early fall when they are just starting to mature. Acorns will be collected and floated to determine viability; all acorns that float will be discarded. All viable acorns will be stored in an air tight container under refrigeration for up to a year and inspected regularly for mold. Acorns may be stored until planting directly into the ground or within a nursery for initial development. No more than 20 percent of the overall Project site population will be collected for propagation; however, a higher percentage of acorns will be collected from trees proposed for removal. If insufficient acorns are present at the Project site, off-site collection within the same watershed will be conducted. Los Flores Ranch is a potential off-site collection source.

7.3 SITE PREPARATION

Selection of the Oak Planting Unit location will take into consideration observations of active gopher and ground squirrel colonies, as well as slope, aspect and existing vegetation. These areas will be avoided to the greatest extent feasible to reduce the likelihood of oak tree loss. If areas with dense rodent activity are unavoidable, additional site preparation measures may be employed such as installing a raptor perch or conducting trapping. Site preparation will

involve the removal of invasive non-native plants prior to planting, if present. At least a two-foot radius circle around the planting area will be cleared of all vegetation to increase the availability of water for sapling establishment (University of California, 1995).

Mulch and compost may be used to promote oak tree growth. Certified compost may be applied throughout the Oak Planting Unit at a rate of 17 tons per acre (approximately 0.25-inch layer) prior to planting to improve soil fertility and retain soil moisture. Mulch may be applied to the oak tree planting radii to conserve moisture by reducing evapotranspiration from the soil and reducing weeds near seedlings that may compete for soil resources. Mulch may consist of wood chips generated from the removed oak trees or another source that is free of non-native plant seeds, such as oak tree duff from beneath existing oak trees, when planting occurs prior to oak tree removals. Mulch will be spread to a depth of three to six inches around the planting hole. The use of additional mulch (e.g., bark chips, straw, compost, or mulching paper) will be determined during monitoring visits with input from the oak tree specialist.

Heavy equipment will be necessary to facilitate site preparation. All equipment will be cleaned and inspected prior to use to avoid the introduction of non-native material (seeds, soil pathogens, etc.). Equipment and stockpiles needed for generating and storing wood chips will be restricted to pad locations within the Project footprint. Heavy equipment used within the Conservation Area to spread mulch and compost, dig holes, and mow will be operated in a manner that minimizes erosion, soil compaction, and native plant damage.

7.4 PLANTING AND SEEDING

Planting of coast live oak trees will occur in pre-determined Oak Planting Units. Planting will occur in the late fall/winter months to take advantage of the rainy season and rooting period to ensure optimum survival. Saplings, either grown from acorns collected on-site or provided as container stock from a local nursery that is proficient in native plant propagation (from Santa Barbara and/or San Luis Obispo counties), will be planted with care to avoid transplant shock and root injury. If nursery grown saplings are used, all container stock will be inspected for pathogens such as sudden oak death to avoid introduction of foreign pathogens into the Project site. Direct seeding of acorns is preferable for avoiding the introduction of foreign pathogens.

Planting holes will be dug at least one to two feet below the planting spots and backfilled with non-compacted soil to promote deep root development (University of California, 1995). Planting holes will be two times the width of the container stock. If direct-seeding acorns (in-lieu of and/or in addition to planting saplings), acorns will be planted to an approximate depth of one-half to one inch below the soil surface and oriented horizontally. Up to three acorns may be planted in a one foot cluster to increase the probability of establishing a sapling at the location. If more than one sapling grows, the weakest saplings will be culled to promote the growth of the fittest sapling. Self-contained watering systems may also be used and will be installed under/above ground during planting. All planted saplings or acorns will be watered immediately following planting.

Coast live oak trees will be planted in clusters on approximately 20-foot centers from each other and from existing oak trees at a density of approximately 70 oak trees per acre. An average single cluster will be approximately three to four individuals spaced approximately 20 to 40 feet apart. Spacing of planted oak trees within each Oak Planting Unit may be adjusted depending on site conditions to better mimic the tree layout of the natural landscape.

7.5 IRRIGATION

An irrigation plan will be prepared prior to site preparation to outline a strategy of how to provide water to all planted trees. The irrigation plan will include water sources (i.e., above ground tanks or water wells), location of irrigation lines, location of maintenance roads to access water storage sources, and watering method (e.g., truck, drip, self-contained systems, hand water using a vehicle mounted water buffalo, etc.). Irrigation lines will be positioned in a manner that would take the terrain of the site into consideration to ensure all individual plants receive the appropriate amount of water for a specific duration. Existing unpaved roads and existing water wells will be utilized to the greatest extent possible. An oak tree specialist will be consulted to guide and review the plan. The plan may be modified based on the current conditions of the site and to ensure the optimum growing conditions and increased survival. Plantings and nurture trees will be watered, as needed, for a year. Provision shall be made for supplemental hand irrigation of plants, up to three applications per year, once a month after the last measurable rain on normal rainfall years for three years, once in early September and once in early October. When the plants have become established, are showing signs of vigor and growth, irrigation will be reduced or terminated accordingly. Some tests may be undertaken to determine what irrigation strategy works best.

7.6 PROTECTIVE CAGING AND FENCING

Protective fencing or cages may be installed around oak trees and new acorn growth to reduce browsing by herbivores, as necessary. Cages can be formed using half-inch galvanized hardware cloth, formed into a cylinder, 30 inches wide and 4 feet tall, or a similar method. The cages can be installed at ground level and anchored with rebar posts or similar materials. Additionally, pre-fabricated gopher cages may be installed under the soil prior to, or concurrently, with the oak saplings/acorns to prevent damage from burrowing rodents.

Protective fencing may also be installed around the Oak Planting Units to keep out humans, cattle, wild pigs, and other animals that may damage, eat, or uproot young saplings/acorns. The protective fencing would be constructed of durable material, such as barbed wire fencing, that will help to prevent cattle, or other target animals, from impacting the planting area and withstand adverse weather conditions.

7.7 SMALL NURTURE TREES

Oak trees between six inches and six feet in height that are already growing in the Potential Oak Planting Area and/or other areas of the Project site can be nurtured and considered replacement trees or mitigation trees. These oak tree saplings, herein referred to as nurture trees, will be chosen based on site characteristics that promote successful long-term establishment, and nurturing feasibility throughout the Potential Oak Planting Area. Nurture trees will be selected in areas of relatively open canopy to provide adequate sunlight and have ample space for the opportunity to grow. Nurture trees will require similar care to planted trees, including irrigation, weeding, mulching, and installation of protective cages above ground, as necessary. Below ground protective caging will not be implemented due to potential damage to sapling root structure.

7.8 TRANSPLANTING OF OAK TREES

Mature and/or sapling oak trees identified within the Project footprint and proposed for removal may be transplanted to a designated Oak Planting Unit within the Potential Oak Planting

Area in order to salvage the tree. Several factors influence the success of oak tree transplants including, but not limited to: tree size, root mass, and canopy loss (Watson, 2005; and Dagit and Downer, 1997). Transplanting of mature oak trees is not proposed as a mitigation method but may be selectively tried as an experiment to save a tree that would be otherwise mulched. Transplanting of sapling oak trees may be selectively used to enhance and accelerate the structure of the replacement oak woodland habitat during its early years of development. The following general methodologies will be incorporated for salvaged trees to be transplanted:

1. Assess the trees ability to be transplanted. An oak tree specialist will be consulted to verify that these conditions are favorable for transplanting;
2. Target the rootball to be approximately 10 times the diameter of the tree trunk. An oak tree specialist will be consulted to conduct or coordinate the initial boxing of the rootball sides, and determine when the tree is ready for extraction (approximately six months after initial boxing);
3. Implement best management practices when removing the tree from the ground, transporting tree to planting area, and transplanting into ground;
4. Assess and prepare the transplanting location prior to transplanting, by having the oak tree specialist analyze the quality, depth, and drainage characteristics of the soil, and irrigation sources; and
5. Provide appropriate post-planting care, which may include watering, mulching, pest control, and monitoring to ensure success.

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8.0 OAK WOODLAND RESTORATION

In addition to oak tree replacement, this Plan proposes to replace oak woodland habitat. The following restoration techniques will be employed to restore oak woodland habitat within the Oak Planting Units.

8.1 UNDERSTORY VEGETATION

Understory vegetation will be established within the Oak Planting units by employing restoration techniques that support natural recruit, native plant growth, and suppress non-native plant species. Oak Planting Units will be located adjacent to existing coast live oak and California coastal scrub vegetation alliances (refer to Figure 2-2 – Planting Area) to promote natural recruitment through proximity to native seed sources. Certified compost will also be spread throughout the Oak Planting Unit, as described in Section 6.3, to promote growth of native plant species. Fencing around the Oak Planting Units may also be used to control cattle browsing.

Native shrub seed will be collected primarily from within the Project footprint but may also be collected throughout the Project site, as needed to increase the quantity. Native seed will be cleaned and stored in a cool facility until the onset of the rain season, at which time it will be sown throughout the Oak Planting Unit. Specification for seed species and quantity will be included on the landscape plans for each Oak Planting Unit.

Non-native invasive plant removal will occur as deemed necessary during quarterly monitoring visits to reduce competition with native species. Non-native invasive plant removal techniques will be selected based on the plant species and distribution. Mechanical and chemical control methods may be employed (refer to Section 8.3 for more details).

8.2 WILDLIFE HABITAT

Oak woodland wildlife habitat will be enhanced throughout the Oak Planting Unit by adding elements of structure that may not be readily available during the early stages of restoration. Structural elements include wildlife refugia, basking sites, and perch sites. Large woody debris found within the Project disturbance footprint will be relocated to the Oak Planting Unit to provide wildlife refugia and basking sites. Raptor perch sites will be installed either by transplanting large oak tree specimens or by erecting fabricated perch sites (such as wooden poles). Bird and bat houses will be erected throughout the Oak Planting Unit to provide nesting habitat.

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9.0 MAINTENANCE AND MONITORING

Maintenance and monitoring of planted trees and nurture trees will begin after planting and will continue through a seven-year monitoring period, or as otherwise outlined in the success criteria below. Additional maintenance activities may be adopted following approval of this Plan to improve its success. Maintenance and monitoring is expected to decrease as oaks mature and become self-sufficient; however, if success criteria are not met within the seven-year monitoring period, adaptive management and contingency measures will be taken, and maintenance and monitoring will continue until success criteria are met. Maintenance activities may include repair and adjustment to irrigation systems, protective cages (above and below ground, as needed), weed abatement, and replacement plantings. Monitoring activities will include the evaluation of maintenance activities, as well as success of plantings and state of nurture trees. Monitors will identify attributes in each Oak Planting Unit that are contributing factors to changes in success (e.g., watering regiment, soil conditions, and predation). All maintenance and monitoring activities will be recorded.

9.1 IRRIGATION

Irrigation lines and self-contained watering systems will be checked during regular monitoring visits and replaced when damaged. Irrigation frequency and quantity will be monitored and adaptively managed based upon the needs of the saplings (plantings and nurture trees) for survival. Saplings will be irrigated until they are self-sufficient. The goal is to provide saplings with adequate water during the initial years following planting to improve survival and enhance growth rates, but wean saplings from irrigation to promote self-sufficiency. Supplemental irrigation beyond the first three years will only be employed if drought conditions warrant continuation.

9.2 PROTECTIVE CAGES AND FENCES

All protective cages and fences will be inspected and maintained during regular monitoring visits, or as necessary, and replaced when damaged. Protective cages will be promptly removed or expanded as the trees grow to prevent girdling.

9.3 WEED CONTROL

To promote oak tree growth, a three-foot radius around planted trees will be maintained free of non-native plants species to the greatest extent feasible. Non-native invasive plant species (California Invasive Plant Council (Cal IPC) rating high) throughout the Oak Planting Unit will be removed during regular monitoring visits, or as often as necessary, to prevent dispersal throughout the Conservation Area and reduce competition with native plant species. If chemical treatment is warranted, care will be taken to avoid non-target plant damage by following the manufacturer's specifications and restricting application during windy conditions or prior to heavy rain events. Mowers or cattle may be used to reduce the seed set of non-native annual grasses to reduce competition with native plant species, reduce wildfire fuel, and control rodent populations.

9.4 REPLACEMENT PLANTING

Replacement planting will be used as a contingency measure for planting failure if plantings have less than 60 percent survival within a designated Oak Planting Unit. It is expected that some plantings will not survive the first two years based on natural survival rates of tree saplings and potential for herbivory. Replacement oaks will be planted using the same guidelines as initial installation, and any recommendations from successful initial mitigation planting. If supplemental acorns need to be collected, collecting will be conducted in the fall, along with planting to ensure mature seed collection, and planting success. Replacement plantings will be monitored for seven years to determine success.

9.5 MONITORING

Qualitative and quantitative monitoring protocols have been established to evaluate the success of this Plan and inform adaptive management. Qualitative monitoring will focus on restoration progress and identification of maintenance needs. Quantitative monitoring will focus on survival rates and success criteria benchmarks. Mitigation plantings will be monitored for at least seven years to evaluate restoration success criteria. Monitoring will be extended beyond seven years, until the Oak Planting Unit meets the success criteria outlined in Section 10.0.

9.5.1 Qualitative Monitoring

Qualitative monitoring will be scheduled monthly for the first year and at least quarterly for the remaining monitoring period, or more frequently, as recommended by the Oak Tree Specialist, to monitor the growth and success of the oak trees and understory vegetation within each Oak Planting Unit. Changes in irrigation systems and watering regimes, impacts from cattle or other wildlife, erosion issues, and other maintenance needs will be documented. This information will be summarized and recorded.

9.5.2 Quantitative Monitoring

Quantitative monitoring will occur annually to document tree survival and vigor. During each monitoring event, the height and health of each tree will be measured and recorded, and photographs will be taken to document site conditions within each Oak Planting Unit. Recommendations for replacement plantings will be quantified, along with recommendations for additional understory restoration. During the final year of monitoring, the Oak Tree Health Assessment Worksheet (refer to Attachment 3), will be used to document objective signs of vigor. In addition, quadrats or transects will be located using a random stratification methodology. Absolute vegetation cover will be measured to evaluate achievement of the success criteria. These data will be submitted to the County for approval of the restoration's success and completion.

9.6 ADAPTIVE MANAGEMENT

If oak tree survival and understory cover is not tracking toward achievement of the success criteria, adaptive management measures will be implemented. Adaptive management may include relocation of the Oak Planting Unit, changes to maintenance measures, or implementation of different planting techniques. The need for adaptive management will be identified during quarterly monitoring visits and reported annually in a summary report. The Oak Tree Specialist will recommend a detailed remedial plan to address restoration problems. As an example, if feral

hogs cause an excessive loss of saplings, a remedial plan to install hog fencing around the Oak Planting Units or initiate a feral hog depredation program would be recommended in the annual report. Adaptive management allows for employing additional measures that have not been detailed within this Plan to reach the success criteria.

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10.0 SUCCESS CRITERIA FOR OAK TREE MITIGATION

Success criteria have been developed to assess the goal of replacing oak woodland habitat, not only individual oak trees. In consideration of the duration required to establish mature oak woodland, the success criteria reflect developing oak woodlands. The restoration will be considered successful when the following criteria are met.

10.1 OAK TREE SURVIVAL

The following outlines the success criteria used to determine successful regeneration of oak tree plantings and nurture trees within the designated Potential Oak Planting Area. The success criteria are based on regulatory codes and guidelines detailed in Section 3.0. All planted trees must be surviving without supplemental irrigation for at least two years prior to determining success. The health of trees will be determined by measurements of new growth, canopy density, and pest infestation. Refer to Attachment 3 for details on each measurement. At the end of seven years, a success rate of at least 60 percent of planted trees (six trees for every mature tree removed, if planting acorns/one gallon) must be achieved. Success is defined as being in good health and demonstrating vigor and new growth without supplemental watering, as determined by an Oak Tree Specialist. These criteria are preliminary and subject to change based on Project permitting requirements:

1. An Oak Planting Unit is determined successful if at least 60 percent of the planted trees are in good health and have grown to at least six feet in height. In the case of planted acorns or one gallon saplings, six trees must be established to replace each tree removed;
2. Nurture trees are deemed successful if the sapling demonstrates good health and have grown to at least eight feet in height after the seven-year minimum monitoring period without supplemental watering (for a period of at least two years) and protective fencing; and/or
3. Transplanted trees are deemed successful only if the tree demonstrates good health without supplemental watering after three years, and then continues to survive following the minimum seven-year monitoring period. If a transplanted tree dies, it will be replaced at the ratios specified in Section 5.2.

10.2 OAK WOODLAND HABITAT

The Project will establish three acres of oak woodland habitat for each acre of oak woodland removed. This replacement ratio is derived from the recommended planting layout and provides the benefit of creating a greater quantity of oak woodland within the Project site following Project implementation. Replacement acreage will be measured using the same methodology that was used for mapping the existing oak woodland. The oak woodland understory at the Project site predominantly consists of non-native annual grasslands with intermittent native shrubs and herbs. Therefore, the goal of the restoration will be to establish herbaceous cover and native shrubs to stabilize soils and provide habitat structure and wildlife forage without requiring unrealistic goals for non-native cover.

Quantitative success criteria for understory vegetation are:

- 75 percent absolute total vegetation cover or greater;

- Ten percent absolute native cover or greater; and
- Less than one percent non-native invasive cover (defined as Cal IPC's rating of high).

Qualitative success criteria have been developed to assess the ecological value and function of the created oak woodland habitat. Observation of the following elements will indicate successful restoration:

- Wildlife use (browsing, scat, burrows, etc.);
- Evidence of avian nesting;
- Leaf litter;
- Perch sites; and
- Woody debris.

11.0 SUMMARY

Oak woodland habitats are important to the ecological integrity of Santa Barbara County and have been recognized by the County as integral parts of the state's cultural and historical heritage. The Project has been designed to minimize grading and land disturbance by maximizing the use of existing roads, well pads, cleared areas, and contours wherever possible. Care was taken to avoid oak tree removals by minimizing the number and size of new well pads, by routing new roads around canopies, and by designing the new facility campus as a network of smaller parking lot and building spaces that better fit in the existing spaces between oak tree canopies. Where oak tree removal is unavoidable, this Plan provides an adaptive replacement plan for successful mitigation for the loss of the mature oak trees and oak woodland habitat, per guidance from Santa Barbara County standards and ordinances and the SB 1334.

Mitigation for mature live oak trees that must be removed will be compensated:

- 10:1 by replacement planting of acorns or young one-gallon saplings,
- 3:1 by replacement planting of 15-gallon saplings,
- 10:1 by maintenance and protection of nurture trees (naturally occurring oak trees between six inches and six feet tall) within the Project site, and
- 1:1 by transplanted mature trees from within the Project development footprint, or a combination thereof.

Trees will be planted in the designated Potential Oak Planting Area consisting of non-native annual grasslands, surrounded by existing coast live oak trees and California coastal scrub alliances to expand the existing canopy. This Potential Oak Planting Area lies outside the Project disturbance footprint and was selected based on a desktop evaluation of planting suitability (i.e., slope, plant community, and soil conditions), property access/ownership constraints, and existing and future land use considerations. Considering the characteristics that support suitable planting locations within the Project site, 237.2 acres of suitable planting area has been identified within the 686.4-acre Conservation Area, with the potential to support a maximum of 16,545 planted trees, spaced, on average, 20 feet apart. The remaining acreage beyond the Potential Oak Planting Area that is comprised of existing oak woodland may be used to identify and protect nurture trees.

Maintenance of the Potential Oak Planting Area will include irrigating, weeding, mulching, installing and maintaining protective caging/fencing, and additional planting/seeding for a seven-year monitoring period or until achievement of the success criteria for each Oak Planting Unit. Monitoring of the Oak Planting Units will include documentation of tree height, health, site photographs, and documentation of site conditions for any additional maintenance activities. At the end of seven years, a success rate of at least 60 percent of planted trees must be in good health and demonstrate vigor by signs of new growth without supplemental watering. In the event the Oak Planting Unit does not reach success criteria within the seven-year monitoring period, additional mitigation or monitoring will be required in order to reach success.

The oaks in the Potential Oak Planting Area will be conserved and protected from future removal and safeguarded from erosion, overgrazing, agriculture, and development activities. A

long-term management strategy will be developed for the entire Potential Oak Planting Area to ensure the protection of planted oaks and the existing oak woodland.

12.0 REFERENCES

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ATTACHMENT 1

VEGETATION MAPPING DATASHEETS

CNPS and CL Combined Vegetation Rapid Assessment Field Relevé Form
 Relevé or Rapid Assessment (circle one) (Revised May 13, 2011)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
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I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #: ECC0001 Air photo: 3 Date: 1.15.13 Name(s) of surveyors (circle recorder): Kennu Wimer (Chris Santala)

GPS wypt #: 1 GPS name: Trimble XT Datum: _____ or NAD83. Bearing, left axis at SW pt _____ (degrees) of Long / Short side
 UTME -120.282832 UTMN 34.830992 Zone: 10/A (circle one) Error: ± N/A ft / m / pdop
 GPS within stand? (Yes) / No If No, cite from waypoint to stand, distance _____ (meters) & bearing _____ (degrees)

Elevation: 943 (ft) / m Camera Name/Photograph #: Canon PowerShot SX150IS # 1-4

Stand Size (acres): <1, (1.5) >5 | Plot Size (m²): 10 / 100 / 400 / 1000 | Plot Shape _____ x _____ ft / m or Circle Radius _____ ft / m
 Exposure, Actual °: _____ (NE) NW SE SW Flat Variable All | Steepness, Actual °: _____ 0° 1-5° 5-25° >25

Topography: Macro: top (upper) mid lower bottom | Micro: convex flat concave (undulating)
 Geology code: SETU Soil Texture code: MELS | (Upland) or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
 H20: 0 BA Stems: 3 Litter: 95 Bedrock: _____ Boulder: _____ Stone: _____ Cobble: _____ Gravel: 2 Fines: _____ =100%

% Current year bioturbation _____ Past bioturbation present? (Yes) No | % Hoof punch _____
 Fire evidence: Yes (No) (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Road cuts transecting stand
Historic oil field - however stands on steep slopes are relatively undisturbed

Disturbance code / Intensity (L,M,H): 1/15 L/ _____ / _____ / _____ "Other" _____ / _____

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)
 Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), (S3) mature (1-25% dead), S4 decadent (>25% dead)
 Herbaceous: (H1) (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)
 Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 0 % Vasc Veg cover: 98

% Cover - Conifer tree / Hardwood tree: _____ / _____ Regenerating Tree: _____ Shrub: 96 Herbaceous: <1
 Height Class - Conifer tree / Hardwood tree: _____ / _____ Regenerating Tree: _____ Shrub: 03 Herbaceous: 01
 Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S=Shrub, H=Herb, E=SEedling, A=SApling, N=Non-vascular.
 % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
S	<i>Salvia mellifera</i>	60					
S	<i>Artemisia californica</i>	16					
S	<i>Baccharis pilularis</i>	20					
H	<i>Cortadena jubata</i>	<1					
H	<i>Stipa lepida</i>	<1					

Unusual species: Malacothamnus fasciculatum

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Salvia mellifera Shrubland Alliance
 Field-assessed association name (optional): _____
 Adjacent alliances/direction: Quercus agr. Woodland / N, S, E, W
 Confidence in alliance identification: L M (H) Explain: Salvia dominant; remnant blooms visible
 Phenology (E,P,L): Herb _____ Shrub L Tree _____ Other identification or mapping information: _____

Is poly >1 type: Yes / No If yes, explain: _____

Polygon/Stand No. ECC0001 - Black Sage Scrub Alliance



NORTH



EAST



SOUTH



WEST

CNPS and CD Combined Vegetation Rapid Assessment and Relevé Field Form
 Relevé or Rapid Assessment (circle one) (Revised May 13, 2011)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
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I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #:	Air photo:	Date:	Name(s) of surveyors (circle recorder):
ECC0002	3	1/15/13	K. Wimer (C. Santata)

GPS wypt #: 2 GPS name: 7mbk^{XT} Datum: _____ or NAD83. Bearing, left axis at SW pt _____ (degrees) of Long / Short side
 UTM E -120.279348 UTM N 34.831885 Zone: 10 / 11 (circle one) Error: ± 1/2 ft / m / pdop
 GPS within stand? (Yes) / No If No, cite from waypoint to stand, distance _____ (meters) & bearing _____ (degrees)

Elevation: 802 (ft) m Camera Name/Photograph #'s: Canon Powershot SX150 IS # 5-8

Stand Size (acres): <1, (1.5) >5 | Plot Size (m²): 10 / 100 / 400 / 1000 | Plot Shape _____ x _____ ft / m or Circle Radius _____ ft / m
 Exposure, Actual °: _____ NE (NW) SE SW Flat Variable All | Steepness, Actual °: _____ 0° (1-5°) 5-25° > 25

Topography: Macro: top upper mid lower (bottom) | Micro: (convex) flat concave undulating
 Geology code: SETU Soil Texture code: MESA | Upland or (Wetland/Riparian) (circle one)

% Surface cover: (Incl. outerops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
 H20: BA Stems: 2 Litter: 95 Bedrock: _____ Boulder: _____ Stone: _____ Cobble: _____ Gravel: _____ Fines: 2 =100%

% Current year bioturbation 0 Past bioturbation present? Yes / (No) | % Hoof punch <1
 Fire evidence: Yes / (No) (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Ranching property, historic oil field

Disturbance code / Intensity (L,M,H): 104 L / _____ / _____ / _____ / _____ "Other" _____ / _____

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), (T4) (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)
 Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), (S3) mature (1-25% dead), S4 decadent (>25% dead)
 Herbaceous: (H1) (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)
 Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 0 % Vasc Veg cover: 80
 % Cover - Conifer tree / Hardwood tree: 175 Regenerating Tree: _____ Shrub: 1 Herbaceous: 80
 Height Class - Conifer tree / Hardwood tree: 107 Regenerating Tree: _____ Shrub: 02 Herbaceous: 01
 Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S=Shrub, H=Herb, E=SEedling, A=SApling, N=Non-vascular.
 % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
H	<i>Geranium molle</i>	40		T	<i>Quercus agrifolia</i>	<1	
H	<i>Claytonia perfoliata</i>	5		H	<i>Chenopodium californicum</i>	<1	
H	<i>Bromus diandrus</i>	30					
H	<i>Carduus pycnocephalus</i>	2					
T	<i>Eucalyptus globulus</i>	74					
S	<i>Artemisia californica</i>	1					
H	<i>Erdstraw</i>	21					
H	<i>Rumex crispus</i>	21					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Eucalyptus globulus semi-natural woodland

Field-assessed association name (optional): _____

Adjacent alliances/direction: Coast Live Oak woodland 1, S, W, California sage scrub 1, W

Confidence in alliance identification: L M (H) Explain: Eucalyptus glob. dominant

Phenology (E,P,L): Herb E Shrub L Tree P Other identification or mapping information: _____

Is poly >1 type: Yes / No If yes, explain: _____

Polygon/Stand No. ECC0002 - Eucalyptus Groves



01/15/2013

NORTH



01/15/2013

EAST



01/15/2013

SOUTH



01/15/2013

WEST

CNPS and CD Combined Vegetation Rapid Assessment Field Relevé Form
 Relevé or Rapid Assessment (circle one) (Revised May 13, 2011)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
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I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #: ECC0003 Air photo: 3 Date: 1/15/13 Name(s) of surveyors (circle recorder): C. Santala K. Wimer

GPS wypt #: _____ GPS name: 11m04 XT Datum: _____ or NAD83. Bearing, left axis at SW pt _____ (degrees) of Long / Short side
 UTM E -120.289877 UTM N 34.83474 Zone 10Y 11 (circle one) Error: ± N/A ft / m / pdop
 GPS within stand? Yes No If No, cite from waypoint to stand, distance _____ (meters) & bearing _____ (degrees)

Elevation: 862 ft / m Camera Name/Photograph #'s: Canon PowerShot SX150IS # 10-13

Stand Size (acres): <1, 1-5, >5 Plot Size (m²): 10 / 100 / 400 / 1000 | Plot Shape _____ x _____ ft / m or Circle Radius _____ ft / m
 Exposure, Actual °: _____ NE NW SE SW Flat Variable All | Steepness, Actual °: _____ 0° 1-5° 5-25° > 25

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating
 Geology code: SETU Soil Texture code: MESA | Upland or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
 H20: _____ BA Stems: 5 Litter: _____ Bedrock: _____ Boulder: _____ Stone: _____ Cobble: _____ Gravel: 5 Fines: 90 =100%

% Current year bioturbation 1 Past bioturbation present? Yes / No | % Hoof punch 0
 Fire evidence: Yes No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Historic oilfield, ranching

Disturbance code / Intensity (L,M,H): 104 L / _____ / _____ / _____ / _____ "Other" _____ / _____

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)
 Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)
 Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)
 Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 0 % Vasc Veg cover: 95
 % Cover - Conifer tree / Hardwood tree: _____ / _____ Regenerating Tree: _____ Shrub: 3 Herbaceous: 95
 Height Class - Conifer tree / Hardwood tree: _____ / _____ Regenerating Tree: _____ Shrub: 03 Herbaceous: 01
 Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S=Shrub, H=Herb, E=SEedling, A=SApling, N=Non-vascular.
 % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%

Strata	Species	% cover	C	Strata	Species	% cover	C
H	<i>Erodium cicutarium</i>	25					
H	<i>Festuca perennis</i>	15					
H	<i>Bromus diandrus</i>	50					
H	<i>Medicago polymorpha</i>	2					
H	<i>Stellaria media</i>	2					
S	<i>Brassica nigra</i>	2					
S	<i>Artemisia californica</i>	1					
H	<i>Oroton setigerus</i>	<1					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Bromus (diandrus, hord.) semi-natural herbaceous stand
 Field-assessed association name (optional): _____
 Adjacent alliances/direction: Open live oak woodland / e, n / Coastal scrub / w, s
 Confidence in alliance identification: L M H Explain: Previously surveyed during spring
 Phenology (E,P,L): Herb E Shrub E Tree _____ Other identification or mapping information: _____

Is poly >1 type: Yes / No If yes, explain: _____

Polygon/Stand No. ECC0003 - Annual Brome Grasslands



NORTH



EAST



SOUTH



WEST

CNPS and CDLG Combined Vegetation Rapid Assessment and Relevé Field Form

Relevé or Rapid Assessment (circle one)

(Revised May 13, 2011)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
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I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #: <u>ECC0004</u>	Air photo: <u>4</u>	Date: <u>1/16/13</u>	Name(s) of surveyors (circle recorder): <u>C. Santala, K. Wimer</u>
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GPS wypt #: 4 GPS name: trm Datum: NAD83 or NAD83. Bearing, left axis at SW pt _____ (degrees) of Long / Short side
 UTME 120.275492 UTMN 34.836533 Zone: 10 11 (circle one) Error: ± n/a ft / m / pdop

GPS within stand? Yes / No If No, cite from waypoint to stand, distance _____ (meters) & bearing _____ (degrees)

Elevation: 728 (ft) m Camera Name/Photograph #'s: Canon Powershot SX150IS # 14-17

Stand Size (acres): <1, 1-5, >5 Plot Size (m²): 10 / 100 / 400 / 1000 | Plot Shape ___ x ___ ft / m or Circle Radius ___ ft / m
 Exposure, Actual °: ___ NE NW SE SW Flat Variable All | Steepness, Actual °: ___ 0° 1-5° 5-25° > 25

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating
 Geology code: SETU Soil Texture code: MELS | Upland or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
 H20: ___ BA Stems: 5 Litter: 95 Bedrock: ___ Boulder: ___ Stone: ___ Cobble: ___ Gravel: ___ Fines: ___ =100%

% Current year bioturbation 0 Past bioturbation present? Yes / No | % Hoof punch 0
 Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Historic oil field property, relatively undisturbed area, adjacent road cuts & abandoned well pads

Disturbance code / Intensity (L,M,H): 101 L1 / / / / / / / / "Other" _____ /

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)
 Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 0 % Vasc Veg cover: 100

% Cover - Conifer tree / Hardwood tree: 180 Regenerating Tree: ___ Shrub: 3 Herbaceous: 90
 Height Class - Conifer tree / Hardwood tree: 105 Regenerating Tree: ___ Shrub: 03 Herbaceous: 02

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
 % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
H	<i>Geranium molle</i>	45		H	<i>Carduus pycnocephalus</i>	3	
T	<i>Quercus agrifolia</i>	80					
H	<i>Bromus diandrus</i>	30					
H	<i>Festuca perennis</i>	5					
H	<i>Avena barbata</i>	5					
S	<i>Brassica nigra</i>	3					
H	<i>Claytonia perfoliata</i>	2					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Quercus agrifolia woodland Alliance

Field-assessed association name (optional): _____

Adjacent alliances/direction: Annual Bromegrassland 1 E, S, Coastal scrub 1 N

Confidence in alliance identification: L M H Explain: Quercus agrifolia dominant

Phenology (E,P,L): Herb E Shrub L Tree P Other identification or mapping information: _____

Is poly >1 type: Yes / No If yes, explain: _____

Polygon/Stand No. ECC0004 - Coast Live Oak Woodland



NORTH



EAST



SOUTH



WEST

CNPS and CDEG Combined Vegetation Rapid Assessment and Relevé Field Form

Relevé or **Rapid Assessment** (circle one)

(Revised May 13, 2011)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
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I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #: E000005 Air photo: 4 Date: 1/16/13 Name(s) of surveyors (circle recorder): C. Santala, K. Wimer

GPS wypt #: 5 GPS name: tnmbk88.YT Datum: _____ or NAD83. Bearing, left axis at SW pt _____ (degrees) of Long / Short side
 UTME -120.275474 UTMN 34.836845 Zone (10) 11 (circle one) Error: ± N/A ft / m / pdop

GPS within stand? Yes / No If No, cite from waypoint to stand, distance _____ (meters) & bearing _____ (degrees)

Elevation: 750 (ft) m Camera Name/Photograph #'s: Canon PowerShot SX150 IS # 18-21

Stand Size (acres): <1, 1-5, >5 Plot Size (m²): 10 / 100 / 400 / 1000 | Plot Shape _____ x _____ ft / m or Circle Radius _____ ft / m
 Exposure, Actual °: _____ NE NW SE SW Flat Variable All | Steepness, Actual °: _____ 0° 1-5° 5-25° >25

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating
 Geology code: SETU Soil Texture code: MELS | Upland or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
 H20: _____ BA Stems: 5 Litter: 5 Bedrock: _____ Boulder: _____ Stone: _____ Cobble: 15 Gravel: _____ Fines: 75 =100%

% Current year bioturbation <1 Past bioturbation present? Yes No | % Hoof punch 0
 Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Historic oil field, relatively undisturbed stand (deep loop), road cut & abandoned wellpads adjacent

Disturbance code / Intensity (L,M,H): _____ / _____ / _____ / _____ / _____ / _____ / _____ / _____ "Other" minimal small mammal burrows

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)
 Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 0 % Vasc Veg cover: 80

% Cover - Conifer tree / Hardwood tree: _____ / _____ Regenerating Tree: _____ Shrub: 75 Herbaceous: 5
 Height Class - Conifer tree / Hardwood tree: _____ / 04 Regenerating Tree: _____ Shrub: 03 Herbaceous: 01
 Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
 % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
S	<i>Artemisia californica</i>	72		H	<i>Erodium cicutarium</i>	<1	
S	<i>Achillea glabra</i>	3		T	<i>Quercus agrifolia</i>	1	
H	<i>Stipa</i> sp.	<1					
H	<i>Centaurea solstitialis</i>	<1					
H	<i>Lonicera</i> sp.	<1					
H	<i>Arnica montana</i>	<1					
H	<i>Carduus pycnocephalus</i>	<1					
H	<i>Avena barbata</i>	<1					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Artemisia californica chapland Alliance

Field-assessed association name (optional): _____

Adjacent alliances/direction: Coast Live Oak woodland, e, s, w, Annual Grassland, n, w

Confidence in alliance identification: L M H Explain: Artemisia californica dominant

Phenology (E,P,L): Herb E Shrub L Tree T Other identification or mapping information: _____

Is poly >1 type: Yes / No If yes, explain: _____

Polygon/Stand No. ECC0005 - California Sagebrush Scrub



NORTH



EAST



SOUTH



WEST

CNPS and CDFG Combined Vegetation Rapid Assessment and Relevé Field Form
 Relevé or Rapid Assessment (circle one) (Revised May 13, 2011)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
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I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #: <u>ECC0006</u>	Air photo: <u>4</u>	Date: <u>1/16/13</u>	Name(s) of surveyors (circle recorder): <u>C. Santala, K. Wimer</u>
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GPS wypt #: 6 GPS name: tnm Datum: _____ or NAD83. Bearing, left axis at SW pt _____ (degrees) of Long / Short side
 UTME-120.268308 UTMN 34.838867 Zone 10 / 11 (circle one) Error: ± n/a ft / m / pdop
 GPS within stand? Yes / No If No, cite from waypoint to stand, distance _____ (meters) & bearing _____ (degrees)

Elevation: 806 (ft) m Camera Name/Photograph #'s: 24-27 (28,29 botanical) Canon Powershot SX50S

Stand Size (acres): <1 1-5 >5 | Plot Size (m²): 10 / 100 / 400 / 1000 | Plot Shape ___ x ___ ft / m or Circle Radius ___ ft / m
 Exposure, Actual °: _____ NE NW SE SW Flat Variable All | Steepness, Actual °: _____ 0° 1-5° 5-25° >25

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating
 Geology code: SETU Soil Texture code: MESH | Upland or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
 H20: _____ BA Stems: _____ Litter: 3 Bedrock: 90 Boulder: _____ Stone: _____ Cobble: 3 Gravel: _____ Fines: 4 =100%

% Current year bioturbation 0 Past bioturbation present? Yes / No | % Hoof punch 0
 Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:
oil field property, stand relatively undisturbed

Disturbance code / Intensity (L,M,H): 20/L / _____ / _____ / _____ / _____ "Other" _____ / _____

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)
 Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)
 Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)
 Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 2 % Vasc Veg cover: 80
 % Cover - Conifer tree / Hardwood tree: _____ / _____ Regenerating Tree: _____ Shrub: 80 Herbaceous: 3
 Height Class - Conifer tree / Hardwood tree: _____ / 04 Regenerating Tree: _____ Shrub: _____ Herbaceous: _____
 Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
 % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
S	<i>Baccharis pilularis</i>	65					
T	<i>Quercus agrifolia</i>	1					
S	<i>Artemisia californica</i>	15					
H	<i>Bromus diandrus</i>	41					
H	moss sp.	41					
H	<i>Chlorogalum pomoides</i>	41					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Baccharis pilularis shrubland alliance

Field-assessed association name (optional): _____

Adjacent alliances/direction: Coastal oak woodland , California sagebrush scrub

Confidence in alliance identification: L M H Explain: _____

Phenology (E,P,L): Herb E Shrub L Tree L Other identification or mapping information: location marked on map

Is poly >1 type: Yes / No If yes, explain: _____

Polygon/Stand No. ECC0006 - Coyote Brush Scrub



NORTH



EAST



SOUTH



WEST

CNPS and CDFG Combined Vegetation Rapid Assessment and Relevé Field Form

Relevé or Rapid Assessment (circle one)

(Revised May 13, 2011)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
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I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #:	Air photo:	Date:	Name(s) of surveyors (circle recorder):
ECC0007	Aerial 4	1/16/13	C. Santala, K. Wimer
GPS wpyt #: <u>7</u> GPS name: <u>tnmbykt</u> Datum: _____ or NAD83. Bearing, left axis at SW pt _____ (degrees) of Long / Short side			
UTME <u>-120.264781</u> UTMN <u>34.839887</u> Zone: <u>(10)11</u> (circle one) Error: ± <u>N/A</u> ft / m / pdop			
GPS within stand? <u>(Yes)</u> / No If No, cite from waypoint to stand, distance _____ (meters) & bearing _____ (degrees)			
Elevation: <u>748</u> (ft) m Camera Name/Photograph #'s: <u>Canon Powershot Sx150 IS # 30-33</u>			
Stand Size (acres): <u>(<1)</u> , 1-5, >5 Plot Size (m ²): 10 / 100 / 400 / 1000 Plot Shape _____ x _____ ft / m or Circle Radius _____ ft / m			
Exposure, Actual °: _____ NE NW SE SW <u>(Flat)</u> Variable All Steepness, Actual °: _____ 0° <u>(1-5°)</u> 5-25° > 25			
Topography: Macro: <u>(top)</u> upper mid lower bottom Micro: <u>convex</u> <u>(flat)</u> concave undulating			
Geology code: <u>SETU</u> Soil Texture code: <u>FISH</u> <u>(Upland)</u> or Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H20: <u>0</u> BA Stems: <u>5</u> Litter: _____ Bedrock: _____ Boulder: _____ Stone: _____ Cobble: _____ Gravel: <u>15</u> Fines: <u>80</u> =100%			
% Current year bioturbation <u>0</u> Past bioturbation present? <u>(Yes)</u> / No % Hoof punch <u>0</u>			
Fire evidence: Yes / <u>(No)</u> (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>Historical oil field activities, abandoned well pad</u>			

Disturbance code / Intensity (L,M,H): 15 / m / _____ / _____ / _____ / _____ / _____ "Other" _____ / _____

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), (S3) mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: (H1) (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 0 % Vasc Veg cover: 85

% Cover - Conifer tree / Hardwood tree: _____ / _____ Regenerating Tree: _____ Shrub: 65 Herbaceous: 75 (under shrub & openings in shrub)

Height Class - Conifer tree / Hardwood tree: _____ / _____ Regenerating Tree: _____ Shrub: _____ Herbaceous: _____

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
S	<i>Encarnia ericoides</i>	50		S	<i>Salvia mellikera</i>	2	
H	<i>Croton californica</i>	1					
H	<i>Erodium cicutarium</i>	30					
S	<i>Artemisia californica</i>	13					
H	<i>Medicago polymorpha</i>	10					
H	<i>Centauris molitensis</i>	2					
H	<i>Carduus pycnocephalus</i>	2					
H	<i>Bromus diandrus</i>	30					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Encarnia ericoides shrubland

Field-assessed association name (optional): _____

Adjacent alliances/direction: Coastal scrub / Disturbed / _____

Confidence in alliance identification: L M (H) Explain: _____

Phenology (E,P,L): Herb E Shrub L Tree 0 Other identification or mapping information: _____

Is poly >1 type: Yes / No If yes, explain: _____

Polygon/Stand No. ECC0007 - Mock Heather Stand



NORTH



EAST



SOUTH



WEST

CNPS and CDFG Combined Vegetation Rapid Assessment and Relevé Field Form

Relevé or Rapid Assessment (circle one)

(Revised May 13, 2011)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association:
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I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #:	Air photo:	Date:	Name(s) of surveyors (circle recorder):
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ECC0008 Aerial 4/15/13 (Chris Santali) Jessica Adinolfi, Kenny Urner

GPS wypt #: 8 GPS name: Camera Datum: _____ or NAD83. Bearing, left axis at SW pt _____ (degrees) of Long / Short side

UTME 120° 16' 59.489 UTMN 34° 49' 55.266 Zone: 10/11 (circle one) Error: ± N/A ft / m / pdop

GPS within stand? (Yes) No If No, cite from waypoint to stand, distance _____ (meters) & bearing _____ (degrees)

Elevation: 924 (ft) m Camera Name/Photograph #'s: Nikon coolpix AW100 1,2,3,4

Stand Size (acres): (<1, 1-5, >5) | Plot Size (m²): 10 / 100 / 400 / 1000 | Plot Shape _____ x _____ ft / m or Circle Radius _____ ft / m

Exposure, Actual °: _____ NE NW SE SW (Flat) Variable All | Steepness, Actual °: _____ 0° (1-5°) 5-25° > 25

Topography: Macro: top upper mid lower (bottom) | Micro: convex flat (concave) undulating

Geology code: SETV Soil Texture code: MESA | Upland or (Wetland) Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: 70 BA Stems: 20 Litter: 0 Bedrock: 0 Boulder: 0 Stone: 0 Cobble: 0 Gravel: 0 Fines: 10 =100%

% Current year bioturbation 0 Past bioturbation present? Yes / (No) | % Hoof punch 20

Fire evidence: Yes / (No) (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Former abandoned well pad, depression w/ inundation (H₂O) used by wildlife as water source. Historically used oil field and access roads

Disturbance code / Intensity (L,M,H): 01 / M 20 / M _____ / _____ / _____ "Other" _____ / _____

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: (H1) (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 0 % Vasc Veg cover: 20

% Cover - Conifer tree / Hardwood tree: 0/0 Regenerating Tree: 0 Shrub: 10 Herbaceous: 20

Height Class - Conifer tree / Hardwood tree: 0/0 Regenerating Tree: 0 Shrub: 03 Herbaceous: 01

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S=Shrub, H=Herb, E=SEedling, A=SApling, N=Non-vascular.

% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
H	<i>Eleocharis parviflora</i>	4		S	<i>Baccharis salicifolia</i>	1	
H	<i>Cotula coronopifolia</i>	5		H	<i>Crucifera + Illece</i>	<1	
H	<i>Juncus burtianus</i>	1		H	<i>Lobelia strigosa</i>	<1	
H	<i>Melilotus indicus</i>	2					
H	<i>Festuca myuros</i>	2					
H	<i>Polypogon monspeliensis</i>	3					
H	<i>Erodium cicutarium</i>	<1					
H	<i>Bromus diandrus</i>	<1					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: *Cotula coronopifolia* (Pond perimeter)

Field-assessed association name (optional): _____

Adjacent alliances/direction: Oak woodland west, Coastal scrub south/north

Confidence in alliance identification: L M (H) Explain: _____

Phenology (E,P,L): Herb E Shrub E Tree 0 Other identification or mapping information: _____

Is poly >1 type: Yes / No If yes, explain: _____

Polygon/Stand No. ECC0008 – Fields of Brass Buttons



NORTH



EAST



SOUTH



WEST

CNPS and CDFG Combined Vegetation Rapid Assessment and Relevé Field Form

Relevé or Rapid Assessment (circle one) (Revised May 13, 2011)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
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I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #: ECC0009 Air photo: Aerial 3 Date: 4/15/13 Name(s) of surveyors (circle recorder): C. Santala, J. Adinoh, K. Wilmer

GPS wpyt #: 9 GPS name: Carrizo Datum: _____ or NAD83. Bearing, left axis at SW pt _____ (degrees) of Long / Short side
 UTM E 120° 16' 57.642" UTM N 34° 50' 25.320" Zone: 10 11 (circle one) Error: ± h/k ft / m / pdop

GPS within stand? Yes / No If No, cite from waypoint to stand, distance _____ (meters) & bearing _____ (degrees)

Elevation: 830 (ft) m Camera Name/Photograph #: Nikon Coolpix AW100 5 (looking south) thru _____

Stand Size (acres): <1, 1-5, >5 | Plot Size (m²): 10 / 100 / 400 / 1000 | Plot Shape _____ x _____ ft / m or Circle Radius _____ ft / m
 Exposure, Actual °: _____ NE NW SE SW Flat Variable All | Steepness, Actual °: _____ 0° 1-5° 5-25° > 25

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating
 Geology code: STU Soil Texture code: MELO | Upland or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
 H20: 0 BA Stems: 98 Litter: 2 Bedrock: 0 Boulder: 0 Stone: 0 Cobble: 0 Gravel: 0 Fines: 0 =100%

% Current year bioturbation 1% Past bioturbation present? Yes / No | % Hoof punch 2%
 Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Grazing in abandoned/little used oil field, access roads adjacent

Disturbance code / Intensity (L,M,H): 20/L / _____ / _____ / _____ / _____ / _____ "Other" _____ / _____

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)
 Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)
 Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 0 % Vasc Veg cover: 100

% Cover - Conifer tree / Hardwood tree: H / 50% Regenerating Tree: <1% Shrub: 1% Herbaceous: 90%
 Height Class - Conifer tree / Hardwood tree: 0105 Regenerating Tree: 03 Shrub: 02 Herbaceous: 01

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S=Shrub, H=Herb, E=SEedling, A=SApling, N=Non-vascular.
 % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
T	<i>Quercus agrifolia</i>	50		S	<i>Toxicodendron diversilobum</i>	4	
S	<i>Solanum elaeagnifolium</i>	1					
H	<i>Salvia spathulifera</i>	3					
H	<i>Carduus pycnocephalus</i>	50					
H	<i>Stachys bullata</i>	10					
H	<i>Bromus diandrus</i>	20					
H	<i>Claytonia perfoliata</i>	1					
H	<i>Galium</i>	1					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Coast live oak woodland

Field-assessed association name (optional): _____

Adjacent alliances/direction: Coastal scrub lateral 1 S Annual Grass _____

Confidence in alliance identification: L M H Explain: _____

Phenology (E,P,L): Herb E Shrub E Tree P Other identification or mapping information: _____

Is poly >1 type: Yes / No If yes, explain: _____

Polygon/Stand No. ECC0009 – Coast Live Oak Woodland



NORTH



EAST



SOUTH



WEST

CNPS and CDFG Combined Vegetation Rapid Assessment and Relevé Field Form

Relevé or **Rapid Assessment** (circle one)

(Revised May 13, 2011)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association:
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I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #:	Air photo:	Date:	Name(s) of surveyors (circle recorder):
ECC0010	Aerial 7	4/15/13	C. Santala, J. Adinolfi, K. Wimmer
GPS wpt #: <u>10</u> GPS name: <u>Carney</u> Datum: _____ or NAD83. Bearing, left axis at SW pt _____ (degrees) of <u>Long</u> / Short side			
UTME <u>120° 10' 97.642"</u> UTMN <u>34° 50' 25.320"</u> Zone: <u>10</u> / 11 (circle one) Error: ± <u>n/a</u> ft / m / pdop			
GPS within stand? <u>Yes</u> No If No, cite from waypoint to stand, distance _____ (meters) & bearing _____ (degrees)			
Elevation: <u>716</u> (ft) / m Camera Name/Photograph #'s: <u>Nikon Coolpix AW100, photos 9-12</u>			
Stand Size (acres): <u><1</u> 1-5, >5 Plot Size (m ²): 10 / 100 / 400 / 1000 Plot Shape _____ x _____ ft / m or Circle Radius _____ ft / m			
Exposure, Actual °: <u>W</u> NE NW SE SW Flat Variable All Steepness, Actual °: _____ 0° <u>1-5°</u> 5-25° >25			
Topography: Macro: top upper <u>mid</u> lower bottom Micro: <u>convex</u> flat concave undulating			
Geology code: <u>SETU</u> Soil Texture code: <u>FISN</u> <u>Upland</u> or Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H20: <u>0</u> BA Stems: <u>85</u> Litter: <u>5</u> Bedrock: <u>0</u> Boulder: <u>0</u> Stone: <u>0</u> Cobble: <u>0</u> Gravel: <u>0</u> Fines: <u>10</u> =100%			
% Current year bioturbation <u>5</u> Past bioturbation present? <u>Yes</u> / No % Hoof punch <u>10</u> %			
Fire evidence: Yes / <u>No</u> (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>Browsing evident, adjacent to oak woodland relatively undisturbed, with abandoned fracture all field</u>			
Disturbance code / Intensity (L,M,H): <u>D4 / L</u> _____ / _____ / _____ / _____ "Other" _____ / _____			

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 0 % Vasc Veg cover: 85%

% Cover - Conifer tree / Hardwood tree: - / - Regenerating Tree: - Shrub: 5 Herbaceous: 80

Height Class - Conifer tree / Hardwood tree: - / - Regenerating Tree: - Shrub: 02 Herbaceous: 01

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S=Shrub, H=Herb, E=SEedling, A=SApling, N=Non-vascular.

% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
H	Lupinus bicolor	15		H	Cashtleja exerta	1	
H	Croton californicus	5		S	Artemisia californica	1	
H	Avena barbata	20		S	Artemisia glabra	1	
H	Erodium cicutarium	12		H	Bromus diandrus	20	
H	Heterostemma glandulosum	1		H	Lobelia sp.	1	
H	Hurkelia sp.	3		H	Bromus hordeaceus	3	
S	Salvia melitensis	1					
S	Erigeron annuus	1					

Unusual species: Distichlis spicata

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Bromus/Avena Grassland

Field-assessed association name (optional): _____

Adjacent alliances/direction: Oak woodland (N), 100% scrub (comp & brush) South, East

Confidence in alliance identification: L M H Explain: _____

Phenology (E,P,L): Herb D Shrub L Tree 0 Other identification or mapping information: Shrub - only 2 black sage were decadent (photos all very young)

Is poly >1 type: Yes / No If yes, explain: _____

Polygon/Stand No. ECC0010 - Annual Brome Grasslands



NORTH



EAST



SOUTH



WEST

CNPS and CDFG Combined Vegetation Rapid Assessment and Relevé Field Form

Relevé or Rapid Assessment (circle one) (Revised May 13, 2011)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association:
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I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #:	Air photo:	Date:	Name(s) of surveyors (circle recorder):
ECC0011	Aerial 7	4/15/13	(C. Santala) J. Adinolfi, K. Wimer

GPS wypt #: 11 GPS name: online Datum: _____ or NAD83. Bearing, left axis at SW pt _____ (degrees) of Long / Short side
 UTM E 120° 16' 38.86" UTM N 34° 48' 50.11" Zone: 10 / 11 (circle one) Error: ± n/a ft / m / pdop
 GPS within stand? Yes / No If No, cite from waypoint to stand, distance _____ (meters) & bearing _____ (degrees)

Elevation: 664 ft / m Camera Name/Photograph #: Nikon Coolpix AW100 photos 13-16

Stand Size (acres): <1, 1-5, >5 | Plot Size (m²): 10 / 100 / 400 / 1000 | Plot Shape _____ x _____ ft / m or Circle Radius _____ ft / m
 Exposure, Actual °: _____ NE NW SE SW Flat Variable All | Steepness, Actual °: _____ 0° 1-5° 5-25° > 25

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating
 Geology code: SETU Soil Texture code: COSA | Upland or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
 H20: 0 BA Stems: 60 Litter: 70 Bedrock: _____ Boulder: _____ Stone: _____ Cobble: _____ Gravel: 10 Fines: 20 =100%

% Current year bioturbation 0 Past bioturbation present? Yes / No | % Hoof punch 0
 Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Ephemeral channelized drainage adjacent to Cat Canyon Rd

Disturbance code / Intensity (L,M,H): 08/M / _____ / _____ / _____ / _____ "Other" _____ / _____

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 0 % Vasc Veg cover: 63

% Cover - Conifer tree / Hardwood tree: - / - Regenerating Tree: - Shrub: 50 Herbaceous: 13

Height Class - Conifer tree / Hardwood tree: - / - Regenerating Tree: - Shrub: 05 Herbaceous: 01

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S=Shrub, H=Herb, E=SEedling, A=SApling, N=Non-vascular.
 % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
H	<i>Melilotis indicus</i>	1		S	<i>Sambucus</i>	<1	
H	<i>Pseudognaphalium calif.</i>	2		S	<i>Ononis maculata</i>	<1	
S	<i>Salix laevigata</i>	30					
S	<i>Artemisia douglasiana</i>	2					
S	<i>Artemisia californica</i>	1					
S	<i>Baccharis pilularis</i>	5					
S	<i>Baccharis salicifolia</i>	1					
H	<i>Brassica nigra</i>	1					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Salix laevigata shrubland

Field-assessed association name (optional): _____

Adjacent alliances/direction: Cal sage (east) / _____ / _____

Confidence in alliance identification: L M H Explain: _____

Phenology (E,P,L): Herb P Shrub P Tree 0 Other identification or mapping information: _____

Is poly >1 type: Yes / No If yes, explain: _____

* Fire sand + small rock

Polygon/Stand No. ECC0011 – Red Willow thickets



NORTH



EAST



SOUTH



WEST

CNPS and CDFG Combined Vegetation Rapid Assessment and Relevé Field Form

Relevé or Rapid Assessment (circle one) (Revised May 13, 2011)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association:
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I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #:	Air photo:	Date:	Name(s) of surveyors (circle recorder):
ECC0012	Aerial 7	4/16/13	(John Santala, Kenny Wimer, Jessica Adinolfi)
GPS wypt #: <u>12</u> GPS name: <u>Campeña</u> Datum: _____ or NAD83. Bearing, left axis at SW pt <u>270</u> (degrees) of <u>Long</u> / Short side			
UTME <u>120° 16' 1.926"</u> UTMN <u>34° 49' 35.178"</u> Zone: <u>10</u> / 11 (circle one) Error: ± <u>n/a</u> ft / m / pdop			
GPS within stand? <u>Yes</u> / No If No, cite from waypoint to stand, distance _____ (meters) & bearing _____ (degrees)			
Elevation: <u>800</u> (ft/m) Camera Name/Photograph #s: <u>Nikon coolpix AW100 photos 1-4</u>			
Stand Size (acres): <u><1</u> , 1-5, >5 Plot Size (m ²): 10 / 100 / 400 / 1000 Plot Shape ___ x ___ ft / m or Circle Radius ___ ft / m			
Exposure, Actual °: <u>West (light)</u> NE NW SE SW <u>Flat</u> Variable All Steepness, Actual °: _____ 0° <u>1-5°</u> 5-25° > 25			
Topography: Macro: top upper mid lower <u>bottom</u> Micro: <u>convex</u> <u>flat</u> concave undulating			
Geology code: <u>SETV</u> Soil Texture code: <u>FISN 1</u> <u>Upland</u> or Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H20: <u>0</u> BA Stems: <u>30</u> Litter: <u>50</u> Bedrock: _____ Boulder: _____ Stone: _____ Cobble: _____ Gravel: _____ Fines: <u>30</u> =100%			
% Current year bioturbation <u>0</u> Past bioturbation present? Yes / <u>No</u> % Hoof punch <u>0</u>			
Fire evidence: Yes / <u>No</u> (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>stand w/in 50 yds of channelized drainage, area is grazed, adjacent relatively undisturbed scrub, oak woodland</u>			

Disturbance code / Intensity (L,M,H): 20/L / _____ / _____ / _____ / _____ "Other" _____ / _____

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 0 % Vasc Veg cover: 75

% Cover - Conifer tree / Hardwood tree: - / - Regenerating Tree: - Shrub: 50 Herbaceous: 25 3

Height Class - Conifer tree / Hardwood tree: - / - Regenerating Tree: - Shrub: 04 Herbaceous: 01

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
S	Franseria californica	35		S	Encarnia ericoides	15	
H	Artemisia douglasiana	10	u2	S	Artemisia californica	5	
H	Chenopodium californica	1					
S	Baccharis pilularis	5					
H	Mammillaria vulgare	1					
T	Quercus agrifolia	2					
S	Croton californica	1					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Colicberry scrub

Field-assessed association name (optional): _____

Adjacent alliances/direction: Grassland (east) / Coastline oak wood (North) oak scrub (west)

Confidence in alliance identification: L M H Explain: _____

Phenology (E,P,L): Herb E Shrub P Tree P Other identification or mapping information: _____

Is poly >I type: Yes / No If yes, explain: _____

Polygon/Stand No. ECC0012 - California Coffeeberry Scrub



NORTH



EAST



SOUTH



WEST

CNPS and CDFG Combined Vegetation Rapid Assessment and Relevé Field Form

Relevé or Rapid Assessment (circle one)

(Revised May 13, 2011)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
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I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #:	Air photo:	Date:	Name(s) of surveyors (circle recorder):
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ECC0013 Aerial 4 4/16/13 C. Santala, X. Wimer, J. Adinolfi

GPS wypt #: 13 GPS name: camera Datum: _____ or NAD83. Bearing, left axis at SW pt 310 (degrees) of Long / Short side
 UTME 120° 16' 01.96" UTMN 34° 49' 43.12" Zone: 10 / 11 (circle one) Error: ± n/a ft / m / pdop

GPS within stand? Yes / No If No, cite from waypoint to stand, distance _____ (meters) & bearing _____ (degrees)

Elevation: 767 ft/m Camera Name/Photograph #s: Nikon Coolpix AW100 5-9

Stand Size (acres): <1, 1-5, >5 | Plot Size (m²): 10 (100) 400 / 1000 | Plot Shape 10 x 10 ft/m or Circle Radius _____ ft / m
 Exposure, Actual °: 265 NE (NW) SE SW Flat Variable All | Steepness, Actual °: _____ 0° (1-5) 5-25° > 25

Topography: Macro: top upper mid lower (bottom) | Micro: convex (flat) concave undulating
 Geology code: SETU Soil Texture code: FISN | (Upland) or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
 H20: 0 BA Stems: 85 Litter: 10 Bedrock: _____ Boulder: _____ Stone: _____ Cobble: _____ Gravel: _____ Fines: 5 =100%

% Current year bioturbation 5 Past bioturbation present? Yes / No | % Hoof punch 0
 Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Ranch land/grazing

Disturbance code / Intensity (L,M,H): 04 / L / _____ / _____ / _____ / _____ / _____ "Other" _____ / _____

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), (S4) decadent (>25% dead)

Herbaceous: (H1) (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 0 % Vasc Veg cover: 85

% Cover - Conifer tree / Hardwood tree: - / - Regenerating Tree: - Shrub: 1 Herbaceous: 84

Height Class - Conifer tree / Hardwood tree: - / - Regenerating Tree: - Shrub: 01 Herbaceous: 01

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
 % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
H	<i>Bromus diandrus</i>	35					
H	<i>Erodium botrys</i>	39					
H	<i>Lynis bicolor</i>	2					
H	<i>Bromus hordeaceus</i>	15					
S	<i>Croton californicus</i>	<1					
H	<i>Festuca myuros</i>	<1					
H	<i>Avena barbata</i>	<1					
S	<i>Baccharis pilularis</i>	1					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Bromus diandrus grassland

Field-assessed association name (optional): _____

Adjacent alliances/direction: Coastlive oak (east), Coastal scrub (west)

Confidence in alliance identification: L M (H) Explain: _____

Phenology (E,P,L): Herb P Shrub P Tree 0 Other identification or mapping information: _____

Is poly >1 type: Yes / No If yes, explain: _____

Polygon/Stand No. ECC0013 - Annual Brome Grasslands



NORTH



EAST



SOUTH



WEST

Polygon/Stand No. ECC0014 – Black Sage Scrub

North
Photo not available

East
Photo not available



SOUTH



WEST

CNPS and CDFG Combined Vegetation Rapid Assessment and Relevé Field Form

Relevé or Rapid Assessment (circle one)

(Revised May 13, 2011)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			
Polygon/Stand #:	Air photo:	Date:	Name(s) of surveyors (circle recorder):
E100015	Aerial 3	4/16/13	C. Santala, K. Wimer, J. Adenolf
GPS wypt #:	GPS name:	Datum:	Bearing, left axis at SW pt
15	amer	or NAD83.	345 (degrees) of Long / Short side
UTME	UTMN	Zone:	Error: ±
120° 17' 3.294"	34° 50' 21.882"	10 / 11 (circle one)	n/a ft / m / pdop
GPS within stand? <input checked="" type="radio"/> Yes <input type="radio"/> No If No, cite from waypoint to stand, distance (meters) & bearing (degrees)			
Elevation: 858 ft m Camera Name/Photograph #': Nikon Coolpix AW100, photos 13-16			
Stand Size (acres): <1, 1-5, >5 Plot Size (m ²): 10 / 100 / 400 / 1000 Plot Shape 10 x 10 ft / m or Circle Radius ft / m			
Exposure, Actual °: 242 NE NW SE <input checked="" type="radio"/> SW Flat Variable All Steepness, Actual °: 0° 1-5° <input checked="" type="radio"/> 5-25° > 25			
Topography: Macro: top upper <input checked="" type="radio"/> mid lower bottom Micro: convex flat concave undulating			
Geology code: SETU Soil Texture code: MESA Upland or Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H20: 1 BA Stems: 30 Litter: 30 Bedrock: 1 Boulder: Stone: Cobble: Gravel: 9 Fines: 30 =100%			
% Current year bioturbation <input checked="" type="radio"/> Past bioturbation present? Yes <input type="radio"/> No <input checked="" type="radio"/> % Hoof punch <input checked="" type="radio"/>			
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: Ranchland, grazing historical & current w/in abandoned / minimally utilized oilfield			
Disturbance code / Intensity (L,M,H): 04 / m / / / / / / / / "Other" / /			
II. HABITAT AND VEGETATION DESCRIPTION			
Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)			
Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)			
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 0 % Vasc Veg cover: 80			
% Cover - Conifer tree / Hardwood tree: - / - Regenerating Tree: - Shrub: - Herbaceous: 80			
Height Class - Conifer tree / Hardwood tree: - / - Regenerating Tree: - Shrub: - Herbaceous: 01			
Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m			
Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular. % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.			
Strata	Species	% cover	C Strata Species % cover C
H	Avena barbata	30	H fleishfeldia meana 1
H	Erodium botrys	3	H Dichelostema capitatum <1
H	Bromus diandrus	27	
H	stipa pulchra	8	
H	Bromus hordeaceus	3	
H	Bromus madritensis	3	
H	Centauris melitensis	1	
H	Medicago polymorpha	1	
Unusual species: -			
III. INTERPRETATION OF STAND			
Field-assessed vegetation alliance name: Avena barbata grassland			
Field-assessed association name (optional):			
Adjacent alliances/direction: Coastal scrub (south, west) Coast live oak (east)			
Confidence in alliance identification: L M <input checked="" type="radio"/> H Explain:			
Phenology (E,P,L): Herb D/L Shrub - Tree - Other identification or mapping information:			
Is poly >1 type: Yes <input checked="" type="radio"/> No <input type="radio"/> If yes, explain:			

Polygon/Stand No. ECC0015 – Wild Oats Grassland



NORTH



EAST



SOUTH



WEST

CNPS and CDFG Combined Vegetation Rapid Assessment and Relevé Field Form

Relevé or Rapid Assessment (circle one)

(Revised May 13, 2011)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
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I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #:	Air photo:	Date:	Name(s) of surveyors (circle recorder):
ECC0016	Aerial 4	4/17/13	Christina Santolo, Kenny Wimer, Jessica Adinolfi
GPS wpyt #: <u>16</u> GPS name: <u>onlve</u> Datum: _____ or NAD83. Bearing, left axis at SW pt <u>75</u> (degrees) of Long / Short side			
UTME <u>120° 15' 40.96"</u> UTMN <u>34° 40' 16.96"</u> Zone: <u>10</u> / 11 (circle one) Error: ± <u>n/a</u> ft / m / pdop			
GPS within stand? <u>Yes</u> No If No, cite from waypoint to stand, distance _____ (meters) & bearing _____ (degrees)			
Elevation: <u>708</u> (ft) m Camera Name/Photograph #s: <u>Canon Coolpix AW100, Photos 1-4</u>			
Stand Size (acres): <u><1</u> , 1-5, >5 Plot Size (m ²): 10 / 100 / 400 / 1000 Plot Shape <u>20 x 20</u> ft / m or Circle Radius _____ ft / m			
Exposure, Actual °: <u>118</u> NE NW SE SW Flat <u>Variable</u> All Steepness, Actual °: _____ 0° 1-5° 5-25° > 25			
Topography: Macro: top upper <u>mid</u> lower bottom Micro: <u>convex</u> flat concave undulating			
Geology code: <u>SFTV</u> Soil Texture code: <u>MESN</u> <u>Upland</u> or Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H20: <u>0</u> BA Stems: <u>45</u> Litter: <u>18</u> Bedrock: _____ Boulder: _____ Stone: _____ Cobble: _____ Gravel: <u>12</u> Fines: <u>25</u> =100%			
% Current year bioturbation <u>5</u> Past bioturbation present? <u>Yes</u> / No % Hoof punch <u>0</u>			
Fire evidence: Yes / <u>No</u> (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>Relatively undisturbed area w/in oil field property due to steepness & large shrubs</u>			

Disturbance code / Intensity (L,M,H): 04 / L / _____ / _____ / _____ / _____ / _____ "Other" _____ / _____

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 0 % Vasc Veg cover: 75

% Cover - Conifer tree / Hardwood tree: - / - Regenerating Tree: - Shrub: 55 Herbaceous: 20

Height Class - Conifer tree / Hardwood tree: - / - Regenerating Tree: - Shrub: 03 Herbaceous: 02

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S=Shrub, H=Herb, E=SEedling, A=SApling, N=Non-vascular.
 % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
S	Artemisia californica	20		H	Chorizanthe ^(rock spiral) <u>ang</u>	1	
S	Salvia melitensis	5		H	Centauria melitensis	<1	
S	Sambucus	1		H	Erodium botrys	1	
H	maritima	1		S	Acemisson glaber	10	
H	Stipa pulchra	5		H	Erodium cicutarium	2	
H	Avena barbata	5		H	Hypochens glabra	<1	
H	Bromus diandrus	15		H	Bromus madritensis	1	
H	Bromus hordeaceus	2		H	Cryptantha dewlandi	<1	

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Artemisia californica shrubland

Field-assessed association name (optional): _____

Adjacent alliances/direction: Grassland (west) / 1 Cal sage / couple sage (N, south, east)

Confidence in alliance identification: L M H Explain: _____

Phenology (E,P,L): Herb P/L Shrub P Tree Other identification or mapping information: _____

Is poly >1 type: Yes / No If yes, explain: _____

Polygon/Stand No. ECC0016 - California Sagebrush Scrub



NORTH



EAST



SOUTH



WEST

CNPS and CDFG Combined Vegetation Rapid Assessment and Relevé Field Form

Relevé or Rapid Assessment (circle one)

(Revised May 13, 2011)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
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I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #: ECC0017 Air photo: Aerial 7 Date: 4/17/13 Name(s) of surveyors (circle recorder): (Chris Santala) Kenny Wimer, Jessica Adinolfi

GPS wypt #: 17 GPS name: Camera Datum: _____ or NAD83. Bearing, left axis at SW pt 325 (degrees) of Long / Short side
 UTM E 120° 17' 6.00" UTM N 34° 49' 18.83" Zone: 10 / 11 (circle one) Error: ± n/a ft / m / pdop

GPS within stand? Yes / No If No, cite from waypoint to stand, distance _____ (meters) & bearing _____ (degrees)

Elevation: 718 ft / m Camera Name/Photograph #'s: Nikon Coolpix AW100 photos 5-8

Stand Size (acres): <1, 1-5, >5 | Plot Size (m²): 10 / 100 / 400 / 1000 | Plot Shape 20 x 20 ft / m or Circle Radius _____ ft / m
 Exposure, Actual °: 119 NE NW (SE) SW Flat Variable All | Steepness, Actual °: _____ 0° 1-5° (5-25°) > 25

Topography: Macro: top upper (mid) lower bottom | Micro: convex flat concave undulating
 Geology code: SETU Soil Texture code: COSA | Upland or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
 H20: 0 BA Stems: 40 Litter: 25 Bedrock: _____ Boulder: 1 Stone: _____ Cobble: 5 Gravel: 10 Fines: 20 =100%

% Current year bioturbation 0 Past bioturbation present? Yes / No | % Hoof punch 0
 Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Historical oil field activities evident in some bare ground areas (ie hardened oil)

Disturbance code / Intensity (L,M,H): 01/M 2012 / _____ / _____ / _____ "Other" _____ / _____

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 1 % Vasc Veg cover: 60

% Cover - Conifer tree / Hardwood tree: - / - Regenerating Tree: - Shrub: 45 Herbaceous: 15
 Height Class - Conifer tree / Hardwood tree: - / - Regenerating Tree: - Shrub: 04 Herbaceous: 02

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
 % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
S	Baccharis pilularis	35		H	Eukrypta	1	
S	Artemisia californica	10		H	pterosthygia	<1	
H	Chenopodium cal	2		H	Galium parryi	<1	
S	Solanum xanthi	4		H	Anagallis arvensis	<1	
H	Pseudognaphalium cal	<1		H	crassula canola	<1	
H	Bromus diandrus	<1					
H	Bromus madritensis	<1					
H	Amsinckia spectabilis	<1					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Coyle Bush scrub

Field-assessed association name (optional): _____

Adjacent alliances/direction: Coastline oak wood (south) Coyle Bush scrub (west, north, east)

Confidence in alliance identification: L M (H) Explain: _____

Phenology (E,P,L): Herb P/L Shrub E/P/L Tree _____ Other identification or mapping information: _____

Is poly >1 type: Yes / No If yes, explain: _____

Polygon/Stand No. ECC0017 – Coyote Brush Scrub



NORTH



EAST



SOUTH



WEST

CNPS and CDFG Combined Vegetation Rapid Assessment and Relevé Field Form

Relevé or Rapid Assessment (circle one)

(Revised May 13, 2011)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
-----------------	-------------------	-----------------------------	----------------------

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #:	Air photo:	Date:	Name(s) of surveyors (circle recorder):
E00018	lena 7	4/18/13	Chns Santala, Jessica Adinolf, Kenny Wimer

GPS wypt #: 18 GPS name: Camera Datum: _____ or NAD83. Bearing, left axis at SW pt 0 (degrees) of Long / Short side

UTME 34° 49' 46.04" UTMN 120° 16' 40.68" Zone: 10 / 11 (circle one) Error: ± _____ ft / m / pdop

GPS within stand? Yes / No If No, cite from waypoint to stand, distance _____ (meters) & bearing _____ (degrees)

Elevation: 245 ft / m Camera Name/Photograph #'s: Nikon Coolpix AW100, Photos 1-4

Stand Size (acres): <1, 1-5, >5 | Plot Size (m²): 10 / 100 / 400 / 1000 | Plot Shape 10 x 10 ft / m or Circle Radius _____ ft / m
 Exposure, Actual °: 324 NE NW SE SW Flat Variable All | Steepness, Actual °: _____ 0° 1-5° 5-25° > 25

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating
 Geology code: SETU Soil Texture code: MELS | Upland or Wetland/Riparian (circle one)

% Surface cover: _____ (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
 H20: 0 BA Stems: 80 Litter: 15 Bedrock: - Boulder: - Stone: - Cobble: - Gravel: - Fines: 5 =100%

% Current year bioturbation 0 Past bioturbation present? Yes / No | % Hoof punch 2%
 Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Brazing, wildlife foraging, relatively undisturbed area w/in abandoned oilfield property

Disturbance code / Intensity (L,M,H): 04/L / _____ / _____ / _____ / _____ "Other" _____ / _____

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 0 % Vasc Veg cover: 90

% Cover - Conifer tree / Hardwood tree: - / <1 Regenerating Tree: 1 Shrub: 7 Herbaceous: 83
 Height Class - Conifer tree / Hardwood tree: - / 01 Regenerating Tree: 01 Shrub: 04 Herbaceous: 02

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S=Shrub, H=Herb, E=SEedling, A=SApling, N=Non-vascular.
 % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
S	<i>Baccharis pilularis</i>	5		H	<i>Lupinus truncatum</i>	1	
S	<i>Artemisia californica</i>	2		H	<i>Verbena lasiospachy</i>	2	
T	<i>Quercus agrifolia</i>	1		H	<i>Medicago polymorpha</i>	3	
H	<i>Juncus palens</i>	20		H	<i>Melilotus indica</i>	<1	
H	<i>Bromus hordeaceus</i>	14		H	<i>Geranium dissectum</i>	4	
H	<i>Bromus diandrus</i>	14		H	<i>Carduus pycno</i>	1	
H	<i>Erodium botrys</i>	2		H	<i>Pseudognaphalium canescens</i>	<1	
H	<i>Lupinus bicolor</i>	5		H	<i>Juncus bulbosus</i>	2	

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Juncus palens provisionale

Field-assessed association name (optional): _____

Adjacent alliances/direction: Oak woodland (USA), Black sage scrub (East, South, north)

Confidence in alliance identification: L M H Explain: _____

Phenology (E,P,L): Herb P Shrub P Tree E Other identification or mapping information: _____

Is poly >1 type: Yes / No If yes, explain: _____

Polygon/Stand No. ECC0018 - Western Rush Marsh



NORTH



EAST



SOUTH



WEST

ATTACHMENT 2

REGULATORY TEXT

REGULATORY TEXT

SANTA BARBARA COUNTY ENVIRONMENTAL THRESHOLDS AND GUIDELINES MANUAL



COUNTY OF SANTA BARBARA

Planning and Development

Environmental Thresholds and Guidelines Manual

Revised January 1995

Revised October 2001

Revised October 2002

Replacement Pages July 2003

Interim Revision to Air Quality Subsection October 2006

Revised January 2008

Revised September 2008

Revised July 2015

Published October 2008

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NOTE:

This document is updated on a periodic basis in order to include amendments adopted by the Board of Supervisors. Recently adopted amendments may not yet be incorporated into this copy. Please check with the Planning and Development Department Zoning Information Counter located at either 123 East Anapamu Street, Santa Barbara, or 624 West Foster Road, Suite C, Santa Maria, for information on amendments approved subsequent to the date shown on the front of this publication.

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6. BIOLOGICAL RESOURCES (Approved by the Board of Supervisors September 27, 1994)

A. Introduction.

Federal and State laws and adopted County policies require the protection of natural habitats and associated wildlife and vegetation in recognition of their many values, including maintaining a healthy balance between urban built areas and supportive natural environment, nutrient recycling, providing for watershed protection, protection against erosion, cleansing of air and water, food chain support, scientific and medical research, education, recreation, aesthetics, and for the intrinsic value of wildlife and vegetation and their natural ecosystems.

Santa Barbara County has a wide diversity of habitat types, including chaparrals, oak woodlands, wetlands and beach dunes. Preservation of large contiguous habitat areas is the key to preserving biodiversity and avoiding additional species becoming rare, endangered or extinct.

Due to the complexities of ecosystems and the many factors involved in assessing the value of biological resources and project impacts, general qualitative guidelines rather than numerical thresholds are provided.

B. Legal Authority.

1. **CEQA Guidance for Biological Impact Assessment.** The following sections of the State CEQA Guidelines provide general direction for the evaluation of biological resource impacts as a part of the environmental review of proposed projects.

California Environmental Quality Act (CEQA) Section 15065 states that a Lead Agency shall find that a project may have a significant effect on the environment and thereby require an Environmental Impact Report (EIR) to be prepared for the project where the project has the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal.

CEQA Appendix G states that a project will normally have a significant effect on the environment if it will:

- “(a) Conflict with adopted environmental plans and goals of the community where it is located;
 - (c) Substantially affect a rare or endangered species of animal, plant or the habitat of the species;
 - (d) Interfere substantially with the movement of any resident or migratory fish or wildlife species; and
 - (e) Substantially diminish habitat for fish, wildlife or plants.”
2. **Federal and State Requirements for Protection of Biological Resources.** Environmental impact analysis and mitigation needs to take into account Federal and State biological resource regulations. The Federal Endangered Species Act and California Endangered Species Act formally list plant and animal species determined to be rare, threatened or endangered, or candidate species, and establish regulations for protecting these species and their habitats. Additional information regarding these statutes is provided in a separate technical document (Planning and Development Department Biological Resources Technical References, 1994).

Other federal statutes include the National Environmental Policy Act (NEPA), the Clean Water Act Section 404 (for protection of wetlands), Bald Eagle Protection Act, Migratory Bird Treaty Act, Executive Order 11990 (wetlands protection), Rivers and Harbors Act Section 10, Marine Protection, Sanctuary and Research Act, Marine Mammal Protection Act, and Section 1601 and 1603 Stream Alteration Agreements.

- 3. County Biological Resources Policies.** Requirements for the protection of biological resources in the unincorporated area of Santa Barbara County are provided by the Comprehensive Plan Conservation Element, Environmental Resource Management Element (ERME), Land Use Element, Community Plans, and the Coastal Land Use Plan. These documents identify sensitive habitats and species, and provide measures to direct project design and policies to protect biological resources.

C. Guidelines for Assessment of Biological Resources Impacts.

- 1. Initial Study Review Process.** The term "biological resources" refers to plant and animal species and habitats that support plant and animal species.

The value of a habitat and the resources present on the project site and potential project impacts are assessed preliminarily during the initial study review process. The first task in the assessment of biological impacts is an evaluation of the plant and animal resources on the project site and the second focuses on the project impact itself, using a series of assessment factors. The initial study evaluation determines whether an EIR or Mitigated Negative Declaration should be prepared based upon substantial evidence (not public controversy) that there is the potential for significant adverse biological impacts to occur as a result of a proposed project.

Based on a preliminary site assessment and review of existing historical resource information (designated environmentally sensitive habitat (ESH) areas, biological resource maps, reports, surveys, and Natural Diversity Data Base maps, available in the Planning and Development Department), staff utilizes the methodologies described below to determine whether resources on a site are biologically valuable, and whether a project may result in a significant impact to biological resources. In some instances a biological consultant survey of the site is required to determine the presence or absence of sensitive species and the value of habitat on and surrounding the project site, and to identify potential project impacts and feasible measures which could be incorporated into the project design to avoid or minimize the potentially significant impacts. Guidelines for performance of biological studies and sensitive resource definitions are provided in a separate technical document.

The determination of impact is done on a case-by-case basis. Because of the complexity of biological resource issues, substantial variation can occur between cases. The following sections identify questions and factors used in assessing the value of biological resources, and the significance of project impacts.

- 2. Evaluation of Resources on the Project Site.**

- a. Resources Inventory.**

- (1) What biological communities are on the site? What size area?
- (2) Is the habitat type relatively common? Is it rare and occurring in only a few places in the region, or significantly declining in extent and/or quality? Is the habitat designated as an ESH area on County planning documents, or designated

as "critical habitat" for listed species by Federal or State agencies?

- (3) Is the site in an urban, rural or outlying area? What are the uses surrounding the site? Is the habitat isolated or is it contiguous with adjacent habitat or close enough to provide a link between habitats?
- (4) Does the habitat support resident species or migratory species? Are there protected species (e.g., endangered or threatened), or species of candidate, special, or local concern or healthy rare species?

b. Condition and Quality.

- (1) Is the habitat pristine or disturbed? How much or to what degree?
- (2) How biologically productive is it? Does it support an especially rich and diverse plant and/or wildlife population?
- (3) Is the habitat resource (including the surrounding area if it is related) large enough to be viable?

3. Evaluation of Project Impacts. Assessment of impacts must account for both short-term and long-term impacts. Thus the assessment must account for items such as immediate tree removal and longer-term, more subtle impacts such as interruption of the natural fire regime or interference with plant or animal propagation.

a. Types of Impacts to Biological Resources. Disturbance to habitats or species may be significant, based on substantial evidence in the record (not public controversy or speculation), if they substantially impact significant resources in the following ways:

- (1) Substantially reduce or eliminate species diversity or abundance
- (2) Substantially reduce or eliminate quantity or quality of nesting areas
- (3) Substantially limit reproductive capacity through losses of individuals or habitat
- (4) Substantially fragment, eliminate, or otherwise disrupt foraging areas and/or access to food sources
- (5) Substantially limit or fragment range and movement (geographic distribution or animals and/or seed dispersal routes)
- (6) Substantially interfere with natural processes, such as fire or flooding, upon which the habitat depends.

b. Less Than Significant Impacts. There are many areas in the County where there is little or no importance to a given habitat and it is presumed that disruption would not create a significant impact. Examples of areas where impacts to habitat are presumed to be insignificant include:¹

- (1) Small acreages of non-native grassland if wildlife values are low.
- (2) Individuals or stands of non-native trees if not used by important animal species such as raptors or monarch butterflies.
- (3) Areas of historical disturbance such as intensive agriculture.

¹ Pursuant to CEQA, a presumption based upon County thresholds that a project's impact is insignificant is rebutted if there is substantial evidence in light of the whole record before the lead agency that the project may have a significant impact on the environment (Pub. Res. Code §21082.2).

- (4) Small pockets of habitats already significantly fragmented or isolated, and degraded or disturbed.
- (5) Areas of primarily ruderal species resulting from pre-existing man-made disturbance.

c. Impact Assessment Factors. In addition to the criteria listed in a. "Types of Impacts to Biological Resources" above, the following questions and factors are used in assessing the significance of project impacts on biological resources.

(1) Size.

How much of the resource in question both on and off the project site would be impacted? (percentage of the whole area and square footage and/or acreage are both useful to know)

How does the area or species that would be impacted relate to the remaining populations off the project site? (percentage of total area or species population, either quantitatively or qualitatively.)

(2) Type of Impact.

Would it adversely indirectly affect wildlife (light, noise, barriers to movement, etc.)?

Would it remove the resource or cause an animal to abandon the area or a critical activity (e.g., nesting) in that area?

Would it fragment the area's resource?

(3) Timing.

Would the impact occur at a critical time in the life cycle of an important plant or animal (e.g., breeding, nesting, or flowering periods)?

Is the impact temporary or permanent? If it is temporary, how long would the resource take to recover?

Would the impact be periodic, of short duration, but recur again and again?

D. Habitat-Specific Impact Assessment Guidelines.

The following section provides additional impact assessment guidelines specific to several biological communities. These guidelines are to be used in conjunction with the general impact assessment guidelines described in Section III. (Note: Not all habitat types found in Santa Barbara County are addressed by these habitat-specific guidelines. Habitat types not addressed here are assessed with the general impact assessment guidelines in Section III.)

1. Wetlands.

a. Description. Wetlands are among the most biologically productive of habitats, and the County's wetlands have been diminished both in areal extent and quality from the historic condition. As a result, naturally-occurring wetlands are an important resource, and projects with potential impacts to wetlands must be carefully evaluated. Examples of wetlands include coastal salt and brackish marshes, fresh water marshes, and vernal pools. Special cases include seasonal wetlands, vegetated flats, inter-dunal swale wetlands, and vegetated river bars and flats (riparian areas).

- b. **Definition.** For the purposes of determining potentially significant effect, Santa Barbara County uses the following wetland definition that has been adopted by most resource protection agencies (U.S. Fish and Wildlife Service, the California Coastal Commission, the California Fish and Game Commission and the California Department of Fish and Game).² This definition reads:

"For purposes of this classification wetlands must have one or more of the following three attributes:

- a) At least periodically, the land supports predominantly hydrophytes, that is plants adapted to moist areas.
- b) The substrate is predominantly un-drained hydric soil, and
- c) The substrate is non soil and is saturated with water or covered by shallow water at some time during the growing season of each year. (Cowardin 1979)"

In order to ensure that wetland protection standards are applied equitably to affected property owners, wetlands which have only one of the defining three characteristics, especially those defined only by seasonal ponding, require careful review to ensure that highly disturbed areas with artificially compacted soils which do not have true wetland characteristics are not mistakenly identified as wetlands.

- c. **Wetland/Upland Boundary Definition.** The same category used to delineate wetland is used to delineate the boundary between wetland and upland.³ The upland limit of wetland is designated as 1) the boundary between land with predominantly hydrophytic cover and land with predominantly mesophytic (semi-dry) or xerophytic (dry) cover; or 2) the boundary between soil that is predominantly hydric and soil that is predominantly nonhydric; or 3) in the case of wetlands without vegetation or soil, the boundary between land that is flooded or saturated at some time each year and land that is not.
- d. **Wetland Impact Assessment Guidelines.** The following types of project-created impacts may be considered significant:
- (1) Projects which result in a net loss of important wetland area or wetland habitat value, either through direct or indirect impacts to wetland vegetation, degradation of water quality, or would threaten the continuity of wetland-dependant animal or plant species are considered to have a potentially significant effect on the environment (California Environmental Quality Act: Guidelines, Appendix G; items c, d, and t).
 - (2) Wildlife access, use, and dispersal in wetland habitats are key components of their ecosystem value. For example, many upland species of wildlife could not persist without access to water. Movement between contiguous habitats through riparian areas (e.g.: from mountainous chaparral to valley grassland or coastal mesa) allows for many species to continue to persist and prevents genetic isolation. Projects which substantially interrupt wildlife access, use and dispersal

² It is the goal of Santa Barbara County to maintain a definition of wetlands consistent with Federal and State resources agencies listed above.

³ Methodologies used in delineating wetlands are consistent with those utilized by Federal and State resources agencies referenced above.

in wetland areas would typically be considered to have potentially significant impacts.

- (3) The hydrology of wetlands systems must be maintained if their function and values are to be preserved. Therefore, maintenance of hydrological conditions, such as the quantity and quality of run-off, etc., must be assessed in project review.

e. **Coastal Salt Marsh Impact Assessment Guidelines.** Project-created impacts may be considered significant due to the potential to change species composition and habitat value as outlined below.

- (1) Substantial alteration of tidal circulation or decrease of tidal prism.
- (2) Adverse hydrologic changes (e.g., altered freshwater input), substantial increase of sedimentation, introduction of toxic elements or alteration of ambient water temperature.
- (3) Construction activity which creates indirect impacts such as noise and turbidity on sensitive animal species, especially during critical periods such as breeding and nesting.
- (4) Disruption of wildlife dispersal corridors.
- (5) Disturbance or removal of substantial amounts of marsh habitats. Because of the high value and extremely limited extent of salt marsh habitat in the County, small areas of such habitat may be considered significant.

f. **Vernal Pools Impact Assessment Guidelines:** The following types of project-related impacts may be considered significant:

- (1) Direct removal of vernal pool or vernal pools complex.
- (2) Direct or indirect adverse hydrologic changes such as altered freshwater input, changes in the watershed area or run-off quantity and/ or quality, substantial increase in sedimentation, introduction of toxic elements or alteration of ambient water temperature.
- (3) Disruption of larger plant community (e.g., grassland) within which vernal pool occurs, isolation or interruption of contiguous habitat which would disrupt animal movement patterns, seed dispersal routes or increase vulnerability of species to weed invasion or local extirpation. For example, fragmentation of habitat may interrupt interaction between the habitat and the organisms within the pools (pollination, seed, invertebrate and vertebrate dispersal, provision of drinking and bathing water, etc.). These types of direct and indirect impacts are potentially significant.

2. Riparian Habitats.

a. **Description.** Riparian habitat is the terrestrial or upland area adjacent to freshwater bodies, such as the banks of creeks and streams, the shores of lakes and ponds, and aquifers which emerge at the surface such as springs and seeps (Bowland and Ferren 1992). A rich assemblage of wildlife series, including birds, mammals and amphibians are found in riparian habitats. In Santa Barbara County, riparian habitat occurs in and along the County's four major rivers (Santa Ynez, Santa Maria, Cuyama and Sisquoc) and in and along the County's many creeks and streams. This habitat can

also occur along arroyos and barrancas, and other types of drainages throughout the County.

b. Riparian Impact Assessment Guidelines, The following types of project-related impacts may be considered significant:

- (1) Direct removal of riparian vegetation.
- (2) Disruption of riparian wildlife habitat, particularly animal dispersal corridors and or understory vegetation.
- (3) Intrusion within the upland edge of the riparian canopy (generally within 50 feet in urban areas, within 100 feet in rural areas, and within 200 feet of major rivers listed in the previous section), leading to potential disruption of animal migration, breeding, etc. through increased noise, light and glare, and human or domestic animal intrusion
- (4) Disruption of a substantial amount of adjacent upland vegetation where such vegetation plays a critical role in supporting riparian-dependent wildlife species (e. g., amphibians), or where such vegetation aids in stabilizing steep slopes adjacent to the riparian corridor, which reduces erosion and sedimentation potential.
- (5) Construction activity which disrupts critical time periods (nesting, breeding) for fish and other wildlife species.

3. Native Grasslands.

a. Description: Native Grassland in California once occurred over 8 million acres in the Central Valley and in scattered patches along the Coast Ranges (Heady, 1977). Few stands of native grasslands remain in the state and the habitat is considered rare both in the state and within the county.

b. Native Grassland Habitat Impact Assessment Guidelines:

- (1) For purposes of resource evaluation in Santa Barbara County, a native grassland is defined as an area where native grassland species comprise 10 percent or more of the total relative cover.^{4,5}
- (2) Removal or severe disturbance to a patch or patches of native grasses less than one-quarter acre, which is clearly isolated and is not a part of a significant native grassland or an integral component of a larger ecosystem, is usually considered insignificant.

4. Oak Woodlands and Forests.

a. Description. There are three primary types of oak woodlands in Santa Barbara County: Valley Oak, Coast Live Oak, and Blue Oak woodlands. The number, type,

⁴ The California Department of Fish and Game, Natural Heritage Division uses the 10 percent relative cover figure in determining acreages of remaining native grasslands (Keeler-Wolf, Natural Diversity Data Base, personal communication May 1992). (Relative cover is the cover of a particular species as a percentage of total plant cover of a given area. [Barbour, Burk & Pitts 1980].)

⁵ Native grasslands which are dominated by perennial bunch grasses such as purple needlegrass (*Stipa pulchra*) tend to be patchy (the individual plants and groups of plants tend to be distributed in patches). Therefore, for example, where a high density of small patches occur in an area of one acre, the whole acre should be delineated if native grassland species comprise 10 percent or more of the total relative cover, rather than merely delineating the patches that would sum to less than one acre.

and density of oak trees, and the relationship between trees and understory are principal characteristics which define the various types of woodlands. Oak habitats support a diverse wildlife population, and offer abundant resources to wildlife including food sources, shade in summer, shelter in winter, perching, roosting, nesting, and food storage sites.

b. Impact Assessment Guidelines for Woodlands and Forest Habitat Areas.⁶ Project-created impacts may be considered significant due to changes in habitat value and species composition such as the following:

- (1) Habitat fragmentation.
- (2) Removal of understory.
- (3) Alteration to drainage patterns.
- (4) Disruption of the canopy
- (5) Removal of a significant number of trees that would cause a break in the canopy or disruption in animal movement in and through the woodland

5. Impact Assessment for Individual Native Trees.⁶

a. Description. Native specimen trees, regardless of size, are potentially significant, and rare native trees, which are very low in number or isolated in distribution (such as Island Oak) may be particularly significant. This significance evaluation is done on a case-by-case basis and considers tree size, numbers, location, relationship to habitat, etc.

b. Definition. Specimen trees are defined, for biological assessment purposes, as mature trees that are healthy and structurally sound and have grown into the natural stature particular to the species.

c. Native Tree Impact Assessment. In general, the loss of 10 percent or more of the trees of biological value on a project site is considered potentially significant.⁷

E. General Mitigation Guidelines for Biological Impacts.

1. Mitigation Hierarchy. The following general approaches to reducing biological impacts are presented in the order of their effectiveness.

a. Avoidance.

Avoid direct or indirect impacts to significant biological resources through project design.

Focus on maintaining large, contiguous habitat areas and animal movement corridors. A project design which clusters development on a relatively limited portion of the project site may reduce the habitat area disturbed by the project.

b. Onsite Mitigation.

⁶ The impact assessment guidelines for oak trees, woodlands and forest habitat do not apply to non-discretionary level oak tree removal of protected and unprotected size under the Grading Ordinance Guidelines for Native Oak Tree Removal that are incorporated as Appendix A in County Code, Chapter 14. Non-discretionary-level oak tree removal of protected and unprotected size that is subject to and in compliance with these Guidelines has been previously analyzed in the program EIR, 00-EIR-07 RV1.

⁷ The number of trees present onsite from which the 10 percent is measured may be calculated either by counting individual trees or by measuring the area of the tree canopy with a planimeter.

Minimize or reduce impacts through on-site design and resource protection measures.

Measures may include vegetative spatial buffer between project and habitat areas; revegetation; habitat enhancement; erosion and water quality protection; on-site replacement/compensation; maintenance and management measures such as fencing, weed control, use of building envelopes, and dedication of areas through open space or conservation easements or grant deed of development rights; short-term measures to protect against construction impacts (e.g., fencing, timing of construction to avoid nesting season).

c. Off-Site Mitigation.

Compensate for on-site impacts through off-site measures.

When avoidance or on-site mitigation is infeasible or inadequate to reduce impacts, measures such as those listed under on-site mitigation can be considered in off-site locations, or may be accomplished through in-lieu fees. Off-site approaches may be appropriate at times if a greater ecological value may be clearly gained than with on-site mitigation. (i.e., where on-site habitat is of low quality or highly fragmented).

- 2. Habitat Replacement/Compensation Guidelines.** The mitigation approach of replacing habitat either on-site or off-site, to compensate for habitat loss, is generally not a preferred approach because it always results in some habitat loss (either short-term or long-term), and because prospects for successful habitat replacement are problematic.

Replacement mitigation should involve the same habitat type, location(s) within the same watershed and as close as possible to the site of impact, and should result in comparable and compensating size and habitat value.

Beneficial ecological restoration projects, where the purpose of the project is to enhance or restore biological or habitat resources, compensate replacement at a minimum ratio of 1:1. Refer to the *County Guidelines for the Implementation of the California Environmental Quality Act of 1970, As Amended*, revised January 8, 2008, for the definition and requirements for beneficial ecological restoration projects.

3. Consultation on Mitigation and Project Design.

a. Biological Information. County biological information available to project applicants, consulting biologists and the public by appointment includes resource and wetland maps, historical aerial photographs, and a library of previous biological surveys and reports. More specific mitigation guidance is provided in a separate technical document augmenting these Guidelines.

b. Consultants. County staff is available through consultations and pre-application meetings to advise project applicants on project design measures to minimize biological impacts. Project sponsors may consult informally with California Department of Fish and Game and/or area consulting biologists at the preliminary review or initial study stage to determine what wildlife and vegetation resource information is available or needed and how the necessary information can be obtained.

F. Technical Background Document.

A separate technical document (Appendix A) contains the following additional information:

- A. Summary of Biological Resources Statutes

- B. Biological Survey Guidelines
- C. Detailed Biological Habitat Descriptions
- D. Biological Mitigations
- E. References

APPENDIX A

Santa Barbara County Planning and Development Department Biological Resources Guidelines Technical Background Document September 1994

Synopsis:

As an appendix to the Biological Resources Guidelines (September 1994) of the County Environmental Thresholds and Guidelines Manual, this document provides additional technical background information about biological resources, which may be useful when evaluating development proposals for impacts on vegetation, wildlife, and biological habitats.

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A. Summary of Biological Resource Statutes (September 1994)

The Biological Resources Guidelines provides a short summary of legal authority under the California Environmental Quality Act (CEQA) for evaluating biological resource impacts, and Federal, State and County requirements and polices for the protection of biological resources.

Following are additional excerpts describing the statutory basis for the protection of individual plant and animal species, and biological habitats.

1. The legal basis for protection of threatened, endangered and candidate species.

The following text is excerpted from a "Revised Memorandum of Law Demonstrating Continuing Compliance by the State of California with USC Section 1535(c) of the Federal Endangered Species Act of 1973", originally prepared in 1974 by Evelle Younger, Boronkay and Mok with revisions made by John K. Van de Kamp, Attorney General of California and others in 1990.

"The authority of the state to conserve resident species of fish, wildlife or plants determined by the state agency to be endangered or threatened is granted in the Federal Endangered Species Act (ESA) 16 USC section 1535(c)(1)(A) and (2) (A).

California Fish and Game Code Section 200 grants general authority to the Fish and Game Commission to regulate the taking or possession of birds, mammals, fish, amphibians and reptiles subject to more specific statutory restrictions...."

a. Regulations and statutory authority. "Important state authority for the conservation of endangered and threatened species of fish, wildlife and plants is found in California Endangered Species Act (CESA) enacted in 1984. California Fish and Game Code Section 2051 et seq. ... In addition for a complete picture the California Endangered Species Act (CESA) must be read with the Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.) which also governs the preservation, protection and enhancement of endangered or rare native plants...."

- b. California Endangered Species Act (California Fish and Game Code Sections 2051 et seq.)** "This important conservation legislation declares State policy regarding threatened and endangered species, provides for a listing and review process, prohibits certain acts damaging to listed species, and provides a consultation process whereby state projects are reviewed for impacts on listed species. Both the Commission and Department are given important powers and duties vis-à-vis protection of subject species.

The CASE declares the State's interest in threatened and endangered species (California Fish and Game Code Section 2051) and unequivocally sets out the State's policy in California Fish and Game Code Section 2052:

"The Legislature further finds and declares that it is the policy of the state to conserve, protect, restore, and enhance any endangered species or any threatened species and its habitat and that it is the intent of the Legislature, consistent with conserving the species, to acquire lands for habitat for these species."

Toward that end state agencies in approving projects are required to seek out feasible alternatives to avoid jeopardizing the continued existence of listed species or provide appropriate mitigation and enhancement measures. California Fish and Game Code Sections 2053 - 2054. The California thresholds for endangered and threatened status (California Fish and Game Code Sections 2062 and 2067) are equivalent to Federal definitions. See 16 USC Sections 1532(6) and 1532(20). Also the tools listed for "conserving" resources (California Fish and Game Code Section 2061) are identical to the federal model. 16 U.S.C. Section 1532(3)."

"...Species to be so conserved must first be listed. That responsibility rests with the Fish and Game Commission upon consideration of sufficient scientific information. California Fish and Game Code Section 2070. The listing process may be initiated by petition from any interested person (California Fish and Game Code Section 2071, 2072 and 2072.3) or on recommendation of the Department of Fish and Game (California Fish and Game Code Section 2072.7. Petitions are evaluated by the Department which makes a recommendation to the Commission as to whether the petition contains sufficient information to determine if action is warranted. California Fish and Game Code Section 2073.5. Petitions and Department-initiated recommendations are then acted upon by the Commission, which decides whether to require formal review of the request. California Fish and Game Code Section 2074.2. Formal review and the corresponding "candidate species" status triggers substantial opportunities for public participation through the notification of interested parties. See California Fish and Game Code Section 2074, 2074.2, 2075, 2077 and 2078. This notification and opportunity to participate continues throughout the designation process. Formal review itself may take up to one year and results in a Department report on listing including, if appropriate, a preliminary identification of the habitat that may be essential to the continued existence of the species and recommendation as to management activities and other recommendations for recovery of the species. California Fish and Game Code Section 2074.6."

"Currently California's list of threatened or endangered plants and animals is set out in 14 Section Code Choosy. Sections 670.2 and 670.5. This listing is subject to periodic Department review and appropriate Commission response. California Fish and Game Code Section 2077...."

"Once a species is listed "[N]o person shall import into this state, export out of this state,

or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission determines to be an endangered species or a threatened species, or attempt any of those acts," subject to some exceptions principally involving plants. California Fish and Game Code Section 2080....**This prohibition generally applies to candidate species undergoing formal review.** [emphasis added] California Fish and Game Code Section 2085..."

"In the event a project is being carried out by a local agency the Department [of Fish Section Game] may participate in the environmental review process as a responsible or trustee agency as appropriate. In that regard the status of threatened or endangered is recognized in the environmental review process (14 Section Code Choosy. 15380) and a project impact is normally considered significant, thus requiring the consideration of alternatives and mitigation, if a project will substantially affect a threatened or endangered species of animal or plant or the habitat of the species. 14 Section Code Choosy. Causa. 6, Chap. 3, Cheesy. G(c)."

"The Native Plant Protection Act [California Fish and Game Code Section 1900 et seq.] provides further authority to conserve plant species and conduct investigations in support of conservation in accordance with 16 U.S.C. sections 1535(c)(2)(A)(C).

- c. **Wildlife and Natural Areas Conservation Act (California Fish and Game Code Section 2700 et seq.).** This legislation became effective November 9, 1988 and provides money for habitat protection for California species including those designated as threatened or endangered. California Fish and Game Code Section 2701. The principal protection focus is acquisition...."

"California Fish and Game Code Section 1700 et seq., entitled "Conservation of Aquatic Resources," declares State policy to encourage conservation of the living resources of the ocean and other state waters, including species preservation.

Similarly California Fish and Game Code section 1750 et seq. (Native Species Conservation and Enhancement Act) declares a policy of maintaining sufficient populations of all species of wildlife and native plants and the habitat necessary to insure their continued existence at optimum levels and establishes an account to manage private donations toward that end....California Fish and Game Code Section 1800 et seq. provides that the policy of the State, inter alia, is "to encourage the conservation and maintenance of wildlife resources" including the maintenance of "sufficient populations of all species of wildlife and the habitat necessary to ...perpetuate all species of wildlife for their intrinsic and ecological values...." Lastly, California Fish and Game Code Sections 1930-1933 establishes the significant natural areas program to protect and preserve important habitats and ecosystems through developing information with respect to natural resources (the California Natural Diversity Data Base)...[and other mechanisms]."

- d. **Public Resources Code.** "California Public Resources Code Section 21000 et seq. was [enacted] in 1970 as the [California] Environmental Quality Act of 1970 (CEQA), to promote the declared legislative intent to maintain a quality environment including the protection of natural resources.

Section 21001(c) of the code provides that it is the policy of the State to "Prevent the elimination of fish or wildlife species due to man's activities, insure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future

generations representations of all plant and animal communities and examples of the major periods of California history."

The Act goes on to provide for an environmental impact report, similar to the provisions in the National Environmental Policy Act of 1969 and for the preparation of environmental impact reports by all local agencies, state agencies, boards, and commissions on any project which would have a significant effect on the environment."

- e. **California Coastal Act.** "California Public Resources Code Section 30000 et seq. was added by statute in 1976 as the California Coastal Act. The act sets out various policies protecting marine and land resources including species and habitat. To this end, the California Coastal Commission was established to regulate development with local government along the coast to insure that development will be consistent with conservation policies."
- f. **Authority and jurisdiction over wetlands.** The Federal Clean Water Pollution Control Act of 1972, ("Clean Water Act") requires a permit for the discharge of pollutants into the waters of the United States. The Clean Water Act defines pollutants to include dredge and fill materials (33 U.S.C. S 1362). Section 404 of the Clean Water Act authorizes the Army Corps of Engineers to issue permits to discharge dredge and fill materials into waters of the United States (33 U.S.C. S 1344(a). Federal Regulations define waters of the United States to include wetlands (33 CFR S 328.3(a)(7).

Due to the widely recognized high economic and biologic value of wetlands, the California Coastal Act mandates governmental regulation of these areas. The Act requires that the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes be maintained and, where feasible, restored. Sections of the Act provide general policies for development in and adjacent to wetlands, and specific policies for protecting these areas (California Coastal Commission, 1981).

Fish and Game Sections 1601 and 1603 prohibit any person or governmental agency, or public utility from substantially diverting or obstructing the natural flow or substantially change the bed, channel or bank of any river, stream or lake designated by the department, or use any material from the streambeds without obtaining the appropriate permit from the California Department of Fish and Game.

It is generally advisable to consult with representatives of these agencies prior to submittal of an application to the County, so that impacts to Wetlands and Deepwater Habitats are avoided or minimized to the greatest extent feasible.

- 2. **The legal basis for the protection of habitats.** California Fish and Game Code Section 1750 et seq. (Native Species Conservation and Enhancement Act) declares a policy of maintaining sufficient populations of all species of wildlife and native plants and the habitat necessary to ensure their continued existence at optimum levels.

California Fish and Game Code Section 1800 et seq. states that it is the policy of the state "to encourage the conservation and maintenance of wildlife resources" including the maintenance of "sufficient population of all species of wildlife and the habitat necessary to ... perpetuate all species of wildlife for their intrinsic and ecological values..."

Furthermore, CEQA (Public Resources Code section 21000(c) states that it is the policy of the state to: "...prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for

future generations representations of all plant and animal communities and examples of the major periods of California history."

CEQA Appendix G, items (c), (d), and (t) specifically mention or refer to habitat.

The California legislature has further recognized the need to conduct habitat-based land use planning through adoption of the *Natural Community Conservation Planning Act of 1991 (NCCP)* (California Fish and Game Code Section 2800 et. seq.). The purpose of this Act is to provide for regional protection and perpetuation of natural wildlife diversity while allowing compatible land use and appropriate development and growth. The NCCP process is designed to provide an alternative to current "single species" conservation efforts by formulating regional, natural community-based habitat protection programs to protect the numerous species inhabiting each of the targeted natural communities.

In 1986, the U.S. District Court for Hawaii (*Palila v. Hawaii Department of Land and Natural Resources and Sportsmen of Hawaii*, 649 F.Supp.1070 [1986] (*Palila II*)) issued a ruling regarding destruction of habitat of an endangered bird known as "Palila" in the State of Hawaii. Regarding the term "harm" within the definition of "take" of the Federal Endangered Species Act, the Court concluded:

"A finding of "harm" does not require death to individual members of the species; nor does it require a finding that habitat degradation is presently driving the species further toward extinction. Habitat destruction that prevents the recovery of the species by affecting essential behavioral patterns causes actual injury to the species and effects a taking under Section 9 of the Act."

"The key to the Secretary's [of the Interior] definition is harm to the species as a whole through habitat destruction or modification. If the habitat modification prevents the population from recovering, then this causes injury to the species and should be actionable under Section 9."

See also *Sierra Club v. Lyng*, 694 F.Supp.1260 (E.D. Tex. 1988) and *Sierra Club v. Yeutter*, 926 F.2d 429 (5th Cir.1991). Further discussion of habitat protection under the Endangered Species Act is provided by Sidle and Bowman (1988).

B. Biological Survey Guidelines.

1. Initial assessment of biological resources (Initial Studies, EIRs and Mitigated NDs).

During the overall land use permit process, an on-site inspection is conducted by the Planning and Development Department to determine if critical or sensitive biological resources may be impacted by a proposed project. Should the on-site investigation indicate the presence, or a high potential for the presence, of critical or sensitive biological resource, a biological survey may be required, pursuant to CEQA Section 15064 (Determining Significant Impacts). The biological survey could be completed as part of an EIR or it could be used to develop a Mitigated Negative Declaration as provided for by CEQA Section 15070:

- a. The Initial Study shall be used to provide a written determination of whether a Negative Declaration or an EIR shall be prepared for a project.
- b. Where a project is revised in response to an Initial Study so that potential adverse effects are mitigated to a point where no significant environmental effects would occur, a Negative Declaration shall be prepared instead of an EIR. If the project would still result in one or more significant effects on the environment after mitigation measures are added to the project, an EIR shall be prepared.

- c. The EIR shall emphasize study of the impacts determined to be significant and can omit further examination of those impacts found to be clearly insignificant in the Initial Study.

Biological survey reports are conducted and written by professional biologists under contract to the County. Payment for the study is accomplished by a deposit with the County from the applicant in an amount equal to the cost estimate of the consulting biologist. In some cases, work is performed by a Planning and Development Department-qualified biologist under contract to the applicant.

All biological surveys are subject to review and acceptance by Planning and Development Department staff and may require reexamination by an outside consulting biologist acceptable to the Planning and Development Department. If a disagreement among experts occurs, review by an independent biologist may be required.

In a majority of cases, applicants work with the staff of the Development Review Division to modify the project design for the purpose of reducing impacts to biological resources to an acceptable level. Project design modifications, with the applicant's consent, then become a part of the project description and the basis for issuing a Mitigated Negative Declaration. However, if design modifications are not acceptable to an applicant, then additional biological analysis (and possibly development of additional mitigation measures) would be required as a component of an EIR pursuant to the above citation from CEQA.

2. **Qualifications to perform the biological survey.** Biological consultants must be on the Planning and Development Department list of qualified biologists or on staff of a Planning and Development Department-qualified consulting firm or otherwise be acceptable to Planning and Development Department. A file is retained in the Planning and Development Department which tracks the performance of each consultant. Consultants should be selected on the basis of possessing objectivity and the following qualifications, in order of importance:
 - a. A BA/BS in biological sciences or other degree specializing in the natural sciences.
 - b. Professional or academic experience as a biological field investigator, with a background in field sampling design and field methods;
 - c. Taxonomic experience and a knowledge of plant or animal (whichever is appropriate) ecology;
 - d. Familiarity with plants, animals, or both (whichever is appropriate) of the area, including the species of concern; and
 - e. Familiarity with the appropriate county, state and federal policies related to special status species and biological surveys.
 - f. In addition, the County of Santa Barbara requires that a consultant, hired to perform a biological survey, presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed. Therefore, to avoid a real or perceived appearance of a conflict of interest, a biological survey submitted by a consultant shall be subject to verification of the Planning and Development Department staff biologists or a third outside consulting biologist.
3. **Guidelines for preparation of biological survey reports.** These guidelines were prepared by James R. Nelson, a botanist with the California Energy Commission, published in its original form by the California Department of Fish and Game (1984) and supplemented by Planning and Development Department staff in consultation with local biologists.

- a. When to conduct a biological survey.** It is appropriate to conduct a biological field survey to determine if, or the extent to which, sensitive plants or animals or a habitat of concern will be affected by a proposed project when:
- (1) Based upon an initial biological assessment, it appears that the project may damage potential special status plant or animal habitats;
 - (2) Special status species have historically been identified on the project site and adequate information for impact assessment is lacking; or
 - (3) No initial biological assessment by the Planning and Development Department biologist has been conducted and it is not known which habitats or the quality of habitats exist on the site, nor what the potential impacts of the project may be.
- b. Guidelines and goals of the biological survey.** Biological surveys that are conducted to determine the environmental impacts of development activities should include particular attention to all rare, threatened, and endangered species and habitats. The species and habitats are not necessarily limited to those that have been "listed" by state and federal agencies, but include any species that, based upon all available data, can be shown to be rare, threatened and/or endangered. These can include "federal candidate" species, "state special concern" species, and those of local concern such as those species which are endemic, rare in the region, or declining in number.

Field searches should be conducted in such a manner that they will locate any listed or special status plant or animal species that may be present/a resident or that may utilize the site on a seasonal rather than year-round basis. Specifically:

- (1) Investigations should be conducted at the proper season and time of day when special status species are both evident and identifiable. Field surveys should be scheduled to coincide with known flowering periods, and/or during periods of phenological development that are necessary to identify plants of concern, and during periods critical to the species such as nesting for birds or larval development for amphibians.
- (2) Investigations should be both predictive in nature and based upon field inspection. Surveys should predict the presence of rare plants and animals (which may not be present every year or which may use it infrequently) based upon the occurrence of habitats or other physical features, in addition to actual field observation. The survey should not be limited to a description of those species that are actually observed in the field. Every species noted in the field should be identified to the extent necessary to ensure that it is neither a listed nor special status species.
- (3) Investigations should be conducted in such a manner that they are consistent with conservation ethics. Collections of voucher specimens or rare (or suspected rare) plants or animals should be made only when such actions do not jeopardize the continued existence of the population and in accordance with applicable state and federal regulations. All voucher specimens should be deposited at local public herbaria or recognized museums of natural history for proper storage and future reference. Photography should be used to document plant identifications and habitat whenever possible, especially when rare plant populations cannot withstand collection of vouchers.
- (4) Investigations should be conducted using systematic field techniques in all habitats of the site to ensure a reasonably thorough coverage of potential impact areas.

- (5) Investigations should be well-documented. When rare or endangered plants or animals or unusual plant communities are located, a California Native Plant Field Survey Form or its equivalent must be completed and sent to the Natural Diversity Data Base and a copy attached to the report sent to the Planning and Development Department.
- c. **Contents of the biological survey.** Reports of biological field surveys and reports must contain the following information with the exception of items 10 through 12 which are recommended for inclusion but may not be necessary in all cases.
- (1) A detailed map of the project regional location and specific study area;
 - (2) A written description of the biological setting, referencing the plant community and a detailed map of the vegetation and/or animal habitat areas.
 - (3) A detailed description of the survey methodology;
 - (4) The dates and times of field visits;
 - (5) An assessment of all potential direct and indirect impacts;
 - (6) A discussion of the status, distribution, and habitat affinities of all special status plants or animals found at the project site;
 - (7) A discussion of the quality of the habitat considering: its ability to support species diversity, its ability to be self-sustaining (in the context of the surrounding area, not just the project boundaries), how common or rare it is (see Table 3 for example), how good a representative it is (plant community), the degree of previous disturbance, and other history of the site, etc.
 - (8) Recommended mitigation measures to reduce impacts to the maximum extent feasible and to protect the resource(s) by considering a range of possibilities, including: avoidance, fencing, open space easements, clustering and off-site mitigation;
 - (9) Suggestions for monitoring and evaluating the effectiveness of the mitigation measures;
 - (10) Solutions which, when feasible, work toward regional protection of the resources, including: combining open space easements with adjacent ownerships, maintenance of open space corridors; attempting to preserve as much contiguous habitat as possible;
 - (11) Recommended methods for the restoration of damaged habitats, where appropriate and feasible, and suggested success criteria to be achieved at the end of the proposed monitoring period;
 - (12) A list of all listed or special status plant or animal species observed or expected to occur on site. A list of additional species observed or expected should also be included. This may be representative of the communities present rather than exhaustive. Division by taxonomic group is not necessary.
 - (13) Copies of all Natural Diversity Data Base Field Survey Forms sent to Sacramento and Natural Community Field Survey Forms, for sensitive species or communities found on the project site;
 - (14) The name(s) of the field investigator(s); and

- (15) A list of references cited, persons contacted, herbaria and museums visited, and the location of voucher specimens.

C. Biological habitat descriptions and project design suggestions.

The following provides brief descriptions of some, though not all, of the habitats occurring in Santa Barbara County, an explanation of the habitat's importance, and project design suggestions for minimizing impacts to habitats, as well as individual plant and animal species. These habitats are by no means the only priority habitats in the County, rather, they represent the habitats where conflicts with land use developments most often occur.

1. **Wetlands.** All naturally occurring wetlands are considered significant resources because they provide a high number of functional values in a generally dry, arid region, and because of their extremely rare occurrence within the region. Examples include, but may not be limited to coastal salt and brackish marshes, fresh water marshes and vernal pools.

Wetlands, due to the presence of water, support the most diverse assemblages of plants and animals found in the southwestern United States. Because of the high biological productivity in wetlands and the historic elimination of 90 percent of California's wetlands, the highest numbers of threatened and endangered species most often occur here. Wetlands are utilized by a large number of organisms including invertebrate larvae, large mammals and plants that may only survive in wetland areas. Wetlands provide food, cover for protection against predators, and habitat for breeding of some species. Because Santa Barbara County is located along the Pacific Flyway, the County not only has a diverse resident bird population, but also those migrating birds that over-winter in Santa Barbara County (migrants). Wetlands provide seasonal and year-round habitat to several migrating bird species along the Pacific Flyway and fish utilize some of these areas as spawning and foraging habitat.

Wetlands also provide a number of public benefits¹ including: 1) protection of the shore from erosion (typically applicable to marshes, sloughs, and other estuaries), 2) Water Quality/Hydrology which support groundwater recharge, surface water availability, and water purification/filtration, 3) food chain support, 4) nutrient cycling, and 5) Socio-Economic benefits which include aesthetics, ethno-botany, recreation, research, education, economic benefit, etc.

a Coastal Salt Marsh

- (1) **Description.** Coastal salt marshes are restricted to the upper intertidal zone of protected shallow bays, estuaries, and coastal lagoons. Physical conditions are dominated by the tides and variances in elevation which influence the frequency and duration of tidal flooding. The harsh, tidal environment of a salt marsh results in zones of different indicator plants. The environment includes tidal inundations of salt or brackish water, water-saturated soils containing few air spaces and hence reduced oxygen levels, and an environment fully exposed to sun, wide temperature fluctuations, wind, etc. The lowest zone is inundated twice daily; whereas the middle or upper zones may be inundated only once or twice a month, or even by only the highest spring tides (Faber, 1982).

Because tides are so important in providing moisture for coastal marshes, any interruption in tidal circulation can have drastic effects on these communities. The total area of marsh habitat may be correlated with the tidal prism (the total volume

¹ Bowland and Ferren (1992), and Sather and Smith (1984)

of water moving in and out of the slough\marsh\lagoon, etc). As tidal prisms are reduced through sedimentation due to urban and agricultural development or for road construction, the likelihood of closure at the mouth increases. This event can change the soil and water salinity and water levels. This in turn affects many salt-tolerant plants adapted to this type of environment and convert salt-marsh habitat to upland habitats available to species such as the Belding's Savannah sparrow. Additionally, wildlife species such as the tidewater goby, depend on brackish waters to survive.

In addition to sedimentation, increases of fresh water inputs into the system due to urban and agricultural runoff may reduce salinity levels, while upstream dams may have the opposite effect. This runoff may also introduce toxic elements into the marsh such as fertilizers, septic effluent, pesticides, oil, grease, etc. Other potential impacts include changes in depth of enclosed water, elevated temperatures and decreased oxygen from algal blooms often associated with high nitrogen levels from polluting sources. These changes can alter the number and diversity of wildlife species. (Zedler, J. 1982). Development adjacent to the area could also disrupt wildlife behavioral patterns due to noise, neighboring domestic dogs and cats and other physical disturbances.

(2) Project design suggestions

- (a) Maintain tidal prism.
- (b) Minimize adverse hydrologic changes, sedimentation, and introduction of any toxic elements.
- (c) Timing of construction activity should be carefully planned to minimize indirect impacts such as noise and turbidity on sensitive animal species during critical periods such as breeding and nesting.
- (d) Maintain wildlife dispersal corridors.
- (e) Enhancement and restoration of salt marshes that can be incorporated into the project include: removal of existing fill, improving tidal circulation through grading, channel excavation, or removing other impediments to circulation, and cleanup.

b. Vernal Pools and associated features

- (1) **Description.** Vernal pools are perhaps the most unique, rare, and endangered type of wetlands in California according to a number of studies cited in the Ferren and Pritchett 1988 report (p. 3). In fact, these wetlands are found only in a few places in the world outside California, namely southern Oregon and in the Cape Province of South Africa (Faber, P. 1982).

A vernal pool is a small depression that fills with water during the winter (gradually drying during the spring and becoming completely dry in the summer) and supports a unique assemblage of plants.

V.L. Holland and David Keil (1990) add: "Vernal pool vegetation is characterized by herbaceous plants that begin their growth as aquatic or semi aquatic plants and make a transition to a dry-land environment as the pool dries. This generally results in the development of concentric rings of vegetation that develop around the margins of the drying pool. Most vernal pool plants are annual herbs. The

relatively few perennial species grow from deeply seated rhizomes or rootstocks. Shrubs and trees are absent from vernal pool communities. Some species from vernal pool communities have very showy flowers and act as aspect dominants."

"Vernal Flat" is used to describe areas that are not easily definable as discrete basins (vernal pools) and whose wetland/upland affiliations fluctuate corresponding to changing precipitation trends from year to year. Following several years of average to above-average rainfall, these tend to support vernal pool species and exclude upland species. Following several years of low rainfall, these areas tend to be characterized by upland species (Olson, 1992).

"Swales" are low moist areas, that when associated with vernal pools, may support vernal pool species including invertebrates (for example: U.S. Fish Section Wildlife Service, 1992). They may also be important because they transport rain water to a vernal pool or complex of pools.

Wildlife species, such as the Western Spadefoot Toad and California Tiger Salamander utilize these seasonal wetlands for breeding and egg-laying during the first rains of the year (December through April). The Tiger Salamander can spend several months in the larval stage, metamorphosing to adult salamanders as late as May through August when the pools dry up and then dispersing to rodent burrows in adjacent grassland areas. Spadefoot toads breed later in the year than tiger salamanders (March through April) and are dependent upon grass pollen and other vegetation for food and to conserve moisture during the tadpole stage. This species also metamorphoses to adults and disperses to surrounding rodent burrows in adjacent grasslands. Furthermore, other amphibians utilize these seasonal ponds as habitat.

Direct and indirect impacts to the pool itself may result in adverse changes to either the physical or chemical properties of the pool. Impacts to the watershed or community in which it functions may also impact the pool. For example, fragmentation of habitat may interrupt interaction between the habitat and the organisms within the pools (pollination, seed, invertebrate and vertebrate dispersal, provision of drinking and bathing water, etc.).

(2) Project design suggestions.

- (a) Because vernal pools do not exist by themselves as isolated units, and instead function within a larger plant community such as a grassland, the surrounding upland habitat should be preserved to the maximum degree feasible. If the vernal pools occur in a dispersed pattern throughout an upland community, the entire community should be preserved as one unit.
- (b) Design developments to provide a buffer around all vernal pools (with the possible exception of artificially created pools), or include enough of a buffer to protect the topographic watershed, whichever is greater. Typical buffer area: 100-250 feet from edge of pool.
- (c) Vernal Pool "complexes" (groupings of several pools have swales according to hydrology and topography) should be avoided and buffered (minimum of 100 feet) or enough of a buffer to protect the topographic watershed of the entire complex, whichever is greater.
- (d) Restoration and enhancement can include removal of exotic (non-native)

species, planting of appropriate native species (seeding), removal of fill, relocation of foot and bike paths around rather than through the pools, etc.

- (e) Disturbance to vernal pools or vernal pool complexes should be timed to avoid breeding seasons of sensitive wildlife species.

c. Riparian Habitats

- (1) **Description.** Riparian habitat is generally considered as the terrestrial or upland area adjacent to freshwater bodies, such as the banks of linear watercourses (e.g.: creeks and streams), the shores of lakes and ponds, and aquifers which emerge at the surface such as springs and seeps (Bowland and Ferren 1992). The habitat is typically thought of as a corridor from stream bank to bank (from edge of riparian vegetation to edge of riparian vegetation) which may include a wetland portion in the center.²

Riparian habitat occurs in and along the County's four major rivers (Santa Ynez, Santa Maria, Cuyama and Sisquoc) and in and along the County's many creeks and streams. This habitat can also occur along arroyos and barrancas, and other types of drainages throughout the County.

Riparian habitat is particularly rich in wildlife species, in that water is present at least during some part of the year in these corridors and the dense plants of varying heights provide a diverse food source and safety from predators. In particular, riparian habitat provides forage, cover, water, migration and fawning for Santa Barbara County's resident deer herd. Various types of cover are required by deer including protective cover, for fawning, feeding and resting, escape cover from predators, and thermal cover to provide temperature regulation in the winter and summer. Riparian habitats typically provide all these habitat requirements. Deer also require a variety of food types in their diet, depending upon the time of year and will utilize oak woodlands, chaparral and grasslands adjacent to riparian corridors in order to obtain a sufficient diet. The shade of bank side vegetation can keep a stream cold enough for migratory sport fish such as steelhead trout.

Less obvious species that utilize the riparian corridors are the amphibians that require plunge pools in which to reproduce, seek protection from predation and maintain a constant body temperature. Pool and riffle sequences within streams and creeks are necessary for successful spawning for many species of fish. Specialized bird species such as Cooper's hawks and a great variety of songbirds utilize riparian habitat for breeding, nesting and foraging due to the diversity of structural heights and continuity of vegetation along the drainages.

- (2) **Project design suggestions.**

- (a) Incorporate into project design a vegetated buffer from the upland edge of the riparian canopy at least 50 feet in width.
- (b) Inclusion of adjacent upland vegetation in the buffer. Upland vegetation is important as habitat for a large number of species, particularly amphibians,³

² The Cowardin classification system does not use the term "riparian". Cowardin categories for riparian systems are palustrine and riverine.

³ Some species such as the western pond turtle may utilize upland habitat as much as 1/4 mile away from the riparian wetland (Sweet 1992).

and also aids in stabilizing the banks, which reduces erosion and sedimentation potential.

- (c) Retain animal dispersal corridors, including the understory.
- (d) Construction activity can be planned to avoid critical time periods (nesting, breeding) for fish and other wildlife species.
- (e) Careful siting of some projects such as bridges and pipelines can limit the disturbance area to previously disturbed locations.
- (f) Restoration or enhancement of riparian habitat on a project site can enhance the ecological value of the creek, stream, or river, both upstream and downstream.

2. **Chaparral.** Chaparral is composed mainly of woody, evergreen shrubs. It forms extensive shrub lands that occupy most of the hills and lower mountain slopes of Santa Barbara County and throughout California. It is adapted to drought and fire, passing through cycles of burning and re-growth approximately every 30 years. Even though chaparral has no commercial value, it provides the most highly valued watershed cover of any vegetation community in the state (Hanes, 1977). Chaparral occurs throughout Santa Barbara County and is further broken down into a number of categories.

a. **Burton Mesa Chaparral.**

- (1) **Description.** Central Maritime Chaparral, also known as Sandhill or Burton Mesa Chaparral is a unique form of chaparral that is restricted to the aeolian sands of the Orcutt soils formation north of Lompoc. Many of the species unique to Burton Mesa Chaparral are narrowly restricted in distribution (Odion, Storrer and Semonsen 1993, Ferren et. al 1984, Smith 1976, Dames and Moore 1985). Because of the high number of endemic species (many of which are dominants in the community), the unusual oaks, and a rich herbaceous understory, Burton Mesa Chaparral has been recognized as a valuable biological resource by local biologists and the County of Santa Barbara. Various land uses have reduced its original limited extent which has been estimated as follows:

Original Central Chaparral Habitat	22,153 acres
1938 Central Maritime Chaparral	14,563 acres
1987 Central Maritime Chaparral	8,618 acres

In 1988 it was reported that of the 39 percent of original habitat that remains, two-thirds is found within Vandenberg Air Force base, where it is severely threatened by military development and land management practices that have resulted in the invasion of vigorous exotic (non-native) species particularly ice plant. These trends are continuing at a rapid rate (Odion, Hickson and D'Antonio 1992, Philbrick and Odion 1988).

Since the time the 1988 report was written a 5,125 acre property was acquired by the State of California. This land contains roughly 3,250 acres of semi-pristine to pristine, and roughly 150 acres of degraded Central Maritime Chaparral, in addition to substantial acreages of other important plant communities (Odion, Storrer and Semonsen 1993). Mitigation efforts are now being focused on acquisition of adjacent lands and funding of habitat restoration and management within the preserve.

b. Coastal Sage Scrub.

- (1) **Description.** Coastal sage scrub is a drought-tolerant, Mediterranean habitat characterized by soft-leaved, shallow-rooted sub-shrubs such as California sagebrush, (*Artemisia californica*), several sage species (*Salvia spp.*), California buckwheat (*Eriogonum spp.*), and California encelia (*Encelia californica*) (Bowler, 1990). Commonly called "soft chaparral", Coastal sage scrub is highly fire adapted, and increases in species richness following fires, but a second wave in the number of species (mostly understory species that are not fire successional) occurs 15-25 years after burning (Westman 1987).

Coastal sage scrub and the related coastal succulent scrubs in northern Baja California originally extended from San Francisco to El Rosario in Baja California and has been divided into four floristic associations, two of which occur in Santa Barbara County: Diablan (San Francisco to Point Conception) and Venturan (Point Conception to Los Angeles). Coastal sage scrub is limited to the lower elevations of both the coastal and interior regions of the mountains where moist maritime air penetrates inland.

More than a decade ago it was estimated that 85 to 90 percent of the original coastal sage scrub habitat (Westman, 1981) had been eliminated as a result of urban development and agriculture (O'Leary, 1989). Other factors contributing to loss of this habitat have been reported to be increased air pollution and changes in fire frequency due to fire suppression activities. Coastal sage scrub is being reduced in its overall extent and fragmented by road and urban development particularly in Orange and San Diego Counties.

(2) **Project design suggestions.**

- (a) The basic principles of preserving biodiversity apply to this habitat type. Design the project so that continuous, unbroken habitat areas are preserved to the greatest extent feasible.
- (b) Retain corridors to connect with other undisturbed areas to preserve wildlife travel corridor.
- (c) Removal of invasive exotic species such as freeway ice plant (Zedler and Scheid 1988) and pampas grass improves the quality of the remaining habitat.
- (d) Consider indirect effects of chaparral removal, including reduction of groundwater recharge, increased erosion and sedimentation to adjacent creeks and streams which may affect riparian habitats and wildlife.
- (e) Balance between design measures for habitat protection and for fire management.

c. Native grasslands.

- (1) **Description.** Native grasslands which are dominated by perennial bunch grasses such as purple needlegrass (*Stipa pulchra*) tend to be patchy (the individual plants and groups of plants tend to be distributed in patches). Valley Grassland in California once occurred over 8 million acres in the Central Valley and in scattered patches along the Coast Ranges (Heady, 1977). Few stands of native grasslands remain in the state and the habitat is considered rare both in the state and within the

county. Even among the "pristine" grasslands in the state, the vegetative cover of native grassland species is reportedly rarely greater than 50 percent, and in many of these reserves it is commonly found between 15 and 25 percent of the total vegetative cover (Keeler-Wolf, 1992). A study commissioned by the County in 1989 reported that native grassland areas are exceedingly rare in the County, except on the Channel Islands and inside Gaviota State Park (Odion, 1989).

(2) Project design suggestions.

- (a) Design the project so that continuous habitat areas are preserved to the greatest extent feasible.
- (b) Incorporation of restoration and enhancement measures, including weeding, intentional burning, revegetation (planting of seeds or plugs), or other procedures will facilitate natural regeneration of the grassland.

d. Woodlands and Forests.

- (1) Description.** Generally speaking, there are three types of oak woodlands in Santa Barbara County. Valley Oak Woodland is typically characterized by scattered trees surrounded by grassland, whereas trees in live oak and blue oak woodlands tend to be more closely spaced. Coast Live Oak (*Quercus agrifolia*) forms dense groves of trees on north-facing slopes and is the primary oak species found in southern oak woodlands. Deep alluvial soils in interior valleys support grasslands and Valley Oak Woodland (*Quercus lobata* and *Quercus agrifolia*). The foothills of the inner coast ranges are inhabited by Blue Oak (*Quercus douglasii*), Coast Live Oak (*Quercus agrifolia*), Digger Pine (*Pinus sabiniana*), and other components of blue oak woodland. The number, type, and density of oak trees, are principal characteristics which define the various types of woodlands; further, the relationship between trees and vegetation in the understory below in woodlands also define variety in woodland habitats. In addition to oak forests, a variety of pine and other coniferous forests also occur in the county. Oak communities are emphasized in the following discussion because they so frequently occur in the same areas in which developments are proposed.

Oak habitats offer diverse resources to wildlife: shade in summer, shelter in winter, perching, roosting, nesting, and food storage sites. Acorns are the most plentiful food source, but oak catkins, twigs, leaves, buds, sap, galls, fungi, lichens, and roots all provide important foods. Other species associated with the oak woodland include redberry, coffeeberry, toyon, mistletoe, poison oak, forbs and grasses which are also important foods for wildlife. Insects feeding in oak habitats are eaten by birds, reptiles, amphibians, mammals and other insects which in turn feed larger predators such as owls, hawks, snakes, bobcats, coyotes, mountain lions and bears. Some oak trees are "granary trees" in which acorn woodpeckers store acorns. Scrub jays and magpies inadvertently "plant" acorns when they store them in the ground. Dead trees, or snags, provide perching, feeding and nesting sites for raptors as well as thermal cover for smaller mammals, reptiles and amphibians. Oaks provide wildlife habitat from the seedling through the snag (dead tree) stages of succession in the woodland. This habitat type supports a diverse wildlife population, and disruption of the woodland often indirectly results in disrupting wildlife breeding, nesting, foraging, and dispersal.

(2) **Project design suggestions for Woodlands and Forests.**

- (a) Retain contiguous blocks of habitat area particularly where adjacent to offsite habitat areas.
- (b) Retain animal migration corridors to other habitat areas.
- (c) Retain understory.

(3) **Project design suggestions for individual native trees.**

- (a) **Avoidance.** The preferred method of protecting native trees is to avoid any disturbance within the area 6 feet away from their driplines (the outermost edge of a tree's foliage) and drainage patterns above and below the tree. Although the stabilizing structural roots generally occur within the dripline, numerous and highly significant "feeder roots" which facilitate gas and water exchange and uptake of nutrients occur outside the dripline.

For management purposes, it is useful to think of a tree's root zone as being one third larger than the drip line area (University of California Cooperative Extension, no date). As a general rule, avoid grading and impervious surfaces within 6 feet of the dripline of all significant trees where ever feasible. This may be adjusted upwards or downwards depending on the size of the tree. It is advisable to include a margin of safety to account for unintentional errors during the construction phase of the project. The most vulnerable parts of a mature tree are the root crown (at the base of the trunk) and the entire root zone.

- (b) **Broad scale irrigation.** Avoid irrigation with rainbirds beneath previously un-irrigated oaks because it is likely to create conditions favorable to oak root fungus. It is advised that irrigation water, if necessary, be infrequent (i.e., once a week), be done by hand or drip method (Semonsen 1992, Doud 1992), and be no closer than 6 to 10 feet (depending on the size) from the trunk of the tree.
- (c) **Hard surfaces.** Any hard surfaces under oaks would better consist of paving blocks or other material which will allow air and rain water to reach the roots.
- (d) **Ground disturbance.** As a general guideline, disturb no more than 20 percent of the total area beneath the dripline of any one tree.

(4) **Project design guidelines for non-native trees**

- (a) Monarch butterfly wintering sites can be preserved by keeping the grove of trees in a state so that shelter from wind and temperature extremes are retained. This may include other trees outside the main grove that affect wind exposure.
- (b) Where possible, preserve other non-native trees that have value to important wildlife species.

D. Biological Mitigation Measures.

Please refer to the conditions of approval or mitigation measures in the biology section of the Santa Barbara County *A Planners Guide to Conditions of Approval and Mitigation Measures* which contains a listing of model measures containing standard language used when such measures are applied as

conditions of permit approval. Please note that these measures are not applicable to all cases and projects. In addition, the wording of measures may be customized as appropriate to address specific project circumstances.

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REGULATORY TEXT

SANTA BARBARA COUNTY PLANNER'S GUIDE TO CONDITIONS OF APPROVAL AND MITIGATION MEASURES



COUNTY OF SANTA BARBARA

Planning and Development

**A Planner's Guide to
Conditions of Approval
And
Mitigation Measures**

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BIOLOGYBIOLOGY-TREES

The following conditions are for the replacement of trees removed and/or to ensure existing trees are not damaged during construction. Prior to selecting applicable conditions, the project must be carefully reviewed to ensure that everything that might damage trees (e.g., drainage, access road(s), utilities, accessory structure(s), construction vehicle width and height, etc) is taken into consideration. Conditions Bio-03, -04, and -05 apply to all native trees and shrubs.

Bio-01 *[Planner: Use this condition instead of “Tree Protection Plan” when no trees are proposed for removal, very limited tree protection is needed and measures are straightforward, e.g., a residential project with a few trees or tree areas that need to be fenced, but construction will not directly impact the health of the tree.]*

Bio-01 Tree Protection Without a Tree Protection Plan. All grading, trenching, ground disturbance, construction activities and structural development shall occur beyond six feet of the dripline of all [NATIVE / OAK / SPECIMEN / VALLEY OAK] trees.

- a. Prior to the [APPROVAL / ISSUANCE] of a [LAND USE PERMIT / COASTAL DEVELOPMENT PERMIT / ZONING CLEARANCE] for grading or construction, all [NATIVE / OAK / SPECIMEN / VALLEY OAK] trees shall be fenced at least six feet beyond the dripline as shown on the approved exhibit dated [XXX]. Fencing shall be at least three feet in height of chain link or other material acceptable to P&D and shall be staked every six feet. The Owner/Applicant shall place signs stating “tree protection area” at 15 foot intervals on the fence. Fencing and signs shall remain in place throughout all grading and construction activities.
- b. No tree removal or damage is authorized by this permit. However, any unanticipated damage to trees or sensitive habitats from construction activities shall be mitigated in a manner approved by P&D. This mitigation shall include but is not limited to posting of a performance security, tree replacement on a 10:1 (15:1 for Valley or Blue Oaks) ratio and hiring of an outside consulting biologist or arborist to assess damage and recommend mitigation. The required mitigation shall be done under the direction of P&D prior to any further work occurring onsite. Any performance securities required for installation and maintenance of replacement trees will be released by P&D after its inspection and confirmation of such installation and maintenance.
- c. To help ensure the long term survival of [NATIVE / OAK / VALLEY OAK] trees, no permanent irrigation systems are permitted within six feet of the dripline of [NATIVE / OAK / VALLEY OAK] trees. Any landscaping must be of compatible species requiring minimal irrigation. Drainage plans shall be designed so that tree trunk areas are properly drained to avoid ponding.

PLAN REQUIREMENTS: Fencing shall be graphically depicted on project plans.

TIMING: This condition shall be printed on project plans submitted for [LAND USE PERMIT / COASTAL DEVELOPMENT PERMIT / ZONING CLEARANCE] approval [and shall be recorded with the final map], and installed prior to Grading or Building Permit issuance.

[INCLUDE IF SUBJECT TO PERMIT COMPLIANCE] **MONITORING:** P&D compliance monitoring staff shall review plans and confirm fence installation. Compliance staff shall conduct site inspections to ensure compliance during grading and construction.

Bio-01a

[Planner: Tree Protection Condition broken into two components(1a and 1b); both with same plan requirements, timing and monitoring. See Bio-02 for Tree Restoration. Planner: Choose those components applicable to your project, carefully considering whether each is feasible. Examine plans closely. Be certain access, utilities, water supply and sanitation lines will not go through trees. If they will, so state and specify resulting requirements. If you choose 2a unaltered, then 2b and 2c do not apply. If you require only pervious material for driveways or roads, be certain fire dept approves. Use only 3 “d” or “e” or unless both are clearly needed, in which case, describe! For example, if trimming is expected & allowed, but trenching is not.]

Bio-01a Tree Protection Plan-Site Plan Component. The Owner/Applicant shall submit a Tree Protection Plan (TPP) prepared by a P&D-approved arborist and/or biologist and designed to [ADD PURPOSE LANGUAGE]. The plan shall include the following site plan components *[PLANNER: SELECT, ADD AND DELETE AS APPROPRIATE]*:

1. The Owner/Applicant shall comply with and depict the following on the TPP exhibit and Grading and Building Plans.
 - a. All [OR STATE EXCEPTIONS] trees shall be preserved. No grading for buildings, accessways, easements, subsurface grading sewage disposal and well placement shall take place within the area within six feet of the dripline of any of these trees.
 - b. [XX] trees [DESCRIBE LOCATION(S)] will be removed per approved plans. Depict location of these trees.
 - c. [XX] trees [DESCRIBE LOCATION(S)] will be removed per approved plans. Depict location of these trees.
 - d. [XX] trees [DESCRIBE LOCATION(S)] shall be boxed and replanted. Depict original and new location for these trees.
 - e. Depict approved [DEVELOPMENT / BUILDING] envelopes. Include utility corridors, irrigation lines, roadways, driveways. *[PLANNER: If utilities may go through trees, require a utility corridor designed to minimize impacts – if you are not certain, you must alter language.]*
 - f. Depict equipment storage (including construction materials, equipment, fill soil or rocks) and construction staging and parking areas outside of the protection area.

- g. Depict the type & location of protective fencing (see below) or other barriers to be in place to protect trees in protection areas during construction.
- h. Depict the location of all tree wells or retaining walls. These shall be located outside the area within six feet of the dripline of all protected trees unless authorized by P&D.
- i. Depict the location of all paths [DRIVEWAYS, SIDEWALKS] within 25 feet of dripline areas. Only pervious paving materials (gravel, brick without mortar, turf block) are permitted within 6 feet of dripline areas.

PLAN REQUIREMENTS: The Owner/Applicant shall: (1) Submit the TPP; (2) Include all applicable components in Tree Replacement Plan and/or Landscape and Irrigation Plans if these are required; (3) include as notes or depictions all plan components listed above, graphically depicting all those related to earth movement, construction, and temporarily and/or permanently installed protection measures.

TIMING: The Owner/Applicant shall comply with this measure prior to [APPROVAL / ISSUANCE] of [LAND USE PERMIT / COASTAL DEVELOPMENT PERMIT / ZONING CLEARANCE]. Plan components shall be included on all plans prior to the issuance of [GRADING / BUILDING] permits. The Owner/Applicant shall install tree protection measures onsite prior to issuance of [GRADING / BUILDING] permits and pre-construction meeting.

MONITORING: The Owner/Applicant shall demonstrate to P&D compliance monitoring staff that trees identified for protection were not damaged or removed or if damage, or removal occurred, that correction is completed as required by the TPP prior to Final Building Inspection Clearance.

Bio-01b

Bio-01b Tree Protection Plan – Construction Component. The Owner / Applicant shall submit a Tree Protection Plan (TPP) prepared by a P&D-approved arborist and/or biologist and designed to [ADD PURPOSE LANGUAGE]. The Owner Applicant shall comply with and specify the following as notes on the TPP and Grading and Building Plans [PLANNER: SELECT, ADD, AND DELETE AS APPROPRIATE]:

- 1. Fencing of all trees to be protected at least six feet outside the dripline with chain-link (or other material satisfactory to P&D) fencing at least 3 ft high, staked to prevent any collapse, and with signs identifying the protection area placed in 15-ft intervals on the fencing.
- 2. Fencing/staking/signage shall be maintained throughout all grading and construction activities.
- 3. All trees located within 25 ft of buildings shall be protected from stucco and/or paint during construction.
- 4. No irrigation is permitted within 6 ft of the dripline of any protected tree unless specifically authorized.
- 5. The following shall be completed only by hand and under the direction of a P&D approved arborist/biologist:
 - a. Any trenching required within the dripline or sensitive root zone of any specimen.

- b. Cleanly cutting any roots of one inch in diameter or greater, encountered during grading or construction.
 - c. Tree removal and trimming.
6. Special equipment: If the use of hand tools is deemed infeasible by P&D, P&D may authorize work with rubber-tired construction equipment weighing five tons or less. If significant large rocks are present, or if spoil placement will impact surrounding trees, then a small tracked excavator (i.e., 215 or smaller track hoe) may be used as determined by P&D staff and under the direction of a P&D approved biologist.
7. The following are not permitted:
- a. Any trenching within the dripline or sensitive root zone of any specimen.
 - b. Cutting any roots of one inch in diameter or greater.
 - c. Tree removal and trimming.
8. Grading shall be designed to avoid ponding and ensure proper drainage within driplines of oak trees.

PLAN REQUIREMENTS: The Owner/Applicant shall: (1) submit the TPP; (2) Include all applicable components in Tree Replacement Plan and/or Landscape and Irrigation Plans if these are required; (3) include as notes or depictions all plan components listed above, graphically depicting all those related to earth movement, construction, and temporarily and/or permanently installed protection measures.

TIMING: The Owner/Applicant shall comply with this measure prior to [APPROVAL / ISSUANCE] of [LUP / CDP / ZCI]. Plan components shall be included on all plans prior to the issuance of [GRADING / BUILDING] permits. The Owner/Applicant shall install tree protection measures onsite prior to issuance of grading/building permits and pre-construction meeting.

MONITORING: The Owner/Applicant shall demonstrate to P&D compliance monitoring staff that trees identified for protection were not damaged or removed or, if damage or removal occurred, that correction is completed as required by the TPP prior to Final Building Inspection Clearance.

Bio-01c Tree Protection Plan-Unexpected Damage and Mitigation. In the event of unexpected damage or removal, this mitigation shall include but is not limited to posting of a performance security and hiring an outside consulting biologist or arborist to assess damage and recommend mitigation. The required mitigation shall be done under the direction of P&D prior to any further work occurring on site. Any performance securities required for installation and maintenance of replacement trees will be released by P&D after its inspection and approval of such installation and maintenance.

Damaged trees shall be mitigated on a minimum 10:1 ratio [PLANNER: 10:1 RATIO IS FOR OAK TREES, BUT OTHER TREES CAN BY 1:1. ALSO, DEPENDING ON URBAN OR RURAL SETTING, THE REPLACEMENT TREE PROGRAM MIGHT BE CASE SPECIFIC. VERIFY WITH YOUR SUPERVISING PLANNER]. If it becomes necessary to remove a tree not planned for removal, if feasible, the tree shall be boxed and replanted. If a P&D approved arborist certifies that it is not feasible to replant the tree, it shall be replaced on a 10:1 basis (15:1 for Blue or Valley Oaks) with trees with 10-gallon or larger size saplings grown from locally obtained seed. If replacement trees cannot all be accommodated on site, a plan must be approved by P&D for replacement trees to be planted off site [PLANNER: VERIFY WITH YOUR SUPERVISING PLANNER].

[See Bio-01 or Bio-01a for Tree Protection.]

Bio-02 Tree Replacement. The Owner/Applicant shall submit for P&D approval a [NATIVE] Tree Replacement Plan prepared by a P&D-approved arborist/biologist and designed to [ADD PURPOSE LANGUAGE] and including the following components *[PLANNER SELECT AND ADD AS APPROPRIATE]*:

1. The replacement trees shall be [STATE] species, [INDICATE DENSITY OF PLANTS PER MEASURED AREA OR]:
 - a. [XX] gallon size [INSERT SPECIES] trees obtained from locally occurring saplings or seed stock 10 [15 FOR VALLEY AND BLUE OAKS] for every [NATIVE] tree approved to be removed or significantly disturbed. Show replanting location on plans.
 - b. [XX] trees removed from the construction area and boxed for replanting on the property. Show replanting location on plans.
2. *[OPTIONAL:]* Species shall be from locally obtained plans and seed stock.
3. The trees shall be gopher fenced.
4. The trees shall be irrigated with drip irrigation on a timer until established (a period to be established by the P&D approved arborist).
5. The trees shall be weaned off of irrigation over a period of two to three years.
6. No permanent irrigation shall occur within the dripline of [ANY OR DESCRIBE EXCEPTIONS] tree.
7. If replacement trees cannot all be accommodated on site, the Owner/Applicant shall submit a plan for P&D approval for replacement trees to be planted off site.

8. *[ADD IF NECESSARY:]* All [NEW AND REPLANTED] trees shall be protected from predation by wild and domestic animals and from human interference by the use of staked, chain link fencing and gopher fencing during the maintenance period.

PLAN REQUIREMENTS: *[OPTIONAL: Include the components of the plan in Landscape and Irrigation Plans if these are required].*

TIMING: Plans shall be submitted prior to [APPROVAL / ISSUANCE] of [LAND USE PERMIT / COASTAL DEVELOPMENT PERMIT / ZONING CLEARANCE]. The Owner/Applicant shall post a performance security to ensure installation prior to Final Building Inspection Clearance and maintenance for [MINIMUM THREE OR FIVE] years.

MONITORING: The Owner/Applicant shall demonstrate to P&D compliance monitoring staff that all required components of the approved plan(s) are in place as required prior to Final Inspection Clearance [AND MAINTAINED THROUGHOUT MAINTENANCE PERIOD]. P&D compliance monitoring staff signature is required to release the installation security upon satisfactory installation of all items in approved plans and maintenance security upon successful implementation of this plan.

Bio-03

Bio-03 Arborist Report Requirement. The Owner/Applicant shall hire a P&D-approved arborist/biologist to evaluate all proposed native tree and shrub removals within 25 ft of potential ground disturbances. The arborist/biologist report shall present biologically favorable options for access roads, utilities, drainages and structure placement taking into account native tree and shrub species, age, and health with preservation emphasized. All development and potential ground disturbances shall be designed to avoid the maximum number of natives possible.

PLAN REQUIREMENTS: The Owner/Applicant shall submit the above report to P&D for review and approval.

TIMING: The Owner/Applicant shall submit the above report prior to [INSERT TIMING]. Recommendations in the report shall be incorporated into the project prior to [INSERT TIMING].

MONITORING: P&D processing planner shall check all plans for incorporation of recommendations and P&D compliance monitoring staff shall site inspect as appropriate.

Bio-03a

Bio-03a Onsite Arborist/Biologist. The Owner/Applicant shall designate a P&D-approved arborist/biologist to be onsite throughout all grading and construction activities which may impact [NATIVE] trees. Duties include the responsibility to ensure all aspects of the approved Tree Protection & Tree Replacement Plans are carried out. [ADD OTHER DETAILED DUTIES AS NEEDED.]

MONITORING: The Owner/Applicant shall submit to P&D compliance monitoring staff the name and contact information for the approved arborist/biologist prior to commencement of construction / pre-construction meeting. P&D compliance monitoring staff shall site inspect as appropriate.

Bio-04 **Bio-04 Ag Pamphlet.** The Owner/Applicant shall include in CC&Rs a copy of the State Department of Agriculture pamphlet, “Living Among the Oaks.”

Bio-05 *[PLANNER: Use this only if a Tree Replacement Plan is not required. If you require a TRP and need to apply this condition, make it a component of the TRP.]*

Bio-05 Tree Planting and Maintenance. The Owner/Applicant shall plant 10 [15 FOR VALLEY AND BLUE OAKS] [XX] gallon size [INSERT SPECIES] oak trees obtained from locally occurring saplings or seed stock for every oak tree removed, relocated or damaged. The trees shall be planted, gopher fenced and irrigated (drip irrigation on a time) for a [INSERT PERIOD] year maintenance period.

PLAN REQUIREMENTS: This requirement shall be shown on a landscape plan to be reviewed and approved by P&D.

TIMING: A performance security shall be required prior to [INSERT TIMING]. Prior to [INSERT TIMING] trees shall be planted, fenced and irrigated.

MONITORING: P&D compliance monitoring staff shall ensure tree installation and maintenance. Performance security release requires P&D staff sign-off.

BIOLOGY-OPEN EASEMENT

There are three types of easements for protection of resources such as biological, agricultural, and watershed resources: Open Space, Conservation and Development Rights Easements. This condition applies to open space and conservation easements. Before applying an easement, ask yourself how the easement will benefit the property beyond, say, a construction envelope. If you have a map that will have a common open space, you may use this condition. If your intent is to have the easement managed by a non-profit land preservation agency such as the Land Trust, you must use a conservation easement. And remember: The Land Trust and most similar agencies will not accept management of properties if they are very small, isolated from all other like-resources, surrounded by development, etc. Always consult with County Counsel and the non-profit before finalizing the wording of the condition and agreements.

- Bio-06 **Bio-06 Easements.** The Owner/Applicant shall dedicate an [OPEN SPACE / CONSERVATION] easement [RECORDED ON THE PROPERTY TITLE] reviewed and approved by P&D and County Counsel for the [INDICATE WHAT EASEMENT COVERS AND PURPOSE] to [INDICATE TO WHOM THE LAND SHALL BE DESIGNATED (E.G., COUNTY, LAND TRUST, ETC)]. In addition, the Owner/Applicant shall *[PLANNER: IF THIS IS TO BE MANAGED BY AN OUTSIDE AGENCY, BE SURE THESE REQUIREMENTS ARE CONSISTENT WITH THAT AGENCY'S GOALS, MISSION]*:
1. Construct and maintain in perpetuity a [INSERT HEIGHT] foot high fence suitable to preclude encroachment into the [OPEN SPACE / CONSERVATION] area [DETERMINE TIMING IF OTHER THAN FINAL INSPECTION CLEARANCE].
 2. Erect and maintain in perpetuity signs [INSERT LOCATION(S), HEIGHT, SIZE, MATERIALS OR REQUIRE DESIGN APPROVAL BY BAR, IF APPLICABLE] to limit encroachment and/or prohibited uses [DETERMINE TIMING IF OTHER THAN FINAL INSPECTION CLEARANCE].
 3. *[PLANNER: INSERT IF PLANTINGS ARE NEEDED]*
 4. Provide a subordination agreement for long term monitoring and establish an endowment for monitoring costs reviewed and approved by P&D and County Counsel and docketed with the Board of Supervisors. [REQUIRE PRIOR TO MAP RECORDATION OR PRIOR TO LAND USE PERMIT / COASTAL DEVELOPMENT PERMIT / ZONING CLEARANCE]. Unless otherwise stated, the [HOA / OWNER] shall maintain the easement and all required fencing, signs and plantings in good repair. The [HOA / OWNER] shall allow County staff or designees to inspect and photo document condition of the easement area, fencing, signs, plantings at least once per year and the [HOA / OWNER] must complete any repairs required by the County or designees.
 5. Record a buyer notification that reads as follows: **“IMPORTANT: BUYER NOTIFICATION:** [Insert easement details including purpose,

location, restrictions, maintenance requirements, whether easement is open for public use...]. The County or designee may periodically inspect to ensure the intent of the easement is being met. The [HOA / OWNER] shall permit County staff or authorized agency staff to conduct and photo document condition of easement area, fencing, signs as needed and shall complete repairs...as required by County staff.”

6. [FOR MAPS WITH “COMMON OPEN SPACE” ADD THE FOLLOWING TO THE BUYER NOTIFICATION] Title to the common open space shall be held by a non-profit association of homeowners or by any other non-profit group on such reasonable terms and conditions as the Board of Supervisors may prescribe. If the common open space is conveyed to a group other than the homeowners association, the right to develop such property with anything except open space or noncommercial recreation shall be conveyed to the County of Santa Barbara.

TIMING: The [RECORDED AGREEMENTS / OFFERS TO DEDICATE / SUBORDINATION AGREEMENTS / ENDOWMENTS] shall be in place prior to [LAND USE PERMIT / COASTAL DEVELOPMENT PERMIT / FINAL MAP CLEARANCE]. Any required [FENCING / SIGNAGE, PLANTINGS] shall be installed prior to Final Building Inspection Clearance.

MONITORING: P&D compliance monitoring staff or designees will inspect and photo document condition of easement area, fencing, signs, plants, etc prior to Final Building Inspection Clearance and ANNUALLY or as often as deemed necessary by the County thereafter.

- Rules-32 **Rules-32 Contractor and Subcontractor Notification.** The Owner/Applicant shall ensure that potential contractors are aware of County requirements. Owner / Applicant shall notify all contractors and subcontractors in writing of the site rules, restrictions, and Conditions of Approval and submit a copy of the notice to P&D compliance monitoring staff.
- Rules-33 **Rules-33 Indemnity and Separation.** The Owner/Applicant shall defend, indemnify and hold harmless the County or its agents or officers and employees from any claim, action or proceeding against the County or its agents, officers or employees, to attack, set aside, void, or annul, in whole or in part, the County's approval of this project. In the event that the County fails promptly to notify the Owner / Applicant of any such claim, action or proceeding, or that the County fails to cooperate fully in the defense of said claim, this condition shall thereafter be of no further force or effect.
- Rules-34 **Rules-34 Legal Challenge.** In the event that any condition imposing a fee, exaction, dedication or other measure is challenged by the project sponsors in an action filed in a court of law or threatened to be filed therein which action is brought in the time period provided for by law, this approval shall be suspended pending dismissal of such action, the expiration of the limitation period applicable to such action, or final resolution of such action. If any condition is invalidated by a court of law, the entire project shall be reviewed by the review authority and no approval shall be issued unless substitute feasible conditions/measures are imposed.
- Rules-35 **Rules-35 Limits-Except DPs.** This approval does not confer legal status on any existing structures(s) or use(s) on the property unless specifically authorized by this approval.
- Rules-36 **Rules-36 Map/LLA Expiration.** This [TENTATIVE MAP / LOT LINE ADJUSTMENT] shall expire three years after approval by the final county review authority unless otherwise provided in the Subdivision Map Act and Chapter 21 of the Santa Barbara County Code.
- Rules-37 **Rules-37 Time Extensions-All Projects.** The Owner / Applicant may request a time extension prior to the expiration of the permit or entitlement for development. The review authority with jurisdiction over the project may, upon good cause shown, grant a time extension in compliance with County rules and regulations, which include reflecting changed circumstances and ensuring compliance with CEQA. If the Owner / Applicant requests a time extension for this permit, the permit may be revised to include updated language to standard conditions and/or mitigation measures and additional conditions and/or mitigation measures which reflect changed circumstances or additional identified project impacts.

ATTACHMENT 2

OAK TREE HEALTH ASSESSMENT

Oak Tree Health Assessment Worksheet

Oak Id:

Date:

New growth

0	No new growth, cracks of death (black) on trunk
1	Less than 50% of canopy with new growth, few growth cracks (red/brown) on trunk
2	Greater than 50% of canopy with new growth, many growth cracks (red/brown) on trunk

Canopy Color

0	10% or more leaves brown
1	Less than 10% brown leaves
2	All leaves green

Crown Rating

0	Severe thinning/dieback
2	Minor thinning/twig dieback
4	Healthy, full crown

Pest Infestation

0	Severe infestation
1	Minor infestation
2	No infestation

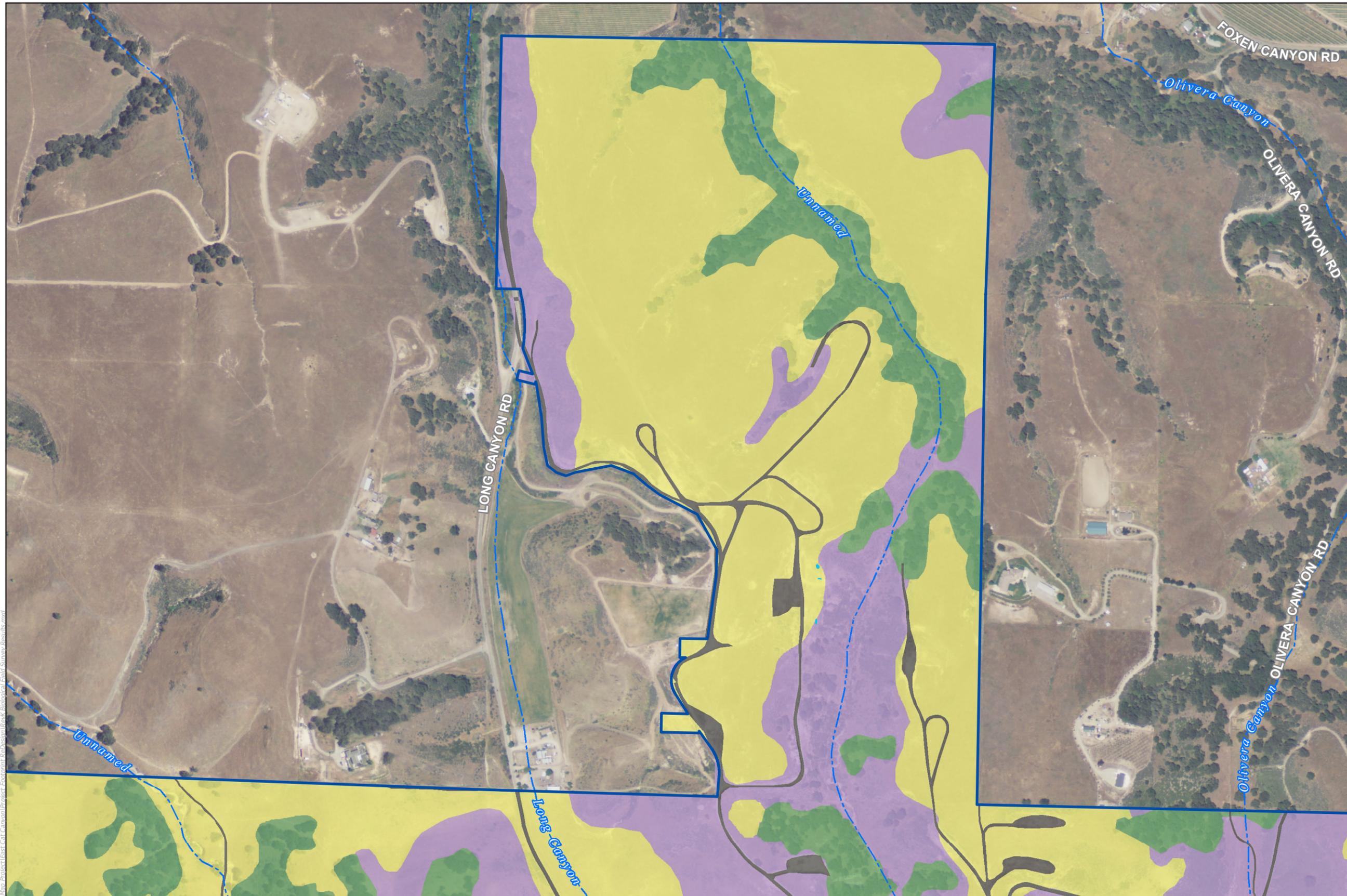
Fungal Infection

0	Greater than 30% fungal cover
1	5-30% fungal cover
2	Less than 5% fungal cover

Total:

Health Rating

9-12	Excellent
7-8	Good
0-6	Poor

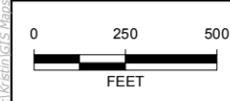
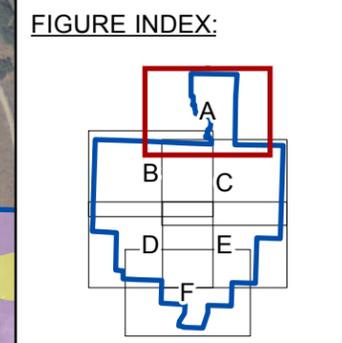


LEGEND:

-  Biological Survey Area (BSA)
-  Project Footprint
-  Rapid Assessment and/or Releve Data Point
-  Ephemeral Wetland Depression (2/2013)
-  Hydrographic Feature

Vegetation Communities

-  Annual grassland
-  California coastal scrub
-  Coast live oak woodland
-  Previously Disturbed/Developed

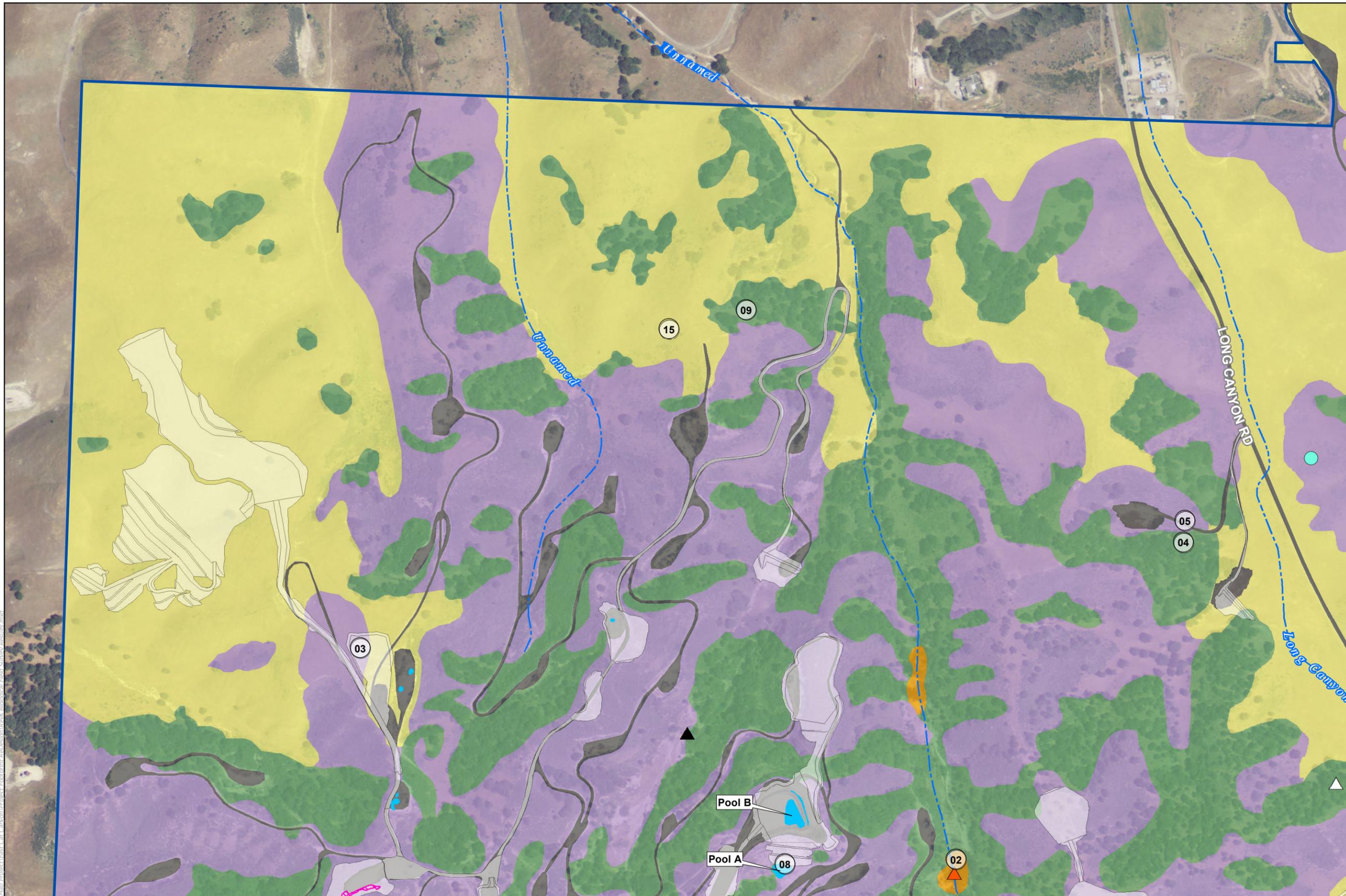


Source: NAIP 2012 Image, County of Santa Barbara, DPSI 2013, Parsons 11-1-17 Rev K
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 Notes: This map was created for informational and display purposes only

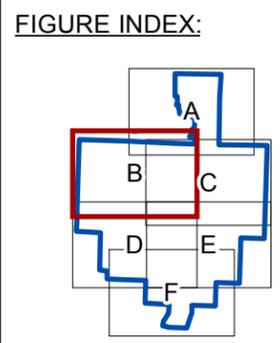
PROJECT NAME: EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT
 PROJECT NUMBER: 1002-0455 DATE: November 2017

**BIOLOGICAL FIELD SURVEY RESULTS
 OAK AVOIDANCE PROJECT**

FIGURE 1A



- LEGEND:**
- Biological Survey Area (BSA)
 - Project Footprint
 - Rapid Assessment and/or Releve Data Point
 - Ephemeral Wetland Depression (2/2013)
 - Hydrographic Feature
 - Wildlife Observation**
 - American kestrel nest
 - Red-tailed hawk nest
 - Common raven nest
 - Rufous-crowned sparrow
 - Special Status Species**
 - Straight-awned spineflower
 - Vegetation Communities**
 - Annual grassland
 - California coastal scrub
 - Coast live oak woodland
 - Eucalyptus groves
 - Previously Disturbed/Developed



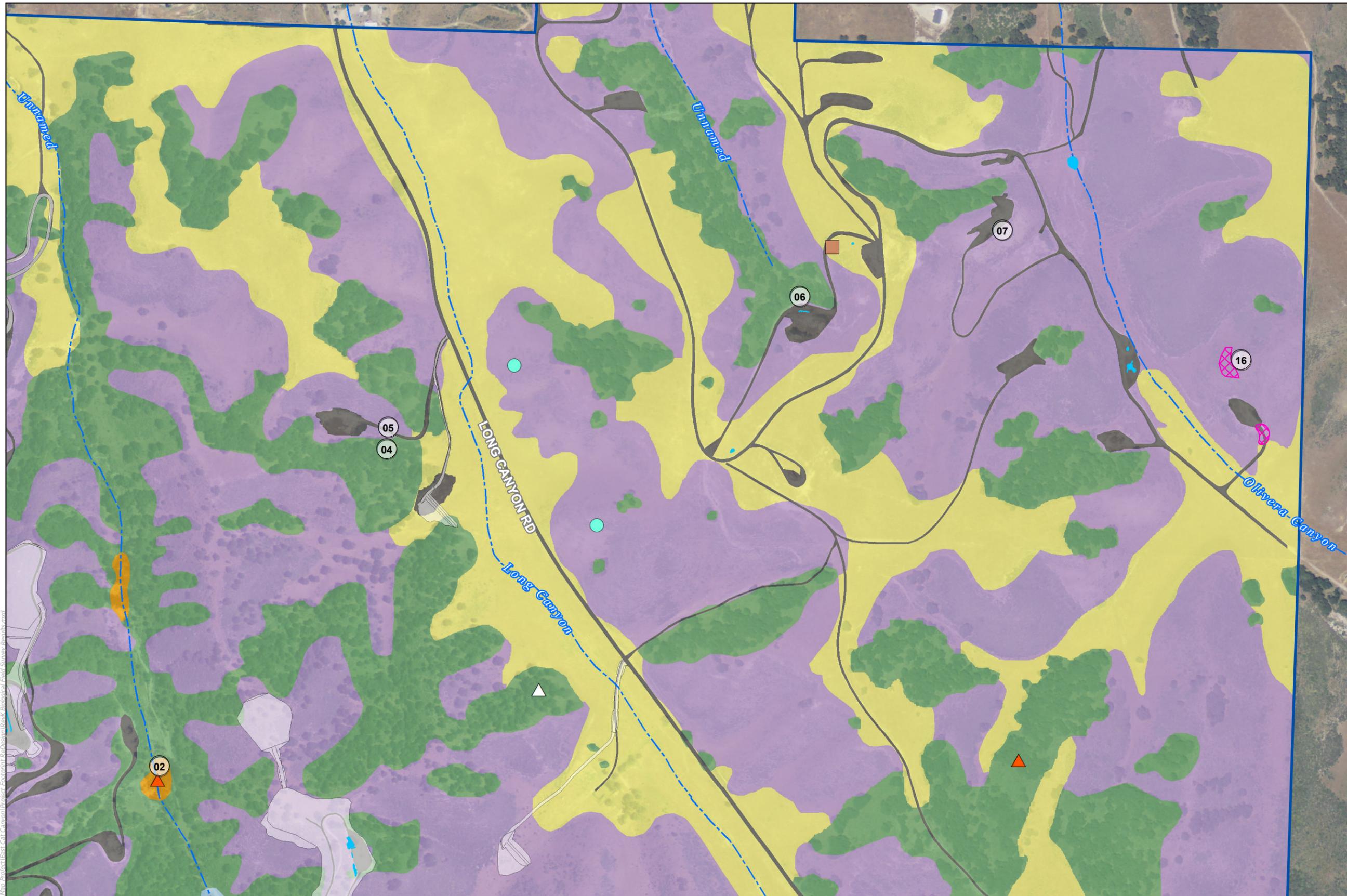
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**BIOLOGICAL FIELD SURVEY RESULTS
OAK AVOIDANCE PROJECT**

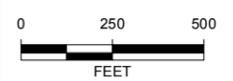
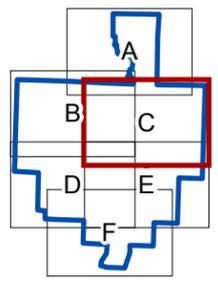
FIGURE 1B



- LEGEND:**
- Biological Survey Area (BSA)
 - Project Footprint
 - Rapid Assessment and/or Releve Data Point
 - Ephemeral Wetland Depression (2/2013)
 - Hydrographic Feature
- Wildlife Observation**
- Americal kestrel nest
 - Red-tailed hawk nest
 - Rufous-crowned sparrow
 - American badger
- Vegetation Communities**
- Annual grassland
 - California coastal scrub
 - Coast live oak woodland
 - Eucalyptus groves
 - Previously Disturbed/Developed
 - Western rush marsh



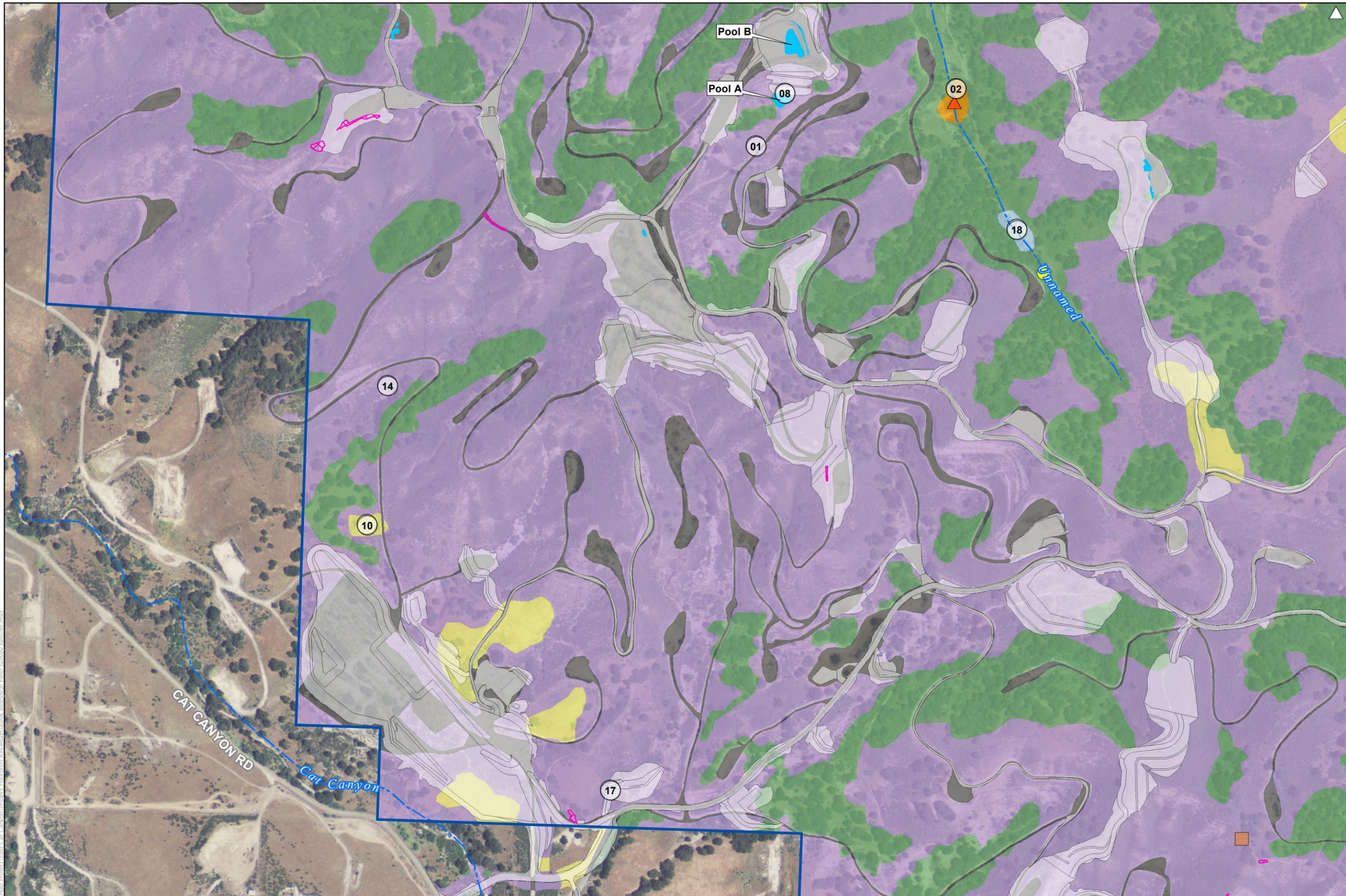
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**BIOLOGICAL FIELD SURVEY RESULTS
 OAK AVOIDANCE PROJECT**

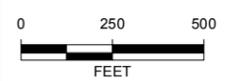
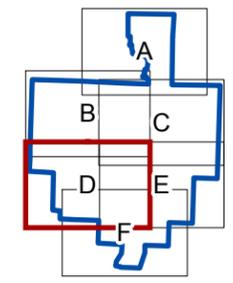


LEGEND:

- Biological Survey Area (BSA)
- Project Footprint
- Rapid Assessment and/or Releve Data Point
- Ephemeral Wetland Depression (2/2013)
- Hydrographic Feature
- Wildlife Observation**
- American kestrel nest
- Red-tailed hawk nest
- Golden eagle
- American badger
- Special Status Species**
- Straight-awned spinniflower
- Vegetation Communities**
- Annual grassland
- California coastal scrub
- Coast live oak woodland
- Eucalyptus groves
- Previously Disturbed/Developed
- Western rush marsh



FIGURE INDEX:



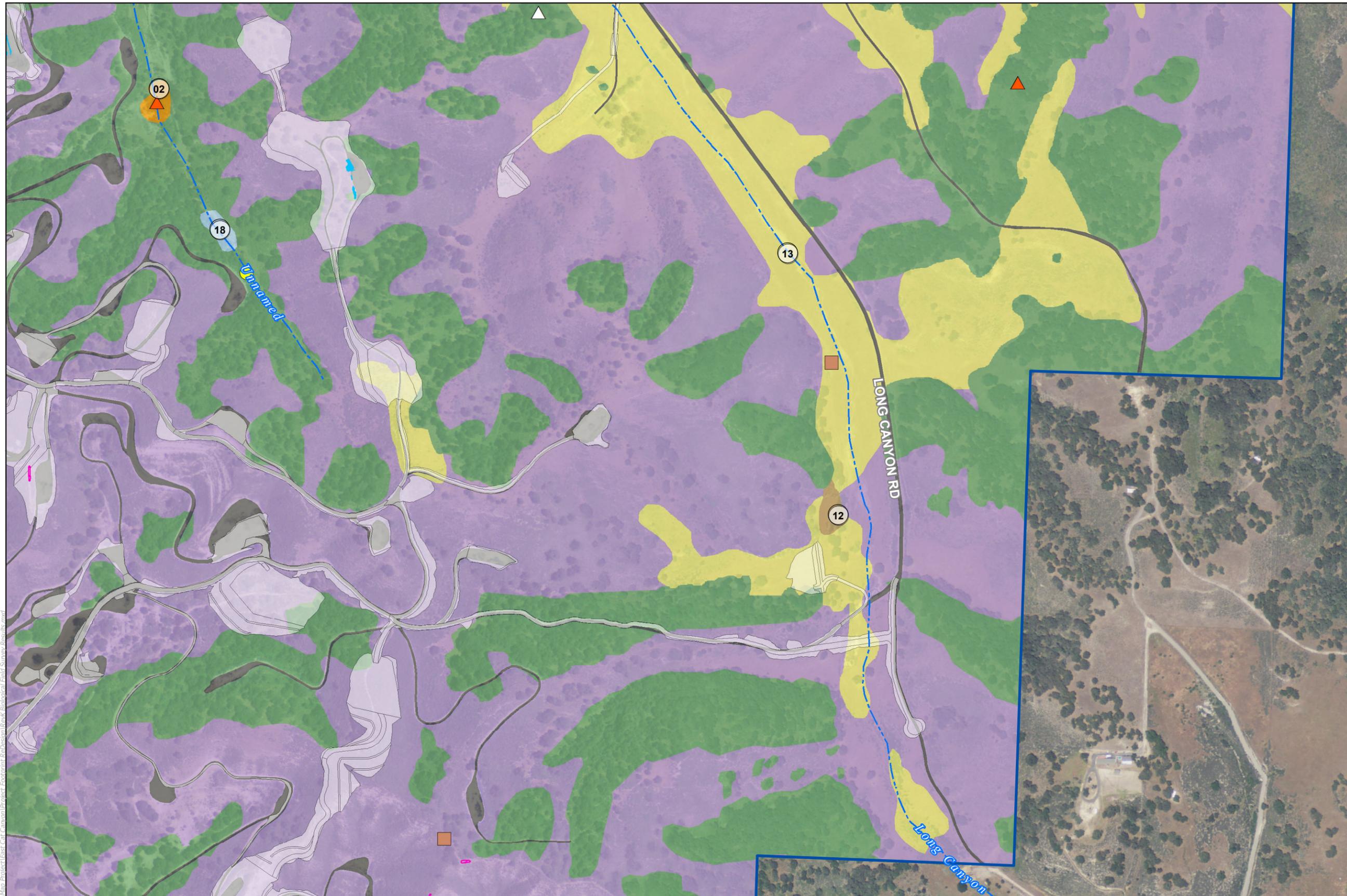
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PROJECT NAME: EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT
 PROJECT NUMBER: 1002-0455 DATE: November 2017

**BIOLOGICAL FIELD SURVEY RESULTS
 OAK AVOIDANCE PROJECT**

FIGURE 1D

21458191.GIS_Maps\Mapa Project\East Cat Canyon\Project Footprint\Revised\Revised Biological Field Survey Results.mxd

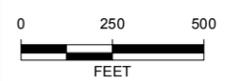
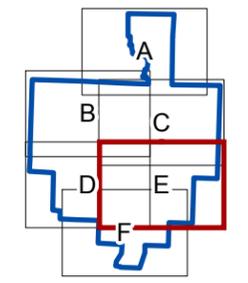


LEGEND:

- Biological Survey Area (BSA)
- Project Footprint
- Rapid Assessment and/or Releve Data Point
- Ephemeral Wetland Depression (2/2013)
- Hydrographic Feature
- Wildlife Observation**
- American kestrel nest
- Red-tailed hawk nest
- Golden eagle
- American badger
- Special Status Species**
- Straight-awned spinniflower
- Vegetation Communities**
- Annual grassland
- California coastal scrub
- California coffee berry scrub
- Coast live oak woodland
- Eucalyptus groves
- Previously Disturbed/Developed
- Western rush marsh



FIGURE INDEX:

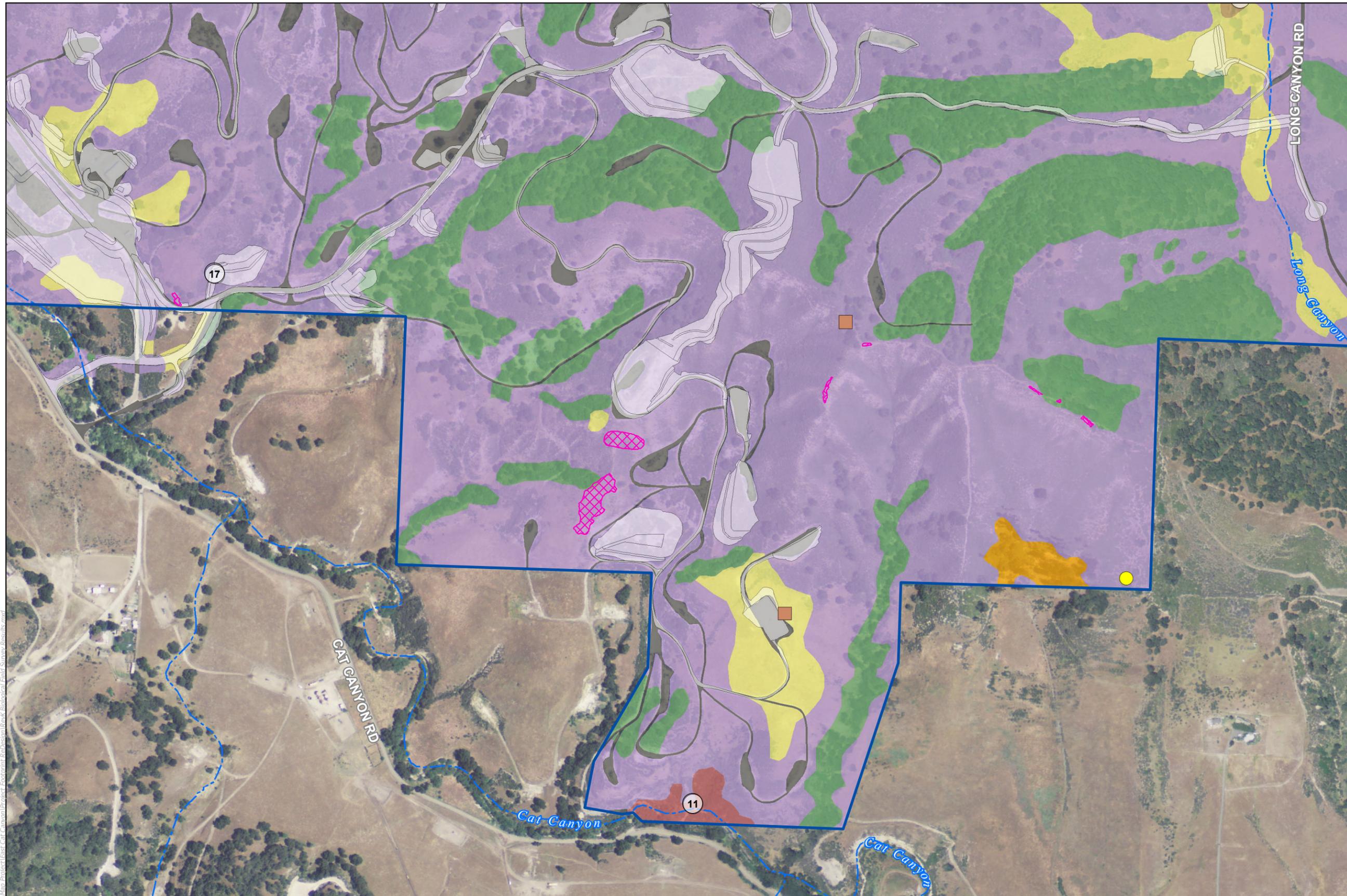


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**BIOLOGICAL FIELD SURVEY RESULTS
OAK AVOIDANCE PROJECT**

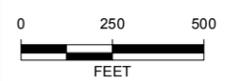
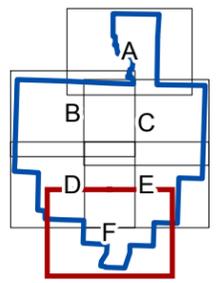
**FIGURE
1E**



- LEGEND:**
- Biological Survey Area (BSA)
 - Project Footprint
 - Rapid Assessment and/or Releve Data Point
 - Hydrographic Feature
- Wildlife Observation**
- Golden eagle
 - American badger
- Special Status Species**
- Straight-awned spineflower
- Vegetation Communities**
- Annual grassland
 - California coastal scrub
 - California coffee berry scrub
 - Coast live oak woodland
 - Eucalyptus groves
 - Previously Disturbed/Developed
 - Red willow thicket



FIGURE INDEX:



Source: NAIP 2012 Image, County of Santa Barbara, DPSI 2013, Parsons 11-1-17 Rev K
 Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
 Notes: This map was created for informational and display purposes only

PROJECT NAME: EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT
 PROJECT NUMBER: 1002-0455 DATE: November 2017

**BIOLOGICAL FIELD SURVEY RESULTS
 OAK AVOIDANCE PROJECT**