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May 25, 2012

427930.DI.DR

Mike Monasmith  
Senior Project Manager  
Systems Assessment & Facility Siting Division  
California Energy Commission  
1516 Ninth Street, MS-15  
Sacramento, CA 95814

Subject: Data Response, Set 1B-7  
Hidden Hills Solar Electric Generating System (11-AFC-2)

Dear Mr. Monasmith:

On behalf of Hidden Hills Solar I, LLC; and Hidden Hills Solar II, LLC, please find attached copies of Data Response Set 1B-7.

Please call me if you have any questions.

Sincerely,

CH2M HILL

A handwritten signature in blue ink, reading "John L. Carrier".

John L. Carrier, J.D.  
Program Manager

Encl.

c: POS List  
Project file

**DOCKET**  
**11-AFC-2**

DATE May 25 2012

RECD. May 25 2012



**Data Response Set 1B-7**

# **Hidden Hills**

## **Solar Electric Generating System**

(11-AFC-2)



**Application for Certification**  
**Hidden Hills Solar I, LLC; and Hidden Hills Solar II, LLC**

**May 2012**

With Technical Assistance from





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# **Hidden Hills Solar Electric Generating System (HHSEGS)**

**(11-AFC-2)**

**Data Response, Set 1B-7  
(Responses to Data Request 52)**

Submitted to the  
**California Energy Commission**

Submitted by  
**Hidden Hills Solar I, LLC; and  
Hidden Hills Solar II, LLC**

May 25, 2012

With Assistance from  
**CH2MHILL**  
2485 Natomas Park Drive  
Suite 600  
Sacramento, CA 95833



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# Introduction

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Attached is Hidden Hills Solar I, LLC, and Hidden Hills Solar II, LLC (collectively, “Applicant”) additional response to the California Energy Commission (CEC) Staff’s data request number 52 for the Hidden Hills Solar Electric Generating System (HHSEGS) Project (11-AFC-2). The CEC Staff served this data request on November 4, 2011.



# Biological Resources (52)

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## **GOLDEN EAGLE**

**BACKGROUND:** Due to recent changes in the U.S. Fish and Wildlife Service's (USFWS) survey protocols and management of golden eagle, staff needs additional information on the occurrence of golden eagle nests within the project area. The applicant's golden eagle surveys provided in Appendix 5.2D of the AFC did not completely follow the most recent survey protocol for this species, *Interim Golden Eagle Inventory and Monitoring Protocols and other Recommendations* (Pagel et al 2010). Staff contacted USFWS Migratory Bird Program staff (Heather Beeler) on September 6, 2011, and learned that helicopter surveys were highly recommended for this project and if there were conflicts with bighorn sheep lambing season, helicopter surveys could be flown prior to the lambing season to ensure all potential eagle nests are located. Staff also learned that upon completion of the helicopter survey, ground surveys could be conducted for the identified nest locations. Heather Beeler also indicated the applicant's golden eagle surveys included in Appendix 5.2D suffice as a preliminary, reconnaissance-level survey effort but are not thorough enough to draw any conclusions about eagle use of the project area during the breeding season or throughout the year. At staff's request, the applicant contacted Heather Beeler on September 7, 2011, to clarify aerial and ground survey needs and appropriate survey timing for golden eagles for this project.

Based on consultation with resource agencies, previous Energy Commission siting cases for large solar thermal projects in the Mojave Desert have considered a cumulative impact radius of 140 miles from the project site to golden eagle territories, since the local golden eagle population is defined as eagles that occur within the average natal dispersal distance of the nests under consideration (Pagel et al 2010). Heather Beeler also indicated that observational points are suggested for golden eagle migration data in which observers watch for golden eagle activity from fixed locations for a minimum of two hours to assess occurrence and habitat use of the project area by golden eagles; observational points are also useful to assess general raptor habitat use in the project area.

The following data requests are based on the preliminary agency conversations and guidance included in Records of Conversations provided by the applicant during Data Adequacy review (California Department Fish and Game (CDFG), Jeff Villepique; Sacramento USFWS, Heather Beeler; Ventura USFWS, Ashleigh Blackford; Nevada Department of Wildlife, Brad Hardenbrook).

## **DATA REQUEST**

52. Once the agencies have approved the study proposal and the fall 2011 helicopter survey(s) has been completed, please provide staff a fall 2011 helicopter survey report that will include the "minimum data collected at

known golden eagle territories” identified in Pagel et al 2010 (See Section IX, Documentation and Accepted Notation). Once winter/spring 2012 ground surveys have been completed, please provide staff a complete Golden Eagle Study Report.

**Response:** Following agency guidance, golden eagle nest surveys were conducted on foot during April, 2012. A technical memorandum reporting the results of those surveys is provided as Attachment DR52-3.

## ATTACHMENT DR52-3



16431 Scientific Way  
Irvine, CA 92618-7443  
Phone: 949-788-4900  
Fax: 949-788-4901  
www.ultrasystems.com

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**RE: Pahrump Valley, CA Golden Eagle Nest Survey – April 2012**

May 18, 2012

In April of 2012, three biologists conducted pedestrian Golden Eagle surveys near the Pahrump Valley of eastern California. Table DR52.3-1 (all tables are provided at the end of this memo) presents survey data for golden eagle breeding areas located in the Nopah and Kingston ranges overlooking the Pahrump Valley in California. The terrain is very steep and rugged, and the Pahrump Range has extensive ridges, fins and folds, with cliffs offering an abundance of potential nesting substrate.

The pedestrian surveys followed the 2010 Interim Golden Eagle Technical Guidance; Inventory and Monitoring Protocols and Other Recommendation in Support of Golden Eagle Management and Permit Issuance (Pagel -USFWS 2010). Each nest site, roost, or territory was observed for a minimum of 4 hours by a qualified observer (Appendix A: Permitted Biologist Resumes). Each area inventory was conducted looking for numbers, locations and distributions of golden eagles and their breeding area habitats as described below. The surveys conducted during this effort comprise one of the two recommended site visits during a single breeding season (Pagel 2010); a second site survey is scheduled for late May/early June 2012.

Using aerial nest survey data provided by CH2M HILL (2011), nine breeding areas were identified based on the spacing of nest clusters (see Figure DR52.3-1 in Appendix B: Maps and Figures). Table DR52.3-2 provides a brief summary of breeding area status, based on the field observations at each area. Although a number of other raptor species were observed, some of which were nesting within the Pahrump Range, only golden eagle information was included in this report. Nest numbers and GPS coordinates are from the CH2M HILL aerial survey conducted in November 2011. Nests identified by the letters US-A through US-H are new nests located during the April 2012 surveys (see Figure DR52.3-2). GPS locations for these nests were approximated using the topographical map features (Map Source) of Garmin Map 76CSx GPS units.

The survey found four occupied golden eagle breeding areas (North Nopah, NW Nopah, NE Nopah and East Central Nopah), two of which contained nests with young (NW Nopah and NE Nopah). An additional two breeding areas (South Central (SC) Nopah and NE Kingston) displayed signs of occupancy by eagles, but no eagles were observed there during the surveys. An eagle vocalization was heard at NE Kingston, but no eagles were seen there. No signs of occupancy by eagles at the remaining three sites (Central Nopah, SE Nopah and SW Nopah) were observed.

Verifying that a breeding area is unoccupied by eagles may require up to four site visits on the ground (Driscoll 2010); however, the U.S. Fish and Wildlife Service (USFWS) has recommended at least two flights or two site visits on the ground in a single breeding season at least 30 days apart for the purposes of renewable energy project surveys (Pagel et al. 2010). At the two potentially occupied breeding areas (SC Nopah and NE Kingston) our estimation of breeding area status was based on the presence of fresh

lining in nests and fresh mute on the nest cliffs (SC Nopah), and on an eagle vocalization heard at NE Kingston. In general, eagle pairs in temperate climates remain in their breeding areas year-round, but may not be present at the nest cliff during site visits unless they are tending eggs or young. Not all eagle pairs lay eggs every year, and fewer pairs lay eggs in years of low prey numbers and/or severe winter weather (Steenhof et al. 1997).

Nest US-H is being tended by the East Central Nopah golden eagle pair, and is located approximately 4.7 miles from the Hidden Hills Solar Electric Generating System site, near the junction of Old Spanish Trail Highway and Mesquite Valley Road. This site will be observed again during the second site survey. Since this survey was conducted from the ground, close photographs of golden eagle nest structures were not always possible. Photos that may aid in the location of nest sites are included in Appendix C. Table DR52.3-1 contains the nest survey results data.

## **References**

- CH2M HILL. 2011. Hidden Hills SEGS Site Aerial Golden Eagle Nest Survey, Fall 2011. Provided as Attachment DR52-1, Data Response Set 1B-3. January 27.
- Driscoll, D.E. 2010. Protocol for golden eagle occupancy, reproduction, and prey population assessment. American Eagle Research Institute, Apache Jct., Arizona. 50pp.
- Pagel, J.E., D.M. Whittington, and G.T. Allen. 2010. Interim golden eagle technical guidance: inventory and monitoring protocols; and other recommendations in support of eagle management and permit issuance. Division of Migratory Bird Management, U.S. Fish and Wildlife Service.
- Steenhof, K., M.N. Kochert and T.L. McDonald. 1997. Interactive effects of prey and weather on golden eagle reproduction. *Journal of Animal Ecology* 66:350-362.

**TABLE DR52.3-1 Golden Eagle Survey Results from Pedestrian Surveys near Pahrump Valley  
Pahrump Valley Golden Eagle Nest Surveys, Nopah and Kingston Ranges, CA - April 2012.**

Breeding Area (BA)	Nest ID	BA Status	Comments
North Nopah Range	CH-88	Occupied	Nest Empty. 5-mile hike from Wilderness Boundary. 10-mile hike round-trip. Adult hunting jackrabbits on slope SE of nest on 4-23-12. Adult made two diving attempts for jackrabbit, but was unsuccessful.
NW Nopah Range	*CH-1	Occupied	Nest Not Located
	CH-2	Occupied	Nest Empty
	CH-3	Occupied	Nest Empty
	CH-4	Occupied	Nest Empty
	CH-5	Occupied	Nest Empty
	US-A	Active	Adult pair + at least 1 young 1 week old on 4-17-12. Nest in tight sheltered corner. Not visible from west.
	US-B	Occupied	Nest in pothole just south of Nest CH-4
NE Nopah Range	CH-8	Occupied	Nest Empty
	CH-9	Occupied	Nest Empty
	US-C	Active	Adult pair + 2 prey deliveries to nest on 4-21-12. Young in nest, but could not get good view for age
Central Nopah Range (CH-7 = CA-26) (DNL = CA-25)	CH-7	Unoccupied	Ravens have built on top of nest and are incubating.
	CA-26		Nest CH-7 is at same location as CA-26.
	CA-25	Not Found	Nest DNL is at same location as CA-25. Nest DNL or CA-25 was not located.
East Central Nopah	US-H	Occupied	Adult pair undulating and perching on knoll. Nest with fresh muting, but no young visible.
South Central Nopah (CH 16 = CA 27)	CH-6	Potentially Occupied	Fresh muting in multiple areas, but no eagles seen.
	US-D	Potentially Occupied	Nest in pothole. Muting in area, but no eagles seen.
	CH-16	Potentially Occupied	Nest Empty. CH-16 is at same location as CA-27.
	US-E	Potentially Occupied	Nest Empty, but in good condition. No eagles seen.
	US-F	Potentially Occupied	Nest Empty, but in good condition. No eagles seen. Nest appears new, with fresh sticks. Fresh muting.
SE Nopah Range	CH-11	Unoccupied	Nest Empty. No eagles observed in area.
	CH-12	Unoccupied	Nest Empty. No eagles observed in area.
	CH-13	Unoccupied	Nest Empty. No eagles observed in area.
	CH-14	Unoccupied	Nest Empty. No eagles observed in area.
SW Nopah Range	CH-90	Unoccupied	Nest Empty. No eagles observed in area.
	CH-91	Unoccupied	Nest Empty. No eagles observed in area.
NE Kingston Range	CH-29	Unoccupied	Nest Empty. Possibly Red-tailed Hawk nest.
	CH-30	Potentially Occupied	Nest Empty. Eagle vocalization, but no sighting.
	US-G	Potentially Occupied	Nest Empty, but in good condition. No eagles seen.

**Notes:**

**DNL** = Did Not Locate

**BA** = Breeding Areas, also known as nest cluster or territory

**Nest Status:**

**Occupied** = one or more adults or their fresh lining or muting were observed at the nest.

**Active** = nest in which eggs were laid.

**Unoccupied** = an area containing a nest, but did not indicate any of the following conditions: a) young were raised; b) eggs were laid; c) adult was observed with incubating behavior; d) two adults were observed perched on or near the nest; e) adult with an immature plumaged bird observed at or near the nest, and such as courtship behavior occurred; or f) recent repairs (fresh sticks or lining), mute, or feathers were visible at or near the nest.

\***CH-1** nest is not occupied; however, the nest is in the occupied BA. Nest CH-1 is in the BA (number of alternate nests used by a single pair of golden eagles) with Nests CH-1 to 5 and US-A and B. Within this BA, eggs were laid in Nest US-A in 2012, an Active Nest. Site CH-1 is within an occupied BA of a pair of golden eagles; therefore, it is considered an occupied nest.

UltraSystems

Golden Eagle Surveys

Pahrump Valley 2012

**TABLE DR52.3-2**

## Summary of Nest Survey Results

Breeding Area	Nest Numbers	Total Nests Located	Nest Status	Comments
North Nopah Range	CH-88	1	Occupied <sup>1</sup>	Adult hunting in area
NW Nopah Range	CH-1, 2, 3, 4, 5 & US-A, B	6	Occupied & Active <sup>2</sup>	Young in Nest A
NE Nopah Range	CH-8, 9 & US-C	3	Occupied & Active	Young in Nest C
Central Nopah Range	CH-7 + DNL	1	Unoccupied <sup>3</sup>	Nest DNL not located
East Central Nopah	US-H	1	Occupied	Adult pair at Nest H
South Central Nopah	CH-6, 16 & US-D, E, F	5	Potentially Occupied	Fresh mute and sticks at Nest F
SE Nopah Range	CH-11, 12, 13, 14	4	Unoccupied	Nests empty and no eagles seen
SW Nopah Range	CH-90, 91	2	Unoccupied	Nests empty and no eagles seen
NE Kingston Range	CH-29, 30 & US-G	3	Potentially Occupied	Nests empty. Eagle vocalization

**Notes:**

1. **Occupied** = one or more adults or their fresh lining or muting were observed at the nest.

2. **Active** = nest in which eggs were laid.

3. **Unoccupied** = an area containing a nest, but did not indicate any of the following conditions: a) young were raised; b) eggs were laid; c) adult was observed with incubating behavior; d) two adults were observed perched on or near the nest; e) adult with an immature plumaged bird observed at or near the nest, and such as courtship behavior occurred; or f) recent repairs (fresh sticks or lining), mute, or feathers were visible at or near the nest.



**APPENDIX A**  
**SITE PHOTOGRAPHS**



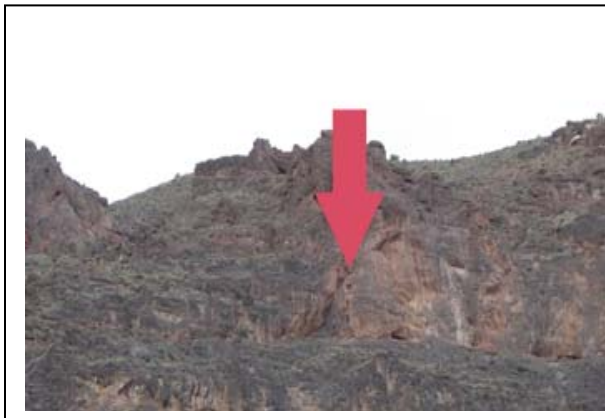
**Pahrump Valley, CA Golden Eagle Nest Survey – April 2012.**



Nest US-A and cliff is hidden by ridge on west side



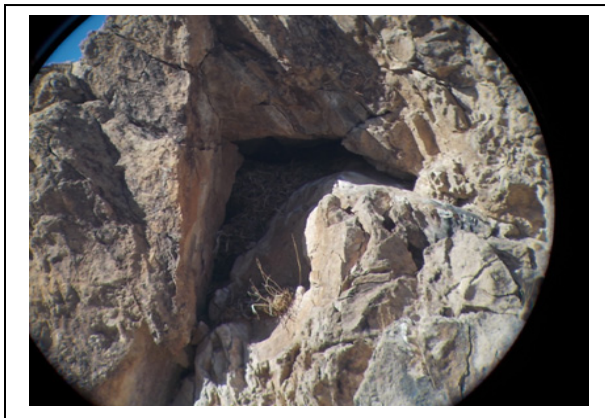
Pothole Nests CH-4 & US-B on left and Nest CH-5 to right



Nest US-F cliff in back of box canyon behind ridge



Nest US-G cliff



Nest US-G through scope



Nest US-H



**APPENDIX B**  
**PERMITTED BIOLOGIST RESUMES**



# AMERICAN EAGLE RESEARCH INSTITUTE

P.O. Box 748, Apache Junction, Arizona 85117 (480) 216-3001 EagleStudies@gmail.com

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**Resume Of: Daniel E. Driscoll - Bald and Golden Eagle Biologist and Director**

## **OBJECTIVE**

Conducting research which explores the resources important to the ecology of eagle species and the elements that pertain to population ecology and demography; thereby, providing management agencies and the private sector with sound biology on which to base decisions that may affect eagle populations or individual breeding areas.

## **BALD EAGLE, GOLDEN EAGLE, AND RAPTOR EXPERIENCE**

I received a Bachelor of Science degree in Forest and Wildlife Management from Purdue University in 1984. While attending Purdue, I programmed computers for the university, and conducted two raptor ecology research projects: 1) The ecology of urban nesting American kestrels; and, 2) Raptor populations and habitat utilization in agricultural areas. For the past 27 years, I have studied the ecology of bald and golden eagles throughout the U.S. and Mexico, and assisted government agencies and Native American Tribes with bald eagle, golden eagle, and other raptor projects. I have served as an Eagle Expert on the Hopi and Navajo Joint Golden Eagle Advisory Board, the Southwest Bald and Golden Eagle Management Committee, and the California and Nevada Golden Eagle Working Group.

My primary expertise involves nest inventory and mapping, capturing eagles for telemetry studies, collecting blood samples and morphological data, conducting occupancy and reproduction assessment (ORA) surveys, assessing adult tenure, climbing cliff and tree nests to band eaglets, the fitting of satellite, cellular, and conventional telemetry on eagles, assessing the impact of transmission line, pipeline, and wind energy development, and oil spills, data base management, data analysis, and technical writing. I have tagged over 700 eagles, climbed over 500 cliff and tree nests, and flown over 1,000 hours of helicopter surveys and over 200 hours of airplane surveys. I have conducted research alone in remote locations, as well as trained, scheduled, supervised, and equipped field crews for larger projects. I have coordinated permits and research with many state and federal agencies, and Native American Tribes, as well as private organizations, landowners, and ranchers in the U.S. and Mexico. I have written manuscripts for scientific publications, prepared large reports for government agencies, and presented research findings verbally to government agencies, scientific forums, and the general public, and developed the protocol for golden eagle occupancy and reproduction assessment. Recently, I have been subcontracted to conduct golden eagle nest inventories, ORA surveys, and capture and tag golden eagles for preconstruction wind energy siting in Arizona, California, Nevada, New Mexico, and Baja Mexico, for SWCA Environmental Consultants, San Diego Zoo Global, and West Virginia University.

I have also worked with a number of other raptor and endangered species. I have captured, banded, and climbed over 100 nests of other raptor species, including peregrine falcons, prairie falcons, American kestrels, northern goshawks, red-tailed hawks, grey hawks, Harris hawks, Harlan's hawks, Swainson's hawks, ferruginous hawks, common black hawks, white-tailed hawks, common ravens, turkey vultures, and California condors. In addition, I have been involved with surveys and habitat assessment for red-legged frogs, and predation studies of Channel Islands foxes.

**Golden Eagle Biologist**

Studied the ecology of golden eagles nesting on Hopi Tribal Lands in northeastern Arizona.  
Assisted in the design and budgeting of a monitoring plan for golden eagles on tribal lands.  
Prepared proposals to generate funds for golden eagle and prey population research on Hopi Lands.  
Identified, mapped, and inventoried golden eagle nest locations, habitat characteristics, and use areas.  
Conducted Occupancy and Reproduction Assessment (ORA) surveys to determine nesting chronology and monitor the trend of breeding area occupancy.  
Trained tribal biologists in the collection and analysis of occupancy and reproduction assessment data.  
Compiled and analyzed productivity data, and calculated breeding area densities.  
Compared reproductive parameters from tribal lands to that of golden eagle populations elsewhere.  
Designed prey population assessment methodologies and survey transects.  
Mapped golden eagle nest sites, rabbit transects, and prairie dog colonies using ArcGIS 9.3 and 10.0.  
Photographed golden eagle nest sites and compiled breeding area reproductive histories.  
Developed, managed, and analyzed databases, and prepared reports.

AMERICAN EAGLE RESEARCH INSTITUTE, APACHE JUNCTION, ARIZONA      2006 – 2012

**Golden Eagle Biologist**

Consulted the Hopi Tribe and Navajo Nation and their attorneys on golden eagle issues pertaining to the mediation of a federal court case involving 1882 and 1934 boundaries of Hopi and Navajo Tribal Lands, and proposed Paiute Tribal Lands, in northeastern Arizona.  
Served as an Eagle Expert on the Hopi and Navajo Joint Golden Eagle Advisory Board.  
Identified, mapped, and inventoried golden eagle nest locations, human structures, and land improvements in the vicinity of golden eagle nest sites on Hopi and Navajo Lands.  
Created a database of nest locations, nest photographs, nest cliff characteristics, land uses, human access and improvements, terrain features, and the areas potential for development.  
Established and Mapped Non-Development Zones surrounding golden eagle nest sites.  
Compiled and analyzed productivity data, and calculated breeding area densities.  
Compared reproductive parameters from tribal lands to that of golden eagle populations elsewhere.  
Assessed the impact of Transmission Line and Aquifer Pipeline Development on golden eagles.  
Prepared a 2 volume document, "Golden Eagle Nest Investigation For 1934 Reservation Mediation" for use as an exhibit of evidence in federal court proceedings.  
Prepared proposals to generate funds for golden eagle and prey research on Hopi and Navajo Lands.  
Designed and budgeted a 12 year research project on the ecology of golden eagles on the Colorado Plateau of Arizona, New Mexico, Colorado, and Utah.

AMERICAN EAGLE RESEARCH INSTITUTE, APACHE JUNCTION, ARIZONA      2002 – 2009

**Golden Eagle and Raptor Biologist**

Studied raptor utilization of a proposed wind resource area in the Mojave Desert of California.  
Inventoried raptor migration through the proposed wind resource area.  
Monitored the behavior and habitat use of golden eagles and other raptors breeding on, and adjacent to, the proposed wind resource area.

AERIE – subcontract for BLOOM BIOLOGICAL, Santa Anna, CA      September 2006 – April 2008



**Golden Eagle Biologist**

Assisted with a study of the ecology of golden eagles on Hopi Lands in northern Arizona.  
Trained biologists to capture, band, telemeter, and collect blood samples from golden eagles.  
Captured breeding adult golden eagles utilizing radio-controlled bownets.  
Climbed golden eagle nests to process young and collect prey remains.  
Telemetered adult and nestling eagles with backpack transmitters, using a Teflon ribbon harness.  
Banded eagles with U.S. Fish and Wildlife Service bands.  
Collected blood samples for gender confirmation.  
Recorded morphological characteristics for sexual differentiation and aging.  
Trained biologists to radio-track eagles for habitat use, movements, and home range determination.

AMERICAN EAGLE RESEARCH INSTITUTE, APACHE JUNCTION, ARIZONA

May 2001

**Golden Eagle Biologist**

Assisted The Nature Conservancy and the National Park Service with a study of the impacts of golden eagles on endangered endemic Channel Islands foxes. Golden eagles recently (1990s) occupied the islands, in the DDT induced absence of bald eagles and peregrine falcons, to take advantage of large populations of feral sheep and pigs remaining from years of private ownership. Following the removal of feral sheep from the islands, the Channel Islands fox became a more important component of the golden eagle diet.

The Channel Islands fox is a small (house-cat size), very tame animal, which had virtually no predators until golden eagles arrived. Through the accelerated rate of island evolution, the foxes evolved into separate subspecies on each island. The small foxes were such easy prey that the eagles quickly reduced their numbers to the point where extinction was eminent. Since golden eagles were not native to the Channel Islands, it was decided to capture and translocate the eagles to the mainland and begin a captive breeding program to restore fox populations to healthy numbers.

Managed the eagle project and coordinated with Park Service and Nature Conservancy biologists.  
Supervised and equipped field crews and managed logistics.  
Trained biologists to capture, band, telemeter, and collect blood samples from golden eagles.  
Captured adult, subadult, and juvenile golden eagles using radio-controlled bownets and dho-gaza nets.  
Telemetered eagles with backpack satellite transmitters, using a Teflon ribbon harness.  
Banded eagles with U.S. Fish and Wildlife Service bands.  
Recorded morphological characteristics for sexual differentiation, aging, and population parameters.  
Collected blood samples for DNA analysis, contaminant testing, and gender confirmation.  
Climbed golden eagle nests to process young and collect prey remains.  
Transported eagles to northeastern California and released them in appropriate habitat.  
Surveyed the islands to locate eagles for capture and relocation.  
Identified, photographed, mapped, and inventoried golden eagle nest locations, and use areas.  
Collected feral pigs for bait stations utilizing a Browning 7mm magnum rifle.  
Purchased, operated, and maintained ATVs and four wheel drive vehicles.  
Identified, recorded, and reported unique plants, animals, and archeological sites.

PREDATORY BIRD RESEARCH GROUP, UNIVERSITY OF CALIFORNIA, SANTA CRUZ,  
CALIFORNIA

2000 – 2005

**Golden Eagle Biologist**

Studied the ecology of golden eagles in the Diablo Range of Central California and the Altamont Pass Wind Resource Area, in cooperation with the U.S. Fish and Wildlife Service, East Bay Regional Parks Department, California Fish and Game Department, Kenetech Windpower, Greenridge Windpower, Lawrence Livermore National Laboratory, National Renewable Energy Laboratory, California Energy Commission, Contra Costa Water District, and San Francisco Water Dept. Captured breeding and wintering adult, subadult, and juvenile golden eagles, utilizing radio-controlled bownets, pit traps, and dho-gaza sets.

Telemetered captured golden eagles with backpack transmitters, using a Teflon ribbon harness.

Banded eagles with U.S. Fish and Wildlife Service bands.

Recorded morphological characteristics for sexual differentiation, aging, and population parameters.

Collected blood samples for contaminant testing and gender confirmation.

Identified, photographed, mapped, and inventoried golden eagle nest locations and use areas.

Climbed golden eagle nests to process young, collect prey remains, eggshell fragments, addle eggs, and measure nest parameters.

Radio-tracked eagles by foot, vehicle, and airplane to determine movements and mortality factors.

Conducted Occupancy and Reproduction Assessment (ORA) surveys to determine nesting chronology and monitor the progress of breeding pairs.

Mapped habitat within the Altamont Pass Wind Resource Area (WRA) and golden eagle nest sites surrounding the WRA.

Monitored eagle and other raptor activity within the WRA to determine environmental and behavioral aspects that could lead to collisions with wind turbines.

Designed and conducted surveys of prey populations within and surrounding the WRA.

Developed data forms for recording macro- and micro-habitat characteristics at nest sites, prey densities, and eagle morphological characteristics.

Developed, managed, and analyzed databases, and prepared reports.

Correlated eagle use with land management, prey densities, and mitigation factors using ArcGIS software.

Photographed golden eagle nest sites and use areas.

Operated and maintained two and four-wheel drive vehicles.

PREDATORY BIRD RESEARCH GROUP, UNIVERSITY OF CALIFORNIA, SANTA CRUZ,  
CALIFORNIA 1994 - 2001

**Bald Eagle Biologist**

Trained biologists to capture, band, telemeter, and collect blood samples from bald eagles on the Hudson River, New York, as part of a habitat use and contaminant study in cooperation with the New York Department of Environmental Conservation.

Trained biologists to sexually differentiate eagles based on morphological characteristics.

Telemetered adult and subadult eagles with backpack transmitters, using a Teflon ribbon harness.

Banded eagles with U.S. Fish and Wildlife Service and color anodized Visual Identification Bands.

Collected blood samples for organochlorine analysis.

AERIE subcontract for INSTITUTE FOR WILDLIFE STUDIES, Arcata, CA

June 1998

**Bald Eagle Biologist**

Studied the ecology of bald eagles in Sonora, Mexico, in cooperation with the Centro Ecologico de Sonora, IMADES – Instituto del Medio Ambiente y Desarrollo Sustentable del Estado de Sonora (Institute for Environment and Sustainable Development of the State of Sonora), SEMARNAT – Secretaria del Medio Ambiente y Recursos Naturales (Secretary for the Environment and Natural Resources), PROFEPA – Procuraduria Federal de Proteccion al Ambiente (Federal Law Enforcement and Environmental Protection), and the U.S. Fish and Wildlife Service.

Canoeed the Rio Bavispe, Rio Aros, and Rio Yaqui in interior Sonora, Mexico, searching for bald eagle breeding areas, as well as peregrine falcon, common black hawk, and other raptor nests.

Climbed bald eagle nests to process young, collect prey remains, addle eggs, eggshell fragments, and measure nest parameters.

Banded eaglets with U.S. Fish and Wildlife Service and color anodized Visual Identification Bands.

Collected blood samples for DNA restriction fragment length polymorphism studies, electrophoresis of enzymes, and heavy metal analysis.

Clipped feather samples for trace element analysis.

Recorded morphological characteristics and body condition for sexual differentiation, aging, and population parameters.

Developed data forms for recording macro- and micro-habitat characteristics at nest sites and eagle morphological characteristics.

Identified, photographed, mapped, and inventoried bald eagle nest locations and use areas.

Assisted in fishery studies utilizing gill nets, electroshockers, and visual surveys to determine fish distribution, abundance, and habitat use.

Conducted surveys to search for unknown breeding areas, and to assess habitat for bald eagles.

Developed, managed, and analyzed databases, and prepared reports.

AMERICAN EAGLE RESEARCH INSTITUTE, APACHE JUNCTION, ARIZONA 1988 – 2006

**Golden Eagle Biologist**

Studied the ecology of golden eagles in Central Mexico (Nuevo Leon, San Luis Potosi, Zacatecas) in cooperation with Fundacion ARA, SEMARNAT – Secretaria del Medio Ambiente y Recursos Naturales (Secretary for the Environment and Natural Resources), and PROFEPA – Procuraduria Federal de Proteccion al Ambiente (Federal Law Enforcement and Environmental Protection).

Trained biologists to capture, telemeter, and radio-track golden eagles.

Captured breeding golden eagles, utilizing radio-controlled bownets and dho-gaza sets.

Telemetered eagles with satellite backpack transmitters, using a Teflon ribbon harness, and conventional tail-mount transmitters.

Banded eagles with U.S. Fish and Wildlife Service bands.

Recorded morphological characteristics for sexual differentiation and aging.

Climbed golden eagle nests to collect prey remains and eggshell fragments.

Radio-tracked eagles by foot, vehicle, and airplane to determine movements, range, and habitat use.

Photographed golden eagle nest sites and use areas.

Operated and maintained two and four-wheel drive vehicles.

INTERNATIONAL EAGLE RESEARCH TEAM, MONTERREY, MEXICO May – October 1997

**Bald Eagle Biologist**

Studied the ecology of bald eagles in Arizona, in cooperation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Arizona Game and Fish Department, U.S. Bureau of Reclamation, U.S. Bureau of Land Management, U.S. Bureau of Indian Affairs, and Salt River Project.

Climbed bald eagle nests to process nestlings, collect prey remains, eggshell fragments, addle eggs, and measure nest parameters.

Banded eagles with U.S. Fish and Wildlife Service and color anodized Visual Identification Bands.

Recorded morphological characteristics and body condition for sexual differentiation, aging, and population parameters.

Rescued injured eagles and prefledged eaglets, and collected nestlings which died prior to fledging.

Conducted Occupancy and Reproduction Assessment (ORA) helicopter surveys to determine nesting chronology and monitor breeding progress.

Monitored individual adults at breeding areas to assess mortality and replacement among the breeding segment of the population, and to identify eagles carrying U.S. Fish and Wildlife Service or Visual Identification Bands.

Trained biologists to climb nests, handle young, and sexually differentiate eagles based on morphological characteristics.

Identified, photographed, mapped, and inventoried bald eagle nest locations and use areas.

Developed a life-table for Arizona bald eagles based on survivorship data from banding and telemetry.

Conducted helicopter surveys to search for unknown breeding areas, and to assess the population of bald eagles wintering in Arizona.

Developed, managed, and analyzed databases, and prepared reports.

Prepared an updated version of the "Arizona Bald Eagle Nest Map Atlas", compiled from 1986-1990 and published as Volume F of the "Ecology of Bald Eagles in Arizona", with demography and nest site data from 1991-1993.

AMERICAN EAGLE RESEARCH INSTITUTE, APACHE JUNCTION, ARIZONA      1991 - 1993

**Bald Eagle and Raptor Biologist**

Trained biologists to band, measure, and telemeter bald eagles that were being hacked into the Ventana Wilderness Sanctuary on the Big Sur Coast of California.

Trained biologists to climb nests and handle young of northern goshawks.

Assisted the U.S. Fish and Wildlife Service with the capture of, fitting of patagial transmitters to, and collection of blood samples from California Condors in the Lion Canyon Wilderness, CA.

Assisted the Lawrence Livermore National Laboratory with surveys for endangered red-legged frogs.

Analyzed field data on various aspects of Arizona and Mexico bald eagle ecology and prepared manuscripts for scientific journals.

AMERICAN EAGLE RESEARCH INSTITUTE, APACHE JUNCTION, ARIZONA      1991 – 2006

**Bald Eagle Biologist**

Studied the ecology of bald eagles in Arizona, in cooperation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Arizona Game and Fish Department, U.S. Bureau of Reclamation, U.S. Bureau of Land Management, U.S. Bureau of Indian Affairs, and Salt River Project.

Captured breeding and wintering adult, subadult, and juvenile bald eagles, utilizing noosed fish, and radio-controlled bownets and power snares.

Telemetered captured bald eagles with backpack transmitters, using a Teflon ribbon harness.

Banded eagles with U.S. Fish and Wildlife Service and color anodized Visual Identification Bands.

Collected blood samples for DNA restriction fragment length polymorphism studies, electrophoresis of enzymes, and heavy metal analysis, and clipped feather samples for trace element analysis.

Recorded morphological characteristics for sexual differentiation, aging, and population parameters.

Climbed bald eagle nests to process young, collect prey remains, eggshell fragments, addle eggs, nest lining samples, and measure nest parameters.

Rescued injured eagles and prefledged eaglets, and collected nestlings which died prior to fledging.

Radio-tracked eagles by foot, vehicle, boat, and airplane to determine diel movements, obtain foraging data, and quantify home range and habitat utilization.

Identified, photographed, mapped, and inventoried bald eagle nest locations and use areas.

Mapped habitat within and surrounding bald eagle breeding areas.

Conducted Occupancy and Reproduction Assessment (ORA) helicopter surveys to determine nesting chronology and monitor the progress of breeding pairs.

Monitored individual adults at breeding areas to assess mortality and replacement among the breeding segment of the population, and to identify eagles carrying USFWS or VID Bands.

Developed a life-table for Arizona bald eagles based on survivorship data from banding and telemetry.

Surveyed prey distribution and abundance in eagle breeding areas.

Supervised biologists, managed logistics, and supplied, inventoried, and maintained field equipment.

Developed data forms for recording diel movements of eagles, macro- and micro-habitat characteristics at forage and nest sites, prey densities, prey deliveries to the nest, and eagle morphological characteristics for our research team, as well as data forms for the U.S. Fish and Wildlife Service's Arizona Bald Eagle Nest Watch Program which in addition included categories of human disturbances and interspecific and intraspecific interactions.

Conducted helicopter surveys to search for unknown breeding areas, and to assess the population of bald eagles wintering in Arizona.

Utilized backpack electroshockers, gill nets, seines, and visual surveys to determine fish distribution, abundance, and habitat use.

Developed, managed, and analyzed databases, and prepared reports.

Prepared a 7 volume document, "The Ecology of Bald Eagles in Arizona", which summarized the status, life history, behavior, foraging ecology, nesting ecology, demography, and prey base of the Arizona bald eagle population, and presented management recommendations for this population of desert-nesting bald eagles.

Performed an extensive review of all historical records relating to bald eagles and habitat conditions in Arizona, and interviewed agency personnel and other people knowledgeable about bald eagles in the state, to produce the "Arizona Bald Eagle Nest Map Atlas", a complete history of the Arizona bald eagle population and individual breeding areas.

Operated and maintained boats, outboard motors, canoes, rafts, and two and four wheel drive vehicles.

**Bald Eagle Biologist**

Studied the ecology of bald eagles on the Pit River in California, in cooperation with Pacific Gas and Electric, the U.S. Fish and Wildlife Service, U.S. Forest Service, and CA Game and Fish.

Captured breeding and wintering adult and subadult bald eagles, using noosed fish, and radio-controlled bownets and power snares.

Telemetered captured bald eagles with backpack transmitters utilizing a Teflon ribbon harness.

Banded eagles with U.S. Fish and Wildlife Service and color anodized Visual Identification Bands.

Collected blood samples for DNA restriction fragment length polymorphism studies, electrophoresis of enzymes, and heavy metal analysis.

Clipped feather samples for trace element analysis.

Recorded morphological characteristics and body condition for sexual differentiation, aging, and population parameters.

Climbed bald eagle nests to process nestlings, collect prey remains, eggshell fragments, addle eggs, and measure nest parameters.

Developed data forms for recording macro- and micro-habitat characteristics at nest sites and eagle morphological characteristics.

Radio-tracked eagles to determine diel movements, obtain foraging data, and quantify home range and habitat utilization.

Monitored individual adults at breeding areas to assess mortality and replacement among the breeding segment of the population, and to identify eagles carrying U.S. Fish and Wildlife Service or Visual Identification Bands.

Conducted helicopter surveys to determine nest occupancy and the status of telemetered eagles.

Photographed bald eagle nest sites and use areas.

Operated and maintained boats, outboard motors, canoes, rafts, and two and four wheel drive vehicles.

**BIOSYSTEMS ANALYSIS, INC., FALL RIVER MILLS, CALIFORNIA**

September – October 1988

April – August 1990

September 1991

October – November 1992

July – August 2002

**Raptor Biologist**

Studied the ecology of peregrine falcons on the Channel Islands, CA, in cooperation with the U.S.

Fish and Wildlife Service, U.S. Park Service, Catalina Island Conservancy, California Game and Fish Department, The Institute For Wildlife Studies, and Predatory Bird Research Group.

Surveyed the Channel Islands for peregrine falcons and eyries.

Recorded bald eagle sightings on Catalina Island in cooperation with the Catalina Island Bald Eagle Reintroduction Project.

Climbed peregrine falcon eyries to collect prey remains, eggshell fragments, and addle eggs for organochlorine (DDT/DDE) analysis.

Plotted cliffs suitable for peregrine eyries on topographic maps.

Surveyed prey distribution and abundance on the islands.

Supervised field biologists, and organized, scheduled, and managed logistics for island surveys.

Photographed peregrine eyries and potential nest cliffs.

**BIOSYSTEMS ANALYSIS, INC., SANTA CRUZ, CALIFORNIA**

March – July 1992

**Bald Eagle Biologist**

Assessed the impacts of the Exxon Valdez Oil Spill on the ecology of bald eagles in Prince William Sound, Alaska.

Conducted helicopter surveys to locate nests and monitor breeding success.

Developed a field agenda based on chronology at individual nest sites.

Identified, photographed, mapped, and inventoried bald eagle nest locations and use areas.

Climbed bald eagle nests to process nestlings, and collect prey remains, eggshell fragments, and addle eggs for hydrocarbon analysis.

Captured breeding adult bald eagles, using a floating noosed fish set.

Telemetered adult and nestling bald eagles with backpack transmitters utilizing a Teflon ribbon harness.

Banded adult and nestling eagles with U.S. Fish and Wildlife Service bands.

Collected blood samples for genetic, hydrocarbon, organochlorine, and heavy metal analysis.

Clipped feather samples for trace element analysis and hydrocarbon studies.

Recorded morphological characteristics and body condition for sexual differentiation, aging, and population parameters.

Trained biologists to capture, band, telemeter, and collect blood samples from eagles, and to sexually differentiate eagles based on morphological characteristics.

Mapped bald eagle nest sites, concentration areas, and salmon spawning streams within Prince William Sound.

Developed data forms for recording morphological characteristics, and banding and telemetry data.

Updated Fish and Wildlife Service personnel on activity at bald eagle nests and proximity to oiled areas, for management of Exxon clean-up crews.

Prepared reports summarizing field data.

U.S. FISH AND WILDLIFE SERVICE, VALDEZ, ALASKA

July - September 1989

**Golden Eagle Biologist**

Conducted an independent research project on golden eagles in Arizona.

Hiked and rafted through the Verde and Salt River Canyons and other habitats in Arizona searching for eagles and nests.

Identified, photographed, mapped, and inventoried golden eagle nest locations and use areas.

Communicated with the U.S. Fish and Wildlife Service, U.S. Forest Service, Arizona Game and Fish Department, U.S. Bureau of Reclamation, U.S. Bureau of Land Management, and Salt River Project to gather information on eagle nests and sightings.

Investigated reports of eagles and nests and plotted nest sites and areas of multiple eagle sightings on topographic maps.

Climbed golden eagle nests to collect prey remains, addle eggs, eggshell fragments, and measure nest parameters.

Rescued injured eagles and prefledged eaglets, and returned them to the nest or transported them to rehabilitation or veterinary facilities.

Developed data forms for recording macro- and micro-habitat characteristics at nest sites and eagle morphological characteristics.

AMERICAN EAGLE RESEARCH INSTITUTE, APACHE JUNCTION, ARIZONA      1985 – 1990

**Bald Eagle and Raptor Biologist**

Researched the history of bald eagles in the southwest.  
Identified, photographed, mapped, and inventoried bald eagle and raptor nest locations and use areas.  
Developed the Arizona Bald Eagle Nest Map Atlas.  
Climbed bald eagle and other raptor nests to collect prey remains, addle eggs, eggshell fragments, and measure nest parameters in cooperation with the U.S. Fish and Wildlife Service.  
Conducted aerial and ground surveys for bald eagle breeding areas.  
Compiled management recommendations for bald eagle nest sites.  
Designed a study to evaluate the impacts of hydroelectric dam operations on nesting bald eagles.  
Conducted raptor population censuses, endangered plant surveys, and wildlife, vegetation, and archaeological surveys at proposed dam and coal mine sites in Arizona and New Mexico.  
Supervised backhoe operators, archaeological and vegetation crews.  
Constructed fences to protect archaeological sites.  
Photographed archaeological sites and artifacts.  
Operated and maintained two and four-wheel drive vehicles.

SALT RIVER PROJECT, ENVIRONMENTAL SERVICES DEPARTMENT, PHOENIX, ARIZONA  
June - September 1986

**Bald Eagle Biologist**

Set up bald eagle trapping stations with Howitzer fueled rocket nets.  
Collected feral goats and pigs for bait stations, utilizing 6.5 mm rifles and a 357 magnum pistol.  
Test fired rocket nets and inspected all aspects for safety hazards to operators and eagles.  
Assembled and disassembled detonating squibs and Howitzer fuel explosives for rocket nets.  
Radio-tracked eagles to determine home range and habitat utilization.  
Photographed trapping and telemetry operations.  
Collected prey remains from bald eagle nest sites.  
Constructed a base camp, including installation of building, sink, shower, water heater, and plumbing.  
Operated and maintained a four wheel drive jeep.

INSTITUTE FOR WILDLIFE STUDIES, SANTA CATALINA ISLAND BALD EAGLE  
REINTRODUCTION PROJECT, CALIFORNIA May 1986

**Bald Eagle Biologist**

Evaluated the impacts of hydroelectric dam operations on nesting bald eagles.  
Monitored bald eagle nesting behavior.  
Identified prey species taken by eagles, and available prey items not used.  
Plotted perches and foraging locations on maps, using the Universal Transverse Mercator System.  
Evaluated the effects of intraspecific and interspecific interactions on nesting bald eagles.  
Photographed bald eagle nest sites and use areas.  
Identified all species of birds, mammals, and herptiles sighted within bald eagle nesting areas.  
Prepared a management report for nesting bald eagles on the Salt River Project watershed.  
Operated and maintained a four wheel drive vehicle.

SALT RIVER PROJECT, PHOENIX, ARIZONA

February – May 1986



**Bald Eagle Biologist**

Captured wintering bald eagles in the Coconino National Forest, utilizing Howitzer fueled rocket nets.  
Removed and released non-target wildlife from nets.  
Assisted in the application of backpack transmitters on bald eagles.  
Packed Howitzer fuel explosive charges for rocket nets.  
Radio-tracked eagles to determine habitat utilization and locate roosts.  
Photographed trapping and telemetry processes.

USFS ROCKY MOUNTAIN FOREST AND RANGE EXPERIMENT STATION

February 1986

**Bald Eagle Biologist**

Monitored bald eagle nesting behavior.  
Identified prey species taken by eagles, and available prey items not used.  
Mapped eagle perches and foraging locations using the Universal Transverse Mercator System.  
Evaluated the effects of intraspecific and interspecific interactions on nesting bald eagles.  
Recorded sonagrams and assisted in banding eaglets, collecting blood samples for electrophoretic analysis, and collecting prey remains from nests.  
Photographed bald eagle nest sites and use areas.  
Identified all species of birds, mammals, and herptiles sighted within bald eagle nesting areas.  
Prepared management reports for nesting bald eagles on Tonto National Forest, Arizona.

USFS ROCKY MOUNTAIN FOREST AND RANGE EXPERIMENT STATION February - June 1985

**Raptor Biologist**

Reintroduced peregrine falcons to Yellowstone National Park, Wyoming.  
Transported food to the hack site daily, and monitored the food intake of each falcon.  
Monitored and recorded the behavior, development, food habits, and intraspecific and interspecific interactions of fledgling peregrine falcons.  
Radio-tracked falcons ranging beyond the hack site area.  
Identified all species of birds, mammals, and herptiles sighted within the hack site area.  
Prepared a report summarizing the field data and providing recommendations for future hack sites within Yellowstone National Park.

THE PEREGRINE FUND, INC., WORLD CENTER FOR BIRDS OF PREY, BOISE, IDAHO

July - August 1985

**REFERENCES**

Dr. W. Grainger Hunt - Evolutionary Ecologist / Raptor Research Biologist  
The Peregrine Fund, Inc., 552-205 James Drive, McArthur, CA 96056  
Email: Grainger@PeregrineFund.org (530) 336-7281

Robert Mesta – Sonoran Joint Ventures  
U.S. Fish and Wildlife Service, 738 North 5<sup>th</sup> Street, Suite 215, Tucson, AZ 85705  
Email: Robert\_Mesta@FWS.gov (520) 882-0047

Ron Jackman - Bald and Golden Eagle Biologist  
Garcia and Associates, 1260 Mountain Shadows Blvd., Redding, CA 96003  
Email: RonaldJackman@ATT.net (530) 945-4088

**OTHER WILDLIFE EXPERIENCE****Wildlife Technician**

Conducted fieldwork for an eastern cottontail PhD research project.  
Live trapped and ear-tagged cottontails for population estimation.  
Collected cottontails with 22 caliber rifles for tissue analysis.  
Collected tissues for nutrient and reproductive analysis from cottontails shot by hunters.  
Operated and maintained vehicles with automatic and standard transmissions.

PURDUE UNIVERSITY, DEPARTMENT OF FORESTRY AND NATURAL RESOURCES,  
WEST LAFAYETTE, INDIANA August 1985 - January 1986

**Wildlife Technician**

Conducted wildlife habitat evaluations along highway corridors.  
Administered wildlife habitat improvement on Hoosier National Forest.  
Prepared habitat management reports.  
Constructed live traps for ruffed grouse.  
Operated and maintained two and four-wheel drive vehicles with automatic and standard transmissions.

INDIANA DEPARTMENT OF NATURAL RESOURCES, DIVISION OF FISH AND WILDLIFE,  
FOREST WILDLIFE HEADQUARTERS, MITCHELL, INDIANA June - August 1984

**Wildlife Assistant**

Indiana Department of Natural Resources:	Whitetail deer check stations	1979 - 1985	
Ruffed grouse drumming counts	1982 - 1984	Eastern wild turkey gobbling counts	1982 - 1984
Winter bird census:	1981 - 1987	Ruffed grouse drumming counts	1982 - 1984
Constructed and erected barn owl and wood duck nest boxes			1982 - 1984

**Computer Programmer**

Designed maps on Intergraph Interactive Graphics Design Systems Computers.  
Programmed computers in Basic and Fortran languages.  
Designed interactive programs for teaching soil science courses, and computer graphics screens.  
Developed data storage and sorting programs.  
Wrote software documentation for computer programs.

PURDUE UNIVERSITY, DEPARTMENT OF AGRONOMY, WEST LAFAYETTE, INDIANA  
June 1982 - January 1985

**HONORS AND ACTIVITIES**

1990 - U.S. Department of the Interior "Natural Resource Response Award for Exceptional Service" in response to the Exxon Valdez Oil Spill  
1989 - U.S. Fish and Wildlife Service "Outstanding Contribution Award" for the Arizona Bald Eagle Nest Watch Program  
1985 - Boone and Crockett "Wildlife Biologist Of The Year" Award  
Purdue University - Xi Sigma Pi Forestry Academic Honorary Fraternity  
Purdue University - Deans List of Distinguished Students  
Purdue University - President, Raptor Committee Chairman, and Forestry Council Representative, of The Wildlife Society

**EDUCATION****Purdue University** – Bachelor of Science, Forest and Wildlife Management, 1984

GPA 5.1 / 6.0

**Arizona State University** – Computer Applications in Biology, 1987

GPA 4.0 / 4.0

**Wildlife Ecology**

Raptor Ecology  
 Wildlife Ecology  
 Physiological Ecology  
 of Wildlife  
 Environmental Ecology

**Habitat Management**

Wildlife Management  
 Dendrology  
 Botany  
 Forest Soils  
 Forest Mensuration  
 Forest Silviculture  
 Forest Management  
 Forest Economics

**Wildlife Management**

Wildlife Techniques  
 Ornithology  
 Mammalogy  
 Ichthyology  
 Entomology  
 Deer Biology and Harvest Management  
 Upland Game Management  
 Statistical Methods

**Computers**

Fortran Programming  
 Basic Programming  
 Computer Applications In Biology

**Technical Skills**

Mountaineering  
 Survival Skills  
 Technical Climbing  
 Helicopter Safety Training  
 Helicopter Open Water Crash Training

**PROJECT COORDINATION AND MANAGEMENT**

Over the years, I have coordinated permits and field work with many government agencies and private organizations, including the following.

U.S. Fish and Wildlife Service	U.S. Forest Service	U.S. Bureau of Reclamation
U.S. Bureau of Land Management	National Park Service	U.S. Bureau of Indian Affairs
Fort McDowell Pima-Maricopa Tribe	Hopi Tribe	Navajo Nation
Salt River Pima-Maricopa Tribe	San Carlos Apache Tribe	White Mountain Apache Tribe
Salt River Project	Phoenix Zoo	San Diego Zoo
U.S. Windpower	Kenetech Windpower	Pacific Gas and Electric
Great Basin Windpower	NextEra Windpower	Greenridge Windpower
Lawrence Livermore National Laboratory		Clean Energy Center
National Renewable Energy Laboratory		Alameda County Agricultural Department
Contra Costa Water District		California Energy Commission
Camp Parks Reserve Forces Training Area		San Francisco Water Department
California Attorney Generals Office		Crane Naval Munitions Depot
Arizona Game and Fish Department		U.S. Department of Justice
Nevada Department of Wildlife		California Department of Fish and Game
New York Dept. of Environmental Conservation		New Mexico Department of Game and Fish
West Virginia University	SWCA Environmental Consultants	Indiana Department of Natural Resources
Channel Islands Aviation	Island Packers	Tetra Tech, Inc.
Aspen Helicopters	Classic Helicopters	Catalina Island Conservancy
Channel Islands National Parks	Yellowstone National Park	Papillion Helicopters
The Nature Conservancy	Liberty Wildlife Foundation	East Bay Regional Parks
Private Landowners and Ranchers	Arnold and Porter Law Firm	Ventana Wilderness Sanctuary
Centro Ecologico de Sonora	IMADES – (Sonora Mexico Fish and Game Department)	Brown and Bain Law Firm
Fundacion ARA	SEMARNAT – (Mexico Fish and Wildlife Service)	
PROFEPA – (Mexico Wildlife Law Enforcement and Environmental Protection Agency)		

**FEDERAL AND STATE PERMITS****Current**

USGS Bird Banding and Auxiliary Marking **Master Bander Permit 23723** expiration 2-28-2014

USFWS Eagle Scientific Collecting **Permit MB041248-0, -1**, Since 2001, Expiration 3-31-2014,  
which contains the provision to hold one golden eagle for use as a lure bird.

USFWS Migratory Bird Scientific Collecting **Permit Pending**

Arizona Game and Fish Department Bald and Golden Eagle Scientific Collecting **Permit SP690888-CLS**

New Mexico Department of Game and Fish Bald and Golden Eagle Scientific Collecting **Permit 3487**

Nevada Department of Wildlife Golden Eagle Scientific Collecting **Permit S34397**

California Department of Fish and Game Golden Eagle Scientific Collecting **Permit SC3262**

SEMARNAT – Secretaria del Medio Ambiente y Recursos Naturales (Secretary for the Environment and  
Natural Resources) Mexico Golden Eagle **Permit 01362-11**

**Sub-Permit**

26 years under the Master Permit of **Dr. W. Grainger Hunt: 1986-2011**

Bird Banding Lab and Auxiliary Marking **Permit 20675-L** expiration 4-30-2013

USFWS Eagle Scientific Collecting **Permit MB799822-1** expiration 12-31-2002,  
which contained the provision to hold two golden eagles for use as lure birds.

BioSystems Analysis, Inc, Santa Cruz, CA: 1986-1993

Predatory Bird Research Group, University of California, Santa Cruz: 1994-2002

The Peregrine Fund, Inc, Boise, Idaho: 2003-2011

**Sub-Permit**

12 years under the Master Permit of **Brian Walton: 1996-2007**

Bird Banding Lab and Auxiliary Marking **Permit 22383-Q** expiration 11-30-2007

USFWS Special Purpose **Permit MB017597-0, 1, 2, 3, and 4** expiration 03-31-2010,  
which contained the provision to hold one golden eagle for use as a lure bird,  
and to translocate golden eagles from the California Channel Islands to the mainland.

USFWS Eagle Depredation **Permit MB081537-0** expiration 2004

USFWS Threatened Species **Permit TE017919-14 and 15** 2001-2008

Predatory Bird Research Group, University of CA, Santa Cruz:

**Sub-Permit**

**Robert Mesta**, USFWS, Sonoran Joint Ventures, Tucson, AZ: 1993-2005

Bird Banding Lab and Auxiliary Marking **Permit 22450**

**Peter Bloom**, Western Foundation of Vertebrate Zoology, Camarillo, CA: 1994

Bird Banding Lab and Auxiliary Marking **Permit 27416**

**Explosives Permit**

Department of Justice, Firearms Division, Sacramento, CA, Explosives Certificate of Eligibility 2005

**Explosives Permit CA0349400** to use rocket nets and canon nets for capturing eagles

**PUBLICATIONS**

- Brack, V., T.T. Cable and D.E. Driscoll. 1985. Food habits of urban American kestrels. *Indiana Academy of Science* 94:607-613.
- Driscoll, D.E. 1985. 1985 Redmond nest site bald eagle research report. U.S. Forest Service, Rocky Mountain Forest and Range Experiment Station, Phoenix, Arizona. 46pp.
- Driscoll, D.E. 1985. 1985 Ash nest site bald eagle research report. U.S. Forest Service, Rocky Mountain Forest and Range Experiment Station, Phoenix, Arizona. 4pp.
- Driscoll, D.E. and J.S.W. Tischendorf. 1985. 1985 Yellowstone National Park peregrine falcon hack Site report. Pages 185-189 in *The Peregrine Fund's Rocky Mountain Program Operation Report, 1985*. The Peregrine Fund, Inc., World Center for Birds of Prey, Boise, Idaho.
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- Driscoll, D.E. and P.T. Buckley. 1986. 1986 Horse Mesa nest site bald eagle research report. Salt River Project, Phoenix, Arizona. 35pp.
- Driscoll, D.E., V. Brack and T.T. Cable. 1989. Habitat use by a pair of urban nesting American kestrels. *Indiana Audubon Quarterly* 67(4):211-213.
- Schempf, P., T. Bowman, D.E. Driscoll, R. Mesta, J.T. Driscoll, B. Lehman, P. Bill, R. Yates, S. Boise, and J. Hughes. 1989. Exxon Valdez Oil Spill Impact Assessment: Bald Eagle Project. U.S. Fish and Wildlife Service, Valdez, Alaska.
- Hunt, W.G., D.E. Driscoll, E.W. Bianchi, and R.E. Jackman. 1987. Ecology of bald eagles in Arizona: 1987 interim report. BioSystems Analysis, Inc., Santa Cruz, California. 121pp.
- Hunt, W.G., D.E. Driscoll, E.W. Bianchi, and R.E. Jackman. 1988. Ecology of bald eagles in Arizona: 1988 interim report. BioSystems Analysis, Inc., Santa Cruz, California. 184pp.
- Driscoll, D.E. and W.G. Hunt. 1991. Demography of Arizona bald eagles. *Journal of Raptor Research* 25(4):153.
- Hunt, W.G., E.W. Bianchi, D.E. Driscoll, and R.E. Jackman. 1991. Foraging studies of nesting bald eagles in Arizona. *Journal of Raptor Research* 25(4):155.
- Hunt, W.G., D.E. Driscoll, E.W. Bianchi, and R.E. Jackman. 1992. Ecology of bald eagles in Arizona. Parts A,B,C,D,E, and F. BioSystems Analysis, Inc., Santa Cruz, California.
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- Mesta, R.I., D.E. Driscoll and G. Beatty. 1992. Arizona bald eagle banding report: 1991-1992. U.S. Fish and Wildlife Service, Ventura, California. 19pp.
- Driscoll, D.E., R.I. Mesta and J.T. Driscoll. 1993. Population ecology and demography of bald eagles in Arizona: 1991-1993. American Eagle Research Institute, Mesa, Arizona. 74pp.
- Jackman, R.E., W.G. Hunt, D.E. Driscoll and J.M. Jenkins. 1993. A modified floating-fish snare for capture of inland bald eagles. *North American Bird Bander* 18(3):98-101.
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- Hunt, W.G., R.E. Jackman, T.L. Brown, D.E. Driscoll and L. Culp. 1996. A population study of golden eagles in the Altamont Pass Wind Resource Area: Second year progress report. Predatory Bird Research Group, University of California, Santa Cruz. 90pp.
- Hunt, W.G., R.E. Jackman, T.L. Brown, D.E. Driscoll and L. Culp. 1997. A population study of golden eagles in the Altamont Pass Wind Resource Area: Population trend analysis 1994-1997. Predatory Bird Research Group, University of California, Santa Cruz. 33pp.
- Driscoll, D.E., R.E. Jackman, W.G. Hunt, G.L. Beatty, J.T. Driscoll, R.L. Glinski, T.A. Gatz and R.I. Mesta. 1999. Status of nesting bald eagles in Arizona. *Journal of Raptor Research* 33(3):218-226.
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- Hunt, W.G., R.E. Jackman, D.E. Driscoll, T.L. Hunt and P.R. Law. In prep. Wind turbines and golden eagle demography in west-central California.
- Driscoll, D.E. W.G. Hunt, R.E. Jackman, and V.G. Matarranz. In prep. A one measurement method of sexing bald, golden, and Bonelli eagles.
- Driscoll, D.E., W.G. Hunt, R.E. Jackman, and V.G. Matarranz. In prep. Attaching backpack transmitters to eagles and other raptors.

# GREGG DONEY

4701 Helberg Drive Helena, Montana 59602

Cell - 406.600.8577

GEDONEY@GMAIL.COM

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## PROFESSIONAL OBJECTIVES

- Develop the field based knowledge of natural history traits necessary in avian research, monitoring and management efforts to achieve sound wildlife conservation goals.
- Further understanding of avian ecology and migration ecology for practical application in present and future natural resource management challenges.
- Further the applications of sentinel species in monitoring environmental health.

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## PROFESSIONAL PROFILE

- Experienced field biologist/avian researcher with expertise in field research and monitoring techniques with raptor species.
- Dedicated with meticulous organizational, leadership, mechanical and trouble-shooting skills required for wildlife capture, marking, sampling and data collection activities in remote, island and international settings.
- Computer-proficient with Microsoft Office products, GPS and mapping software packages.
- Possess technical writing and data compilation/analyses skills for project reporting, publications, proposals.
- Hold USGS Master Banding Permit #23633 in good standing.

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## EDUCATION:

Bachelor of Science in Wildlife Biology (1987), Colorado State University, Fort Collins, Colorado

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## AREAS OF SPECIALTY

- |   |   |
|---|---|
| • Avian Breeding, Migration & Wintering Surveys | • Project Planning, Logistics & Reporting       |
| • Avian Capture & Marking Techniques            | • Data Collection & Management                  |
| • Radio Telemetry                               | • Collection & Management of Biological Samples |

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## PROFESSIONAL EXPERIENCE

Functioned as a contractor of specialized services or a "by agreement" employee during the past 22 years, with the following agencies, universities and private research organizations on the projects outlined below.

### EARTHSPAN

2656 Wade Street Minden, Nevada 89423

Supervisor: Mike Yates

*Research Associate & Field Biologist* (Sept/Oct. 1996-present)

(775) 267-2257

- **Padre Island Peregrine Falcon Survey** –

Coordinated a long-term (35 year) study of the autumn migration ecology of migrant tundra peregrine falcons at a migratory staging area in South Texas. Functioned as a *Field Biologist* from 1996-2005, promoted to *Autumn Project Coordinator* in 2006, a *Research Associate* in 2007 and member of the *Board of Directors* 2011.

- \* Coordinated project logistics, fund raising, budgeting, permitting, data collection and reporting
- \* Surveyed, captured and marked migrant falcons
- \* Collected and managed biological samples for genetic, toxicological and pathological analyses
- \* Maintained agency relations, database development and management

- **California Least Tern Pilot Project -**

Supervisor: Thomas Maechtle  
(307) 673-7571

*Field Biologist:* Jul. 2003

Assisted in a pilot program applying an emergent telemetry technology, the Crossband Transponder System to study the migratory behavior, habitat use and foraging pattern of least terns. This effort utilized forrester's terns as a surrogate species to identify a safe, reliable means of capture and develop tagging methods applicable to plunge diving species.

- \*Tested and developed capture methods for breeding forrester's terns

- \* Tested and developed various harness designs and materials for radio tagging terns

- **Mexico Golden Eagle Study –**

Supervisor: Michael McGrady

*Field Biologist:* Jul. 1997

Participated in a pilot satellite and conventional telemetry study of golden eagle ecology in central Mexico

**AMERICAN EAGLE RESEARCH INSTITUTE**

Supervisor: Daniel Driscoll  
(480) 216-3001

P.O. Box 748 Apache Junction, Arizona 85217

*Field Biologist:* Mar 2011 to Present

- Captured and telemetered golden eagles with GSM and GPS telemetry for habitat use studies at potential wind power generating facilities in Northern Arizona, Baja Mexico and western Nevada.

**MONTANA FISH WILDLIFE & PARKS**

Supervisor: Catherine Wightman  
(406) 490-2329

Helena, Montana 59620

*Field Biologist:* May-Jun 2010, May-2011

- Conducted aerial surveys of nesting bald eagles and great blue heron colonies in southwestern Montana
- Conducted colonial-nesting waterbird inventories in western Montana as part of the USFWS Western Colonial Waterbird Monitoring and Inventory Program.

**BIG HORN ENVIROMENTAL CONSULTANTS**

Supervisor: Thomas Maechtle  
(307) 673-7571

P.O. Box 207 Sheridan, Wyoming 82801

*Field Biologist:* Mar.-Jun. 2006 to 2009

- **Biological Inventory of the Powder River Basin –**

Monitored sensitive wildlife species in a cooperative effort (BLM, Private) to understand the impacts of coal bed methane development on local wildlife populations in northeastern Wyoming.

- \* Conducted aerial and ground surveys of sage grouse, nesting and wintering raptors

- \* Surveyed breeding mountain plover and delineated black-tailed prairie dog colonies

- \* Maintained a database for the above activities and private landowner relations

**SAINT CLOUD STATE UNIVERSITY**

Supervisor: Marco Restani  
(320) 308-4975

Dept. of Biological Sciences, St. Cloud, MN 56301

*Field Biologist* – Mar 2007 – Sep 2009

- **CEHMM Biomonitoring Project**

Assisted with developing and implementing a sampling program to monitor and provide baseline information of prevalent avian diseases and contaminant loads in Chihuahuan ravens in New Mexico and Texas.

- \*Coordinated planning, logistics, collaborative analyses, purchasing, scheduling and reporting

- \*Conducted raven nest surveys, adult trapping, trained individuals in sampling protocol

- \* Collected and managed biological samples for genetic, toxicological and pathological analyses

- \* Maintained a database of the above activities and provided a field report to principals



**MONTANA STATE UNIVERSITY & APEX ENVIRONMENTAL**

Ecology Department Bozeman, Montana 59717

Field Biologist - Aug 2008 – Feb 2009

Supervisor: Al Harmata

(406) 586-3747

- **Madison Valley Renewable Energy Project –**

Monitored autumn migratory avian passage and winter eagle usage of a proposed wind resources area (WRA) in southwestern Montana.

- \* Conducted X-band marine radar monitoring of autumnal migrant passage to determine volume and flight elevation.
- \* Assisted with capture and radio tagging bald and golden eagles in the WRA vicinity
- \* Collected blood and feather samples from captured eagles for an associated contaminants analyses and natal origin study

**SANTA CRUZ PREDATORY BIRD RESEARCH GROUP**

University of California at Santa Cruz

Long Marine Lab- 100 Shaffer Road Santa Cruz, California 95060

Field Biologist – 1997-2007

Supervisor: Brian Latta

(831) 234-5079

Daniel Driscoll

(480) 216-3001

- **Channel Islands Peregrine Falcon Toxicology Study – Feb. 2007**

Participated in an intensive breeding survey to monitor breeding success and collect biological samples (addled eggs and blood samples) for toxicological analyses of nesting peregrine falcons on the Channel Islands in Southern California.

- **Granite Ridge Wildlife Inventory – Oct. 2005**

Conducted a wildlife inventory for a proposed wind power development in the Granite Range in northwestern Nevada.

- **Northern Channel Islands Golden Eagle Translocation Project – 1999-2005**

Participated in a translocation effort, to move golden eagles from Santa Cruz Island to alleviate predation pressure on endangered island fox populations in the Channel Islands National Park.

- \* Surveyed the Channel Island for golden eagle presence and breeding status
- \* Captured, telemetered and relocated golden eagles
- \* Excavated inactive eagle nests to quantify the constituents of their nesting season diet
- \* Trained individuals in capture techniques

- **Anacapa Island Project – Sept. /Oct. 2002**

Conducted an effort to avoid secondary poisoning of non-target raptor species during the Island Conservation and Ecology Groups' Rat Eradication Project in the Channel Islands National Park.

- \* Captured, relocated and held in captivity various resident and migratory raptor species
- \* Refined, developed and trained individuals in capture techniques

- **Altamont Pass Golden Eagle Population Ecology Study – Dec. 1999 - Jan. 2000**

Participated in a demographics study to assess the impacts of the Altamont Wind Resources Area (WRA) on the local golden eagle population.

- \* Assisted with Capturing and telemetering golden eagles in the WRA

- **Millerton Lake Bald Eagle Migration and Winter Ecology Study – Dec. 1999 - Jan. 2000**

Participated in a study of bald eagle migration ecology and winter habitat use through satellite and conventional radio telemetry.

- \* Assisted with capturing and telemetering wintering bald eagles

- **Silverwood Lake Bald Eagle Project - Nov. 1997 - Apr. 1998**

Combined capture, telemetry (satellite & conventional), radio tracking, observations and prey surveys in a field study of bald eagle winter and migration ecology in southern California.

**BLOOM BIOLOGICAL Inc.**

13611 Hewes Ave Santa Ana, CA 92705

**Daggett Ridge Raptor Survey –**

Field Biologist: Aug/Sept 2005 &amp; 2006

Supervisor: Pete Bloom

(714) 544-6147

Conducted migratory and resident avian surveys for a proposed wind power development of the Dagget Ridge in Southeastern California.

**ROCKY MOUNTAIN COLLEGE**

1511 Poly Drive Billings, Montana 59102-1796

Supervisor: Marco Restani

(320) 308-4975

- **WIPP Raptor Program –**

*Field Biologist:* Feb-May 2001

Conducted a breeding survey and genetic study of the mating system of Harris's hawks in Southeastern New Mexico.

- \* Surveyed territories for breeding status and productivity
- \* Captured, banded and collected blood samples from breeding adults and nestlings for genetic analysis
- \* Coordinated field logistics, agency contacts and technical reports

**RAPTOR RESEARCH CENTER**

Boise State University

1910 University Drive Boise, Idaho 83725

Supervisor: Mark Fuller

(208) 426-4115

- **Greenland Gyrfalcon Survey and Food Habits Study –**

*Field Biologist:* Apr.-Aug. 2000

Participated in a gyrfalcon population ecology study in central West Greenland and facilitated graduate student research on gyrfalcon food habits and prey availability.

- \* Determined territory occupancy, breeding status and productivity through aerial and ground surveys
- \* Banded nestlings, collected prey remains and cliff habitat measurements
- \* Installed remote video cameras to document prey deliveries
- \* Collaborated on design and implementation of prey surveys
- \* Completed season reports facilitated logistics among collaborating organizations

- **Greenland Peregrine Falcon Survey and Habitat Ecology Study –**

*Field Biologist:* Jun-Aug. 1998-1999

Participated in a peregrine falcon and gyrfalcon population ecology study in central West Greenland and facilitated graduate student research on peregrine breeding habitat ecology.

- \* Determined territory occupancy and breeding status through behavioral observations
- \* Captured and resighted breeding adults for survivorship, nest site fidelity and transmitter retrieval
- \* Monitored eyrie productivity and marked nestlings
- \* Collected measurements of cliff and eyrie habitat variables
- \* Facilitated logistics and communications among collaborating organizations
- \* Compiled data and completed season reports

**CONSERVATION RESEARCH FOUNDATION**

8300 S. Gantz Ave. Boise, Idaho 83709

Supervisor: William Mattox

(208) 362-3435

- **Greenland Peregrine Falcon Survey –**

*Field Biologist:* Jul.-Aug. 1993-1996

Participated in a long term study of peregrine falcon and gyrfalcon population ecology in Kangerlussuaq, central West Greenland.

- \* Determined territory occupancy and breeding status through behavioral observations.
- \* Monitored eyrie productivity and marked nestlings
- \* Monitored adult survivorship and site fidelity through capture and resighting efforts
- \* Collected morphometric measurements and blood samples for genetic and parasitic analysis
- \* Assisted with logistical support

**COLORADO DIVISION OF WILDLIFE**

317 W. Prospect Ave. Fort Collins, Colorado 80526

Supervisor: Jerry Craig

(970) 472-4307

- **Colorado Statewide Peregrine Falcon Survey –**

*Field Biologist:* Apr.-Jun. 1994-1998

Participated in a long term population ecology study of nesting peregrine falcons in Colorado.

- \* Determined territory occupancy and breeding status through behavioral observations
- \* Monitored eyrie productivity, banded eyases and surveyed for undocumented pairs
- \* Completed field reports and maintained supporting agency contacts

## **ADDITIONAL EXPERIENCE**

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### **MONTANA STATE UNIVERSITY**

Supervisor: Marco Restani

Department of Biology Bozeman, Montana 59717

*Field Biologist:* Oct.-Dec. 1992, 1993, 1995

- **Hauser Lake Bald Eagle Project** - Utilized capture, color marking, telemetry, video, observations and prey surveys in a field study examining the composition, general ecology and foraging strategies of bald eagles at an autumnal concentration in central Montana.

### **HAWKWATCH INTERNATIONAL**

Supervisor: Stephen Hoffman

1800 S. West Temple, Suite 226 Salt Lake City, Utah 84115

*Field Biologist:* Sept. 1991-1993 & 1995

- **Goshute Raptor Project** - Participated in a migratory count and primarily trapped and banded migrating raptors in eastern Nevada.

### **GREENFALK CONSULTANTS**

Supervisor: William Mattox

8300 S. Gantz Ave. Boise, Idaho 83709

*Field Biologist:* Mar.-Jul. 1992

- **Snake River Birds of Prey Area - Study 2** - Combined capture, telemetry (ground & fixed site), eyrie monitoring and observations in a field study assessing the impacts of military training activities on nesting prairie falcons and golden eagles in the Snake River Birds of Prey Conservation Area in southwest Idaho.

### **INSTITUTE OF WILDLIFE & ENVIRONMENTAL TOXICOLOGY**

Supervisor: Paul Woods

Clemson University Greenville, South Carolina

*Field Biologist:* Mar - Nov. 1990-1991

- **Whidbey Island Pilot Project** - Utilized capture, telemetry, eyrie monitoring, toxicological assays, plus various blood and tissue sampling regimes to identify indicator species, targeting trophic pathways of contaminants from hazardous waste sites in the local avian and small mammal populations on Whidbey Island Naval Air Station in northwestern Washington.

## **PROFESSIONAL AFFILIATIONS**

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Raptor Research Foundation

Cooper Ornithological Society

Western Bird Banding Association

## **PUBLICATIONS**

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Doney, G.E. and M.A. Yates. 2006 through 2010. Peregrine Falcon Migration Studies at South Padre Island, Texas. Annual Reports to USFWS – Laguna Atascosa National Wildlife Refuge

Latta, B.C., D.E. Driscoll, J.L. Linthicum, R.E. Jackman, G.E. Doney. 2003. Capture and translocation of golden eagles from the California Channel Islands to mitigate depredation of endemic island foxes. *In*: D.K. Garcelon and C.A. Schwemm, (eds.) Proceedings of the Sixth California Islands Symposium. National Park Service Technical Publication CHIS-05-01, Institute for Wildlife Studies, Arcata, California, pp.132-141.



## Joseph G. Barnes

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2291 West Horizon Pkwy, Apt 4121

Henderson, NV 89052

(702) 283-3523

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**OBJECTIVE** Study the conservation and applied management of ecological systems

**EDUCATION** **BALDWIN-WALLACE COLLEGE**, Berea, OH  
Bachelor of Science, June 1997  
Major: Biology Minor: Chemistry  
GPA: 3.5/4.0  
**UNIVERSITY OF NEVADA, LAS VEGAS**, School of Life Sciences  
M.S. in Biological Sciences, May 2011  
GPA: 4.0/4.0

### WORK EXPERIENCE

**AMERICAN EAGLE RESEARCH INSTITUTE**, Apache Junction, AZ

*Independent Contractor: Golden Eagle trapper, 3/11 to present*

- Trap resident breeding and non-breeding Golden Eagles using remotely activated bownets and a net launcher: northern Arizona and Baja, Mexico
- Band, collect blood samples, and gather morphometric data
- Affix Microwave GPS and cellular GSM backpack harness transmitters on eagles

**DEPARTMENT OF FISH, WILDLIFE AND CONSERVATION ECOLOGY**, New Mexico State University, Las Cruces, NM: *Research Assistant, 1/11 to 8/11*

- Survey and monitor Golden Eagle breeding territories in relation to wind energy development
- Rappel into nests to collect prey remains and feather samples

**PUBLIC LANDS INSTITUTE**, University of Nevada, Las Vegas, Boulder City, NV

*Research Assistant, (Under Task Agreement with Lake Mead National Recreation Area) 3/04 to 1/11*

- Develop survey protocol, and conduct population assessment and reproductive success studies of Peregrine Falcons
- Conduct habitat use and prey studies of breeding peregrines
- Develop a GIS-based predictive habitat model for peregrines within southern Nevada
- Lead researcher responsible for developing and implementing a five-year inventory and monitoring study of shorebird and aquatic bird populations on lakes Mead and Mohave
- Conduct site surveys, collect egg masses, rear young, and translocate relict leopard frogs
- Assist in the coordination and implementation of Bald Eagle winter surveys
- Conduct breeding season call-broadcast surveys for Northern Goshawks
- Monitor Snowy Plover breeding populations and assess local habitat threats to breeding sites
- Perform point counts, area intensive surveys, mist netting and banding of southwestern songbirds
- Perform call-broadcast surveys for Willow Flycatchers, marsh birds, and Le Conte's, Bendire's, and Crissal thrashers
- Write government technical reports, perform data analyses, and present findings in public and professional forums
- Team coordinator of field crews performing wildlife surveys and data management duties
- Conduct transect surveys and general area searches for desert tortoises
- Participate in desert bighorn sheep, capture, collaring, and radio telemetry tracking operations
- Assist in the capture and transportation of wild burros
- Perform bat mist-netting and exit counts at roost sites
- Assist with gillnet surveys and PIT tag application with razorback sucker and bonytail chub

**ARIZONA GAME AND FISH DEPARTMENT, Phoenix, AZ**

*Wildlife Technician studying federally endangered SW Willow Flycatchers, 4/03 to 9/03*

- Conduct field surveys of riparian habitats for southwestern willow flycatcher territories and nesting sites
- Nest monitoring of sites to determine yearly female fecundity, nestling survival rates, and brown-headed cowbird nest parasitism
- Detect and identify associated southwestern songbird species by sight and sound
- Conduct nest site vegetation surveys

**SALTWATER, INC., Honolulu, HI**

*Scientific Technician: Hawaii longline and bottomfish fisheries, 1/02 to 6/02, 10/03 to 2/04*

**JOHNSON CONTROLS, INC., Pascagoula, MS**

*Hawaii longline observer for the National Marine Fisheries Service, 10/00 to 2/01*

- Tally all fishery interactions with focal and bycatch fish species
- DNA sampling, life history data collection and tagging of leatherback and olive ridley sea turtles
- Collection of biological data on swordfish, tuna and shark species
- Identification and observation of marine mammal and seabird interactions

**NATIONAL MARINE FISHERIES SERVICE, Anchorage, AK**

*Marine Biologist, North Pacific Groundfish Observer Program, 10/02 to 4/03*

- Evaluate fisheries observers for data collection and sampling technique
- Edit observer data using custom computer software applications
- Advise and assist observers during their field deployments
- Travel to field stations to conduct industry outreach activities

**IDAHO COOPERATIVE FISH AND WILDLIFE RESEARCH UNIT, Stevenson, WA**

*Wildlife Technician, Columbia River Salmon Migration Project, 3/01 to 10/01*

- Radio telemetry and acoustic tracking of chinook salmon, steelhead, and pacific lamprey
- Tag and release migrating chinook salmon and steelhead
- Train a field crew in boating operations and radio telemetry tracking skills

**ALASKAN OBSERVERS, INC., Seattle, WA**

*Field Coordinator for the commercial groundfish observer program, 6/00 to 10/00*

- Assign and place fisheries observers aboard commercial fishing vessels
- Handle logistical support of fisheries observers
- Contract liaison between observers, private vessels, federal government and private contractors

*Japanese Southern Bluefin Tuna Experimental Fishing Program, 7/98 to 9/98 and 7/99 to 9/99*

- Tally all fishery interactions with focal and bycatch fish species
- Collection of sexed length frequencies, age indices, viability, and fecundity data on miscellaneous fish species in the Indian Ocean
- Tag and release immature bluefin tuna and various shark species
- Monitor seabird activity and mortality in relation to fishing operations and collection of data on tagged seabirds

*Groundfish Observer for the Domestic Groundfish Observer Program, 8/97 to 1/02*

- Random sampling of species composition and total catch estimates of fishing operations on commercial vessels
- Collection of biological data for age, distribution, and habitat studies of various fish species, marine mammals and seabirds in the Bering Sea and Pacific Ocean
- Monitor vessels for adherence to federal fishing and operating regulations

## PUBLICATIONS

- Barnes, J. G.,** J. R. Jaeger, and D. B. Thompson. (under review) Effectiveness of call-broadcast surveys to detect territorial peregrine falcons. *Journal of Raptor Research*.
- Barnes, J. G.** and J. R. Jaeger. (in press) Aquatic birds of Lakes Mead and Mohave. *In: Synthesis of scientific research of Lake Mead ecosystem and implications for environmental management*. U.S. Geological Survey Circular.
- Barnes, J. G.** and J. R. Jaeger. (in progress) Assessing peregrine falcon predator-prey dynamics in Lake Mead National Recreation Area.
- Barnes, J. G.,** J. R. Jaeger, and D. B. Thompson. (in progress) A characterization of nesting habitat of peregrine falcons in Lake Mead National Recreation Area.

## SELECTED TECHNICAL REPORTS

- Barnes, J. G.** and J. R. Jaeger. 2011. Aquatic Bird List: Lake Mead National Recreation Area. Aquatic bird checklist summarizing research 2004–2009, presented to the National Park Service and produced for circulation to the public.
- Barnes, J. G.** and J. R. Jaeger. 2011. Inventory and monitoring of shoreline and aquatic bird species on lakes Mead and Mohave: final report 2004–2009. Unpublished report produced by the University of Nevada, Las Vegas, Public Lands Institute for the National Park Service, Lake Mead National Recreation Area, Boulder City, NV. 39 pp.
- Jaeger, J. R. and **J. G. Barnes**. 2010. Relict leopard frog (*Rana onca*) monitoring and management. Unpublished report produced by the University of Nevada, Las Vegas, Public Lands Institute for the National Park Service, Lake Mead National Recreation Area, Boulder City, NV. 30 pp.
- Barnes, J.** and J. Jaeger. 2010. Peregrine falcon monitoring within Lake Mead National Recreation Area, 2008-2009. Unpublished report produced by the University of Nevada, Las Vegas, Public Lands Institute for the National Park Service, Lake Mead National Recreation Area, Boulder City, NV. 32 pp.

## PRESENTATIONS

- Barnes, J. G.** 2011. (Invited Guest Speaker). An ecological study of peregrine falcons: a local contribution to a continent-wide success story in conservation biology. Museum of Vertebrate Zoology Seminar Series, University of California, Berkeley. 30 Mar. Berkeley, CA.
- Barnes, J. G.,** J. Jaeger, and D. Thompson. 2010. Call-broadcast surveys as an effective tool for detecting peregrine falcons. Raptor Research Foundation Annual Conference. 22-26 Sep. Fort Collins, CO.  
\*won William C. Anderson Award for best student oral presentation
- Barnes, J. G.,** J. R. Jaeger, and D. Thompson. 2010. Habitat use and breeding success of peregrine falcons in Lake Mead National Recreation Area (poster). Raptor Research Foundation Annual Conference. 22-26 Sep. Fort Collins, CO.  
\*honorable mention
- Barnes, J.,** J. Jaeger, and D. Thompson. 2010. Call-broadcast surveys as an effective technique for detecting breeding peregrine falcons at Lake Mead National Recreation Area. BIOS Symposium. 12 Mar. UNLV, School of Life Sciences, Las Vegas, NV.  
\*won best oral presentation award
- Barnes, J.** and J. Jaeger. 2009. Inventory and temporal variation of aquatic birds using Lakes Mead and Mohave. Lake Mead Science Symposium. 13-14 Jan. Las Vegas, NV.
- Barnes, J. G.** 2007. Shorebirds and aquatic birds of lakes Mead and Mohave: Over three years of inventory and monitoring. 32<sup>nd</sup> Annual Meeting of the Western Field Ornithologists. 27-30 Sep. Las Vegas, NV.

## **ADDITIONAL EXPERIENCE & EXPERTISE**

**Assistant Instructor:** Raptor Field Techniques Workshop. A week-long course training students raptor trapping and banding methods, tree-climbing, rappelling, and radio telemetry tracking. The workshop was conducted by Eugene Jacobs at the Linwood Springs Research Station, Stevens Point, WI. 6/11

### **Banding and Biological Data Collection:**

- Collected feathers, drew blood, and banded Golden Eagle and Gyrfalcon nestlings. Field work required rappelling into cliff-nests at remote field sites. Conducted helicopter nest surveys of cliff-nesting raptors. Work conducted with Travis Booms, wildlife biologist with Alaska Department of Fish and Game. 6/11-7/11
- Contributed to an ongoing trapping and banding study of Red-shouldered Hawk adults and nestlings, along with an additional nest box study of American Kestrels. Work conducted under Eugene Jacobs, principal investigator, for independent study at Linwood Springs Research Station, Stevens Point, WI. 6/08, 6/09 and 6/10
- Performed trapping, banding, and blood sampling from Swainson's Hawk adults and nestlings. Work was part of an ongoing study in northern California conducted for Chris Briggs, PhD candidate, University of Nevada, Reno. 7/09 and 7/10
- Assisted with winter raptor surveying and trapping efforts within the Great Basin Desert in central Nevada and Utah, primarily with Rough-legged, Red-tailed and Ferruginous Hawks. Work conducted under Al Hinde, principal investigator, in collaboration with HawkWatch International. 1/08, 12/08, 1/09, 12/10

**Manuscript Review:** Provided review and comments of the Peregrine Falcon species account for the Nevada Comprehensive Bird Conservation Plan. Review requested by John Boone, with the Great Basin Bird Observatory for the Nevada Working Group of Partners in Flight. 9/10

## **PROFESSIONAL TRAINING**

- Completed over 40 hours of training in trapping, banding, and nest monitoring methods at Raptor Field Techniques Workshop, Linwood Springs Research Station: 6/07
- Southwestern Willow Flycatcher nest monitoring and survey training: 4/03
- Marsh bird survey techniques training for Yuma clapper, Virginia, and Black rails: 3/05
- Bat training with mist-netting and Anabat acoustic identification: 5/05
- Introduction to ArcGIS mapping: 8/04
- Motorboat Operator's Certification from the US Department of the Interior: 3/01
- Red Cross training and certification in adult CPR and First Aid
- Rattlesnake field identification and handling workshop: 3/05, 3/06
- Water quality data collection using Hydrolab and VOC sampling equipment: 5/04
- Radio telemetry and acoustic animal tracking: 3/01
- Helicopter passenger training, US Department of the Interior: 3/04
- Tagging and release of salmon, sea turtles, sharks, and bluefin tuna: 7/98, 3/01

## **ORGANIZATIONAL MEMBERSHIPS**

- Association of Field Ornithologists
- Cooper Ornithological Society
- Raptor Research Foundation
- Southwestern Association of Naturalists
- Western Field Ornithologists

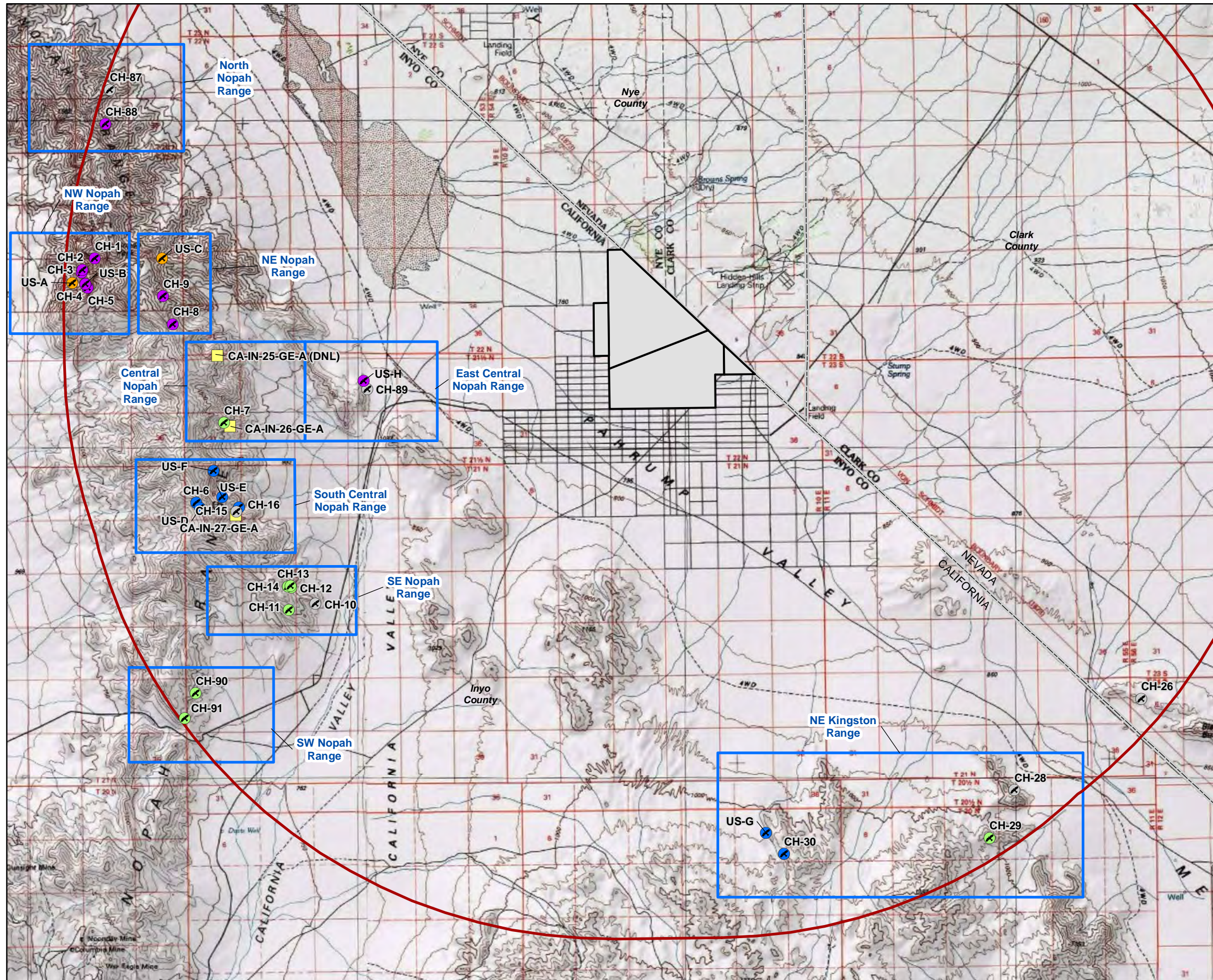


## **APPENDIX C**

### **MAPS AND FIGURES**







**LEGEND**

**Nest Status**

- Active
- Occupied
- Potentially Occupied
- Unoccupied
- Unknown Raptor (Raven/ Red-tailed hawk)
- golden eagle - BLM Database

Breeding Areas

Survey Area

HHSEGS

State/ County Boundary

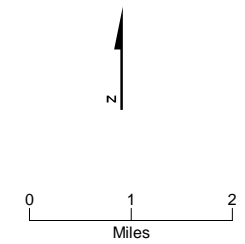
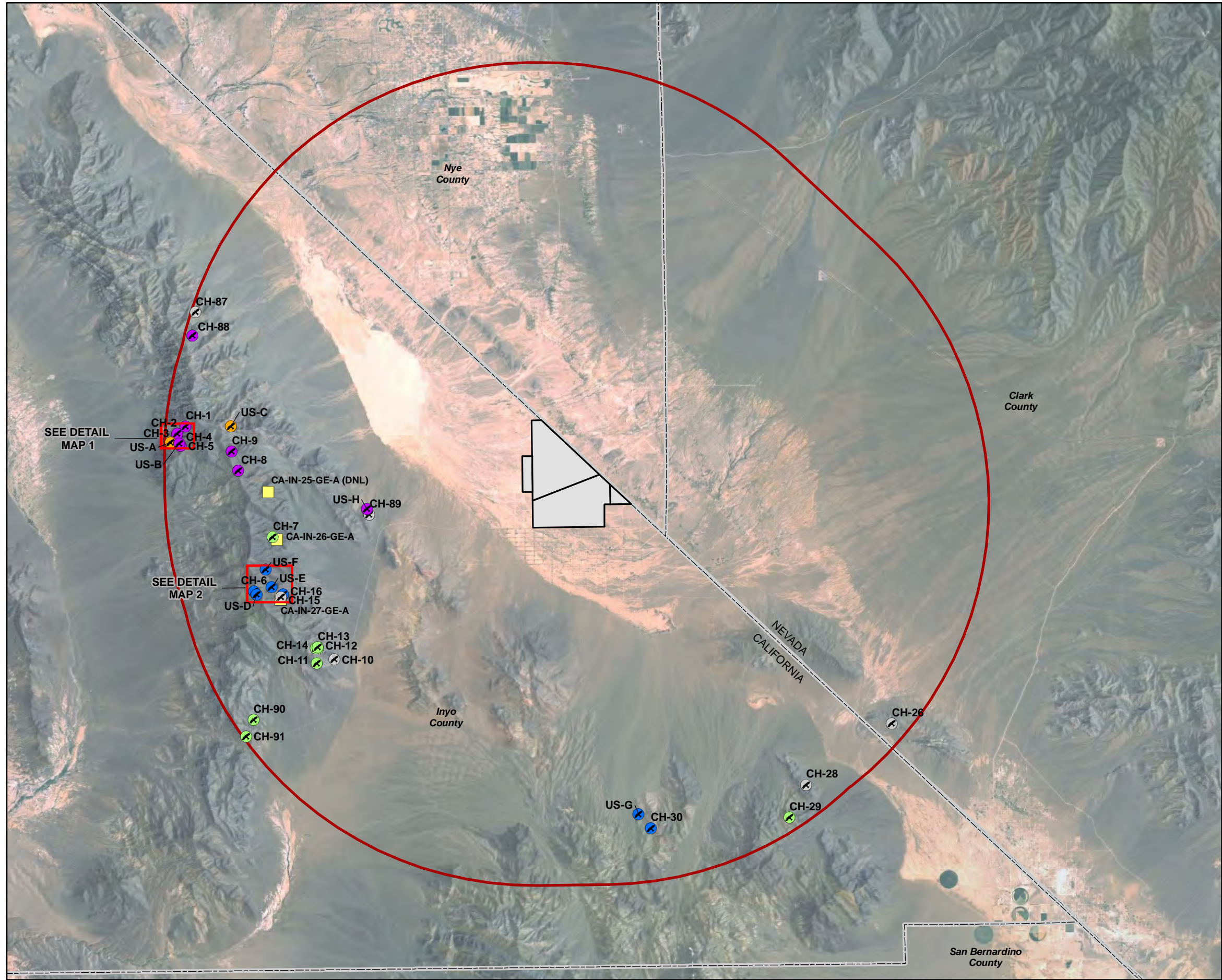


FIGURE DR52.3-1  
Breeding Areas within 10 miles of HHSEGS  
Hidden Hills Solar Electric Generating System





**LEGEND**

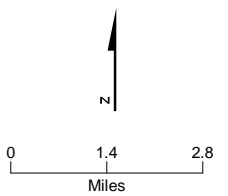
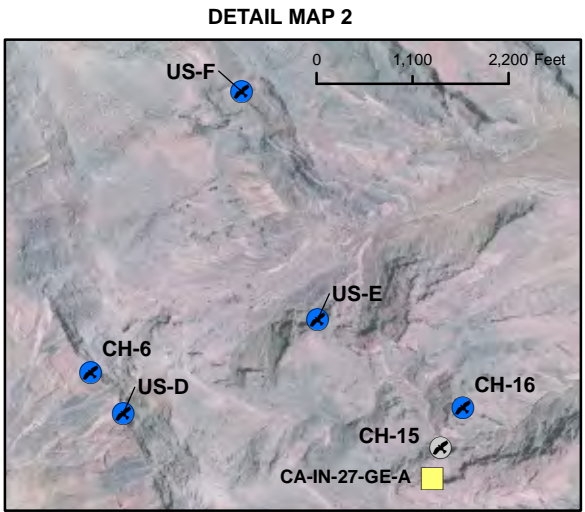
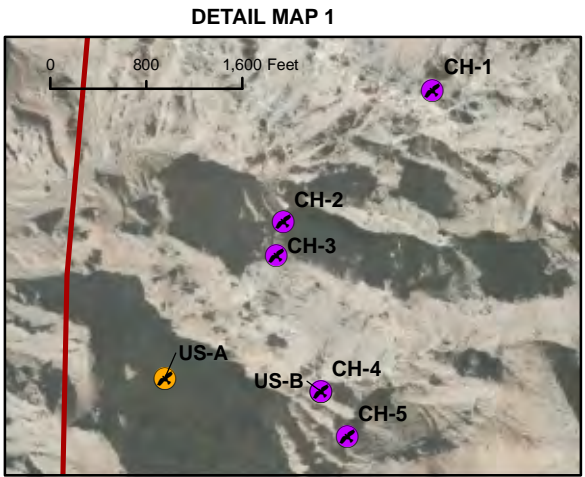
**Nest Status**

- Active
- Occupied
- Potentially Occupied
- Unoccupied
- Unknown Raptor (Raven/ Red-tailed hawk)
- golden eagle - BLM Database

HHSEGS

Survey Area

State/ County Boundary



**FIGURE DR52.3-2**  
Raptor Nests within 10 miles of HHSEGS  
Hidden Hills Solar Electric Generating System





**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
COMMISSION OF THE STATE OF CALIFORNIA  
1516 NINTH STREET, SACRAMENTO, CA 95814  
1-800-822-6228 – WWW.ENERGY.CA.GOV**

**APPLICATION FOR CERTIFICATION  
FOR THE *HIDDEN HILLS SOLAR ELECTRIC  
GENERATING SYSTEM***

DOCKET NO. 11-AFC-02  
PROOF OF SERVICE  
(Revised 5/15/2012)

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\*indicates change

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### DECLARATION OF SERVICE

I, John L. Carrier, declare that on May 25, 2012, I served and filed copies of the attached Hidden Hills SEGS (11-AFC-2) Data Response Set 1B-7, dated May 25, 2012. This document is accompanied by the most recent Proof of Service list, located on the web page for this project at: [www.energy.ca.gov/sitingcases/hiddenhills/index.html](http://www.energy.ca.gov/sitingcases/hiddenhills/index.html).

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

*(Check all that Apply)*

**For service to all other parties:**

- X Served electronically to all e-mail addresses on the Proof of Service list;
- Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses **NOT** marked "e-mail preferred."

**AND**

**For filing with the Docket Unit at the Energy Commission:**

- X by sending an electronic copy to the e-mail address below (preferred method); **OR**
- by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

**CALIFORNIA ENERGY COMMISSION – DOCKET UNIT**

Attn: Docket No. 11-AFC-2  
1516 Ninth Street, MS-4  
Sacramento, CA 95814-5512  
[docket@energy.state.ca.us](mailto:docket@energy.state.ca.us)

***OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:***

- Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

California Energy Commission  
Michael J. Levy, Chief Counsel  
1516 Ninth Street MS-14  
Sacramento, CA 95814  
[mlevy@energy.state.ca.us](mailto:mlevy@energy.state.ca.us)

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.



\_\_\_\_\_  
John L. Carrier  
CH2M Hill