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April 8, 2013

California Energy Commission
Dockets Unit
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: **PALEN SOLAR ELECTRIC GENERATING SYSTEM WINTER 2013 GOLDEN EAGLE SURVEY RESULTS**
PALEN SOLAR ELECTRIC GENERATING SYSTEM
DOCKET NO. (09-AFC-7C)

Enclosed for filing with the California Energy Commission is the electronic version of **PALEN SOLAR ELECTRIC GENERATING SYSTEM WINTER 2013 GOLDEN EAGLE SURVEY RESULTS**, for the Palen Solar Electric Generating System (09-AFC-7C).

Sincerely,

Marie Fleming

PALEN SOLAR ELECTRIC GENERATING SYSTEM
WINTER 2013 GOLDEN EAGLE SURVEY RESULTS

Prepared for:

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March 2013

REPORT CONTRIBUTORS

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GIS & Maps: Marcus C. England

ABOUT BLOOM BIOLOGICAL, INC.

For over 35 years, Bloom Biological, Inc. (BBI) has provided biological consulting services to large and small clients. Our resume of services includes raptor and endangered species research, biological monitoring, impact assessment and permitting, conservation planning and geospatial analysis. Our innovative approach to our work has provided solutions to complex problems for clients and projects throughout a range of industries including alternative energy, residential development and the public sector. Collectively, the management and staff of BBI hold permits or memoranda of understanding for participating in the conservation and recovery of more than a dozen endangered or threatened species, as well as numerous other special-status species, in California and the western United States. Over the years, BBI has established an impeccable relationship with the resource agencies, project proponents, and environmental organizations by skillfully balancing the needs and objectives of land planning, resource conservation, and the public interest. In addition to our work in southern California, BBI biologists have worked throughout the western United States, and in Alaska, Peru, Ecuador, Belize, Costa Rica, India, Southeast Asia, Sweden and the western Pacific. BBI is a certified SBE, WBE and MBE.

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1.0 INTRODUCTION

Bloom Biological, Inc. (BBI) was retained by BrightSource Energy, Inc. (BrightSource) to conduct winter surveys for Golden Eagle (*Aquila chrysaetos*) for the proposed Palen Solar Electric Generating System project located in the vicinity of Desert Center in unincorporated Riverside County, California. Six weeks of studies conducted by BBI included the placement of seven randomly located camera traps with carcass bait, and visual surveys conducted while driving all accessible roads within the study area. These surveys only found definitive evidence for use of the area by one Golden Eagle during the winter months. This report presents the methods, results and conclusions of BBI's winter surveys.

2.0 STUDY AREA DESCRIPTION

The "Study Area" in this report includes the proposed Project Site (see Exhibit 1) and all lands within a ten mile radius of the Project Site. The Project Site is comprised of approximately 3,793 acres (1,535 hectares) located just north of Interstate 10 near the Chuckwalla Valley Road exit. On the Public Land Survey System, the Project Site is located in all or portions of Sections 27, 28, 29, 30, 31, 32, 33 and 34 of Township 5 South, Range 17 East and Sections 2, 3, 4, 5 and 6 of Township 6 South, Range 17 East of the U.S. Geological Survey's 7.5-minute *Sidewinder Well* quadrangle. Elevations on the Project Site range from approximately 440 feet (134 meters) above mean sea level near the northeastern boundary to 680 feet (207 meters) above mean sea level near the southwestern boundary. There are no significant terrain features on the Project Site, and terrain decreases gradually from southwest to the northeast.

The Study Area is bisected laterally by US Interstate Highway 10 with the Coxcomb Mountains, Palen Mountains, Palen Dry Lake and the Project Site on the north side of the highway. On the south side of Interstate 10, within the Study Area, is the northeastern portion of the Chuckwalla Mountains. Large alluvial plains extend from the mountain ranges leading down slope to sand dune complexes and dry lakes. Mountain ranges in the Study Area contain significant large rock outcroppings small cliffs suitable for Golden Eagle nesting. Large portions of the Palen Mountains were not accessible during this study.

Figure 1. Study area location relative to the state (left) and county (right)

3.0 REASON FOR SURVEYS

3.1 Golden Eagle Natural History

Kochert et al. (2002) provided a thorough description of the natural history of the Golden Eagle, noting that the species is found a variety of habitats located in a wide range of latitudes throughout the Northern Hemisphere. In North America, Golden Eagles are most common in the western half of the continent near

open spaces that provide hunting habitat, and generally with cliffs present for nesting sites. While northern populations of the species are migratory, often making trips of thousands of miles to the wintering grounds; southern populations (including those in southern California) tend to be resident year-round.

While Golden Eagles are capable of killing large prey such as cranes, wild ungulates, and domestic livestock, they primarily subsist on rabbits, hares, ground squirrels, and prairie dogs (Bloom and Hawks 1982, Olendorff 1976). Golden Eagles typically reach sexual maturity, form territories and begin nesting at four years of age. Pairs are generally thought to stay within the limits of their territory, which can measure well over 20 square kilometers and may contain as many as 14 nests (Bloom pers. obs.). The pair maintains and repairs one or more of these nests as part of their courtship. Over the course of a decade several of these nests will be used and will produce young while others may only be added to with fresh sticks. Most alternate nests are important in the successful reproduction of a pair of eagles. Kochert et al. (2002) also noted that the nesting season is prolonged, extending more than 6 months from the time the 1-3 eggs are laid until the young reach independence. A typical Golden Eagle raises an average of only 1 young per year and up to 15 young over its lifetime. Pairs commonly refrain from laying eggs in some years, particularly when prey is scarce. The number of young that Golden Eagles produce each year depends on a combination of weather and prey conditions.

3.2 Regulatory Protections

Regulatory protections for Golden Eagles obviate the need for thorough surveys to determine the status of Golden Eagles for projects occurring within their range and habitat. The intent is to determine the extent of potential direct, indirect and cumulative effects projects may have on eagles, avoid and or minimize these effects, assess the potential for incidental take during project operation, and monitor eagle populations in response to increase usage of desert environments for alternative energy projects. These measures are predominantly driven by the Bald and Golden Eagle Protection Act.

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), enacted in 1940, and amended several times since then, prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

For purposes of the guidelines, "disturb" means: “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

4.0 METHODS

All surveys were performed from January 23 to February 27, 2013 by BBI biologists Peter H. Bloom, Ph.D. and Scott Thomas (see resumes in Appendix C). Weather conditions were generally typical for the season, with temperatures during field visits ranging from 42° F to 72° F with calm to light winds and mostly

minimal cloud cover. All survey visits were between 0700h and 1830h. Survey dates, times and weather conditions are detailed in Table 1.

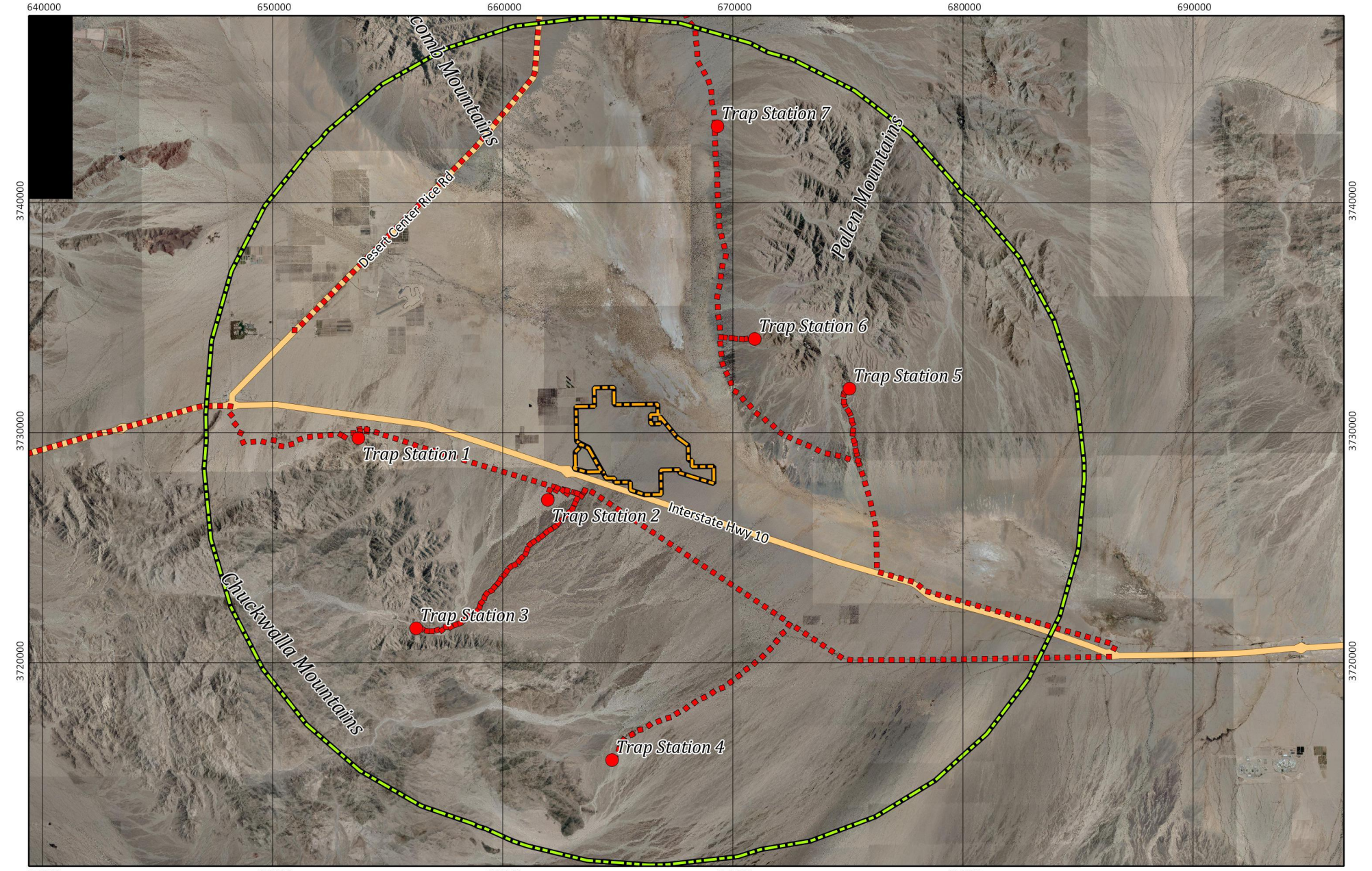
Camera trapping was used to gage the use of lands within the Study Area by Golden Eagles and other wildlife, as Golden Eagles will regularly utilize carrion as a food source when it is available. Carcasses were placed as bait, staked to the ground at locations selected based on habitat features spread out across the Study Area near accessible roads. Placement avoided the extreme edges of the Study Area in order to avoid attracting eagles from outside the Study Area. Reconyx™ 500 series cameras were staked within 15 feet of the carcass to capture all visiting predators and scavengers (see first photograph in Appendix B). The cameras were set to record activity at a minimum of a picture every 5 seconds and were in operation 24 hours per day from the time of set-up to removal of the station. Image data stored on the camera memory cards were retrieved and downloaded during weekly survey visits to document all activity. Stations were left operating from the initial set-up date until the project ended or until evidence of lack of activity dictated taking down or moving the station. Bait Station 1 was in operation for five weeks, Station 2 for four weeks, Stations 3 and 4 in operation for six weeks, Station 6 for five weeks and Station 7 for three weeks. Camera trapping operations were conducted constantly from January 23 to February 27, 2013. Bait station locations are shown on Exhibit 1.

Visual surveys for Golden Eagles and other avian predators were conducted during each Study Area visit by driving all accessible roads and stopping at random locations and scanning the skyline and potential perch locations such as cliffs, rock outcroppings and trees with high powered binoculars and spotting scopes. Observations were also conducted from the location of each bait station. Large areas of the Palen and Coxcomb Mountains, as well assmaller portions of the Chuckwalla Mountains, were not accessible and not adequately surveyed. The project site is flat and not suspected as Golden Eagle foraging or nesting habitat and was therefore not surveyed during this study. The project site is scheduled to be surveyed for all birds, including Golden Eagles, during Spring and Summer of 2013. The survey route is shown on Exhibit 1.

This combination of camera trapping and visual studies has been implemented by BBI elsewhere in the Mojave Desert and serves as a good tool (see Hamel et al. 2013) to establish a baseline for Golden Eagle usage of a particular study area.

Table 1. Field Survey Dates, Times, and Weather Conditions

Date	Time	Weather	Biologists
02/27/2013	0700-1500h	Start: 51° F, 0% cloud cover, Calm out of the N End: 67° F, 0% cloud cover, Light Wind out of the N No rain; No fog; No snow	Pete Bloom Scott Thomas
02/20/2013	0700-1600h	Start: 42° F, 76-99% cloud cover, Breeze out of the W End: 66° F, 51-75% cloud cover, Light Wind out of the NW No rain; No fog; No snow	Pete Bloom Scott Thomas
02/12/2013	0800-1730h	Start: 48° F, 0% cloud cover, Calm out of the N End: 66° F, 0% cloud cover, Calm out of the N No rain; No fog; No snow	Pete Bloom Scott Thomas
02/05/2013	0730-1800h	Start: 58° F, 0% cloud cover, Calm out of the W End: 72° F, 1-25% cloud cover, Calm out of the W No rain; No fog; No snow	Scott Thomas
01/29/2013	0800-1830h	Start: 55° F, 1-25% cloud cover, Breeze out of the W End: 68° F, 1-25% cloud cover, Breeze out of the SW No rain; No fog; No snow	Pete Bloom Scott Thomas
01/23/2013	0800-1700h	Start: 46° F, 76-99% cloud cover, Calm out of the N End: 65° F, 76-99% cloud cover, Calm out of the N No rain; No fog; No snow	Pete Bloom Scott Thomas



Study Area (Ten Mile Project Buffer)

Project Site

Survey Route

Trap Stations

UTM NAD 83 Zone 11 Coordinates
Author: Marcus C. England
Map Date: 18 March 2013
Aerial Photography: US Department of Agriculture

0 1 2 3 mi
1:225000

Exhibit 1: Study Area, Survey Route & Camera Trap Locations

Palen Solar Electric Generating System | Riverside County, California

Bloom Biological, Inc.
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5.0 RESULTS AND DISCUSSION

A single sub-adult Golden Eagle was present all 5 weeks at Bait Station 6 (see photos in Appendix B), feeding on the carcass 2-3 days each week, usually until the remainder of carcass was taken away at night by Coyotes (*Canis latrans*). The activity level by scavengers at all stations was high. All stations were visited by Common Ravens (*Corvus corax*) and Coyotes, and Station 4 was regularly visited by Turkey Vultures (*Cathartes aura*). There was enough activity at these stations that it should have drawn the attention of Golden Eagles to the Bait Stations if they were within the vicinity. Although not all adult Golden Eagles will readily land at carcasses, it is probable that more than one eagle would have been observed over a 4-6 week period of camera trapping with 4-7 stations had high numbers of eagles actually been present in the area. Six full-length survey sessions yielding no observations of eagles, other than at the #6 Bait Station on camera, is also indicative of low eagle winter usage within the Study Area.

No Golden Eagles were observed within the Study Area during visual surveys. Observations of common Golden Eagle prey items such as Black-tailed Jackrabbits (*Lepus californicus*) and small rodents were regular (< 3 per each survey day) during the six week study, with jackrabbits being observed almost every survey in numbers of 1-3 per survey. Observations of White-tailed Antelope Squirrels (*Ammospermophilus leucurus*), another common prey species for desert raptors, were also regularly observed throughout the study. A complete list of all wildlife species detected during BBI's surveys is provided as Appendix A.

6.0 LITERATURE CITED

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APPENDIX A. FAUNAL COMPENDIUM

Birds

Accipitriformes - Hawks, Kites, Eagles, and Allies | Cathartidae - New World Vultures
Turkey Vulture *Cathartes aura*

Accipitriformes - Hawks, Kites, Eagles, and Allies | Accipitridae - Hawks, Kites, Eagles, and Allies
Northern Harrier *Circus cyaneus*
Red-tailed Hawk *Buteo jamaicensis*
Ferruginous Hawk *Buteo regalis*
Golden Eagle *Aquila chrysaetos*

Falconiformes - Caracaras and Falcons | Falconidae - Caracaras and Falcons
American Kestrel *Falco sparverius*
Merlin *Falco columbarius*

Columbiformes - Pigeons, and Doves | Columbidae - Pigeons and Doves
Eurasian Collared-Dove *Streptopelia decaocto*

Strigiformes - Owls | Strigidae - Typical Owls
Burrowing Owl *Athene cunicularia*

Coraciiformes - Rollers, Motmots, Kingfishers, and Allies | Alcedinidae - Kingfishers
Belted Kingfisher *Ceryle alcyon*

Passeriformes - Passerine Birds | Tyrannidae - Tyrant Flycatchers
Say's Phoebe *Sayornis saya*

Passeriformes - Passerine Birds | Laniidae - Shrikes
Loggerhead Shrike *Lanius ludovicianus*

Passeriformes - Passerine Birds | Corvidae - Crows and Jays
Common Raven *Corvus corax*

Passeriformes - Passerine Birds | Alaudidae - Larks
Horned Lark *Eremophila alpestris*

Passeriformes - Passerine Birds | Remizidae - Penduline Tits and Verdins
Verdin *Auriparus flaviceps*

Passeriformes - Passerine Birds | Troglodytidae - Wrens
Rock Wren *Salpinctes obsoletus*

Passeriformes - Passerine Birds | Polioptilidae - Gnatcatchers and Gnatwrens
Black-tailed Gnatcatcher *Polioptila melanura*

Passeriformes - Passerine Birds | Mimidae - Mockingbirds and Thrashers
Sage Thrasher *Oreoscoptes montanus*

Passeriformes - Passerine Birds | Ptilogonatidae - Silky-flycatchers
Phainopepla *Phainopepla nitens*

Passeriformes - Passerine Birds | Emberizidae – Emberizids
Chipping Sparrow *Spizella passerina*
Sage Sparrow *Amphispiza belli*

Passeriformes - Passerine Birds | Fringillidae - Fringilline and Cardueline Finches and Allies
House Finch *Carpodacus mexicanus*

Mammals

Lagomorpha | Leporidae
Black-tailed Jackrabbit *Lepus californicus*

Rodentia | Sciuridae
White-tailed Antelope Squirrel *Ammospermophilus leucurus*

Carnivora | Canidae
Coyote *Canis latrans*
Gray Fox *Urocyon cinereoargenteus*

Carnivora | Felidae
Bobcat *Lynx rufus*

Artiodactyla | Cervidae
Mule Deer *Odocoileus hemionus*

Reptiles

Squamata | Phrynosomatidae
Side-blotched Lizard *Uta stansburiana*

APPENDIX B. CAMERA TRAP PHOTOGRAPHS

Above: Camera at trap station 1.

Above: Camera at trap station 2.

Above: Bobcat (*Lynx rufus*) at trap station 1.

Above: Gray Fox (*Urocyon cinereoargenteus*) at trap station 3.

Above: Turkey Vultures (*Cathartes aura*) at trap station 4.

Above: Red-tailed Hawk (*Buteo jamaicensis*) at trap station 6.

Above: Golden Eagle (*Aquila chrysaetos*) at trap station 6.

Above: Golden Eagle (*Aquila chrysaetos*) at trap station 6.

APPENDIX C. RESUMES

Bloom Biological, Inc.
Research | Consulting | Conservation

Peter H. Bloom, Ph.D. | President

Qualifications

Peter Bloom has been a professional environmental consultant for more than 35 years, principally in California. He specializes in the environmental sciences, is an internationally recognized expert in raptor biology and conservation and is considered one of the best all-around field biologists in California with his extensive knowledge and experience with all terrestrial vertebrate groups (amphibians, reptiles, birds, and mammals) and the vascular plants. Corporate clients for whom he has prepared or contributed to the production of numerous biological assessments and environmental impact reports include The Irvine Company, Rancho Mission Viejo, Tejon Ranch, Newhall Ranch, Ahmanson Ranch, Metropolitan Water District, and Los Angeles Department of Water and Power. He has also worked extensively with the Department of Defense, U.S. Fish and Wildlife Service, National Park Service, Bureau of Land Management, U.S. Forest Service, California Department of Fish and Game, and various non-profit conservation groups providing valuable research and advice, primarily on raptor ecology and conservation. He has conducted avian and herpetological research in the western United States, Alaska, Peru, Ecuador, and India and has been responsible for a wide variety of biological, ecological, and conservation studies ranging from local biological assessments to regional conservation planning. Dr. Bloom has published more than 30 peer-reviewed scientific papers and technical reports and taught California natural history at a local junior college for more than 12 years.

Professional Experience

As founder and President of Bloom Biological, Inc., Dr. Bloom has prepared numerous biological assessments and worked on an array of avian research projects in the western United States, Alaska, Peru, Ecuador, and India, spending over 600 hours conducting helicopter and fixed-wing nest survey work and aerial radio-tracking of eagles, California condors, hawks, and herons. He has also been responsible for conducting or supervising:

- fiber-optics and electrical powerline installation surveys and construction monitoring;
- surveys of nesting and wintering birds of prey for the California Department of Fish and Game (CDFG), BLM, U.S. Forest Service, Department of Defense, and numerous private land owners;
- transponder and radio-tagging of adult California red-legged frogs in Ventura County;
- focused surveys for California gnatcatcher, southwestern willow flycatcher, least Bell's vireo, yellow-billed cuckoo, Swainson's hawks, golden eagles, arroyo toad, California red-legged frog, desert tortoise, Pacific pond turtle (including trapping and surveying habitat), coast horned lizard, flat-tailed horned lizard, Belding's orange-throated whiptail, coastal whiptail, southern rubber boa, coastal patch-nosed snake, California glossy snake, two-striped garter snake (including trapping and surveying habitat), red-diamond rattlesnake, southern flying squirrel, and Pacific pocket mouse;
- general herpetological, small mammal, breeding and winter bird surveys in southern California;
- translocation of several hundred arroyo toads at Camp Pendleton Marine Corps Base;
- sensitive herpetological, mammal, and raptor surveys for the Transportation Corridor Agency in Orange County; and
- a raptor status and management plan for Naval Weapons Station, Seal Beach and Fallbrook Detachment.

As a research biologist at the Western Foundation of Vertebrate Zoology, served on the Science Advisory Board of the South Orange County Natural Communities Conservation Program. During his tenure there he:

- provided herpetological input into the Orange County environmental GIS and Cleveland National Forest environmental inventory.
- managed a long-term (30 yr.) raptor ecology study in California;
- managed a successful Great Blue Heron mitigation project designed to increase numbers of nesting herons through placement of artificial nest platforms;
- supervised and performed predator management activities for USFWS related to protection of California least terns, snowy plovers, and light-footed clapper rails in southwestern California from avian and other

vertebrate predators (locations included Vandenberg Air Force Base, Naval Weapons Station Seal Beach, Batiquitos Lagoon, Port of Long Beach, Port of San Diego, and Tijuana Slough National Wildlife Refuge);
- supervised a two year CalTrans radio-telemetry study of nesting peregrine falcons and their relationship to California least terns in southwestern California; and
- organized and finished seven years of a MAPS passerine monitoring station.
- Together with sub-permittees, banded ~ 45,000 birds, mostly nestlings (1970 – 2013).

While serving as a research biologist and advisor in India, responsibilities included educating local biologists in the various techniques needed to capture birds, and conducting radio-telemetry research.

Served as thesis advisor to seven students at CSU Long Beach, one student at CSU Humboldt, and one student at CSU Fullerton.

As research biologist for the National Audubon Society, was responsible for writing the grant proposal and ultimately the successful award of two grants totaling $300,000 for six years of fulltime research on the ecology of southern California raptor populations. Responsibilities included project management, personnel selection, supervision of 12 volunteers, proposal and budget preparation, method design, data analysis, report writing, and publication of results. Directed the effort to capture all wild free-flying California condors for transmitter placement or captive breeding. Radio-tracked condors and conducted contaminant studies involving condors and 180 golden eagles.

As a research biologist at the University of California, Santa Cruz, was principal investigator on a three year study designed to determine the status of northern goshawk populations in California for CDFG.

Trapped and placed transmitters on great gray owls for the National Park Service , prairie falcons for CDFG, and peregrine falcons in Peru for the Bodega Bay Institute of Pollution Ecology.

As a wildlife biologist for BLM, was principal investigator of a study designed to determine the status of the Swainson's hawk in California. Surveyed all semi-arid and desert regions, reviewed literature and museum records, assessed reproduction, banded adults and young, and prepared the final report. His efforts contributed to the state-listing of Swainson's hawk as threatened.

Surveyed and reported on the ecology and distribution of raptors inhabiting the 200-square-mile Camp Pendleton Marine Corps Base.

While serving as a biological technician for BLM, conducted reptile, amphibian, small mammal, and avian surveys of 3.25 million acres of public land as part of a grazing EIS.

Education

Ph.D., Biology, College of Natural Resources, University of Idaho, Moscow
M.S., Biology, California State University, Long Beach
B.S., Zoology, California State University, Long Beach

Awards

Graduation with Honors – Best Thesis Award School of Natural Sciences 1979
The Wildlife Society Western Section: Professional of the Year, 2005
Association of Field Ornithologists: Bergstrom Award, 1981
The Nature Conservancy: $27,000 for satellite transmitters, 2004 and 2006

Permits & Certifications

Federal endangered species recovery permit (TE-787376) for red-legged frog (including placement of transmitters and transponders), arroyo toad, California gnatcatcher (including banding), least Bell's vireo (including banding), southwestern willow flycatcher (including banding), California least tern, snowy plover, peregrine falcon (banding), bald eagle (banding), and Swainson's hawk (banding).

California scientific collecting permit and memorandum of understanding for all raptors, including state-

threatened Swainson's hawk, reptiles, amphibians, small mammals, and many additional species of birds, including state-threatened western yellow-billed cuckoo, California least tern, snowy plover, peregrine falcon, and bald eagle

Federal Master Banding Permit No. 20431

Federal Bird Marking and Salvage Permit
Predator Management Permit
Migratory Bird Relocation Permit (burrowing owl and other species)

Brown-headed cowbird trapping authorization

Desert Tortoise Council-approved for conducting desert tortoise monitoring surveys

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Reproductive performance, age structure, and natal dispersal of Swainson's hawks in the Butte Valley, California.

Journal of Raptor Research 29:187-192. 1995. 1995. (with B. Woodbridge and K. K. Finley)

The biology and current status of the long-eared owl in coastal southern California. Bulletin of the Southern California Academy of Sciences 93:1-12. 1994.

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Bloom Biological, Inc.
Research | Consulting | Conservation

Scott Thomas | Director of Field Operations

Qualifications

Mr. Thomas has over 20 years of experience working with raptors, songbirds, small mammals, reptiles, and amphibians. He has banded several thousand raptors, including Golden Eagle; sea-eagles; Osprey; Swainson's, Red-tailed, and Red-shouldered Hawks; White-tailed Kite; Spotted and Burrowing owls, and more than 500 songbirds. He has extensive experience trapping and installing radio/satellite telemetry equipment on Red-tailed and Cooper's Hawks, Turkey Vultures, Golden Eagles, and numerous songbirds. He has performed and managed various raptor survey and monitoring studies and has served as Conservation Director for Audubon California and Raptor Program Coordinator and Regional Conservation Coordinator for the Raptor Research Foundation.

Professional Experience

Orange County Conservation Director for Sea and Sage Audubon Society and Audubon California. Duties have included: management of science programs, the Orange County Raptor Research Project, and other avian research programs; liaison and conservation with Starr Ranch Audubon Sanctuary; development of the monthly Science and Conservation Lecture Series; and development of the raptor and avian urban nesting habitat protection program. Responsibilities have also included oversight of chapter interactions with public agencies and the private sector development community.

Biological monitor at the Sunshine Canyon Landfill in Sylmar, California. Responsibilities included general biological monitoring, avian breeding surveys, raptor surveys, mist netting of several hundred passerines to determine breeding and range status, operation and management of 5 miles of reptile pit-fall traps, and capturing and relocating over 500 individuals of 15 reptile species.

Performed trapping and marking studies, habitat assessments and management programs, nest surveys, and monitoring studies for raptors and other birds. Highlights in recent years have included trapping and installing satellite transmitters on Golden Eagles in Sweden and Red-tailed Hawks and Turkey Vultures in southern California.

Completed a 15-month raptor survey for the PDV Wind Turbine Facility in the Antelope Valley. Project objectives were to survey and document resident, breeding, and migratory raptors, focusing on Swainson's Hawks, Golden Eagles, and other migrant raptors.

Performed breeding Swainson's Hawk surveys in the Antelope Valley, Owens Valley, and northeastern California. Captured and color marked 25 individuals in cooperation with the California Department of Fish and Game, and University of California, Berkeley.

Performed raptor surveys in the Las Virgenes Canyon Reserve (formerly Ohmanson Ranch) and breeding raptor surveys and subsequent construction monitoring in Moorpark, California. Performed raptor surveys in the Santa Monica Mountains Conservancy open spaces, focusing on nesting and breeding success.

Conducted raptor research and monitoring projects on the Irvine Ranch Land Reserve, the Orange County Water District at Prado Basin, and the Rancho Mission Viejo Land Conservancy. Tasks included a satellite telemetry study, monitoring of natal dispersal and philopatry, and annual report preparation.

Monitored wintering Burrowing Owls and Peregrine Falcons and conducted pre-construction surveys for breeding passerines and raptors for the City of El Segundo.

Served as field manager for a 3-year survey of Burrowing Owl densities in the Imperial Valley coordinating the work of 15-20 field biologists, and performed protocol surveys that included the capture, banding and passive relocation of approximately 15 Burrowing Owl pairs. Performed a Burrowing Owl survey and translocation project for Cal

Trans in south San Diego County, which included the capture and translocation of breeding pairs. Conducted protocol Burrowing Owl surveys with CH2M Hill Inc. in Western Riverside County. Monitored and banded Burrowing Owls on the Seal Beach Naval Weapons Station, California. Performed Burrowing Owl presence/absence and breeding surveys in Menifee, Rubidoux, and Victorville, California.

Assisted with protocol Spotted Owl surveys in the Santa Ana Mountains.

Developed and managed the Orange County (California) Cactus Wren project in coordination with the Audubon Society, The Nature Conservancy, and the Nature Reserve of Orange County, which includes banding Cactus Wrens and conducting nesting surveys.

Performed numerous Arroyo Toad surveys and monitoring studies.

Education

A.S. (Environmental Science) Saddleback College
B.S. (Biology) California State University

Permits & Certifications

California and federal permits to handle, take blood, capture, and band all diurnal and nocturnal raptors
Federal bird marking and salvage sub-permit, including eagles; approved to mark, install telemetry equipment, and take blood samples
California scientific collectors permit no. 801128-03
Federal banding sub-permit 20431-AT
Federal bird marking and salvage permit
Federal 10A(1) endangered species sub-permit TE-787376 for arroyo toad and California gnatcatcher
Federal burrowing owl translocation permit MB0022490
Federal migratory bird predator management authorization
Federal migratory bird avian relocation permit
Desert tortoise egg handling and burrow construction certificate
Desert Tortoise Council-approved for conducting desert tortoise monitoring surveys
Southwestern Willow Flycatcher Workshop

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
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AMENDMENT

FOR THE PALEN SOLAR ELECTRIC GENERATING SYSTEM

Docket No. 09-AFC-7C
PROOF OF SERVICE
(Revised 3/26/13)

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After docketing, the Docket Unit will provide a copy to the persons listed below. Do not send copies of documents to these persons unless specifically directed to do so.

KAREN DOUGLAS
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Kelly Foley
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Eileen Allen
Commissioners' Technical
Adviser for Facility Siting

DECLARATION OF SERVICE

I, Marie Fleming, declare that on April 8, 2013, I served and filed copies of the attached, **PALEN SOLAR ELECTRIC GENERATING SYSTEM WINTER 2013 GOLDEN EAGLE SURVEY RESULTS** dated March 2013. This document is accompanied by the most recent Proof of Service, which I copied from the web page for this project at: http://www.energy.ca.gov/sitingcases/palen/compliance/.

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service) and to the Commission's Docket Unit, as appropriate, in the following manner:

(C*heck one*)

For service to all other parties and filing with the Docket Unit at the Energy Commission:

__X__ I e-mailed the document to all e-mail addresses on the Service List above and personally delivered it or deposited it in the US mail with first class postage to those parties noted above as "hard copy required"; **OR**

_____ Instead of e-mailing the document, I personally delivered it or deposited it in the US mail with first class postage to all of the persons on the Service List for whom a mailing address is given.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that I am over the age of 18 years.

Dated: April 8, 2013

Marie Fleming