

## **4.4 BIOLOGICAL RESOURCES**

### **4.4.1 Environmental Setting**

#### **4.4.1.1 Project Site**

The Project site is located within the Solomon Hills and the Gato Ridge mountain ranges in East Cat Canyon, approximately five miles southeast of the City of Santa Maria, Santa Barbara County, California. The regional topography is generally comprised of steeply to moderately incised canyons and drainages, moderate to steep hills, valleys, and smaller flat areas. Drainages found 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 associated floodplain is located to the northeast of the Project site. This river is subject to moderate to heavy seasonal flows and provides suitable habitat for a variety of wildlife, including several special-status plants and animals. Ephemeral tributaries to this river intersect and parallel the Project site.

Properties to the west of the Project site consist of large residential lots and non-Aera oil field parcels which include a network of narrow and steep unpaved and/or remnant asphalt roads. Properties to the east primarily consist of row crop- agriculture (primarily within the Sisquoc River flood plain), large residential lots grazed by cattle, and some oil operations. Due to past and on-going oil field maintenance activities and cattle grazing that occurs throughout the Project site, much of the Project site has been previously disturbed. However, due to the steep and rugged terrain, many inaccessible areas have been left undisturbed and allow for dense vegetative growth.

#### **4.4.1.2 Natural Gas Pipeline.**

The natural gas pipeline alignment is located under existing paved roads with established culverts that maintain water flow. The pipeline route is situated along side rotational row-crop agriculture and vineyards, city development, and large residential lots grazed by livestock. Drainages found throughout the pipeline alignment are ephemeral and consist of dry, loose sand and rock with moderate to dense scrub and scattered oak woodland habitat. There are also a number of agricultural drainages that are regularly cleared of vegetation and the presence of water is irregular and dependent on crop irrigation cycles.

#### **4.4.1.3 Electrical Transmission Line.**

The Pacific Gas and Electric electrical transmission line will extend from the western extent of the Project site to an adjacent parcel to the west. The transmission line transects Cat Canyon Creek and the adjacent Cat Canyon Road. The habitat occurring along this route consists primarily of grazed non-native grassland, disturbed scrub, and sparse oak tree canopy. Cat Canyon Creek is ephemeral and consists of dry, loose sand and rock with sparse to moderate scrub and scattered oak tree canopy. Riparian habitats do not occur in this section of Cat Canyon Creek.

## 4.4.2 Regulatory Setting

### 4.4.2.1 Federal Regulations

**Federal Endangered Species Act.** The Federal Endangered Species Act, administered by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, provides protection to species listed as Threatened or Endangered, and Critical Habitat designated for the protection of such species. The Federal Endangered Species Act prohibits “take” of Threatened and Endangered species except under certain circumstances and only with authorization from the U.S. Fish and Wildlife Service through a permit under sections 4(d), 7, or 10(a) of the Federal Endangered Species Act. Under the Federal Endangered Species Act, “take” is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

Critical Habitat is defined in Section 3(5)(A) of The Federal Endangered Species Act as: (1) specific areas within the geographical area occupied by the species at the time of listing, on which are found those physical or biological features that are essential to the conservation of the listed species and that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species at the time of listing that are essential for the conservation of a listed species.

The Federal Endangered Species Act also provides protection to those species proposed to be listed under the Federal Endangered Species Act and maintains lists of species that are neither formally listed nor proposed, but could potentially be listed in the future. These Federal candidate species include taxa for which substantial information on biological vulnerability and potential threats exist, and are maintained in order to support the appropriateness of proposing to list the taxa as an Endangered or Threatened species. The U.S. Fish and Wildlife Service also manages Birds of Conservation Concern, which include bird species of highest conservation priorities, in an effort to draw attention to species in need of conservation action.

**Migratory Bird Treaty Act.** The U.S. Fish and Wildlife Service also administers the Federal Migratory Bird Treaty Act of 1918 (16 USC 703-711). The Migratory Bird Treaty Act establishes Federal responsibilities for the protection of nearly all species of birds, their eggs, and their nests. It implemented the 1916 Convention between the U.S. and Great Britain for the protection of birds migrating between the U.S. and Canada; implemented the 1936 Convention for the Protection of Migratory Birds and Animals between the U.S. and Mexico; and similar conventions between the U.S. and Japan (1972) and the Union of Soviet Socialist Republics (1976). Under the Migratory Bird Treaty Act, it is unlawful to kill, collect, take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR 10, including feathers or other parts, nests, eggs or products, except as allowed by implementing regulations (50 CFR 21). Certain game bird species are allowed to be hunted for specific periods determined by Federal and State governments.

**Bald and Golden Eagle Protection Act.** The Bald and Golden Eagle Protection Act is administered by the U.S. Fish and Wildlife Service and protects eagles from commercial exploitation and safeguards their continued survival in the U.S. This Act prohibits anyone, without a permit issued by the Secretary of the Interior, from “taking” bald eagles, including their parts, nests, or eggs, similarly to the Migratory Bird Treaty Act. The Act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” “Disturb” means “to agitate

or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.” In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present.

**Magnuson-Stevens Fishery Conservation and Management Act.** The Magnuson-Stevens Act provides for the conservation and management of fishery resources within the U.S. Exclusive Economic Zone, which extends from the seaward boundary to 230 miles from shore. Using the tools provided by the Magnuson-Stevens Act, National Oceanic and Atmospheric Administration’s National Marine Fisheries Service assesses and predicts the status of fish stocks, ensures compliance with fisheries regulations, and works to reduce wasteful fishing practices. Anadromous fish, which swim upstream for breeding through inland waters with a significant nexus to the Pacific Ocean, are provided protection by the Magnuson-Stevens Act. Waters that may support anadromous fish may be subject to Section 7 consultation with the National Marine Fisheries Service under the Federal Endangered Species Act.

**Clean Water Act.** The Clean Water Act, formally entitled the Federal Water Pollution Control Act of 1972, is comprehensive legislation enacted to protect the nation’s waters. The Act generally includes reference to its substantial supplementation by the Clean Water Act of 1977. Both Acts were subsequently amended in 1981, 1987, and 1993. Overall, the Clean Water Act seeks to protect the nation’s water from pollution by setting water quality standards for surface water and by limiting the discharge of effluents into waters of the U.S. These water quality standards are enforced by the U.S. Environmental Protection Agency.

The U.S. Army Corps of Engineers is responsible for the issuance of permits for the placement of dredged or fill material into Waters pursuant to Section 404 of the Clean Water Act (33 USC 1344). As defined by the U.S. Army Corps of Engineers in 33 CFR 328.3(a) (3), Waters are those waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; tributaries and impoundments to such waters; all interstate waters including interstate wetlands; and territorial seas. In addition, Federal guidance has been developed that requires careful examination and documentation of the physical location(s) and hydrologic connections among waters/wetlands. To determine Federal jurisdiction, particular focus is given to (1) surface hydrologic connections between a wetland and “navigable waters in fact”, (2) “adjacency” of a wetland to traditionally navigable waters, and thus (3) a “significant nexus” to interstate commerce. Waters/wetlands features can also be determined to be under Federal jurisdiction by the U.S. Army Corps of Engineers or Environmental Protection Agency if a “significant nexus” can be shown between the wetland feature in question and its contribution to the maintenance or restoration of the physical, chemical, or biological integrity of downstream waters that are traditionally navigable.

The federal Clean Water Act defines wetlands as follows:

*“... Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.”* (33 CFR 328.3 [b])

For the purposes of identification and delineation of wetlands, the U.S. Army Corps of Engineers uses the Environmental Laboratory Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987), herein referred to as 1987 U.S. Army Corps of Engineers Manual, and the Arid West regional supplement (Environmental Laboratory, 2008). The U.S. Army Corps of Engineers defines a wetland using a three parameter (hydrology, soil, and vegetation) test in which all parameters must all occur to be classified as a Federal wetland.

Further, to determine the extent of the wetland boundaries in non-tidal waters, the lateral extent of U.S. Army Corps of Engineers jurisdiction is often determined by the ordinary high water mark, which is defined as:

*“...[the] line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.”* (33 CFR 328[e])

#### 4.4.2.2 State Regulations

**Porter-Cologne Water Quality Control Act.** The Porter-Cologne Water Quality Control Act (CA Water Code §§ 13000-13999.10) mandates that waters of the State shall be protected, such that activities that may affect waters of the State shall be regulated to attain the highest quality. This Act establishes the State Water Resources Control Board as the principal State agency for controlling water quality in California. The State Water Resources Control Board provides regulations that mandate a “non-degradation policy” for State waters, especially those of high quality. The State Water Resources Control Board is divided into local Regional Water Quality Control Boards.

Pursuant to Section 401 of the Clean Water Act, the U.S. Army Corps of Engineers cannot issue a Federal permit until the State of California first issues a water quality certification to ensure that a project will comply with State water quality standards. The authority to issue water quality certifications for the following Project is vested with the Central Coast Regional Water Quality Control Board.

**California Fish and Game Code.** The California Department of Fish and Wildlife, formerly the California Department of Fish and Game, administers a number of laws and programs designed to protect fish and wildlife resources. Principal of these is the California Endangered Species Act of 1984 Fish and Game Code Section 2050 that regulates the listing and take of State Endangered and Threatened species. California Department of Fish and Wildlife also maintains lists of Candidate-Endangered species and Candidate-Threatened species. California candidate species are afforded the same level of protection as listed species. California Department of Fish and Wildlife also designates Species of Special Concern that are of limited distribution, declining populations, diminishing habitat, or unusual scientific,

recreational, or educational value. These species do not have the same legal protection as listed species, but may be added to official lists in the future.

The California Department of Fish and Wildlife also manage a Watch List that includes “Taxa to Watch” (Shuford and Gardali, 2008), which includes: 1) species not on the current Special Concern list but were on previous lists and they have not been state listed under the California Endangered Species Act; 2) species that were previously state or federally listed and now are on neither list; or 3) species are on the list of Fully Protected species.

California Department of Fish and Wildlife administers other State laws designed to protect wildlife and plants. Section 3511 of the California Fish and Game Code designates species that are afforded Fully Protected status. Fish and Game Code Sections 4700 and 5515 assign the same status to specified mammals and fish. These statutes generally provide that specifically identified birds, mammals, and fish “or parts thereof may not be taken or possessed at any time and no provision of [the Fish and Game] code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected [bird, mammal, or fish] and no permits or licenses heretofore issued shall have any force or effect” for any such purpose. For fully protected fish and mammals, the only exception to the take prohibition is that the Fish and Game Commission may authorize the collecting of such species “for necessary scientific research” (Fish and Game Code, Sections 4700, 5515). With a proper permit, fully protected birds may also be captured live and relocated “for the protection of livestock” (Section 3511). Section 3503.5 protects birds of prey (Falconiformes and Strigiformes), their eggs, and their nests.

California Department of Fish and Wildlife manages the California Native Plant Protection Act of 1977 (Fish and Game Code Section 1900, *et seq.*), which was enacted to identify, designate and, protect rare plants. The California Native Plant Society operates under a Memorandum of Understanding with the California Department of Fish and Wildlife and outlines broad cooperation in rare plant assessment and protection, and formalizes cooperative ventures such as data sharing and production of complementary information sources for rare plants.

Pursuant to Section 1602 of the California Fish and Game Code, California Department of Fish and Wildlife requires a Lake or Streambed Alteration Agreement between California Department of Fish and Wildlife and any State or local governmental agency, public utility, or private party before the initiation of any construction project that will: 1) substantially divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake; 2) substantially change or use materials from a streambed; or 3) result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake. Therefore, the California Department of Fish and Wildlife claims jurisdiction over the bed, bank, and channel of the drainage that may be impacted by project activities.

**California Environmental Quality Act.** Project-related adverse impacts on special-status species are likely considered significant for California Environmental Quality Act purposes. Section 15065 of the California Environmental Quality Act 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 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.

Further, the California Environmental Quality Act (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;
- (b) Substantially affect a rare or endangered species of animal, plant or the habitat of the species;
- (c) Interfere substantially with the movement of any resident or migratory fish or wildlife species; and
- (d) Substantially diminish habitat for fish, wildlife or plants” (County of Santa Barbara, 2008)

**State of California Senate Bill 1334.** State of California regulations specific to oak tree protection are included in State Senate Bill 1334. Regulations specific to Senate Bill 1334 were introduced by Senator Sheila James Kuehl and filed in September of 2004. Senate Bill 1334 requires that oak woodland conversions be subject to the California Environmental Quality Act and mitigated. Senate Bill 1344 states that the conversion of oak woodlands refers to the cutting or removal of 30 percent or more of the oak tree canopy from an oak woodland and changing the land use so that the converted acreage will not sustain oak species functioning as a biological unit in the future. Pursuant to Senate Bill 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.

#### 4.4.2.3 Santa Barbara County Regulations

Requirements for the protection of biological resources in the unincorporated area of Santa Barbara County are provided within the Comprehensive Plan Conservation Element, Environmental Resource Management Element, Land Use Element, Community Plans, the Coastal Land Use Plan, and Santa Barbara County Code (2003). These documents identify sensitive habitats and species, and provide measures to direct project design and policies to protect biological resources. These Plans/Elements provide a framework of policies designed to protect special-status species and Environmentally Sensitive Habitat Areas. Environmental Thresholds and Guidelines Manual, published in October of 2008 by the County, is used to define sensitive resources and assist in determining levels of impacts to sensitive areas and appropriate methods for avoidance, minimization, and/or mitigation.

Factors that are used in assessing the significance of project impacts on biological resources includes size of project; the relative disturbance to habitat occurring in Project region and immediate vicinity; type of impact; and, timing relative to the occurrence of sensitive resources that project may impact.

The County of Santa Barbara (2008) determines that disturbance impacts may be significant based on substantial evidence in the record, if a project substantially impacts sensitive 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; and
6. Substantially interfere with natural processes, such as fire or flooding, upon which the habitat depends.

Disturbance impacts may be less than significant if the project occurs in an area 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: small acreages of non-native grassland if wildlife values are low; individuals or stands of non-native trees if not used by important animal species such as raptors or monarch butterflies (*Danaus plexippus*); areas of historical disturbance such as intensive agriculture; small pockets of habitats already significantly fragmented or isolated, and degraded or disturbed; and, areas of primarily ruderal species resulting from pre-existing man-made disturbance.

**Oak Trees.** Santa Barbara County Code (2003) – Grading Ordinance Guidelines for Native Oak Tree Removal (Appendix A of Chapter 14) includes guidelines for agricultural and non-agricultural deciduous and live oak removals. Specifically, this appendix states the following:

*“Live Oak Removal For Non-Agricultural Purposes, Where a Development Permit is Not Required.* The guidelines for live oak removals not associated with an agricultural activity (as defined by section 14-8 of the grading ordinance), but for which no development permit is required, are the same as for agricultural removals except that five percent canopy removal triggers a management plan requirement, rather than fifteen percent. All other aspects of the program are the same as those for agricultural removals, pursuant to Section II.A above.

*Live Oak Removal Associated with Activities Requiring a Development Permit.* Consistency with the comprehensive plan shall apply only to live oak removal associated with activities requiring a development permit, pursuant to Chapter 35, Article III.”

In addition, 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.

Consistent with the Comprehensive Plan Conservation Element (Oak Tree Protection in the Inland Rural Areas of Santa Barbara County, Development Standard 1), the following applies for the 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 address in separate Development Standards.)”

**Wetlands.** The Santa Barbara County Environmental Thresholds and Guidelines manual (2008) provides the following wetland definitions:

*“... wetlands must have one or more of the following three attributes:*

- 1. At least periodically, the land supports predominantly hydrophytes, that is, plants adapted to moist areas;*
- 2. The substrate is predominantly un-drained hydric soil, and*
- 3. 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.”*

**Defensible Space Program.** The Santa Barbara County Fire Department, Fire Prevention Division is responsible for the administration of the Defensible Space Program as outline in California’s Public Resource Code 4291, which has been incorporated into the Government Code 51175-51189, Santa Barbara County Code of Ordinances and Santa Barbara County Fire Department Development Standards. Defensible space is an area surrounding a building or structure where basic wildfire protection practices are implemented, thus providing defense from an approaching wildfire or escape from a structure fire. The area is managed to limit fuel and thereby limit the potential for combustion. The Project will perform fuel reduction, including vegetation removal, in accordance with the defensible space requirements outlined in Santa Barbara County Fire Department Development Standard Number 6. These standards are further discussed in the Project Fuel Management Plan (Appendix F-1.A).

#### **4.4.3 Impact Assessment Standards**

The following impact discussion incorporates the Federal Endangered Species Act, the California Endangered Species Act, and Santa Barbara County biological resource policies for determining the level of the effect of the Project on biological resources. The thresholds of significance were evaluated based on information provided in the 2008 Santa Barbara County Environmental Thresholds and Guidelines Manual, Biological Resource Section (6)(C)(3)(a-c), outlined below.

- 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. 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 raptor or monarch butterflies.
  3. Areas of historical disturbance such as intensive agriculture.
  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 [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 flowing 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?"

Additionally, the 2008 Santa Barbara County Environmental Thresholds and Guidelines Manual, Biological Resources Section (6)(D) provides the following habitat-specific impact assessment guidelines pertinent to the resources occurring within the Project site. Section (6)(D)(4)(b) is as follows for wetlands and woodlands:

**“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-dependent animal or plant species are considered to have a potentially significant effect on the environment.
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 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.”

**“Impact Assessment Guidelines for Woodlands and Forest Habitat Areas.** 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.”

**“Impact Assessment for Individual Native Trees.**

1. 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.

2. 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.
3. 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.”

#### 4.4.4 Summary of Agency Consultation, Biological Surveys, Desktop Review

##### 4.4.4.1 Agency Consultation History

Table 4.4-1 – Agency Consultation Summary summarizes agency consultations that specifically discussed Project planning for the Project as of August 2014. Agency consultations include coordination meetings with the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and U.S. Army Corps of Engineers. Main topics of discussion with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife have focused on drift net study designs and mitigation requirements for California tiger salamander (*Ambystoma californiense*) and U.S. Fish and Wildlife Service protocol-level surveys for other potentially occurring special-status species.

**Table 4.4-1. Agency Consultation Summary**

Meeting Date and Location	Names of Attendance	Topic of Discussion
November 2, 2015 – U.S. Army Corps of Engineers Office	Crystal Huerta (U.S. Army Corps of Engineers), Susan Perrell (Aera), Eric Snelling (Padre Associates, Inc.), Sarah Spann (Padre Associates, Inc.), Alyssa Bery (Padre Associates, Inc.),	U.S. Army Corps of Engineers jurisdictional waters
November 21, 2014 - Ventura U.S. Fish and Wildlife Field Office	Colleen Draguesku (United States Fish and Wildlife Service), Martin Potter (California Department of Fish and Wildlife), Susan Perrell (Aera), Eric Snelling (Padre Associates, Inc.), Sarah Spann (Padre Associates, Inc.), Thea Benson (Padre Associates, Inc.), John Storrer (Storrer Environmental, LLC),	Project status update, protocol survey update, drift fence and aquatic surveys, and mitigation banking strategy.
June 30, 2014 – Padre Associates, Inc. Ventura Office	Crystal Huerta (U.S. Army Corps of Engineers), Susan Perrell (Aera), Eric Snelling (Padre Associates, Inc.), Sarah Spann (Padre Associates, Inc.)	U.S. Army Corps of Engineers jurisdictional waters
May 16, 2014 – East Cat Canyon Oil and Gas Field Project Site	Martin Potter (California Department of Fish and Wildlife), Susan Perrell (Aera), Sarah Spann (Padre Associates, Inc.), Thea Benson (Padre Associates, Inc.), John Storrer (Storrer Environmental, LLC), Keith Kidwell Jr. (Sturgeon Services International)	Field survey reviewing location of California tiger salamander drift net locations.
May 5, 2014 – Ventura U.S. Fish and Wildlife Field Office	Jeff Phillips (U.S. Fish and Wildlife Service), Nic Huber (U.S. Fish and Wildlife Service), Martin Potter (California Department of Fish and Wildlife), Susan Perrell (Aera), John Storrer (Storrer Environmental, LLC), Sarah Spann (Padre Associates, Inc.), Thea Benson (Padre Associates, Inc.)	Review Project plans and California tiger salamander drift net design.

**Table 4.4-1. Agency Consultation Summary**

Meeting Date and Location	Names of Attendance	Topic of Discussion
November 6, 2013 – Ventura U.S.Fish and Wildlife Service Field Office	Jeff Phillips (U.S. Fish and Wildlife Service), Martin Potter (California Department of Fish and Wildlife), Susan Perrell (Aera), Eric Snelling (Padre Associates, Inc.), Thea Benson (Padre Associates, Inc.), John Storrer (Storrer Environmental, LLC)	Discuss Project preliminary design and special-status species protocol-level surveys.
November 15, 2011	Jeff Phillips (U.S. Fish and Wildlife Service), Andrea Adams (U.S. Fish and Wildlife Service), Darryl Gunderson (Aera), John Storrer (Storrer Environmental, LLC), Eric Snelling (Padre Associates, Inc.)	Habitat assessment for exploratory wells and two-dimensional seismic survey

4.4.4.2 Biological Survey Areas

Biological resource studies included desktop reviews of the Project region and field surveys to document resources within the “Biological Survey Areas”. The Biological Survey Areas included the Project site, which includes the Aera-owned portions of the East Cat Canyon Oil Field and two small additional adjacent off-site Project footprint areas, the proposed natural gas pipeline alignment (within the public road rights-of-way plus a 200 foot buffer on each side), and the proposed electrical transmission line alignment plus a 500 foot buffer area on each side, as summarized in Table 4.4-2 – Summary of Biological Survey Areas. Separate Biological Resources Survey Reports were prepared by Padre Associates, Inc. for each Biological Survey Area (Appendices F-1 through F-3).

**Table 4.4-2. Summary of the Biological Survey Areas**

<b>Biological Survey Areas</b>	
<b>Project Site Biological Survey Area</b>	Aera property
	Portions of the Project footprint located on parcels adjacent Aera property
<b>Natural Gas Pipeline Biological Survey Area</b>	Natural gas pipeline alignment and a 200 foot buffer on each side of the public road rights-of-way
<b>Electrical Transmission Line Biological Survey Area</b>	Pacific Gas and Electric electrical transmission line alignment and a 500 foot buffer area on each side

#### 4.4.4.3 Desktop Review

The initial desktop review included an aerial imagery review of the Biological Survey Areas and surrounding region. The surrounding region, for the purposes of this discussion, includes the following nine U.S. Geological Survey quadrangles: Twitchell Dam, Tepusquet Canyon, Sisquoc, Orcutt, Lompoc, Los Alamos, Zaca Creek, Foxen Canyon, and Santa Maria. This review included the incorporation of Geographic Information Systems layers, including topography contours, and aquatic resources documented with the National Wetland Inventory (U.S. Fish and Wildlife Service, 2014a), as well as aerial photographs of the Project site provided by Cannon Associates (2011). Specifically, the aerial photographs consisted of 12 digital orthophotos using U.S. Geological Survey Digital Elevation Model data for rectification. Aerial photographs of the remaining portions of the Biological Survey Areas were provided by the National Agriculture Imagery Program (2012). All aerial photographs were reviewed to analyze potential migratory routes, habitat connectivity and landscape fragmentation, and investigation of surrounding land uses. These images were also used in the field to further assist in defining and mapping existing plant communities and sensitive habitats identified within the Biological Survey Areas.

The desktop review included a query of the California Department of Fish and Wildlife California Natural Diversity Database to identify reported occurrences of special-status plant and wildlife species and sensitive habitats within the region surrounding the Biological Survey Areas. The California Natural Diversity Database is a statewide digital database utilized to locate the nearest occurrences of all rare, threatened, endangered, and special-status species and natural communities in California. All wildlife taxa listed in the California Natural Diversity Database are considered "Special Animals," which the California Department of Fish and Wildlife is interested in tracking, regardless of their legal protection status (California Department of Fish and Wildlife, 2011). Provided in this assessment are figures illustrating the California Natural Diversity Database query results. The figures represent each documented California Natural Diversity Database occurrence with a polygon that depicts the accuracy of the data that was used to map the occurrence. Each polygon is provided an accuracy class that describes the level of the location detail. A polygon, therefore, does not necessarily reflect that a species occurs in all areas of the polygon, but may represent a non-specific area that documents habitat resources and/or simply a buffer distance around a specific point.

The U.S. Fish and Wildlife Service Critical Habitat Portal (2014b) was reviewed to determine location of Critical Habitat for Federally protected species that may potentially occur in the region. The U.S. Fish and Wildlife Service Critical Habitat Portal is an online database that provides most recent datasets for federally defined Critical Habitat areas. Global Information System shapefiles for California tiger salamander ponds, provided by the U.S. Fish and Wildlife Service (last updated in July 2010), were also reviewed. These files were released by the U.S. Fish and Wildlife Service for purposes of planning and do not constitute a comprehensive list of all the ponds that have the potential to be California tiger salamander breeding ponds in Santa Barbara County; however, the shapefiles have provided information on nearby aquatic habitats. In addition, Global Information Systems data for Environmentally Sensitive Habitat Area's provided by the Santa Barbara County Department of Planning and Development was reviewed.

The Global Information System layers from the National Wetland Inventory were reviewed to assist in the analysis of water resources. The National Wetland Inventory was established by

the U.S. Fish and Wildlife Service in 1974 to conduct a nationwide inventory of wetlands to provide biologists and others with information on the distribution of wetlands to aid in wetland conservation efforts. The National Wetland Inventory Global Information System layers used in this analysis were last modified on May 1, 2014, using the on-line Wetland Mapper (U.S. Fish and Wildlife Service, 2014a). Other water resources that were utilized in this analysis included U.S. Geological Survey blue-line streams identified on topographic imagery. Blue-line streams are useful tools used by regulatory agencies to assist in determination of jurisdiction.

The desktop review also examined multiple sources of technical survey information completed in the vicinity of the Biological Survey Areas, including the following:

- *Initial Field Assessment for California Tiger Salamander for the Aera East Cat Canyon Oil and Gas Field.* January 22, 2007. Prepared by Mr. Vince Semonsen of VJS Biological Consulting. (Semonsen, 2007);
- *Habitat Assessment for California Tiger Salamander for the Aera Two-dimensional Seismic Survey Test Plan.* September 8, 2011. Prepared by Storrer Environmental. (Storrer, 2011);
- *Habitat Assessment for California Tiger Salamander for the Aera East Cat Canyon Production Plan, Santa Barbara County, California.* September 2013. Prepared by Storrer Environmental (Storrer, 2013);
- *90-Day Report for Vernal Pool Fairy Shrimp Wet Season Surveys for Aera Oil and Gas Field.* Prepared by Padre Associates, Inc. (Padre, 2014a);
- *Dry Season Survey Results for Vernal Pool Fairy Shrimp within the Aera Oil and Gas Field.* Prepared by LSA (LSA, 2014);
- *Biological Resources Report for the Aera Energy, LLC. Two-dimensional Seismic Survey Project.* May 2011. Prepared by Padre Associates, Inc. (Padre, 2011a);
- *Biological Resources Survey Report for the Aera Exploratory Drilling Project, East Cat Canyon Oil Field.* May 2011. Prepared by Padre Associates, Inc. (Padre, 2011b);
- *ERG Operating Company, LLC. Los Alamos Fee "Pond E" California Red-legged Frog (*Rana draytonii*) Survey Results.* July 30, 2012. Letter to ERG Operating Company, LLC. Prepared by Sage Institute, Inc. (Sage, 2012); and
- *Results of Drift Net and Aquatic Surveys for California Tiger Salamanders (*Ambystoma californiense*) and Other Special-Status Amphibians at Five Wetlands on the ERG West Cat Canyon Lease in Northern Santa Barbara County, California.* June 14, 2012. Prepared by Paul W. Collins, Peter Gaede, and Vince Semonsen. (Collins and Gaede, 2012).

Plant community maps and Santa Barbara County Fire Department defensible space standards were reviewed to determine potential temporary impacts to plant communities and sensitive habitats for fuel management purposes. The review included Global Information System analysis of County-required buffers for structures and roadways, and existing plant communities and sensitive habitats occurring within the designated buffers.

A review of site records from other environmental documents and range maps including Zeiner et al., (1988, 1990a, 1990b) and Sibley (2003) were also utilized to determine what species have the potential to occur in the area based on life history and historical and current range maps.

In addition, in February 2014, one HOBO® Micro Weather Station with a rain gauge smart sensor was installed on a tripod adjacent to the office building within the Project site. Rainfall data were downloaded on a regular basis from February through May 2014 using HOBOWare® software.

#### 4.4.4.4 Field Surveys

Following the initial desktop review of the Biological Survey Areas and the surrounding region, field surveys were conducted to identify the existing botanical and wildlife resources occurring within the Biological Survey Areas and identify vegetation communities and habitats available for potentially occurring species.

Field surveys completed within the Biological Survey Areas included general biological resource surveys, focused species-specific surveys, and an extensive oak tree inventory. Padre Associates, Inc. Biologists involved in the biological surveys include: Thea Benson, Kenny Wimer, Christina Santala, Michaela Hoffman, Sarah Powell, Shannon Gonzales, and Amy Golub. Padre Associates, Inc. staff was assisted by Brian Dugas, Jessica Adinolfi, and Rhett Blanton of Terra Verde Environmental Consulting. Thea Benson supported John Storrer, Storrer Environmental, LLC, with evaluation of potential California tiger salamander habitat within the Project site. Padre Associates, Inc. Biologists also supported wet and dry season vernal pool fairy shrimp (*Branchinecta lynchi*) surveys within the Project site along with LSA Associates, Inc. Biologists. The survey dates and personnel for all field surveys are summarized in Table 4.4-3 – Summary of Completed Field Surveys.

**Table 4.4-3. Summary of Completed Field Surveys**

Survey Dates	Survey Focus	Biological Staff
<b>Surveys Completed within Project Site Biological Survey Area</b>		
July 20-21 and August 10, 2011 July 20 and August 1, 2012	California tiger salamander habitat assessment	J. Storrer, T. Benson
January 15 - 16, 2013 (2 surveys)	Wetland Identification and Mapping, Vernal Pool Fairy Shrimp Habitat Assessment, Botanical, Wildlife	T. Benson, S. Powell, C. Santala, K. Wimer
February 13, 2013 (1 survey – day and night)	California Red-Legged Frog Habitat Assessment	T. Benson and B. Dugas
March 26, 2013 (1 survey off-site in adjacent properties)	Botanical Blooming Period Reference Survey	C. Santala, J. Adinolfi

**Table 4.4-3. Summary of Completed Field Surveys**

<b>Survey Dates</b>	<b>Survey Focus</b>	<b>Biological Staff</b>
April 15 - 18, 2013 (4 surveys)	Botanical, Vegetation Community Mapping, Vegetation Rapid Assessments, Wildlife, Camera Stations	T. Benson, C. Santala, K. Wimer, J. Adinolfi, R. Blanton
October 15, 2013 to September 5, 2014	Oak Tree Inventory	T. Benson, C. Santala, A. Golub, K. Wimer, M. Hoffman, S. Gonzales
February 13, February 27, March 13, March 25, April 8, April 22, May 6, and May 20, 2014 (8 surveys)	Vernal Pool Fairy Shrimp Wet Season Surveys	S. Powell, M. Hoffman, T. Benson
April 11, 2014	California tiger salamander upland drift net design site walk	Martin Potter (California Department of Fish and Wildlife), Susan Perrell (Aera), J. Storrer, T. Benson, S. Spann, and Keith Kidwell Jr. (Sturgeon)
July 8 and 9, 2014 (2 surveys)	Vernal Pool Fairy Shrimp Dry Season Surveys	LSA Associates, Inc. and M. Hoffman
April 11, May 2, May 16, June 6, June 19, July 1, July 15, and July 25, 2014	Least Bell's Vireo Surveys (8 surveys)	T. Benson
<b>Surveys Completed within Natural Gas Pipeline Biological Survey Area</b>		
June 18, 2013, October 1, 2013, January 30, 2014	Botanical, Vegetation Community Mapping, Wildlife	C. Santala, A. Golub, J. Adinolfi
<b>Surveys Completed within Electrical Transmission Line Biological Survey Area</b>		
February 5, 2014, May 16, 2014	Botanical, Vegetation Community Mapping, Wildlife	C. Santala, T. Benson

During the field survey, biologists walked the Biological Survey Areas while documenting all plant and wildlife species, wetlands, and other biological resources. Direct visual observations, indirect sign (e.g., tracks, scat, skeletal remains, and burrows), and auditory cues (e.g., calls and songs) were documented. Biologists focused on the identification of potential habitat for special-status species, presence/absence of special-status species, and existing conditions, including vegetation community classification and suitable habitat for plant and local wildlife species that have the potential to occur within the Biological Survey Areas. Two infrared sensor cameras were placed along wildlife trails and water sources within the Project site and left overnight between April 15 and 18, 2013, to document wildlife movements at night.

Field surveys for the natural gas pipeline Biological Survey Area were limited to the public rights-of-way, which included the roadways and road shoulders; however, aerial field maps were utilized during field surveys to further analyze vegetation types within the remaining areas of the natural gas pipeline Biological Survey Area.

All identifiable plant species were documented and presence of suitable habitat for potentially occurring special-status plants was noted. Plant specimens that were not positively identified in the field were further examined using appropriate botanical keys, including the *Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al., 2012) and the *Jepson Herbarium Online Interchange California Floristics* (University of California, 2012). Vegetation/habitat types recorded during the surveys were classified based on the California Native Plant Society's *A Manual of California Vegetation, Second Edition (MCVII)* (Sawyer et al., 2009) and *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland, 1986), as appropriate. Further, the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (California Department of Fish and Wildlife, 2009) in conjunction with The Natural Communities List (California Department of Fish and Wildlife, 2010) was utilized to determine presence/absence of special-status natural communities, which are communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effect of projects (California Department of Fish and Wildlife, 2009). These communities may or may not contain special-status species. Padre Associates, Inc. utilized aerial imagery in conjunction with field surveys to identify and classify the plant communities and disturbance related areas within the Biological Survey Areas.

All resources occurring within the Biological Survey Areas were mapped either by hand directly on aerial imagery and/or using a GeoXH™ handheld Global Positioning System. All collected Global Positioning System data were downloaded into a Global Information System mapping program for use in graphics development.

Species specific surveys were conducted within the Project site for the following species: California tiger salamander, vernal pool fairy shrimp, and least bell's vireo (*Vireo bellii pusillus*).

Pools that remained holding water were surveyed for potential California red-legged frog (*Rana draytonii*) habitat using the *U.S. Fish and Wildlife Service Revised Guidance on Site Assessments and Field Surveys for California Red-Legged Frog* (2005c). This habitat assessment included a day-time visit and was followed by a night-time eye-shine survey. During these field visits, the pools were inspected for aquatic life, including amphibian egg masses, and pool depth was recorded. A California Red-Legged Frog Habitat Assessment was submitted to U.S. Fish and Wildlife Service and California Department of Fish and Wildlife in September 2013 (Appendix F-1.C).

A habitat assessment for vernal pool fairy shrimp was completed and submitted to the U.S. Fish and Wildlife Service in September 2013 following January 15 and 16, 2013 field visits. U.S. Fish and Wildlife Service protocol-level branchiopod surveys were initiated following the 1996 *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods* (U.S. Fish and Wildlife Service, 1996). U.S. Fish and Wildlife Service-approved dip-net aquatic surveys were completed throughout the Project site on February 13 and 27, March 13 and 25, April 8 and 22, and May 6 and 20, 2014. Surveys were completed by Sarah Powell under U.S. Fish and Wildlife Service

Recovery Permit 81440-2010-B-0026. Additional methodology and results of the surveys are provided in the 90-Day Report submitted to the U.S. Fish and Wildlife Service in August 2014 (Appendix F-1.E). Following the wet-season vernal pool fairy shrimp surveys, dry-season cysts surveys were completed on July 8 and 9, 2014 by LSA Associates, Inc. Results of this investigation are also provided in Appendix F-1.E.

A California tiger salamander habitat assessment was submitted to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife by John Storrer in September 2013 (Appendix F-1.F). Aquatic dip net surveys (one survey in March, April, and May) were initiated by J. Storrer in 2013 and 2014 for a U.S. Fish and Wildlife Service documented potential California tiger salamander pool (SISQ-19); however, no dip net surveys were completed because the pool did not hold water throughout 2013 and 2014. Several site visits to the pool were completed by Padre Associates, Inc. Biologists following rain events to document the water levels; however, the pond did not support standing water. One small pool of water located at a former staging area was holding water on May 16, 2014; therefore, a dip net survey was completed by Thea Benson and John Storrer.

During the spring of 2014, Thea Benson conducted U.S. Fish and Wildlife Service protocol-level surveys for least Bell's vireo per guidance of the U.S. Fish and Wildlife Service. These surveys included eight visits to suitable habitat areas within the Project site documenting all bird activity. The surveys were completed on April 11, May 2, May 16, June 6, June 19, July 1, July 15, and July 25, 2014. Following the completion of the surveys, a final report was submitted to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife in August of 2014 (Appendix F-1.G).

Oak tree inventories were completed within the Project site, documenting all trees greater than eight inches in diameter at breast height (DBH) located within the Project grading limits of disturbance, using a calibrated measuring tape. In the case of trees with multiple trunks, the diameter-at-breast-height of all trunks was combined to calculate the diameter of the tree. Individual oak tree locations were documented with a hand held Global Positioning System; the location, size, and species were documented 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 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.

#### 4.4.5 Biological Resource Survey Findings

##### 4.4.5.1 Regionally Occurring Sensitive Habitats

Based on information obtained from the desktop review, several habitats occur in the region that are afforded protection by a Federal, State, or local authority, and may support special-status plants and wildlife. For the purposes of this assessment, sensitive habitats include the following:

- Critical Habitat defined by the Federal Endangered Species Act under Section 3, and protected by the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service (Figure 4.4-1 - Sensitive Habitats within Project Vicinity);
- Sensitive habitats defined by the California Endangered Species Act and protected by the California Department of Fish and Wildlife and/or local agencies, documented within the California Natural Diversity Database;
- Environmentally Sensitive Habitat Areas protected by the County of Santa Barbara and outlined in the Santa Barbara County Environmental Thresholds and Guidelines Manual (Santa Barbara County, 2008); and/or,
- Rare habitats protected by local professional organizations and/or the scientific community.

Table 4.4-4 - Summary of Sensitive Habitats Occurring within the Project Region, provides a summary of sensitive habitats occurring in the region (within the nine quadrangle search) and their approximate distance from the Project site.

**Table 4.4-4. Summary of Sensitive Habitats Occurring within the Project Region**

Sensitive Habitat	Protection Status <sup>3</sup>	Distance from Boundaries of Project Site
<b>U.S. Fish and Wildlife Service/National Marine Fisheries Service Designated Critical Habitat<sup>1</sup></b>		
Southern Steelhead Critical Habitat	Designated Critical Habitat	0.7 miles north-northeast
California Red-Legged Frog Critical Habitat	Designated Critical Habitat	5.5 miles northeast
California Tiger Salamander Critical Habitat	Designated Critical Habitat	3.3 miles southwest
Arroyo Toad Critical Habitat	Designated Critical Habitat	2.5 miles east
La Graciosa Thistle Critical Habitat	Designated Critical Habitat	3.0 miles southwest
Lompoc Yerba Santa Critical Habitat	Designated Critical Habitat	5.4 miles west
Gaviota Tarplant Critical Habitat	Designated Critical Habitat	20.9 miles southwest
<b>California Department of Fish and Wildlife Natural Communities of Special Concern<sup>2</sup></b>		
Central Coast Arroyo Willow Riparian Forest	G3/S3.2	15.8 miles southwest
Central Maritime Chaparral	G3/S3.2	10.4 miles southwest
Southern California Steelhead Stream	G?/SNR	13.7 miles southwest

**Table 4.4-4. Summary of Sensitive Habitats Occurring within the Project Region**

Sensitive Habitat	Protection Status <sup>3</sup>	Distance from Boundaries of Project Site
Southern California Threespine Stickleback Stream	G?/SNR	10.5 miles southwest
Southern Cottonwood Willow Riparian Forest	G3/S3.2	13.6 miles south
Southern Vernal Pool	G?/SNR	14.3 miles southwest
Southern Willow Scrub	G3/S2.1	0.7 miles north-northeast
Red Willow Thickets	G3/S3	Observed within Project Site
Coast Live Oak Woodland	G5/S4, County Environmentally Sensitive Habitat Area	Observed within Project Site
<p>Notes:</p> <p><sup>1</sup>U.S. Fish and Wildlife Service Federal Register.</p> <p><sup>2</sup>The California Natural Diversity Database ranking codes are part of the Heritage Methodology that provides information about the status of the taxon/community throughout their entire range and within California. The California Department of Fish and Wildlife List of Vegetation Alliances and Associations are based on Sawyer et al., 2009 and available on-line (California Department of Fish and Wildlife, 2010).<sup>3</sup>Status Codes</p> <p>G Global Rank.                      S State Rank                      G1-G5 Globally critically imperiled (G1) to demonstrably secure (G5)                      S1-S3 State critically imperiled (S1) to demonstrably secure (S5).                      NR Not ranked.                      ? Denotes an inexact numeric rank due to insufficient samples over the full expected range of the type, but existing information points to this rank.</p>		





**Southern Steelhead Critical Habitat.** No federally designated Critical Habitat for southern steelhead (*Oncorhynchus mykiss*) occurs within the Project footprint; however, the Sisquoc River is designated as an Evolutionary Significant Unit for southern Steelhead (*Oncorhynchus mykiss*) and occurs within the Project region. The Sisquoc River is designated as an evolutionary significant unit (ESU) for southern steelhead and occurs within the Project region; however, it does not cross through the Biological Survey Areas (Figure 4.4-1 - Sensitive Habitats within Project Vicinity).

**California Tiger Salamander Critical Habitat.** The Biological Survey Areas are located within the Santa Barbara County Distinct Population Segment for California tiger salamander. Critical Habitat for the Santa Barbara County District Population Segment was designated by the U.S. Fish and Wildlife Service in September of 2005 for six metapopulation units: West Santa Maria/Orcutt, East Santa Maria, West Los Alamos/Careaga, East Los Alamos, Purisima Hills, and Santa Rita Valley. The East Santa Maria, West Los Alamos/Careaga, and East Los Alamos metapopulations occur within a five mile radius of the Project site. Critical Habitat for California tiger salamander does not occur within the Project site or the electrical transmission line Biological Survey Area. Critical Habitat does occur within the natural gas pipeline Biological Survey Area along East Clark Avenue and the intersection of Dominion Road (Figure 4.4-1 - Sensitive Habitats within Project Vicinity) (north of the Project site); however, the pipeline will be constructed under the paved roadway, outside the designated Critical Habitat area for California tiger salamander.

**California Red-Legged Frog Critical Habitat.** No federally designated Critical Habitat for California red-legged frog occurs within the Project site or the electrical transmission line Biological Survey Areas; however, Critical Habitat for the East Santa Maria and West Los Alamos/Careaga metapopulations does occur approximately five miles northeast of the Project site, within the Sierra Madre Mountains (Figure 4.4-1 - Sensitive Habitats within Project Vicinity). Critical Habitat also occurs within natural gas pipeline Biological Survey Area along Graciosa Road, near the western terminus of the pipeline corridor (Figure 4.4-1 - Sensitive Habitats within Project Vicinity); however, the pipeline will be constructed under the paved roadway, outside the designated Critical Habitat areas.

**Arroyo Toad Critical Habitat.** No federally designated Critical Habitat for arroyo toad (*Bufo californicus*) occurs within the Biological Survey Areas; however, it does occur to the east within 2.5 miles of the Project site in the upstream reaches of the Sisquoc River (Figure 4.4-1 - Sensitive Habitats within Project Vicinity).

**La Graciosa Thistle Critical Habitat.** No federally designated Critical Habitat for La Graciosa thistle (*Cirsium scariosum* var. *loncholepis*) occurs within the Project site or the electrical transmission line Biological Survey Area; however, the Santa Maria River-Orcutt Creek Critical Habitat Unit (No. 2) includes a stretch of Graciosa Road in the western portion of the natural gas pipeline Biological Survey Area (Figure 4.4-1 - Sensitive Habitats within Project Vicinity). Additionally, the Cañada de Las Flores Critical Habitat Unit (No. 3) occurs within five miles to the south of Project site (Figure 4.4-1 - Sensitive Habitats within Project Vicinity). The natural gas pipeline will be constructed under the roadway and the pipeline alignment does overlap designated La Graciosa thistle Critical Habitat areas.

**Lompoc Yerba Santa Critical Habitat.** No federally designated Critical Habitat for Lompoc yerba santa (*Eriodictyon capitatum*) occurs within the Biological Survey Areas; however,

the Lompoc Yerba Santa - Solomon Hills Unit is located approximately 5.4 miles west of the Project site, five miles west of portions of electrical transmission line Biological Survey Area, and approximately 0.8 mile east of the western terminus of the natural gas pipeline Biological Survey Area near Graciosa Road (Figure 4.4-1 - Sensitive Habitats within Project Vicinity).

**Gaviota tarplant Critical Habitat.** No federally designated Critical Habitat for Gaviota tarplant (*Deinandra increscens* ssp. *villosa*) occurs within the Biological Survey Areas; however, the Sudden Peak Unit occurs approximately 20.9 miles to the southwest of Project site (Figure 4.4-1 - Sensitive Habitats within Project Vicinity).

**California Department of Fish and Wildlife Natural Communities of Special Concern.** California Department of Fish and Wildlife has created the List of Vegetation Alliances and Associations (Natural Communities List) (California Department of Fish and Wildlife, 2010), to assist in the identification of which Natural Communities are considered to be a high priority for conservation. The Natural Communities List includes California Natural Diversity Database Natural Community occurrences (i.e., Holland types) and vegetation types classified according to the current State standard MCVII nomenclature. All Natural Community occurrences in the California Department of Fish and Wildlife Natural Communities List (California Department of Fish and Wildlife, 2010) have a corresponding G (Global) and S (State) rank, according their degree of imperilment (as measured by rarity, trends, and threats), using the Heritage Methodology.

Based on the California Natural Diversity Database query conducted during the desktop review, the following Natural Communities of Special Concern have been documented within the region, outside the Project site: Central Coast Arroyo Willow Riparian Forest, Central Maritime Chaparral, Southern California Steelhead Stream, Southern California Threespine Stickleback Stream, Southern Cottonwood Willow Riparian Forest, Southern Vernal Pool, and Southern Willow Scrub. Based on the April 2013 field surveys, no Natural Communities of Special Concern were observed within the Project site or within the work areas for the electrical transmission line or natural gas pipeline.

**County Sensitive Habitats.** Santa Barbara County has habitat-specific impact assessment guidelines in their Environmental Thresholds Manual (2008) for native communities specific to the region, such as oak woodlands, native grasslands, vernal pools, and riparian habitat. Environmentally Sensitive Habitat Areas designated by Santa Barbara County primarily occur along the coast and no County-documented Environmentally Sensitive Habitat Areas have been mapped within 10 miles of the Project site (Figure 4.4-1 - Sensitive Habitats within Project Vicinity); however, coast live oak woodland is considered to be an Environmentally Sensitive Habitat Area and occurs extensively within Biological Survey Areas.

The region has the potential to support native grassland habitat; however, these communities are not typically documented by resource professionals and make historical documentation difficult to track. In Santa Barbara County, native grasslands are defined as “*an area where native grassland species comprise ten percent or more of the total relative cover*” (Santa Barbara County, 2008). The California Department of Fish and Wildlife also considers valley needlegrass grassland to be a sensitive plant community based on the species composition at the alliance and provisional alliance level. Native grasslands occurring in the Santa Barbara County area are dominated by perennial bunch grasses such as purple needlegrass (*Stipa*

[*Nasella pulchra*], foothill needlegrass (*Stipa [Nasella] lepida*), and nodding needlegrass (*Stipa [Nasella] cernua*). Purple needlegrass and foothill needlegrass species were identified within the Project site; however, these species did not comprise a native grassland community with ten percent or more of total relative cover in any given area.

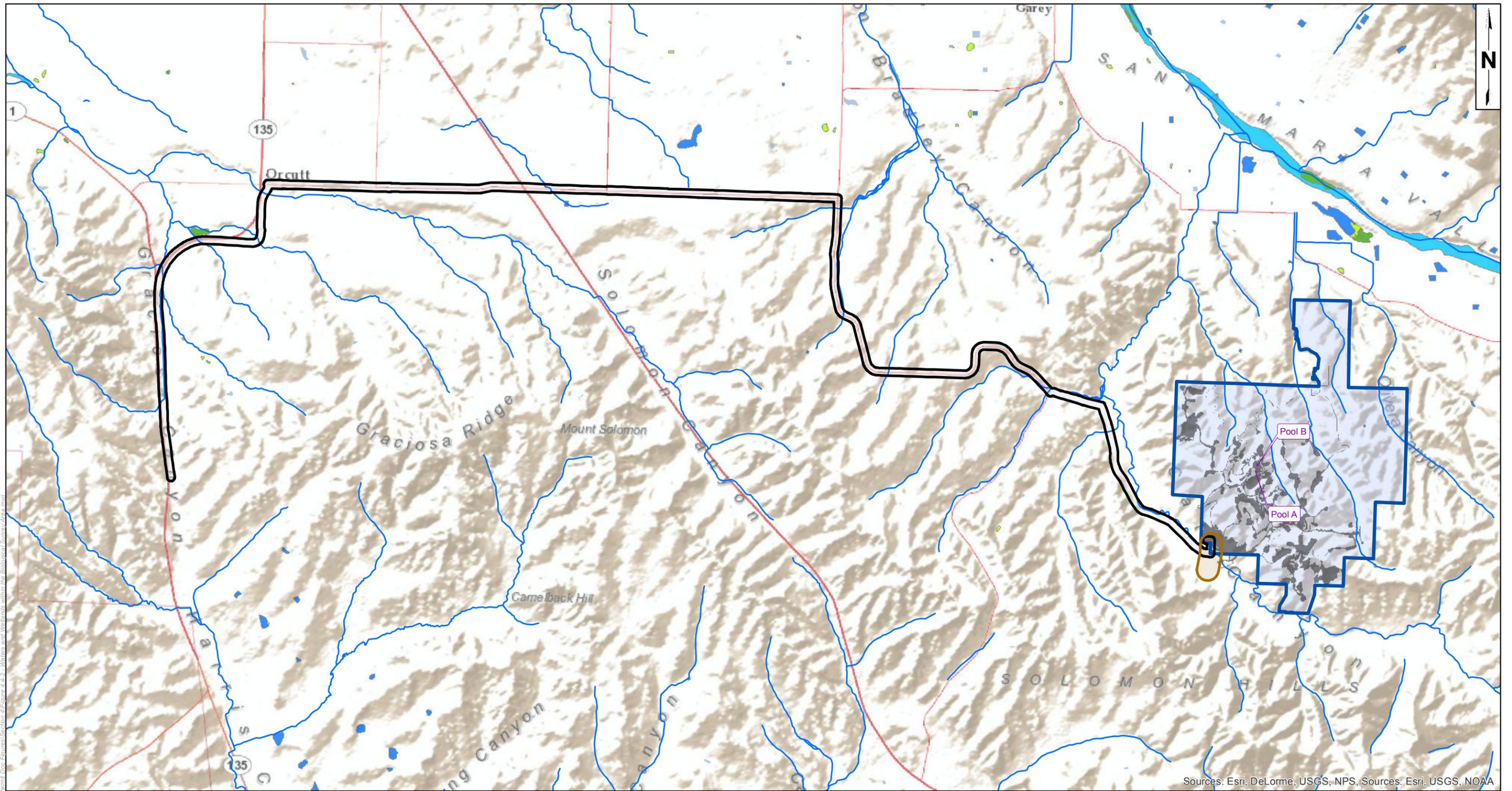
#### 4.4.5.2 Aquatic Features

**Drainages.** The Project site contains six blue-line drainages identified by U.S. Geological Survey topographical imagery (Figure 4.4-2 - Waters and Wetlands within the Biological Survey Areas). These drainages include Cat Canyon Creek, Long Canyon Creek, Olivera Canyon Creek, and three unnamed drainages. In addition, Bradley Canyon Creek and Graciosa Canyon Creek intersect and/or parallel the natural gas pipeline Biological Survey Area. No drainages or other wetlands were identified by the U.S. Fish and Wildlife Service's National Wetland Inventory (U.S. Fish and Wildlife Service, 2014a) within the Biological Survey Areas (Figure 4.4-2 - Waters and Wetlands within the Biological Survey Areas). The blue-line drainages are ephemeral and remain dry for the majority of the year except during and immediately following rainfall. After seasonal rains, the streams may hold water long enough to provide suitable breeding habitat for some amphibious species or aquatic invertebrates that rely on ephemeral water sources. They do not provide a perennial water source for aquatic wildlife that rely on a continual water source for survival and/or breeding, such as fish.

Cat Canyon Creek flows from southeast to northwest along the western boundary of the Project site and transects the electrical transmission line Biological Survey Area (Figure 4.4-2 - Waters and Wetlands within the Biological Survey Areas). This drainage supports a mix of willow thickets and coast live oak woodland habitat along portions of the channel as it meanders through numerous private properties north through the town of Sisquoc, eventually draining into the Sisquoc River. Long Canyon Creek flows through the Project site and also drains to the Sisquoc River. In the upper portions of the drainage, in the southeastern portion of the Project site, it is a swale in grassland habitat grazed by cattle. It begins to narrow into the canyon along Long Canyon Road, supporting some scattered riparian vegetation occurring in the northern reaches of the Project site. It then flows north of the Project site where it is channelized by agricultural activities before draining into the Sisquoc River. To the east of the Project site, Olivera Canyon Creek is an ephemeral drainage that gathers water flow from rills in the hillsides following rainfall. This drainage is steep and flows through oak woodland and grassland habitats before also draining to the Sisquoc River.

There are three other unnamed "blue-line" drainages that support water from the north facing slopes of the Project site and drain north eventually to the Sisquoc River. In addition, there are several other ephemeral drainages not identified as blue-line streams but were observed during field surveys throughout the Project site. These channels drain the steep hillsides within the property into the lower floodplain during periods of rainfall and remain dry for the remainder of the year. They are sandy and several have been significantly impacted by erosion at the Project site. Riparian vegetation or other hydrophytic plant species were not identified in these drainages.

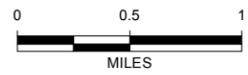
These drainages may or may not be afforded protection by federal, state, and local regulatory agencies based on definitions provided in Section 4.4.2 above. A jurisdictional determination, supplemented with a wetland delineation, may be necessary to determine jurisdictional limits of federal and state wetlands.



Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA

**LEGEND:**

- |                                       |  |                                   |
|---------------------------------------|--|-----------------------------------|
| Aear Energy LLC Property BSA          | USGS Blue Line Stream                                    | Freshwater Forested/Shrub Wetland |
| Natural Gas Import Pipeline Route BSA | Ephemeral Wetland Depression on Aera Energy LLC Property | Freshwater Pond                   |
| 115kV Service Line BSA                | <b>NWI Wetland</b>                                       | Other                             |
| Project Footprint                     | Freshwater Emergent Wetland                              | Riverine                          |



Source: ESRI Online Basemap, Santa Barbara County, USFWS NWI, TJ Cross 8/20/14, DPSI 2013, Spec Services  
 Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
 Notes: BSA = Biological Survey Area  
 This map was created for informational and display purposes only.

PROJECT NAME: <b>EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT</b>	
PROJECT NUMBER: 1002-0455	DATE: September 2014

**WATERS AND WETLANDS  
WITHIN THE  
BIOLOGICAL SURVEY AREA**

**FIGURE  
4.4-2**

I:\GIS\MapInfo\Project\East Cat Canyon\Permit Doc\FigureSection\Figure 4.4-2 - Waters and Wetlands within the Biological Survey Area.mxd



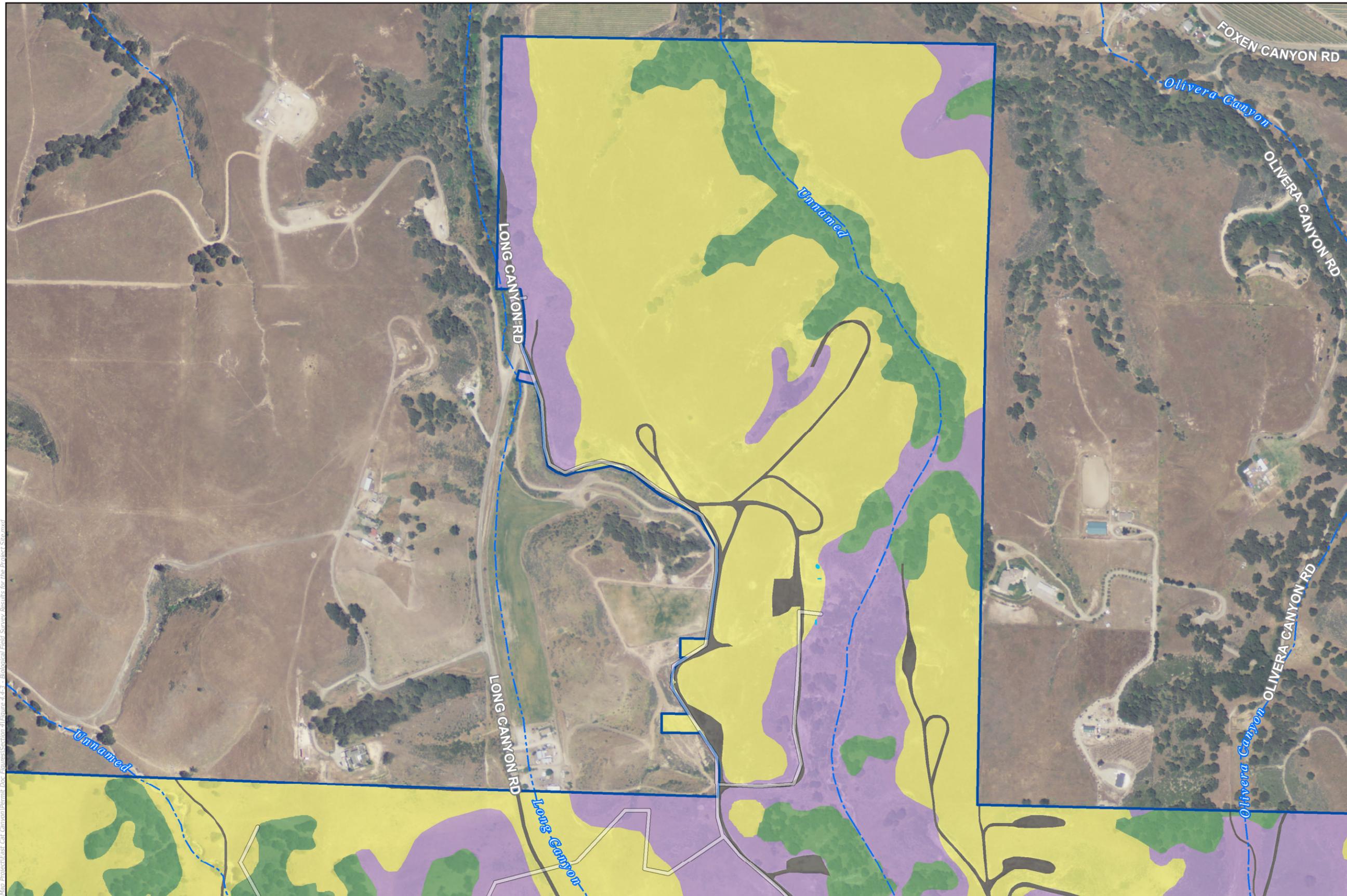
**Ephemeral Wetland Depressions.** Ephemeral wetland depressions are isolated shallow surface indentations consisting of relatively impermeable materials such as hardpan, clay, or basalt that restrict the downward percolation of rainwater. These depressions become inundated following rainfall and may sometimes remain inundated until spring or early summer, or sometimes fill and empty numerous times during the wet season. They may support endemic plant and wildlife species that rely on short duration inundation and specific soil elements. Some ephemeral ponds, depending on their specific wetland conditions (e.g., hydric soils, hydrology duration, and/or hydrophytic vegetation), may be afforded protection under federal, state, and/or local regulatory guidelines. A jurisdictional determination, supplemented with a wetland delineation, may be necessary to determine jurisdictional limits of federal and state wetlands.

Field visits on January 15 and 16, 2013, documented pooled water within the Project site following recorded rainfall of 0.13 inch on January 10, 2013. Several depressional pools were identified along abandoned well pads or containment basins that were previously graded and cleared of vegetation and some with a road base fill (Figure 4.4-3 - Biological Field Survey Results for the Project Site) (Note: This figure has been updated). The majority of the pools did not support vegetation and no endemic vernal pool species were observed during field visits. Few (under twelve) of the pools contained sparse vegetation on the perimeter, consisting primarily of non-native species including brass buttons (*Cotula coropifolia*), annual rabbitsfoot grass (*Polypogon monspeliensis*), rattail sixweeks grass (*Festuca myuros*), and yellow sweet clover (*Melilotus indicus*). Hydrophytic vegetation was not predominant and hydrology indicators were only present following rainfall and not during the region's growing season. In addition, all pools were located on disturbed/compacted soils that do not meet hydric soil specifications. Therefore, these pools did not meet wetland definitions for federal, state, or Santa Barbara County.

The Project site was visited again on February 13, 2013, and the pools were all dry except for two that were once used as containment basins during past oil field operations (Pool A and Pool B) (Figure 4.4-3 - Biological Field Survey Results for the Project Site). Pool B is fenced off from cattle, and during the February 2013 survey, had an impervious concrete/asphalt base with no emergent vegetation. Pool A was open to cattle and other wildlife to use and was underlain by a claypan, which was capable of holding water for longer hydroperiods. Pool A contained non-native brass button patches with component species consisting of parish's spikerush (*Eleocharis parishii*), toad rush (*Juncus bufonius*), yellow sweet clover, rattail sixweeks grass, and annual rabbitsfoot grass.

During the April 2013 field survey, the only remaining water identified within the Project site was observed at Pool A where water persisted and a small patch of brass buttons patches was identified and further surveyed using the California Native Plant Society and California Department of Fish and Wildlife Protocol for Combined Vegetation Rapid Assessment and Relevè Sampling (California Native Plant Society, 2011). Data sheets for these surveys are provided within Appendix F-1.H. Because this area supports hydrophytic plant components (brass buttons) and is "a non-soil that was saturated with water or covered by shallow water at some time during the growing season of each year", Pool A may be considered a wetland according to Santa Barbara County definitions, outlined in section 4.2.3 above. None of the remaining pools contained sufficient hydrophytic vegetation, hydric soils, or hydroperiod to be considered a wetland under the Santa Barbara County wetland definitions or other federal and state wetland definitions; however, a jurisdictional determination may be necessary.

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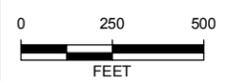
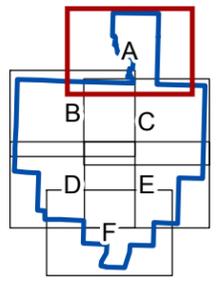


**LEGEND:**

- Biological Survey Area (BSA)
- Project Footprint
- Rapid Assessment and/or Revele Data Point
- Ephemeral Wetland Depression (2/2013)
- Hydrographic Feature
- Wildlife Observation**
- Americal kestrel nest
- Red-tailed hawk nest
- Common raven nest
- Golden eagle
- Rufous-crowned sparrow
- American badger
- Special Status Species**
- Straight-awned spineflower
- Vegetation Community**
- Annual grasslands
- California coastal scrub
- California coffee berry scrub
- Coast live oak woodland
- Eucalyptus groves
- Previously Disturbed/Developed
- Red willow thicket
- Western rush marsh



**FIGURE INDEX:**



Source: NAIP 2012 Image, County of Santa Barbara, DPSI 2013, TJ Cross 8/20/2014  
 Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
 Notes: This map was created for informational and display purposes only

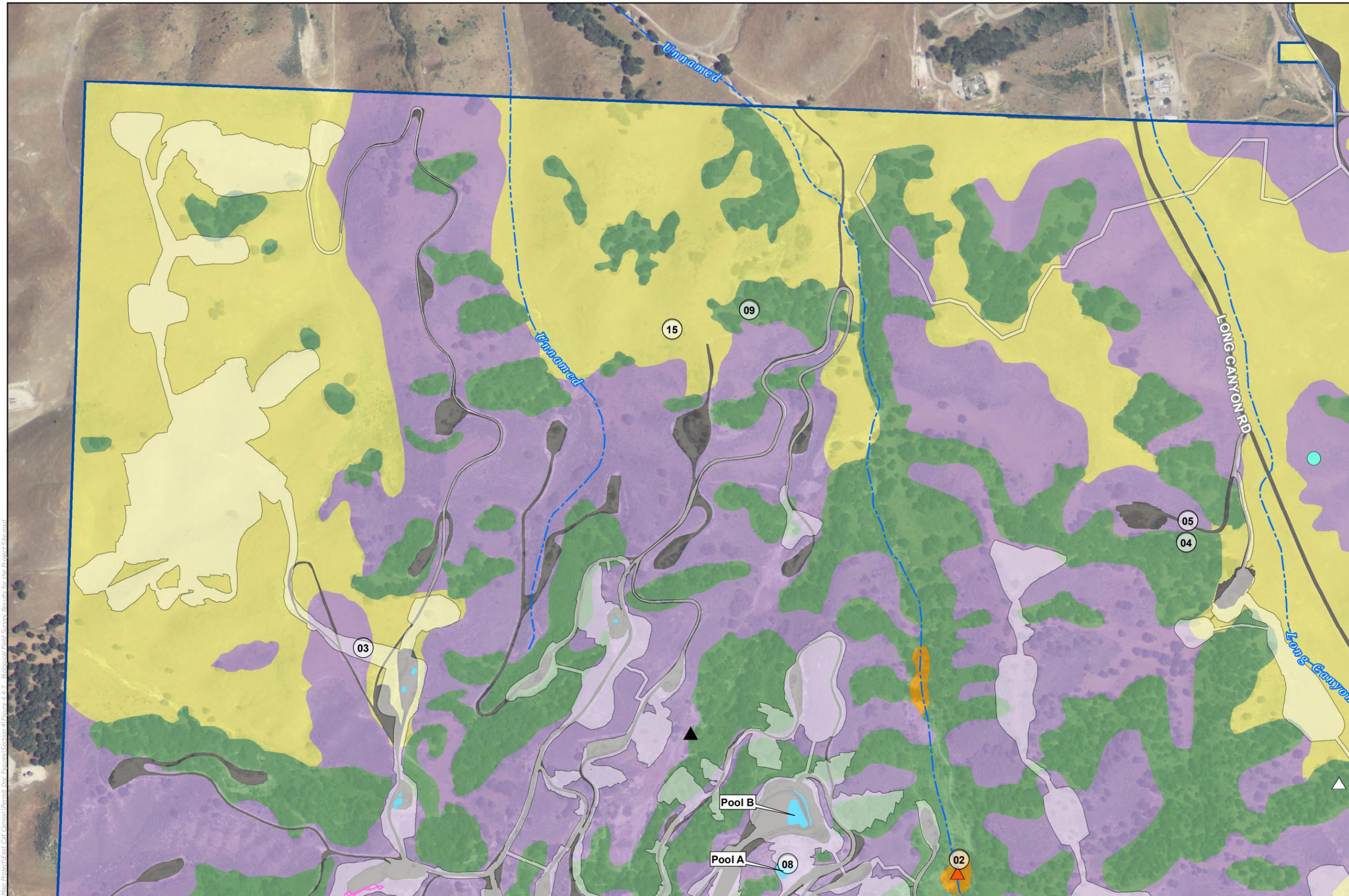
PROJECT NAME: **EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT**  
 PROJECT NUMBER: 1002-0455      DATE: August 2015

**BIOLOGICAL FIELD SURVEY RESULTS FOR THE PROJECT SITE**

FIGURE 4.4-3

© Kroll/IGIS Maps/Mapa Project/East Cat Canyon/Permit Doc Figures/Section of Figure 4.4-3: Biological Field Survey Results for the Project Site.mxd



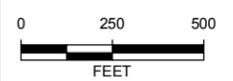
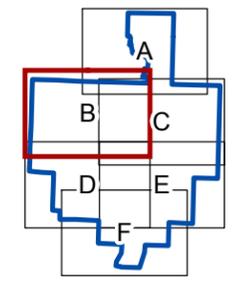


**LEGEND:**

- 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
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- Annual grasslands
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**FIGURE INDEX:**



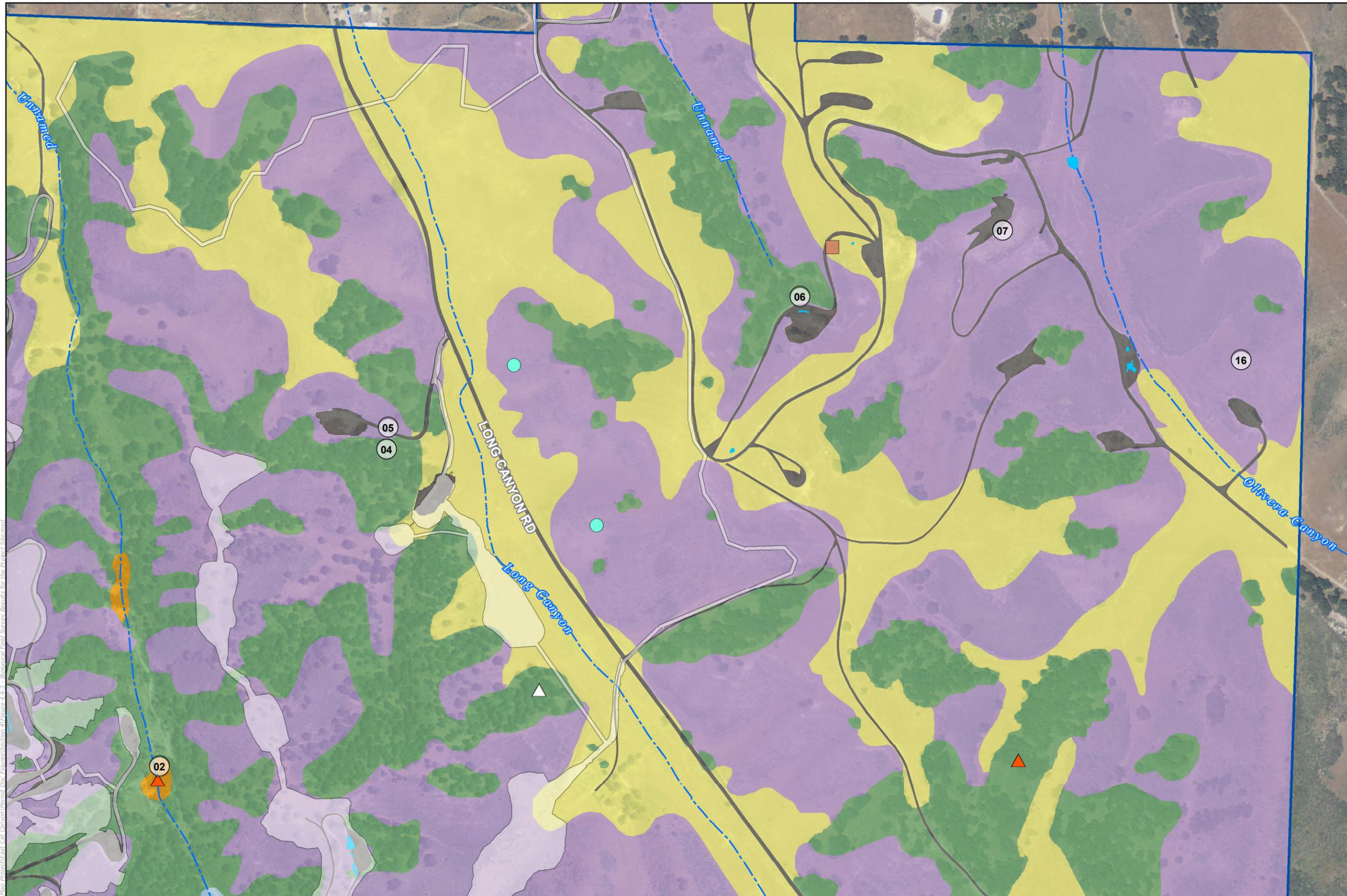
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 Notes: This map was created for informational and display purposes only

PROJECT NAME: EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT  
 PROJECT NUMBER: 1002-0455 DATE: August 2015

**BIOLOGICAL FIELD SURVEY RESULTS FOR THE PROJECT SITE**

FIGURE 4.4-3



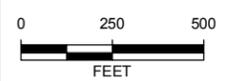
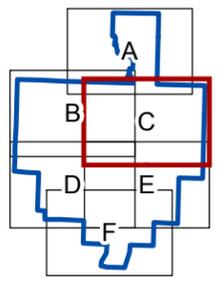


**LEGEND:**

-  Biological Survey Area (BSA)
-  Project Footprint
-  Rapid Assessment and/or Revele Data Point
-  Ephemeral Wetland Depression (2/2013)
-  Hydrographic Feature
- Wildlife Observation**
-  Americal kestrel nest
-  Red-tailed hawk nest
-  Common raven nest
-  Golden eagle
-  Rufous-crowned sparrow
-  American badger
- Special Status Species**
-  Straight-awned spineflower
- Vegetation Community**
-  Annual grasslands
-  California coastal scrub
-  California coffee berry scrub
-  Coast live oak woodland
-  Eucalyptus groves
-  Previously Disturbed/Developed
-  Red willow thicket
-  Western rush marsh



**FIGURE INDEX:**



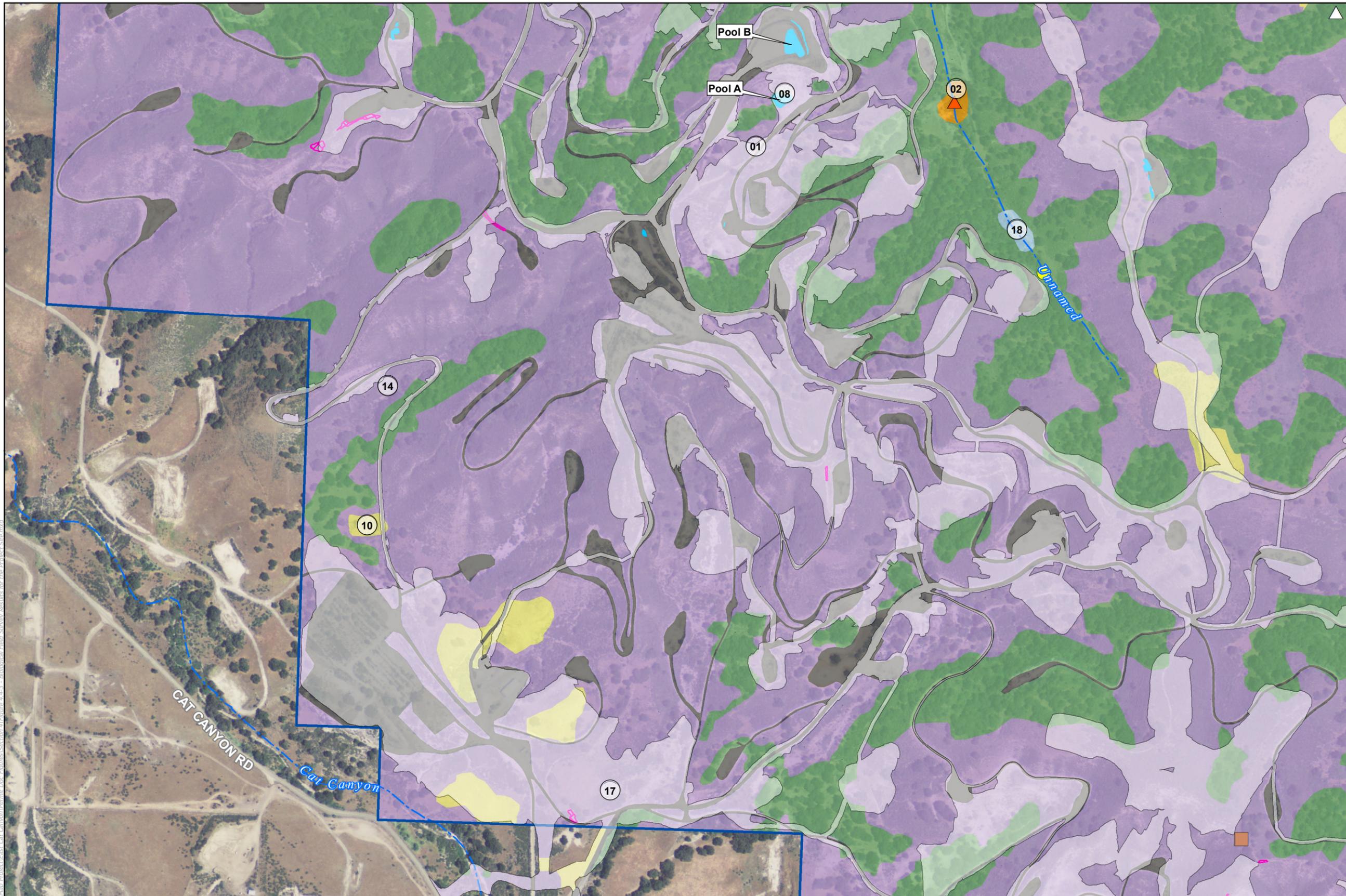
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 Notes: This map was created for informational and display purposes only

PROJECT NAME: EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT  
 PROJECT NUMBER: 1002-0455 DATE: August 2015

**BIOLOGICAL FIELD SURVEY RESULTS FOR THE PROJECT SITE**

FIGURE 4.4-3



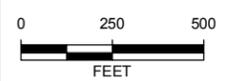
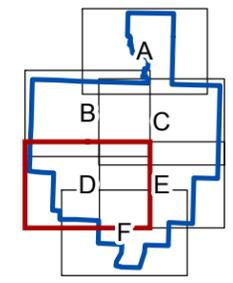


**LEGEND:**

- Biological Survey Area (BSA)
- Project Footprint
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- Hydrographic Feature
- Wildlife Observation**
  - American kestrel nest
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  - Rufous-crowned sparrow
  - American badger
- Special Status Species**
  - Straight-awned spineflower
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  - California coffee berry scrub
  - Coast live oak woodland
  - Eucalyptus groves
  - Previously Disturbed/Developed
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  - Western rush marsh



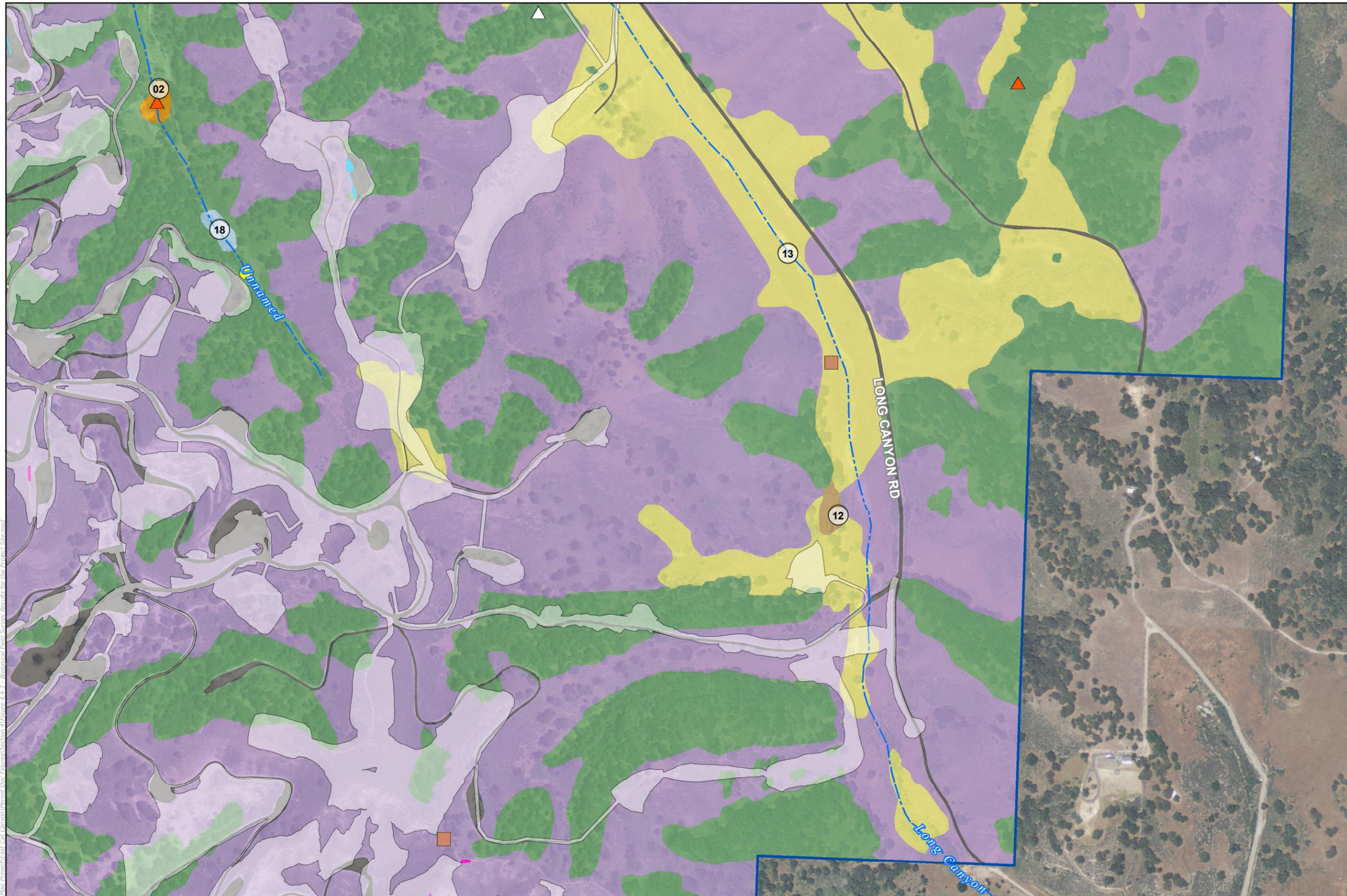
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 Notes: This map was created for informational and display purposes only

<p>PROJECT NAME: <b>EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT</b></p> <p>PROJECT NUMBER: 1002-0455      DATE: August 2015</p>	<p><b>BIOLOGICAL FIELD SURVEY RESULTS FOR THE PROJECT SITE</b></p>	<p>FIGURE 4.4-3</p>
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**LEGEND:**

- Biological Survey Area (BSA)
- Project Footprint
- Rapid Assessment and/or Releve Data Point
- Ephemeral Wetland Depression (2/2013)
- Hydrographic Feature

**Wildlife Observation**

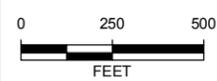
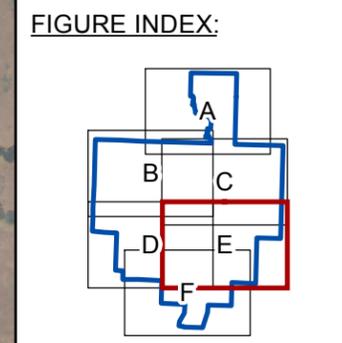
- Americal kestrel nest
- Red-tailed hawk nest
- Common raven nest
- Golden eagle
- Rufous-crowned sparrow
- American badger

**Special Status Species**

- Straight-awned spinniflower

**Vegetation Community**

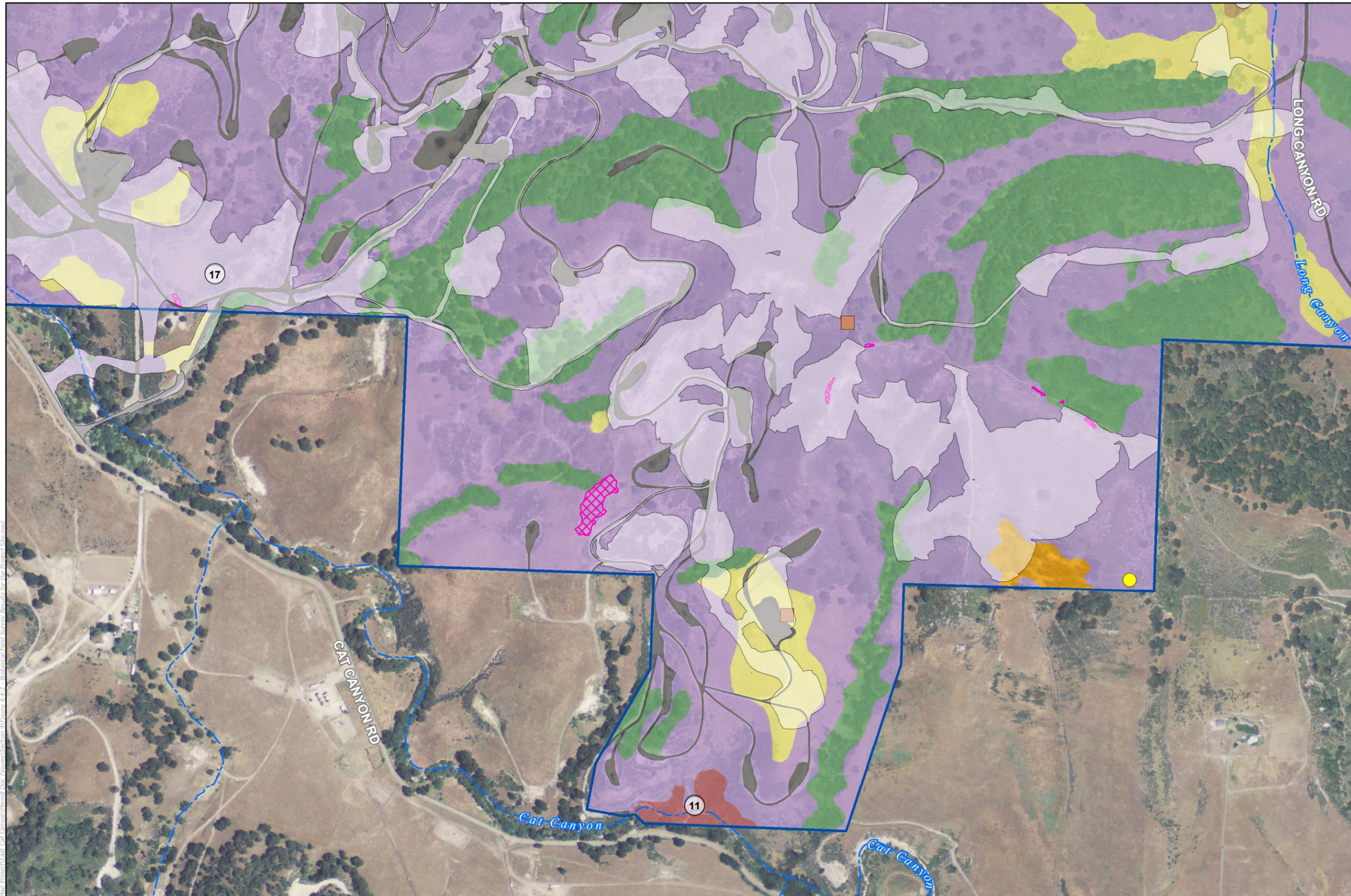
- Annual grasslands
- California coastal scrub
- California coffee berry scrub
- Coast live oak woodland
- Eucalyptus groves
- Previously Disturbed/Developed
- Red willow thicket
- Western rush marsh



Source: NAIP 2012 Image, County of Santa Barbara, DPSI 2013, TJ Cross 8/20/2014  
 Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
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PROJECT NAME: <b>EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT</b>	<b>BIOLOGICAL FIELD SURVEY RESULTS FOR THE PROJECT SITE</b>	FIGURE
PROJECT NUMBER: 1002-0455      DATE: August 2015		4.4-3





**LEGEND:**

- Biological Survey Area (BSA)
- Project Footprint
- Rapid Assessment and/or Releve Data Point
- Ephemeral Wetland Depression (2/2013)
- Hydrographic Feature

**Wildlife Observation**

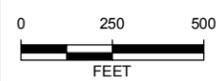
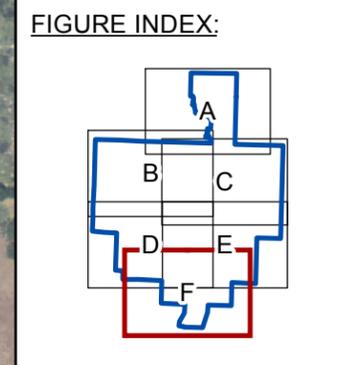
- American kestrel nest
- Red-tailed hawk nest
- Common raven nest
- Golden eagle
- Rufous-crowned sparrow
- American badger

**Special Status Species**

- Straight-awned spineflower

**Vegetation Community**

- Annual grasslands
- California coastal scrub
- California coffee berry scrub
- Coast live oak woodland
- Eucalyptus groves
- Previously Disturbed/Developed
- Red willow thicket
- Western rush marsh



Source: NAIP 2012 Image, County of Santa Barbara, DPSI 2013, TJ Cross 8/20/2014  
 Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
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<p>PROJECT NAME: <b>EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT</b></p> <p>PROJECT NUMBER: 1002-0455      DATE: August 2015</p>	<p><b>BIOLOGICAL FIELD SURVEY RESULTS FOR THE PROJECT SITE</b></p>	<p>FIGURE 4.4-3</p>
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© Kristini GIS Maps/Map Project/East Cat Canyon/Permit Doc/Figure/Section 4/Figure 4.4-3 Biological Field Survey Results for the Project Site.mxd



**Agricultural Ditches.** The natural gas pipeline Biological Survey Area intersects several row-crop agricultural fields, in which soils are regularly disked and the crops rotated seasonally. Vineyards are also present, but these fields are not rotated. Runoff from these fields is directed to agricultural ditches, which are frequently cleared of vegetation to maintain flows. Some of these agricultural ditches connect to larger agricultural drainages that terminate at catchment basins and store the water until percolating into the ground. In the Santa Maria Valley, these ditches and catchment basins are known to support amphibian movements and breeding activities. No agricultural ponds were observed within the natural gas pipeline Biological Survey Area; however, agricultural ditches were observed along the roadside within the natural gas pipeline Biological Survey Area and likely drain into ponds located outside of the natural gas pipeline Biological Survey Area.

#### 4.4.5.3 Vegetation Types Occurring within the Biological Survey Areas

Based on species composition, life form, and community membership rules, the vegetation identified within the Biological Survey Areas can be classified into distinct vegetation types (i.e., alliances, associations) as described in Sawyer et al., 2009. Further, the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (California Department of Fish and Wildlife, 2009), in conjunction with *The Natural Communities List* (California Department of Fish and Wildlife, 2010), was utilized to determine presence/absence of special-status natural communities. These vegetation communities are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects (California Department of Fish and Wildlife, 2009). These vegetation communities may or may not contain special-status species. Padre Associates, Inc. utilized aerial imagery in conjunction with field surveys to identify and classify the vegetation types and wildlife habitats within the Biological Survey Areas.

Refer to Figures 4.4-3 - Biological Field Survey Results for the Project Site, 4.4-4 - Biological Field Survey Results for the Pacific Gas and Electric Biological Survey Area, and 4.4-5 - Biological Field Survey Results for the Southern California Gas Biological Survey Area for biological field survey results for the Biological Survey Areas. Refer to the attached Biological Resources Survey Reports (Appendices F-1, F-2, and F-3) for site photographs, comprehensive list of plants, and rapid assessment data sheets for the Biological Survey Areas.

In summary, the following vegetation types were identified within the Project site: western rush marshes, annual grassland (annual brome grassland, wild oats grasslands), California coffeeberry scrub, California coastal scrub (black sage scrub, California sagebrush scrub, mock heather stand, coyote brush scrub), red willow thickets, coast live oak woodland, and eucalyptus groves. The vegetation types identified within the electrical transmission line Biological Survey Area include: annual brome grassland, coyote brush scrub, and coast live oak woodland. The vegetation types identified within the natural gas pipeline Biological Survey Area include: annual brome grassland, coyote brush scrub, arroyo willow thickets, coast live oak woodland, and eucalyptus groves. Other areas within the Biological Survey Areas that support vegetation include agricultural areas, ruderal, and ornamental communities. In addition, areas previously disturbed that typically do not support any vegetation cover due to presence of impervious surfaces; however, may support some vegetative growth were identified separately from developed areas that do not support any vegetative cover.

The California Native Plant Society and California Department of Fish and Wildlife *Protocol for Combined Vegetation Rapid Assessment and Relevè Sampling* (version May 13, 2011) was utilized during the field surveys within the Project site to classify vegetation types. These vegetation types were then mapped to further determine acreage of Project impacts (Table 4.4-5 - Special-Status Plant Species of the Project Region). For the electrical transmission line and natural gas pipeline Biological Survey Areas, these vegetation types were classified based on the CNPS *A Manual of California Vegetation, Second Edition* (Sawyer et al., 2009) and *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland, 1986), as appropriate. Acreages were not generated for these areas.

**Table 4.4-5. Summary of Vegetation Types of the Project Region**

Vegetation Type	Regulatory Status <sup>1</sup>	Total Acreages within the Project Site	Map Treatment
Western Rush Marshes	G4/S4?	0.5	Western Rush Marshes
Annual Brome Grasslands	-	509.9	Component of Annual Grassland
Wild Oats Grasslands	-		Component of Annual Grassland
California Coffeeberry Scrub	G4/S4	0.6	California Coffeeberry Scrub
Black Sage Scrub	G4/S4	1,025.8	Component of California Coastal Scrub
California Sagebrush Scrub	G5/S5		Component of California Coastal Scrub
Mock Heather Stand	-		Component of California Coastal Scrub
Coyote Brush Scrub	G5/S5		Component of California Coastal Scrub
Red Willow Thickets	G3/S3	2.2	Red Willow Thickets
Coast Live Oak Woodland	G5/S4, County ESHA	449.2	Coast Live Oak Woodland
Eucalyptus Groves	-	3.7	Eucalyptus Groves
Previously Disturbed	-	119.1	Previously Disturbed

Notes:

<sup>1</sup>The CNDDDB ranking codes are part of the Heritage Methodology that provides information about the status of the taxon/community throughout their entire range and within California. The California Department of Fish and Wildlife List of Vegetation Alliances and Associations are based on Sawyer et al., 2009 and available on-line (California Department of Fish and Wildlife, 2010).

G Global Rank.

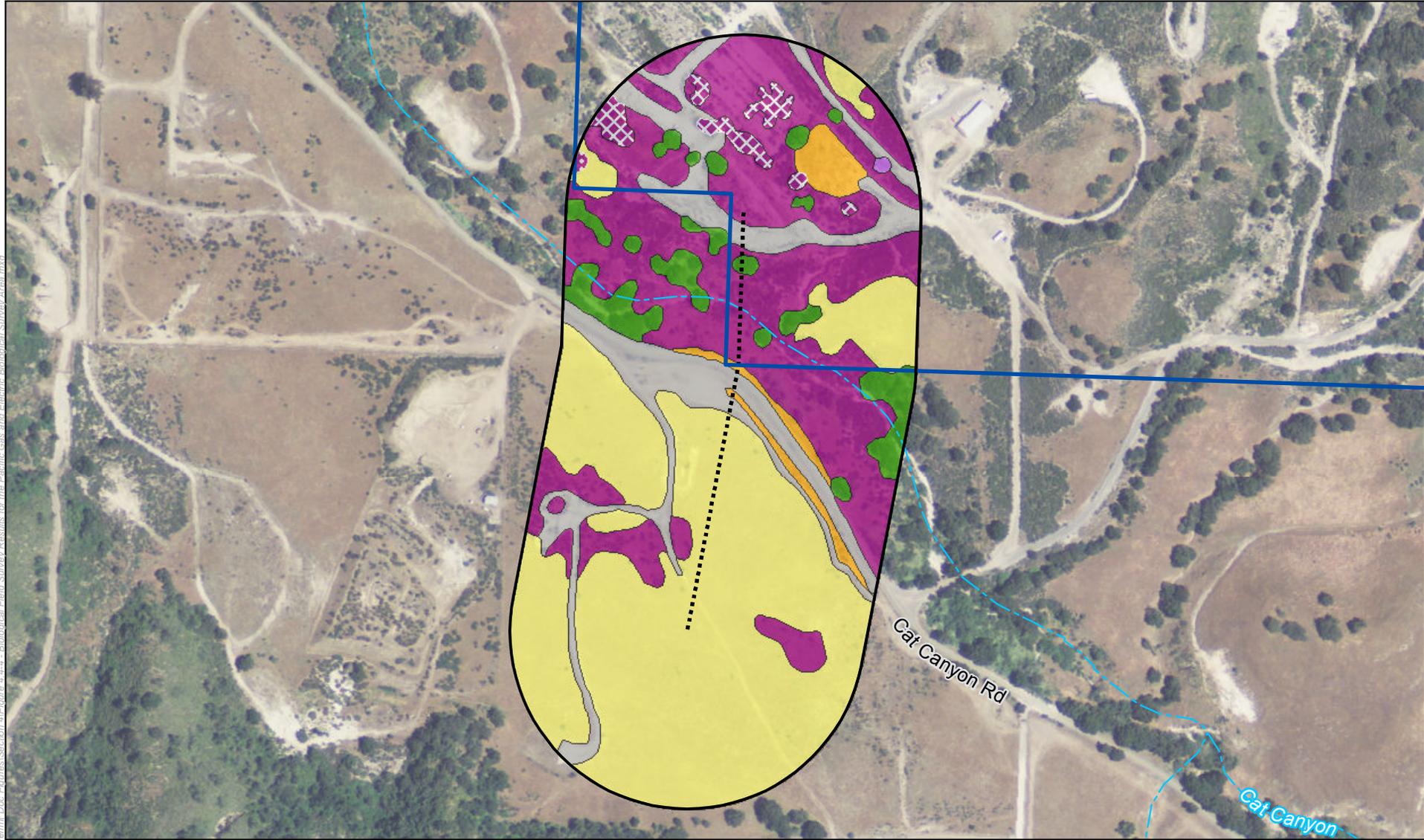
S State Rank

G1-G5 Globally critically imperiled (G1) to demonstrably secure (G5)

S1-S3 State critically imperiled (S1) to demonstrably secure (S5).

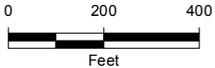
NR Not ranked.

? Denotes an inexact numeric rank due to insufficient samples over the full expected range of the type, but existing information points to this rank.



Biological Survey Area	<b>Vegetation Type</b>	Blue Gum Tree ( <i>Eucalyptus globulus</i> )
Proposed 115kV Service Line	Annual Brome Grasslands	Ruderal
Aera Energy LLC Property	Coast Live Oak Woodland	Coyote Brush Scrub and California Walnut ( <i>Juglans californica</i> )
Hydrological Feature	Coyote Brush Scrub	Coyote Brush Scrub and Peppertree ( <i>Schinus molle</i> )
	Developed	

Source: County of Santa Barbara, NAIP 2012, PGE, Aera Energy LLC  
 1-20-13 drawing, DPSI 2013 Survey  
 Notes: This map was created for informational and display purposes only



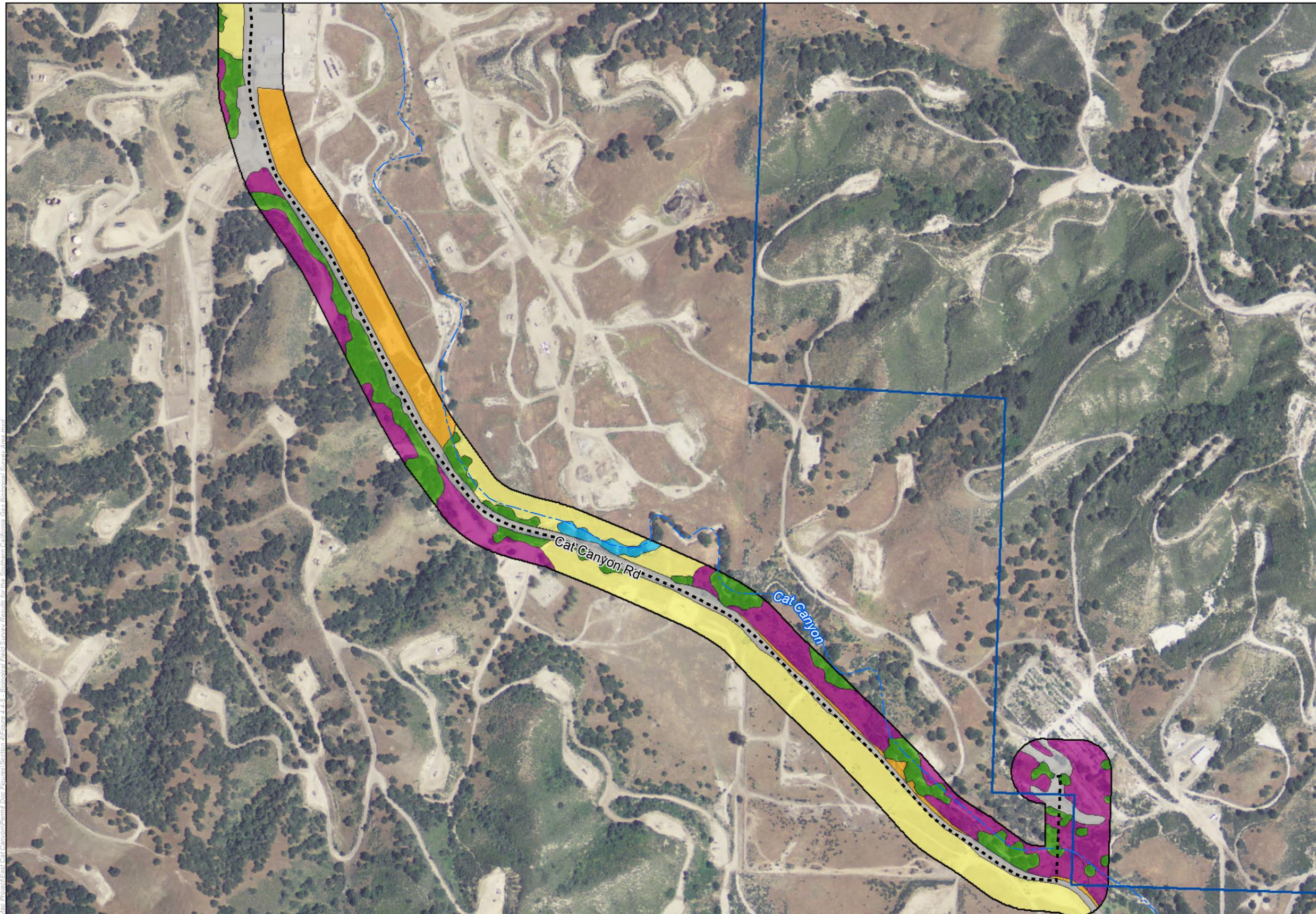
PROJECT NAME:  
**EAST CAT CANYON  
 OIL FIELD REDEVELOPMENT PROJECT**  
 PROJECT NUMBER: 1002-0455      DATE: September 2014

**BIOLOGICAL FIELD SURVEY RESULTS FOR  
 THE PACIFIC GAS AND ELECTRIC  
 BIOLOGICAL SURVEY AREA**

FIGURE  
**4.4-4**

Z:\Krostrin\GIS\_Maps\Map\_Productions\East\_Cat\_Canyon\Permit\_Doc\_Figures\Section\_4\4.4 - Biological Field Survey Results for the Pacific Gas and Electric Biological Survey Area.mxd

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**LEGEND:**

- Biological Survey Area
- Natural Gas Import Pipeline Route
- Aera Energy LLC Property
- Hydrological Feature
- Vegetation Type**
- Agricultural
- Annual Brome Grasslands
- Arroyo Willow Thickets
- Coast Live Oak Woodland
- Coyote Brush Scrub
- Developed
- Drainage Feature
- Eucalyptus Groves
- Ornamental
- Ruderal

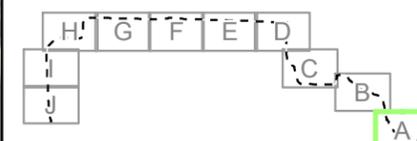
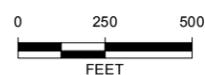


FIGURE INDEX



Source: Santa Barbara County, NAIP 2012 Image, Spec Services  
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 Notes: This map was created for informational and display purposes only

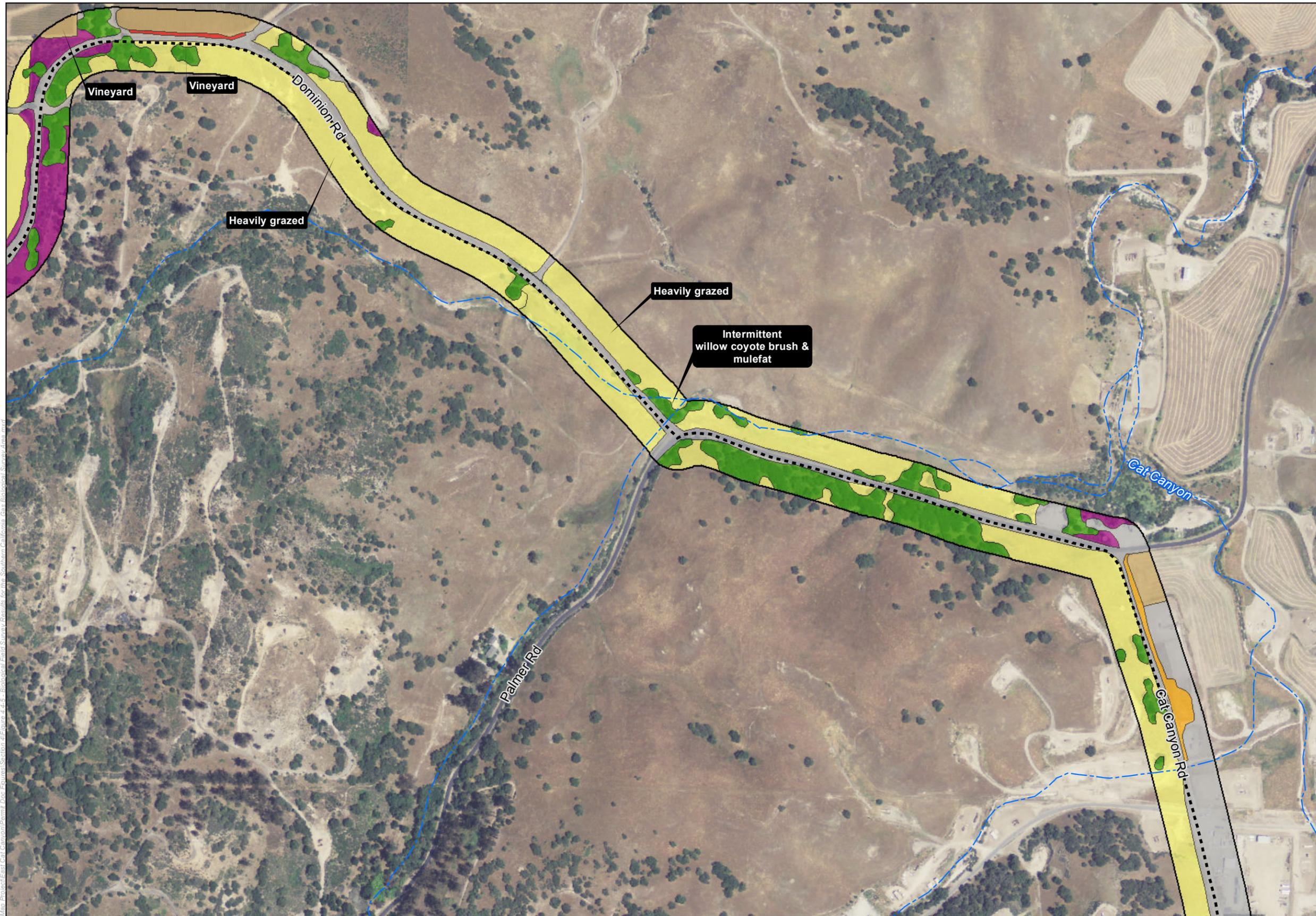
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 OIL FIELD REDEVELOPMENT PROJECT  
 PROJECT NUMBER: 1002-0455 DATE: September 2014

BIOLOGICAL FIELD SURVEY RESULTS FOR THE  
 SOUTHERN CALIFORNIA GAS  
 BIOLOGICAL SURVEY AREA

FIGURE  
 4.4-5A

C:\Users\GIS\Desktop\Map\Project\East Cat Canyon\Permit\_Doc\Figure\Section 4\Figure 4.4-5 - Biological Field Survey Results for the Southern California Gas Biological Survey Area.mxd





- LEGEND:**
- Biological Survey Area
  - Natural Gas Import Pipeline Route
  - Aera Energy LLC Property
  - Hydrological Feature
- Vegetation Type**
- Agricultural
  - Annual Brome Grasslands
  - Arroyo Willow Thickets
  - Coast Live Oak Woodland
  - Coyote Brush Scrub
  - Developed
  - Drainage Feature
  - Eucalyptus Groves
  - Ornamental
  - Ruderal

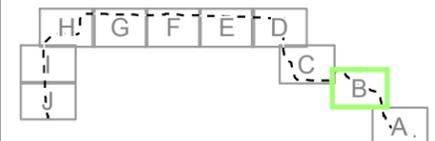
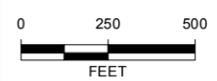


FIGURE INDEX



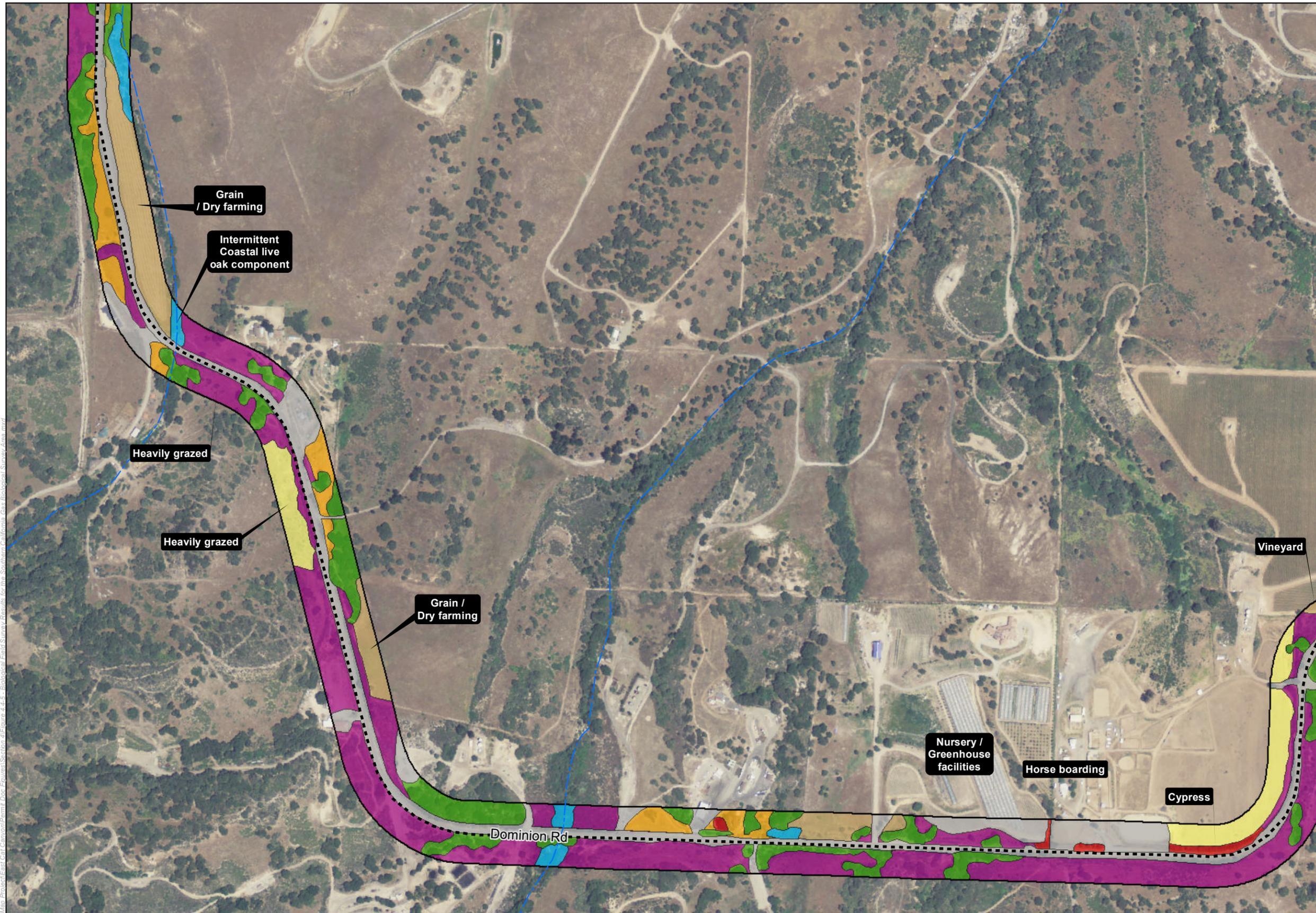
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PROJECT NUMBER: 1002-0455	DATE: September 2014

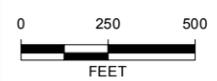
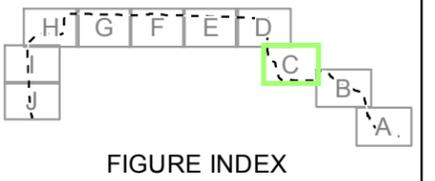
**BIOLOGICAL FIELD SURVEY RESULTS FOR THE  
SOUTHERN CALIFORNIA GAS  
BIOLOGICAL SURVEY AREA**

FIGURE  
**4.4-5B**





- LEGEND:**
- Biological Survey Area
  - Natural Gas Import Pipeline Route
  - Aera Energy LLC Property
  - Hydrological Feature
  - Vegetation Type**
  - Agricultural
  - Annual Brome Grasslands
  - Arroyo Willow Thickets
  - Coast Live Oak Woodland
  - Coyote Brush Scrub
  - Developed
  - Drainage Feature
  - Eucalyptus Groves
  - Ornamental
  - Ruderal



Source: Santa Barbara County, NAIP 2012 Image, Spec Services  
 Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
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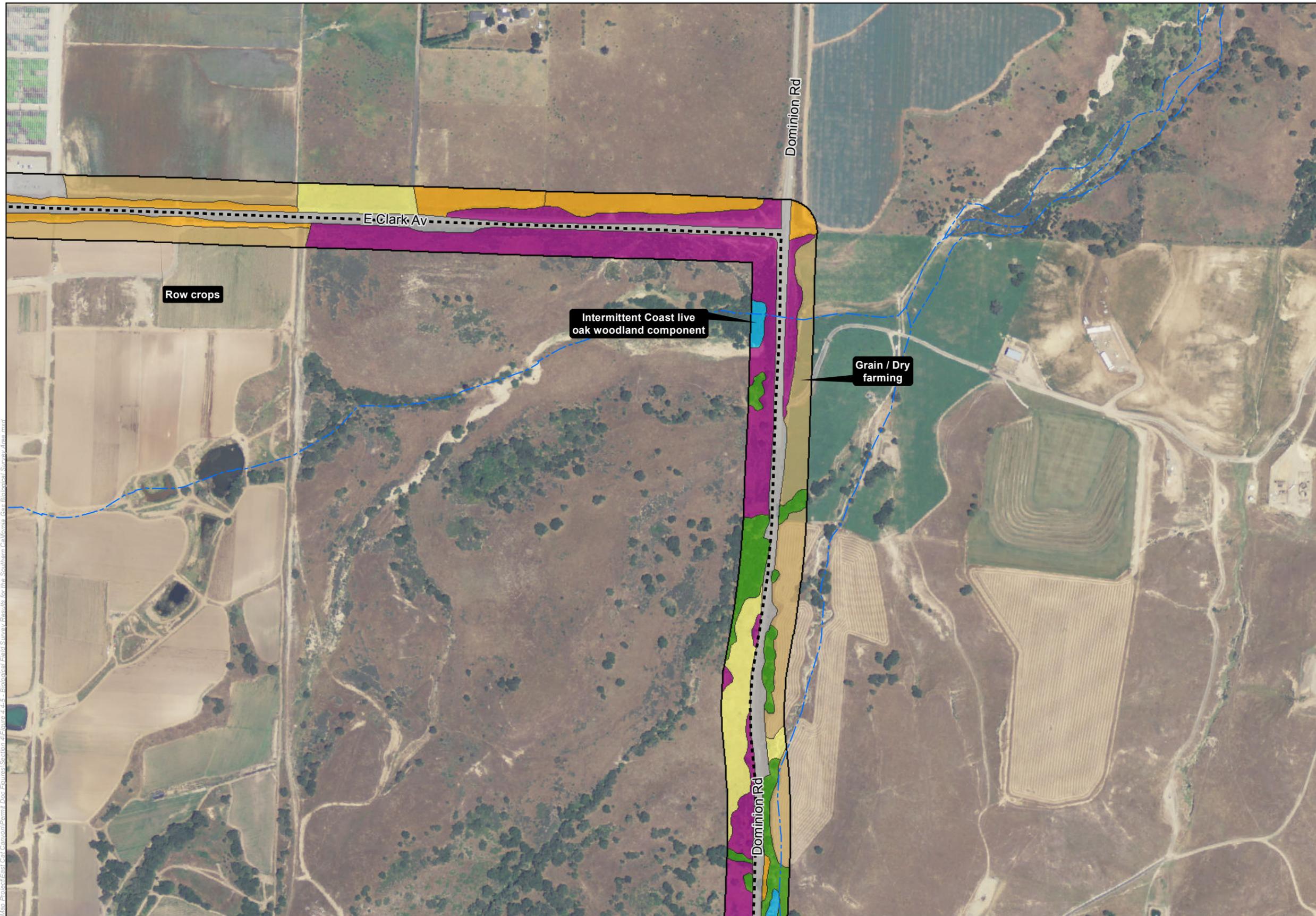
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 OIL FIELD REDEVELOPMENT PROJECT  
 PROJECT NUMBER: 1002-0455 DATE: September 2014

BIOLOGICAL FIELD SURVEY RESULTS FOR THE  
 SOUTHERN CALIFORNIA GAS  
 BIOLOGICAL SURVEY AREA

FIGURE  
 4.4-5C

I:\GIS\MapInfo\Project\East Cat Canyon\Permit\_Doc\Figures\Sectional\Figure 4.4-5 - Biological Field Survey Results for the Southern California Gas Biological Survey Area.mxd





**LEGEND:**

- Biological Survey Area
- Natural Gas Import Pipeline Route
- Aera Energy LLC Property
- Hydrological Feature
- Vegetation Type**
- Agricultural
- Annual Brome Grasslands
- Arroyo Willow Thickets
- Coast Live Oak Woodland
- Coyote Brush Scrub
- Developed
- Drainage Feature
- Eucalyptus Groves
- Ornamental
- Ruderal

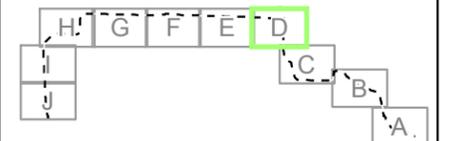
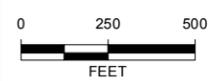


FIGURE INDEX



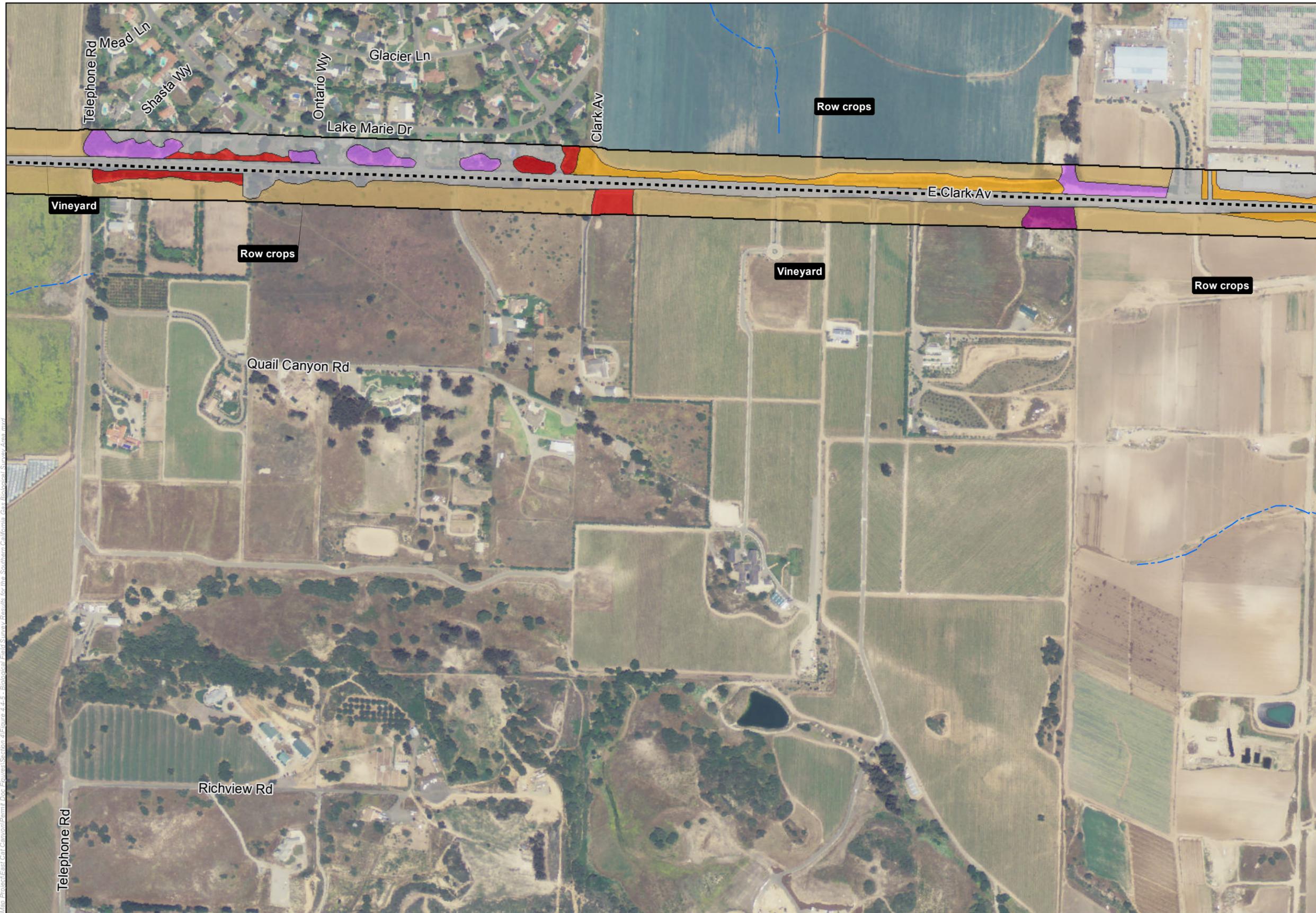
Source: Santa Barbara County, NAIP 2012 Image, Spec Services  
 Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
 Notes: This map was created for informational and display purposes only

PROJECT NAME: <b>EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT</b>	
PROJECT NUMBER: 1002-0455	DATE: September 2014

**BIOLOGICAL FIELD SURVEY RESULTS FOR THE  
SOUTHERN CALIFORNIA GAS  
BIOLOGICAL SURVEY AREA**

FIGURE  
**4.4-5D**





- LEGEND:**
- Biological Survey Area
  - Natural Gas Import Pipeline Route
  - Aera Energy LLC Property
  - Hydrological Feature
- Vegetation Type**
- Agricultural
  - Annual Brome Grasslands
  - Arroyo Willow Thickets
  - Coast Live Oak Woodland
  - Coyote Brush Scrub
  - Developed
  - Drainage Feature
  - Eucalyptus Groves
  - Ornamental
  - Ruderal

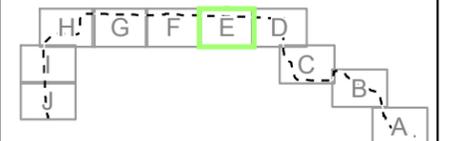
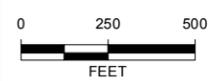


FIGURE INDEX



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

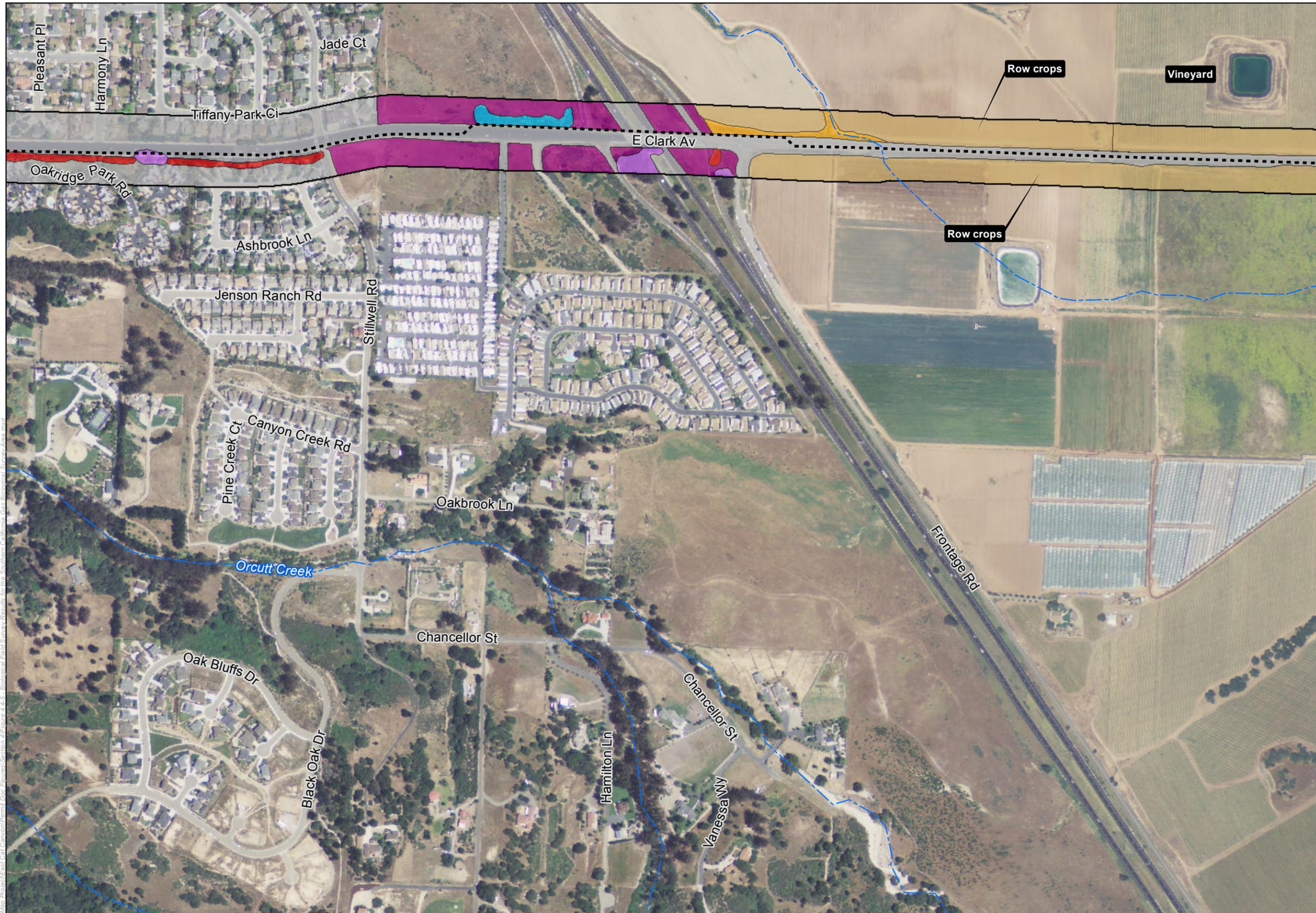
PROJECT NAME: EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT  
 PROJECT NUMBER: 1002-0455 DATE: September 2014

BIOLOGICAL FIELD SURVEY RESULTS FOR THE SOUTHERN CALIFORNIA GAS BIOLOGICAL SURVEY AREA

FIGURE 4.4-5E

K:\GIS\MapInfo\Project\East Cat Canyon\Permit\_Doc\Figures\Section 4\Figure 4.4-5 - Biological Field Survey Results for the Southern California Gas Biological Survey Area.mxd





- LEGEND:**
- Biological Survey Area
  - Natural Gas Import Pipeline Route
  - Aera Energy LLC Property
  - Hydrological Feature
- Vegetation Type**
- Agricultural
  - Annual Brome Grasslands
  - Arroyo Willow Thickets
  - Coast Live Oak Woodland
  - Coyote Brush Scrub
  - Developed
  - Drainage Feature
  - Eucalyptus Groves
  - Ornamental
  - Ruderal

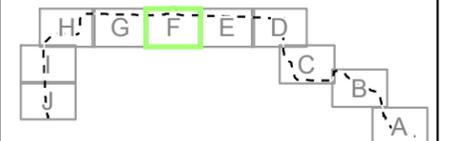
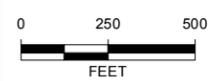


FIGURE INDEX



Source: Santa Barbara County, NAIP 2012 Image, Spec Services  
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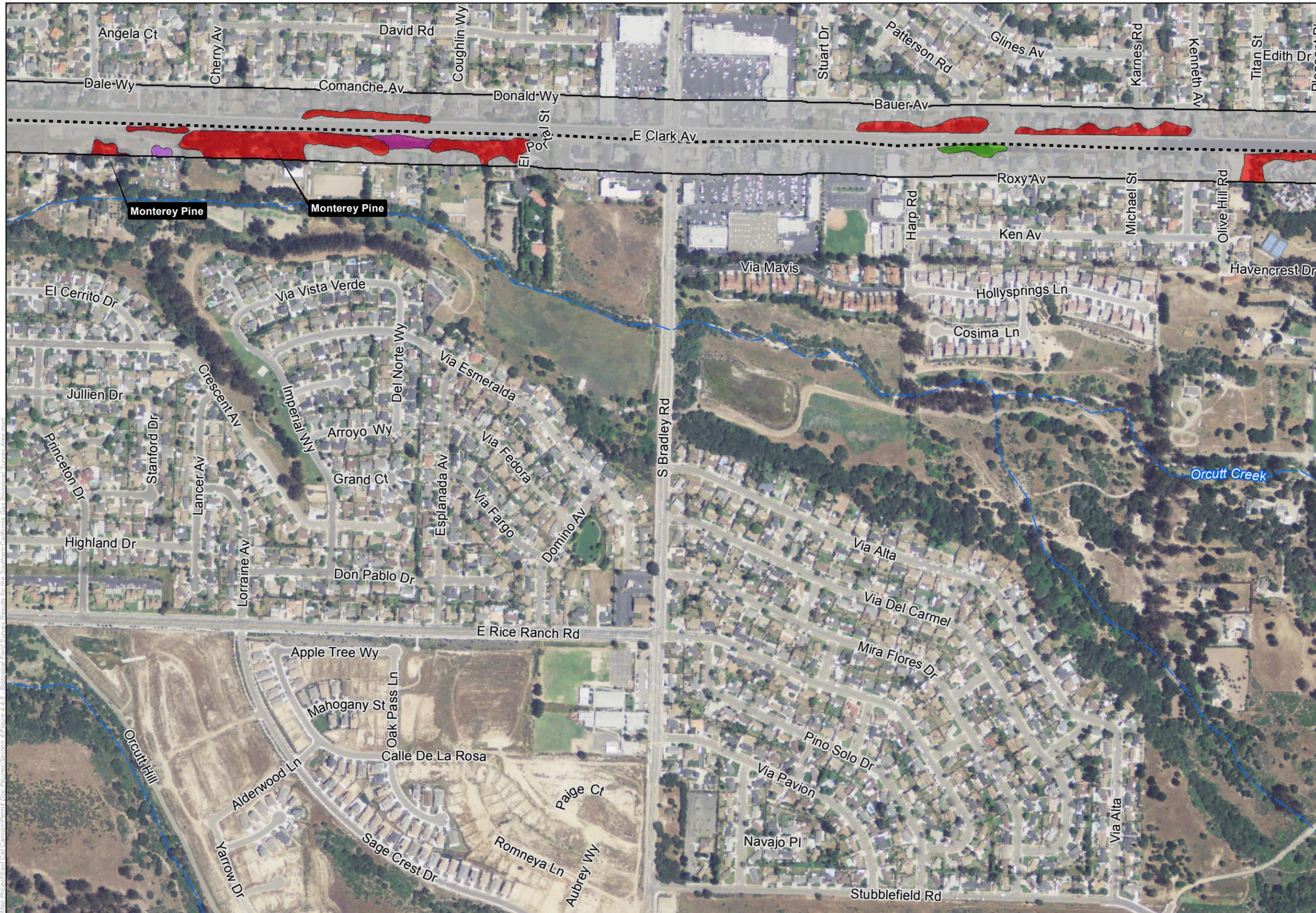
PROJECT NAME: EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT  
 PROJECT NUMBER: 1002-0455 DATE: September 2014

BIOLOGICAL FIELD SURVEY RESULTS FOR THE SOUTHERN CALIFORNIA GAS BIOLOGICAL SURVEY AREA

FIGURE 4.4-5F

M:\GIS\MapInfo\Project\East Cat Canyon\Permit\_Doc\Figure\Sectional\Figure 4.4-5 - Biological Field Survey Results for the Southern California Gas Biological Survey Area.mxd





- LEGEND:**
- Biological Survey Area
  - Natural Gas Import Pipeline Route
  - Aera Energy LLC Property
  - Hydrological Feature
  - Vegetation Type**
    - Agricultural
    - Annual Brome Grasslands
    - Arroyo Willow Thickets
    - Coast Live Oak Woodland
    - Coyote Brush Scrub
    - Developed
    - Drainage Feature
    - Eucalyptus Groves
    - Ornamental
    - Ruderal

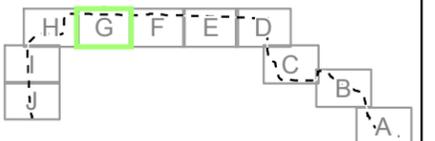
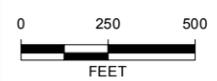


FIGURE INDEX



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

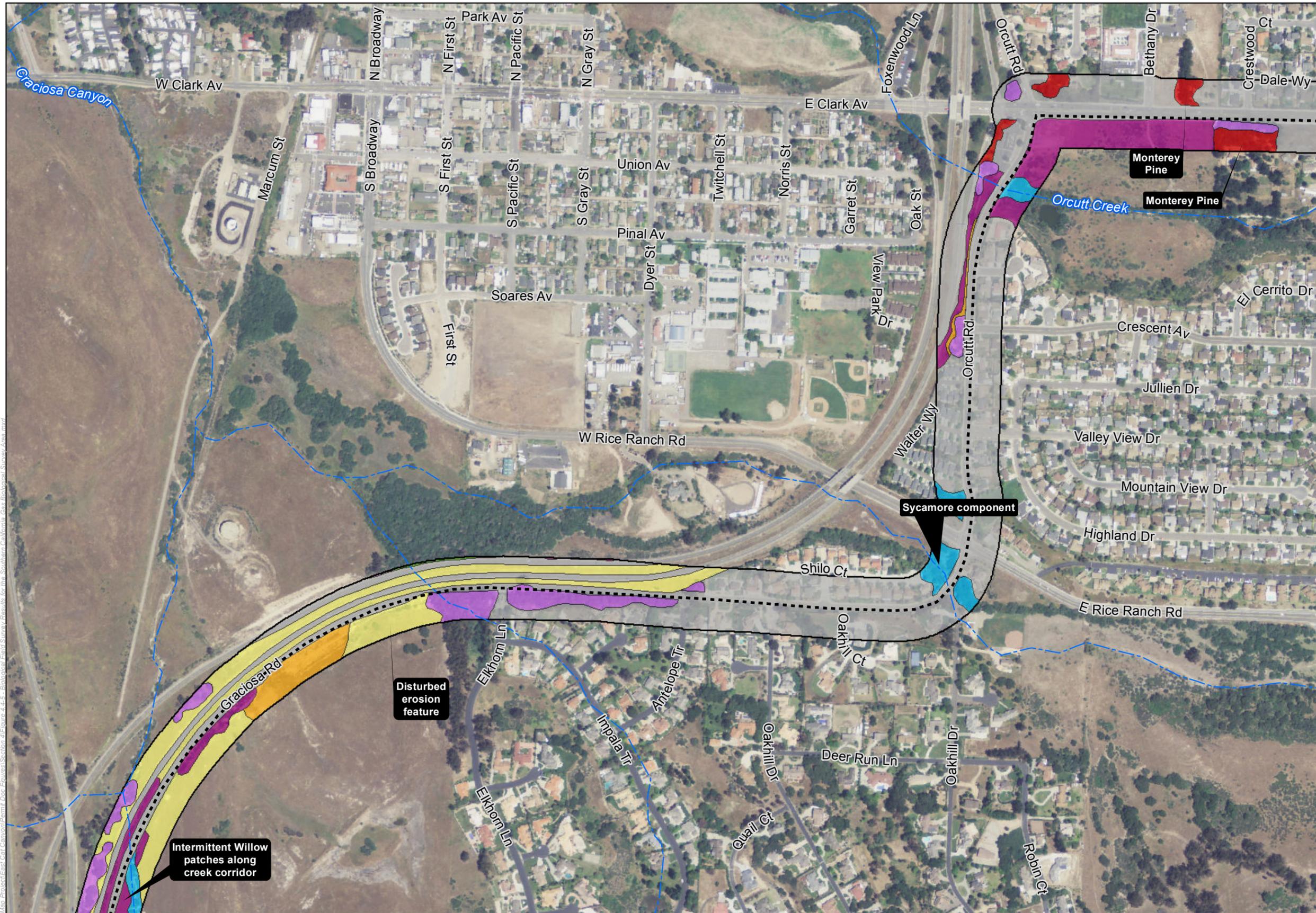
PROJECT NAME: EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT  
 PROJECT NUMBER: 1002-0455 DATE: September 2014

BIOLOGICAL FIELD SURVEY RESULTS FOR THE SOUTHERN CALIFORNIA GAS BIOLOGICAL SURVEY AREA

FIGURE 4.4-5G

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- LEGEND:**
- Biological Survey Area
  - Natural Gas Import Pipeline Route
  - Aera Energy LLC Property
  - ~ Hydrological Feature
- Vegetation Type**
- Agricultural
  - Annual Brome Grasslands
  - Arroyo Willow Thickets
  - Coast Live Oak Woodland
  - Coyote Brush Scrub
  - Developed
  - Drainage Feature
  - Eucalyptus Groves
  - Ornamental
  - Ruderal

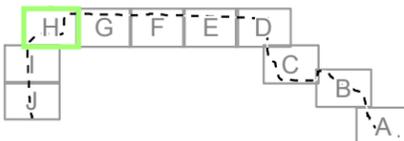
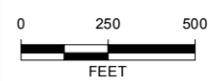


FIGURE INDEX



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

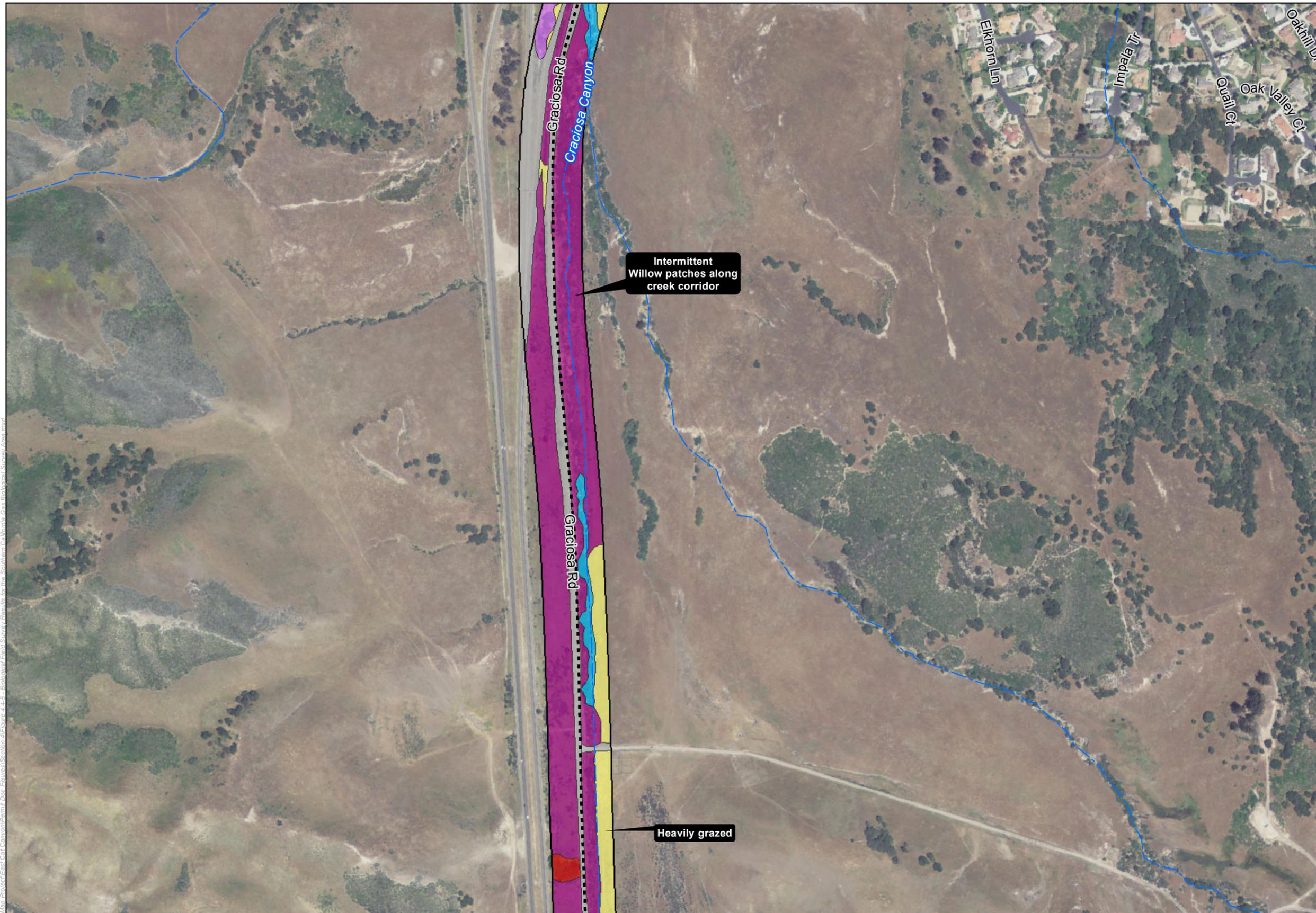
PROJECT NAME: EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT  
 PROJECT NUMBER: 1002-0455 DATE: September 2014

BIOLOGICAL FIELD SURVEY RESULTS FOR THE SOUTHERN CALIFORNIA GAS BIOLOGICAL SURVEY AREA

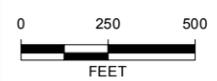
FIGURE 4.4-5H

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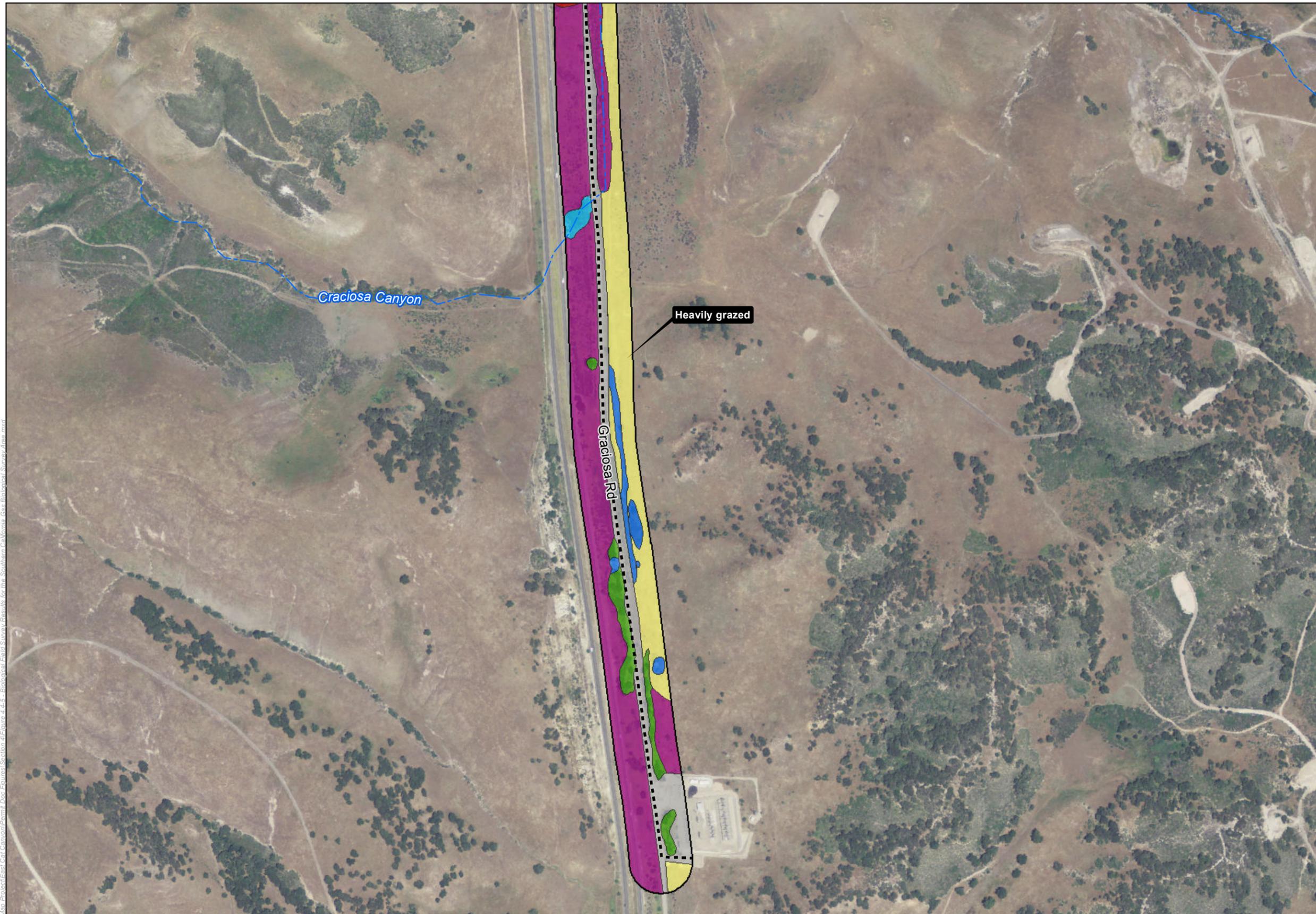
- LEGEND:**
- Biological Survey Area
  - Natural Gas Import Pipeline Route
  - Aera Energy LLC Property
  - Hydrological Feature
- Vegetation Type**
- Agricultural
  - Annual Brome Grasslands
  - Arroyo Willow Thickets
  - Coast Live Oak Woodland
  - Coyote Brush Scrub
  - Developed
  - Drainage Feature
  - Eucalyptus Groves
  - Ornamental
  - Ruderal



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

PROJECT NAME: <b>EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT</b>	<b>BIOLOGICAL FIELD SURVEY RESULTS FOR THE SOUTHERN CALIFORNIA GAS BIOLOGICAL SURVEY AREA</b>	FIGURE <b>4.4-5I</b>
PROJECT NUMBER: 1002-0455		DATE: September 2014





**LEGEND:**

- Biological Survey Area
- Natural Gas Import Pipeline Route
- Aera Energy LLC Property
- ~ Hydrological Feature
- Vegetation Type**
- Agricultural
- Annual Brome Grasslands
- Arroyo Willow Thickets
- Coast Live Oak Woodland
- Coyote Brush Scrub
- Developed
- Drainage Feature
- Eucalyptus Groves
- Ornamental
- Ruderal

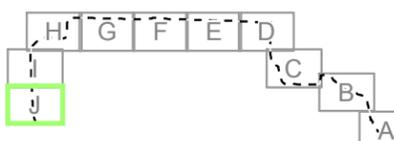
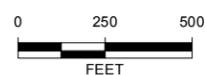


FIGURE INDEX



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

PROJECT NAME: <b>EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT</b>	
PROJECT NUMBER: 1002-0455	DATE: September 2014

**BIOLOGICAL FIELD SURVEY RESULTS FOR THE  
SOUTHERN CALIFORNIA GAS  
BIOLOGICAL SURVEY AREA**

FIGURE  
4.4-5J

K:\GIS\MapInfo\Project\East Cat Canyon\Permit\_Doc\Figures\Section 4\Figure 4.4-5 - Biological Field Survey Results for the Southern California Gas Biological Survey Area.mxd



#### 4.4.5.4 Special-Status Plant Species

Special-status plant species are either listed as Endangered or Threatened under the Federal Endangered Species Act or the California Endangered Species Act, considered rare under the California Native Plant Protection Act, or considered rare (but not legally listed) by resources agencies, professional organizations, and the scientific community. Special-status plants are further defined as follows:

- Plants listed or proposed for listing as Threatened or Endangered under the Federal Endangered Species Act (50 CFR 17.12 for listed plants and various notices in the Federal Register for proposed species);
- Plants that are candidates for possible future listing as Threatened or Endangered under the Federal Endangered Species Act (Federal Register Vol. 67, No. 114, pp.40657-4067, June 13, 2002);
- Plants that meet the definitions of rare or endangered species under the California Environmental Quality Act (the California Environmental Quality Act Guidelines, Section 15380);
- Plants considered by the California Native Plant Society to be "Rare, Threatened, or Endangered" in California (Ranks 1B and 2 in the California Native Plant Society, 2011);
- Plants listed by California Native Plant Society as plants about which we need more information and plants of limited distribution (Ranks 3 and 4);
- Plants listed or proposed for listing by the State of California as Threatened or Endangered under the California Endangered Species Act (14 CCR 670.5);
- Plants listed under the California Native Plant Protection Act (California Fish and Game Code 1900 et seq.);
- Plants considered sensitive by other Federal agencies (i.e., U.S. Forest Service, Bureau of Land Management), State and local agencies or jurisdictions; and
- Plants considered sensitive or unique by the scientific community or occurring at the limits of their natural range (the California Environmental Quality Act Guidelines).

The desktop review and field surveys found that several special-status plant species have been recorded within the Project region (U.S. Geological Survey quadrangles; Sisquoc, Foxen Canyon, Lompoc, Los Alamos, Orcutt, Santa Maria, Tepusquet Canyon, Twitchell Dam, and Zaca Creek) and the Biological Survey Areas may provide suitable habitat for potentially occurring special-status species. Table 4.4-6 - Special-Status Wildlife Species of the Project Region lists these species that have the potential to occur within the Biological Survey Areas, their current status, habitat description, and nearest known occurrence.

**Table 4.4-6. Special-Status Plant Species of the Project Region**

Common Name Scientific Name (Arranged alphabetically by scientific name)	Regulatory Status <sup>2</sup>	Habitat Description	Nearest Documented Occurrence	Biological Survey Areas			
				Habitat Present	Occurrence < Five Miles	Observed	Potential for Occurrence
Black-flowered figwort <i>Scrophularia atrata</i>	Rank 1B.2	Closed-cone coniferous forest, chaparral, coastal dunes, coastal scrub, riparian scrub.	North slope of Purisima Hills; 0.7 mile from Highway 1; 0.6 mile south of the intersection with Los Alamos-Casmalia Road; approximately 8.8 miles from the Project site (California Department of Fish and Wildlife, 2014a).	X	X		X
Blochman's leafy daisy <i>Erigeron blochmaniae</i>	Rank 1B.2	Coastal dunes, coastal scrub.	Southwest of Santa Maria; along Black Road; approximately 14 miles from the Project site (California Department of Fish and Wildlife, 2014a).	X			X
Chaparral ragwort <i>Senecio aphanactis</i>	Rank 2.2	Chaparral, cismontane woodland, coastal scrub. Sometimes alkaline.	South of Burton Mesa Road, Vandenberg Village; approximately 13 miles from the Project site (California Department of Fish and Wildlife, 2014a).	X			X
California sawgrass <i>Cladium californicum</i>	Rank 2.2	Meadows and seeps, marshes and swamps.	Open marsh on Price Road; northeast of Los Alamos; approximately 5.3 miles southwest of the Project site (California Department of Fish and Wildlife, 2014).		X		
Dune larkspur <i>Delphinium parryi</i> ssp. <i>blochmaniae</i>	Rank 1B.2	Maritime chaparral, coastal dunes.	Documented within the natural gas pipeline Biological Survey Area along Graciosa Road (California Department of Fish and Wildlife, 2014a).		X		X
Dwarf calycadenia <i>Calycadenia villosa</i>	Rank 1B.1	Chaparral, cismontane woodland, valley and foothill grassland, meadows and seeps.	Los Alamos; approximately 5.5 miles south of the Project site (California Department of Fish and Wildlife, 2014a).	X	X		X
Eastwood's brittle-leaf manzanita <i>Arctostaphylos crustacea</i> ssp. <i>eastwoodiana</i>	Rank 1B.1	Chaparral (Maritime). Sandy soils.	SW of Lompoc; about one mile south of Highway 246; approximately 15.0 miles southwest of the natural gas pipeline Biological Survey Area (California Department of Fish and Wildlife, 2014).				
Gambel's water cress <i>Nasturtium gambelii</i> Gambel's water cress	FE, ST, Rank 1B.1	Marshes and swamps (freshwater or brackish).	Barka Slough, San Antonio Valley, approximately four miles from the natural gas pipeline Biological Survey Area (California Department of Fish and Wildlife, 2014a).	X	X		X

**Table 4.4-6. Special-Status Plant Species of the Project Region**

Common Name Scientific Name (Arranged alphabetically by scientific name)	Regulatory Status <sup>2</sup>	Habitat Description	Nearest Documented Occurrence	Biological Survey Areas			
				Habitat Present	Occurrence ≤ Five Miles	Observed	Potential for Occurrence
Gaviota tarplant <i>Deinandra increscens</i> ssp. <i>villosa</i>	FE, SE Rank 1B.1	Coastal scrub, valley and foothill grassland, coastal bluff scrub.	3.5 miles west of Orcutt on Highway 1; approximately 13 miles from the Project site (California Department of Fish and Wildlife, 2014a).	X	X		X
Hoover's bent grass <i>Agrostis hooveri</i>	Rank 1B.2	Dry sandy soils within closed- cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland.	Cat Canyon Oil Field in Soloman Hills near Santa Maria; within Project site. (California Department of Fish and Wildlife, 2014a).	X	X		X
La Graciosa thistle <i>Cirsium scariosum</i> var. <i>loncholepis</i>	FE, ST Rank 1B.1	Mesic and sandy cismontane woodland, coastal dunes, riparian scrub, brackish marshes, valley and foothill grassland.	Canada de Las Flores; 2.5 miles north of Los Alamos Valley; approximately 4.0 miles from the Project site (California Department of Fish and Wildlife, 2014a).	X	X		X
La Purisima manzanita <i>Arctostaphylos purissima</i>	Rank 1B.1	Chaparral, coastal scrub. Sandy soils.	Northeast of junction of Cebada Canyon Road and Highway 246; NE of Lompoc; approximately 15.0 miles southwest of the Project site (California Department of Fish and Wildlife, 2014).	X <sup>1</sup>	X <sup>1</sup>		
Lompoc yerba santa <i>Eriodictyon capitatum</i>	FE, SR, Rank 1B.2	Closed-cone coniferous forest, maritime chaparral.	Orcutt Oil Field; Graciosa Ridge; Solomon Hills; 6.7 miles west of the Project site (California Department of Fish and Wildlife, 2014).		X		
Mesa horkelia <i>Horkelia cuneata</i> var. <i>puberula</i>	Rank 1B.1	Chaparral, cismontane woodland, coastal scrub.	East of Santa Maria; approximately three miles north of the Project site (California Department of Fish and Wildlife, 2014a).	X	X		X
Miles' milkvetch <i>Astragalus didymocarpus</i> var. <i>milesianus</i>	Rank 1B.2	Coastal scrub (clay).	Foxen Canyon; approximately three miles east of the Project site (California Department of Fish and Wildlife, 2014a).	X	X		X
Pale-yellow layia <i>Layia heterotricha</i>	Rank 1B.1	Cismontane woodland, pinyon- juniper woodland, valley and foothill grassland.	Along Rucker Road; 0.1 mile west of Calle Primera; Lompoc Mesa; approximately 13 miles from the Project site (California Department of Fish and Wildlife, 2014a).	X			X
Sand mesa manzanita <i>Arctostaphylos rudis</i>	Rank 1B.2	Chaparral (maritime), coastal scrub. Sandy soils.	Upper Graciosa Valley; east of Highway 1 and Highway 135; approximately 7.2 miles west of the Project site (California Department of Fish and Wildlife, 2014).	X <sup>1</sup>	X <sup>1</sup>		

**Table 4.4-6. Special-Status Plant Species of the Project Region**

Common Name Scientific Name (Arranged alphabetically by scientific name)	Regulatory Status <sup>2</sup>	Habitat Description	Nearest Documented Occurrence	Biological Survey Areas			
				Habitat Present	Occurrence < Five Miles	Observed	Potential for Occurrence
Santa Barbara honeysuckle <i>Lonicera subspicata</i> var. <i>subspicata</i>	Rank 1B.2	Chaparral, cismontane woodland, coastal scrub.	La Purisima Mission State Historic Park, 1.2 miles north of Lompoc city limit; approximately 13 miles from the Project site (California Department of Fish and Wildlife, 2014a).	X			X
Santa Ynez groundstar <i>Ancistrocarphus keilii</i>	Rank 1B.1	Chaparral, cismontane woodland. Sandy soils.	Between Buellton and Lompoc; Santa Ynez River drainage; approximately 12.6 miles from Project site (California Department of Fish and Wildlife, 2014a).	X			X
Seaside bird's-beak <i>Cordylanthus rigidus</i> ssp. <i>littoralis</i>	SE Rank 1B.1	Closed-cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, coastal scrub. Sandy, often disturbed sites.	Northeast of La Purisima Mission; approximately 10.5 miles from the Project site (California Department of Fish and Wildlife, 2014a).	X			X
Straight-awned spineflower <i>Chorizanthe rectispina</i>	Rank 1B.3	Chaparral, cismontane woodland, coastal scrub.	Observed by biologist within the Project site during 2013 surveys.	X	X	X	X
Umbrella larkspur <i>Delphinium umbracolorum</i>	Rank 1B.3	Cismontane woodland.	Colson Canyon; east of Santa Maria; approximately 9.5 miles from the Project site (California Department of Fish and Wildlife, 2014a).	X			X
Vandenberg monkeyflower <i>Mimulus fremontii</i> var. <i>vandenbergensis</i>	FC Rank 1B.1	Chaparral (Burton Mesa), cismontane woodland. Sandy, often disturbed areas.	La Purisima Mission State Historic Park; approximately 11.8 miles from the Project site (California Department of Fish and Wildlife, 2014a).	X			X

**Table 4.4-6. Special-Status Plant Species of the Project Region**

Common Name <i>Scientific Name</i> <i>(Arranged alphabetically by scientific name)</i>	Regulatory Status <sup>2</sup>	Habitat Description	Nearest Documented Occurrence	Biological Survey Areas		
				Habitat Present	Occurrence < Five Miles	Observed
Notes: USFWS U.S. Fish and Wildlife Service CDFW California Department of Fish and Wildlife CNPS California Native Plant Society  <sup>1</sup> Although suitable habitat is present within the Biological Survey Areas, no manzanita was observed during surveys. Therefore, this species is not expected to occur within the Biological Survey Areas.  <sup>2</sup> Status Codes: FE Federal Endangered (USFWS) FC Federal Species of Concern (USFWS) SE State Endangered (CDFW) ST State Threatened (CDFW) SR State Rare (CDFW) Rank 1B Plants Rare, Threatened, or Endangered in California and Elsewhere (CNPS) 0.1 Seriously Endangered in California 0.2 Fairly Endangered in California 0.3 Not very Endangered in California Rank 2 Plants rare, Rare, Threatened, or Endangered in California, but More Common Elsewhere (CNPS) Rank 4 Plants of Limited Distribution – A Watch List (CNPS) G Global S State Rank						

Figure 4.4-6 - Special-Status Plants within the Biological Survey Areas illustrates special-status plant species occurring within a five mile radius from the Biological Survey Areas. Field surveys were completed within the Biological Survey Areas during the appropriate blooming periods for the majority of special-status plants occurring within the region. Refer to Biological Resources Survey Reports (Appendix F-1).

During the combined field surveys within the Biological Survey Areas, straight-awned spineflower (*Chorizanthe rectispina*) was observed within the Project site. In addition, Hoover's bent grass (*Agrostis hooveri*) was documented by the California National Diversity Database within the Project site. The following descriptions briefly discuss biological information and ecological requirements for these species.

**Straight-awned spineflower.** Straight-awned spineflower is an annual herb in the Buckwheat (Polygonaceae) Family that occurs at elevations of 85 to 1035 meters, and is generally associated with sandy or gravel soils. The April 2013 survey was conducted during the expected blooming period for this species and suitable habitat occurs in coastal scrub habitat and associated soils within the Project site. Four distinct populations of straight-awned spineflower were observed within Project site, primarily on rocky substrate and/or rocky outcrops. Location and ecological information for each distinct population was recorded appropriately on required California Natural Diversity Database forms and will be submitted to the California Department of Fish and Wildlife prior to Project initiation.

**Hoover's bent grass.** No Hoover's bent grass was observed within the Project site. The CNDDDB historical documentation (1973) of an occurrence of Hoover's bent grass within the Project site was investigated in the field using the CNDDDB coordinates. This location consisted of coastal scrub vegetation, unpaved access roads, and rocky substrate comprised of scattered California sagebrush, coyote brush, sparse non-native grasses and intermittent patches (i.e., less than 10 percent cover) of purple needlegrass and foothill needlegrass. Hoover's bent grass was not observed at this location or elsewhere in the Project site.

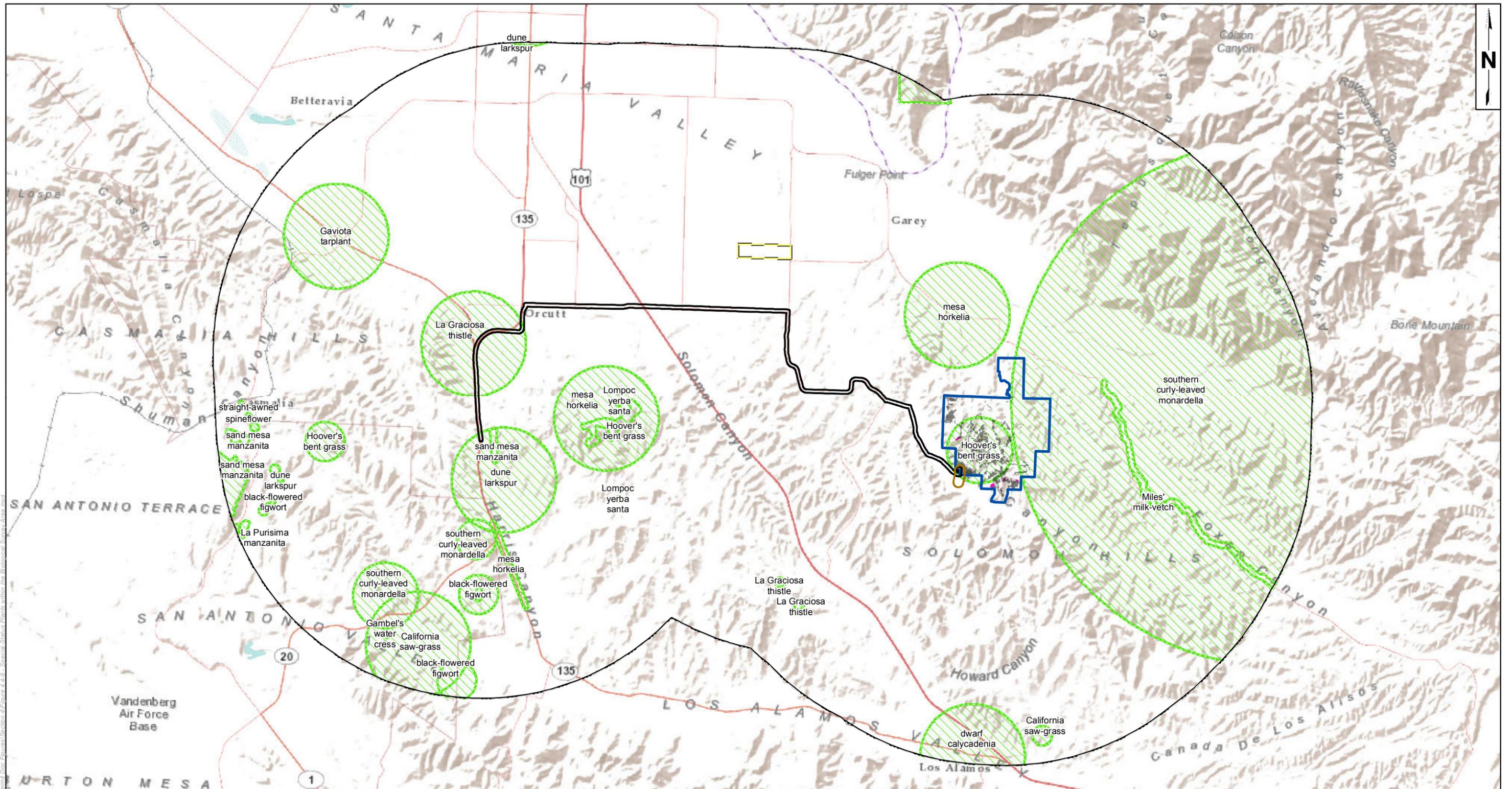
No other special-status species were observed during field surveys. The following special-status plant species have the potential to occur within the Project site, based on presence of suitable habitat and/or documented occurrence within five-miles of the Project site: Santa Ynez groundstar, Miles' milkvetch, dwarf calycadenia, La Graciosa thistle, seaside bird's beak, Gaviota tarplant, umbrella larkspur, Blochman's leafy daisy, mesa horkelia, pale-yellow layia, Santa Barbara honeysuckle, Vandenberg monkey flower, black-flowered figwort, and chaparral ragwort.

No other special-status species were observed during field surveys; however, variations in the absence, presence, and abundance of plants occurring in the Biological Survey Areas can vary annually due to fluctuations in precipitation, fire, non-native and/or invasive species, human disturbance, agricultural operations, and/or seed banks that can stay dormant for several years.

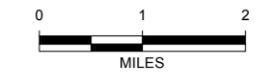
#### 4.4.5.5 Wildlife Occurring within the Biological Survey Areas

Wildlife species were visually observed or detected by track, scat, skeletal remains, burrows, and/or vocalization during the field surveys conducted within the Biological Survey Areas. Complications in the quantitative assessment of terrestrial vertebrate and invertebrate populations may have influenced observations made during field surveys. These complications include:

- Migrating species may occur in the area only for short periods;
- Many species of amphibians and reptiles become inactive during one or more seasons;
- Seasonal or annual fluctuations in climate or weather patterns may confound observations; No mist-netting, trapping, or tracking surveys, focused protocol-level surveys;
- For the electrical transmission line and natural gas pipeline Biological Survey Areas, no focused protocol-level surveys, invertebrate surveys, aquatic dip-net or nocturnal surveys were completed during field surveys by Padre Associates, Inc. Biologists; and
- For the natural gas pipeline Biological Survey Area, field surveys were limited to public right-of-ways along the pipeline corridor and the remainder 250 foot buffer on each side of the pipeline corridor were not accessible by foot.



- LEGEND:**
- 5 Mile Buffer of the BSAs
  - 115kV Service Line BSA
  - Natural Gas Import Pipeline Route BSA
  - Aear Energy LLC Property BSA
  - Project Footprint
  - Sargent Fee Site - VPFS, Burrowing owl, CTS Identified on Site
  - Straight-awned spineflower on Aera Energy LLC Property
  - CDFW Natural Plant Species of Special Concern



Source: ESRI Online Basemap, TJCross 8/20/14, DPSI 2013, CDFW/CNDD 8/2014  
 Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
 Notes: BSA = Biological Survey Area  
 This map was created for informational and display purposes only.

PROJECT NAME: <b>EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT</b>		<b>SPECIAL-STATUS PLANTS WITHIN THE BIOLOGICAL SURVEY AREA</b>	<b>FIGURE 4.4-6</b>
PROJECT NUMBER: 1002-0455	DATE: September 2014		



Wildlife species observed within the Biological Survey Areas during the field surveys, other wildlife that have been previously documented by other sources identified in the desktop review, and species that have the potential to utilize the Biological Survey Areas based on suitable habitat and other environmental conditions can be found in the Biological Resources Survey Reports provided in Appendix F-1.L. Descriptions of wildlife species that were observed within Biological Survey Areas and have potential to occur within the Biological Survey Areas are further discussed below. Documentation for all special-status species identified during field surveys will be submitted to the California Department of Fish and Wildlife's California Natural Diversity Database.

**Invertebrates.** A wide variety of invertebrates are expected to occur in the Biological Survey Areas, including ground beetles (Order Coleoptera) and burrowing bugs (Aethus sp.), spiders (Order Araneida), millipedes (Class Diplopoda), butterflies (Order Lepidoptera), dragonflies (Order Odonata), and bees, wasps, and ants (Order Hymenoptera). Several of these common terrestrial invertebrates were observed during the field surveys; however, they were not collected and/or further identified to the species level. Vernal pool fairy shrimp dip net surveys were completed during the wet season of 2014 of all suitable aquatic pools documented within the Project site (Figure 4.4-3 - Biological Field Survey Results for the Project Site). While vernal pool fairy shrimp were not found, dip net surveys resulted in the identification of seed shrimp (Ostracods), water boatman (Corixidae), midge larvae (Chironomidae), predaceous water beetle (Dystiscidae), and water strider (Gerridae). Discussion of special-status species is provided below. No invertebrate surveys were completed in the electrical transmission line or natural gas pipeline Biological Survey Areas.

**Fish.** The drainages within the Biological Survey Areas are ephemeral and therefore do not support fish. No water was observed in any of the stream channels/drainages throughout the Biological Survey Areas during field visits. Discussion of special-status species is provided below.

**Amphibians.** Small, shallow depressions with the abandoned well pads occurring within the Project site may accumulate water for long enough durations to support breeding cycles for some amphibians. During field visits in January 2013, egg masses and tadpoles of Sierran treefrog (*Pseudacris regilla*) and California toad (*Anaxyrus boreas halophilus*) were observed in well pads that did contain water. These species may also occur in aquatic features within the natural gas pipeline and electrical transmission line Biological Survey Areas. Oak habitat in the Project site provides shade, moist logs, and dense leaf litter that hold moisture throughout the year for terrestrial amphibians, such as: ensatina (*Ensatina eschscholtzii*), black-bellied slender salamander (*Batrachoseps nigriventris*), and arboreal salamander (*Aneides lugubris*). Of these, only ensatina was observed within Project site during field surveys. Discussion of special-status amphibian species is provided below. No amphibians were identified in the electrical transmission line or natural gas pipeline Biological Survey Areas.

**Reptiles.** Reptile species that may be expected to occur within the Biological Survey Areas based on the presence of suitable habitat include, but are not limited to, western yellow-bellied racer (*Coluber constrictor mormon*), California kingsnake (*Lampropeltis getula californiae*), and Skilton's skink (*Plestiodon skiltonianus skiltonianus*). Reptiles observed within the Project site during field surveys were limited to California whiptail (*Aspidoscelis tigris munda*), Blainsville's [Coast] horned lizard (*Phrynosoma blainvillii*), San Diego gopher snake (*Pituophis catenifer*

*annectens*), and Coast Range fence lizard (*Sceloporus occidentalis bocourti*). Discussion of special-status species is provided below. Reptiles identified in the electrical transmission line Biological Survey Area were limited to Coast Range (western) fence lizard (*Sceloporus occidentalis*). No reptiles were observed in the natural gas pipeline Biological Survey Area during field visits.

**Birds.** Bird field surveys were completed in the Biological Survey Areas during the fall and spring months. Migratory breeding birds, which would most likely to be observed between March and September, were likely recorded with resident birds. Birds that were observed in the Biological Survey Areas during the field surveys included, but not limited to, western scrub jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), spotted towhee (*Pipilo maculatus*), northern flicker (*Colaptes auratus*), bushtit (*Psaltriparus minimus*), wrentit (*Chamaea fasciata*), California thrasher (*Toxostoma redivivum*), western kingbird (*Tyrannus verticalis*), lark sparrow (*Chondestes grammacus*), Anna's hummingbird (*Calypte anna*), and red-tailed hawk (*Buteo jamaicensis*). These birds are likely to utilize surrounding habitats for breeding activities during the spring and summer months. Discussion of special-status birds is provided below.

**Mammals.** Mammals observed directly and/or by indirect signs during the field survey included Audubon's cottontail (*Sylvilagus audubonii*), Botta's pocket gopher (*Thomomys bottae*), American badger (*Taxidea taxus*), coyote (*Canis latrans*), black-tailed jackrabbit (*Lepus californicus*), bobcat (*Lynx rufus*), California ground squirrel (*Otospermophilus beecheyi*), mule deer (*Odocoileus hemionus*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), wild pig (*Sus scrofa*), and big-eared woodrat (*Neotoma macrotis*). Other common mammal species that may be expected to occur within the Biological Survey Areas based on the presence of suitable habitat and migratory corridors (i.e., ridgelines and roadways) include gray fox (*Urocyon cinereoargenteus*) and mountain lion (*Felis concolor*). Discussion of special-status species is provided below.

**Migratory Corridors.** Wildlife migration corridors are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Migration corridors may be local, such as those between foraging and nesting/denning areas, or they may be regional in nature. Migration corridors are not unidirectional access routes; however, reference is usually made to source and receiver areas in discussions of wildlife movement networks. "Habitat linkages" are migration corridors that contain contiguous strips of native vegetation between source and receiver areas. These natural linkages provide cover and forage sufficient for temporary inhabitation by a variety of ground-dwelling animal species. Wildlife migration corridors are essential to the regional fitness of an area as they provide avenues of genetic exchange and allow animals to access alternative territories as fluctuating dispersal pressures dictate.

The Biological Survey Areas consist of many drainages and exposed roadways that could be utilized by wildlife moving through the region. The larger drainages occurring within the Biological Survey Areas include Cat Canyon Creek, Olivera Creek, and Long Canyon Creek. Cat Canyon Creek supports intermittent patches of dense willow scrub habitat mixed with oak woodland and open areas significantly disturbed by past land use activities. The portions of Cat Canyon Creek within the Project site consist of dense oak woodland and small patches of willow scrub. Long Canyon and Olivera Creek are significantly disturbed drainages that do not support

riparian vegetation within the Biological Survey Areas. Other smaller drainages occur throughout the Biological Survey Areas; however, these drainages consist of dense scrub habitat along steep hillsides that do not have open passageways allowing for convenient movement by wildlife.

#### 4.4.5.6 Special-Status Wildlife Species

Special-status wildlife species are either listed as Endangered or Threatened under the Federal Endangered Species Act or the California Endangered Species Act, considered rare by resources agencies, professional organizations, and the scientific community. For the purposes of this assessment, special-status wildlife species are defined as follows:

- Animals listed or proposed for listing as Threatened or Endangered under the Federal Endangered Species Act (50 CFR 17.11 for listed animals and various notices in the Federal Register for proposed species);
- Animals that are candidates for possible future listing as Threatened or Endangered under the Federal Endangered Species Act (Federal Register Vol. 70, No. 90, pp. 24869-24934, May 11, 2005);
- Animals that meet the definitions of rare or endangered species under the (CEQA Guidelines, Section 15380);
- Animal Species of Special Concern to the California Department of Fish and Wildlife (Shuford and Gardali, 2008 for birds; Williams, 1986 for mammals; Moyle et al., 1989 for fish; and Jennings and Hayes, 1994 for amphibians and reptiles);
- Animals listed or proposed for listing by the State of California as Threatened and Endangered under the California Endangered Species Act (14 CCR 670.5);
- Animal species of special concern to the California Department of Fish and Wildlife (California Department of Fish and Wildlife, 2009; Shuford and Gardali, 2008 for birds; Williams, 1986 for mammals);
- Animal species that are fully protected in California (California Fish and Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]);
- Animal species protected under the Marine Mammal Protection Act (as amended in 1994);
- Birds of Conservation Concern. Migratory and non-migratory bird species (beyond those already designated as Federally Threatened or Endangered) that represent the U.S. Fish and Wildlife Service highest conservation priorities in effort to draw attention to species in need of conservation action (U.S. Fish and Wildlife Service, 2008);
- Birds on the California Department of Fish and Wildlife Watch List include “Taxa to Watch” (Shuford and Gardali, 2008) 1) not on the current Special Concern list but were on previous lists and they have not been State listed under the California Endangered Species Act; 2) were previously State or Federally listed and now are on neither list; or 3) are on the list of “Fully Protected” species;
- The Western Bat Working Group is comprised of agencies, organizations and individuals interested in bat research, management and conservation from the 13 western states and provinces. Species designated as “High Priority” are imperiled or

are at high risk of imperilment based on available information on distribution, status, ecology and known threats; and/or

- The California Natural Diversity Database ranking element codes are part of the “Heritage Methodology” for special animals in which the California Department of Fish and Wildlife is interested in tracking, regardless of their legal protection status. It is a shorthand formula that provides information about the status of a taxon, both throughout its entire range and within California.

Table 4.4-7 - Special-Status Wildlife Species of the Project Region lists special-status wildlife that have been documented within the Project region along with a checkbox of observations and an assessment of the potential for species occurrence within the Biological Survey Areas. Figure 4.4-7 - Special-Status Wildlife within the Biological Survey Areas illustrates occurrences of special-status wildlife documented within a five mile radius around the Biological Survey Areas.

**Table 4.4-7. Special-Status Wildlife Species of the Project Region**

Common Name Scientific Name	Status <sup>1</sup>	General Habitat Description	Nearest Documented Occurrence	Biological Survey Area			
				Habitat Present	Occurrence ≤ Five Miles	Observed	Potential for Occurrence
<b>Invertebrates</b>							
Lompoc grasshopper <i>Trimerotropis occulens</i>	GH, SH	Known only in San Luis Obispo and Santa Barbara counties. Limited information available.	Nearest known location: in Lompoc in 1938 (CDFW, 2014).	X			
Monarch butterfly <i>Danaus plexippus</i>	G5, S3	Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress) with nectar and water sources nearby.	Nearest documented location: Santa Maria Country Club, greater than five miles from the Project site (California Department of Fish and Wildlife, 2014a).	X	X	X	X
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT	Vernal pools.	Wet season protocol-level surveys within the Project site resulted in negative findings. Nearest occurrence in Sargent Fee (Padre, 2010), within one mile from the natural gas pipeline Biological Survey Area.	X	X		X <sup>2</sup>
<b>Fish</b>							
Southern steelhead <i>Oncorhynchus mykiss irideus</i>	FE, CSC	Warmer waters and more variable conditions from Santa Maria river into San Diego County.	USFWS critical habitat occurs along the Sisquoc River, within one mile of BSA.		X		

**Table 4.4-7. Special-Status Wildlife Species of the Project Region**

Common Name Scientific Name	Status <sup>1</sup>	General Habitat Description	Nearest Documented Occurrence	Biological Survey Area			
				Habitat Present	Occurrence <sup>s</sup> Five Miles	Observed	Potential for Occurrence
Unarmored threespine stickleback <i>Gasterosteus aculeatus williamsoni</i>	FE, SE	Weedy pools, backwaters and emergent vegetation at the stream edge in small southern California streams.	Nearest known location: San Antonio Creek, greater than five miles from BSA (CDFW, 2014).		X		
<b>Reptiles</b>							
Blainville's (coast) horned lizard <i>Phrynosoma blainvillii</i>	CSC	Wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes.	Observed within the Project site during field surveys.	X	X	X	X
California (silvery) legless lizard <i>Anniella pulchra</i>	CSC	Sandy or loose loamy soils, under sparse vegetation. Soil moisture is essential.	Nearest known location: South side of Sisquoc River, approximately 3.7 miles west-northwest of the Project site (California Department of Fish and Wildlife, 2014a).	X	X		X
Coast patch-nosed snake <i>Salvadora hexalepis virgulata</i>	CSC	Brushy or shrubby vegetation in Southern California. Require small mammal burrows for refuge and overwintering sites.	Nearest known location: Avena Rd., 2.19 miles northeast of La Purisima Mission State Historical Park, greater than five miles from the Project site (California Department of Fish and Wildlife, 2014a).	X			X
Southern western pond turtle <i>Actinemys pallida</i>	CSC	Permanent or nearly permanent bodies of water in many habitat types (<6000 ft elevation).	Nearest documented location: south side of the Sisquoc River, (California Department of Fish and Wildlife, 2014a). Suitable habitat occurs along the natural gas pipeline Biological Survey Area.	X	X		X <sup>2</sup>
<b>Amphibians</b>							
Arroyo toad <i>Anaxyrus californicus</i>	FE, CSC	Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.	Nearest known location: Sisquoc River, approximately 3.8 miles north-northwest of the Project site (CDFW, 2014).		X		
California red-legged frog <i>Rana draytonii</i>	FT, CSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	Nearest known location: along the Sisquoc River, approximately 2.5 miles north and northeast of the Project site (California Department of Fish and Wildlife, 2014a).		X		X

**Table 4.4-7. Special-Status Wildlife Species of the Project Region**

Common Name Scientific Name	Status <sup>1</sup>	General Habitat Description	Nearest Documented Occurrence	Biological Survey Area			
				Habitat Present	Occurrence <sup>s</sup> Five Miles	Observed	Potential for Occurrence
California tiger salamander <i>Ambystoma californiense</i>	FE, ST, CSC	Need underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding.	Nearest known location: east round pond located east of Highway 101, approximately 4.2 miles southwest of the Project site (California Department of Fish and Wildlife, 2014a).	X	X		X
Western spadefoot <i>Spea hammondi</i>	CSC	Grassland habitats, valley-foothill hardwood woodlands, vernal pools are essential for egg laying and breeding.	Nearest documented occurrence located to the west of the Project site along Cat Canyon Road (Sage, 2012).	X	X		X
<b>Birds</b>							
Burrowing owl <i>Athene cucularia</i>	CSC, MBTA	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation.	Nearest sighting in 2003, northwest of junction of Betteravia Road and Black Road, greater than five miles from the Project site (California Department of Fish and Wildlife, 2014a).	X	X		X
California horned lark <i>Eremophila alpestris actia</i>	MBTA, WL	Grasslands with low-lying vegetation.	Observed within the Project site during April 2013 field survey by Padre Associates, Inc. Biologists.	X	X	X	X
Golden eagle <i>Aquila chrysaetos</i>	FP, MBTA, WL, BCC	Open grasslands, foothills, prairies, open forests.	No observations for this species were noted in the desktop review. Suitable habitat present within the Project site.	X	X		X
Loggerhead shrike <i>Lanius ludovicianus</i>	CSC, BCC, MBTA	Open pastures and prairies with scattered bushes, hedgerows and trees.	No observations for this species were noted in the desktop review; however, suitable habitat is present within the Project site.	X			X
Oak titmouse <i>Baeolophus inornatus</i>	MBTP, BCC	Oak woodland	Observed in the Project site during field surveys.	X	X	X	X
Purple martin <i>Progne subis</i>	MBTP, CSC	Oak woodland, conifer forests	No observations for this species were noted in the desktop review; however, suitable habitat is present within the Project site.	X			X
Southern California rufous-crowned sparrow <i>Aimophila ruficeps canescens</i>	MBTA, WL	Coastal scrub.	Observed within Project site during field surveys.	X	X	X	X
Tricolored blackbird <i>Agelaius tricolor</i>	CSC, MBTA	Requires open water and protected nesting substrate and foraging area with insect prey within a few km of the colony.	Documented along Cat Canyon Road by Padre Associates, Inc. Biologists, immediately adjacent to the Project site.	X	X		X

**Table 4.4-7. Special-Status Wildlife Species of the Project Region**

Common Name <i>Scientific Name</i>	Status <sup>1</sup>	General Habitat Description	Nearest Documented Occurrence	Biological Survey Area			
				Habitat Present	Occurrence $\geq$ Five Miles	Observed	Potential for Occurrence
Yellow warbler <i>Dendroica petechia</i>	CSC, MBTA	Riparian plant association; prefers willows, cottonwoods, aspens, sycamores and alders for nesting and foraging.	Nearest known location: Sisquoc River, approximately 2.3 miles from the Project site (California Department of Fish and Wildlife, 2014a).	X	X		X
<b>Mammals</b>							
American badger <i>Taxidea taxus</i>	CSC	Shrub, forest, and herbaceous habitats, with friable soils.	Observed within Project site during field surveys. Also observed within Biological Survey Areas for off property utilities.	X	X	X	X
Hoary bat <i>Lasiurus cinereus</i>	CSC	Open habitats or open mosaics, with access to trees for cover and open areas or habitat edges for feeding. Requires water.	Nearest known location: Vandenberg Air Force Base, greater than five miles from the Project site (California Department of Fish and Wildlife, 2014a).	X			X
Pallid bat <i>Antrozous pallidus</i>	CSC	Deserts, grasslands, shrublands, woodlands, and forests, open dry habitats with rocky outcrops for roosting	Observed by Padre Associates, Inc. Biologists in Hammon Fee, West Cat Canyon, approximately one mile west of the Project site.	X	X		X
San Diego desert woodrat <i>Neotoma lepida intermedia</i>	CSC	Coastal scrub habitat and forest associated with rocky outcrops.	Lompoc Oil Fields, south of Purisima Hills (California Department of Fish and Wildlife, 2014a)	X			X
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	CSC	Roosts in the open, hanging from walls, ceilings. Roosting sites extremely sensitive to human disturbance.	Nearest known location: Vandenberg Air Force Base, greater than five miles from (California Department of Fish and Wildlife, 2014a).	X			X
Western red bat <i>Lasiurus blossevillii</i>	CSC	Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	Nearest known location: Vandenberg Air Force Base, greater than five miles from the Project site (California Department of Fish and Wildlife, 2014a).	X			X
Yuma myotis <i>Myotis yumanesis</i>	CSC	Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices.	Nearest known location: Vandenberg Air Force Base, greater than five-miles from the Project site (California Department of Fish and Wildlife, 2014a).	X			X

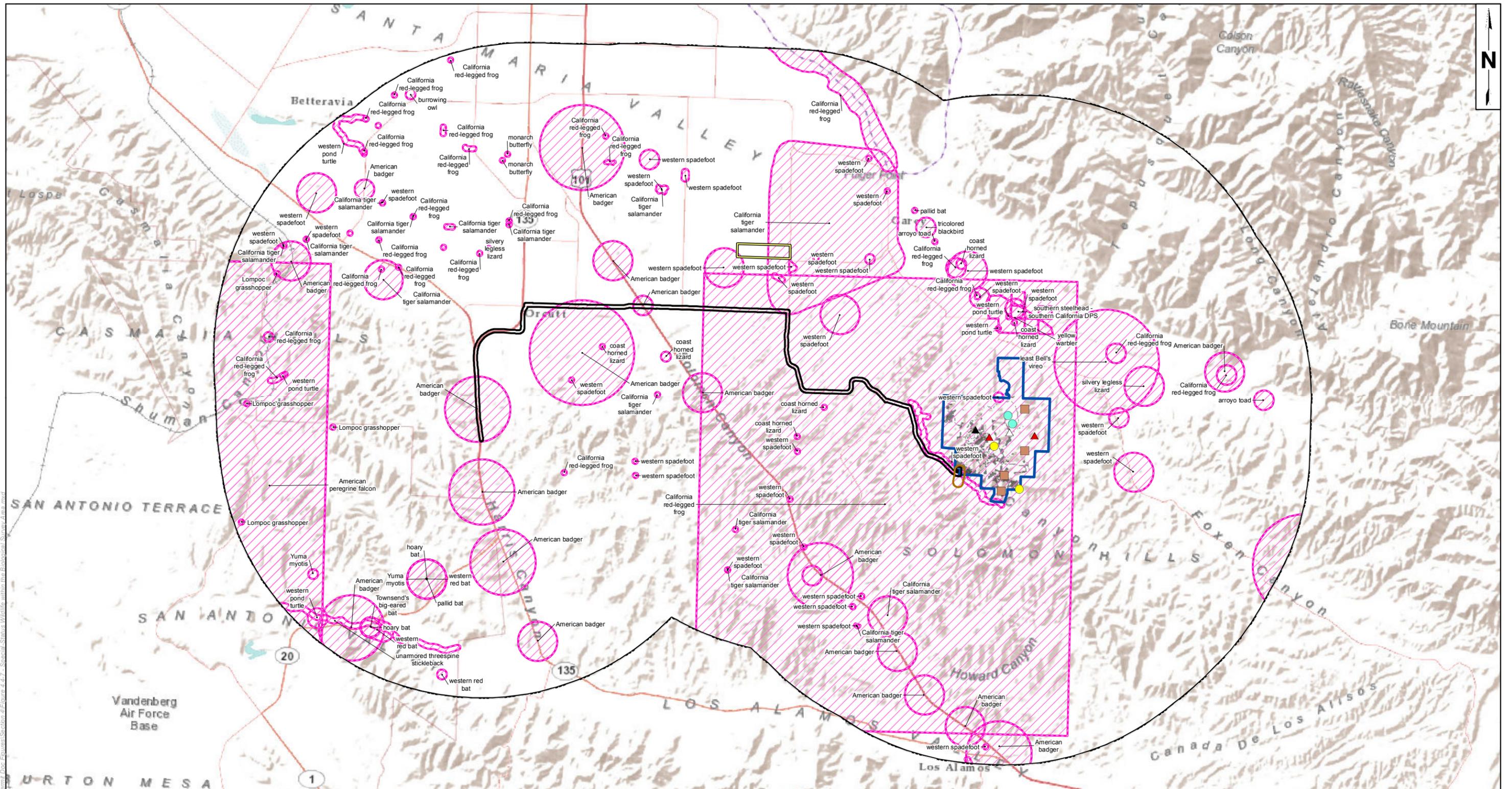
**Table 4.4-7. Special-Status Wildlife Species of the Project Region**

Common Name <i>Scientific Name</i>	Status <sup>1</sup>	General Habitat Description	Nearest Documented Occurrence	Biological Survey Area		
				Habitat Present	Occurrence $\leq$ Five Miles	Observed
Notes: USFWS U.S. Fish and Wildlife Service CDFW California Department of Fish and Wildlife CNPS California Native Plant Society NMFS National Marine Fisheries Service <sup>1</sup> Status Codes: FE Federal Endangered (USFWS/NMFS) SE State Endangered (CDFW)			Status Codes continued: FT Federal Threatened (USFWS/NMFS) ST State Threatened (CDFW) CSC California Species of Special Concern (CDFW) BCC Bird of Conservation Concern (USFWS) M Migratory Bird Treaty Act (USFWS) WL Watch List (CDFW) FP Fully Protected (CDFW)			
G1/S1 Global/State Rank, less than 6 viable element occurrences (Eos) OR less than 1,000 individuals OR less than 2,000 acres. Critically Imperiled– At very high risk of extinction or elimination due to extreme rarity, very steep declines, or other factors. G2/S2 Global/State Rank, 6-20 Eos OR 1,000-3,000 individuals OR 2,000-10,000 acres. Imperiled – At high risk of extinction or elimination due to very restricted range, very few populations or occurrences, steep declines, or other factors. G3/S3 Global/State Rank, 21-80 Eos or 3,000-10,000 individuals OR 10,000-50,000. Vulnerable – At moderate risk of extinction or elimination due to a restricted range, relatively few populations or occurrences, recent and widespread declines, or other factors. G4/S4 Global/State Rank. Apparently secure – this rank is clearly lower than S3 but factors exist to cause some concern; i.e. there is some threat, or somewhat narrow habitat S5/G5 Global/State Rank. Common, widespread, and abundant. Population or stand demonstrably secure to ineradicable due to being commonly found in the world SH/GH Global/State Rank. Possibly Extinct – Known from only historical occurrences but still some hope of rediscovery.						

Based on the literature review and field surveys, the Biological Survey Areas may provide suitable habitat to support several special-status wildlife species. Refer to the Biological Resources Survey Reports (Appendix F-1.L) for discussions on the life history for these species and further detail on the potential for each of these wildlife species to occur in the Biological Survey Areas.

**Invertebrates.** No invertebrates were collected or identified to species-level during field survey visits; therefore, presence/absence of special-status invertebrates is based on suitable habitat within the Biological Survey Areas and nearest documented occurrences.

**Lompoc Grasshopper.** This species has been collected only in Santa Barbara and San Luis Obispo counties and the habitat in which it occurs is unknown. Limited information is available on this species; however, the California Natural Diversity Database last documented the species in Santa Barbara County in 1938. No invertebrates were collected or identified to species-level during field survey visits. Grasshopper species are likely to occur within the Biological Survey Areas; however, further survey efforts would be required to determine presence/absence of this species.



**LEGEND:**

5 Mile Buffer of the BSAs	Project Footprint	<b>Wildlife Observation on Aera Energy LLC Property</b>		Golden eagle
Aera Energy LLC Property BSA	Sargent Fee Site - VPFs, Burrowing owl, CTS Identified on Site	American kestrel nest	Rufous-crowned sparrow	
Natural Gas Import Pipeline Route BSA	CDFW Natural Wildlife Species of Special Concern	Red-tailed hawk nest	American badger	
115kV Service Line BSA		Common raven nest		

0 1 2  
MILES

Source: ESRI Online Basemap, TJCross 8/20/14, DPSI 2013, CDFW CNDDDB 8/2014  
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
Notes: BSA = Biological Survey Area  
This map was created for informational and display purposes only.

PROJECT NAME: <b>EAST CAT CANYON OIL FIELD REDEVELOPMENT PROJECT</b>		<b>SPECIAL-STATUS WILDLIFE WITHIN THE BIOLOGICAL SURVEY AREA</b>	<b>FIGURE 4.4-7</b>
PROJECT NUMBER: 1002-0455	DATE: September 2014		



Monarch Butterfly. This species is not formally listed as an Endangered or Threatened species; however, over-wintering monarch butterflies are considered to be a “special animal” by the California Department of Fish and Wildlife. Monarch butterfly wintering sites are classified as “demonstrably secure” worldwide but within California they are considered of “restricted range; rare.” Monarch butterflies will begin to abandon autumnal roosts within northern United States and Canada in early November to December to over-wintering sites in the warmer climates in southern California and Mexico. Monarch butterflies will fly north for breeding as the milkweed plants come into bloom in the spring. Wintering aggregations of monarch butterflies in California can primarily be found on Monterey pines and in eucalyptus groves (Sakai and Calvert, 1991). Wintering habitat components frequently include sources of moisture such as streams, ponds or abundant morning dew. Other habitat preferences include little direct sunlight, minimal wind, and moist ambient conditions. Monarch butterflies have been observed intermittently within the Project site, but not in large numbers, and no roosts have been observed within the Project site. Small eucalyptus groves occur within the southern boundary of the Project site and will be removed as part of Project activities; however, monarch butterflies are not likely dependent on eucalyptus groves found within the Project site for autumnal roosts. Eucalyptus groves and clusters of Monterey pine and other large trees occurring along the natural gas pipeline route may provide suitable over-wintering roosts. No suitable habitat for monarch butterfly was observed in the electrical transmission line Biological Survey Area.

Vernal Pool Fairy Shrimp. The habitat communities mapped at the Project site are generally inconsistent with natural vernal pool systems typically occurring in valley and foothill grasslands. The majority of the Project site consists of steep topography, which supports scrub and woodland vegetative communities, and flatter, highly disturbed lands associated with past land use activities. Potential aquatic habitat is limited to manmade habitat consisting of cattle watering stock ponds and ponded areas on highly compacted abandoned well pads or degraded/buried paved areas. Vernal pool fairy shrimp, however, are known to occur degraded areas by past land use activities.

Within Santa Barbara County, there is only one record of vernal pool fairy shrimp recorded in the California Natural Diversity Database; a 2004 occurrence on Porter Peak in the Los Padres National Forest located over 18 miles northeast of the Project site (California Department of Fish and Wildlife, 2014). However, there are several other recent reported occurrences within Santa Barbara County that are not yet recorded in the California Natural Diversity Database. Of these, the nearest non-California Natural Diversity Database documentation of vernal pool fairy shrimp to the Biological Survey Areas is a 2010 occurrence documented during spring field surveys by Padre Associates, Inc. Biologists at the Chevron Sargent Fee site located approximately 5.2 miles northwest of the Project site (Padre Associates, Inc., 2010).

Additionally, there are known occurrences at the Santa Maria Airport approximately ten miles northwest of the Project site (United States Fish and Wildlife Service, 2007); Vandenberg Air Force Base over 15 miles west-southwest of the Biological Survey Area (United States Fish and Wildlife Service, 2007); near Lake Cachuma (associated with Critical Habitat there) over 21 miles southeast of the Project site; and on the Las Varas Ranch Property over 31 miles south-southeast of the Project site (Collins, 2012). Because they are not yet recorded in the California Natural Diversity Database, the exact locations and dates of these occurrences are unknown.

Field surveys at the Project site included a reconnaissance-level visit documenting the extent of aquatic habitats on January 15 and 16, 2013. This survey followed a rain event on January 10, 2013 that resulted in a rainfall total of 0.13 inch. Field surveys identified 22 aquatic features at 16 locations throughout the Project site. The majority of these features are small ponded areas that occur on abandoned well pads. Following this visit, United States Fish and Wildlife Service protocol-level surveys were initiated during the wet season following discussions with the United States Fish and Wildlife Service Ventura Field Office. The surveys were completed in accordance to *United States Fish and Wildlife Service Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Brachiopods* (United States Fish and Wildlife Service, 1996). Results of the wet season surveys produced negative findings (Appendix F-1.D). Following the wet season surveys, dry season surveys were completed by LSA Associates, Inc. July 8 and 9, 2014 and the results also produced negative findings (Appendix F-1.E).

Based on the results of the 2014 dry and wet protocol-level surveys, vernal pool fairy shrimp have been determined to be absent from the Project site. Within natural gas pipeline Biological Survey Area, potential aquatic habitat is limited to manmade roadside drainages, ephemeral creek crossings, and ponded areas on highly compacted paved areas. Project activities are not expected to include any vegetation or topsoil removal that may support habitat for this species. No special-status invertebrates are expected to occur within electrical transmission line Biological Survey Area due to absence of available suitable habitat observed during field surveys.

#### **Fishes.**

Southern Steelhead and Unarmored Threespine Stickleback. Southern steelhead and unarmored threespine stickleback are federally listed species known to occur in the region. Steelhead are an anadromous form of rainbow trout that reproduce in freshwater, but spend much of their life cycle in the ocean, where increased prey density provides a greater growth rate and size. The nearby (within one mile of the Project site) Sisquoc River has been designated as Critical Habitat for the southern California Evolutionary Significant Unit. Unarmored three-spine stickleback, however, are not anadromous and occur in freshwater streams their entire life cycle. Nearest documented occurrence is San Antonio Creek, greater than five miles from the Project site. The Biological Survey Areas do not support streams that hold water for long enough durations to support fish species; therefore, these species are not likely to occur within the Biological Survey Areas.

#### **Reptiles.**

Blainville's Horned Lizard. Blainville's horned lizard, formerly coast horned lizard, inhabits open areas of sandy soil and low vegetation in valleys and foothills throughout northern California to Baja California. It is found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil, including sandy washes and along unpaved roads. This species was observed within the Project site during field surveys and is expected to occur throughout the Biological Survey Areas.

Coast Patch-Nose Snake. Coast patch-nosed snake occur in California from the northern Carrizo Plains in San Luis Obispo County, south through the coastal zone, south and west of the deserts, into coastal northern Baja California. It inhabits semi-arid brushy areas and chaparral in

canyons, rocky hillsides, and plains. This snake is considered uncommon along the southern coast area due to land changes from heavy grazing, development, and loss of former habitat, though its natural history and abundance have never been well-known or extensively studied. Coast patch-nose snake was not been observed during surveys; however, suitable habitat occurs within the Biological Survey Areas.

California Legless Lizard. California legless lizard, formerly known as silvery legless lizard, occur in moist warm loose soil found in sparsely vegetated areas of beach dunes, chaparral, sandy washes, and stream terraces with oaks and is often found under surface objects such as rocks, boards and logs (Stebbins, 2003). The range for this species includes Monterey, San Luis Obispo, and the majority of Santa Barbara County. The species separates into four additional species based on genetic lineages from the very southern end of Santa Barbara County south. This species was identified within the Sisquoc River within five miles from the Project site. Legless lizard have not been identified within the Biological Survey Areas, however, suitable loose sandy soils may occur within Cat Canyon Creek within the Project site (similar conditions to the Sisquoc River bottom) and within other portions of the Biological Survey Areas.

Southern Western Pond Turtle. The southern western pond turtle is an aquatic turtle inhabiting streams, marshes, ponds, and irrigation ditches within woodland, grassland, and open forest communities. This species requires upland sites, usually along stream or pond margins, for nesting and over-wintering. Stream habitat consists of large, deep pool areas with moderate-to-good plant and debris cover, and rock and cobble substrates for escape retreats. Southwestern pond turtles will over-winter underwater, often in the muddy bottom of a pool, making it difficult to determine presence or absence in a given creek without completing aquatic surveys. Females dig upland nests between April and August and hatchlings emerge in early fall or overwinter (Stebbins, 2003; Behler and King, 1992). They may travel some distance from water for egg-laying, moving as much as 0.5 mile away from the nearest source of water. Females will also cover the nest with soil and adjacent low vegetation, making it difficult to find nests. No pond turtles were observed within the Biological Survey Areas during field surveys. Southern western pond turtle have been documented within five miles from the Project site, specifically within the Sisquoc River. Suitable habitat occurs along many of the drainages throughout the Biological Survey Areas and southern western pond turtles are likely to occur throughout the Biological Survey Areas.

**Amphibians.** Sensitive amphibian species that have been documented within a five mile radius from the Biological Survey Areas include: arroyo toad, western spadefoot toad, California tiger salamander, and California red-legged frog. All of these species include both aquatic and terrestrial components in their life cycles, each requiring different water duration requirements to lay eggs and metamorphose into their adult stage. These requirements reflect different adaptive summer survival strategies in different upland habitats. Determining presence/absence is difficult due to the species limited movements (i.e., only travel at night or during rain events), limited pool availability in dry years, and wide ranging upland burrow habitats. No protocol-level surveys were completed within electrical transmission line or natural gas pipeline Biological Survey Areas; protocol-level surveys within the Project site are discussed below. Aquatic resources observed within the Biological Survey Areas were limited to agricultural and roadway drainages that may or may not provide suitable conditions for aquatic amphibians in any given time of year.

Arroyo Toad. Arroyo toads have been documented in the Sisquoc River east of the Project site. Areas in the Sisquoc River have also been designated United States Fish and Wildlife Service Arroyo Toad Critical Habitat (United States Fish and Wildlife Service, 2011), within five miles from the Project site. Arroyo toad specialize in habitats consisting of shallow pools and open sand and gravel flood terraces of medium to large sized intermittent or perennial streams that flood on a regular basis (United States Fish and Wildlife Service, 2011). Breeding pools for this species must persist for a minimum of two months for the completion of larval developments and are less than six inches deep (United States Fish and Wildlife Service, 2011). Suitable aquatic habitat was not observed within the Biological Survey Areas during field surveys and during discussions with the United States Fish and Wildlife Service on November 6, 2013, no protocol-level surveys deemed necessary due to lack of suitable habitat.

California Tiger Salamander. The Santa Barbara County population of the California tiger salamander is federally listed as Endangered and recently listed with the State of California as Threatened. Adults breed in ponds between November and March after migrating from upland habitats during the first big rain within November/December. Females lay eggs in the pools, and the eggs metamorph within three to four months. The young migrate upland during May through August. Young California tiger salamander are strictly terrestrial for three to four years, remaining in small mammal burrows, moving through terrestrial habitats during the night, and rarely come to the surface to feed. Upland habitat includes grasslands, edge of oak savannas, sometimes chaparral and shrublands (in coastal areas), and may or may not be grazed by cattle. California tiger salamander regularly use California ground squirrel (*Otospermophilus beecheyi*), and Botta's pocket gopher burrows in upland habitats (Shaffer et al., 1993, Barry and Shaffer, 1994). Mature California tiger salamander migrate to aquatic habitats to breed. The aquatic habitats include ponds, vernal pools, and ditches. Breeding ponds must be non-permanent, but water must persist in these pools at least into May (preferably into July or August) to allow time for metamorphosis. While CTS are known to disperse up to 1.2 miles away from breeding ponds, 95 percent of adult and sub-adult CTS are found within 0.4 mile (approximately 2,100 feet) of breeding ponds (Trenham and Shaffer, 2005). The habitat with the highest conservation value for California tiger salamander is within 1.5 miles of the breeding pond. The Project site is located within five miles from the United States Fish and Wildlife Service designated Critical Habitat for this species (United States Fish and Wildlife Service, 2012b) and documented breeding pools (Storrer, 2013). The natural gas pipeline Biological Survey Area is located along the southern border of the U.S. Fish and Wildlife Service-designated California tiger salamander Critical Habitat and occurs within one mile from a known breeding pond (TWDA-12), located near East Clark Avenue and Dominion Road. The United States Fish and Wildlife Service has also identified several pools with aerial imagery that have not necessarily been surveyed and may or may not contain suitable breeding or upland habitat; however, the United States Fish and Wildlife Service is interested in their protection. Two of these ponds are referred to as: Olivera Canyon Pond (SISQ-20), located within the Project site, and Long Canyon Pond (SISQ-19), located on a parcel adjacent to the Project site. Olivera Canyon Pond is located within the Project site but does not hold water for long durations, did not hold water following any given rain event in the winter months of 2013, and therefore has not been subject to aquatic sampling. Long Canyon Pond is located on private property and there is limited access and information available. However, based on historic aerial photo review, this feature appears to hold water for a significant period of time following rainfall. No aquatic surveys have been performed. A California tiger

salamander habitat assessment completed by Mr. Vince Semenson in 2007 and a second completed by Storrer Environmental in 2011 determined that upland habitat within the Project site was not suitable for California tiger salamander. California red-legged frog surveys completed by Sage Institute, Inc. (2012) identified several small stock ponds within the adjacent ERG Operating Company, LLC property to the immediate west of the Project site that may also provide suitable habitat for California tiger salamander. Aquatic surveys of these ponds were carried out by ERG Resources LLC consultant, Paul Collins, and concluded that no California tiger salamander were found (Collins, 2014). Despite these conclusions, discussions with the United States Fish and Wildlife Service and California Department of Fish and Wildlife indicated that protocol-level surveys were necessary to determine presence or absence of the species occurring within the Project site. Based on these agency discussions, an upland drift net array was designed to capture the most plausible salamander movements through the Project site. This 'most plausible pathways' driftnet survey approach was chosen over the standard United States Fish and Wildlife Service protocol, due to the infeasibility of covering 95 percent of the property boundary. These surveys were approved by the United States Fish and Wildlife Service and California Department of Fish and Wildlife and initiated in October of 2014.

Within the natural gas pipeline and electrical transmission line Biological Survey Areas, Project activities are not expected to include any activities in or adjacent to any known pools with the potential to support California tiger salamander.

California Red-Legged Frog. California red-legged frog is a federally listed Threatened species and a California Species of Special Concern. California red-legged frog is generally found along marshes, streams, ponds, and other permanent sources of water where dense scrubby vegetation such as willows, cattails, and bulrushes dominate. Breeding sites occur inundated along watercourses with pools that remain long enough for breeding and the development of larvae. Breeding time occurs between November and April, depending on locality (Stebbins, 1985; Storer, 1925). Permanent or nearly permanent pools are required for larval development, which takes 11 to 20 weeks (Storer, 1925; Calef, 1973).

Critical Habitat for the California red-legged frog does not occur within the Biological Survey Areas; however, it does occur within a five mile radius of the Project site. The California Natural Diversity Database query resulted in the identification of several documented occurrences of California red-legged frog within five miles of the Project site (California Department of Fish and Wildlife, 2014). These occurrences are primarily located within pools/ponds along the Sisquoc River to the north of the Project site. No California red-legged frogs have been documented within the Biological Survey Areas during field surveys, including during vernal pool fairy shrimp aquatic dip-net surveys. California red-legged frog have been documented to the south of Project site by Sage Institute, Inc. (2012) in a small stock pond (pond "E") during a California red-legged frog eye-shine survey in June of 2011. Suitable breeding habitat does not occur within the Biological Survey Areas; however, California red-legged frog may utilize portions of the Biological Survey Areas for migratory routes to suitable breeding ponds. Following discussions with the U.S. Fish and Wildlife Service, protocol-level California red-legged frog surveys were deemed not warranted due to lack of suitable habitat within the Biological Survey Areas.

Western Spadefoot Toad. Western spadefoot toad (*Spea hammondi*) is not seen during most of the year, as it resides in burrows up to nine months with infrequent nocturnal sojourns. The species is typically associated with sandy, friable soils. They emerge during spring rains and breed in temporary pools from January to May. Oviposition (egg laying) will not occur until water temperatures reach a minimum of 48°F, usually between late February and late May (Jennings and Hayes, 1994). Eggs hatch within three to four days and tadpoles will transform within 11 weeks, depending on food availability and the duration of the pool. Spadefoot require temporary breeding pools that must last for at least 30 days or larvae will not survive. Suitable habitat occurs within drainage features that are capable of providing pooled areas that hold water at least 30 days following a rain event. These pooled areas may vary from year to year and are extremely temporary in nature; therefore, it may be impossible to locate all potential breeding pool areas. Determining presence/absence is difficult due to this temporary nature of the ponds and also due to the specific requirements, such as temperature and rain events, which trigger spadefoot toad to emerge from their underground burrows. This species has been identified within the Cat Canyon valley and documented by Sage Institute, Inc. (2012) during California red-legged frog aquatic protocol-level surveys. There is a potential that westerns spadefoot toad will occur within the Biological Survey Areas.

#### **Birds.**

Birds of Prey. Red-tailed hawk, American kestrel (*Falco sparverius*), Cooper's hawk, (*Accipiter cooperii*), merlin (*Falco columbarius*), turkey vulture (*Cathartes aura*), and golden eagle (*Aquila chrysaetos*) are wide ranging birds of prey that could use the Biological Survey Areas for the purposes of foraging during migration and/or movement through the region. Birds of prey may also utilize the Biological Survey Areas for nest sites, which are protected by federal and/or state agencies. Nests are often used year after year and the California Department of Fish and Wildlife and United States Fish and Wildlife Service do provide protection of these nest sites if they are occupied or not. It is expected that birds of prey and their nests will occur within the Biological Survey Areas.

Other Protected Birds. A number of bird species potentially occurring within the Biological Survey Areas are protected during their nesting period under the provisions of the federal Migratory Bird Treaty Act. The Migratory Bird Treaty Act restricts the killing, taking, collecting, and selling or purchasing of native bird species or their parts, nests, or eggs. During the field surveys within the Biological Survey Areas, several bird species protected by the Migratory Bird Treaty Act were observed, including nest sites. Unlike raptors, most birds may return to the nest site, or near vicinity, year after year to breed, however, new nests are typically created. It is expected that protected birds and their nests will occur within the Biological Survey Areas.

Tricolored Blackbird. Tricolored blackbirds (*Agelaius tricolor*) are a colonial nesting species breeding from mid-March through early August (Beedy and Hamilton, 1999). They nest at colony sites near freshwater marshes (Neff, 1937) in canopies of willows and other riparian trees, requiring open areas accessible to water, a protected nesting substrate within flooded areas or thorny or spiny vegetation, and a suitable foraging space providing adequate insect prey near the colony (Beedy and Hamilton, 1999). Wintering tricolored blackbirds congregate in flocks with mixed-species of blackbirds that forage in grasslands and agricultural fields with low-growing vegetation and at dairies and feedlots (Shuford and Gardali, 2008). Preferred foraging habitats

include agriculture fields (e.g., rice, alfalfa, oats, and wheat). Degradation of habitat from human activities, such as converting grassland and pastures to vineyards or developed lots, is the greatest threat to the sustainability of this species (Beedy and Hamilton, 1999). Tricolored blackbirds have been observed foraging along Cat Canyon Road in open non-native grassland communities. It is expected that tri-colored blackbirds will occur within the Biological Survey Areas.

Burrowing Owl. Burrowing owls (*Athene cunicularia*) are year-round residents in annual and perennial grasslands or other vegetation communities that support little to no tree or shrub cover. In California, the species is typically found in close association with California ground squirrels, which create burrows that are used by burrowing owls for year-round shelter and seasonal nesting habitat. They may also utilize badger, coyote and fox dens, or holes (Ronan, 2002), as well as human-made structures such as culverts, corrugated metal pipes, debris piles, or openings beneath pavement as shelter and nesting habitat (California Department of Fish and Wildlife, 1995). Typical burrowing owl breeding season in California is from March to August, but can begin as early as February and extend into December (Rosenberg and Haley, 2004). Burrowing owls have not been identified within the Biological Survey Areas; however, suitable habitat does occur within grassland habitats within the Biological Survey Areas. There is potential for burrowing owl to occur within the Biological Survey Areas.

Yellow Warbler. Yellow warbler (*Dendroica petecchia*) generally occupy riparian vegetation in close proximity to water (Lowther et al., 1999), and is a common nesting species in riparian habitats in San Luis Obispo and Santa Barbara counties. Breeding season begins in mid-March and the potential for this species to occur within riparian habitats as a migratory stop-over, for nesting, or for foraging is expected. It is expected that yellow warbler will occur within the Biological Survey Areas.

Least Bell's Vireo. Least Bell's vireo nests in riparian forests during the spring months in California and winters south into southern Baja and along the coast of Mexico. It prefers dense, low, shrubby vegetation in riparian areas, brushy fields, young second-growth forest or woodland, scrub oak, coastal chaparral, and mesquite brushlands, often near water. Least Bell's vireo begin to return to southern California breeding sites in mid- to late-March and are generally present on the breeding grounds until late September before migrating to wintering grounds in southern Baja California, Mexico. Current breeding distribution is concentrated in Ventura and San Diego counties but is known to occur in the Sisquoc and Santa Ynez rivers to the south of the Project site. Along the Santa Ynez River, least Bell's vireo have occurred mainly in mugwort, mulefat, and willow shrubs (Olson and Gray, 1989). The least Bell's vireo has been documented along the Sisquoc River, within five miles from the Project site. Critical Habitat occurs approximately 40 miles south of the Project site. Protocol-level surveys were completed in 2014 along portions of willow thickets occurring along Cat Canyon Creek within the Project site. The results of the surveys are provided in a Least Bell's Vireo Survey Report within Appendix F-1.G. No least Bell's vireo were identified during protocol-level presence/absence surveys in the Project site; therefore least Bell's vireo is considered absent from the Project site and no further focused surveys are required.

No least Bell's vireo were observed during field surveys of the natural gas pipeline or electrical transmission line Biological Survey Areas; however, protocol-level surveys were not

completed to accurately determine presence or absence within those Biological Survey Areas. Project activities within the natural gas pipeline and electrical transmission line Biological Survey Areas are not expected to include any removal of habitats with the potential to support this species.

Purple Martin. Purple martin (*Progne subis*) is distributed throughout California in central and northern coastal conifer forests, interior foothills, and southern California forests. It occurs primarily from mid-March to late September in California and breeds from May to mid-August (Williams, 1998). Purple martins rely on cavities in trees, bridges, utility poles, lava tubes, and buildings. Most tree nest sites in San Luis Obispo and Santa Barbara counties occur in large oaks and sycamores. Purple martin populations have been threatened primarily by removal of large snags, specifically from post-fire salvage logging, and competition from European starlings. Purple martins were not observed within the Biological Survey Areas; however, large oak trees with snags and/or many abandoned woodpecker holes that occur within the oak woodland habitats in the Biological Survey Areas may provide suitable habitat for martin nesting colonies. There is potential for purple martin to occur within the Biological Survey Areas.

Southern California Rufous-Crowned Sparrow. The southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) is a resident of southwest California on the slopes of the Transverse and Coastal ranges from northern Santa Barbara and Ventura Counties south to Baja California Norte. The California Natural Diversity Database does not document this bird in the region; however, southern California rufous-crowned sparrow was identified by Padre Biologists during the April 2013 field survey within the Project site among hillsides consisting of sage scrub, specifically along Foxen Canyon. This sparrow nests on the ground, often wedged in hollows among rocks or under clumps of grass, low bushes, or shrubs on open brush or grass-covered rocky hillsides from mid-March through mid-July (Cogswell, 1968a; Wolf, 1977; Harrison, 1978; Shuford, 1993; and Rising, 1996). It appears to prefer coastal sage scrub dominated by California sagebrush (Grinnell and Miller, 1944), but they can also be found breeding in coastal bluff scrub, low-growing serpentine chaparral, and along the edges of tall chaparral habitats (Thorngate and Parsons, 2005). Southern California rufous-crowned sparrow are expected to occur in the Project site.

No southern California rufous-crowned sparrow were observed during field surveys of the natural gas pipeline or electrical transmission line Biological Survey Areas and Project activities within these Biological Survey Areas are not expected to include any removal of habitats with the potential to support this species.

California Horned Lark. California horned lark (*Eremophila alpestris actia*) commonly occur in grasslands and other open habitats with low, sparse vegetation, often flocking together in small groups. They nest in low lying vegetation during the spring months. Their breeding season begins in late February and they will build nests on the ground in small areas at the base of small shrubs or in crevices in rock clusters. Horned lark were observed by Padre Biologists during the April 2013 field surveys within the Project site. California horned lark is expected to occur in the Project site.

No California horned lark were observed during field surveys of the natural gas pipeline or electrical transmission line Biological Survey Areas and Project activities within these Biological

Survey Areas are not expected to include any removal of habitats with the potential to support this species.

Oak Titmouse. Oak titmouse (*Baeolophus inornatus*) is a U.S. Fish and Wildlife Service Bird of Conservation Concern species. Oak titmouse occur in oak woodland and mixed riparian habitats. They nest in natural cavities in tree trunks in mid-March. This species mates for life and defends their nesting territories year-round. Oak titmouse was identified in the oak woodland habitats within the Biological Survey Areas during field surveys. It is expected that oak titmouse will occur in the Biological Survey Areas.

Loggerhead Shrike. Loggerhead shrike (*Lanius ludovicianus*) is a U.S. Fish and Wildlife Service Bird of Conservation Concern and California Department of Fish and Wildlife Species of Special Concern and is a common species within the Project vicinity. This species generally occur in a variety of open grassland, oak savannah, shrubland, and other similar habitats where it feeds on arthropods, reptiles, amphibians, small rodents, and birds (Craig, 1978). Loggerhead shrike nest from March to June with young becoming independent during July or August. Nests are generally well-concealed in dense foliage, on stable branches of a shrub or tree. Loggerhead shrike was not observed within the Biological Survey Areas during field surveys; however, this species has been documented by Padre Biologists in the adjacent area during April 2013 field surveys. It is expected that loggerhead shrike will occur in the Biological Survey Areas.

#### **Mammals.**

San Diego Desert Woodrat. San Diego desert woodrat (*Neotoma lepida intermedia*) is not formally listed as Endangered or Threatened; however, it is a Species of Special Concern protected by the California Department of Fish and Wildlife. San Diego desert woodrat has not been documented within five miles from the Project site. Desert woodrat are typically associated with rocky outcroppings and coastal sage scrub habitats along the coast, dominated by California sagebrush and coyote brush, as well as coast sunflower (*Encelia californica*), black sage, and giant ryegrass (*Leymus condensatus*). This species typically constructs a nest structure with twigs, sticks, cactus parts, and various other materials.

Similar to the San Diego desert woodrat, the big-eared woodrat (*N. macrotis*) is not protected by the California Department of Fish and Wildlife. Big-eared woodrats are common to Santa Barbara County and are morphologically and genetically differentiated from San Diego desert woodrats. Woodrat nests were observed throughout the Project site. No focused biological surveys were completed (i.e., trapping) to determine which species occurs in the Project site; however, the larger-sized nests, which were observed at the base of trees or up in tree branches in the Project site, are more typical of big-eared woodrat and other dusky-footed woodrat species. Therefore, it is likely that big-eared woodrat occurs in the Project site.

No woodrat nests were observed during field surveys of the natural gas pipeline or electrical transmission line Biological Survey Areas; however, suitable scrub and woodland habitat is present and woodrats may occur.

American Badger. American badger is a California Species of Special Concern, which typically inhabits grasslands, farmland, and forest edges within friable soils (California Department of Fish and Wildlife, 1986). Badger dig elliptical burrows with 8 to 12-inch openings, which they utilize for cover, sleeping, hunting, caching food and breeding (California Department of Fish and

Wildlife, 1986). They breed in the months of July and August (National Audubon Society, 1996). Badger do not hibernate; however, they will occupy their burrows during torpor in the coldest part of the winter, remaining in the burrow for several days per week (National Audubon Society, 1996). This species typically preys on small burrowing mammals, such as ground squirrels, rats, and mice, and will also feed on birds, snakes and other reptiles. Badgers are nocturnal; however, they are well known to be active during the day as well. A badger's home range varies from 590 to 4,200 acres. Badger activity has been identified within grassland habitats and agricultural communities within the Biological Survey Areas. It is expected that American badger will occur in the Biological Survey Areas.

Sensitive Bats. Special-status bat species in the Project region include Townsend's bat, pallid bat, hoary bat, and western red bat. No bats were observed during field surveys; however, no specific bat surveys were completed by Padre Biologists. Maternal colonies for most bats occur between April and August. Most bat species will migrate from maternal roosts to wintering sites and some bats will migrate out of the area to warmer climates during the winter months.

Padre Biologists and Central Coast Bat Research Group completed a bat survey in the western extent of Cat Canyon on June 19, 2008, in support of an unrelated project effort. Numerous bats were observed and/or detected as part of this survey effort via Anabat acoustic detectors including several species in the *Myotis* genus, California myotis (*Myotis californicus*), Mexican free-tailed bat (*Tadarida brasiliensis*), and pallid bat. No bats or sign of bat (i.e., guano) were observed during field surveys at the Project site; however, no specific bat surveys were completed as part of the biological field surveys. Project activities are not expected to include any removal of habitats with the potential to support bat species.

#### **4.4.6 Impact Analysis**

The following impact analysis discusses temporary and permanent impacts resulting from Project activities specific to ecological communities, plants, and wildlife. Temporary and permanent impacts are assessed by short-term and long-term Project activities and their overall impact.

Short-term Project activities result in temporary impacts to biological resources while long-term Project activities result in permanent impacts to biological resources. Short-term, temporary impacts include disturbance to above-ground vegetation, minor soil displacement, and wildlife disturbance. Specifically, Project activities that are expected to result in short-term temporary impacts include grading of cut/fill slopes and above-ground pipeline installation that will require temporary ground disturbance and cutting back plant communities that may be revegetated, and temporary staging and stockpile areas during installation of the off-site electrical transmission line and natural gas pipeline. Fuel management activities will also result in temporary impacts to plant communities within the Project site and are expected to be implemented for the life of the Project. Permanent impacts include landscape fragmentation, loss of habitat, and wildlife displacement as a result of removal of vegetation for well pads, roads, laydown areas, facility areas, detention basins (initial grading and long term maintenance), and installation of culverts. Complete discussions of impacts are provided in the following sections.

Activities associated with the natural gas pipeline and electrical transmission line are considered temporary and short-term including excavation for pipeline and power pole placement and staging and stockpiling.

#### 4.4.6.1 Impacts to Vegetation Types

**Electrical Transmission Line Biological Survey Area.** The installation of an electrical transmission line has been designed to avoid stream channels, wetlands, and associated riparian habitats, to the greatest extent feasible. No grading or other vegetation removal activities will be conducted as part of the transmission line construction activities. Construction activities may result in short-term temporary disturbances to existing communities, specifically during pole installation and vehicle use that may result in dust and temporary ground disturbance. The Project will incorporate measures (Section 4.4.7 – Project-Incorporated Avoidance and Minimization Measures) to reduce impacts to native communities and local wildlife to less than significant.

**Natural Gas Pipeline Biological Survey Area.** The installation of a natural gas pipeline has been designed to limit construction activities as much as possible to areas beneath public roadways and to avoid stream channels, agricultural drainages, wetlands, and associated riparian habitats, to the greatest extent feasible. Horizontal directional drilling will be used for areas along the pipeline alignment that must intersect these resources. Horizontal directional drilling activities will be staged at the top of the bank outside designated wetlands to avoid impacts to the integrity of the channel and wildlife that may utilize the channels for any portions of their life cycle (i.e., cover, foraging, local migration, and/or breeding). The Project will incorporate measures (Section 4.4.7 – Project-Incorporated Avoidance and Minimization Measures) to reduce impacts to native plant communities and local wildlife to less than significant.

**Project Site.** Based on the proposed Project footprint, temporary impacts to vegetation are expected to occur as a result of cut/fill slope grading (for all vegetation types other than oak woodland), above-ground pipeline, and electrical transmission line installation activities. In addition, fuel management activities associated with defensible space standards, as required by the Santa Barbara County Fire Department requirements, are expected to result in temporary impacts. Temporary impacts associated with fuel management activities are categorized separately because the fuel management zones extend beyond the Project footprint depicted on Project plans. Fuel management zones and associated fuel reduction activities required within each zone are described within the Fuel Management Plan (Appendix F-1.A).

Permanent impacts include landscape fragmentation, loss of habitat, and wildlife displacement as a result of removal of vegetation for well pads, roads, laydown areas, facility areas, detention basins (initial grading and long term maintenance), and installation of culverts. In addition, for the oak woodland vegetation type, grading of cut/fill slopes will be considered a permanent impact due to the need for oak tree removal. A summary of permanent and temporary impacts are provided in Table 4.4-8 - Summary of Vegetation Impacts Resulting from Project Activities and discussed in greater detail in the paragraphs below.

Western Rush Marsh. No temporary or permanent impacts are anticipated for the 0.5 acres of western rush occurring within the Project site.

California Coffeeberry Scrub. No temporary or permanent impacts are anticipated for the 0.6 acres of California coffeeberry scrub occurring within the Project site.

Red Willow Thickets. No temporary or permanent impacts are anticipated for the 2.2 acres of red willow thickets occurring within the Project site.

Oak Woodlands/Coast Live Oak. 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. Discussions of temporary and permanent impacts are included below.

*Temporary Impacts*

Approximately 6.2 acres of oak woodlands will be temporarily impacted by fuel management activities within the Project site (Table 4.4-8 - Summary of Vegetation Impacts Resulting from Project Activities); however no individual oak trees will be removed. An additional 1.3 acres of oak woodlands will be temporarily impacted by Project activities including above-ground pipeline and electrical transmission line installation within the Project site (Table 4.4-8 - Summary of Vegetation Impacts Resulting from Project Activities), 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 for fuel management/reduction. These activities could cause a tree to die by significantly damaging its root structure; however, an Oak Tree Protection Plan (Appendix F-1.M) will be 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 will be incorporated into the Project and will provide 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 (Appendix F-1.M), and minimization and avoidance measures of the Project Fuel Management Plan (Appendix F-1.A), temporary impacts to oak trees within the Project site will be less than significant.

During grading, drilling, and maintenance activities within the Project site, 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.

**Table 4.4-8. Summary of Vegetation Impacts Resulting from Project Activities**

Vegetation Type	Total Within Project Site (acres)	Phase I Impacts (acres)					Phase II Impacts (acres)					PROJECT TOTAL - Phase I and Phase II Impacts (acres)				
		Temporary Fuel Management <sup>3</sup>	Temporary	Permanent	Total Phase I	Percent of Vegetation Type Impacted Within Project Site	Temporary Fuel Management <sup>3</sup>	Temporary	Permanent	Total Phase II	Percent of Vegetation Type Impacted Within Project Site	Temporary Fuel Management <sup>3</sup>	Temporary	Permanent	Total Phase I and II <sup>4</sup>	Total Percent of Vegetation Type Impacted Within Project Site <sup>4</sup>
Western Rush Marshes	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
California Coffeeberry Scrub	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Willow Thickets	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coast Live Oak Woodland <sup>1</sup>	449.2	3.4	0.6	13.4	17.4	3.9	2.8	0.7	8.3	11.8	2.6	6.2	1.3	21.7	29.2	6.5
Annual Grassland (annual brome and wild oats grassland)	509.9	1.0	6.1	5.9	13.0	2.5	1.8	15.2	23.6	40.6	8.0	2.8	21.3	29.5	53.6	10.5
California Coastal Scrub (California sage scrub, black sage scrub, mock heather stand, and coyote brush scrub) <sup>4</sup>	1,025.8	10.4	37.9	51.4	99.7	9.7	8.7	31.2	44.9	84.8	8.3	19.1	69.1	96.34	184.5	18.0
Eucalyptus Groves <sup>5</sup>	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.3	1.0	27.0	0.0	0.7	0.3	1.0	27.0
Previously Disturbed <sup>6</sup>	119.1	1.1	8.9	39.0	49.0	41.1	1.3	2.0	14.6	17.9	15.0	2.4	10.9	53.6	66.9	56.2
<b>TOTAL</b>	<b>2,111.0</b>	<b>15.9</b>	<b>53.5</b>	<b>109.7</b>	<b>179.1</b>	<b>8.5</b>	<b>14.6</b>	<b>49.8</b>	<b>91.7</b>	<b>156.1</b>	<b>7.4</b>	<b>30.5</b>	<b>103.3</b>	<b>201.4</b>	<b>335.2</b>	<b>15.9</b>
Coast Live Oak Trees <sup>2</sup>	N/A	N/A	N/A	N/A	1,005 trees	N/A	N/A	N/A	N/A	499 trees	N/A	N/A	N/A	N/A	1,504 trees	N/A

NOTES:  
 1. Includes tree trimming and understory removal but not tree removal.  
 2. Tree counts include all oak trees with a DBH of six inches or greater that are proposed for removal from within the Aera Energy LLC Property boundary. Oak trees within the portions of the Project footprint located on adjacent parcels (not owned by Aera Energy LLC) were not inventoried, but were estimated based on GIS canopy analysis. Inventory data that included both of six inches or greater DBH and eight inches or greater DBH oak trees was used to calculate the typical ratio of six inch to eight inch DBH oak trees within a canopy. Using the eight inch DBH or greater field inventory data, and the computed ratio, the number of six inch or greater DBH trees was estimated and used in areas where there was no six inch or greater field inventory data. There are approximately 10.6 percent more mature trees when oak trees six inch to less than eight inch DBH are included.  
 3. Temporary Fuel Management impact acreages only reflect the area of Fuel Management that extends beyond the Project footprint.  
 4. Includes Temporary Fuel Management Impacts.  
 5. These numbers were erroneously reported in the April 2015 permit application submittal due to a GIS query that categorized cut/fill grading impacts as permanent rather than temporary. The new numbers correctly present cut/fill grading impacts as temporary.  
 6. Error with rounding to the nearest tenth

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### *Permanent Impacts*

The Project will result in the permanent removal of 21.7 acres of coast live oak woodland within the Project site, approximately 4.8 percent of the total woodland habitat within the Project site. Based on the County's thresholds of significance for "Woodlands and Forest Habitat Areas", the removal of the 21.7 acres 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 oak woodland habitat removed from the Project footprint will be replaced by well pads, roads, and facilities that do not support wildlife habitat and may disrupt animal movement corridors; therefore, a permanent loss of habitat will result.

Oak tree inventories were completed within the proposed Project footprint within the Project site and used to estimate the total number of mature coast live oak trees (six inches in DBH or greater) that are proposed for impact. A total of 1,504 coast live oak trees six inches or greater in DBH were identified for removal (1,005 trees in Phase I and 499 trees in Phase II) (Table 4.4-8 - Summary of Vegetation Impacts Resulting from Project Activities). 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. Oak tree locations gathered during field surveys utilizing global positioning units are depicted in Figure 4.4-8 – Oak Inventory Study Area (Note: This figure has been updated). 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, as depicted in Figure 4.4-8.

The removal of 1,504 coast live oak trees will result in the loss of an estimated 7.0 percent of the total number of trees within the Project site, 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 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 43 mature live oak trees per canopy acre). Based on that ratio and the total canopy areas measured using GIS, the estimated total number of mature live oak trees (six inches in DBH or greater) within the Project site (based on a total oak woodland canopy cover of 498.75 acres) is 21,446 mature live oak trees.

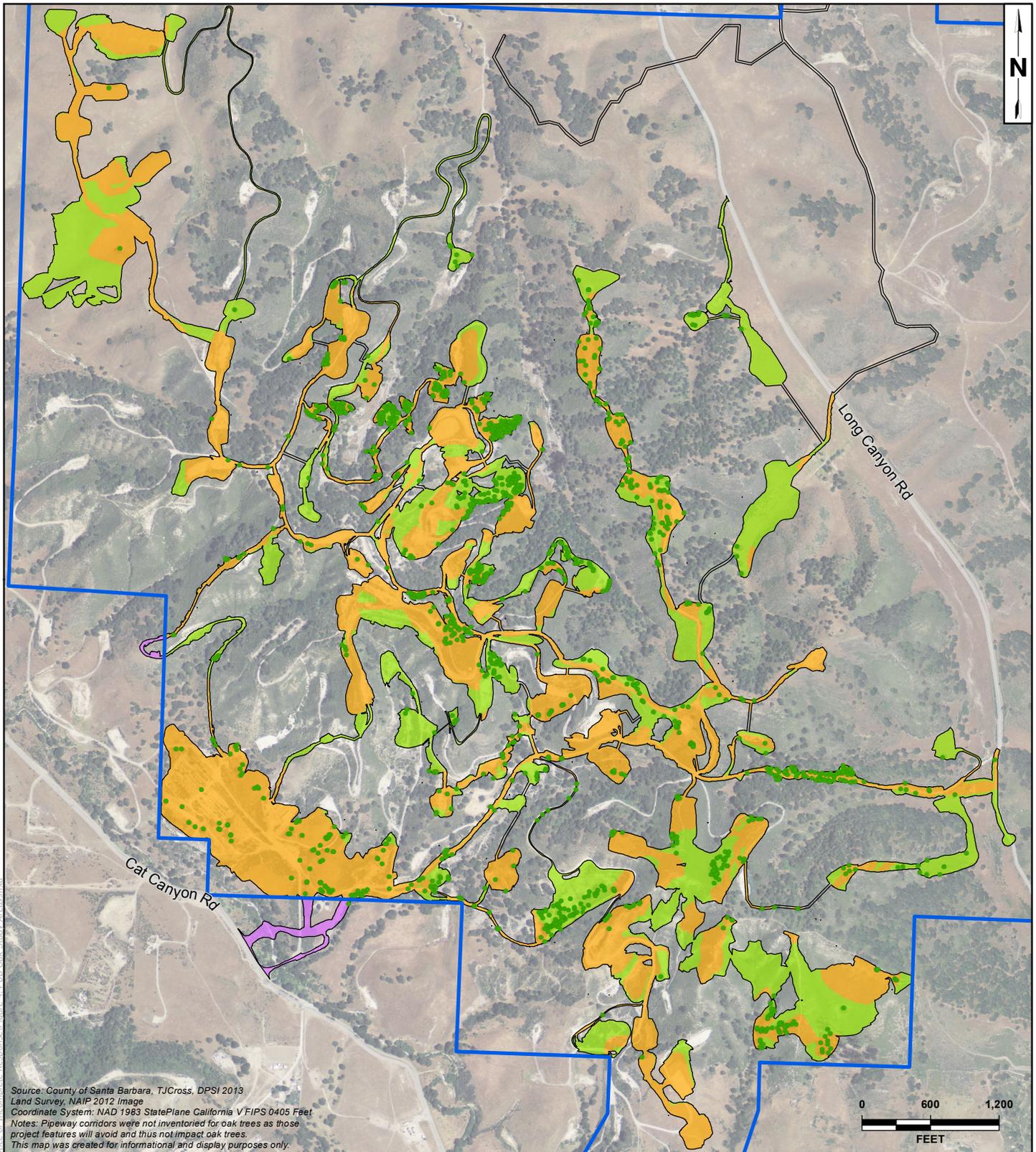
The Project is designed to minimize land disturbance by maximizing the use of existing roads, well pads, cleared areas, and contours wherever possible. Care was taken to avoid oak tree removals by minimizing the number and size of new well pads, by routing new roads and pipeline corridors around canopies, 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. The Project will incorporate avoidance and minimization measures to the greatest extent possible as outlined in the Oak Tree Protection Plan (Appendix F-1.M). However, an Oak Tree Replacement Plan (Appendix F-1.N) has been developed to provide an adaptive replacement plan for successful mitigation for the unavoidable removal of the mature oak trees. This Plan is consistent with Santa Barbara County standards, ordinances, and guidance

documents. The Oak Tree Replacement Plan proposes mitigation using any combination of the following replacement alternatives:

- For every mature live oak tree (six inches DBH or greater) 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 (six inches DBH or greater) 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 (six inches DBH or greater), 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 (six inches DBH or greater) 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 mitigation for on-site removals.

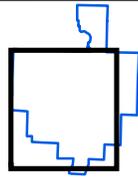
Following Santa Barbara County approval, the Oak Tree Replacement Plan will be implemented. Trees will be planted in the designated “Potential Oak Planting Area” located outside the Project disturbance footprint, within the proposed 686.4 acre Conservation Area. The 215.4-acre Planting Area was selected based on the number and area of trees to be removed, and 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. The Planting Area has the potential to support a maximum of 15,040 planted trees (spaced on 20-foot centers), which will be planted in stages and grouped into smaller management areas referred to as “Oak Planting Units”.

Maintenance and monitoring of the Potential Oak Planting Area will include irrigating, weeding, mulching, installation and maintenance of protective caging/fencing if and where needed, and additional planting/seeding for a five year monitoring period for each Oak Planting Unit. Monitoring of the Oak Planting Units will include documentation of tree height, site photographs, and documentation of site conditions for any additional maintenance activities. Success will be achieved if, at the end of the five years, 60 percent or more of the planted trees are 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 following the five year monitoring period, contingency measures (such as further nurturing or replacement planting) will be implemented and additional monitoring years may be required in order to reach success. The Planting Area will be protected from excessive erosion, overgrazing, agriculture activities, 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.



Source: County of Santa Barbara, TJCross, DPSI 2013  
 Land Survey, NAIP 2012 Image  
 Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet  
 Notes: Pipeway corridors were not inventoried for oak trees as those project features will avoid and thus not impact oak trees.  
 This map was created for informational and display purposes only.

- Aera Energy LLC Property
- Impacted Oak Tree DBH ≥ 6 in.
- Oak Inventory of DBH ≥ 6 in.
- Oak Inventory of DBH ≥ 8 in.
- Oak Inventory Desktop Extrapolation
- Project Footprint



PROJECT NAME:  
**EAST CAT CANYON  
 OIL FIELD REDEVELOPMENT PROJECT**

PROJECT NUMBER: 1002-0455      DATE: August 2015

## OAK INVENTORY STUDY AREAS

FIGURE  
4.4-8

Z:\Kristin\GIS Maps\Map Project\East Cat Canyon\Map of Incomplete Response\Figure 4.4-8B Oak Study Areas.mxd

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Annual Grasslands. A total of 53.6 acres of the 509.9 acres of annual grasslands occurring within the Project site (or 10.5 percent) will be impacted (temporarily and permanently) by Project activities (Table 4.4-8 - Summary of Vegetation Impacts Resulting from Project Activities). Discussions of temporary and permanent impacts within the Project site are provided below. No temporary or permanent impacts are anticipated for the annual grasslands occurring within the electrical transmission line and natural gas pipeline Biological Survey Areas. These activities will not require vegetation removal.

*Temporary Impacts*

Temporary impacts to annual grasslands within the Project site will result from fuel management activities along roads and adjacent to structures, installation of above-ground pipelines and electrical transmission lines, and cut/fill grading along slopes of roads and well pads. Project temporary impacts to annual grasslands include 24.1 acres during Phase I and Phase II activities. Of the 24.1 acres of annual grassland temporary impacts, 21.3 acres will result from construction of the Project and 2.8 acres will result from fuel management activities. Fuel management activities within annual grasslands will consist of mowing vegetation to less than four inches in height for the life of the Project. A Fuel Management Plan (Appendix F-1.A) will be incorporated into the Project and will provide guidance for vegetation removal activities and minimize impacts to annual grasslands to the greatest extent possible.

*Permanent Impacts*

Permanent Impacts to annual grasslands resulting from Project construction activities include the removal and conversion of approximately 29.5 acres of annual grassland habitat within the Project footprint, as a result of Phase I and Phase II activities (Table 4.4-8 - Summary of Vegetation Impacts Resulting from Project Activities). Removal of vegetation will result in the disruption of foraging areas and/or access to food sources for local wildlife. The permanent removal of annual grasslands may be considered significant by substantially fragmenting, eliminating, or otherwise disrupting foraging areas and/or access to food sources, and/or substantially limit or fragment range and movement of wildlife, based on Santa Barbara County Environmental Thresholds and Guidelines Manual (2008). The Project will implement a Revegetation Plan that will specify revegetation of removed habitat, pre-activity surveys, and nesting bird surveys (as described in Section 4.4.7) to reduce impacts to native communities and local wildlife to less than significant.

California Coastal Scrub. A total of 184.5 acres of the 1,025.8 acres of California coastal scrub occurring within the BSA (or 18.0 percent) will be impacted (temporarily and permanently) by Project activities (Table 4.4-8 - Summary of Vegetation Impacts Resulting from Project Activities). Discussions of temporary and permanent impacts are provided below. No temporary or permanent impacts are anticipated for the California coastal scrub vegetation occurring within the electrical transmission line and natural gas pipeline Biological Survey Areas. These activities will not require vegetation removal.

*Temporary Impacts*

Temporary impacts to California coastal scrub will result from fuel management activities along roads and adjacent to structures, installation of above-ground pipelines and electrical transmission lines, and cut/fill grading along slopes of roads and well pads within the Project site. Project temporary impacts to California coastal scrub include 69.1 acres during Phase I and

Phase II activities. Of the 69.1 acres of California coastal scrub temporary impacts, 50.0 acres will result from construction of the Project and 19.1 acres will result from fuel management activities (Table 4.4-8 - Summary of Vegetation Impacts Resulting from Project Activities). Fuel management activities within California coastal scrub will consist of selective thinning, by cutting the shrubs near the base of the plant, leaving the root system in place to allow for regrowth allowing for species regeneration year after year. Thinning will be used to create a vegetation mosaic containing approximately 75 percent uncut shrubs and 25 percent cut re-sprouting shrubs to minimize fragmentation. A Fuel Management Plan (Appendix F-1.A) will be incorporated into the Project and will provide guidance for vegetation removal activities and minimize impacts to California coastal scrub to the greatest extent possible.

Heavy equipment use and increased human activities during above-ground pipeline and electrical transmission line installation may temporarily disturb California coastal scrub vegetation, which is expected to recover following completion of activities. Cut/fill grading will result in the removal of small acreages of California coastal scrub; however, implementation of avoidance and minimization measures (as outlined in Section 4.4.7), including a Project Revegetation Plan and the Fuel Management Plan, will ensure that impacts to California coastal scrub are 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 coastal scrub species 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*

Permanent impacts to California coastal scrub include the removal and conversion of approximately 96.3 acres of California coastal scrub habitat within the Project footprint, as a result of Phase I and Phase II activities (Table 4.4-8 - Summary of Vegetation Impacts Resulting from Project Activities). The permanent removal of California coastal scrub may be considered significant by substantially eliminating quantity or quality of nesting areas, fragment, eliminate, or otherwise disrupt foraging areas and/or access to food sources, and/or substantially limit or fragment range and movement of wildlife, based on Santa Barbara County Environmental Thresholds and Guidelines Manual (2008). The Project will implement a Revegetation Plan that will specify revegetation of removed habitat, pre-activity surveys, and nesting bird surveys (as described in Section 7.0) to reduce impacts to native communities and local wildlife to less than significant.

Eucalyptus Groves. A total of 1.0 acres (or 27.0 percent) of the 3.7 acres of eucalyptus groves occurring within the Project site will be impacted (temporarily and permanently) by Project activities (Table 4.4-8 - Summary of Vegetation Impacts Resulting from Project Activities). Discussions of temporary and permanent impacts are provided below. No temporary or permanent impacts are anticipated for the eucalyptus/Monterey pine groves occurring within the natural gas pipeline Biological Survey Area. These activities will not require vegetation removal.

### *Temporary Impacts*

Approximately 0.7 acres of temporary impacts to eucalyptus groves will result from above-ground pipeline and electrical transmission line installation and cut/fill grading activities along slopes of roads and well pads. These activities will require limbing, sapling displacement, and/or understory vegetation clearance. No temporary impacts are expected to occur as a result of fuel management activities. Eucalyptus are a non-native species; however, these groves provide suitable foraging and nesting habitat for wildlife. The Project will incorporate pre-activity surveys and nesting bird surveys (as outlined in Section 4.4.7) to reduce impacts to local wildlife to less than significant

### *Permanent Impacts*

Permanent impacts to eucalyptus groves include the removal and conversion of approximately 0.3 acres of eucalyptus grove habitat within the Project footprint, as a result of Phase II activities (Table 4.4-8 - Summary of Vegetation Impacts Resulting from Project Activities). The Project may significantly impact eucalyptus groves by substantially eliminating quantity or quality of nesting areas for wildlife such as monarch butterfly and red-tailed hawk, based on Santa Barbara County Environmental Thresholds and Guidelines Manual (2008). The Project will incorporate pre-activity surveys and nesting bird surveys (as outlined in Section 4.4.7) to reduce impacts to local wildlife to less than significant.

Waters and Wetlands. Waters and wetlands perform numerous beneficial functions, including groundwater recharge, stream recharge, pollution filtration, flood control, and wildlife habitat. Impacts that reduce or eliminate the wetland functions would be considered significant. Waters and ephemeral wetlands depressions that occur within the Biological Survey Areas may be afforded protection by the U.S. Army Corps of Engineers, California Department of Fish and Wildlife, Regional Water Quality Board, and/or Santa Barbara County. In addition, portions of Cat Canyon Creek within the Project site and Orcutt Creek along the natural gas pipeline alignment support riparian vegetation (willow thickets) may be afforded protection by the California Department of Fish and Wildlife.

The natural gas pipeline construction has been designed to limit activities as much as possible to areas beneath public roadways and to avoid stream channels, agricultural drainages, wetlands, and associated riparian habitats, to the greatest extent feasible. Horizontal directional drilling will be used for areas along the pipeline alignment that must intersect these resources. Horizontal directional drilling activities will be staged at the top of bank outside designated wetlands to avoid impacts to the integrity of the channel and wildlife that may utilize the channels for any portions of their life cycle (i.e., cover, foraging, local migration, and/or breeding). In addition, all activities associated with the installation of the electrical transmission line will avoid Cat Canyon Creek.

### *Temporary Impacts*

The main drainages that occur within the Biological Survey Areas will be avoided by Project activities, with the exception of road improvements during construction along Cat Canyon Creek and Long Canyon Creek, within the Project site. Appropriate agency permits will be acquired before Project initiation and will incorporate agency approved avoidance and minimization measures to reduce impacts to regulated waters to less than significant. In addition,

Project activities will incorporate erosion control measures and buffers from waters, further outlined in the avoidance and minimization measures, resulting in less than significant impacts.

#### *Permanent Impacts*

Construction of the Project will result in the removal of Pool A within the Project site (Figure 4.4-3 - Biological Field Survey Results). During the April 2013 field surveys, this pool supported a hydrophytic plant species and was covered by shallow water at some time during the growing season. Removal of Pool A will result in a total of 0.11 acres (4791.6 square feet) of a pool located in previously disturbed areas and may be protected by Santa Barbara County due to presence of hydrophytic plant species. Pool A is used by cattle and may be the only natural source of water within the Project site that supports local upland wildlife (i.e., deer, bobcat, ect.). The permanent removal of Pool A may be considered significant because of the loss important wetland value, per County of Santa Barbara Environmental Thresholds and guidelines Manual (2008). Pool A does not support special-status aquatic species, hydric soils, and is not located adjacent to a non-navigable tributary, therefore, is not provided protection by state or Federal agencies. The Project will implement a Revegetation Plan that will specify revegetation of removed habitat, pre-activity surveys, and nesting bird surveys (as described in Section 7.0) to reduce impacts to wetland resources and local wildlife to less than significant.

In addition, operation of the Project could result in spills of hazardous materials due to geologic hazards, mechanical failure, structural failure, corrosion, or human error. Such spills could potentially result in water quality impacts to creeks and shallow groundwater. Small leaks or spills, which generally are contained and remediated quickly, may have minor or negligible impacts to water resources. In contrast, large spills such as from pipeline or tank ruptures or undetected leaks, which spread to surface waters and/or groundwater, may substantially degrade water quality, with potential long-term impacts to biological resources. The potential impacts to biological resources as a result of a crude oil spill that degrades surface or groundwater quality would be considered significant. The Project will incorporate a Spill Prevention and Response Plan that will describe spill prevention measures and drainage controls as an avoidance and minimization measure, and impacts are considered less than significant.

#### 4.4.6.2 Impacts to Special-Status Plant Species

**Electrical Transmission Line and Natural Gas Pipeline Biological Survey Areas.** No special-status plants or sensitive plant communities were identified within the electrical transmission line and natural gas pipeline Biological Survey Areas during field surveys. In the event a special-status plant is identified during recommended pre-activity surveys, the species will be avoided to the greatest extent possible; however, if the species cannot be avoided appropriate relocation methods may be implemented per a relocation and monitoring plan approved by the appropriate regulatory agencies. Relocation of a species will result in direct impacts, however, these impacts will be reduced to less than significant in the event the plants are monitored and survive following relocation.

## **Project Site.**

### Straight-Awned Spineflower.

#### *Temporary Impacts*

Special-status plant species that were documented during field surveys were limited to straight-awned spineflower, a species of conservation concern listed with the California Native Plant Society (Rank 1B.3). The Project footprint avoids most spineflower populations; however, approximately 0.23 acre of habitat would be removed. In addition, plant populations vary year to year based on environmental conditions and Project activities have the potential to result in the removal to new populations that were not identifiable during the 2013 and 2014 field surveys. The removal of these populations are considered temporary with the incorporation of a species-specific revegetation/relocation plan that includes seed collection and topsoil salvage, further discussed in Section 4.4.7.

During grading, drilling, and maintenance activities, increased dust due to ground disturbance and vehicle traffic may create indirect impacts along the immediate road shoulders where straight-awned spineflower may occur. Dust that accumulates on these plants may block 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.

With the implementation of avoidance and minimization measures (as outlined in Section 4.4.7), including dust control measures and a species-specific straight-awned spineflower revegetation/relocation plan, impacts to the local straight-awned spineflower populations will be reduced to less than significant.

#### *Permanent Impacts*

With the implementation of avoidance and minimization measures outlined in Section 4.4.7, straight-awned spineflower will not be permanently impacted by Project activities.

#### 4.4.6.3 Impacts to Special-Status Wildlife Species

### **Electrical Transmission Line Biological Survey Area.**

General Impacts to Wildlife. Direct mortality of some wildlife could occur during construction as a result of increased vehicular and foot traffic, use of heavy equipment, and other power line/power pole installation activities. Specifically, reptiles and amphibians that spend much of their life cycles underground may be inadvertently crushed by equipment. There is also potential for impacts related to fugitive dust, exposure to hazardous substances accidentally released by vehicles or other equipment, sedimentation into Cat Canyon Creek, or the colonization of non-native, invasive plant species.

A wide variety of birds are expected to occur within the work areas during construction, utilizing the area for foraging and nesting. Foraging birds are expected to leave the immediate vicinity of the work areas during construction activities into adjacent habitats. Birds that may be nesting within the work areas may be adversely affected by construction activities; however, these impacts will be reduced to less than significant with the incorporation of the avoidance and

minimization measures listed in Section 4.4.7, such as pre-activity nesting bird surveys and incorporating buffers from nest locations.

Minimal ground disturbance is expected to occur as a result of the installation of the transmission line support poles. Wildlife that utilize burrows for all or portions of their lifecycle may be impacted by use of heavy equipment (crushing of burrows) and/or during installation of transmission line support poles. With the incorporation of avoidance and minimization measures, including pre-activity surveys, these impacts will be reduced to less than significant.

A portion of the Cat Canyon Creek corridor found within the transmission line corridor and is likely utilized by several types of wildlife moving through the region. In addition, many amphibian species in the region depend on undeveloped open space and grassland habitats, to migrate between established water sources throughout the region. The proposed transmission line, being suspended above-ground, is not expected to impede movement of wildlife.

Raptors are susceptible to electrocution by power lines following project activities; however, this Report does not include impact discussion regarding impacts to biological resources, such as raptors, following the installation of power poles/lines. Additional impact analysis and specific avoidance and minimization measures will be assessed by the electric provider and their representative biological evaluation team.

#### **Natural Gas Pipeline Biological Survey Area.**

General Impacts to Wildlife. Local wildlife populations, including special-status species, may potentially be adversely affected by the temporary disruption of foraging, burrowing, and nesting activities due to an increase of human activity, use of heavy equipment, and noise associated with the initial road excavation, pipeline installation, and road repair activities. Impacts to biological resources are expected to be temporary and implementation of recommended avoidance and minimization measures (as outlined in Section 4.4.7) would reduce impacts to less than significant.

#### **Project Site.**

General Impacts to Wildlife. Heavy equipment operation and associated noise and dust generated by grading and excavation activities, and the increase of human presence, may disrupt foraging and denning activities of some wildlife, including special-status species. This could potentially result in mortality of less mobile species, particularly ground-dwelling species such as California ground squirrel, Botta's pocket-gopher, broad-footed mole, and amphibian species that inhabit burrows during the dry season. During Project activities, local wildlife populations (including potentially occurring special-status species) may be adversely affected by the loss of food, cover, and nesting/denning habitat. Local wildlife will be temporarily displaced into adjacent habitats and likely experience greater competition for food and nest sites. Disruptions from the increased intensity of Project activities may include nest abandonment, stress-related reduced fecundity, reduced foraging efficiency, and increased flight response. These disruptions may indirectly result in difficulty in providing food to young, possibly leading to loss of young. Project activities may also disrupt migratory patterns, foraging activities, home-range size, and breeding activities to all wildlife, including special-status species. These impacts to wildlife are indirect and temporary and will be reduced to less than significant with the implementation of avoidance and minimization measures, such as delineation of Project disturbance limits, pre-activity woodrat nest removal, and pre-activity nesting bird surveys.

Monarch Butterfly. Monarch butterflies have been observed intermittently within the Project site, but not in large numbers; no roosts have been observed. Small eucalyptus groves occur within the southern boundary of the Project site and will be removed as part of Project activities; however, monarch butterflies are not likely dependent on eucalyptus groves found within the Project site for autumnal roosts. In addition, avoidance and minimization measures have been provided below to ensure the protection of the species. Impacts to this species are not expected to result from Project activities.

California Tiger Salamander. The Project site lies 2.99 miles south of California tiger salamander Critical Habitat Area Unit 2 and 3.3 miles northeast of California tiger salamander Critical Habitat Area Unit 3, as designated by the U.S. Fish and Wildlife Service (2010). The natural gas pipeline is located on the southern border of California Tiger Salamander Critical Habitat and known and potential breeding pools have been documented within one mile from the natural gas pipeline Biological Survey Area, specifically near East Clark Avenue and Dominion Road. No impacts to California tiger salamander Critical Habitat will occur as a result of the proposed Project.

A California tiger salamander habitat assessment prepared for the Project site concluded that there was a low potential for California tiger salamander to occur within the boundaries of the Project site (Storrer, 2013). California tiger salamander have not been recorded within the limits of the Project site. There are no documented California tiger salamander breeding ponds within the maximum recorded dispersal distance of 1.3 miles. California tiger salamander have not been found during three years of upland and aquatic surveys on the adjacent West Cat Canyon Oil and Gas Lease (Collins and Gaede, 2014).

Three potential California tiger salamander breeding ponds within the maximum recorded 1.3 mile dispersal distance from the Project site were identified by the United States Fish and Wildlife Service as SISQ-19, SISQ-20, and ERG Pond D (Figure 4.4-9 - California Tiger Salamander Upland Habitat Suitability Model). SISQ-20 lies within the Project site boundary, but outside of the Project disturbance footprint. SISQ 19 and ERG Pond D lie outside of the Project site. The Project site contains upland habitat that may be suitable for CTS migrating from these potential breeding ponds.

Aquatic surveys of potential California tiger salamander breeding pond SISQ-20 were planned for 2012, 2013, and 2014, but were not possible due to lack of surface water. Aquatic surveys of the ERG Pond D were carried out by ERG Resources LLC consultant, Paul Collins, and concluded that no California tiger salamander were found (Collins, 2014). Discussions with the United States Fish and Wildlife Service and California Department of Fish and Wildlife in 2014 concluded that further sampling of ERG Pond D would not likely provide any additional useful information. Pond SISQ-19 lies outside of the Project site on private property and was not surveyed.

Protocol-level surveys to determine presence or absence of California tiger salamander within the Project site as endorsed by the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife (U.S. Fish and Wildlife Service, 2003) are infeasible due to the large size of the Project site and logistical constraints posed by steep terrain and other access limitations. Limited upland drift net fencing surveys, while not completely consistent with Protocol, have been approved by California Department of Fish and Wildlife and U.S. Fish and Wildlife Service and are planned for fall and winter of 2014 - 2015. For purposes of this impact analysis

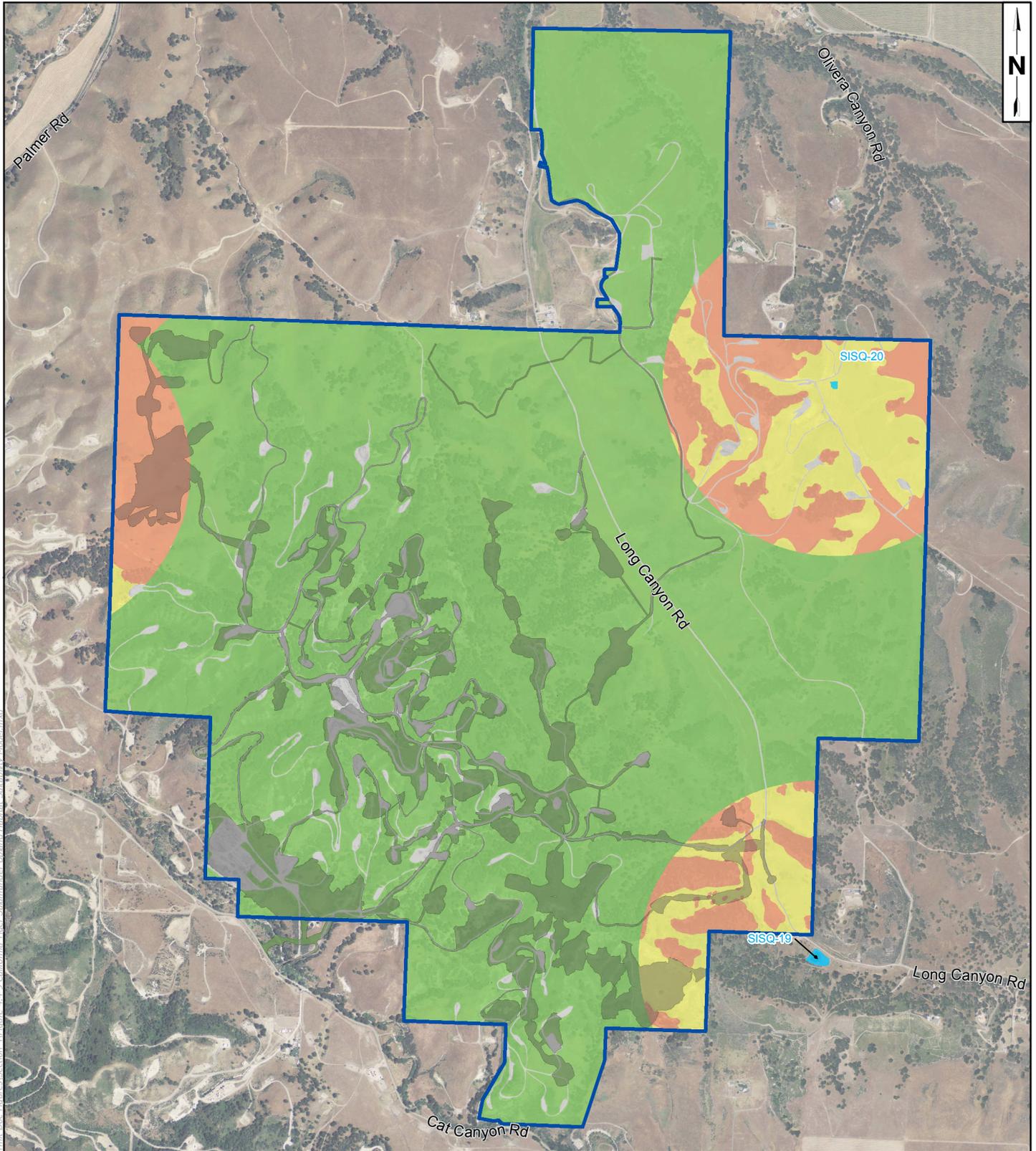
only, California tiger salamander have been presumed to be present in upland habitat, which makes up 1,992.3 acres within the Project site.

Potential for California tiger salamander to occur within various portions of the Project site was ranked as *high*, *medium*, or *low* on the basis of two criteria: 1) distance from potential California tiger salamander breeding ponds; and, 2) habitat suitability as inferred by vegetation type. The ranking criteria are summarized in Table 4.4-9 - Ranking of Potential for California Tiger Salamander to occur within the Project Site.

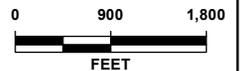
**Table 4.4-9. Ranking of Potential for California Tiger Salamander to occur within Project Site**

Potential for California tiger salamander to Occur <sup>1</sup>	Distance from potential California tiger salamander breeding pond	Habitat Type
<b>High</b>	Within 2,200 feet radii	Annual grassland and oak woodland
<b>Moderate</b>	Within 2,200 feet radii	Coastal sage scrub and coffeeberry scrub
<b>Low</b>	Outside 2,200 feet radii from potential California tiger salamander breeding ponds	--
Notes: <sup>1</sup> Biological evaluation for California tiger salamander concluded that there is a low potential for occurrence within the Project site; however, U.S. Fish and Wildlife Service and California Department of Fish and Wildlife determined that protocol-level surveys were infeasible due to large size of the Project site and logistical constraints posed by steep terrain and other access limitations. For the purposes of this impact analysis only, California tiger salamander have been presumed to be present in upland habitat within the Project site.		

Trenham and Shaffer (2005) found that 95 percent of the population of California tiger salamander associated with a particular pond was most likely to use upland habitat within 2,200 feet of its perimeter. Oak woodland and annual grasslands have been considered within this report to be the most suitable upland habitat, with high densities of small mammals whose burrows provide underground refugia for California tiger salamander. Portions of the Project site supporting oak woodland or annual grassland within 2,200 feet of potential California tiger salamander breeding ponds were classified as *high* potential for California tiger salamander occurrence. Scrub habitats (e.g., coastal scrub, coffeeberry scrub) are considered less suitable and we classified as having *moderate* potential for California tiger salamander occurrence where they lie within 2,200 feet of a potential breeding pond. Portions of the Project site beyond 2,200 feet from potential breeding ponds were classified as having *low* potential for California tiger salamander occurrence. Areas of existing development such as roads and well pads are classified as having no suitability for California tiger salamander occurrence and were excluded from the calculation of Project impacts.



- |                          |                                   |  |
|--------------------------|-----------------------------------|--|
| Aera Energy LLC Property | <b>Habitat Potential Category</b> | Low                                    |
| Project Footprint        | High                              | Existing Developed Area - No Potential |
|                          | Moderate                          |  |



Source: County of Santa Barbara, TJCross 8-20-14, DPSI 2013 Land Survey, NAIP 2012 Image, Terra Solutions, Storrer Environmental Services  
 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: September 2014

**CALIFORNIA TIGER SALAMANDER  
 UPLAND HABITAT SUITABILITY MODEL**

FIGURE  
**4.4-9**

Z:\Kristin\GIS Maps\Map Project\East\_Cat\_Canyon\Permit\_Doc\_Figures\Section\_4\Figure\_4.4-9 California Tiger Salamander Upland Habitat Suitability Model.mxd

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*Impacts to Individual California Tiger Salamander*

Construction-related impacts to California tiger salamander could include injury or mortality from equipment operations and vehicle traffic. Mortality could also occur through exposure should California tiger salamander become entrapped in open excavations while migrating between upland habitat and breeding ponds. Measures to avoid or minimize the potential for these adverse effects will be implemented during construction.

Impacts from Project operations could include mortality from vehicle encounters or exposure to hazards associated with repair and maintenance work (e.g. operation of equipment, open excavations). California tiger salamander will be most vulnerable to these effects when dispersing between upland habitat and aquatic breeding sites. Dispersal typically occurs during winter season rain events during nighttime hours. Direct mortality impacts will be reduced to less than significant with the incorporation of avoidance and minimization measures (as outlines in Section 4.4.7).

*Temporary and Permanent Impacts to California Tiger Salamander Habitat*

Project impacts based on this classification of habitat for California tiger salamander occurrence potential are included in Table 4.4-10 - Project Impacts based on Californian Tiger Salamander potential.

**Table 4.4-10. Project Impacts Based on California Tiger Salamander Potential**

Habitat Value Based on California Tiger Salamander Potential <sup>1</sup>	Total Upland Habitat within the Project site (acres)	Percent of Total Upland Habitat within the Project site	Temporary Impacts (acres) <sup>2</sup>	Permanent Impacts (acres) <sup>2</sup>
High	178.7	8.5	8.1	12.9
Moderate	158.3	7.5	6.5	5.7
Low	1,655.3	78.4	90.0	117.3
<b>Total</b>	<b>1,992.3</b>	<b>--</b>	<b>104.6</b>	<b>135.9</b>
Notes: Notes: <sup>1</sup> Biological evaluation for California tiger salamander concluded that there is a low potential for occurrence within the Project site; however, U.S. Fish and Wildlife Service and California Department of Fish and Wildlife determined that protocol-level surveys were infeasible due to large size of the Project site and logistical constraints posed by steep terrain and other access limitations. For the purposes of this impact analysis only, California tiger salamander have been presumed to be present in upland habitat within the Project site. <sup>2</sup> Impacts generated from 8/20/14 Grading Plan with on-site pipelines. Existing disturbed areas (existing roads, pads, structures) not included in this calculation.				

Based on the presumption of presence and the habitat-based occurrence likelihood classifications described above, a total of 104.6 acres will be temporarily impacted, and then restored with native vegetation following development. A total of 135.9 acres with varying degrees

of California tiger salamander occurrence potential will be permanently impacted by the proposed Project (refer to Table 4.4-10 - Project Impacts based on Californian Tiger Salamander potential and Figure 4.4-9 - California Tiger Salamander Upland Habitat Suitability Model).

Potential temporary and permanent impacts to California tiger salamander upland habitat will be adverse and significant, but mitigable for the following reasons:

- The area of permanent impact (135.9 acres) makes up 6.8 percent of the total upland habitat area (1,992.3 acres) that is available within the Project site to potentially occurring California tiger salamander;
- The area subject to temporary impacts (104.6 acres) makes up 5.3 percent of total available upland habitat area (1,992.3 acres) that is available within the Project site to potentially occurring California tiger salamander, and will be restored following construction;
- The majority of Project construction will occur beyond 2,200 feet from potential breeding ponds;
- Project activities that could impact potentially occurring California tiger salamander, (i.e. vehicle movement, construction,) are minimal on rainy nights, when California tiger salamander upland dispersal is most likely to occur;
- Avoidance and minimization measures will be implemented during construction and operation of facilities that will further reduce the potential for incidental take;
- No Project impacts to California tiger salamander potential breeding habitat will occur; and
- No Project impacts to California tiger salamander Critical Habitat, as designated by the United States Fish and Wildlife Service will occur.

Aera has consulted with both the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service throughout the Project planning stages. Upland and aquatic surveys have been approved by the agencies and are planned for fall, winter, and spring of 2014 - 2015. Fish and Game Code Section 2081(b)(2) requires compensatory mitigation for permanent loss and temporary disturbance of upland refuge habitat. Aera will provide one or more of the following mitigation alternatives to preserve California tiger salamander habitat of equal or greater quality than that affected by the Project:

- Permanent onsite easement(s);
- Permanent offsite easement(s);
- Funds for the acquisition of permanent easements to a qualified easement holder, or
- Contribution to an established "conservation bank".

Aera proposes to mitigate for the permanent removal and temporary disturbance of upland habitat based on mitigation ratios developed to reflect the potential presence of California tiger salamander within the acreage that would be impacted by Project activities. These ratios are shown in Table 4.4-11 - Mitigation for Loss of Potential California Tiger Salamander Upland Habitat.

**Table 4.4-11. Mitigation for Loss of Potential California Tiger Salamander Upland Habitat**

Habitat Value Based on California Tiger Salamander Potential	Temporary Impacts			Permanent Impacts		
	Acres	Mitigation Ratio	Mitigation Acreage	Acres	Mitigation Ratio	Mitigation Acreage
<b>High</b>	8.1	2:1	16.2	12.9	4:1	51.6
<b>Moderate</b>	6.5	0.5:1	3.25	5.7	2:1	11.4
<b>Low</b>	90.0	0.1:1	9.0	117.3	1:1	117.3
<b>Total</b>	104.6	--	<b>33.18</b>	135.9	--	<b>180.3</b>
Notes:						
<sup>1</sup> Impacts generated from 8/20/14 Grading Plan with on-site pipelines. Existing disturbed areas (existing roads, pads, structures) not included in this calculation.						

Southern Western Pond Turtle, California Red-Legged Frog, and Western Spadefoot. Southern western pond turtle, California red-legged frog, and western spadefoot are species that utilize both upland and aquatic habitats for portions of their life cycle and are primarily actively moving between these habitats during rain events, particularly at night. Potential western spadefoot and southern western pond turtle habitat occurs in the sandy, friable soils along Cat Canyon Creek and Long Canyon Creek. Project activities are limited in these areas to the construction of drainage crossings that will support Project traffic. Additionally, these species are primarily active during rainy nights when they emerge from burrows and overwintering grounds in seek of ephemeral pools for breeding. Due to the increase in traffic that will result from the Project, impacts to western spadefoot and southern western pond turtles may also include the mortality of individuals along the roads during night operations. Impacts due to Project activities proposed within Cat Canyon Creek and Long Canyon Creek are considered temporary and no permanent loss of habitat will occur. With the implementation of avoidance and minimization measures, such as pre-activity raking surveys, use of cover boards, avoiding Project activities in creek channels during the rainy season when water is present within the channels, and minimizing traffic during rainy nights, these impacts considered less than significant.

Blainville’s Horned Lizard, Coast Patch-Nosed Snake, California Legless Lizard. Blainville’s horned lizard, coast patch-nosed snake, and California legless lizard are all species that utilize upland habitats, specifically sandy soils, and may occur under dense brush and loose layers of soil. Blainville’s horned lizard have been documented within the Project site on multiple field visits and are expected to occur within the Project footprint during construction and operations. Coast patch-nosed snake or California legless lizards were not observed within the Project site during field visits by Padre; however, suitable habitat does occur and may occur within Project footprints. Initial grading activities may result in the mortality of these species during construction. In addition, due to the increased traffic resulting from the Project, impacts to Blainville’s horned lizard may include the mortality of individuals along the roads. Project grading activities and Project facilities and operations will not create any significant barriers and suitable

habitat will not be significantly removed as a result of the Project. Impacts to Blainville's horned lizard from Project activities are temporary and with the implementation of avoidance and minimization measures, these impacts are considered less than significant.

Nesting Birds and Roosting Bats. A number of migratory bird species could potentially nest in the grassland, scrub, and oak woodland habitat areas throughout the Project site. These include ground nesters (e.g., California horned lark, killdeer, and lark sparrow), small tree/shrub nesters (e.g., bushtit, American robin, house finch, Acorn woodpecker, and lesser goldfinch), and several raptors that require large trees for nesting (e.g., red-tailed hawk and American kestrel). Nest destruction from tree removal and ground-clearing activities could destroy nests, nestlings, or hatchlings, and result in a violation of the Migratory Bird Treaty Act (16 USC 703-712). With the implementation of avoidance and minimization measures outlined in Section 4.7.7, Project activities will minimize these impacts to nesting birds and roosting bats to less than significant.

Woodrats. Woodrat nests were observed throughout the Project site during field surveys. It is expected that the common big-eared woodrat occupies the Project site; however, San Diego desert woodrat, which is provided protection by the California Department of Fish and Wildlife, may also occur in the Project site. These species cannot be differentiated with certainty unless the species is trapped and genetically tested. Temporary impacts to woodrats will occur during initial ground disturbance and vegetation removal activities. Woodrat nests may be directly removed by such activities and woodrats may be indirectly impacted by Project activities, including increases in traffic, fuel reduction activities, increases in noise, and removal of oak woodland and scrub habitats. With the incorporation of pre-activity surveys and other avoidance and minimization measures, woodrat nests will be knocked down prior to initial ground disturbance and vegetation removal activities to provide adequate time for the woodrats to vacate their nests into adjacent habitats outside the immediate work areas.

American Badger and Burrowing Owl. American badger and burrowing owl are both species that utilize burrows underground. Evidence of American badger has been observed throughout the Project site, and badgers can be expected to occur throughout the Project footprint due to the presence of suitable habitat. Burrowing owls have not been identified within the Project site; however, suitable habitat does occur within the Project site. Equipment moving through the Project area could potentially injure or kill badgers/owls that remain in dens. In addition, denning badgers/owls may be indirectly impacted by increased noise and human presence. Adjacent habitat is available for American badger and burrowing owl to retreat and occupy. Impacts to American badger and burrowing owl from Project activities are temporary and with the implementation of avoidance and minimization measures, such as pre-activity surveys and buffers around natal dens, these impacts are considered less than significant.

#### **4.4.7 Project-Incorporated Avoidance and Minimization Measures**

Past and current land use practices (i.e., oil field operations and rangeland) have impacted the extent and diversity of the biological resources existing within the Biological Survey Areas; however, as indicated in this Report, the Biological Survey Areas contains large sections of undisturbed habitats suitable to support wide species diversity, including sensitive species. The Project will incorporate avoidance of sensitive resources as the first priority and will implement the following avoidance and minimization measures throughout the life of the Project to reduce impacts to less than significant.

- **BIO-1. Agency Permitting.** Prior to Project initiation, all applicable permits, including California Department of Fish and Wildlife, U.S. Army Corps of Engineers, Regional Water Quality Control Board, and Santa Barbara County permits, will be obtained, as necessary. Avoidance, minimization, and/or mitigation measures required by these agencies will be incorporated into the Project.
- **BIO-2. Oak Tree Protection.** The Project Oak Tree Protection Plan, provided within Appendix F-1.M, will be submitted to the County for review and approval. The approved Plan will be incorporated into the Project. At no time will oak trees be removed as part of off-site natural gas pipeline or electrical transmission line activities. A certified arborist will oversee trimming of oak tree limbs that have the potential to be impacted as a result of vehicle or equipment usage associated with off-site activities.
- **BIO-3. Oak Tree Replacement.** The Project will implement an Oak Tree Replacement Plan for oak trees that will be removed. The Project Oak Tree Replacement Plan, provided in Appendix F-1.N, will be submitted to Santa Barbara County for approval. Following approval, the Plan will be implemented to mitigate oak tree removals. The Plan prescribes that each removed mature live oak tree six inches in diameter at breast height or greater than, will be mitigated using any combination of the following replacement alternatives:
  - a) 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
  - b) 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
  - c) 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 the Potential Oak Planting Area or in the Project site (10:1 - sapling/nurture trees), and/or
  - d) 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
  - e) 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 mitigation for on-site removals.
- **BIO-4. Dust Control Measures.** During construction activities and periods of high vehicle/equipment traffic along unpaved roads and work areas, dust control methods to minimize dust impacts to surrounding vegetation will be implemented for all on-site and off-site Project activities, as necessary. Dust control methods include, but are not limited to, the following:
  - a) Light water spray or soil stabilizer application on stockpiles;
  - b) Watering or stabilizing soil on vehicle movement surface areas to prevent the generation of fugitive dust;

- c) Reducing vehicle speed; and
- d) Suspending earth moving or other dust-producing activities during periods of high winds or when dust control measures are not able to prevent visible dust plumes.
- **BIO-5. Fuel Management Plan.** The Fuel Management Plan for the Project site, provided as Appendix F-1.A, will be submitted to the County for review and approval. The approved Plan will be incorporated into the Project.
- **BIO-6. Erosion Control Measures.** A Storm Water Pollution Prevention Plan will be implemented for all applicable Project activities. Erosion and sediment controls (e.g., silt fences, straw wattles, mulching, and hydroseeding) will be installed properly and maintained regularly. Other Best Management Practices will also be implemented as necessary and/or as required by Project permits.
- **BIO-7. Environmental Sensitivity Orientation.** A Project-specific environmental sensitivity orientation will be prepared by a biologist familiar with the Project region and incorporated into site-specific training that will be required for Project personnel working on-site. The purpose of the orientation is to educate Project personnel on local special-status wildlife species that may occur within the Project area and to provide an overview of the avoidance and minimization measures to be adhered to during the Project. In addition, personnel will be briefed on the reporting process in the event that an inadvertent injury should occur to a special-status species during construction or operations.
- **BIO-8. Delineation of Project Disturbance Limits.** Prior to initial grading or construction, Project disturbance limits will be delineated in the field, under the guidance of a qualified biologist, using high visibility fencing or flagging to avoid impacts to special-status plant populations and other adjacent sensitive habitat areas. The use of heavy equipment and vehicles will be limited to the proposed work areas, existing roadways, and defined staging areas/access points.
- **BIO-9. Pre-Activity Surveys.**

**Project site.** Pre-activity surveys will be conducted prior to initial grading, excavation, and vegetation removal activities within two weeks of planned work. Pre-activity surveys will be completed by a qualified biologist experienced with regional wildlife and plant species. These surveys will consist of the following activities:

  - a) Woodrat nest destruction using hand tools to knock down nests and deter animals out of the immediate work area. Woodrat nest destruction will first be approved by the California Department of Fish and Wildlife by written or verbal approval;
  - b) Large burrows in which display signs of badger or owls, will be, scoped, and dusted around the entrance for three consecutive days to determine if the burrow is active. All active and non-active American badger burrows will be avoided to the greatest extent possible; however, if the burrow cannot be avoided and the burrow is active, then the burrow will be closed by collapsing the soil around the entrance to deter the badgers out of the work area. If the burrow is an active natal den during the breeding season (February through August), then that burrow will be avoided until the pups have grown and left the burrow. All active burrowing owl burrows will be

avoided within a 300 foot buffer. The California Department of Fish and Wildlife will be contacted to determine additional minimization measures for natal dens, if necessary. In the event a burrow is being used by a burrowing owl, the burrow will be avoided until the California Department of Fish and Wildlife is notified to determine appropriate avoidance and minimization measures;

- c) Biologists will place cover boards in the work area to attract reptiles using the area. The cover boards will be checked immediately prior to ground disturbing activities to capture and relocate reptiles to adjacent suitable habitat and out of harm's way. Raking of sandy soils within the immediate work areas will also be incorporated into pre-activity surveys to help observe, capture, and relocate reptiles that may lie just under the soil surface;
- d) Biologists will identify, flag, and map with a global positioning unit any special-status plant species identified in the work area. These plant populations will be avoided to the extent practicable; however, if avoidance is not practicable, a revegetation/relocation plan will be implemented.

**Natural gas pipeline.** Pre-activity surveys will be conducted prior to initial excavation and horizontal directional drilling activities. Pre-activity surveys will consist of the following:

- e) A qualified biologist with experience identifying special-status plants and associated habitats will conduct a pre-activity survey of all work areas, including staging and laydown areas, prior to any ground disturbing activities. Any special-status plant populations encountered will be flagged and avoided to the greatest extent possible. These areas will be avoided for staging or stockpiling of material or soil when feasible. La Graciosa thistle, Gaviota tarplant, and Lompoc yerba santa observations will be reported to the U.S. Fish and Wildlife; and
- f) A qualified biologist with experience identifying American badger and their potential dens will conduct a pre-activity survey prior to initial work activities. All potentially active badger dens that would be directly impacted by construction activities will be inspected by a qualified Biologist using an optic scope or monitored using tracking medium/remote sensor cameras (3 days) to ensure the den is vacant. After verification that the den is unoccupied it will be immediately excavated and backfilled. If badger activity is detected at a den, the entrance to the den will be blocked with soil, sticks, or debris for three to five days to discourage the use of the dens prior to project disturbance activities. After the biologist determines that the badger has stopped using an active den, the den will be hand-excavated with a shovel to prevent re-use during project construction.

**Electrical transmission line.** Pre-activity surveys will be conducted prior to initial ground disturbance activities. Pre-activity surveys will consist of the following:

- g) A qualified biologist with experience identifying special-status plants and associated habitats shall conduct a pre-activity survey of all work areas, including staging and laydown areas, prior to any ground disturbing activities. The surveys shall be conducted within appropriate blooming periods for potentially occurring special-status plants. Any special-status plant populations encountered shall be

avoided; however, if they cannot be avoided, a relocation and monitoring plan shall be prepared and approved by the appropriate regulatory agency prior to any disturbance to the plants. Observations of special-status species shall be reported to the California Department of Fish and Wildlife and/or U.S. Fish and Wildlife, as required; and

h) A qualified Biologist with experience identifying American badger and burrowing owl and their potential burrows shall conduct a pre-activity survey prior to initial work activities. Potential badger and burrowing owl burrows will be avoided with a 50 foot buffer. If a burrow is identified within the immediate work area, the California Department of Fish and Wildlife will be contacted for further guidance on appropriate protective measures during Project activities.

- **BIO-10. Straight-awned Spineflower Avoidance or Revegetation/Relocation.** Project activities will avoid special-status species populations identified within the Project site to the extent practicable; however, where straight-awned spineflower has been identified within the Project grading footprint and in any other cases where Project activities cannot avoid straight-awned spineflower, an agency approved revegetation plan will be implemented. The revegetation plan will provide guidelines for seed collection and topsoil salvage to ensure impacts to the population are reduced to the greatest extent possible. The plan will also incorporate monitoring and reporting methods for revegetated populations to ensure success.
- **BIO -11. Revegetation Plan.** Project activities that require the temporary removal of vegetation for cut/fill slopes, above-ground pipeline installation, and on-site electrical transmission line installation activities will be revegetated per a County-approved revegetation plan. The plan will be prepared and submitted to the appropriate regulatory agencies for approval. The revegetation plan will incorporate goals, implementation methods, and maintenance and monitoring measures to ensure successful revegetation of native plant communities.
- **BIO-12. Nesting Bird Surveys.** In the event that Project initial ground disturbing and vegetation removal activities are scheduled during the nesting bird season (March 15 through September 15), a nesting bird survey will be completed by a qualified biologist with experience in bird identification and nest searching within 24 hours of disturbance activities. No active nests of native bird species protected by the Migratory Bird Treaty Act will be removed by Project activities and appropriate buffers will be incorporated into the Project plans to ensure the protection of the nest. Buffers will be delineated by a qualified biologist based on an appropriate distance to minimize disturbance to the active nest, a standard of 300 feet for passerines and 500 feet for raptors, or as required by Project permits. These buffers may be minimized by a qualified biologist on a case-by-case basis, and consistent with permit conditions, where birds are not impacted by Project activities.
- **BIO-13. Spill Response Plan.** A Spill Response Plan will be prepared prior to Project activities and will be implemented for the life of the Project. The Plan will include appropriate measures for containment of spills, agency notifications, clean-up protocols, and procedures for restoring lay down areas and other impacted areas to pre-disturbance conditions. Spill containment equipment will be available on-site

during all Project drilling and fuel handling activities. The Plan will also include protocols for locating equipment at least 50 feet from stream channels and other standing water, and inspecting and maintaining equipment to prevent leaks.

- **BIO-14. Drilling Fluid Release Contingency Plan.** This plan will be prepared for all horizontal directional drilling operations during the installation of the natural gas pipeline and will be prepared with special emphasis on stream crossings. This plan will include appropriate measures for containment of spills, agency notifications, clean-up protocols, and procedures for restoring lay down areas and other impacted areas to pre-disturbance conditions. Spill containment equipment will be available on-site during all drilling and fuel handling activities. A qualified Biologist knowledgeable in horizontal directional drilling operations will be onsite during horizontal directional drilling operations along actively flowing streams or ponded water to document any spill or drilling fluid release and provide additional guidance to protect biological resources in the event of a spill or drilling fluid release. In the event that a spill or drilling fluid release occurs within a stream corridor, all work will be halted and the spill will be contained using the procedures outlined in the Project-specific Drilling Fluid Release Contingency Plan.
- **BIO-15. Removal of Trash.** All food-related items and trash will be contained in trash bins with lids and will be removed from the work areas at the end of each working day.
- **BIO-16. Amphibian Avoidance.**
  - a) Project site. To minimize impacts to migrating amphibians that travel to aquatic breeding grounds during rainy nights (i.e., spadefoot, California red-legged frog, California tiger salamander), vehicle travel within the Project site will be avoided during rainy nights to the extent practicable. In the event that vehicles must travel the roads within the Project area, speeds will be reduced. In the event a California red-legged frog or California tiger salamander is identified in a road, the U.S. Fish and Wildlife Service will be contacted immediately for further direction.
  - b) Natural gas pipeline. Excavation activities for the natural gas pipeline will be completed during the daylight hours, to the greatest extent possible. Excavation activities will avoid rainy nights, when California tiger salamanders are most active. A qualified biologist will complete a pre-activity survey prior to work that follows a rainy night, to ensure no California tiger salamander are present within the work areas. Training will be provided to the crew and crew supervisors to recognize, report, and avoid California tiger salamander. In the event a California tiger salamander is observed in the work area, the work in the immediate area of the California tiger salamander will temporarily cease until agency notification is complete.
  - c) Electrical transmission line. Construction activities will be completed during the daylight hours, to the greatest extent possible for the electrical transmission line construction off-site. Project activities shall avoid rainy nights, when California tiger salamanders are most active. A qualified biologist shall complete a pre-activity survey prior to work that follows a rainy night, to ensure no California tiger salamanders are present within the work areas. Training

will be provided to the crew and crew supervisors to recognize, report, and avoid California tiger salamanders. A biologist will be on-site or on-call during all construction activities to respond to questions or incidents. In the event a California tiger salamanders is observed in the work area, the work shall cease and the U.S. Fish and Wildlife Service will be immediately contacted for further direction.

- **BIO-17. CTS Habitat Mitigation.** Aera proposes to provide mitigation for the permanent removal and temporary disturbance of upland habitat based on mitigation ratios developed to reflect the potential occurrence of California tiger salamander within the acreage that would be impacted by Project activities. Mitigation includes the following:

Temporary Impacts

- Two acres of mitigation for every one acre classified as high habitat value;
- 0.5 acres of mitigation for every one acre classified as moderate habitat value;
- 0.1 acres of mitigation for every one acre classified as low habitat value;

Permanent Impacts

- Four acres of mitigation for every one acre classified as high habitat value;
- Two acres of mitigation for every one acre classified as moderate habitat value; or
- One acre of mitigation for every one acre classified as low habitat value.