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STATE OF CALIFORNIA
State Energy Resources
Conservation and Development Commission

In the Matter of:	)	Docket No. 15-AFC-01
	)	
APPLICATION FOR CERTIFICATION	)	
OF THE PUENTE POWER PROJECT	)	

Exhibit No. 4017

OPENING TESTIMONY OF LAWRENCE E. HUNT

Testimony of

Lawrence E. Hunt

17 January 2017

Qualifications

I am a vertebrate biologist with a B.S. in vertebrate zoology, an M.S. in vertebrate ecology and systematics, and am a Ph.D. Candidate in ecology and evolutionary biology, specializing in herpetology (amphibian and reptile ecology and evolution). I have resided in southern Santa Barbara County since 1982. I have extensive field experience in coastal dune habitats throughout Santa Barbara and Ventura counties and with most of the vertebrates that occupy these habitats as a result of research and consulting work. The Ventura/Oxnard dune systems surrounding the Mandalay Power Plant site were one of many field study sites throughout the region between 1985-1989 for my dissertation research on the ecology and genetics of California legless lizards (genus *Anniella*), a species recognized by the California Department of Fish and Wildlife (CDFW) as a Species of Special Concern. I have continued to conduct field work in the coastal dunes north, south, and west of the Project site intermittently between 1985 and the present. My last visit to this dune system was in September 2016 when I evaluated dune habitat and land use southeast of the intersection of Harbor Boulevard and West 5th Street. In 1998, I prepared a report for The Nature Conservancy on the origin, maintenance, and land use of dune systems in coastal Santa Barbara and San Luis Obispo counties that also examined the functionally related dune systems found in Monterey, Ventura, and Los Angeles counties (Hunt, 1993). Between 1992 and 1995, I was retained by the City of Ventura and the California Department of Parks and Recreation to document vertebrate resources at Emma Wood State

Beach and the Ventura River estuary, including dunes at the mouth of the estuary (Hunt, Lehman, and Capelli, 1992). In 2004-2005, I was retained by the California Department of Parks and Recreation to evaluate amphibian and reptile resources on San Buenaventura State Beach and McGrath State Beach.

Since 1989, I have been a consulting biologist and sole proprietor of Hunt & Associates Biological Consulting Services, based in Santa Barbara. I specialize in special-status species surveys, biological assessments and evaluations related to CEQA/NEPA permitting, and habitat restoration, with clients ranging from private developers to city and county planning departments and State and Federal resource protection agencies. Much of my consulting work involves evaluating habitat quality in relation to current and historic land use in order to determine the potential for a site to support special-status plants and animals, including Environmentally Sensitive Habitat Areas (ESHA). This work not only requires a knowledge of habitats and wildlife relationships at a particular site, but also the ability to evaluate those site-specific resources as they relate to regional patterns of habitat quality and biodiversity. Much of this work also requires me to conduct an analysis of potential Project-related impacts to biological resources and, where impacts are significant, to formulate mitigation recommendations to reduce these impacts to less than significant levels. In preparing the following testimony, I have relied upon my expertise as a vertebrate biologist with a special focus on the Ventura/Oxnard coastal dune systems; my personal observations made at the site of the proposed Puente Power Plant; and on my review of the documents listed in the **Literature Cited** section.

Testimony

Summary of Testimony. The Puente Power Plant Project (Project) would disrupt or destroy environmentally sensitive habitats, plants, and wildlife located on the Project site and in the immediate vicinity. The Project's impacts on these species and habitats are significant and the mitigation proposed in the Final Staff Assessment (FSA) for the Project is insufficient to reduce impacts to these resources to less than significant levels. First, the Project site, particularly the 2.03-acre wetland located on-site, is itself an environmentally sensitive habitat (ESHA) that is rare and especially valuable as a wetland in a coastal setting. Second, the 2.03-acre wetland, coyote bush scrub, and mule-fat scrub located on-site provides suitable habitat for a variety of rare species, including the globose dune beetle, California legless lizard, California horned lizard, two-striped garter snake, northern harrier, white-tailed kite, and other species. The globose dune beetle, California legless lizard, Blainville's horned lizard, two-striped garter snake, and other species have a moderate to high likelihood of occurring on-site in these habitats because these species are located within the surrounding area, the Project site is physically connected to these off-site habitats, and there are no barriers to dispersal between these habitats and the Project site. Third, if the Project is built, the Project will destroy the existing rare and especially valuable habitat on-site and eliminate or force the relocation of the populations of rare and valuable species that have a high potential of utilizing this habitat, including the globose dune beetle, California legless lizard, Blainville's horned lizard, two-striped garter snake, and other species. Finally, the Project is likely to cause significant impacts to rare and sensitive habitats and species located in the surrounding area, including burrowing owl, western snowy plover, and California least tern. The mitigation measures proposed in the FSA are unlikely to

reduce these impacts below significant levels, thus, the Project could cause these species to abandon the surrounding environmentally sensitive habitat areas.

General Description of Site and Its Biological Value. The proposed Puente Power Plant Project site is located in a formerly extensive dune field that borders the western edge of the Oxnard Plain and stretches from the mouth of the Ventura River to Point Hueneme. The Ventura and Santa Clara rivers provide abundant sources of sand for longshore transport to nearshore areas. From the southern edge of the Santa Clara River estuary southward to Point Hueneme, the dunes lie within a lowland created by a series of ancient channels of the Santa Clara River as it has gradually shifted northward across the Oxnard Plain (Cooper, 1967; Beller et al., 2011). The coastline faces westward and the wind effective for sand transport meets the shore at an obtuse angle. As dropping sea levels exposed extensive continental shelf deposits, winds transported sand landward to this low, flat plain and sand accumulated into dunes. Repetitive cycles of sea level fluctuations during the Pleistocene and Holocene produced a series of dune sheets, with the youngest dunes at the shoreline (source) and the oldest at the interior edge of the dune belt. This pattern is reflected in recurring dune systems found at only a handful of locations up and down the coast of California (Cooper, 1967; Hunt, 1993). The largest of these dune systems, found at San Francisco, El Segundo, and San Diego, have been all but obliterated by urban development. The remaining smaller systems, including the Ventura/Oxnard Plain dune system, have been significantly fragmented and/or the interior (oldest) components eliminated completely by urban and agricultural development. The dune system in which the Project site is situated is unusual in that it retains important remnants of the full spectrum of dune emplacement (age). The

Ventura/Oxnard Plain dune system is a rare and especially valuable geological and biological resource.

The Oxnard Plain portion of the dune system is relatively narrow (0.5 to 0.75 miles wide) and terminates abruptly on the alluvial plain. Three distinct dune configurations are present around the existing power plant and proposed Project site: foredunes characterized by small, hummock-like dunes stabilized by colonizing vegetation; a middle zone characterized by small dune masses interspersed with swales and blow-outs; and interior dunes characterized by larger dune masses that are more or less stabilized by the combined effects of reduced sand transport and vegetation. This physical and temporal template on and surrounding the Project site supports plant communities of high biological value that are considered among the most sensitive habitats in California (e.g., Southern Foredunes, Southern Dune Scrub, and Stabilized Interior Dunes (Holland, 1986; Sawyer et al., 2008).

The middle and back (interior) dune areas support a series of dune swale wetlands, McGrath Lake being the largest of these dune wetlands, but others indicated by willow (*Salix* sp.), mule-fat (*Baccharis salicifolia*) and/or coyote bush (*Baccharis pilularis*) thickets. Pickleweed (*Salicornia* sp.), (*Suaeda* sp.), and salt grass (*Distichlis spicata*) grows densely where brackish flats are exposed or thinly covered with sand. This is the case with the 2.03-acre wetland at the proposed Project site where saline soils were temporarily stockpiled in a depression on top of compacted soil. Soils with increased salinity that are occasionally inundated during storm events create and maintain favorable conditions for these and other native plant species to colonize the site.

Natural vegetation on these dunes is closely tied to dune age, which, in turn, affects the distribution of certain special-status wildlife species that are found here (e.g., globose dune beetle (*Coelus globusus*), California legless lizard (genus *Anniella*), and Blainville's horned lizard (*Phrynosoma blainvillii*).

Suitable habitat occurs on the proposed Project site to support the special-status species listed in the following table. My conclusions are based on years of biological field work in the Ventura-Oxnard dune field, the literature I reviewed and cited, the location of the proposed (and existing) power plant in the dune field, and the fact that there are no barriers to dispersal of wildlife onto suitable (even marginal) habitats on the Project site. The existing chain-link fence that currently surrounds the site is not a barrier to dispersal for the terrestrial species listed in the following table. In other words, the Project site is physically connected to habitats that are occupied by special-status species immediately north and west of the Project site. Focused surveys for these species were not conducted during preparation of the PSA or FSA.

Summary of Presence and Impacts to Rare Species

Species	Regulatory Status	Occurrence Off-Site	Survey Method *	Potential for Occurrence On Project Site	Potentially-Occupied Habitats on Project Site	Potential Impacts If Project Were Constructed
Tidewater goby (*Eucyclogobius newberryi*)	Federal Endangered; California Species of Special Concern	Known from Santa Clara River estuary and J Street Drain (Port Hueneme) (CNDDB; USFWS, 2005)	Visual or seining surveys	Low to Moderate	May occur in Edison Canal during El Nino rain event years when surface runoff lowers salinity	Re-directing outfall from current location to Edison Canal may affect the viability of the Edison Canal as

						habitat for the tidewater goby
Globose dune beetle (*Coelus globusus*)	Special Animals List (CDFW, 2016)	Found in foredune and middle dune habitat around west edge of McGrath Lake (L.E. Hunt, pers. observ, 2005)	Seive sand around leaf litter beneath shrubs and cover objects; late winter or spring	Moderate to High; suitable habitat on Project site	May be found in dunes and sandy soils in the western and northern portions of the Project site and in the proposed existing outfall removal area	Permanent habitat and population loss from site grading
California legless lizard (genus *Anniella*)	California Species of Special Concern	Found in middle dune and interior dune habitats, including dune scrub, mule-fat scrub, ice plant mats, and coyote bush scrub, 400 ft N and 0.7 air mi SSE of Project site (Hunt, pers. observ. 2005, 2006)	Rake soils in leaf litter beneath shrubs; lift up ice-plant mats and rake litter/soil beneath, lift cover objects and rake soils beneath; any month of year, especially winter and spring	Moderate to High; suitable soils and habitat on Project site	May occur in sandy soils in mule-fat scrub, ice plant mats, and coyote bush scrub and beneath cover objects, such as broken concrete and asphalt slabs on-site	Permanent habitat and population loss from site grading
Blainville's horned lizard (*Phrynosoma blainvillii*)	California Species of Special Concern	Found in middle and interior dune habitats, including dune scrub and mule-fat scrub, 0.25 mi N and 0.9 mi SSE of Project site (Hunt, pers. observ, 2004, 2005)	Rake leaf litter beneath shrubs in cold weather; lizards active above-ground in morning and late afternoon in spring and fall	Moderate; suitable habitat on Project site	May occur in sandy soils in mule-fat scrub, ice plant mats, and coyote bush scrub in the N and W portions of the site	Permanent habitat and population loss from site grading
Two-striped garter snake (*Thamnophis hammondii*)	California Species of Special Concern	W and SW edge of McGrath Lake, 500-1,000 ft NNW Project site (Hunt, pers. observ. 2004, 2005)	Visual surveys conducted early morning to find individuals basking in suitable habitat	High; suitable wetland and upland habitat on Project site	May forage in 2.03-acre wetland on-site and in mule-fat scrub, ice plant mats, and coyote bush scrub on-site	Permanent loss of foraging habitats; mortality during grading
California black rail (*Laterallus jamaicensis*)	Federal Threatened; California Species of Special Concern; California Fully Protected Species	Santa Clara River estuary and J Street Drain wetlands (Point Hueneme) (CNDDB)	Winter transient; visual surveys	Moderate	May forage in 2.03-acre wetland on-site	Permanent habitat loss
Burrowing owl	California	Dunes W and	Late fall-	Moderate;	Unlikely to	Permanent

(*Athene cunicularia*)	Species of Special Concern	NW of Project site (CNDDB)	early spring (winter transients); visual surveys	suitable roosting and foraging habitat on Project site	roost on-site but may forage in 2.03-acre wetland habitat and open areas in N and W portions of Project site	loss of foraging habitat; disturbance to individuals roosting off-site from increased noise, lighting, and human presence during operations
Western snowy plover (*Charadrius alexandrinus nivosus*)	Federal Threatened; California Species of Special Concern	Roosts and nests in foredune habitats W and NW of Project site (CNDDB)	Fall to summer; visual surveys	Moderate; suitable roosting and foraging habitat on Project site	May roost and/or forage in dune habitats in W and N portions of Project site	Permanent loss of foraging habitat; disturbance to individuals roosting and/or nesting off-site from outfall removal and increased noise, lighting, and human presence during operations
Calilfornia least tern (*Sternula antillarum browni*)	Federal Endangered; State Endangered; and California Fully Protected Species	Roosts in foredune and open beach habitats W and NW of Project site (CNDDB)	Spring and summer; visual surveys	Moderate; suitable foraging habitat on Project site	May forage in Edison Canal	Alteration of foraging habitat in Edison Canal; disturbance to individuals roosting and/or nesting off-site from outfall removal and increased noise, lighting, and human presence during operations
White-tailed kite (*Elanus leucurus*)	California Fully Protected Species	Observed roosting and foraging over riparian and riverine habitats on lower	Fall to early summer; visual surveys	Moderate; suitable foraging habitat on Project site	May forage over Santa Clara River estuary, Point Hueneme, and Point Mugu wetlands; may	Permanent loss of foraging habitat

		Ventura River and in salt marsh habitats in Goleta Slough (Hunt, pers. observ.); nearest roosts and possible breeding sites are in Simi Hills			forage over 2.03-acre wetland in Project site while transiting between these areas	
Northern harrier (*Circus cyaneus*)	California Species of Special Concern	Observed foraging over agricultural fields 1.3 air mi ESE Project site (Hunt, pers. observ.)	Late fall through winter; visual surveys	Moderate to High; suitable foraging habitat on Project site	May forage in 2.03-acre wetland and over upland habitats on Project site	Permanent loss of foraging habitat
Least Bell's vireo (*Vireo bellii pusillus*)	Federal Endangered; State Endangered	Observed less than 0.2 air mi N Project site (CNDDB; USFWS, 2016)	Spring through summer (nesting); fall (transients); protocol visual and/or acoustic surveys	Moderate	May forage in mule-fat scrub on Project site	Permanent loss of foraging habitat; disturbance to individuals during operation from increased noise and human presence

*** Basic survey methodology used to detect species, if present.**

ESHA Criteria. The California Coastal Act defines ESHA as, "Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments." (California Public Resources Code §30107.5). The FSA for the Project notes that, "There are three important elements to the definition of ESHA (CCC, 2003). "First, a geographic area can be designated ESHA either because of the presence of individual species of plants or animals or because of the presence of a particular habitat. Second, in order for an area to be designated as ESHA, the species or habitat must be either rare or it must be especially valuable. Finally, the area must be easily disturbed or degraded by human activities." (FSA, p. 4.2-8, para. 1). The State of California has prepared a list and descriptions of habitats and plant

and animals species considered to be “rare or valuable”, i.e. special-status (Holland, 1986; Tibor, 2001; CDFW, 2015; Sawyer et al., 2008).

Based on the foregoing, it is my understanding that the presence of *either* rare or especially valuable plants, wildlife, *or* their habitats in areas that can be easily disturbed or degraded meets the Coastal Act’s definition of ESHA.

In addition, it is my understanding that the City of Oxnard’s Coastal Land Use Plan (“CLUP”) gives “highest priority” to the “preservation of sensitive habitat areas and coastal resources.” (CLUP I-2; Exhibit 4024). The Policy 52 of the CLUP states that “[i]ndustrial and energy-related development shall not be located in coastal resource areas, including sensitive habitats . . . .” (Id. at III-42; Exhibit 4024).

Presence of Rare and/or Especially Valuable Habitats and Species On-Site and In Adjacent Areas. The Mandalay Power Plant was constructed in what would certainly be considered ESHA today. Coastal dunes are one of the rarest and most sensitive habitat types in California. The dunes at this location have formed and persist because of a unique combination of geological and geomorphological factors that have created a dune field consisting of young dunes along the coast and old dunes inland. Swales between these dune masses trap water and form a spectrum of wetlands from alkali flats to freshwater lakes. The younger dunes and open beach provides habitat for snowy plover and California least tern. As older dunes become stabilized by characteristic vegetation, they provide habitat for a host of special-status wildlife

species. In total, the mosaic of dunes and wetlands in this dune field provides habitat for a variety of special-status species (see table above).

Although the Project site has been maintained at some level for industrial purposes, because it is physically surrounded by ESHA with no intervening barriers to dispersal, there is a constant potential for special-status habitats and wildlife to occupy the site. For example, the depression associated with the 2.03-acre wetland on-site traps surface runoff during storm events, which, in turn, allows this feature to support a combination of native and non-native vegetation. The FSA concluded that the feature does not meet all three of the U.S. Army Corps of Engineers criteria of a wetland, but does support one of those criteria: hydrophytic vegetation. The State of California and the CCC require that only one parameter be present to be classified as a wetland. "The [Project] would be constructed in an area supporting hydrophytic plant species and thus meeting the definition of a wetland [one parameter criterion] under the Coastal Act and Oxnard LCP." (p. 2, CCC 30413(d) report, dated 7 September 2016 (Ex. 4026)).

The FSA states the 2.03-acre wetland feature supports pickleweed (*Salicornia virginica*), slender-leaved iceplant (*Mesembryanthemum nodiflorum*), salt grass (*Distichlis spicata*), and wooly sea-blite (*Suaeda taxifolia*), along with non-native invasives. These same species are dominant elements of Southern Coastal Salt Marsh, a special-status plant community (Holland, 1986; Sawyer et al., 2008) that formerly was more widespread in the area (Beller et al., 2011). The wetland feature on the Project site mimics the physiognomy and habitat function of coastal salt marsh and constitutes suitable habitat for some of the rare and especially valuable wildlife that occupy similar habitats outside the Project site. Because the wetland feature supports

several of the dominant species found in coastal salt marsh, it could be colonized by rodent species, such as California vole (*Microtus californicus*) and harvest mouse (*Reithrodontomys megalotis*), that are common food items of special-status snakes and raptors, such as two-striped garter snakes, white-tailed kites (*Elanus leucurus*), and northern harriers (*Circus cyaneus*). White-tailed kites are Fully Protected Species; the other two species are California Species of Special Concern (CDFW, 2015). Riparian and riverine habitats near the mouth of the Santa Clara River, at the J Street Drain (Port Hueneme), and in the Point Mugu wetlands, provide roosting and foraging habitat for white-tailed kites and northern harriers. I have trapped voles, harvest mice, and other prey in disturbed salt marsh and scrub habitats near the mouth of the Ventura River and have observed kites and harriers foraging in these habitats (Hunt, Lehman, and Capelli, 1992). The 2.03-acre wetland located on the Project site supports similar habitat and is expected to support a similar rodent fauna. Kites, harriers, and burrowing owls forage over broad areas and it is possible that they may use the 2.03-acre wetland on the Project site as foraging habitat.

Additionally, the California Department of Fish and Wildlife ("CDFW") considers the approximately one-acre patch of coyote bush scrub and other areas mapped in the FSA as mule-fat scrub to be dune swale wetlands, and thus worthy of special-status habitat status (CDFW, 2016 (Ex. 4025). I agree with the conclusions of CDFW regarding these habitats.

During field work in dune and wetland habitats immediately north and northeast of the Project site at various times between 1985 and 2008, I have observed two-striped garter snakes (*Thamnophis hammondii*) feeding on amphibian larvae along the southern edge of McGrath Lake

(Hunt, field notes, 2008), a distance of less than 500 feet from the Project site. Given the size of its home range, its dispersal ability, and the fact that this species routinely traverses upland habitats when moving between wetlands, two-striped garter snakes have a high likelihood of using the wetland feature on the Project site as foraging habitat. Although the Project site was graded and has had roads constructed through it, portions of the site could still support special-status species, particularly globose dune beetles and California legless lizards. Both species are California Species of Special Concern (CDFW, 2015). I have found legless lizards by raking sandy soils within a few feet of the northern, northeastern, and southern boundaries of the Project site (Hunt, pers. observ., 1985-2008), making it highly likely that this species also occurs on-site itself. I also found legless lizards in these locations just outside the fence surrounding the Project site by turning over chunks of concrete and asphalt that were imbedded in sandy soils (remnants of former oil field roads), and by raking out mats of ice plant. Section 4.2, Table 4.2-1 in the Biological Resources chapter of the FSA states that soils on the Project site are too compacted to support legless lizards. The field survey methods are not specified in detail, but if they did not include raking sandy soils and overturning cover objects, legless lizards would not have been detected. I have also found horned lizards in mule-fat scrub, coyote bush scrub, dune scrub, and myoporum thickets in this area. Coyote bush scrub and mule-fat scrub occur in the northern and western portion of the Project site and constitute suitable habitat for horned lizards, a California Species of Special Concern (CDFW, 2015). The home ranges of individual horned lizards encompass one or more acres in area. Because the Project site constitutes suitable habitat for the horned lizards, the horned lizards that I have encountered outside the fence of the Project may use portions of the Project site as habitat. I have found that legless lizards can persist in and horned lizards can recolonize severely disturbed habitats that are connected to adjacent,

relatively undisturbed habitats (e.g., residential and oil-field development in Santa Maria area, Santa Barbara County, Calleguas Creek, Ventura County; City of Marina, Monterey County).

Direct and Indirect Impacts to ESHA Habitats and Species. The proposed Project will likely cause direct and indirect impacts to special-status species and their habitat, including direct mortality due to grading, vehicular traffic, and other construction-related activities (see table above). The PSA and FSA considers indirect (off-site) impacts for this Project in the form of noise, vibration, and lighting impacts to biological receptors during Project construction and operation to be potentially significant, but mitigable to less than significant levels. I disagree that the indirect impacts of the Project will be less than significant after the proposed mitigation, and find that the indirect Project impacts will remain significant even with the mitigation proposed by the FSA. As noted in the previous section, the project site is located on habitat that qualifies as ESHA. Although the FSA states that the buffer surrounding the Project site has been increased to 100 feet wide to avoid impacts to off-site ESHA (FSA, p. 4.2-55), the fact remains that ESHA occurs on-site and will be eliminated by the proposed Project.

Burrowing owls (*Athene cunicularia*), western snowy plovers (*Charadrius alexandrines nivosus*) and California least terns (*Sterna antillarum browni*) nest and/or roost in foredune and open beach habitat west and northwest of the Project site. Indirect impacts, such as noise, lighting, and increased human presence will be ongoing for the life of the Project. Owing to the sensitivity of coastal dune habitats to human disturbance and the sensitivity of the wildlife resources found there, long-term, indirect impacts from noise, lighting, and increased human presence could be significant, even after mitigation proposed in the FSA is implemented, causing

these bird species to abandon habitats that are currently occupied. See the table above for potential species-specific impacts.

Tidewater gobies (*Eucyclogobius newberryi*) are known to occur in the Santa Clara River estuary and the J Street Drain (Port Hueneme) (USFWS, 2005). They have not been found in Edison Canal to date, but the dates and thoroughness of surveys for gobies of this water body are unknown to the author. Although gobies typically occur in brackish water, they are a euryhaline species, tolerating salinities ranging from freshwater to seawater. Gobies apparently disperse to unoccupied and occupied sites along the nearshore environment during El Nino storm events when nearshore salinity is diluted by abundant stream and river outputs. The Project proposes to remove the existing freshwater outfall from the existing power plant to the Pacific Ocean and re-direct wastewater and storm water runoff from the site into the Edison Canal, which could alter the suitability of the Edison Canal as habitat for tidewater gobies.

The FSA concludes that the Edison Canal may provide foraging habitat for California least terns (FSA, p. 4.2-15). Changing the existing freshwater outfall from the ocean to Edison Canal and re-directing surface runoff to the Canal may decrease salinity in the Canal, which could affect the distribution and abundance of fish that form food items for California least terns and could negatively affect the ability of this species to forage there.

The mitigation measures dealing with habitat restoration focus narrowly on salt marsh restoration as compensation for loss of the 2.03-acre wetland on the Project site. On-site mule-fat scrub and coyote bush scrub habitats that are associated with dune swales also are considered wetlands by

CDFW and their presence on-site reflects the diversity of wetland types that originally occurred in the dune field here. Unless the proposed salt marsh restoration plan includes mitigation restoration for loss of on-site mule-fat and coyote bush scrub habitat at a 4:1 ratio, it will not compensate for loss of the diversity of wetland types that occur on the Project site.

Conclusions:

(1) Portions of the Project site, specifically the 2.03-acre wetland feature, coyote bush scrub, and mule-fat scrub north and west of the wetland feature are rare, sensitive, and especially valuable habitats in the context of occurring in dune field swales.

(2) The 2.03-acre wetland feature and the coyote bush scrub and mule-fat scrub located on the Project site provide suitable habitat for rare and especially valuable wildlife species.

(3) Populations of rare and especially valuable wildlife species are located in the immediate vicinity of the 2.03-acre wetland feature, i.e., directly outside the fenced Project site, suitable habitat for these species occurs on-site, and the Project site is physically connected to these off-site habitats.

(4) The proposed Project will likely have significant direct and indirect impacts to special-status wildlife and sensitive rare coastal habitat areas that are not mitigated by the FSA.

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U.S. Fish and Wildlife Service (USFWS). 2005. Recovery plan for the tidewater goby (*Eucyclogobius newberryi*). USFWS, Portland, OR. vi + 199 pp.

_____. 2016. Letter from Steve Henry to Shawn Pittard, CEC, regarding comments on Preliminary Staff Assessment. 18 August. Ventura Field Office, Ventura, CA. 2 pp.

Ventura Audubon Society. 2016. Letter from Cynthia Hartley to Janea Scott, California Eneergy Commission regarding impacts of proposed Project on special-status shorebirds, 26 August. Ventura, CA. 2 pp.

LAWRENCE E. HUNT
Curriculum Vitae

Hunt & Associates Biological Consulting Services
5290 Overpass Road, Suite 108, Santa Barbara, California 93111

Phone: (805) 967-8512 Cell: (805) 689-7423 e-mail: anniella@verizon.net

Title: Consulting Biologist

Expertise:
Herpetology, Mammalogy, and Terrestrial Ecology
Endangered Species Surveys and Habitat Evaluations
Conservation Biology and Habitat Conservation Plans
Habitat Restoration Design and Implementation
Impact Assessment and Mitigation Planning
Compliance Monitoring
Spatial Statistics and Biostatistics
Lecturer in Conservation Biology and Endangered Species Management, University of California
Affiliate Curator in Herpetology, Cheadle Center for Biodiversity & Ecological Restoration, UC-Santa Barbara

Statement of Qualifications. Lawrence Hunt is a consulting biologist with over 35 years of experience with rare, threatened and endangered plant and wildlife species and their habitats in the western United States, Mexico, and Chile, focusing on rare, threatened, and endangered plants, crustaceans, fish, amphibians, reptiles, birds, and mammals of central and southern California. Hunt & Associates, headed by Lawrence Hunt, brings together qualified specialists with extensive experience in design and management of biological resource surveys and analyses, including special-status species survey design and implementation, biological assessments and evaluations, EIR/EISs, habitat restoration plans, habitat conservation plans (HCPs), statistical data analysis, local, state, and federal resource agency consultation, mitigation analyses, habitat restoration design and implementation, and permit compliance monitoring. Clients include planning departments for city and county governments and planning agencies, state and federal resource management agencies, non-governmental conservation organizations, and private corporations and individuals. Since 1985, Hunt & Associates has been involved in hundreds of projects throughout central and southern California and southern Nevada, as well as several international consulting projects in Mexico, Chile, and Portugal.

CEQA/NEPA Projects. Hunt & Associates is a certified Small Business Entity (SBE) with extensive experience in all aspects of the preparation and implementation of CEQA/NEPA permitting documents, including: biological assessments, environmental assessments, Biological Resources chapters for EIR/EISs, biological resource (plant and wildlife) surveys, natural area characterizations, biological constraints analyses, impact assessment and mitigation recommendations, and environmental compliance monitoring. The following examples represent some of the largest of these types of projects that Hunt & Associates has been involved in to date:

Electrical Transmission Corridor Projects:

- *1984-1993: Mobil Oil, Unocal, and Exxon Electrical Transmission Line Projects, Monterey, Madera, Kern, Tulare, Fresno, Los Angeles, Riverside, and San Bernardino counties, California.* Project biologist on five regional projects installed to deliver electricity from new cogeneration facilities. Responsibilities included resource agency coordination/consultation, designing field survey protocols, organizing and conducting field surveys and vegetation mapping, preparing biological documents, project permitting, and supervising construction monitoring teams during project implementation.
- *1993-1994: SCE 65Kv Transmission Line Project, Santa Barbara County, California.* Project biologist to County of Santa Barbara Planning & Development Department. Conducted pre-construction surveys, constraints analyses, impact assessments; prepared biological assessment and supervised construction monitoring.
- *1997-1998: ARCO Line 90 Electrical Transmission Project, Kern and Riverside counties, California.* Project biologist to ENSR Consulting, Inc. to conduct special-status species surveys and prepare biological assessment of project.
- *2001-2002: Enron-Pastoria Creek Power Plant Project Project, Tejon Ranch, Kern County, California.* Project biologist to URS Corporation to conduct field surveys for special-status plants and wildlife in the Pastoria Creek, Tunis Creek, Tejon Creek, and Grapevine Creek watersheds on the western side of the Tehachapi Mountains; prepared biological constraints analyses of various proposed transmission line routes; prepared biological assessment of project impacts and mitigation.
- *2012-2014: Path 15 Transmission Line Project, Fresno and Madera counties, California.* Senior wildlife biologist to Aspen Environmental Group, Inc. and the U.S. Department of Energy (Western Area Power Administration to design and conduct special-status plant and wildlife surveys of existing transmission tower sites slated for repair/maintenance;

prepared biological assessment and developed mitigation measures to avoid impacts to listed reptiles, birds, and mammals; conducted protocol-level pre-construction surveys for listed or fully-protected reptiles, birds, and mammals along transmission line route.

- *2012-2015: San Luis Transmission Line Project, Fresno and Madera counties, California.* Senior wildlife biologist to Aspen Environmental Group, Inc. and the U.S. Department of Energy (Western Area Power Administration to design and conduct special-status plant and wildlife surveys of preferred and alternative transmission line routes and substation locations; prepared biological constraints analysis and biological assessment of project; conducted protocol surveys for listed or fully-protected reptiles and mammals along preferred route.

Fiber Optic Transmission Corridor Projects:

- *1988-1992: Sprint Fiber Optic Line Installation Project, Kern, Los Angeles, and San Bernardino counties, California and Clark County, Nevada.* Senior project biologist to Dames & Moore, Inc. to conduct special-status species surveys, prepare biological assessments and supervise construction monitoring during installation across Mojave Desert to Nevada.
- *2001-2003: Level (3) Communications Fiber Optic Line Installation Project, Santa Barbara County, California.* Senior project biologist/resource specialist and environmental compliance coordinator to the County of Santa Barbara Planning and Development Department; conducted pre-construction special-status species surveys and monitoring, prepared biological assessments and supervised construction monitoring during line installation.
- *2002-2004: Evolved Expendable Launch Vehicle (EELV), Delta IV Launch System Program, Vandenberg Air Force Base, Santa Barbara County, California.* Project biologist to ENSR, Inc. and the U.S. Air Force on fiber-optic line installations portion of the project on Vandenberg AFB. Conducted pre-construction surveys for special-status species, prepared biological assessments, supervised construction monitoring, and prepared non-native plant eradication and native habitat restoration plan for project.

Oil and Gas Transmission Line Projects:

- *1993-1997: Kern River Gas Pipeline Transmission Project, Utah, Nevada, and Kern County, California.* Project biologist to Dames & Moore, Inc. on the 1,200-mile long pipeline installation project. Conducted field surveys, prepared biological constraints analyses and impact assessment/mitigation analyses, and supervised construction monitoring.
- *1994-1998: Pacific Pipeline Crude Oil Pipeline, Kern and Los Angeles counties, California.* Senior project biologist to Pacific Pipeline Company, LLC to install and operate 175-mile long crude oil pipeline, including 60 miles through Angeles National Forest. Conducted biological constraints analyses for preferred and alternate pipeline routes, biological assessments, habitat evaluation, vegetation mapping, pre-construction surveys for special-status plant and animal species, consultation with Tejon Ranch attorneys and other land managers and landowners; supervised compliance monitoring of mitigation measures during pipeline construction and initial phase of operations.
- *1996-1998: Proyecto Gasoducto Transandino (Trans-Andean Natural Gas Pipeline Project), Argentina and Chile.* Senior Environmental Scientist to the Dames & Moore, Inc. and the Interior Ministry of Chile on proposed 1,500-mile long natural gas pipeline. Prepared biological evaluations and constraints analyses of preferred and alternative pipeline routes from Argentina, across the Andes Mountains, to receiving station/gas plants on the Pacific Ocean west of Santiago, Chile; identified project-related impacts; developed mitigation recommendations and permit compliance plans.
- *1999-2000: Thermo Eco-Tek Natural Gas Pipeline and Cogeneration Facility Project, San Bernardino and Orange counties, California.* Project biologist to ENSR Corporation to conduct pre-construction surveys for special-status reptiles, birds, and small mammals and prepare biological assessment of project.
- *2002-2008: ExxonMobil Corporation Oil Pipeline Maintenance Program, Kern and Tulare counties, California.* On-call biologist to ENSR Corporation for repair/maintenance projects; prepared biological assessments and conducted protocol-level pre-construction surveys and construction monitoring for listed or fully-protected reptiles and mammals.
- *2003-2006: Sempra Energy Company Programmatic Biological Assessment for Pipeline Operations and Maintenance Activities, Madera, Fresno, Tulare, Kern, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, Riverside, and San Bernardino counties, California.* Project biologist to ENSR Corporation and Southern California Gas Company (Sempra Energy Company) to develop Programmatic Biological Assessment; analyzed biological resources along numerous existing pipeline routes, assessed maintenance and operation impacts, and proposed mitigation measures to reduce or avoid potential impacts to resources to allow operations and maintenance activities to comply with California Department of Fish and Wildlife permit conditions, U.S. Fish and Wildlife Service Biological Opinions, and California Public Utilities Commission permit conditions.
- *2004-2009: Woodside Liquefied Natural Gas (LNG) Re-Gasification Terminal and Pipeline Distribution Project, Los Angeles and Orange counties, California.* Project biologist to ENSR Corporation and Woodside Petroleum, Australia to prepare biological assessment of proposed offshore unloading and re-gasification terminal to be located in the Southern

California Bight 20 miles off Los Angeles; prepared biological constraints analysis of preferred and alternate gas pipeline upgrade routes from proposed onshore receiving stations in coastal Los Angeles and Orange counties.

- *2007-2008: M-70 Crude Oil Pipeline Extension Project, Los Angeles County, California.* Project biologist to ENSR, Inc. and ExxonMobil Corporation to prepare biological assessment and impact and mitigation analysis; conduct pre-construction surveys for special-status plants and wildlife, particularly listed fish species, and supervise construction compliance monitoring.
- *2011-2014: Exploratory Seismic Testing Project, Newhall Ranch, Los Angeles County, California.* Project biologist to Occidental Petroleum Company on proposed exploratory drilling project for natural gas and crude oil reserves. Prepared biological assessment of proposed seismic testing program and conducted biological constraints analysis to determine routes of least impact to special-status habitats and plant and wildlife species during seismic testing.

Renewable Energy Transmission Projects:

- *2006-2009: Tehachapi/Antelope Valley PdV Wind Energy Project, Antelope-Pardee Wind Energy Project, and Tehachapi Renewable Transmission Project (TRTP) Project, Kern and Los Angeles counties, California.* Project biologist to Aspen Environmental Group, Inc. and California Public Utilities Commission (CPUC) on the permitting phases of these three projects to upgrade transmission lines to receive wind-generated energy from turbine fields in the Tehachapi Mountains and Antelope Valley; prepared biological assessments and DEIR/EIS biology sections for DEIR/EISs; provided peer review to CPUC of other consultants' work products.
- *2010-2011: Topaz Solar Facility, Carrizo Plain, San Luis Obispo County, California.* Project biologist to Althouse & Meade Consultants, Inc. to conduct field surveys for special-status amphibians, reptiles, and mammals for biological assessment and EIR documents during permitting phase of project.
- *2010-2011: NextEra North Sky River Wind Energy Project, Piute Mountains, Kern County, California.* Project biologist to CH2MHill, Inc. and North Sky River Energy, LLC to conduct field surveys and habitat evaluations for special-status reptiles and amphibians, focusing on listed salamanders (Tehachapi slender salamander and yellow-blotched salamander); prepared biological assessment, impact analysis, and mitigation recommendations in locating access/service roads and wind turbine sites in order to avoid impacts to listed and other special-status species.
- *2013-2015: City of Vernon Wind Energy Project, Piute Mountains, Kern County, California.* Project biologist to CH2MHill, Inc. and the U.S. Fish and Wildlife Service to conduct field surveys and habitat evaluations for special-status reptiles and amphibians, focusing on listed salamanders (Tehachapi slender salamander and yellow-blotched salamander); prepared biological assessment, impact analysis, and mitigation recommendations regarding location of access/service roads and wind turbine sites in order to avoid impacts to listed and other special-status species.

Federal and State Highway and Bridge Projects:

- *1989-1995: California Department of Transportation Highway Construction and Widening Projects, Madera, Fresno, and Kern counties, California.* Senior project biologist to Dames & Moore, Inc. and CalTrans on one highway construction and two highway widening projects. Conducted focused surveys for listed or special-status amphibians and reptiles, including sampling and evaluating habitat quality of over 250 vernal pools and vernal pool complexes for special-status plants, crustaceans (fairy shrimp), and amphibians (California tiger salamander, California red-legged frog, and western spadefoot); conducted impact analysis and developed mitigation recommendations for CEQA and NEPA documents.
- *1997-2003: Bacara Resort and Hotel Bridge Construction Project, Santa Barbara County, California*. Senior project biologist and project manager to County of Santa Barbara Planning & Development Department during construction of resort hotel project that included construction of two new bridges over Bell Canyon and Tecolote creeks; conducted pre-construction surveys for monarch butterfly, southern steelhead, tidewater goby, and California red-legged frog and implemented the Environmental Quality Assurance (EQAP) Program for permit compliance to avoid impacts to monarch butterfly roost and listed aquatic species in creek corridors.
- *2002-2009: Federal Highway Works Administration Bridge Replacement Projects, San Luis Obispo County, California.* Project biologist to Garcia & Associates, Inc. and County of San Luis Obispo Planning Department on three bridge replacement projects (Highway 1, Santa Rosa Creek Road, and Pozo Road); conducted surveys for listed or special-status species of fish, amphibians, reptiles, and birds for CEQA/NEPA permitting documents.
- *2010-2012: Creek Road Bridge Replacement Project, Ventura County, California.* Project biologist to Galvin Preservation Associates and County of Ventura Public Works Agency to conduct field surveys for listed fish, amphibians, and birds in San Antonio Creek; implemented permit compliance and BMP monitoring during bridge construction and habitat restoration phases of project.

Water Conveyance Projects:

- *2000-2004: Morris Reservoir and San Gabriel Reservoir Sediment Removal Pilot Program, Los Angeles County, California.* Project biologist to Los Angeles Department of Water and Power (LADWP) to design and implement before and after assessments of impacts of in-stream sedimentation on aquatic invertebrate communities and special-status amphibian and reptile species within the San Gabriel River Canyon following release of sediment from Morris and Cogswell dams; prepared biological assessment of effects of sediment sluicing on aquatic and riparian resources to the California Department of Fish and Game.
- *2003-2005: Mojave Check Valve 66 Replacement Project, Mojave River, San Bernardino County, California.* Project biologist to California Department of Water Resources, U.S. Fish and Wildlife Service, and Aspen Environmental Group, Inc. to conduct special-status fish, amphibian, bird, and mammals surveys in advance of proposed water pipeline valve replacement project; designed and implemented focused surveys and impact assessment for the endangered arroyo toad (*Bufo californicus*) in Little Horsethief Creek and Mojave River.
- *2004-2006: Tehachapi Embayment Project, Kern and Los Angeles counties, California.* Project biologist to Aspen Environmental Group, Inc. and California Department of Water Resources to conduct field surveys for special-status reptiles, birds, and mammals for proposed improvement of South Portal Embayment of California Aqueduct along south slopes of the Tehachapi Mountains and adjacent Antelope Valley on Tejon Ranch; prepared impact assessment and mitigation recommendations for various project designs.
- *2005-2007: Seawater Pipeline Replacement Project, University of California, Santa Barbara County, California.* Project biologist to UCSB Facilities Management Department; prepared biological assessment of proposed project to replace and upgrade seawater intake pipelines for Marine Science Institute at Campus Point; conducted and/or supervised onshore and nearshore field surveys of proposed pipeline route; implemented construction monitoring and permit compliance program during pipeline installation.
- *2007-present: Matilija Dam Removal and Ecosystem Restoration Project, Ventura County, California*. Senior project biologist to Ventura County Watershed Protection District to supervise field implementation of non-native plant eradication effort on 16-mile reach of upper Ventura River and main stem Matilija Creek floodplain in advance of future Bureau of Reclamation and U.S. Army Corps of Engineers project to remove Matilija Dam. Supervised implementation of Giant Reed Removal Element of project, involving removal of giant reed (*Arundo donax*) and six other target species of non-native plants in floodplain; conducted pre-construction surveys and monitoring of listed and special-status plants, fish, amphibians, reptiles, birds, and mammals during initial non-native vegetation treatment and annual re-treatment efforts; assembled and supervised team of biologists and monitors to monitor compliance of work crews during vegetation treatment and removal with California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and Regional Water Quality Control Board permit conditions; developed and implemented program to document and analyze natural recolonization of project area by native vegetation.
- *2012: Five Oaks Dam Sediment Release Project, Santa Ana River, Riverside County, California.* Project biologist to U.S. Army Corps of Engineers to conduct before and after surveys at various locations for listed and special-status fish, amphibians, and reptiles during sediment releases from Five Oaks Dam; supervised team of three biologists; prepared summary reports to USACE of results of surveys and evaluations of riparian and aquatic habitats before and after sediment release.
- *2015-present: Ventura River V-11 Invasive Plant Removal and Ecosystem Restoration Project, Ventura County, California.* Senior project biologist to Ventura County Watershed Protection District to supervise field implementation of non-native plant eradication effort on 5-mile reach of middle main stem of Ventura River on two preserves managed by the Ojai Valley Land Conservancy and one preserve managed by the Ventura Hillsides Conservancy. Supervised implementation of removal of giant reed (*Arundo donax*) and five other target species of non-native plants in floodplain and riparian habitats along main stem of river; conducted pre-construction surveys and monitoring of listed and special-status plants, fish, amphibians, reptiles, birds, and mammals during initial non-native vegetation treatment and subsequent re-treatment efforts; assembled and supervised team of biologists and monitors to monitor compliance of work crews during vegetation treatment and removal with California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and Regional Water Quality Control Board permit conditions; developed and implemented program to document and analyze natural recolonization of project area by native vegetation.

Species Recovery Plans, Habitat Conservation Plans, and Species/Habitat Management Plans:

- *1987-1988: Chancellor's Advisory Committee, University of California Natural Reserve System.* Evaluated candidate sites in Santa Barbara County in terms of habitat quality and rare species occurrence for inclusion in the UC Natural Reserve System.
- *1993-2000: Kern County Valley Floor Habitat Conservation Plan, Kern County, California.* Assisted Dames & Moore, Inc. biologists and County of Kern Planning and Development Department planners with determining conservation targets,

evaluating conservation areas, developing mitigation credits, and assessing project-related impacts and mitigation recommendations for Federal and State special-status plants and wildlife.

- *1998-2000: Black Legless Lizard (Anniella pulchra nigra) Status Review, Monterey County, California*. Client: U.S. Fish and Wildlife Service, Sacramento Regional Office, California. Reviewed available literature and research studies and conducted field research to evaluate distribution of this taxon in City of Marina and on Fort Ord to determine taxonomic status and conservation lands for possible listing.
- *2000-2002: Lake Los Carneros County Park Habitat Management Plan, Santa Barbara County, California.* Client: County of Santa Barbara Parks and Recreation Department. Evaluated existing habitat and wildlife resources and current visitor uses and impacts to create a long-term management plan for the 300-acre park that maximized habitat values.
- *1998-2001: California Red-legged Frog (Rana aurora draytonii) Recovery Plan:* Member, Scientific Committee for U.S. Fish and Wildlife Service, Ventura Field Office, California.
- *2001*-2002: *Tidewater Goby (Eucyclogobius newberryi) Recovery Plan:* Provided peer review of draft plan to U.S. Fish and Wildlife Service, Ventura Field Office, California.
- *2002-2014: California Tiger Salamander (Ambystoma californiense) Recovery Plan:* Member, Scientific Committee that developed draft and final recovery plan for the Santa Barbara County Distinct Population Segment of the California Tiger Salamander (*Ambystoma californiense*) for the U.S. Fish and Wildlife Service, Ventura Field Office, California.
- *2005-2007*: *California Tiger Salamander (Ambystoma californiense) occurrence in the 'gap region' of San Luis Obispo County, California.* Client: U.S. Fish and Wildlife Service, Ventura Field Office. Evaluated status of specimens in museum collections and anecdotal reports of tiger salamanders in southern San Luis Obispo County, including specimen found in Brizziolari Creek on campus of Cal-Poly SLO; sampled all water bodies in Brizziolari Creek watershed for salamanders, and checked museum records and specimens of tiger salamanders from San Luis Obispo County to verify that 80-mile gap in distribution of tiger salamanders from southern Monterey County to northern Santa Barbara County is, in fact, real.
- *2006-2008: California Tiger Salamander (Ambystoma californiense) Habitat Conservation Strategy:* Client: County of Santa Barbara Planning and Development Department, U.S. Fish and Wildlife Service, and Wildlife Conservation Board, Washington, D.C. Wrote and obtained grant from USFWS and Wildlife Conservation Board to create county-level conservation strategy between regulatory agencies and landowners to deal with CTS on private property.
- *2008-2009: Southern Steelhead (Oncorhynchus mykiss) Recovery Plan:* Senior Scientist contracted to National Marine Fisheries Service to prepare the *Threats Analysis* and *Recovery Actions* sections for the recovery plans for the South-Central California watershed (Monterey to Santa Barbara County) Recovery Plan and the Southern California watershed (Santa Barbara County to Mexican border) Recovery Plan for the southern steelhead. Collaborated with The Nature Conservancy to adapt their Conservation Action Planning (CAP) Workbook method (spreadsheet) to rank habitat conditions for steelhead in watersheds from Monterey County to the Mexican border in terms of anthropogenic impacts and potential for recovery.
- *2009: Newhall Ranch Habitat Conservation Plan, Newhall Ranch, Los Angeles County, California.* Client: Aspen Environmental Group, Inc. and California Department of Fish and Game. Reviewed and commented on Draft 6,500-acre HCP for proposed Newhall Ranch residential/commercial development project, including site visits to verify habitat conditions and species presence.
- *2007-present: Matilija Dam Removal and Ecosystem Restoration Project and Ventura River Invasive Plant Removal and Ecosystem Restoration Project, Ventura County, California.* Senior biologist to Ventura County Watershed Protection District to design, implement, and report on permit compliance monitoring of non-native plant removal and special-status species protection during watershed-wide habitat improvement project (see further information under "Water Conveyance Projects"). Obtained additional funds from VCWPD to measure and analyze patterns of natural colonization of areas cleared of non-native vegetation (2009-2010 and 2014-2015).
- *2010-2012: Status and Evaluation of Non-Native Tiger Salamander (Ambystoma mavortium) Introductions in Santa Barbara County, California.* Client: U.S. Fish and Wildlife Service, Ventura Field Office. Summarized existing information on location, land ownership, condition, and genetic status and extent of hybridization between native and non-native tiger salamander populations in Santa Barbara County Distinct Population Segment of the California tiger salamander (*Ambystoma californiense*).
- *2014-present*: *Geographic extent of introgression between native and introduced tiger salamanders (genus Ambystoma) in Santa Barbara County, California.* Section 6 grant from U.S. Fish and Wildlife Service and California Department of Fish and Wildlife, administered through Cachuma Resource Conservation District. Collaboration of several biologists to sample known and potential California tiger salamander (*Ambystoma californiense*) breeding sites and collect tissues for genetic analysis to determine if threat of hybridization with introduced non-native tiger salamanders (*Ambystoma mavortium*) is spreading.
- *2014-2016: San Pedro Creek Watershed Biological Resource Evaluation, Santa Barbara County, California.* Project biologist to L&P Consultants, Slippery Rock Ranch, LLP, and Land Trust for Santa Barbara County to conduct assessment of quality of riparian and upland habitats for special-status plants and wildlife resources on 800 acres of San Pedro Creek

watershed on Slippery Rock Ranch. Prepared summary report of biological value of watershed for possible future Land Trust management.

- *2015-present: Monarch butterfly Habitat Restoration and Management Plan, Santa Barbara County, California. Client: City of Santa, California Department of Fish and Wildlife, and Xerces Society.* Developed and implemented plan to monitor and improve habitat conditions for largest overwintering roost of monarch butterfly (*Danaus plexippus*) in City of Santa Barbara.

Academic Background

Ph.D. Candidate in Evolutionary Ecology. Dissertation: *Predictability of Geographic Distribution of Legless Lizards, Genus Anniella, at Multiple Spatial Scales.* Dept. Ecology, Evolution, and Marine Biology, University of California-Santa Barbara

M.S., with honors, 1982: Ecology and Systematics (Herpetology). Thesis: *Geographic Patterns of Morphological Variation in the Lizard Genus, Anniella Gray 1852.* University of Kansas Dept. of Ecology and Systematics and Museum of Natural History

B.S., with honors, 1976: Vertebrate Zoology (Herpetology), University of California-Berkeley

Citizenship: United States

International Consulting/Research Experience: Mexico, Chile, England, Portugal

Professional Affiliations

American Society of Ichthyologists and Herpetologists
Society for the Study of Amphibians and Reptiles
American Society of Zoologists
Sigma Xi Honorary Scientific Society

Peer-Reviewed Publications:

1980. Hunt, L.E. and J. Ottley. Geographic Distribution: *Crotalus viridis helleri*. *Herpetological Review*, 12(2): 65.

1982. Hunt, L.E. Reproduction and feeding in *Eridiphas slevini* (Serpentes: Colubridae). *Herpetological Review*, 13(1): 8-9.

1983. Hunt, L.E. Annotated bibliography of the desert tortoise, *Gopherus agassizi* (Book Review) *Herpetological Review*, 14(1): 25.

1983. Hunt, L.E. A nomenclatural rearrangement of the genus *Anniella* (Sauria: Anniellidae). *Copeia* 1983(1): 79-89.

1984. Hunt, L.E. et al., (co-editors). Contributions to Vertebrate Zoology and Systematics: A Tribute to Henry S. Fitch. *Special Publications of the Museum Natural History, University of Kansas. No. 10.* 278 pp.

1984. Hunt, L.E. Geographic patterns of morphological variation in the lizard genus *Anniella*. Masters Thesis. Univ. of Kansas, Lawrence. 302 pp.

1985. Schultze, H.P., L.E. Hunt and J. Chorn. Type and figured specimens of fossil vertebrates in the collections of the University of Kansas, Museum of Natural History, Part II: Fossil Amphibians and Reptiles. *Miscellaneous Publications of the Museum of Natural History, University of Kansas No. 77*. 66 pp.

1985. Fleischer, R., M. Murphy and L.E. Hunt. Clutch size increase and intraspecific brood parasitism in the yellow-billed cuckoo (*Coccyzus americanus*). *Wilson Bulletin* 97(1): 125-127.

1993. Hunt, L.E. Origin, maintenance and land use of aeolian sand dunes in the Santa Maria Basin, California. Prep. for The Nature Conservancy and U.S. Air Force, Vandenberg AFB. 72 pp.

1994. Hunt, L.E. Capture, relocation and monitoring of a southwestern pond turtle (*Clemmys marmorata pallida*) population on the upper Santa Ynez River, Santa Barbara County, California; Gibraltar Dam Strengthening Project. Prepared for the City of Santa Barbara, U.S. Forest Service and Woodward-Clyde Consultants. 135 pp.

1997. Hunt, L.E. Geostatistical modeling of species distributions: Implications for biogeographical and ecological studies, pp. 427-438, *In:* Soares, A. et al., (eds.). Geostatistics for Environmental Applications. Kluwer Academic Publishers, London. 556 pp.

2009. Hunt, L.E. Species accounts for: *Anniella, Anniella pulchra, Anniella geronimensis*. Catalogue of American Amphibians and Reptiles, Society for the Study of Amphibians and Reptiles. Lawrence, KS. 39 pp.

In prep. Hunt, L.E. Geographic breaks in the regional distribution of California tiger salamanders in San Luis Obispo County, California: Real or artifact? *Herpetological Review*.

In prep. Hunt, L.E. Geographic Distribution: *Coleonyx variegates abbotti. Herpetological Review*.

In prep. Hunt, L.E. Additions to the pulmonate snail fauna of Ventura County. *The Veliger*.

In prep. Hunt, L.E. and B. Roth. A new species of land snail (Pulmonata: Helminthoglyptidae) from Ventura County, California. *The Veliger*.

In prep. Hunt, L.E. and H.B. Shaffer. Early-stage hybridization of native and non-native tiger salamanders in the Santa Barbara County Distinct Population Segment (DPS) of the California Tiger Salamander. *Herpetological Review*.

Grants and Awards:

1976. National Science Foundation, Student Originated Studies Grant
1980. Phi Sigma Biology Honor Society, Univ. Kansas
1982. Regents Scholarship, University of California-Santa Barbara
1984. Masters Thesis, with honors, University of Kansas
1985. National Audubon Society, Research Grant
1988. Storrer Award, American Society of Ichthyologists and Herpetologists
1988. Academic Instructional Grant, University of California-Santa Barbara
1989. Graduate Dissertation Fellowship, University of California-Santa Barbara
1989. 1st World Congress in Herpetology, Canterbury, England, Invited Speaker
1990. Research Grant, The Nature Conservancy
1994-2003. Academic Development Grant, Patagonia, Inc. and University of California-Santa Barbara
1996. Excellence in Reclamation Award, California Mining Association
1996. 1st European Conference on Geostatistics, Lisbon, Portugal, Invited Speaker
1997. Society for Ecological Restoration-Dune Guild, San Luis Obispo, CA, Invited Speaker
1998. 2nd European Conference on Geostatistics, Valencia, Spain, Invited Speaker
2001. Santa Ynez Natural History Association, Santa Ynez, CA, Invited Speaker
2002. Research Grant, Oil Spill Prevention and Remediation Program, California Department of Fish and Game
2003. University of California-Santa Barbara Habitat Restoration Group, Invited Speaker
2003. Threatened and Endangered Amphibians and Reptiles of Southern California, The Wildlife Society and Bureau of Land Management, Riverside, CA, Invited Speaker
2005. Wildlife Conservation Board and U.S. Fish and Wildlife Service, California Tiger Salamander Regional Conservation Strategy Grant, Washington, D.C.
2010-present. U.S. Fish and Wildlife Service, Endangered Species Research Grants, Ventura Field Office, California
2010-2013. Seminar on Ecological Restoration and Conservation (EEMB 188), University of California-Santa Barbara, Guest Lecturer

Certifications: California Department of Transportation, Horizontal Directional Drilling Inspector (2001)

Permits: U.S. Fish and Wildlife Service 10(a)1(a) Recovery (handling) Permits for the California tiger salamander, California red-legged frog; and several species of fairy shrimp
California Department of Fish and Game – Scientific Collecting Permit

County Approved Qualified Biologist Lists: Kern, Monterey, San Luis Obispo, Santa Barbara, Ventura, Los Angeles

LEH: jan2017

DECLARATION OF
Lawrence E. Hunt

I, **Lawrence E. Hunt**, declare as follows:

1. I am a consulting wildlife biologist with over 30 years of field experience in central and southern California. I hold advanced degrees in vertebrate zoology and evolutionary ecology, with an emphasis in herpetolgogy and have conducted extensive field work in the coastal dune systems between the Ventura River and Port Hueneme during research and consulting activities.

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference.

3. I prepared the testimony of Lawrence E. Hunt submitted by intervenors the Los Padres Chapter of the Sierra Club, the Environmental Coalition of Ventura County, and the Environmental Defense Center. The basis for my testimony is set forth in the testimony itself and is incorporated by reference.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 17 January 2017

Signed: Lawrence E Hunt

At: Sacramento, California