October 4, 2013

Santa Ynez Valley Alliance

Amy Dutschke, Regional Director
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2800 Cottage Way
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Interior Board of Indian Appeals
Offices of Hearings and Appeals
U.S. Department of the Interior
801 N. Quincy Street, Suite 300
Arlington, VA 22203

RE: Comments on Santa Ynez Band of Chumash Indians Camp 4 Fee-to-Trust Draft Environmental Assessment

Dear Ms. Dutschke:

Thank you for the opportunity to comment on the Environmental Assessment (EA) for the Camp 4 Fee-to-Trust Annexation.

The Santa Ynez Valley Alliance works collaboratively with individuals, groups and governments to protect the rural character of the Santa Ynez Valley and support good stewardship of natural and agricultural resources through education, comprehensive planning and public participation. The Board of Directors of the Valley Alliance, many of whom have significant land use and planning experience, worked extensively for several years on the Santa Ynez Community Plan update, attending hearings and submitting detailed comments. As a result, the Alliance was able to support the adoption of the Plan by the Board of Supervisors.

The Valley Alliance has been monitoring the Camp 4 issue for more than three years and has a number of comments on the EA as follows:

1.2 LOCATION AND SETTING

First and foremost, we are concerned about the statement made on page 1-5 in the Environmental Assessment that this application will be treated as "on-reservation". Our research confirms that the rule that would have allowed this application to be treated in that manner was withdrawn in November of 2001 (66 Federal Register 56608, 11-9-2001).

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The current regulations are found in 25 CFR Part 151. Although 25 CFR 151.3(a)(1) states that land may be acquired for a tribe in trust status when the property is located "within the exterior boundaries of the tribe's reservation or adjacent thereto, or within a tribal consolidation area," this provision does *not* discuss the *process* by which land may be acquired. Contrary to the statement in the Environmental Assessment, 25 CFR 151(a)(1) does *not* provide that property located within a tribal consolidation area is given the same level of scrutiny as land acquisition on or adjacent to a tribe's reservation.

Instead, the requirements, process and criteria for considering applications for trust acquisitions are set forth in 25 CFR 151.9-15. The section that addresses on-reservation acquisitions is 25 CFR 151.10. This section applies to situations "when the land is located within or contiguous to an Indian reservation." Section 151.11, on the other hand, deals with off-reservation acquisitions and applies to land that "is located outside of and noncontiguous to the tribe's reservation." This section requires greater scrutiny as the distance between the land the tribe's existing reservation increases, and gives greater weight to concerns raised by state and local governments. (*See* 25 CFR 151.11(b).) Nothing in either of these sections references tribal consolidation areas. Accordingly, land acquisition requests are handled as either on-reservation or off-reservation, depending upon whether the land is located within, contiguous or outside the tribe's existing reservation. Because the Camp 4 property is not located within or contiguous to the Santa Ynez reservation, the application must be treated as off-reservation and thus subject to greater scrutiny.

The statements in the Band's Plan and the BIA's Environmental Assessment do not comport with existing regulations. As such, the Valley Alliance requests that they be corrected.

2.0 PROJECT ALTERNATIVES

It is important to note that the Purpose and Need of the proposed annexation are to provide tribal housing. Therefore, the Alternatives in the document must adhere to that purpose and need. The EA should focus on Alternatives that provide the desired housing while protecting the rest of the property from adverse impacts. Hence, Alternative B should cluster the proposed housing sites, or the EA should include an additional alternative that provides clustered, 1-acre lots.

3.4 AFFECTED ENVIRONMENT - BIOLOGICAL RESOURCES

As noted in the attached Environmental Setting report for the proposed Camp 4 development property, the project site supports two major vegetation alliances, grasslands and oak savanna in particular, which cover approximately 80% of the site. The oak savannas include both coast live and valley oaks, both of which are protected by County ordinances. These habitats provide cover, foraging, denning, and nesting habitat for a broad diversity of animal species, including habitat that is being used or could be used by the federally-threatened California red-legged frog,

vernal pool fairy shrimp and Swainson's hawk and the fully protected golden eagle, white-tailed kite and black bear (see documentation in attached report). Given the size and location of the property, its value as a wildlife movement corridor must also be considered.

4.1.4 ENVIRONMENTAL CONSEQUENCES - BIOLOGICAL RESOURCES

According to the attached letter by Lawrence E. Hunt, consulting biologist, the evaluation of impacts to biological resources is insufficient and fails to adequately evaluate and disclose the significant impacts of the proposed project. An Environmental Impact Statement (EIS) must be prepared to address the issues raised by Mr. Hunt's letter.

4.1.8 LAND USE

The EA notes the inconsistency with County's zoning and general plan land use designation, but nevertheless says that there would be no land use impacts because development would be compatible with surrounding land uses. Given that this significant inconsistency with the zoning and land use designation (e.g., 143 units plus potential community center vs. 14 units) must be considered a significant impact, this conclusion is incorrect. Furthermore, the loss of agriculture would be inconsistent with County policy. Both development alternatives would convert most of the project site to non-agricultural uses, resulting in a loss of more than 1100 acres of agricultural land, leaving only 300 acres (less than 1/4 of the site).

4.4 CUMULATIVE EFFECTS

The EA states that long-term cumulative conditions were established based upon the County's Santa Ynez Valley Community Plan. While this Plan is an appropriate resource upon which to evaluate cumulative effects, the EA should also include information from the Santa Ynez Band's Tribal Consolidation and Acquisition Plan (Appendix M to the EA).

CONCLUSION

Based upon the above information, including the attached Environmental Setting report and comment letter from Lawrence E. Hunt dated October 3, 2013, the Santa Ynez Valley Alliance respectfully respects that the BIA prepare a full Environmental Impact Statement for this proposal.

Sincerely,

Mark Oliver, President

Atts: Hunt, Lawrence E. *Environmental Setting for Proposed Camp 4 Development Project, Santa Ynez Valley, Santa Barbara,* California. September 13, 2013.

Hunt, Lawrence E. *Comments on Santa Ynez Band of Chumash Indians Camp 4 Fee-to-Trust Draft Biological Assessment and Environmental Assessment, Santa Ynez Valley, Santa Barbara County, California.* October 3, 2013.

cc: U.S. Senator Dianne Feinstein
U.S. Senator Barbara Boxer
Congresswoman Lois Capps
County of Santa Barbara

Lawrence E. Hunt
Consulting Biologist

Amy Dutschke, Regional Director
Bureau of Indian Affairs, Pacific Regional Office
2800 Cottage Way
Sacramento, California 95825 3 October 2013

Subject: Comments on Santa Ynez Band of Chumash Indians Camp 4 Fee-to-Trust Draft Biological Assessment and Environmental Assessment, Santa Ynez Valley, Santa Barbara County, California.

The Biological Assessment (BA) and Environmental Assessment (EA) prepared for the proposed project identify adverse impacts to these biological resources:

- Special-status species;
- Oak trees and oak savanna habitat;
- Critical habitat for vernal pool fairy shrimp (*Branchinecta lynchi*) (VPFS);
- California red-legged frog (*Rana draytonii*);
- Waters of the U.S.;
- Nesting migratory birds and raptors;
- Migration corridors.

The EA states that implementation of the mitigation measures described in the document would reduce project-related impacts to these resources to less than significant levels. This letter comments on the thoroughness of the BA and EA and the effectiveness of the proposed mitigation measures.

Occurrence of Special-Status Species. The impact evaluation in the BA and EA is restricted to federally-listed species, per NEPA allowances. However, this does not change the fact that, by limiting the evaluation in this way, these documents necessarily present an incomplete picture of the full range of special-status species that are known from or which potentially occur on the project site and which could be affected by the proposed project. These species include a wide variety of plants and animals considered Special Concern by the California Department of Fish and Wildlife (CDFG, 2009) and the California Native Plant Society (Tibor, 2001), species protected by various County policies and regulations, and a number of wildlife species on "Watch Lists" prepared by the Audubon Society, CDFW, CNPS, or County of Santa Barbara (2008).

Page 3-36 of the EA claims that no federally-listed plants occur on-site, but there are a number of List 1B plants with a moderate to high potential of occurring on-site and

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which have some federal status. Protocol level-surveys conducted at appropriate times of the year are needed to rule out occurrence of these species on-site:

Special-Status Plants with Moderate to High Potential of Occurring On-Site.

Common Name (Scientific Name)	CNPS Listing Status*	Flowering Time and Habitat	Nearest Known Occurrence	Potential for Occurrence
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	List 1B	February-June Vernal pools and vernal flats	Edge of Hwy 154 between Santa Ynez River and San Lucas Creek, about 2 air mi SE project site (1997)	Moderate to high potential in stony grasslands in central and southern portions of project site
Dwarf calycadenia (*Calycadenia villosa*)	List 1B	May-October Chaparral, woodland, grassland, seeps	Old record for vicinity of Los Alamos; about 6 mi NW of project site (no date)	Moderate potential in grasslands on project site
Hoover's bent grass (*Agrostis hooveri*)	List 1B	April-July Chaparral, oak woodland, grassland	Upper west fork of Ballard Cyn., approx. 3.5 air mi NW project site (no date)	Moderate to High potential in grassland and savanna on-site
Late-flowered mariposa lily (*Calochortus weedii vestus*)	List 1B	June-August Chaparral, woodland, often on serpentine	San Marcos Pass, E of summit, about 12 air mi SE project site (1955) Painted Cave Road, S of jct E Camino Cielo, about 14 air mi SE project site (2006) E Camino Cielo at Laurel Springs, about 13 air mi SE project site (2006)	Moderate potential in oak savanna on-site, but all known occurrences are in montane areas surrounding the Santa Ynez Valley
Mesa horkelia (*Horkelia cuneata* subsp. *puberula*)	List 1B	February-September Chaparral, oak woodland, coastal sage scrub, and sand hill scrub on sandy soils	Solomon Hills approx. 3.3 air mi SE jct Clark Ave x Hwy 101, about 10 mi NW project area	Moderate potential; most soils on-site may be unsuitable for this species (clays and silts; could be found in sandy portions of washes
Mile's milk-vetch (*Astragalus didymocarpus var. milesianus*)	List 1B	March-June Coastal sage scrub on clay soils	2.5 mi NW Buellton, approx. 7.5 air mi WNW project site (1935) N side San Marcos Pass, about 12 air mi SE project site (1930)	Moderate potential in grassland and savanna on clay soils
Ojai frittilary (*Frittilaria ojaiensis*)	List 1B	March-May Woodland, chaparral on rocky soils	Upper Oso Canyon, about 14 air mi E project site (1961)	Moderate potential in stony grasslands on-site
Southern tarplant (*Centromadia parryi* ssp.	List 1B	July-September	Coastal plain W of Goleta, about 12 air mi	Typically found in coastal grasslands,

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australis)		Vernal flats and grassland	S project site (2005)	but project site grasslands and soils closely resemble coastal sites where this species has been found

Some of these species are not the same ones evaluated in the BA, but are included in the checklist prepared by USFWS and in Appendix E of the EA. The BA and EA do not provide much detail on how the field surveys were conducted, stating only that botanical inventories were conducted in accordance with CDFG protocols. Additional information on field methods (number of persons, transect vs. random walk surveys, transect spacing, project site coverage, etc.), is needed to evaluate the thoroughness of the surveys. More importantly, the botanical surveys for the BA and EA were conducted on 7-9 March 2012 and 23-25 April 2012, which was not adequate to note the presence of special-status annual plants in this area at that time. Rainfall totals for the 2012/2013 rainy season were significantly below average and the timing of most storms occurred relatively early in the season. Consequently, many annual wildflowers bloomed earlier than is typical for this area. In addition to the March and April surveys, botanical surveys should have been conducted in January and February in 2012 in order to more completely capture year-to-year variation in floral phenology. Additional botanical surveys should be conducted to more fully evaluate the site status of annual special-status plants.

Additionally, needlegrass (*Nassella pulchra* and/or *N. lepida*), species of local concern, are likely present on-site and may be extensive enough to meet the criteria for consideration as "native grasslands" (County of Santa Barbara, 2008).

Wildlife surveys were conducted on 12-14 Sept 2011 and 16-17 July 2013, the height of the dry season, which is insufficient to adequately characterize wildlife occurrence on-site or use of on-site habitats, including seasonal water features. Additional wildlife surveys, designed to characterize the full range of wildlife resource use on-site, should be conducted from late fall through mid-summer. These surveys should include acoustic surveys for bats, time-constrained or drift fence-pitfall trap surveys for reptiles and amphibians, monthly surveys of seasonal water features (see below), track and camera stations for nocturnal carnivores, time-constrained surveys for birds, and an analysis of raptor use of the site, including owls.

Impacts to Oak Trees and Oak Savanna. Oak savanna, an iconic habitat of the California landscape, has been diminished in extent and isolated by development to the point that this plant community is considered threatened and of high priority for conservation by the State of California (Davis, n.d., Brown and Davis, 1990; CDFG, 2002; Sawyer et al., 2008). Indeed, valley oaks, coast live oaks, and blue oaks have been described as the "keystone structures" that govern biodiversity and ecosystem function in savanna habitats (Manning et al., 2006; Tietje and Vreeland, 1997; Tietje et al, 1997). Oak tree density across the project site, while relatively stable over the time period that

aerial photography has been available (1928-present), is severely threatened by lack of recruitment due to competing land uses, including livestock grazing and vineyard expansion. The loss of oak trees across the project site will result in significant impacts to local and regional biodiversity. Given that both Alternatives A and B result in significant loss of individual oak trees and fragmentation of existing oak savanna habitat, these project designs should be interpreted as Class I impacts to these resources at the County and State level of protection.

Mapping of oak savanna habitat in Fig. 3-4 of the EA appears subjective. The Methods section in the BA does not describe minimum mapping units or provide criteria for distinguishing mapping of non-native annual grassland vs. oak savanna (e.g., inter-tree spacing and canopy cover). For example, several areas on Parcels 2, 3, and 4 in Figure 6 of the BA support oak trees in densities mapped elsewhere on this figure as "oak savanna", but are not mapped as such. As a result, acreages of and impacts to oak savanna habitat on-site have been underestimated (Table 3.4-1).

There is no rationale given for translating areas mapped as oak savanna in Figure 6 of the BA into the "RMZ zones" mapped in Figures 2-1 and 2-2 of the EA. What is the basis for determining the size, shape, and location of the RMZs?

Rodents (pocket gophers, ground squirrels, and mice) play a significant role in blue, valley, and coast live oak seeding mortality in Santa Ynez Valley oak savanna and woodland (Tyler et al., 2006; 2008). Alternatives A and B will significantly fragment what is now open oak savanna and annual grassland. This could result in reduced rates of raptor and carnivore predation on rodent populations in the resulting fragments because it may become more difficult for these predators to access the fragments because of increased human presence, noise, and movement barriers. Increased oak seedling predation by rodents in these "protected" habitat fragments could result in long-term or permanent reduction in oak tree recruitment. Recruitment is one of the natural processes that governs persistence of oak savanna habitat, so any factor that inhibits or prevents recruitment runs counter to the stated goals of the RMZs. Given existing trends of little or no recruitment, it is only a matter of time before areas currently supporting oak savanna revert to annual grassland as mature trees die or are intentionally removed and are not replaced. The RMZs should strive to create self-sustaining oak savanna habitat.

The EA makes reference to the *Tribal Ordinance Regarding Oak Tree Preservation for the Santa Ynez Band of Chumash Indians* as a "built-in" mitigation measure. However, this ordinance states that, "there will be no loss of oak trees…unless they impede development of Tribal facilities." (pp. 3-27 and 3-28 of EA). Likewise, the mitigation measure proposed in Section 5.4 of the EA will not reduce project-related impacts to individual oak trees or oak savanna habitat to less than significant levels because is lacks specificity, purpose, performance standards, and long-term goals.

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A biologically meaningful mitigation measure would include: a) no loss of existing mature oaks on the project site, and; b) restoration of ecosystem function and self-sustainability to existing oak savanna habitat through preservation and enhancement of patch connectivity. Additionally, the geographic coordinates, dbh (diameter at breast height), and canopy diameter of all oak trees on the project site should be mapped in order to establish baseline conditions of current patterns of oak dispersion and age class structure. This would allow a more informed basis for preserving oak savanna and ecosystem function going forward.

Mitigation measures should include preparation of a comprehensive, biologically-based, long-term oak savanna restoration and preservation program prepared by a qualified biologist (not an arborist, as stated in the EA). The goals of this program should include significantly increasing oak survivorship, recruitment, and self-sustainability throughout the project site through a long-term effort of collecting acorns from existing trees on-site, growing them in a nursery setting until large enough to be planted, and strategically planting them such that they enhance ecosystem function of existing oak savanna habitats that have been degraded by decades of adverse agricultural practices. Whipple et al. (2010) outline such an approach for areas that formerly supported oak savanna but which now support only a few isolated, remnant trees in a semi-urban landscape. Such a program should focus on intensive oak tree planting in areas of the project site proposed for development together with preservation and enhancement of connectivity, function, and genetic integrity of oak savanna habitat. The plan should also include preservation of representative types of oak savanna formed by single species or combinations of species, such as valley oak savanna, blue oak savanna, and coast live oak-blue oak or coast live oak-valley oak savanna.

Description of On-Site Drainages. Page 3-8 of the EA does not mention that two major tributaries of Zanja de Cota Creek drain the northwestern and central portions of the project site (Parcels 1,2, and 3). Zanja de Cota Creek is the major water feature of the Los Olivos Hydrologic Area, where the project site is located. Further on, the EA states that the northwestern and western portions of the project site drain to the north and northwest. This is not correct—most of the site drains to the west and southwest. The descriptions in the text are contradicted by Fig. 3-3 in the EA (FEMA Flood Zones), which shows 100-year floodways draining southwestward across Parcels 1, 2, and 3.

Seasonal Water Features. The EA does not explain the difference between an, ”ephemeral drainage” and a “seasonal wetland swale”. According to p. 3-34 in the EA, none of the ephemeral drainages contained water during any of the site visits. Site visits to these ephemeral drainages should have been timed to occur during or immediately following rain events in order to characterize their status and function. Later, the EA states that the seasonal wetland swale in the northeastern portion of the site was inundated during the April 2012 surveys. Under the paragraph, “Habitat Types” on p. 12 of the BA, there is no mention of vernal pools on-site, but Photos 9 and 12 in Figure 7b describe vernal pools in the south-central and southwestern portions of the project site.

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The entire evaluation of seasonal water features on-site is summarized in one sentence (p. 12), a map that is too large a scale to adequately show aquatic features (Figure 6), and six photos (Figure 7b). The description, mapping, and analysis of these important resources are inadequate to fully address project-related impacts, which include changes in hydrology, sedimentation, and water quality.

Impacts to Vernal Pool Fairy Shrimp (VPFS) Critical Habitat. The BA and EA correctly identify the regulatory circumstances involving this species and accurately map Unit 31 of the VPFS Critical Habitat designation as covering the southern half of the project site. In the absence of surveys for this species because the on-site seasonal water features wetlands did not contain water during their site visits, the BA and EA assume that VPFS may occur on-site. However, the EA states on p. 4-12 that, "The 2.13 acres of ephemeral drainages on the project site do not provide adequate habitat for VPFS". This statement has no factual basis without adequate surveys timed to coincide when water is present in these features. VPFS can be found in a variety of seasonal water features, including isolated pools in ephemeral drainages, tire ruts, and other natural and man-made habitats that may be very limited in size (Eriksen and Belk, 1999; Hunt, pers. observ.). Moreover, this species can, under optimal conditions, complete its life cycle in as little as 18 days (Eriksen and Belk, 1999). Consequently, determining presence or absence at a water feature involves regular sampling throughout the winter and spring. At a minimum, site surveys should occur every two to three weeks between December and early May.

Under "*Potential Impacts*" (p. 19), the BA fails to describe the type, location, or severity of potential impacts to VPFS or VPFS habitat. For example, which seasonal wetlands are "…proposed to be impacted."? The primary mitigation measure proposed to reduce potential impacts to VPFS and VPFS habitats is confusing. On p. 19 the BA recommends establishing a 500-foot buffer around wetland habitats, but goes on to allow construction to occur within this zone. The EA reduces this buffer zone to 50 feet (p. 5-5). A 50-foot buffer around wetland features that potentially support VPFS is inadequate to prevent long-term degradation of these habitats from soil erosion and/or sedimentation. Ideally, the hydrological basin contributing to the vernal feature should be protected from development for long-term management of these sites.

The EA states that the measures included in the BA, together with additional mitigation measures created in a future Biological Opinion from the USFWS, will reduce potential impacts to less than significant levels. Again, there is no discussion of the nature, timing, location, or severity of potential impacts. The first mitigation measure described in the EA states that, "…the Tribe shall purchase preservation [credits at a two-to-one ratio] and creation credits [at a one-to-one ratio] from a USFWS-approved conservation bank. There is no conservation or creation bank for VPFS in Santa Barbara County, let alone elsewhere in Unit 31. USFWS (2005) shows that the nearest mitigation banks for VPFS are located in the Central Valley (p. II-201). Off-site mitigation will not offset significant

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impacts to critical habitat in Unit 31. Why is there no discussion of creating seasonal water features habitat on-site?

The Recovery Plans for VPFS prepared by the USFWS (USFWS, 1998; 2005) identify historic habitat loss and fragmentation as one of the major threats that have eliminated or degraded 90% of the historic vernal pools along the Central California coast. Alternative A proposes to eliminate 330 acres of VPFS habitat. In fact, impacts to critical habitat would be much greater because of habitat fragmentation that would occur under either development scenario. Approximately 65 acres would be removed under Alternative B. All of this disturbance would occur within the Lake Cachuma Core Area (USFWS, 2005-Fig. III-12a). The primary goal of the 1998 and 2005 USFWS recovery plans was preservation of core areas within critical habitat (p. III-89).

Overall, the EA fails to adequately describe, locate, or even identify the severity of potential impacts to critical habitat for VPFS habitat. Moreover, the mitigation measures proposed in the EA to offset potential impacts do not rise to any standard of protection. Off-site mitigation for what amounts to very significant loss and fragmentation of core area critical habitat for VPFS is inadequate and inappropriate. Loss and fragmentation of VPFS habitat under either development scenario should be considered Class I.

Impacts to California Red-Legged Frogs (CRLF). The BA and EA correctly asserts that breeding habitat for CRLF is absent from the project site and notes the occurrence of nearby, off-site records from the CNDDB. However, these nearby records document that CRLF occur in the vicinity of the project site. The documents also state that at least 11 natural and man-made water features that could provide breeding habitat for CRLF occur with a mile of the eastern and western boundaries of the project site. Additionally, Santa Agueda Creek, located east of the project site, may provide breeding habitat for CRLF. The documents note that upland habitat on-site is suitable for CRLF. CRLF use upland habitats for foraging and dispersal, and long-range dispersal between breeding sites is a key feature of metapopulation persistence in this species (Bulger et al., 2003; Fellers and Kleeman, 2007).

CRLF can move distances greater than the one mile (1.6 kilometer) limit used in the BA and EA. Movements in excess of 1.8 and 1.9 miles through upland habitat between aquatic sites have been documented by Bulger et al. (2003) and Fellers and Kleeman (2007), respectively. Hunt (pers. observ.) also found CRLF in upland habitats up to 1.5 to 2 air miles from the nearest aquatic site. CRLF could disperse into the project site from known and potential sites that are location near the site. These dispersal movements may cumulatively exceed the observed distances noted above as individuals use rodent burrows as short-term or long-term upland refugia in moving to other aquatic sites. Strategic placement of drift fence-pitfall trap lines during the winter and early spring offer the best means of evaluating CRLF use of the project site.

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The EA offers a number of avoidance and minimization (A&M) measures designed to avoid adverse impacts to CRLF during project construction. While these measures might be sufficient to reduce impacts to less than significant levels during construction, they do not address potential impacts caused by project occupancy. For example, finding CRLF on-site during implementation of the A&M measures would mean that project occupancy could result in take of CRLF for the life of the project by interfering with dispersal. Currently, the project site can allow unrestricted movement of CRLF, if present, across the site. Increased potential for take from creating interior roadways (mortality) and barriers to dispersal (interference with movements) could occur for the life of the project. These long-term impacts associated with occupancy cannot be reduced to less than significant levels and must be classified as Class I impacts.

Impacts to Nesting Migratory Birds, Raptors, and Bats. BA and EA make no mention of the known occurrence of the golden eagle on the project site (Hunt, pers. observ.) or, at a minimum, the use of grassland and oak savanna as foraging habitat for this species. Oak trees on-site offer potential raptor nest sites, but the BA makes no mention of seeing raptor nests during site visits.

Loss of individual oak trees and fragmentation of oak savanna would significantly impact roost/nest sites for raptors and entire guilds of other birds. For example, oak trees and oak savanna on the project site support eight species of woodpeckers, including two migratory species (acorn, Nuttall's, Lewis', downy, hairy, northern flicker, Williamson's sapsucker, and red-breasted sapsucker). The oak savanna habitat on the project site represents some of the best remaining habitat for Lewis' woodpeckers, a Watch List species, in the Santa Ynez Valley. Acorn woodpeckers form complex, long-term family units around granary trees, typically valley and blue oaks, which could be eradicated as oak trees are removed under either development scenario.

Additionally, several species of special-status bats likely forage in oak savanna and/or have seasonal or permanent roosts in oak trees on the project site. These species include: pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*), both of which have established roosts less than two miles from the project site. Loss of oak trees and fragmentation of oak savanna and annual grassland would significantly impact both of these species as well as a host of other bats. Acoustic surveys, conducted at different times of the year, are needed to better characterize use of the site as foraging and roosting habitat for bats.

Appendix E in the EA lists four species of raptors and 2 two species of migratory birds that were observed on-site during the surveys for the BA, but the discussion of migratory birds on-site on p. 3-40 is cursory and should state that there is more than a "potential [for these species] to nest within the project site". The Cultural Resources section (p. 3-48) states that rodent diggings were 'ubiquitous' across the project site, so there is evidently an abundant prey base for raptors and carnivores. Point-count surveys, conducted at

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different times of the year, are needed to characterize use of the site as foraging and nesting habitat for migratory birds and raptors.

Impact of Tribal Government Facilities. The BA and EA do not analyze potential impacts to biological resources caused by locating the proposed 30-acre Tribal Government facilities and parking lot in the approximate center of the project site. In addition to the obvious significant long-term impacts to habitat loss and fragmentation associated with construction of the facility, there are a number of significant, long-term impacts to wildlife associated with operation of the facility, including, but not limited to: increased noise and human presence, night-lighting, trash, and changes to the seasonal hydrology and ecological function of surrounding ephemeral drainages if surface runoff from the facility and parking lot is directed to them.

Impacts to Wildlife Movement and Corridors. A tenet of conservation biology is that fragmentation and isolation of formerly extensive habitats is a major contributor to the loss of biodiversity. Consequently, it makes intuitive sense that maintaining habitat connectivity as landscapes are developed offers the best opportunity for conserving plant and animal biodiversity. Habitat corridors are promoted as important features of reserves that allow dispersal between high-quality habitats. This means that corridor location and design are critical to maintaining ecological function of connected habitats and wildlife populations (Sutcliffe and Thomas. 1996; Quintana-Ascencio and Menges, 1996; Meffe, Carroll, et al., 1997; Aars and Ims 1999; Beier and Loe, 1992; Beier and Noss. 1998, Mech and Hallett, 2001; Tewsbury, et al., 2002; Damschen, et al., 2006).

At a minimum, the project site provides foraging, nesting, or denning habitat for the following raptors and carnivores: golden eagle, red-tailed hawk, red-shouldered hawk, ferruginous hawk, Cooper's hawk, American kestrel, striped skunk, American badger, long-tailed weasel, bobcat, mountain lion, coyote, grey fox, and black bear. The site provides excellent habitat for their prey, including ground squirrels and other rodents, rabbits and hares, and black-tailed deer. Consequently, much of the project site can be considered a wildlife corridor for these species (and others) moving between similar habitats north, southeast, south, and west of the site. The BA and EA identify one "wildlife corridor"—the NE-SW trending drainage in the vineyard, but grassland and oak savanna can function as a "wildlife corridor", not just riparian areas. Any discussion of "wildlife corridors" should recognize the complexity of this issue. One of the most significant impacts of development of Alternative A or B is its potential effect on wildlife movements.

Page 4-11 of the EA states that Alternatives A and B would not impact native resident or migratory fish, but the document fails to evaluate the effects of increased erosion and sedimentation in Zanja de Cota Creek and other ephemeral drainages on-site that flow into the Santa Ynez River, a steelhead (*Oncorhynchus mykiss*) stream.

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Pages 4-11 and 4-37 of the EA contain brief discussions of potential wildlife movement "corridors" on the project site. These discussions have no basis in fact and only vaguely evaluate the potential impacts of project development on wildlife movement. The Alternative B section on "migratory corridors" on p. 4-37 expands this discussion to include "…overland migration through the project site [between] agricultural and annual grassland areas to the southwest, south, and west of the project site." Additionally, it states that, "Alternative B was designed to avoid the ephemeral drainage that provides a migratory corridor between the northern and western portion of the project site." How and why does the EA assume that ephemeral drainages provide the sole or even primary wildlife movement corridors within and through the project site? Although riparian corridors and drainages may connect otherwise disconnected habitats, wildlife movement is not strictly or primarily associated with these corridors. If a goal of Alternative B is to conserve grassland and oak savanna habitat on-site, then the ephemeral drainages, with a suitable habitat buffer around them, could function as landscape elements that foster connectivity between upland habitat patches on-site and similar habitats north, south, and west of the project site, but only if adequate upland habitat buffers (several hundreds of feet) surround each drainage.

In the absence of specific studies, it is better to speak of habitat connectivity and assume that more connected habitats allow for better dispersal of, and therefore persistence of, wildlife and plant biodiversity. In this case, a more thorough analysis of corridor function is necessary. Specifically, the ephemeral drainages could provide movement corridors for some species, but the buffer areas surrounding various drainages will be much more important in creating and maintaining dispersal opportunities for most of the plants and animal species found on-site and in the region. Buffer width is critical in this function. In the absence of specific studies detailing wildlife movement, wider buffers will offer the greatest opportunity for movement of a diverse assemblage of local species with widely disparate body sizes, dispersal ability, and guild ecology, ranging from annual plants, trees, beetles, butterflies, snails, snakes, birds, rodents, and carnivores.

Barriers to dispersal are the counterpoint to habitat corridors and connectivity. Barriers are species-specific. In the case of ground-dwelling wildlife (snakes, terrestrial birds, owls, rodents, rabbits, deer, and carnivores), the most significant barrier to dispersal to and from the site is Highway 154 because of its width and high likelihood for mortality as animals attempt to cross it or forage alongside it. Armour Ranch Road, Baseline Road, low-density ranchette development northeast of the project site, agricultural development west, northwest, and north of the site, and small-mesh fencing around otherwise open grassland and oak savanna habitat southeast and south of the project site are secondary barriers to unrestricted movement. These barriers are, depending on the species, more or less porous to movements of most ground-dwelling wildlife. Reducing the impacts of these existing barriers involves providing safe and effective means for ground-dwelling wildlife to cross (e.g., wildlife undercrossings).

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The great value of the project site as wildlife habitat is the fact that it provides extensive, connected grassland and oak savanna habitat for a wide variety of plants and animals, especially medium- and large carnivores and raptors whose foraging, breeding, and dispersal habitat is shrinking regionally as their prey base becomes degraded by habitat fragmentation. In this regard, the EA correctly asserts that development of Alternative B would result in less habitat fragmentation and provide more habitat connectivity than Alternative A. However, the design of the development and associated mitigation measures do not reduce impacts to habitat connectivity and wildlife dispersal to less than significant levels. Either development scenario could result in Class I impacts to wildlife movement, and although Alternative B may reduce impacts compared to Alternative A, the environmentally preferable alternative is one that clusters one-acre development parcels in the northwestern corner of the project site and incorporates associated design changes:

- cluster the one-acre development parcels, the proposed Tribal Government Center, and associated roadways and parking lots (approximately 224 total acres) to the northwestern portion of the project site that is currently in vineyard production (approximately 269 acres);
- retain all valley, blue, and coast live trees greater than 6 inches dbh trees in the existing vineyard areas during development and use these trees as "source" trees for re-creating and maintaining "urban oak savanna" in this portion of the project site, similar to that proposed in Guisti, et al. (2005) and Whipple, et al. (2010);
- place the remainder of grassland and oak savanna on the project site under a permanent conservation easement to be used for passive recreational purposes only, e.g., hiking, horseback riding, bird watching, etc.;
- have a qualified biologist create and implement an Oak Savanna Restoration Plan whose goals include retaining all existing oak savanna habitat on-site, increasing oak tree density and recruitment with on-site seed sources, and promoting ecological processes that ensure long-term oak savanna persistence and habitat function (also see comments under "Impacts to Oak Trees and Oak Savanna" above).

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ENVIRONMENTAL SETTING FOR PROPOSED CAMP 4 DEVELOPMENT PROJECT, SANTA YNEZ VALLEY, SANTA BARBARA COUNTY, CALIFORNIA

Valley oak-coast live oak savanna, east-center of Camp 4 property, looking south from Base Line Road. 21 August 2013.

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13 September 2013

Environmental Setting for Proposed Camp 4 Development Project, Santa Ynez Valley, Santa Barbara County, California

This document summarizes the environmental baseline for the proposed Camp 4 Development Project, located in the eastern Santa Ynez Valley, northeast of the junction of Highway 154 and Highway 246 (Fig. 1).

Proposed Camp 4 Project Site.

Methodology. The following description of vegetation and plant communities on the project site is based upon site visits conducted by Lawrence E. Hunt in August and September 2013 along public roadways around the perimeter of the southern, western, northern, and portions of the eastern sides of the project site. In total, approximately 75% of the site was visible with binoculars from these perimeter roads. Aerial photographs of the project vicinity dating from 1928 to 2013 were consulted to gain insight into past land use practices within and around the project site (County of Santa Barbara, 2013; GoogleEarth, 2013).

Pre-existing data sources were consulted to gain insight into plant and animal occurrences from the area. These sources included the California Natural Diversity Data Base for areas within and surrounding the project site (Santa Ynez, Solvang, Figueroa Mountain, San Rafael Mountain, Los Olivos, San Marcos Pass, Zaca Creek, Gaviota, Dos Pueblos Canyon, and

Tajiguas quadrangles), discussions with local botanists and wildlife biologists familiar with the area, general floristic and faunal references (Smith, 1998; Hickman, 1993; Lehman, 1994; Stebbins, 2003; Jennings and Hayes, 1994; Jameson and Peeters, 2004), and pertinent scientific and environmental documents (Aspen Environmental Group, 1996; Hunt and Associates, 2011, 2012) conducted in this region. A complete list of references consulted are presented at the end of this document

Land Use. The following discussion is based on interpretation of aerial photographs taken in 1928, 1938, 1964, 1994, and 2013. Surprisingly, the project site has changed very little during this 85-year range. Livestock grazing (rangeland) is the dominant, recurring land use during this time up to present-day. The northeastern and northern portions of the site were dry-farmed up until the mid-1960s, then converted to irrigated row crops (see current site photographs in Appendix 1).

1928: These may be the earliest aerial photographs of the future project site. The project site is open space, used for grazing and dry farming. Dry farming is evident in the NW portions of the site that today (2013) are under cultivation. There are more oaks present throughout the northern half of the site, including the dry-farmed areas, than at present. Zanja de Cota Creek is better-developed than today. There is no Highway 154. A roadway that follows the present-day track of Highway 246 terminates at today's intersection of Highways 246 and 154. A roadway that follows the present-day track of Base Line Avenue is plainly visible in these photographs. The Santa Agueda Creek floodplain is open space—no development. Portions of the floodplain of the Santa Ynez River appear to be under cultivation.

1938: A roadway following the track of present-day Highway 154 is visible; other main roadways are still present. The dominant land use across most of the future project site is livestock grazing, except in NW corner, which is still dry-farmed. Most of the trees visible on the project site in these photos are still visible in 2013 aerial photographs. The Santa Agueda Creek floodplain is still mostly ranchland, but there is some dry farming in the areas currently occupied by low-density residential housing east of the project site. The areas north of the future project site are dry farmed, but in general, there is unbroken open space between the foothills to the north, across the project site, and the Santa Ynez River to the south.

1964 (Shipman, 1972): Northwestern corner of future project site is under cultivation (formerly dry-farmed). Other northern portions of site also are dry-farmed, but *the site is basically in the same condition as today*. There is no residential development in the Santa Agueda Creek floodplain east of the project site, but some parts of the floodplain are under cultivation. Tree density is basically what is visible today in aerial photographs.

1994 and 2013 (Figs. 2 and 3): Land use practices within the project site are surprisingly similar to those found in the 1928-1964 aerial photographs. Surrounding land use changes include large expansion of cultivated land north, west, and east of the site, and expansion of low-density residential development north and east of the site.

Figure 2. Land use in and around Camp 4 project site, September 1994.

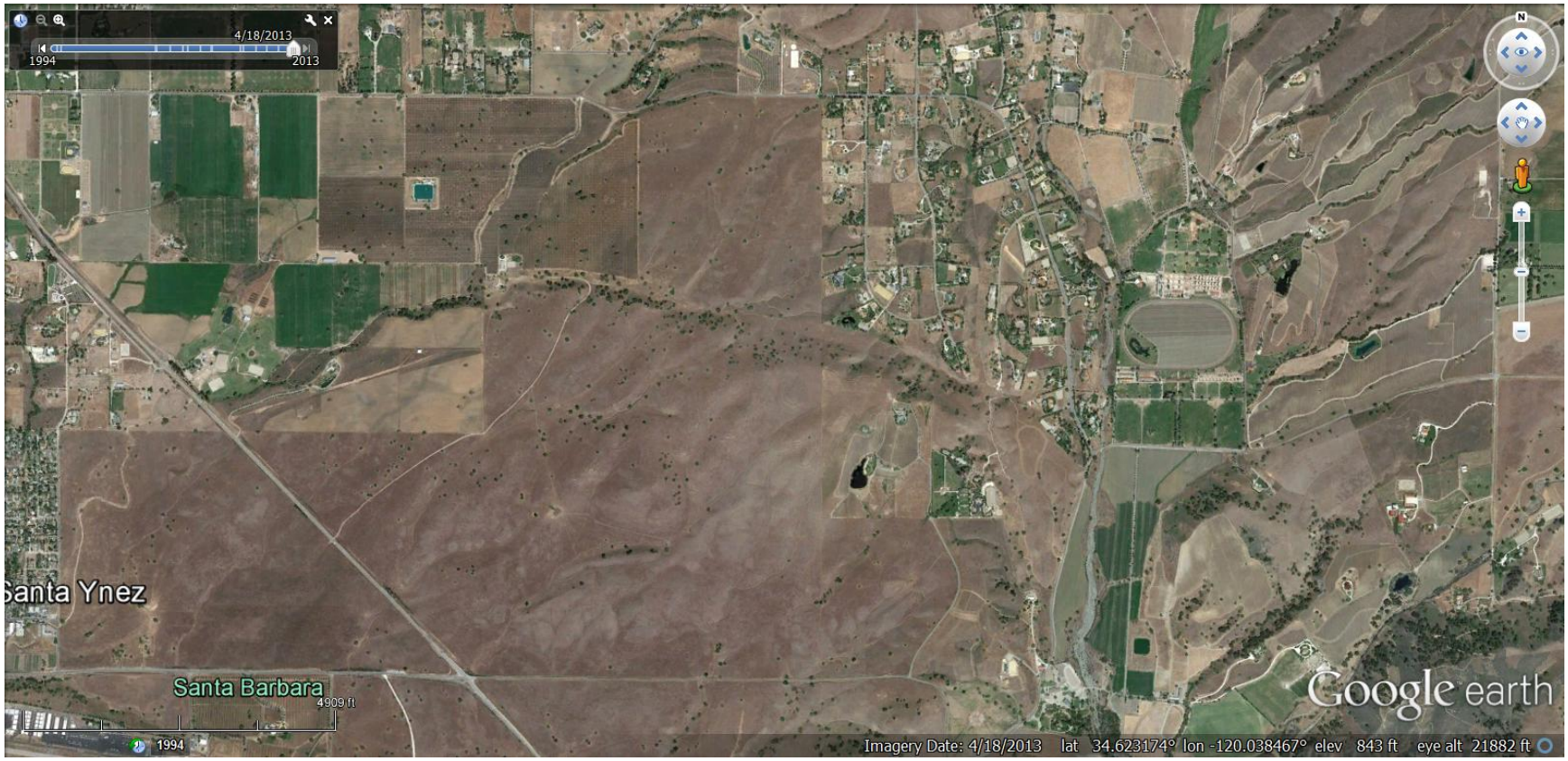

Figure 3. Land use in and around Camp 4 project site, April 2013.

Geology and Soils. Jennings (1991) maps the geology of the area including the project site as Quaternary (Pliocent-Pleistocene), non-marine, mostly unconsolidated alluvium and terrace deposits. The rolling hills in the northern and central portions of the project site are composed of non-marine Paso Robles Formation deposits of Plio-Pleistocene age (2-5 mybp), with younger alluvium throughout the southern portions of the site. These terrace deposits (old stream and floodplain alluvium) are dissected by numerous small gullies and some larger streams (e.g., Santa Agueda Creek) that drain to the Santa Ynez River. The Miocene (5-24 mybp), marine Monterey Formation is exposed in the bottom and side walls of many of the drainages that have cut below these younger terrace deposits (Norris, 2003).

Surface elevations range across the project site from about 675 feet above sea level in the southeastern portions to approximately 845 feet on hilltops along a ridgeline in the south-central portion of the site.

Soils in the project site are derived from this parent material and are described by Shipman (1972) as consisting of three series:

Santa Ynez Series: The Santa Ynez soil series (SnC) consists of moderately well-drained, gravelly, fine sandy loams underlain by gravelly clay subsoils. These soils developed on old water-deposited terraces, commonly in swales. This soils type is restricted to a few drainages and swales and an upland area in the southwestern portions of the project area, north of the junction of Highways 154 and 246. Permeability is very slow. Depth to the clay subsoil is 20-30 inches and on gentle slopes a perched water table forms above the clay subsoil after rains that may be conducive to vernal pool formation. Olson (1992) describes vernal pools in this soil type from sites located approximately 2-3 air miles east of the southeastern edge of the project site.

Chamise Series: The Chamise series consists of well-drained soils that developed over gravelly beds of silt and clay and sandy, water-deposited materials. These soils contain a large number of water-rounded fragments of Monterey Shale and are on dissected high terraces. Chamise shaly loam (ChF) occurs on dissected, old terraces throughout the central portion of the project site. Permeability is moderately slow and runoff is rapid. The subsoil of this soil type consists of a very sticky, plastic clay that may function as a hardpan layer in vernal pool formation. Olson (1992) describes vernal pools in this soil type on Sedgwick Ranch, approximately three air miles north of the northern edge of the project site.

Positas Series: The Positas series consists of well-drained fine, sandy loams with a clay subsoil. These soils occur throughout the upper Santa Ynez Valley on smooth, bench-like terraces that are broken by narrow, steep-sided drainages. Positas fine sandy loam (PtC, PtD, and PtE variants, depending on slope) occurs throughout the project site. Permeability is very slow and in a representative soil profile of this series, the subsoil is a heavy, plastic clay that forms the hardpan beneath vernal pools. The distribution of the PtE soil variant in the southern half of the site broadly coincides with the mapped limits of Critical Habitat Unit 31 for the vernal pool fairy shrimp (*Branchinecta lynchi*), a federally-listed vernal pool crustacean (USFWS, 2006).

Vegetation Alliances (Plant Communities). The following descriptions of plant communities observed within the 1,433-acre project site are based on field observations

from public roads around the perimeter of the site and analysis of recent aerial photographs. Because the site could not be accessed, these descriptions are necessarily general. Based on these observations, the project site supports several major vegetation alliances. Vegetation alliances are based on recurring associations of dominant plant species and are used by the National Vegetation Classification System and the Manual of California Vegetation (CDFG, 2002; Barbour et al., 2007; Sawyer et al., 2008) to provide specific descriptions of plant communities.

Bromus (diandrus, hordeaceus)-Brachypodium distachyon **Semi-Natural Stand (Non-Native Annual Grassland).** This is the most common vegetation alliance in the project site, covering all areas that have not been converted to agriculture. It occurs as an understory in oak savanna and as a distinct plant community in areas that historically may have been oak savanna, but which, through a combination of intentional removal and/or incompatible agricultural practices, have lost oak trees.

Because the field observations that form the basis for this report were conducted in the dry season, it is possible that this vegetation alliance could be defined on the basis of annual native indicator species (e.g., *Deinandra fasciculata* alliance or *Eschscholtzia* (*californicus*) alliance of Sawyer et al., 2008). Representative understory species observed from the perimeter roads around the project site include: rip-gut brome (*Bromus diandrus*), soft chess (*B. mollis*), red brome (*Bromus madritensis* subsp. *rubens*), wild oats (*Avena* sp.), redstem filaree (*Erodium cicutarium*), doveweed (*Eremocarpus setigera*), narrow-leaved milkweed (*Asclepias fasciculatus*), broad-leaved milkweed (*Asclepias eriocarpa*), star-thistle (*Centaurea* sp.), telegraph weed (*Heterotheca grandiflora*). Patches of native grasslands (e.g., *Nassella* spp.) may be present on-site, but could not be observed or evaluated given the constraint on site access.

Ruderal vegetation is non-native and some native grasses, forbs, and some shrubs that share the ability to rapidly colonize disturbed sites. These species are also common elements of non-native annual grassland and may include: broad-leaved filaree (*Erodium botrys*), redstem filaree (*Erodium cicutarium*), scarlet pimpernel (*Anagallis arvensis*), several species of mustards (*Brassica* spp.), various species of clover (*Trifolium* spp.), wild radish (*Raphanus sativa*), vetch (*Vicia* sp.), dock (*Rumex* sp.), smilo (*Pipatherum miliaceum*), telegraph weed (*Heterotheca grandiflora*), Russian thistle (*Salsola tragus*), and horehound (*Marrubium vulgare*).

***Quercus lobata-Quercus agrifolia*-Grass Alliance.** This vegetation alliance describes an association between valley oak, coast live oak, and grassland and covers most of the project area. This alliance is characterized by widely scattered valley oaks (*Quercus lobata*) (generally on deeper terrace soils) and coast live oak (*Quercus agrifolia*) (generally on shallower soils on slopes), with an understory of non-native annual grassland. For the purposes of this document, this alliance is called oak savanna and includes an understory of annual grassland (see discussion of grassland alliance). This alliance is classified as having high conservation priority by the State of California (CDFG , 2002).

The quality of oak savanna habitat varies widely across the project site, from relatively densely arboreal savanna in the central and northwestern portions, to widely spaced mature trees that are remnants of formerly more dense savanna over much of the southern and eastern half of the site. Long-term agricultural practices (grazing, dry farming, and row crop agriculture) have reduced oak tree density, eliminated oaks, and significantly reduced oak recruitment for decades. The observed result today are widely scattered, very old trees with very low or no recruitment. Over time, savanna habitats have been and are converting to non-native annual grassland.

Along the north-facing slopes of a central ridgeline that runs west-east across the north-central portion of the site, the density of coast live oaks and valley oaks is higher, almost approaching a woodland canopy structure in places. The northwestern portion of the project site is currently under cultivation, mostly as vineyard or clover/alfalfa production. The vineyards still support several dozen mature valley and coast live oaks.

***Artemisia californica-Eriogonum fasciculatum* Alliance.** Small, highly disjunct patches of this regionally widespread vegetation alliance occur on some north-facing slopes in the project site. Dominant species (visible with binoculars) include: California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), coyote bush (*Baccharia pilularis*), coast sunflower (*Encelia californica*), coast goldenbush (*Isocoma menziesii*), and poison oak (*Toxicodendron diversilobum*).

***Baccharis salicifolia* Shrubland Alliance.** This alliance occurs in seasonal and intermittent drainages and drainage swales, such as Zanja de Cota Creek, Santa Agueda Creek, and along the Santa Ynez River floodplain. Stands usually form open shrublands or thickets in riparian corridors with coyote bush (*Baccharis pilularis*), tree tobacco (*Nicotiana glauca*), sandbar willow (*Salix exigua*), arroyo willow (*S. lasiolepis*), elderberry (*Sambucus mexicana*). Trees, represented by coast live oak (*Quercus agrifolia*) and valley oak (*Q. lobata*), are scattered along the edges and top-of-bank along these drainages. The herbaceous layer is sparse to non-existent.

Southern Vernal Pool Alliance. See discussion below under ***Special-Status Biological Resources***.

General Wildlife Resources. The predominant wildlife habitat on-site is grassland and oak savanna and this habitat is extensive and connected. Consequently, the project site is expected to support a broad diversity of animal species. Common wildlife species expected to inhabit open grassland include: western fence lizard, southern alligator lizard, western skink, common kingsnake, gopher snake, mourning dove, western kingbird, common raven, northern mockingbird, European starling, house finch, turkey vulture, American kestrel, red-tailed hawk, long-billed curlew, ornate shrew, black-tailed jackrabbit, California ground squirrel, California vole, Botta's pocket gopher, western harvest mouse, coyote, grey fox, bobcat, long-tailed weasel, American badger, and black-tailed deer.

Oak savanna and oak woodland habitat occurs extensively in the northern, central, and southwestern portions of the project site and these open woodlands are known to support a diverse resident fauna that overlaps broadly with grassland fauna. Depending on ground

cover, cover objects, and proximity to seasonal drainages, amphibians such as black-bellied slender salamander, arboreal salamander, ensatina, western spadefoot, Pacific tree frog, and western toad are expected to inhabit oak savanna in the project site. Some of the more common reptiles known to frequent this habitat include southern alligator lizard, western fence lizard, western skink, common kingsnake, ringneck snake, gopher snake, American kestrel, red-tailed hawk, white-tailed kite, western kingbird, California quail, yellow-billed magpie, acorn woodpecker, Lewis's woodpecker, California towhee, American robin, American crow, European starling, house finch, Virginia opossum, raccoon, Botta's pocket gopher, broad-footed mole, Audubon's cottontail, brush rabbit, California ground squirrel, deer mouse, brush mouse, California mouse, dusky-footed woodrat, striped skunk, coyote, bobcat, black bear, mountain lion, and black-tailed deer.

Patches of scrub habitat on-site are small and disjunct, but include riparian scrub along seasonal drainages. These habitats are expected to support Pacific treefrog, coast horned lizard, southern alligator lizard, California quail, Anna's hummingbird, wrentit, bushtit, Bewick's wren, western scrub-jay, California towhee, American kestrel, and brush rabbit.

Seasonal water features may be used by a wide variety of wildlife and they provide specialized habitat for many plant and animal species. Wildlife that may occur in seasonal water features on-site include one or more species of vernal pool crustaceans (e.g., fairy shrimp), western spadefoot, Pacific treefrog, western toad, long-billed curlew, and killdeer.

Special-Status Biological Resources. This section summarizes the distribution and status of plant, wildlife, and aquatic species that are known from or potentially occur in the project area. These species are listed or proposed for listing under Federal and State Endangered Species Acts, as well as species recognized as Rare by the California Native Plant Society (Tibor, 2001), or are considered Species of Special Concern by the California Department of Fish and Wildlife (CDFG, 2009; CNDDB, 2013). The status and known or potential occurrence of special-status plants and animals in and around the project site is summarized in Tables 1 and 2, respectively. There are potentially three special-status plant communities on-site (see following discussion).

Special-Status Plant Communities. Vernal wetlands, if present, belong to the ***Southern Vernal Pool Vegetation Alliance*** and would be part of the Santa Barbara Vernal Pool Region of Keeler-Wolf et al. (1998) and Sawyer et al. (2008, and references therein). This vegetation alliance is considered to be of high conservation priority by the State of California (CDFG, 2002). Although the project site does not support any permanent drainages or well-developed riparian corridors, the tablelands throughout the central and southern portions of the site are dissected by a series of seasonal swales and small, unnamed seasonal drainages that generally run southward and southwestward to the Santa Ynez River. Tributaries of Zanja de Cota Creek, the largest on-site drainage, run northeast to southwest across the northwestern portion and east to west across the center of the site. Santa Agueda Creek runs north to south approximately 0.9 air miles east of the eastern edge of the project site. The Santa Ynez River runs east to west approximately 1.3 air miles south of the southern edge of the project site (Fig. 4).

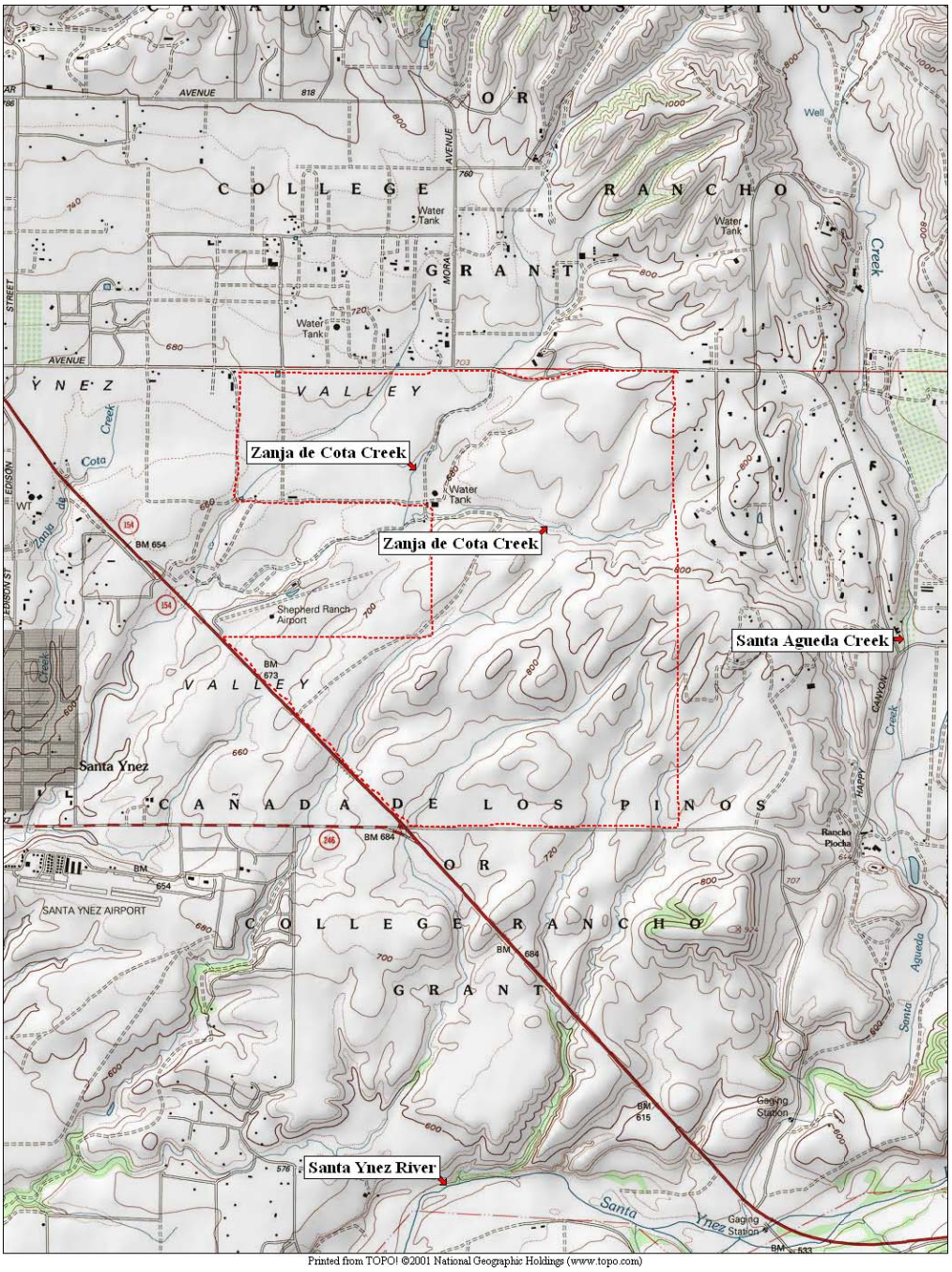

Figure 4. Drainages on and around project site. Note number of unnamed swales and drainages running northeast to southwest across project site. These drainages may support seasonal water features of biological interest. Approximate site boundaries are indicated by red line.

The presence of vernal wetlands or other seasonal water features occur on-site could not be determined by observations from the perimeter observation points, but there is strong circumstantial evidence that the project site supports these special-status resources. For example, Olson (1992) describes vernal pools on the University of California (UC) Sedgwick Ranch Natural Reserve that are located approximately 2-3 air miles north of the project site

on the same soil type that occurs extensively on the project site, Chamise shaly loam (ChF). The USFWS mapped Critical Habitat Unit 31 the federally-listed vernal pool fairy shrimp (*Branchinecta lynchi*) to include the southern half of the project site (USFWS, 2006). Other protected fairy shrimp, e.g., *Linderiella occidentalis*, are known from vernal pools in the region (Table 2). Swales and some of the more well-defined drainage channels, including Zanja de Cota creek and its tributaries, may support seasonal wetlands or seasonal water features that may provide habitat for facultative and/or obligate vernal pool flora and fauna.

These wetlands are potentially regulated by State- and or Federal agencies. Formal wetland delineations are necessary to determine their status and map the wetland/upland boundary within each feature. Such delineations were beyond the scope of work of the present document, but should be investigated further if future development could affect these drainages and/or their respective watershed slopes.

The ***Valley Oak-Coast Live Oak-Grass Vegetation Alliance***, which occurs over much of the project site, is classified as having high conservation priority by the State of California (CDFG, 2002). Additionally, individual coast live oaks and valley oaks are protected by County regulations, which also recognize the local and regional importance of oak savanna and oak woodlands in maintaining biodiversity in the region (County of Santa Barbara, 2008). Large numbers of mature coast live oak and smaller numbers of mature valley oaks are scattered throughout the project site. These trees are integral structural components upon which much of the animal biodiversity found on-site depends because they provide cover, food, roosting, and/or nesting sites. For example, several large oaks scattered throughout the North and South parcels are "granary trees", i.e., trees used by family groups of acorn woodpeckers as acorn storage sites and around which these family groups focus their activities for many decades. Valley oaks and coast live oaks are slowly disappearing from the project site because old trees die and are not replaced by recruitment. The gradual loss of oaks transforms oak savanna to non-native, annual grassland, significantly lowering biodiversity and degrading the character of the landscape.

Native Grassland. Native grasses may be present on-site, but could not be evaluated given the limitations on site access. If present, patches of native grasses would have to be analyzed to see if they meet minimum County thresholds for classification as "native grasslands. The County's Environmental Thresholds and Guidelines Manual defines native grasslands on the basis of density (>10% relative cover) and areal extent (>0.25 acres of >10% relative cover). The Manual defines relative cover as, "the cover of a particular species as a percentage of total plant cover of a given area." The Manual also instructs that, *"Native grasslands which are dominated by perennial bunch grasses such as purple needlegrass (Stipa pulchra) tend to be patchy (the individual plants and groups of plants tend to be distributed in patches). Therefore, for example, where a high density of small patches occurs in an area of one acre, the whole acre should be delineated if native grassland species comprise 10 percent or more of the total relative cover, rather than merely delineating the patches that would sum to less than one acre." Removal or disturbance to a patch or patches of native grasses less than 0.25 acres, which is clearly isolated and is not part of a significant native grassland or an integral component of a larger ecosystem, is usually considered insignificant."* (County of Santa Barbara, 2008).

Special-Status Plants. Table 1 lists rare, threatened, or endangered plants that are known from the project region and potentially may occur on the project site because it contains suitable habitat.

Table 1. Rare, Threatened, and Endangered Plants Known From or Potentially Occurring in Project Site.

Common Name (Scientific Name)	CNPS Listing Status*	Flowering Time and Habitat	Nearest Known Occurrence	Potential for Occurring in Project Site
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	List 1B	February-June Vernal pools and vernal flats	Edge of Hwy 154 between Santa Ynez River and San Lucas Creek, about 2 air mi SE project site (1997)	Moderate to high potential in stony grasslands in central and southern portions of project site
Davidson's saltscale (*Atriplex serenana* var. *davidsonii*)	List 1B	April-October Coastal sage scrub on alkaline soils	Near Hwy 101, N of turnoff to Zaca Canyon, about 7 air mi NW project site	Low potential; if present, would occur in coastal sage scrub, which is uncommon on project site
Dwarf calycadenia (*Calycadenia villosa*)	List 1B	May-October Chaparral, woodland, grassland, seeps	Old record for vicinity of Los Alamos; about 6 mi NW of project site (no date)	Moderate potential in grasslands on project site
Hoover's bent grass (*Agrostis hooveri*)	List 1B	April-July Chaparral, oak woodland, grassland	Upper west fork of Ballard Cyn., approx. 3.5 air mi NW project site (no date)	Moderate to High potential in grassland and savanna on-site
Late-flowered mariposa lily (*Calochortus weedii vestus*)	List 1B	June-August Chaparral, woodland, often on serpentine	San Marcos Pass, E of summit, about 12 air mi SE project site (1955) Painted Cave Road, S of jct E Camino Cielo, about 14 air mi SE project site (2006) E Camino Cielo at Laurel Springs, about 13 air mi SE project site (2006)	Moderate potential in oak savanna on-site, but all known occurrences are in montane areas surrounding the Santa Ynez Valley
Mesa horkelia (*Horkelia cuneata* subsp. *puberula*)	List 1B	February-September Chaparral, oak woodland, coastal sage scrub, and sand hill scrub on sandy soils	Solomon Hills approx. 3.3 air mi SE jct Clark Ave x Hwy 101, about 10 mi NW project area	Low potential; soils on-site may be unsuitable for this species (clays or silts
Mile's milk-vetch (*Astragalus didymocarpus var. milesianus*)	List 1B	March-June Coastal sage scrub on clay soils	2.5 mi NW Buellton, approx. 7.5 air mi WNW project site (1935)	Moderate potential in grassland and savanna on clay soils

			N side San Marcos Pass, about 12 air mi SE project site (1930)	
Needlegrass (*Nassella pulchra* and/or *N. lepida*)	Local Concern	February-June	Grassland; coastal sage scrub and chaparral; oak savanna	High potential of occurring on-site
Ojai frittilary (*Frittilaria ojaiensis*)	List 1B	March-May Woodland, chaparral on rocky soils	Upper Oso Canyon, about 14 air mi E project site (1961)	Moderate potential in stony grasslands on-site
Round-leaved filaree (*Erodium macrophylla*)	List 2	March-May Coastal sage scrub and grassland	Sedgwick Ranch (UC Natural Reserve), 2.3 air mi W of summit of Figueroa Mountain, about 7 air mi NNW project site (2008)	Moderate potential in grassland on-site
Santa Barbara honeysuckle (*Lonicera subspicata* var. *subspicata*)	List 1B	May-September Coastal sage scrub and chaparral	Alamo Pintado Creek, 7-8 mi N Los Olivos, about 10-11 air mi NW project site (1961)	Low potential because of lack of coastal sage scrub habitat
Santa Lucia dwarf rush (*Juncus luciensis*)	List 3	May-July Vernal pools and vernal flats	3-5 mi W San Marcos Pass along W Camino Cielo, about 8-10 air mi SE project site (1956)	Moderate potential in vernal flats or other seasonal water features associated with swales and seasonal drainages on-site
Saw-grass (*Cladium californicum*)	List 2	April-July Freshwater marsh, seeps, seasonal wetlands	Vernal wetland off Price Canyon Rd, NE of Los Alamos, about 3.5 mi NW of project area	Moderate potential in vernal flats or other seasonal water features associated with swales and seasonal drainages on-site
Southern tarplant (*Centromadia parryi* ssp. *australis*)	List 1B	July-September Vernal flats and grassland	Coastal plain W of Goleta, about 12 air mi S project site (2005)	Typically found in coastal grasslands, but project site grasslands closely resemble coastal sites where this species has been found
Umbrella larkspur (*Delphinium umbraculorum*)	List 1B	April-June Coastal sage scrub and chaparral	Alamo Pintado Creek, approx. 7 mi N Los Olivos, about 10 air mi NW project site (1962) Lower Oso Cyn, N of Santa Ynez River near Los Prietos Boys Camp, about 10 air mi ESE project site (1962) Spring between Cachuma Saddle and McKinley Mtn, about 10 air mi NE project site (1976)	Low potential because of lack of coastal sage scrub on-site

White-veined monardella (*Monardella hypoleuca* ssp. *hypoleuca*)	List 1B	June-August Coastal sage scrub, chaparral, and woodland	Camino Cielo betw San Marcos Pass and Paradise Cyn Rd, about 10 air mi SE project site (1964)	Low potential because of lack of suitable coastal sage scrub on-site

**** CNPS Status codes:***

List 1B = species classified as rare-threatened, or endangered in California and elsewhere
List 2 = species classified as rare, threatened, or endangered in California but more common elsewhere.
List 3 = rare, need more information on distribution and abundance.
Local Concern = Species uncommon or endemic to Santa Barbara County.

Table 2. Rare, Threatened, and Endangered Wildlife Known From or Potentially Occurring in Project Region.

Common Name (Scientific Name)	Regulatory Status*	Habitat	Nearest Known Occurrence	Distribution and Status in Project Site
INVERTEBRATES				
California linderiella (*Linderiella occidentalis*)	SSC	Vernal pools; man-made, seasonal water features, including stock ponds and ditches	Cachuma Canyon near Lake Cachuma, about 5 air mi E project site (Eriksen and Belk, 1999)	Moderate potential in vernal wetlands and other seasonal water features on-site
San Diego fairy shrimp (*Branchinecta sandiegonensis*)	FE	Vernal pools; man-made, seasonal water features, including stock ponds and ditches	Coastal plain W of Goleta, about 12 air mi S project site (Fugate, 1993)	Moderate potential in vernal wetlands and other seasonal water features on-site
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Vernal pools; man-made, seasonal water features, including stock ponds and ditches	Cachuma Canyon near Lake Cachuma, about 5 air mi E project site (Eriksen and Belk, 1999) 1 air mi NW and 0.25 air mi SW jct Dominion Road x Orcutt-Garey Road, eastern Santa Maria Valley, about 18 air mi NW project site (Hunt, pers. observ., 2000, 2001) UPRR ROW. approx. 0.5 mi W Dos Pueblos Cyn, W of Goleta, about 12 air mi S project site (Hunt, pers. observ., 2001)	Moderate to high potential in vernal wetlands and other seasonal water features on-site
FISHES				
Southern steelhead (*Oncorhynchus mykiss*)	FE	Permanent and intermittent streams and rivers	Formerly occurred in Zanja de Cota Creek in 1930s (DFG, 1934; Becker, 2007); other tributaries in vicnity; main stem of Santa Ynez River	Potential impacts to this species from proposed project as it affects the hydrology, sedimentation, and pollution of Zanja de Cota Creek
AMPHIBIANS				
Western spadefoot	SSC	Grassland, oak savanna	Alisos Cyn Road at W edge of	Moderate potential in vernal

(*Spea hammondii*)			South Parcel (1987-UCSB specimen) and at several sites within 2 miles SW and W of project area (2000-2009) Alamo Pintado Canyon, about 3 air mi WNW project site (no date – sighting, UCSB record)	wetlands and other seasonal water features on-site. Man-made ponds and lakes E of project site may provide breeding habitat for this species
California red-legged frog (*Rana draytonii*)	FT	Intermittent and perennial streams and ponds, oak woodland, chaparral, grassland	Zaca Creek, W jct Hwy 101 x 154, about 6 air mi NW project site (Hunt, pers. observ., 1999) Santa Ynez River, 2 mi W Solvang, about 7 air mi WSW project site (2007) Zaca Creek near Jonata Park Rd, about 6 air mi W project site (2000) Tributary of Santa Ynez River, 1 mi SE jct Hwy 246 x 154 (= Zanja de Cota Creek), about 1 air mi W project site (2003) Quiota Creek, 3 mi S Santa Ynez, about 4 air mi W project site (2002)	Moderate potential; suitable breeding habitat is apparently absent on-site, but suitable man-made breeding sites occur several hundred feet E of project site; CRLF occur in main stem Santa Ynez River and probably occur in tributaries such as Zanja de Cota Creek; these aquatic sites are broadly connected to upland grassland and oak savanna habitats on the project site, which provide foraging and oversummering habitat for frogs
REPTILES				
Coast horned lizard (*Phrynosoma coronatum*)	SSC	Found in sand hills, grassland, open scrub, and open woodland habitats	Santa Ynex River floodplain between Lake Cachuma and Buellton, about 2-5 air mi S and SW of project site (Hunt, pers. observ., 1998-2011) Solomon Hills, approx. 3.3 air mi SE jct Clark Ave x Hwy 101 in Nov 2010 (Hunt, pers. observ), about 10 air mi NW project site	Moderate potential in oak savanna and grassland areas on-site

			Cachuma Saddle, about 7 air mi NE project site (1980)	
California legless lizard (*Anniella pulchra*)	SSC	Found in friable, sandy soils in coastal dunes, dune scrub, chaparral, and woodland	Sedgwick Ranch (UC Natural Reserve), about 6.5 air mi NNW project site (1999) Figueroa Mtn Rd, about 3 mi N Los Olivos, about 6 air mi NNW project site (2009) Tequepis Canyon, N slope Santa Ynez Mtns, about 5 air mi SE project site (Hunt, pers. observ., 1988)	Low potential; on-site soils have significant silt and clay component as consequence of derivation from Monterey Shale
Coast patch-nosed snake (*Salvadora hexalepis virgultea*)	SSC	Found in sand hills, grassland, savanna, and open scrub habitats	Santa Maria Valley (Hunt, pers. observ), about 18 air mi NNW project site Coastal sage scrub along N slope Santa Ynez Mtns and S slope San Rafael Mtns (Hunt, pers. observ.)	Moderate potential in oak savanna and grassland
Two-striped garter snake (*Thamnophis hammondii*)	SSC	Floodplain habitats associated with perennial and intermittent streams, and adjacent grassland and scrub habitats	Birabent Canyon, 1 mi N Figueroa Guard Station, about 6 air mi N project site (1986) 3.2 mi NE jct Hwy 154 x Figueroa Mtn Road, about 5 air mi NNW project site (1993) Happy Canyon Road, 2 mi S Cachuma Saddle, about 6 air mi NE project site (1993)	Moderate potential in seasonal drainages and swales on-site
Western pond turtle (*Actinemys marmorata*)	SSC	Populations associated with permanent water features (rivers, streams, ponds), but individuals range widely along intermittent and seasonal drainages	Known from permanent and intermittent streams at several locations along N slope of Santa Ynez Mtns (e.g., Nojoqui Creek, Quiota Creek, Santa Ynez River) and S slope San Rafael Mtns (e.g., Cachuma Creek, Birabent Cyn Creek) Santa Ynez River between Quiota	No suitable aquatic habitat on-site, but project site is within dispersal distance from man-made ponds E of project site; could disperse along Zanja de Cota floodplain

			Creek and Bradbury Dam, about 2 air mi S project site (Hunt, pers. observ.)	
BIRDS				
Golden eagle (*Aquila chrysaetos*)	FP	Resident in region; forages in grassland and oak savanna; nests in mountains or grasslands on steep slopes and in isolated trees	Pair regularly observed foraging and courting in Solomon Hills in 2011, approx. 10-12 miles NW of project site (Hunt, pers. observ.) Regularly observed on Sedgwick Ranch (UC Natural Reserve and vicinity, including project site (Hunt, pers. observ.)	High potential to use grasslands and savanna on-site as foraging habitat; unlikely to nest on project site
Ferruginous hawk (*Buteo regalis*)	SSC	Uncommon fall transient and winter visitor to grasslands and savanna in region	Observed several times over past 10 years in Santa Ynez Valley (Hunt, pers. observ.) Near jct Hwy 101 x Hwy 246 at Buellton, abour 7 air mi W project site (1992)	High potential to use grasslands and savanna on-site as foraging habitat during fall and winter
Swainson's hawk (*Buteo swainsoni*)	FT	Winter transient to grassland, oak savanna, and open woodland habitats	Broadly distributed over region	Project area and surrounding open spaces provide suitable winter foraging habitat
Northern harrier (*Circus cyaneus*)	SSC	Grassland, open scrub habitats, and agricultural fields	Observed in Santa Ynez Valley on several occasions (Hunt, pers. observ.)	High potential, especially around agricultural fields in northwestern portion of project site
White-tailed kite (Elanus leucurus)	FP	Grassland, oak savanna, and open scrub; forms communal roosts in fall/winter in willow woodlands	Regularly observed foraging in Los Alamos Valley grasslands and Barka Slough area, 1-5 miles from project area (Hunt, pers. observ.)	High potential in grasslands and savanna on-site as foraging habitat; suitable nesting habitat in oaks
Cooper's hawk (*Accipiter cooperi*)	SSC	Resident in oak riparian woodland throughout region	Found throughout region (Hunt, pers. observ.). Nearest CNDDB record is from W of Zanja de Cota Crk, 1 mi S Santa Ynez, about 1.5 air mi W project site (1989)	High potential in oak savanna habitat on-site
Sharp-shinned hawk (*Accipiter striatus*)	WL	Fall and winter transient to open riparian and oak woodlands throughout region	Figueroa Mtn and Sedgwick Ranch (UC Natural Reserve), about 5 air mi N of project site (Lehman, 1994)	Moderate to high potential in oak savanna on-site, particularly in NE and E portions near residential areas

Prairie falcon (*Falco mexicanus*)	WL	Resident in region; frequents grassland and savanna habitats while foraging	Observed in Solomon Hills, about 10 air mi NW project area (Hunt, pers. observ., 2011)	Moderate to High potential in grassland and savanna
Long-billed curlew (*Numenius americanus*)	WL	Frequents sand hills, grasslands, oak savanna, and agricultural fields	Small flocks observed in Los Alamos Valley and western Santa Ynez Valley (Hunt, pers. observ.)	Moderate to High potential in grassland, savanna, and agricultural fields
Nesting hummingbirds (Allen's, Costa's, and rufous hummingbirds)	WL (nesting)	Uncommon spring migrant to shrublands and woodlands	Found throughout region	High potential in oak savanna habitats on-site; likely nests on-site in oaks and scrub habitat
Burrowing owl (*Athene cunicularia*)	SSC	Winter transient to grasslands, savanna, and coastal sage scrub habitats	Regularly observed in winter in Santa Ynez Valley (Lehman, 1994)	Moderate to high potential in grassland and oak savanna as wintering species
Loggerhead shrike (*Lanius ludovicianus*)	SSC	Resident in oak savanna and scrub habitats in region	Observed in Santa Ynez Valley at various times (Hunt, pers. observ.)	High potential to forage and nest in oak savanna on-site
Yellow-billed magpie (*Pica nuttallii*)	WL	Resident in oak savannah and open oak woodland in region. Nests and communal roosts are protected	Found throughout region	Observed on-site; communal roosts in oak trees on-site; nests here
Lewis's woodpecker	WL	Irregular fall transient and winter visitor	Irregularly observed in oak savanna in Santa Ynez Valley (Lehman, 1994)	High potential in oak savanna on-site
Nuttall's woodpecker (*Picoides nuttallii*)	WL	Resident in oak woodland and oak savanna	Observed throughout region	High potential to forage and nest in oak savanna
Red-breasted sapsucker (*Sphyrapicus ruber*)	WL	Uncommon transient and winter visitor to region	San Rafael Mtns (Lehman, 1994)	Moderate to high potential to use oak savanna as foraging habitat; low potential as nesting species
California horned lark (*Eremophila alpestris actia*)	WL	Occurs in grassland, open scrub, and savanna habitats; relatively common in region in early spring and summer; found throughout region	Found throughout region	High potential in grassland and oak savanna; may nest here in summer
Oak titmouse (*Baeolophus inornatus*)	WL	Resident in oak savanna and oak woodland; found throughout region	Found throughout region	Observed on-site in oak savanna; nests in oak savanna on-site
Grasshopper sparrow (*Ammodramus savannarum*)	SSC	Uncommon and local summer resident in savanna, grassland, and coastal sage scrub	Found throughout region	Moderate to high potential in grassland and oak savanna on-site
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	WL	Rocky, hilly grassland and oak savanna	Found throughout region	Moderate to high potential in rocky grassland on-site
Lark sparrow	WL	Resident in grassland and oak	Commonly observed in Santa	High potential to forage and nest

(*Chondestes grammacus*)		savanna throughout region	Ynez Valley (Hunt, pers. observ.)	in grassland and oak savanna on-site
Tricolored blackbird (*Agelaius tricolor*)	SSC	Uncommon in freshwater marshes, lakes, ponds, and irrigated agricultural areas	Sedgwick Ranch (UC Natural Reserve), N confluence Lisque Creek x Figueroa Creek, about 3.5 air mi NNW project site (2003)	Moderate potential to forage around swales and other seasonal water features on-site and around agricultural fields in northwestern portion of project site
Lawrence's goldfinch (*Carduelis lawrencei*)	WL	Locally uncommon in grassland and open woodland habitats throughout region	Irregularly observed in Santa Ynez Valley (Hunt, pers. observ.)	Moderate to high potential to forage in grassland and oak savanna habitats on-site, as well as weedy agricultural areas in N and NW portions of site
MAMMALS				
Pallid bat (*Antrozous pallidus*)	SSC	Grassland and open scrub and woodland; riparian woodland	Roost site shared with *Corynorhinus* on Santa Ynez River, approx. 2 air mi S project site (2005) Roost site with *Corynorhinus* in Zaca Creek, about 7.5 air mi WNW project site (2001) Vandenberg Air Force Base, about 15 air mi SW of project site (Pierson et al., 2002)	High potential to use grassland and oak savanna habitats on-site as foraging habitat; roost sites in vicinity of project site; may use oak trees as temporary roosts
Townsend's big-eared bat (*Corynorhinus townsendii*)	SSC	Grassland and open scrub and woodland; riparian woodland	Roost site shared with *Antrozous* on Santa Ynez River, approx. 2 air mi S project site (2005) Roost site with *Antrozous* in Zaca Creek, about 7.5 air mi WNW project site (2001)	High potential to forage over grasslands and oak savanna habitat on-site; roost sites near project site
Western red bat (*Lasiurus blossevillii*)	SSC	Grassland and woodland habitats	Migratory species; overwinters along coastal regions of SB County; nearest observations are from Vandenberg AFB, about 30 mi SW of project area	Moderate to high potential to forage in grassland and oak savanna habitat on-site in fall and winter when moving from interior to coastal locations; may use oak trees as temporary roosts
Hoary bat (*Lasiurus blossevillii*)	SSC	Grassland and woodland habitats	Migratory species; overwinters along coastal regions of SB County; observed at Casmalia	Moderate to high potential to forage in grassland and oak savanna habitat on-site in fall and

			Landfill and Vandenberg Air Force Base, about 15-18 air mi W of project site in 2002 (Pierson et al., 2002; Heady, 2002)	winter when moving from interior to coastal locations; may use oak trees as temporary roosts
Yuma myotis (*Myotis yumanensis*)	SSC	Woodland and riparian habitats	Observed foraging along riparian corridor of Santa Ynez River (Hunt, pers. observ.)	High potential to forage in grassland and oak savanna habitats on-site, roost in oak trees
Mastiff bat (*Eumops perotis californicus*)	SSC	Forages over woodland and riparian habitats	White Rock Recreational Area, N of Paradise Canyon, about 5 air mi ESE project site (1998) Vandenberg Air Force Base, about 15 air mi SW of project site (Pierson et al., 2002); coastal Santa Barbara County (Constantine, 1998)	High potential to forage in grassland and oak savanna habitats on-site; roosts in nearby mountains
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	SSC	Grassland, oak savannah, and open scrub and woodland habitats	Bobcat Springs area W of Buellton and Santa Ynez Valley (Hunt, pers. observ., 2013); broadly distributed in grassland and open scrub habitat throughout region	High potential; project area and surrounding open spaces provide suitable foraging habitat
San Diego desert woodrat (*Neotoma lepida intermedia*)	SSC	Rocky grassland and scrub habitats	Several localities where UPRR tracks cross drainages along S slope Santa Ynez Mtns (Hunt, pers. observ.); observed in Santa Ynez Valley and Santa Ynez River riparian corridor (Hunt, pers. observ.), but subspecific identity of individuals from this region is unknown	Low to moderate potential in rocky oak savanna on-site because extent of habitat is limited
American badger (*Taxidea taxus*)	SSC	Open grassland and oak savanna	Several records of DOR individuals along Hwy 101 N and S of Buellton, about 6.5 air mi W project site (1987, 1989, 2013) and near jct Hwy 101 x Hwy 154, about 5 air mi NW project site (1987)	High potential to den and forage in grassland/savanna on both North and South parcels
Mountain lion (*Felis concolor*)	FPF	Oak and riparian woodland, chaparral, oak savanna	Broadly distributed throughout region	High potential for one or more individuals to include project site in home range; dens probably located in Santa Ynez River and

				Santa Ynez or San Rafael mountains
Black bear (*Ursus americanus*)	PF	Oak and riparian woodland, chaparral, oak savanna	Broadly distributed throughout region	High potential for one or more individuals to include project site in home range; dens probably located in Santa Ynez River and Santa Ynez or San Rafael mountains

**** Regulatory Status Key:***

FE: Listed as Endangered by the U.S. Fish and Wildlife Service or National Marine Fisheries Service, according to the statutes of the Federal Endangered Species Act
FT: Listed as Threatened by the U.S. Fish and Wildlife Service or National Marine Fisheries Service, according to the statutes of the Federal Endangered Species Act
SSC: California Species of Special Concern (California Department of Fish and Wildlife), and protected by the California Environmental Quality Act
FP: Fully Protected (California Department of Fish and Wildlife and/or Federal Eagle Protection Act)
FPF and PF: Fully Protected Furbearer (California Department of Fish and Wildlife)
WL: American Bird Conservancy, National Audubon Society, and/or CDFW Watch List species because of regional population declines.

Special-Status Wildlife. The project site potentially supports a large number of special-status animals. The species listed in Table 2 are known from the project region and are evaluated herein because the project site contains suitable habitat.

Habitat Connectivity and Wildlife Movement Corridors. Documenting the existence and relative importance of wildlife movement corridors requires long-term field studies that are beyond the scope of this document (e.g., see discussion and references in Stralberg, 2000 and Gehrt et al., 2010). Any discussion of movement corridors is necessarily species-specific and focuses on dispersal ability, which differs widely for ground-dwelling species versus birds, plants versus animals, animals of different body sizes, etc. In the absence of such field studies, extensive research has shown that biodiversity is generally best conserved by keeping habitats broadly connected, i.e., minimizing habitat fragmentation by anthropogenic disturbance. In other words, the most "porous" movement corridors for wildlife are large landscapes that are broadly connected to other open space.

The project site is large (1,433 acres) and much of the land use therein is compatible with wildlife habitat use and wildlife movement (rangeland). The project site is connected to other open space rangeland to the south and southwest, which more or less retains connectivity to the Santa Ynez River floodplain and riparian corridor and the adjacent north-facing slopes of the Santa Ynez Mountains. Immediately north and west of the project site, land use activities north and west of the project site has converted broad areas of rangeland to row crop agriculture (vineyards, alfalfa/clover production, etc.) and low- to medium density residential/urban uses. Areas east and north of the project site have experienced some fragmentation and conversion of open space, but broad expanses remain on large ranches and preserves, such as the Sedwick Ranch Natural Reserve, which foster connectivity with extensive open space in the San Rafael Mountains. An increasingly uncommon feature of the project site as surrounding areas are developed, is the fact that most of the site is relatively flat, which promotes seasonal wetland formation and has important consequences for the structure and function of wildlife communities.

The most significant barrier to dispersal of ground-dwelling wildlife to and from the project site is Highway 154, which is "semi-porous". Wildlife can move through agricultural fields if there are no fences, however, small-acreage "ranchettes" along the northeastern border of the project site as well as large vineyard areas north and southeast of the project site have erected fences that are complete barriers to wildlife movement.

In a general sense, grassland and oak savanna habitats on the undeveloped portions of the project site, which constitutes approximately 80% of the 1,433-acre property, provides cover, foraging, denning, and nesting habitat for a broad diversity of animal species. Of special note are the large number of raptor and carnivore species known from or potentially occurring on-site by virtue of its size and connectivity to important landscape elements nearby (e.g., Santa Ynez River, Santa Ynez Mountains, San Rafael Mountains).

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APPENDIX 1. CAMP 4 SITE PHOTOGRAPHS TAKEN FROM PERIMETER ROADS (August - September 2013)

Fence lines along borders of some ranchland southeast of the project site that presents a barrier to movement of medium- and large mammals.

View from Armour Ranch Road, looking northwest at Figueroa Mountain and Zaca Peak, showing habitat fragmentation caused by low-density residential development and agriculture.

View from Armour Ranch Road, looking north west at valley-coast live oak savanna and non-native annual grassland habitat on project site.

Non-native annual grassland and oak savanna habitat, looking S at Santa Ynez Mountains from Base Line Road.

View from Armour Ranch Road, looking N at Figueroa Mountain, Zaca Peak (San Rafael Mountains).

Oat production in northwestern corner of project site, with orchard crops off-site to the north.

Clover production on former oak savanna lands in northwestern corner of project site, looking south from Base Line Road.

Vineyard production on former oak savanna land in northwestern portions of project site, looking south from Base Line Road.

Non-native annual grassland and oak savanna habitat in northeastern portion of project site, looking south from Base Line Road. Note higher density of oaks on north-facing slopes associated with tributary of Zanja de Cota Creek. Santa Ynez Mountains in background.