DUDEK

11521 BLOCKER DRIVE, SUITE 200
AUBURN, CALIFORNIA 95603
T 530.885.8232 F 530.885.8372

A. Cover Letter

June 11, 2009 209129

Dan Lynch
County of El Dorado
Procurement and Contracts
330 Fair Lane
Placerville, California 95667

Subject: Integrated Natural Resources Management Planning and Environmental Documentation for El Dorado County's West Slope

Dear Mr. Lynch:

Dudek appreciates the opportunity to present our proposal for completion of the initial two tasks leading to a successful El Dorado County (County) Integrated Natural Resources Management Plan (INRMP). Our Auburn office has closely followed the INRMP process since early 2007, initially as a consultant to the El Dorado Business Alliance, and later as part of our statewide conservation planning work. Based on our successful track record developing and implementing stakeholder-driven conservation plans, and the depth and breadth of staff we are able to offer, we believe that Dudek represents the right choice for the County on this assignment.

Dudek offers a combination of experience providing large-scale habitat planning as well as identification, evaluation, and mapping of important wildlife movement corridors and habitat linkages. We have a carefully selected and knowledgeable team supported by in-house capabilities, including state-of-the-art geographic information system (GIS) mapping and comprehensive technical editing. Further, we have an established reputation for using sound science and conservation planning principles in development of natural resources management plans, including outstanding expertise in all of the disciplines required to complete this assignment.

Our qualifications for this effort are surpassed only by our interest and enthusiasm in providing the services described in the Request for Proposals and in this proposal to El Dorado County, and by our commitment to a successful outcome. We take great satisfaction in our successful completion and implementation of similar projects and find this type of conservation planning and resource management work extremely rewarding, for both Dudek and our clients. We're competent and experienced, and—with our project manager located nearby—we can be exceptionally responsive.

We look forward to hearing from the County regarding our proposal. Please feel free to contact our proposed project manager, Keith Babcock, at 530.885.8232 or kbabcock@dudek.com to discuss our qualifications to complete the West Slope INRMP and environmental documentation.

Sincerely,

June Collins*
Vice President/Environmental Services Manager

Keith Babcock
Principal

* *Ms. Collins is authorized to make representations and bind Dudek contractually. This proposal shall remain valid for 120 days from the due date. Proposer understands, acknowledges, and agrees to the standard terms and conditions of Exhibit "A."*

B. Table of Contents

SECTIONS

TABLES

FIGURES

APPENDIX

INTENTIONALLY LEFT BLANK

C. Dudek's Capabilities

C.1 Executive Summary

Dudek is aware of the lengthy consideration by County staff, consultants, and stakeholders over the last several years to determine the appropriate conservation strategy and process for preparing and implementing the INRMP. Our team offers fresh pairs of eyes, insights, and perspectives to this process.

While we ***do*** have extensive experience with all aspects of preparation and implementation of complex, stakeholder-driven multiple species conservation and management plans, what we ***don't*** have are biases, worn-out ideas, or other "baggage" associated with the process. As such, we can offer fresh, creative, and perhaps novel ways of evaluating and implementing the two major tasks identified in the RFP while still making sure that ***work will be cost effective and conducted by an extraordinarily qualified team.***

We recognize that the County's desired focus for this initial effort is on mapping important habitat areas and habitat connectivity, and identifying alternative conservation planning approaches for the INRMP. As such, Dudek offers the County the following important strengths specific to completing this effort:

- Unequalled, directly applicable experience in large-scale habitat mapping, habitat suitability modeling, sensitive habitat area and indicator species analysis and identification, and movement corridor/habitat connectivity evaluation. Dudek recently conducted these services on the approximately 142,000-acre Tehachapi Uplands Multiple Species Habitat Conservation Plan (MSHCP), currently out for public review.
- Specific and in-depth experience with the identification, evaluation, and mapping of important wildlife movement corridors and habitat linkages, including expertise in the following areas:
    - Identification of key corridor indicator and/or umbrella species
    - Habitat permeability modeling to identify least-cost movement patterns
    - Identification of wildlife movement constriction points and safe passage routes through known barriers
    - Habitat improvement approaches and methodology to increase viability of identified movement corridors or constriction points.

- Directly related insight into the risks and rewards of various conservation planning approaches that may be considered based on our experience as primary authors of the Western Riverside County MSHCP, currently being implemented; in particular, the design and implementation of criteria-based plans, with real-world knowledge of the benefits and shortcomings of each

approach and how they might relate to the unique needs of El Dorado County, including the consideration of:

  - Future wildlife and resource agency permitting requirements for public and private projects
  - Future preserve assembly strategies and costs
  - Future preserve management and monitoring strategies and costs.

- GIS experts who use state-of-the-art tools and methods to accurately characterize and map important habitat areas, movement corridors, and other critical natural resources.
- A proven track record on similar projects in working with various advisory committees, project advocates and proponents, scientists, and public agencies to achieve stakeholder consensus and build a foundation for a streamlined conservation planning and regulatory permitting process.

Dudek's leadership in the field of conservation planning guides our client's projects through the entire process, from biological and GIS database development and preserve design to plan implementation and adaptive management.

Beginning with our detailed discussion of the scope of work, our proposal demonstrates how we will use all of these in-house strengths to your greatest advantage while mapping important habitat and connectivity and identifying alternative INRMP approaches. We have elaborated on our firm background, specific resource management experience, and individual team member experience in Section D. More detailed team member education, certifications, and project experience is located in Appendix A. Additionally, we have integrated our team management and structure into our approach to the INRMP work plan in Section E.

C.2 Detailed Discussion

This section presents our proposed scope of work for the two tasks outlined in the RFP:

- Task 1: Map Important Habitat and Connectivity
- Task 2 : Assist in Identifying Alternative INRMP Approaches

We understand that our long-term role may include providing services throughout the process of the INRMP, including preparation and processing of the plan and environmental document. Both the initial two tasks addressed in this scope of work and future preparation and processing of the plan and environmental document will be a collaborative process among the Board of Supervisors, Planning Commission, Agricultural Commission, County Planning staff, the Plant and Wildlife Technical Advisory Committee (PAWTAC), and the INRMP Stakeholders Advisory Committee (ISAC).

Notably, we will need to creatively work with these stakeholders throughout the process in a manner that results in a successful outcome for the work effort and a defined path forward for the INRMP. Our scope of work suggests key milestones where we believe stakeholder input will be particularly important. We are flexible and look forward to working with the County to refine our approach consistent with County processes and insights if we are fortunate enough to be selected for this assignment.

As discussed in Section D of this proposal, Dudek has a wide range of experience successfully developing and implementing conservation and plans among a diverse group of stakeholders. Our experience ranges from publicly initiated plans in highly fragmented urban and multi-jurisdictional environments characterized by many small land owners, such as western Riverside County (Western Riverside County MSHCP), San Bernardino County (Upper Santa Ana River Habitat Conservation Plan (HCP)), western San Diego County (San Diego Multiple Species Conservation Program (MSCP)), to privately initiated plans with single, large land owners, in urbanized areas (Orange County Southern Subregion HCP) as well as more rural areas (Tehachapi Uplands MSHCP).

This experience, with the Riverside, San Bernardino, and San Diego plans in particular, includes working with diverse stakeholder groups on a broad range of issues covering the full gamut of conservation planning process concerns (base mapping and data adequacy; focal and indicator species; biological preserve and linkage areas; GIS-based landscape permeability analysis and habitat connectivity; alternative plan implementation approaches; regulatory and permitting implications and strategies; preserve assembly and acquisition strategies; and preserve management, monitoring, and adaptive management). Our experience has taught us that each conservation planning process is unique, and there is no "one size fits all" approach. We have learned that solutions are available for the multiple challenges faced during the process, particularly with good will among the stakeholders and effective leadership. We will apply our experience and resources to benefit the County in your planning process.

TASK 1: MAP IMPORTANT HABITAT AND CONNECTIVITY

Task 1.1: Compilation and Review of Existing Data

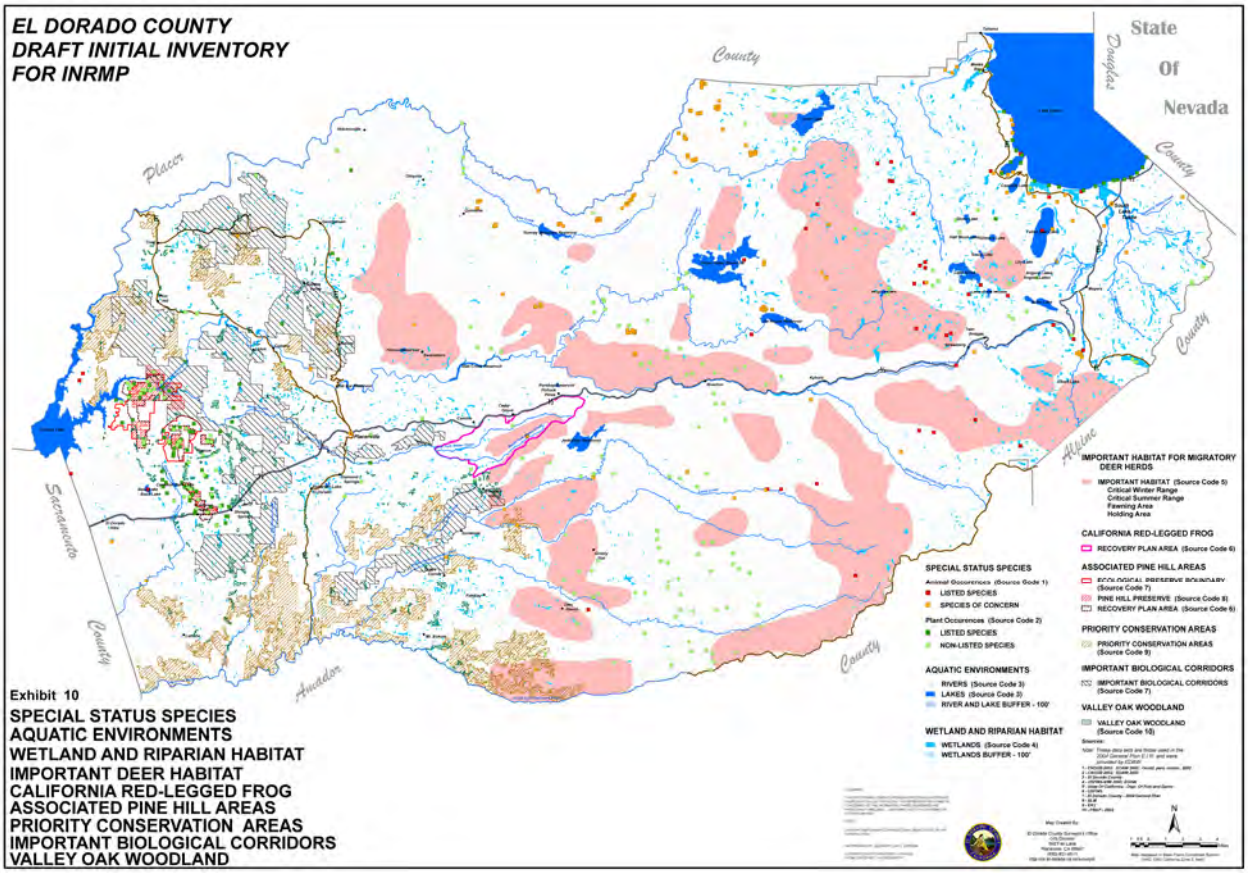
Dudek will first facilitate discussions with PAWTAC, ISAC, and the County, to define and clarify important habitat terms as used in General Plan Policy 7.4.2.8, including but not limited to terms such as

"Important Habitat," "Native Vegetation," "Large Expanses," "Wildlife Movement Corridors," and "Habitat Linkage." This will be an important communication step as it is critical to ensure that all stakeholders are on the same page with respect to terminology, perspectives, and approach.

Working with County staff and our existing resources, Dudek will then assemble a GIS database for this effort. The database will be prepared in a format acceptable to the County and in a manner suitable for delivery to the County at the conclusion of the work effort. We have reviewed the materials available on the County Web site, and our GIS manager, Lisa Lubeley, has an existing professional relationship with El Dorado County GIS staff member Jeney Terry that we believe will facilitate communication throughout the planning process.

County mapping data particularly valuable to this specific effort include mapped resource data (Figure 1) as well as General Plan land use information (including lands designated as Open Space or Natural Resource), Oak Woodland Management Plan Priority Conservation Areas (PCAs), lands in the Ecological Preserve (EP), publicly owned lands, and lands subject to conservation easements.

FIGURE 1. INRMP INITIAL INVENTORY MAP



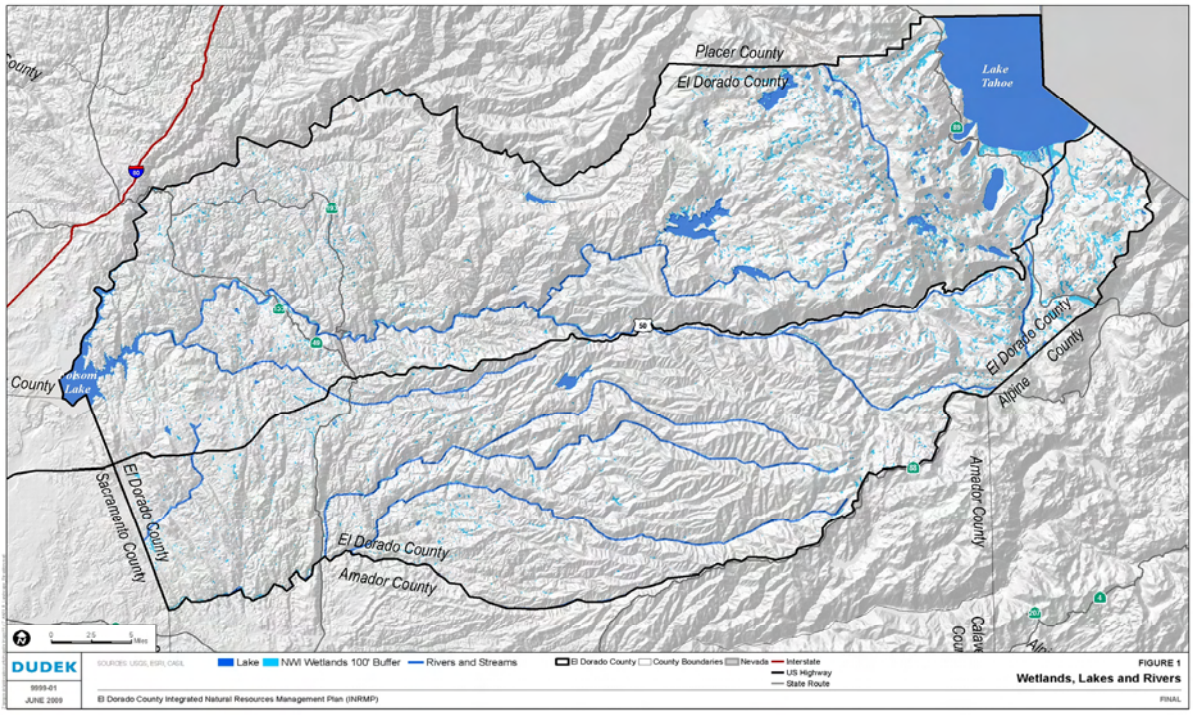
In addition, we have assembled and have access to the following GIS data pertaining to El Dorado County that may be used during this effort as well as throughout the overall planning process. Accessible data includes the following list, and Figure 2 illustrates an example of a selected layer of wetlands data.

- Aerial imagery
- Topography
- Hillshade/Terrain
- Vegetation
  - Gap Veg (1998)
  - U.S. Forest Service (USFS) Data (1981)
  - California Land Cover Mapping & Monitoring Program (LCMMP) Fire and Resource Assessment Program (FRAP) Veg Data (2001)
- Soil Survey Geographic (SSURGO) soils
- National Wetlands Inventory (NWI) data
- U.S. Fish and Wildlife Service (USFWS) Critical Habitat
- USFWS Points
- California Natural Diversity Database (CNDDB) points
- Additional USFS data
  - Wildland/Urban Interface (2000)
  - Forest Fragmentation (1993)
  - Wildland Fire Potential (2006)
  - Critical Habitat Risk (2008)
  - CONUS Forest (2006)
  - Deer Important Habitat
- U.S. Department of Agriculture (USDA) EcoRegions
- Pine Hills Preserve
- California Department of Water Resources (DWR) data
  - Watersheds
  - Groundwater basins
- Regional Water Quality Control Board (RWQCB)
  - 303d waters
  - Regional boundaries
- California Department of Conservation (CDC)

- Williamson Act agricultural preserves (204)
- Important Farmland (Farmland Mapping and. Monitoring Program (FMMP)) (2006)

- Community Reinvestment Act (CRA)
  - Public Trust Lands
- California Department of Forestry and Fire Protection (CAL FIRE)
  - State responsibility areas
  - Administrative boundaries
- Hazus Mapping

FIGURE 2. DUDEK ARCVIEW WETLANDS DATA LAYER EXAMPLE



In addition to mapping data, Dudek will complete a literature review and compile relevant information, including information already developed by PAWTAC. This includes the resource inventory already compiled by the County as well as appropriate literature regarding conservation biology and planning principles, reserve selection methods and modeling, landscape permeability, and species accounts. This task also includes incorporation of Pine Hills plant data prepared by another consultant for that effort, as it is available.

Dudek assumes that the existing data previously compiled and generated by the County is suitable to proceed with the Tasks 1 and 2 portions of the conservation planning process and does not propose to collect new data or complete new base mapping as part of this task. Generalized reconnaissance surveys are proposed as part of the connectivity analysis as described under Task 1.3.

Task 1.2: Develop Conservation Planning Goals and Identify Focal (Indicator) Species

Using information in General Plan policies 7.4.2.8, 7.4.2.9, and 7.4.1.6 as a starting point, Dudek will work with PAWTAC, ISAC, and the County to develop and/or confirm conservation planning goals for the work effort. Dudek considers this an important step before a list of indicator species can be identified. Goals to be considered may include those relating to protection and management of biological resources as well as goals related to economic factors (such as future permitting for public and private projects, and costs of preserve acquisition and management).

Following the identification of conservation goals, Dudek will work with PAWTAC, ISAC, and the County to develop a list of focal (indicator) species to be used during the conservation planning process. Dudek recommends use of the term "focal species" rather than "indicator species" as identified in the RFP, because the concept of focal species is more inclusive of the categories used by ecologists in reference to keystone, umbrella, traditional indicator, and engineering species. Focal species would be those species that are sensitive to habitat loss or fragmentation and/or represent, or are indicators of, biological diversity.

Identifying appropriate focal species will be a challenge because it is unlikely there will be adequate or specific scientific information and justification for selecting a particular species. However, Dudek will work with PAWTAC, ISAC, and the County to identify criteria for inclusion on the list of focal species, which can include such factors as sensitivity level, distribution/range within the study area, habitat relationships, life history, and potential to represent other guilds of species. Dudek assumes that additional research will be necessary under this task to fully evaluate candidate focal species and whether or not they meet agreed-upon list criteria. Developing this list of focal species is a critical step, as it will be the biological foundation and justification for making some potentially difficult and expensive policy decisions.

This task is different from development of a "covered species" list, such as might be developed during preparation of a natural community conservation plan (NCCP)/HCP and for which regulatory coverage is desired for a designated set of covered species. Using the focal species list, which is ecologically based, it will be possible to list a suite of species likely to benefit from protection and management of the focal species.

Dudek regards development and completion of Task 1.2 as a milestone task. We would expect substantial stakeholder input during this task and would seek, if not consensus, at least agreement with PAWTAC, ISAC, and the County to proceed with conservation planning using the conservation goals and focal species list developed during this task before moving on to Task 1.3

Task 1.3: Evaluate Landscape Permeability, Wildlife Habitat Linkages

Dudek understands that wildlife movement and habitat connectivity are key concerns within the study area, particularly north–south connections across Highway 50, including in the vicinity of Weber Creek. This task will be lead by Dudek wildlife manager Brock Ortega with support from Dudek staff members Phil Behrends and Keith Babcock, all three of whom have extensive experience with wildlife movement corridors, habitat connectivity, and landscape permeability. In addition, we will utilize technical advice from William Zielinski of the USFS, Pacific Southwest Research Station, the leading researcher on forest carnivores in California. The experience and qualifications of the Dudek team is described in Section D.3 of this proposal.

Our scope of work for this task includes review of appropriate materials developed during Task 1.1 as well as a comprehensive reconnaissance-level survey to identify existing and/or potential north–south wildlife movement corridors and habitat linkages within the study area. Specifically, this effort will involve an analysis of the following: the effect that Highway 50 has on wildlife movement and habitat connectivity (primarily for terrestrial animals), the identification and feasibility of existing and potential locations along Highway 50 to serve as wildlife crossing points, an evaluation (including estimated costs) of the potential to improve or retrofit identified crossing points to better serve as movement passageways, and an analysis of habitat permeability and connectivity to/from identified Highway 50 wildlife crossing points.

Based on review of existing available information and field efforts, Dudek will work with PAWTAC, ISAC, and the County to develop the appropriate approach for the connectivity analysis, ranging from subjective and expert (professional judgment) identification of important biological habitat and linkage areas, and installation of remote movement-triggered cameras to detect wildlife use of selected undercrossings or pathways, to computer modeling (permeability models for focal species for which data inputs are available and, possibly, a composite model).

Dudek is very familiar with the work of the South Coast Missing Linkages Project, a multiagency and research-organizations coalition initiated in 2000 to identify and delineate critical habitat linkages for preserving biodiversity in the State of California. We have replicated the habitat modeling they completed for the Tehachapi Uplands as part of our work on the Tehachapi Uplands MSHCP. In their 2001 document, *Missing Linkages: Restoring Connectivity to the California Landscape*, they discuss El Dorado County (pgs 429–487), which will provide useful background information. The outcome of this task will be the identification of important north–south wildlife habitat linkages (including viable Highway 50 undercrossings) and connectivity areas. Substantial coordination with and input from PAWTAC, ISAC, and the County is anticipated during this task.

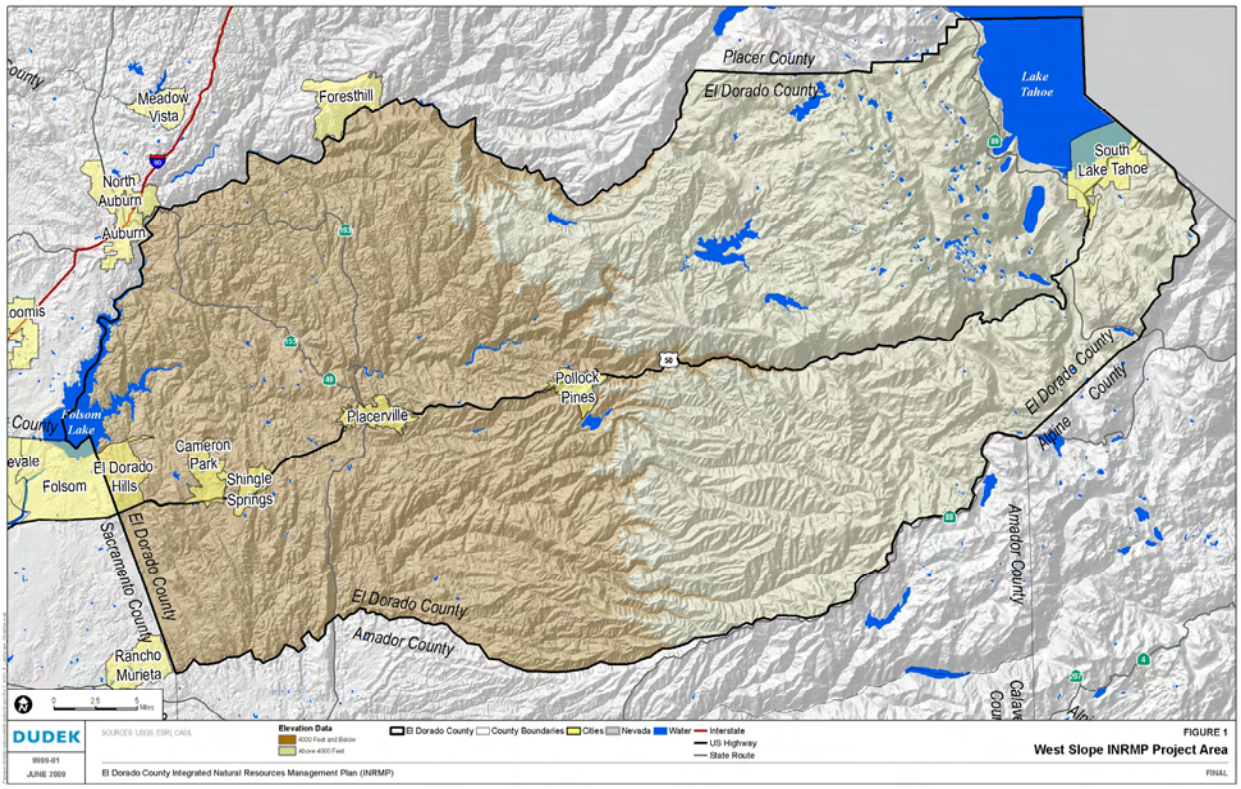
Task 1.4: Prepare Draft and Final Maps and Reports

This task will use the information developed during Tasks 1.1 through 1.3 to generate an Important Habitat Map that depicts important biological habitat areas based on such factors as diversity, rare or special-status resource distributions, naturalness, size of resource areas, representativeness, and value as

linkages and wildlife corridors for focal species. This map could also include existing and potential future edge areas as a factor in evaluating long-term habitat value. Future edge area identification would be based on existing and planned land uses according to the El Dorado County General Plan, including input from PAWTAC, ISAC, and the County regarding anticipated development pressures and timing and location of future development.

Dudek will also prepare an Important Habitat Report, Focal Species Report, and Analysis of North–South Wildlife Movement Corridors Report. These reports will include discussions of the methods and efforts expended during Task 1 and will document the data used in each analysis. Appropriate graphics and maps will be included in each report. For example, Figure 3 presents a map of landscape elevations within the project area.

FIGURE 3. DUDEK ARCVIEW LANDSCAPE ELEVATIONS DATA LAYER EXAMPLE



It is assumed that these reports and maps will form the baseline for the work anticipated for the INRMP and associated environmental document to be prepared following completion of the tasks discussed above. Dudek will prepare an administrative draft, public review draft, and final report for each report identified above. Dudek looks forward to working with the County to define what is meant by a "public review draft," since none of the reports prepared for this work effort would be considered, for example, to be a "project" under the California Environmental Quality Act (CEQA) and necessitate formal, noticed, public review. We understand, however, as a stakeholder driving process, that public input is desirable.

TASK 2: ASSIST IN IDENTIFYING ALTERNATIVE INRMP APPROACHES

Task 2.1: Conduct Informal Gap Analysis

During this task, an informal gap analysis will be completed using GIS. This informal gap analysis is not to be confused with the formal Gap Analysis Program (GAP) described by Scott et al. (1993),[1] but will be based on the same principles. The gap analysis will overlay the Important Habitat Map prepared during Task 1.4 on land use and ownership maps, and will identify areas noted as desirable for conservation but not currently in public ownership or protected in some other way; in other words, there is a lack (a "gap") of protection in these areas. Computer modeling of this information will provide the baseline for identifying and estimating target conservation areas and their locations. Having this information is essential to identifying alternative conceptual conservation scenarios and formulating the alternative INRMP approaches during Task 2.3.

Task 2.2: Identify a Conceptual Conservation Scenario

Based on the Task 1.4 and 2.1 work products, primarily the Important Habitat Map, Dudek will work with PAWTAC, ISAC, and the County to develop what might be termed a conceptual conservation scenario. This could be a single scenario, a single scenario with options and/or redundancies in certain areas, or several alternative scenarios. The purpose of the conservation scenario will be to identify a potential hardline preserve for analysis. It is assumed that the conceptual conservation scenario will be a subset of the important habitats and areas developed during Task 1.4; in other words, it is assumed that some loss of important habitats will occur as El Dorado County is built out. The goal will be to preserve the appropriate important habitat areas to meet the goals of the INRMP and conserve the biological heritage of El Dorado County.

The conceptual conservation scenario might rank important habitat areas using a combination of approaches, such as:

- Subjective ranking (Dudek's and stakeholders' professional judgment)
- "Expert" ranking (based on input from recognized biological experts)
- Computer modeling (permeability modeling may be completed as part of Task 1.3, and including input from stakeholders and/or biological experts)
- Automated (computerized) reserve selection methods (e.g., quantitative optimization or maximization models based on pre-established conservation currency) (This approach is not likely feasible for application to the INRMP, due to difficulty of compiling and incorporating all the necessary data into the models for a realistic or feasible outcome).

The conceptual conservation scenario will incorporate these commonly accepted reserve design tenets:

- Conserve focus species and their habitats

[1] Scott, J.M., F. Davis, B. Csuti, R. Noss, B. Butterfield, C. Groves, H. Anderson, S. Caicco, F. D'Erchia, T.C. Edwards, Jr., J. Ulliman, and R.G. Wright. 1993. "Gap Analysis: A Geographic Approach to Protection of Biological Diversity." *Wildlife Monographs.* No. 123. January 1993.

- Conserve large habitat blocks
- Conserve habitat and species diversity
- Keep reserves contiguous and connected
- Protect reserves from encroachment, edge effect, and invasion by non-native species.

The conceptual conservation scenario will be reviewed in detail with PAWTAC, ISAC, and the County.

Task 2.3: Formulate Alternative INRMP Approaches

This task will be based on the extent and character of those important habitat areas identified during Tasks 2.1 and 2.2 with gaps in protection. For example, if most of the "unprotected" important biological resources are distributed among small, private land holdings, the conservation plan strategy will need to consider the best means of acquiring and protecting those lands. The gap analysis will allow realistic estimates for the amount and location of protection that might occur under development of 2004 General Plan land uses and the location and extent of areas that might be at greater risk of development.

Economic considerations will also be a factor in the formulation of alternative INRMP approaches. These include costs and available funding to acquire potential conservation lands as well as long-term management and monitoring needs. Generally, there is a tradeoff between the amount of land protected and the amount of management required to maintain the habitat value of the land over the long term, with smaller, fragmented habitat areas requiring substantially more long-term management than larger habitat areas. It may be desirable to spend more up front to acquire land, rather than spending more on management over the long term on smaller habitat areas. A detailed economic analysis is not proposed as part of this task, but Dudek will frame the issues as part of this task; we have economic expertise on staff if further analysis of this potential tradeoff is desired by the County.

The level of assurances desired as part of the INRMP will also be a consideration during this task. Dudek understands that the option of pursuing an NCCP or HCP that would result in permits from wildlife and resource agencies is no longer proposed as part of the INRMP. However, the degree to which various features incorporated in the INRMP could streamline future environmental review and regulatory permitting for public and private projects within the study area may be discussed as part of this task.

A successful outcome of this task will be an agreed-upon path forward for the INRMP among PAWTAC, ISAC, and the County. This should include a common understanding of the tasks, time, and costs needed to complete the INRMP process.

Task 2.4 Prepare INRMP Implementation Alternatives Report

Using the information developed during Tasks 2.1 and 2.2, Dudek will prepare a Conceptual Conservation Scenario Map depicting potential preserve areas based on the information developed in Task 1 and as a result of the analysis in Task 2.1. In addition, a Gap Analysis Map will be prepared that depicts the overlay of the Important Habitats Map on land use and ownership within the study area, to identify areas noted as desirable for conservation but not currently in public ownership or otherwise protected as open space.

These maps will then be incorporated into an INRMP Implementation Alternatives Report that will discuss the methods and analysis conducted in Tasks 2.1 through 2.3 as well as the results of the analysis. The report will likely include discussions of conservation scenarios and methodologies employed by other jurisdictions for similar conservation plans, the range of alternative approaches available to the County, and the advantages and disadvantages of each approach considered. Dudek will prepare an administrative draft, public review draft, and final report.

D. Background and Experience

D.1 Dudek's Background and Structure

THIRTY YEARS OF PROVIDING ENVIRONMENTAL SERVICES IN CALIFORNIA

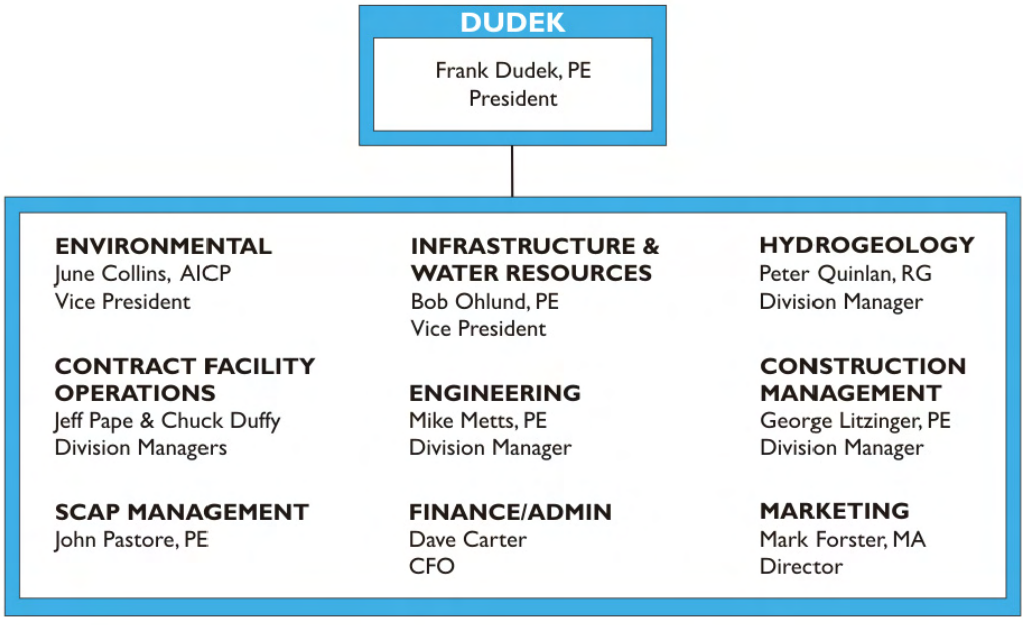
Dudek is an employee-owned, equal opportunity, profitable, and debt-free consulting firm. Founded in Encinitas, California in 1980, Dudek focuses on natural resource management, infrastructure development, and regulatory compliance. Dudek helps municipal clients, like the County of El Dorado, develop and maintain sustainable, economically strong communities by planning and designing projects that maximize function, efficiency, and useful life.

In recent years, we have prepared resource/habitat management plans in Orange, Riverside, Kern, Los Angeles, San Bernardino, and San Diego Counties. We understand the best practices associated with turning baseline studies into useful conservation plans. Our plans have covered some of the widest geographic areas and ranges of species. Our in-house talent and manpower, highlighted below, combined with our resource plan experience, highlighted in the following section, will be a great advantage to the County of El Dorado's West Slope INRMP preparation.

IN-HOUSE RESOURCES AT YOUR FINGERTIPS

Dudek's firmwide organizational structure is highlighted in Figure 4. We currently employ over 200 professionals, including four PhDs, seven certified planners (AICP), sixteen licensed professional engineers (PE), LEED-certified professionals, eleven biologists certified by the California Department of Fish and Game (CDFG) and USFWS, four registered landscape architects, two registered environmental assessors, seven licensed geologists, a certified hydrogeologist, one Certified Engineering Geologist, four professionals certified by the Occupational Safety and Health Administration (OSHA), two licensed contractors, three certified arborists, one certified forester, and one registered professional forester.

FIGURE 4. DUDEK'S FIRMWIDE ORGANIZATIONAL STRUCTURE



Additionally, Dudek has made significant investments in technical and data management capabilities, which impact the quality of our work products. Dudek's quality assurance/quality control (QA/QC) process, handled by our in-house editorial staff in conjunction with project managers, results in high-quality documents done right the first time. Veteran GIS and word processing staff support the Dudek team to produce accurate data and professional documents. Our in-house visual simulation team produces sophisticated projections to facilitate project development. Finally, we have in-house legal counsel to review the legal defensibility of deliverables. Dudek understands that the best way to promote client satisfaction is through commitment to quality service, supported by quality products.

D.2 Dudek's Experience Providing Resource Management Planning

For over 15 years, Dudek has been at the forefront of California conservation planning. We have been the primary authors, project managers, and principal biologists for major multiple species habitat conservation plans (MSHCPs) in Southern California and elsewhere. Our HCP projects covering hundreds of thousands of acres including the Orange County Southern Subregion HCP, the Western Riverside County MSHCP, the San Diego MSCP, the Coachella Valley MSHCP and, currently, the Tehachapi Uplands MSHCP. We are California's premier multiple species habitat conservation planning firm, and we are well qualified to apply that experience to the El Dorado County effort from our local office in Auburn.

Project descriptions of Dudek's experience developing integrated natural resources management plans and associated environmental documentation include:

WESTERN RIVERSIDE COUNTY MSHCP

Client: Riverside County Transportation and Land Management Agency
Reference: Charles Landry, Executive Director, 951.955.9700

The Western Riverside County MSHCP involved planning for the needs of sensitive species over a 1.26-million-acre study area. Dudek was responsible for preparation of the MSHCP, which included five phases: (1) database assembly; (2) visioning/alternatives development; (3) plan preparation/environmental documentation; (4) plan processing; and (5) various meetings and hearings. The MSHCP plan area covers approximately 2,000 square miles. The MSHCP is necessary because of the rapid rate of land conversion to urban development in western Riverside County and the consequent loss of natural habitat and associated species. Riverside County had already completed an HCP for the endangered Stephens' kangaroo rat; the MSHCP will extend existing reserve areas and create new reserves, habitat linkages, and wildlife corridors to conserve other habitats and species and maintain the biological integrity of the region.

"The [Western Riverside County] MSHCP represents great progress in a scientific approach to ecosystem protection. It is a model of partnership between local elected officials and state and federal wildlife agencies."

Pete DeSimone, Audubon of California

A variety of innovative approaches were used in development of the plan and in integrating the plan with the overall Riverside County Integrated Plan. This HCP/NCCP was a component of the three-tiered Riverside County Integrated Project (RCIP), which also involved a transportation plan and an update to the County General Plan. Dudek was a key member of the team during the initial RCIP visioning

process, including extensive participation in community outreach efforts to include unincorporated areas in 14 cities within the 1.26-million-acre Western Riverside County Plan Area. Dudek also served as the lay consultant providing support to the Board of Supervisors–appointed MSHCP Advisory Committee and to Policy and Integration Subcommittees established during the RCIP process. As requested, Dudek has provided support to the County's RCIP Steering Committee, and to the Western Riverside Council of Governments (WRCOG) Executive Committee and City Planning Directors involved in reviewing the overall RCIP. The final MSHCP was approved by the County Board of Supervisors on June 17, 2003, and is a criterion-based plan covering 146 species—the largest such plan in the nation.

EXTENSION-OF-STAFF SERVICES

Client: Western Riverside County Regional Conservation Authority (RCA)
Reference: Charles Landry, RCA Director, 951.955.9700

Since 2005, Dudek has served as extension of staff to the Western Riverside County RCA, a joint powers City composed of the County of Riverside and 14 cities implementing the Western Riverside County MSHCP. The RCA is tasked with acquisition of land, land management, annual reporting of reserve assembly progress, development review of all projects within the criteria area, providing implementation assistance to local permittees, coordination of several stakeholder-run oversight committees, and a variety of as-needed policy determinations and refinements to the MSHCP.

Dudek functions as an extension of staff, providing resource planning specialists, biologists, and GIS analysts primarily responsible for:

1. Preparation of the MSHCP Annual Report.
2. As-needed biological expertise for analysis of pending criteria refinement proposals, development project proposals, interpretation of MSHCP policies, and review of survey protocols.
3. Training for permittees, biologists, and consultants on MSHCP implementation issues.
4. MSHCP consistency review, including managing the Joint Project Review (JPR) process (review of all development applicants within criteria area). Also developed and assisted with management of system tracking mechanisms for public records purposes.
5. Review of CEQA and other environmental documents submitted to the RCA as an interested or responsible agency.
6. Preparation of grant proposals in support of supplemental funding for RCA studies and/or development of specific analytical tools.
7. Preparation of the RCA's Policy and Procedures Manual, as well as MSHCP Implementation Manual for submittal to permittees.
8. Project management and analysis for specific as-needed tasks or conservation issues.
9. Assistance with conservation tracking mechanisms, including reserve accounting summaries.
10. GIS mapping and analysis of the MSHCP's numerous data.

ORANGE COUNTY SOUTHERN SUBREGION NATURAL COMMUNITY CONSERVATION PLAN (NCCP)

Client: Rancho Mission Viejo Company
Reference: Laura Coley-Eisenberg, Vice President, Reserve Manager, 949.240.3363

Dudek was the primary conservation planning and environmental consultant for an NCCP/HCP and Joint environmental impact report/environmental impact statement (EIR/EIS) for the 130,000-acre Southern Subregion NCCP in southern Orange County. Dudek completed a variety of GIS analyses based on a biological database assembled by the County of Orange and augmented by Dudek biologists, including preparation and analysis of a variety of alternative reserve design scenarios. Key features of the planning process included compliance with reserve design goals and objectives established by the state NCCP Conservation Guidelines and the relationship of the proposed reserve design to the Foothill Transportation Corridor South, contemplated by the Orange County Transportation Corridors Agency (TCA). The NCCP is focused on the California gnatcatcher, but also addresses the habitat requirements of more than 100 other sensitive species.

Actions addressed in the Joint EIR/EIS include issuance of a section 10(a) (1) (B) permit by USFWS; issuance of a management authorization under the NCCP Act by the state; and local approvals of the NCCP by the affected jurisdictions, including the County of Orange and the cities of San Clemente, San Juan Capistrano, and Mission Viejo. Major issues addressed in the EIR/EIS include land use, biological resources, traffic circulation, public services and facilities, and population/housing. Work performed by Dudek includes endangered species surveys, vegetation mapping, resource agency coordination, EIR/EIS for CEQA/National Environmental Policy Act (NEPA), biological resource survey, and endangered species permitting.

COACHELLA VALLEY ASSOCIATION OF GOVERNMENTS MSHCP

Client: Coachella Valley Association of Governments (CVAG)
References: John Wohlmuth, Executive Director, 760.346.1127
Katie Barrows, Director of Environmental Services, 760.346.1127

Dudek was responsible for preparation and processing of the Recirculated CVAG MSHCP and EIR/EIS under contract to CVAG. Recirculation was required after one of the permittees, the City of Desert Hot Springs, withdrew from the process prior to issuance of permits. Dudek was brought in for the recirculation effort because of our past experience on similar projects; the confidence of our client that we could complete the work effort in a timely fashion; and the confidence of stakeholders, including the Wildlife Agencies, in our professional standards and abilities. The CVAG MSHCP encompasses about a 700,000-acre area, including substantial public lands, and includes 27 covered species. Key features of Dudek's work effort, in addition to preparing and processing the entire recirculation effort within a very tight timeframe, included developing alternative approaches for coverage of a major flood control facility along Morongo Wash within the City of Desert Hot Springs, given the fact that the City would no longer be a permittee under the MSHCP and would therefore not exercise its land use authority to ensure conservation of certain areas, and addressing the needs of specific species, including Palm Springs pocket mouse and milk vetch. The Recirculated MSHCP was locally approved in 2007 with permits issued in 2008, including subsuming an existing HCP for the Coachella Valley fringe-toed lizard into the MSHCP.

At the present time, the City of Desert Hot Springs has elected to rejoin the MSHCP. Dudek is currently under contract to the City of Desert Hot Springs to prepare and process an amendment to the MSHCP to bring the City back into the plan. As part of that effort, the local Mission Springs Water District may also become a permittee under the plan. Issues specific to the water district include groundwater management and drawdown and effects of those activities on mesquite hummock, a habitat that supports several sensitive species.

TEHACHAPI UPLANDS MSHCP

Client: Tejon Ranch Company
Reference: Steve Letterly, Director of Entitlements, 661.663.4282

Dudek is currently serving as project manager and principal biologist/conservation planner for the Tehachapi Uplands MSHCP. The MSHCP covers about 141,000 acres of the 270,000-acre Tejon Ranch ownership and focuses on the Tehachapi Mountains portion of the ranch. The Tehachapi Mountains are a transverse range and provide a critical connection between the Sierra Nevada and the Coast Range. A key species addressed in the MSHCP is the California condor, along with 26 other species.

Congratulations to the incredible team that just completed the Tehachapi Uplands Multiplie Habitat Conservation Plan, EIS and supporting documents. These documents would not have been completed without your diligence and collective efforts. This is a huge milestone that is deeply appreciated by all of the executives at TRC and DMB.

Roberta Marshall, General Manager and VP

OPEN SPACE MANAGEMENT PLAN

Client: City of Oceanside
Reference: Jerry Hittleman, City Planner, 760.435.3535

Dudek staff managed and prepared a comprehensive Open Space Management Plan (OSMP) for the City of Oceanside's open space preserve system developed under the MSHCP. Dudek staff developed an inventory of the resources and properties within the City, identified the management and monitoring obligations on these lands, specified the management entities responsible for each preserve, and estimated the cost of these services.

Dudek staff developed a geographically explicit database for 139 properties in 36 management subunits throughout the City. Dudek staff developed Property Analysis Records (PARs) for the City to estimate the management and monitoring program cost. Following development of the PARs, Dudek staff prepared the OSMP, which is designed to serve as the City's handbook for their open space preserve system. Dudek staff is currently working with the City and wildlife agencies to revise the OSMP in conjunction with ongoing changes to the City's Subarea Plan. The Subarea Plan and OSMP completion are scheduled for mid-2008.

SPINEFLOWER CONSERVATION PLAN

Client: Newhall Land and Faming Company
Reference: Matt Carpenter, Director of Environmental Resources, 661.255.4259

Dudek has been working with Newhall Land and Farming (Newhall Land) since 2003 to develop five preserve areas as part of a successful conservation program to protect the San Fernando Valley spineflower. Newhall Ranch is one of only two areas in the world where the rare plant grows. Dudek has assisted Newhall Land by working with CDFG and USFWS to develop a conservation strategy. This led to Newhall Land working with its team of biologists to develop a Spineflower Conservation Plan.

In addition, Newhall Land worked with USFWS to initiate a Candidate Conservation Agreement to provide for long-term conservation on their property and keep the spineflower on track for long-term preservation. Dudek has helped Newhall Land set aside an initial 64 acres with a permanent conservation easement for spineflower preservation. Newhall Land is currently working with CDFG and USFWS to site and size a total of five preserve areas including the monitoring, management, and funding components to implement a conservation plan and to establish the preserve areas. Newhall Land has incorporated the preserves into Newhall Ranch's overall community design. While the population numbers of this annual flower are highly variable, Dudek counted more than 7 million spineflower plants in 2005.

SANTA ANA RIVER HCP

Client: San Bernardino Valley Municipal Water District
Reference: Walter Christensen, Project Manager, 951.793.2505

Dudek is managing preparation and processing of the HCP for the upper Santa Ana River watershed below Seven Oaks Dam in San Bernardino County. Dudek has coordinated with the stakeholder groups, USFWS, and CDFG to identify the covered species and covered activities within the 4,700-acre study area. The HCP addresses project impacts, avoidance and minimization measures, mitigation measures, adaptive management and monitoring for 15 species, including Santa Ana River woolly-star and slender-horned spineflower, both state- and federally listed as endangered; San Bernardino kangaroo rat, federally listed as endangered; and California gnatcatcher, federally listed as threatened. The covered activities include flood control activities, water conservation activities, mining activities, a land swap between the San Bernardino Valley Water Conservation District (SBVWCD) and the Bureau of Land Management (BLM), improvement of public roads and utilities, and development of recreational uses including a trail system for San Bernardino County and the cities of Highland and Redlands. In addition, Dudek has prepared the biology section of the EIR/EIS. The lead CEQA agency is the SBVWCD and the lead NEPA agency is the BLM.

Dudek also revised the biological technical report for the project in order to assist the San Bernardino Valley Municipal Water District and LSA Associates, Inc. in responding to comments from the public review of the EIR. This consisted of reviewing the public comments and biological section of the EIR and preparing an impact analysis to special-status species on site in order to support the EIR, providing additional mitigation measures where necessary. Dudek emphasized an effort to maintain consistency with the original results of the EIR when feasible, and to minimize the possibility of the EIR requiring a second public review process.

SAN JACINTO WILDLIFE AREA MANAGEMENT PLAN/INITIAL STUDY/ENVIRONMENTAL DOCUMENTATION

Client: California Wildlife Foundation
Reference: Eddy Kono, Senior Environmental Scientist, 760.200.9174

Dudek was contracted by the California Wildlife Foundation (CWF) to provide environmental services in the San Jacinto Wildlife Area (SJWA) of Southern California in support of the CWF, CDFG, and the Wildlife Conservation Board (WCB). Initially Dudek was involved in establishing the SJWA Land Management Plan (LMP) with the client(s) associated with the property, including establishing existing and long-term management goals, identifying measurable and meaningful project benchmarks, and exploring desired outreach efforts. Dudek provided overall project management and coordination for the team, and conducted an initial literature/document compilation and review of management plans, land use policies, and relevant technical reports, and to address CEQA Initial Study Checklist (and possible NEPA) issues. Dudek also managed the effort to hold three public meetings to gather public input about the LMP and potential concerns.

Dudek conducted reconnaissance visits to the property to verify field data, determine habitat types, and distribution and locations of sensitive resources. These data were used by Dudek staff to prepare the preliminary draft of the LMP, which also addressed soil types, vegetation, wildlife habitats, sensitive species, farmlands, hydrology, total maximum daily loads (TDML) of water quality constituents, invasive weeds, fire management, existing utilities and infrastructure, erosion and sedimentation, hazardous materials, public access and recreation, vehicular access, and visitor interpretation and education facilities. Dudek staff managed the project GIS database files supporting the project documents.

OTAY RANCH RESOURCE MANAGEMENT PLAN

Client: Otay Ranch Company
Reference: Kim Kilkenny, Vice President, 619.234.4050 x115

Dudek began work on this 23,000-acre community in southern San Diego County in 1987 with early site acquisition and due diligence. We are now responsible for environmental reviews, permitting, and habitat restoration activities as part of project construction/implementation. Currently, we are working on the biological resources analysis and permitting for a planned destination resort.

Dudek pioneered writing San Diego County's first comprehensive Resource Management Plan (RMP) to address the County's Resource Protection Ordinance (RPO) in a creative manner suitable for a large master-planned community. The RMP remains a guiding document for implementing Otay Ranch. To support our RMP, Dudek developed a habitat replacement master plan identifying phased restoration, revegetation and enhancement opportunities, methods, and standards for the phased development project. The RMP was approved prior to the County's approval of its region-wide MSCP. The RMP was folded into the MSCP as an integral building block to achieve conservation goals.

TEJON MOUNTAIN VILLAGE OAK MANAGEMENT PLAN

Client: Tejon Mountain Village LLC (a development project of Tejon Ranch Company)
Reference: Robertta Marshall, Tehon Mountain Village Vice President and General Manager, 661.248.3000

Dudek is assisting Tejon Mountain Village's master-planned community development by providing comprehensive environmental design and planning services for a 28,000-acre study area in Kern County. Dudek environmental services include an oak management plan.

Our oak specialists and foresters conducted review of existing information; identified data gaps; designed cost-effective methods to collect missing information; performed field and office data collection for the site's nearly 16,000 acres of oak woodland habitat, including tree assessments, woodland sampling, and extensive GIS analysis; and prepared an Oak Woodland Management Plan (OWMP). The OWMP is a technical appendix of the project's EIR, incorporating an adaptive management–based mitigation program. The OWMP is a comprehensive CEQA document, written to meet or exceed oak impact mitigation requirements of Kern County and the State of California. It is the site's oak resources management plan that includes extensive GIS-based exhibits, analysis, and support for direct, indirect, and cumulative impact findings as well as proposed mitigation plans. Through the various adaptive mitigation measures and management directives, oak impacts were minimized, and planned preservation of 87% of the oak canopy has been achieved.

D.3 Dudek's Team Qualifications and Experience

Dudek provides clients the appropriately experienced and skilled project manager for the specific project type and challenge. Our project managers do their homework to look for the most technically practical, regulatory realistic, and economically viable project options. Keith Babcock, our proposed project manager for the West Slope INRMP, is a Principal and the regional manager of Dudek's Auburn office, with over 25 years' experience in wildlife biology, regulatory compliance, and project management.

Mr. Babcock will head a qualified team of biologists, environmental planners, arborists, and technical specialists to manage the comprehensive needs of the County for the West Slope INRMP. Our proposed team organization, individual team member qualifications, and project roles are elaborated upon in the following pages. Full resumes for each team member, including education, detailed project experience, and licensing and certification information, are located in Appendix A.

KEITH BABCOCK
Principal, Northern California Regional Office Manager
Project Role: Project Manager; Wildlife – Important Habitat and Connectivity

Mr. Babcock has directed, managed, or conducted a broad range of terrestrial wildlife studies, biological resource inventories, sensitive species surveys, environmental impact assessments, biological constraints analyses, habitat conservation/management plans, habitat restoration plans, and mitigation monitoring plans for a variety of private- and public-sector clients in virtually every region in California (in over 25 counties).

Having worked in the Sacramento region for the past 18 years, Mr. Babcock is quite familiar with the natural resource and biological issues of the area, including El Dorado County. His biological and project management expertise has been applied to projects in El Dorado, Placer, Sacramento, Yolo, and Sutter counties, as well as both northern and southern regions of the Central Valley. Mr. Babcock has also been an active member of the state Swainson's Hawk Technical Advisory Committee for over 15 years, providing scientific and educational information to local, state, and federal agencies regarding this species.

Mr. Babcock is currently serving as one of the lead biologists and project managers on the Tehachapi Uplands MSHCP (currently out for public review), which addressed federal regulatory coverage for 27 special-status plant and animal species within the approximately 270,000-acre Tejon Ranch. He regularly coordinated and participated in meetings with USFWS, CDFG, species experts, environmental organizations, and other stakeholders on issues dealing with special-status species ecology and distribution, habitat connectivity and wildlife movement corridors, impact analysis, Endangered Species Act compliance, preserve design, and mitigation and conservation strategies. He also brought together a panel of renowned California condor experts to serve on a technical advisory committee that provided scientifically based input on the Tehachapi Uplands MSHCP. With Mr. Babcock's guidance, this committee ultimately prepared a peer-reviewed technical report that was appended to the Tehachapi Uplands MSHCP and associated EIS. Mr. Babcock also was involved in the initial identification and assessment of potential habitat preserve areas that included meetings and field analysis with the Trust for Public Lands, USFWS, and other stakeholders. He managed the initial analysis of wildlife corridor use and habitat connectivity along a 19-mile stretch of Interstate 5 in the Tehachapi Mountains.

Mr. Babcock also directed and managed the HCP effort to address federal regulatory coverage for the valley elderberry longhorn beetle for the City of Porterville. He coordinated and participated in numerous meetings and workshops that included the City, USFWS, CDFG, Sierra Los Tulares Land Trust, and other stakeholders, to address the identification of habitat preserves, regulatory compliance, and a management plan. These meetings and workshops resulted in the successful completion, directed by Mr. Babcock, of a comprehensive resource management plan for identified preserve areas and the establishment and implementation of a conservation easement.

MICHAEL HUFF
Urban Forestry Manager
Project Role: Oak Management

Michael Huff is manager of Dudek's urban forestry division and has over 17 years' experience in this field. Mr. Huff received a BS in forest management from Northern Arizona University's School of Forestry. He is an International Society of Arboriculture (ISA) Certified Arborist (No. WE-4276A) and a Society of American Foresters Certified Forester (CF-1268). With a strong foundation in forest management and arboriculture, Mr. Huff has been instrumental in developing Dudek's urban forestry team while providing expertise in the field of oak woodland management planning, urban forestry and arboriculture, and wildfire protection planning in California for over 11 years.

Mr. Huff and members of Dudek's forestry team focus their forestry practice on oak woodland management. Understanding how trees and forests function forms the basis of Dudek's oak woodland planning process. On a micro-scale, working with individual oak trees, providing health diagnosis and rehabilitation, results in a deep understanding of trees' physiological processes, strengths, vulnerabilities,

and preferences. On a macro-scale, working with very large and complex projects, some of which include thousands of oak woodland acres, provides an understanding of how trees function as a habitat system and the dynamics important for creating, restoring, or enhancing these systems.

Locally, Dudek is applying our oak expertise for the El Dorado County Department of Transportation (EDCDOT). Dudek monitors and provides irrigation for oak trees that were planted as road improvement project mitigation. Dudek will soon be providing additional consulting to EDCDOT on a bridge project and will be focusing on minimizing oak tree impacts and developing mitigation should the project encroach upon riparian oaks.

Statewide, Mr. Huff and the urban forestry team have prepared oak management plans for several very large, controversial projects; have worked in numerous jurisdictions subject to a variety of oak management ordinances and laws; and have developed an adaptive management mitigation process that is ecologically based and is applicable across jurisdictions.

In addition to oak woodland planning, Mr. Huff manages large-scale municipal urban forest inventories and prepares urban and community forest management plans, preparing impact analysis studies, conducting tree hazard evaluations and technical arboricultural assessments, and preparing large and small-scale fire protection plans.

SCOTT ECKARDT
Project Manager
Project Role: Oak Management

Scott Eckardt has over 8 years' experience in forestry and natural resource management. He has managed numerous projects throughout Southern California, dealing primarily with environmental and resource management issues in open space areas and the region's wildland/urban interface (WUI). These projects include assessment and inventory of oak woodlands, monitoring of native oaks on development sites, assessment of fire and fuel hazard conditions, WUI inspections for local fire departments, surveys of native trees and vegetation, Global Positioning System (GPS) mapping, environmental monitoring, data analysis and preparation of assessment reports, oak management and preservation plans, and necessary CEQA technical documents.

In addition, he routinely utilizes GIS, CAD, and aerial photography in mapping, analysis of resource data, preparation of project plans, conducting project impact analysis, determining appropriate oak mitigation sites, and modeling fire behavior and fire hazard conditions. Mr. Eckardt has also worked for CAL FIRE in South Lake Tahoe, where he conducted fuel reduction, vegetation thinning, and forest rehabilitation and erosion control projects.

SHERRI MILLER
Principal
Project Role: Botanical Resources – Pine Hills Plants

Sherri Miller has 15 years' experience as a biologist and environmental planner. Ms. Miller graduated from Washington and Lee University in 1992 with a BS in biology, and received an MS in botany from Duke University in 1994. She is a trained botanist and wetlands expert with extensive experience preparing habitat and species preservation, management, and monitoring plans. Combining expertise in

botanical resources, regulatory permitting, and environmental documentation, Ms. Miller's in-depth understanding of how environmental regulations interrelate helps clients prepare a strategic approach to resource management, permitting and documentation for greater efficiency and cost-effectiveness. She specializes in environmental assessments, biological resource surveys, data collection and analysis, resource agency coordination, permitting and mitigation design and monitoring.

Ms. Miller has supervised and coordinated numerous biological resource assessments throughout central and Southern California, including surveys for special-status plants and vegetation mapping. She has provided habitat and endangered species permitting expertise on a variety of projects, ranging from regional conservation plans to public infrastructure (e.g., transportation and utilities) projects to master-planned communities.

Ms. Miller was the botany lead for the preparation of the Western Riverside County MSHCP, which addressed the ecology of over 40 special-status plant species, including narrow endemics associated with gabbro soils. She also drafted the riparian/riverine/vernal pools protection guidance, narrow endemic plant species protection guidance, and the monitoring program for the Western Riverside County MSHCP. Ms. Miller has served as project manager or assisted with the analysis and preparation of other MSHCPs or HCPs, predominantly with a focus on wetlands resources and botanical species. Similar to the work required for the Western Riverside County MSHCP, she provided the analysis of impacts and conservation for the Upper Santa Ana River HCP in San Bernardino County. This HCP focused on conservation of public lands along the Santa Ana River, and involved coordination with BLM, the Cities of Highland and Uplands, the SBVWCD, and several private aggregate mining entities.

Ms. Miller also serves as the project manager for Newhall Land and oversaw the vegetation mapping and rare plant surveys on more than 17,000 acres and preparation of a variety of inventories, GIS-based impact analyses, and mitigation plans. Ms. Miller also served as the project manager for an assessment of management, monitoring, and mitigation tied to Newhall Land's Natural Resources Management Plan for the Santa Clara River. Most recently, Ms. Miller was responsible for preparing the Newhall Ranch Resource Management and Development Plan (RMDP) and Spineflower Conservation Plan (SCP) for a 14,000-acre study area, as well as the biological resources section of the EIS/EIR, which analyzes the impacts of the RMDP and SCP with respect to more than 90 special-status species, including 19 special-status plant species.

VIPUL JOSHI
Biologist

Project Role: Botanical Resources – Pine Hills plants

Vipul Joshi has over 10 years' professional experience as a biological consultant specializing in natural resource management, botanical conservation, permit acquisition, permit compliance, and project management. Mr. Joshi is experienced with California flora and environmental regulations. Mr. Joshi also has extensive experience in managing the development of natural resources management plans and conservation planning studies for a variety of public and private projects.

Mr. Joshi has served as the project manager or lead biologist for the preparation of natural resources management plans for projects totaling over 100,000 acres, including the 21,000-acre CDFG San Jacinto Wildlife Area, the 28,000-acre Tejon Mountain Village project area, and the 17,000-acre Newhall Ranch Specific Plan area. Mr. Joshi's focus in the development of these plans has been the identification of clear

goals, the comprehensive evaluation of available data, and the construction of feasible management objectives, measured through standardized monitoring within an identified framework of responsible parties.

Mr. Joshi has also served as project manager or assisted with the analysis and preparation of other MSHCPs or HCPs, predominantly with a focus on wetlands resources and botanical species. Plans for which Mr. Joshi has provided conservation evaluation or project management include the Western Riverside County MSHCP, City of Carlsbad Habitat Management Plan, and the Upper Santa Ana River HCP in San Bernardino County. He has specific experience with CEQA processing with a variety of local jurisdictions; state and federal Endangered Species Act permit processing; wetlands permitting, including nationwide and individual permits from the U.S. Army Corps of Engineers (ACOE); and management of permit compliance. Specific biological survey skills include rare plant surveys, focused presence/absence surveys for vernal pool fairy shrimp species throughout California, vegetation mapping, wetlands delineation, vernal pool identification, vernal pool watershed mapping, and general biological assessments of functions and services.

BROCK ORTEGA
Senior Wildlife Biologist
Project Role: Wildlife – Important Habitat and Connectivity

Brock Ortega graduated from Humboldt State University in 1991 with a degree in wildlife management. He has 17 years' experience as a professional wildlife biologist. He brings extensive expertise to his project teams in many areas, including wildlife biology and management, ecological assessment, environmental impact assessment and mitigation, habitat remediation, endangered species management plan authorship, mitigation monitoring, permitting issues related to wetland resources and threatened or endangered species, and project management. Mr. Ortega has written several habitat and species management plans for a number of federally listed species and generally sensitive species. Mr. Ortega has conducted over 20,000 hours of focused and general wildlife surveys during his professional career. Mr. Ortega is a recognized qualified surveyor for a number of listed and rare amphibian and mammal species, and has federal permits for several avian and invertebrate species, including southwestern willow flycatcher, listed fairy shrimp, and others.

In addition to wildlife management issues, Mr. Ortega has specialized in wildlife movement and connectivity studies and issues. He has attended numerous conferences related to wildlife movement and connectivity issues and will be presenting at the 2009 International Conference on Ecology and Transportation. He furthers his knowledge of existing crossing structures by touring locations across the west, viewing everything from tortoise and kangaroo rat barriers to elk and pronghorn barriers to differing jump-out designs.

Throughout his career, Mr. Ortega has designed and implemented numerous studies to determine wildlife usage of specific sites and through regions, including the San Bernardino and San Jacinto mountains and the Tehachapi Mountains; throughout Riverside County, Orange County, and Los Angeles County; and over/around the California State Highways network.

He has utilized nearly every technique, including standard sooted track plates, guard hair sampling, scat surveys and mapping, gypsum track stations, camera stations, trail dragging track studies, and visual surveys. Mr. Ortega has built his own remote cameras, but has acquired over 30 digital game cameras to

use for corridor and movement studies. He is familiar with designing studies to adequately sample a broad area, either in a stratified manner or based on species-specific habitat requirements. He understands when it is best to use baited stations or when it is best to document unbiased movement. He is up to date with the latest technologies, literature, and techniques available to conduct movement studies and is trained and has implemented sophisticated GIS predictive modeling of least-cost path and unionized movement of wildlife.

PHILIP BEHRENDS, PHD
Senior Scientist/Specialist

Project Role: Wildlife – Important Habitat and Connectivity; Alternative Conservation – Planning Approaches

Dr. Philip Behrends is a behavioral ecologist and animal behaviorist with an extensive theoretical and field background in the study of mammals and birds. Dr. Behrends was the principal conservation biologist for the Southern Subregion NCCP/Master Streambed Alteration Agreement/HCP for southern Orange County, which provides federal regulatory coverage for 32 animal and plant species. After a detailed conservation analysis of three alternative reserve designs, which included various combinations of private land set-asides and land purchase requirements, this plan culminated in the creation of a 32,000-acre Habitat Reserve composed of private lands set aside by Rancho Mission Viejo and regional and wilderness park lands owned by the County of Orange. No additional land acquisition or purchase was necessary under the plan.

Dr. Behrends is currently working with Rancho Mission Viejo, a science panel, and the USFWS in developing a long-term management and monitoring program for the Habitat Reserve that includes an environmental stressor–based adaptive management plan. The monitoring program is scientifically rigorous and includes a statistically based approach, involving stratified random sampling of potential monitoring sites required for inferences about species population and habitat trend; state of the art sampling protocols, such as distance sampling of avian species using point transects; and use of sophisticated statistical analyses, including software (e.g., DISTANCE and PRESENCE) for estimating population parameters, such as population size and density, habitat occupancy rates, and methods to identify habitat covariates that are important for adaptive management.

Dr. Behrends was also the lead analyst and author for mammals for the Western Riverside County MSHCP and holds federal and state permits to conduct trapping studies of the endangered Stephens' kangaroo rat, San Bernardino kangaroo rat, and Pacific pocket mouse. Dr. Behrends has 28 years' combined experience as a consultant and scientist, conducting field investigations of the behavioral and social ecology of kangaroo rats and other rodent species native to the Colorado, Sonoran, and Great Basin deserts.

JUNE COLLINS, AICP
Vice President and Environmental Services Manager

Project Role: Alternative Conservation – Planning Approaches

June Collins, Vice President of the firm, is manager of environmental sciences and is responsible for project management and coordination, client representation, permitting, research, and technical analysis. Ms. Collins has over 29 years' professional experience in planning, environmental analysis, research, and technical writing. For the past 15 years, Ms. Collins has focused on project management, policy

development, and environmental documentation for MSHCPs. Her initial experience includes serving as project manager for the EIR/EIS for San Diego's MSCP, followed by serving as manager for the Orange County Southern Subregion HCP EIR/EIS and the Western Riverside County MSHCP. She served as project manager for the Recirculated CVAG MSHCP, and is currently serving as principal in charge for an amendment to the MSHCP to include the City of Desert Hot Springs. Ms. Collins is also serving as the project manager for the Tehachapi Uplands MSHCP.

Ms. Collins' particular expertise is in assisting clients in development and analysis of alternative conservation planning approaches. This includes deep understanding of client goals and needs as well as the implications of various strategies in meeting those needs. Ms. Collins was a primary force behind the development of the criteria-based approach used in the Western Riverside County MSHCP, an approach specifically customized to the needs of the client at that time.

JOSEPH MONACO, AICP
Principal
Project Role: Alternative Conservation – Planning Approaches

Joseph Monaco has managed significant habitat conservation planning projects, including the Western Riverside County MSHCP—a 1.25-million-acre conservation plan for Western Riverside County. Complexities involved with this program included establishment of a cooperative organizational structure comprising 15 public entities and a management coordination structure and protocols for approximately 350,000 acres of public land. Mr. Monaco's involvement in the Western Riverside County MSHCP has spanned nearly 10 years, from development of conservation alternatives, plan development, and CEQA/NEPA documentation to plan approval and implementation.

Under Mr. Monaco's direction, Dudek currently provides the implementing agency, the Western Riverside County RCA, with staff support in plan implementation, including biological analyses, project consistency review, annual report preparation, land acquisition support, policy development, and permit coordination.

LISA LUBELEY, GISP
Environmental GIS Manager
Project Role: GIS Mapping, Modeling, and Analysis

Lisa Lubeley, a skilled professional, is manager of GIS services and is responsible for project management and coordination, business development, best practices initiatives, software test plans, specialized modeling/analysis, and application development. Ms. Lubeley has over 18 years' professional experience in geospatial technologies and CADD in both the private and public sectors. Her experience includes data management, cartography, modeling/analysis, and desktop and web-based application development, needs assessment, and program management.

Ms. Lubeley is also an accomplished manager who has administrated budgets up to $4 million per year. Her excellent people skills help her to interface effectively with client staff, while her organizational expertise allows effortless coordination of projects from start to finish. Ms. Lubeley is very familiar with governmental methods and processes, thanks to her years of interaction with cities, districts, and regulatory agencies. With over 18 years' experience in the geospatial technology industry in Southern

California, Ms. Lubeley is very familiar with the California GIS community and the role of GIS in both public and private projects.

MARK MCGINNIS
GIS Analyst
Project Role: GIS Mapping, Modeling, and Analysis

Mark McGinnis has over 7 years' direct experience with GIS technologies in the public and private sectors. Mr. McGinnis has gained a thorough understanding of GIS through his involvement in infrastructure and environmental science projects throughout the southwestern United States. He specializes in database development and management, spatial analysis, spatial model building, and online web applications. Mr. McGinnis has assisted in the preparation of HCPs, biological resources technical reports, municipal service reviews (MSRs), and EIRs. Mr. McGinnis has also provided GIS support for numerous biological reports, wetlands permitting, and focused species surveys throughout California.

HEATHER HAMMERMEISTER
Technical Editor
Project Role: Lead Technical Editor

Heather Hammermeister has more than 13 years' experience editing complex, multidisciplinary scientific and technical reports for clients at the federal, state, and local level. Ms. Hammermeister also has experience managing manuscript preparation at both academic and commercial publishing houses. Her areas of expertise include the following:

- Coordinating documentation projects prepared by multiple agencies and ensuring resulting reports have consistent style, tone, and terminology
- Establishing and maintaining guidelines and standard practices for formatting, editing, and producing documents
- Assisting with planning of technical documents
- Providing editorial support tailored to needs and schedules of individual projects
- Preparing report outlines and drafting text
- Reviewing existing drafts for copyediting issues, including spelling, grammar, punctuation, logic, references, and clarity of figures and tables
- Reviewing for integration issues; smoothing writing styles
- Ensuring documents meet project's style guidelines
- Overall editorial quality check.

INTENTIONALLY LEFT BLANK

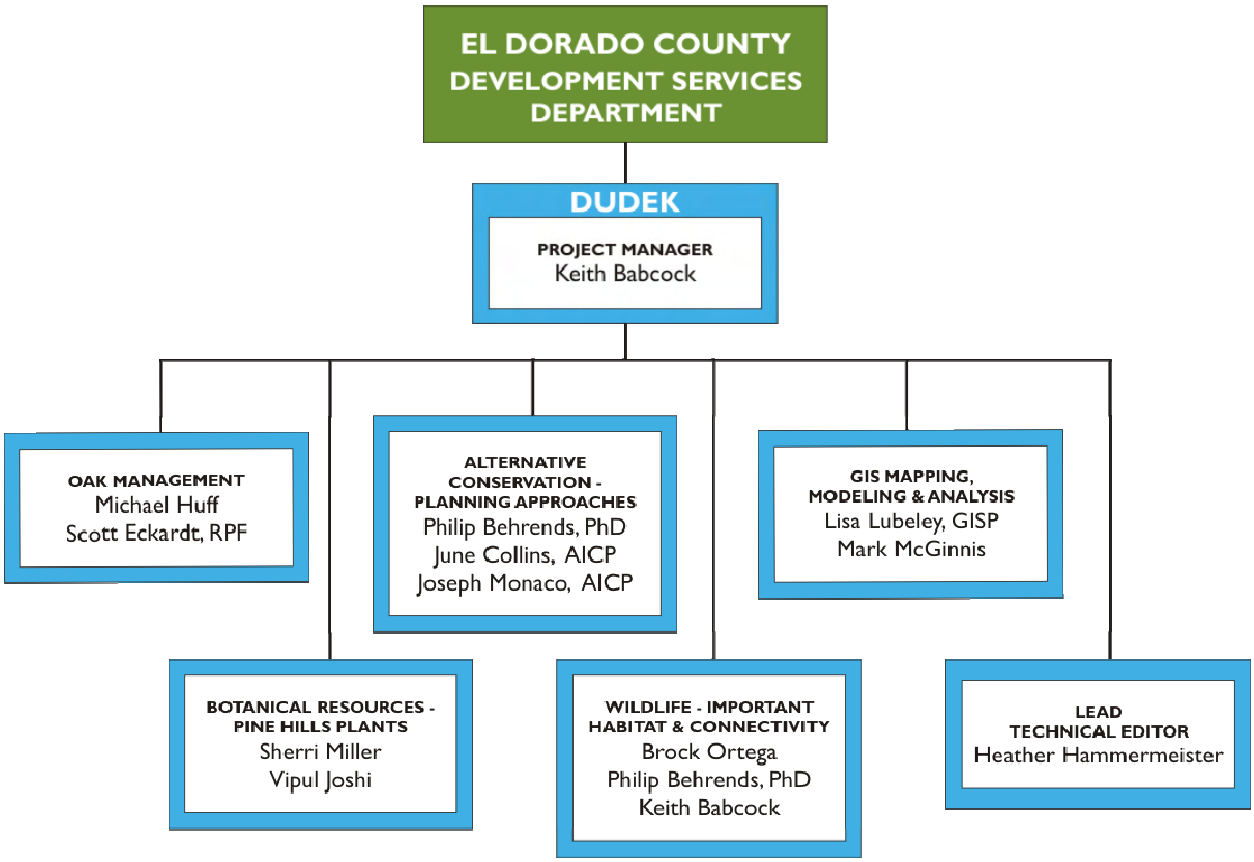
E. Work Plan

Dudek intends to approach this project with our long-term role in mind. From processing the INRMP to preparing environmental documents, we anticipate facilitating a collaborative process among the Board of Supervisors, Planning Commission, Agricultural Commission, County Planning staff, the Plant and Wildlife Technical Advisory Committee (PAWTAC), and the INRMP Stakeholders Advisory Committee (ISAC). We are committed to working creatively with stakeholders to create a successful INRMP.

E.1 Task Management Approach

As mentioned in Section D.3, Keith Babcock will be directly responsible to the County and will lead Dudek's project team, highlighted in Figure 5, and will leverage our extensive in-house resources as needed to complete project tasks.

FIGURE 5. PROJECT LEVEL ORGANIZATIONAL CHART



Our scope of work (Section C.2) suggests key milestones where we believe stakeholder input will be particularly important. Further identified in the projected work plan matrix (Table 1), a fundamental approach to the implementation of the scope of work tasks includes coordination and meetings with PAWTAC, ISAC, and the County.

TABLE 1. PROJECTED WORK PLAN MATRIX

Work Plan	August				September				October				November				December				January				February				March			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task 1 Map Important Habitat and Connectivity																																
Task 1.1 Compilation and Review of Existing Data																																
Discussions with PAWTAC, ISAC, and County on terminology, approach																																
Compile GIS database																																
Literature compilation and review																																
Task 1.2 Develop Conservation Planning Goals, Identify Focal Species																																
Develop/clarify conservation goals; meet with PAWTAC, ISAC, County																																
Identify list of focal species																																
Task 1.3 Evaluate Landscape Permeability, Wildlife Habitat Linkages																																
Literature review																																
Reconnaissance surveys																																
Identify habitat connectivity approach with PAWTAC, ISAC, County																																
Evaluate viability of existing and potential Highway 50 undercrossings																																
Evaluate potential to improve/retrofit selected undercrossings																																
Evaluate habitat permeability and connectivity to feasible undercrossings																																
Task 1.4 Prepare Draft and Final Maps and Reports																																
Important Habitat Map and Report																																
Focal Species Report																																
North–South Wildlife Movement Corridor Report																																
Review with PAWTAC, ISAC, and County																																
Task 2 Assist in Identifying Alternative INRMP Approaches																																
Task 2.1 Conduct Informal Gap Analysis																																
Overlay scenario maps, identify preserve protection gaps																																
Task 2.2 Identify a Conceptual Conservation Scenario																																
Coordinate with PAWTAC, ISAC, County																																
Evaluate various scenarios																																
Task 2.3 Formulate Alternative INRMP Approaches																																
Identify range and assess feasibility of alternative approaches																																
Coordinate with PAWTAC, ISAC, County																																
Task 2.4 Prepare INRMP Implementation Alternatives Report																																
Administrative and public drafts, final report																																
Review with PAWTAC, ISAC, and County																																

Ongoing communication with these groups will be instrumental to ensuring a timely, cost-effective, and successful completion of these tasks. As noted in the Organizational Chart and in Section I of this proposal, Keith Babcock, Dudek's project manager for this effort, will be the point person with respect to communications and coordination with PAWTAC, ISAC, and the County. However, Mr. Babcock will include other conservation planning and habitat connectivity experts at Dudek at meetings with these groups on an as-needed basis (see Figure 4 in Section D).

E.2 Work Plan Assumptions

It is assumed that Dudek will meet with PAWTAC, ISAC, and the County at the regular, monthly scheduled meetings for each committee. While no timeline was suggested in the County's RFP, we understand that it is the County's desire to have the various document and map deliverables vetted by these committees as well as by the Board of Supervisors (BOS). Dudek assumes that this vetting and review will occur at the monthly meetings for each committee and at the regularly scheduled BOS meetings.

Based on the projected work plan matrix (Table 1), it is assumed that Dudek will attend at least ten formal meetings with PAWTAC and ISAC (assumed to be joint meetings), some of which County staff may attend, and three formal meetings with the Planning Commission and/or BOS or as otherwise determined by County staff. Dudek assumes that our project manager will be present at all the meetings, with supporting Dudek staff, listed in Figure 5, attending as needed. However, the work plan and cost estimate assume regular and ongoing communication with members of PAWTAC, ISAC, and the County via telephone and email, as appropriate.

INTENTIONALLY LEFT BLANK

F. Insurance Requirements

Dudek is able to comply with the insurance requirements set forth in the RFP's Exhibit "A." A copy of our current insurance certificate can be provided upon request.

INTENTIONALLY LEFT BLANK

G. Cost Proposal

G.1 Cost Assumptions

The total estimated cost for this work effort is based upon the description of work tasks and the projected work plan included in this proposal. While some reconnaissance-level fieldwork is anticipated, the cost estimate assumes that no significant additional field data collection will need to be conducted to accomplish the major work tasks of this effort. For budgeting purposes, we have assumed a maximum of approximately 100 hours for the habitat connectivity and movement corridor analysis. Given the importance of meeting and coordinating with the members of PAWTAC, ISAC, and the County for this work effort, it is assumed that the project manager will expend approximately 20 hours per month in meeting preparation and attendance.

In addition, we have assumed a maximum of 300 hours for GIS analysis and modeling (assuming Dudek will have access to the County's GIS database), which can include landscape permeability and habitat connectivity analysis, the informal preserve gap analysis, development of a conceptual conservation scenario, and preparation of various habitat maps. Specific scopes and cost estimates for these efforts will likely be refined once we have met with PAWTAC, ISAC, and the County to clarify goals, approaches, and strategies. Since the level of potential public comments and hearings that will be necessary to finalize the various reports is unknown, the cost estimate assumes only those costs to deliver a public draft document of each report and map described in this proposal to the County.

G.2 Cost Estimate

The total estimated labor for the above-described tasks is approximately $318,000. The total estimated expenses (including travel, document reproduction, mailings, notices, etc.) is approximately $11,000. The total time and materials cost is estimated to be $329,000.

On the next page, we have provided our current rate sheet to list hourly rates for all account team members and fees for every service we can provide that is not identified in this RFP.

DUDEK
2009 STANDARD SCHEDULE OF CHARGES

Engineering Services

Project Director	$205.00/hr
Program Manager	$190.00/hr
Principal Engineer II	$180.00/hr
Principal Engineer I	$170.00/hr
Senior Project Manager	$160.00/hr
Project Manager	$145.00/hr
Resident Engineer	$135.00/hr
Senior Engineer II	$135.00/hr
Senior Engineer I	$125.00/hr
Associate Engineer	$115.00/hr
Project Engineer IV	$110.00/hr
Project Engineer III	$100.00/hr
Project Engineer II	$95.00/hr
Project Engineer I	$85.00/hr
Field Engineer II	$110.00/hr
Field Engineer I	$100.00/hr
Engineering Assistant	$75.00/hr

Right-of-Way Management Services

Principal ROW Manager	$170.00/hr
ROW Project Manager	$140.00/hr
ROW Senior Engineer	$125.00/hr
ROW Engineer	$115.00/hr
ROW Technician	$105.00/hr
ROW Research Analyst	$75.00/hr

Environmental Services

Principal	$210.00/hr
Senior Project Manager/Specialist	$195.00/hr
Environmental Specialist/Planner VI	$170.00/hr
Environmental Specialist/Planner V	$150.00/hr
Environmental Specialist/Planner IV	$135.00/hr
Environmental Specialist/Planner III	$125.00/hr
Environmental Specialist/Planner II	$110.00/hr
Environmental Specialist/Planner I	$100.00/hr
Analyst	$85.00/hr
Planning Research Assistant	$70.00/hr

Construction Management Services

Principal/Manager	$195.00/hr
Senior Construction Manager	$180.00/hr
Senior Project Manager	$160.00/hr
Construction Manager	$150.00/hr
Project Manager	$140.00/hr
Resident Engineer	$135.00/hr
Construction Engineer	$130.00/hr
On-site Owner's Representative	$105.00/hr
Construction Inspector III	$120.00/hr
Construction Inspector II	$110.00/hr
Construction Inspector I	$100.00/hr

Hydrogeological Services

Principal	$205.00/hr
Practice Manager	$185.00/hr
Sr. Environmental Engineer	$185.00/hr
Sr. Hydrogeologist/Sr. Proj Mgr	$165.00/hr
Project Manager	$150.00/hr
Associate Hydrogeologist/Engineer	$135.00/hr
Hydrogeologist IV/Engineer IV	$120.00/hr
Hydrogeologist III/Engineer III	$110.00/hr
Hydrogeologist II/Engineer II	$100.00/hr
Hydrogeologist I/Engineer I	$90.00/hr
Technician	$85.00/hr

District Management & Operations

District General Manager	$175.00/hr
District Engineer	$160.00/hr
Operations Manager	$150.00/hr
District Secretary/Accountant	$85.00/hr
Collections System Manager	$95.00/hr
Grade V Operator	$100.00/hr
Grade III Operator	$80.00/hr
Grade I Operator	$55.00/hr
Operator in Training	$40.00/hr
Collection Maintenance Worker II	$55.00/hr
Collection Maintenance Worker I	$40.00/hr

Office Services

Technical/Drafting/CADD Services

3D Graphic Artist	$140.00/hr
Senior Designer	$120.00/hr
Designer	$105.00/hr
Assistant Designer	$85.00/hr
GIS Specialist IV	$135.00/hr
GIS Specialist III	$120.00/hr
GIS Specialist II	$110.00/hr
GIS Specialist I	$100.00/hr
CADD Operator II	$95.00/hr
CADD Operator I	$85.00/hr
CADD Drafter	$80.00/hr
CADD Technician	$70.00/hr

Surveying Services (Coachella Valley)

Professional Land Surveyor	$160.00/hr
3-Person Survey Crew	$235.00/hr
2-Person Survey Crew	$205.00/hr
1-Person Survey Crew	$110.00/hr
Survey Analyst	$110.00/hr
Asst. Survey Analyst/CADD Mapper	$80.00/hr

Support Services

Technical Editor III	$130.00/hr
Technical Editor II	$110.00/hr
Technical Editor I	$90.00/hr
Publications Assistant III	$90.00/hr
Publications Assistant II	$80.00/hr
Publications Assistant I	$70.00/hr
Clerical Administration	$70.00/hr

Forensic Engineering – Court appearances, depositions, and interrogatories as expert witness will be billed at 2.00 times normal rates.

Emergency and Holidays – Minimum charge of two hours will be billed at 1.75 times the normal rate.

Material and Outside Services – Subcontractors, rental of special equipment, special reproductions and blueprinting, outside data processing and computer services, etc., are charged at 1.15 times the direct cost.

Travel Expenses – Mileage at 55 cents per mile. Per diem where overnight stay is involved is charged at cost

Invoices, Late Charges – All fees will be billed to Client monthly and shall be due and payable upon receipt. Invoices are delinquent if not paid within thirty (30) days from the date of the invoice. Client agrees to pay a monthly late charge equal to one percent (1%) per month of the outstanding balance until paid in full.

Effective January 1, 2009

H. References

Dudek is proud of the relationships we build and maintain with our clients. As requested in the RFP, we have included three references for projects that are similar in scope to the INRMP. Please feel free to contact the references shown in Table 2 to discuss our project management and performance.

TABLE 2. DUDEK CLIENT REFERENCES

Client	Reference	Length of Business Relationship	Summary of Services Performed
Western Riverside County Regional Conservation Authority (RCA)	Charles Landry, RCA Director 951.955.9700	8 years	Dudek worked with Mr. Landry on the Western Riverside MSHCP, detailed in Section D.2 of this proposal.
Coachella Valley Association of Governments (CVAG)	John Wohlmuth, Executive Director 760.346.1127 Katie Barrows, Director of Environmental Services 760.346.1127	3 years	Dudek worked with Mr. Wohlmuth and Ms. Barrows on the CVAG MSHCP, detailed in Section D.2 of this proposal.
Tejon Mountain Village, LLC	Steve Letterly, Director of Entitlements 661.663.4282	10 years	Dudek worked with Mr. Letterly on the Tehachapi Uplands MSHCP, detailed in Section D.2 of this proposal.

INTENTIONALLY LEFT BLANK

I. Additional Data

Dudek wishes to present no additional data.

INTENTIONALLY LEFT BLANK

Appendix A
Resumes

Keith Babcock – Principal, Senior Biologist

EXPERIENCE

Keith Babcock is a Principal and regional manager of Dudek's Sacramento area office with over 25 years' experience in wildlife biology, regulatory compliance, and project management. He has directed, managed, or conducted a broad range of terrestrial wildlife research and studies, biological resource inventories, sensitive species surveys, environmental impact assessments, biological constraints analysis, habitat conservation/management plans, habitat restoration plans, and mitigation monitoring plans for a variety of private and public sector clients in virtually every region in California (over 25 counties). Mr. Babcock has a thorough understanding of the California Environmental Quality Act (CEQA), both state and federal Endangered Species Acts, and state and federal regulations and permits involving biological resources. He has worked on numerous environmental and biological compliance projects, including environmental impact reports (EIRs), environmental impact studies (EISs), Section 10(a) permits, habitat conservation plans (HCPs), Section 7 consultations, Section 404 permits, California Department of Fish and Game (CDFG) Streambed Alteration Agreements, and habitat mitigation and restoration plans. His biological expertise includes knowledge of a wide range of terrestrial organisms and ecological relationships, with particular emphasis on general ornithology, raptors, threatened and endangered species, and wildlife movement corridors.

Representative Biological Studies

Directed/directing or participating in various biological studies and data collection to determine presence/absence of special-status species, evaluate habitat functions/values, and/or generally characterize on-site biological resources, including the following:

- Wildlife movement corridor study on the approximately 290,000-acre Tejon Ranch in the Tehachapi Mountains spanning Kern and Los Angeles Counties. Study utilized remote motion-triggered cameras installed at over 20 underpass and culvert locations along Interstate 5 for a total of approximately 19 miles. Information on species, number, location, and date is being compiled, analyzed, and documented.
- Field surveys and documentation efforts for the biological components of several environmental compliance documents in Northern California including the Rancho Dorado EIR in El Dorado County, two gravel and rock mining projects in Yolo County, the Roseville General Plan in Placer County, the Palos Colorados EIR in Contra Costa County, the North Rocklin Circulation Element EIR

EDUCATION

Colorado State University
MS Business Management
1984

Colorado State University
BS Wildlife Biology
1981

LICENSES AND CERTIFICATIONS

Scientific Collecting Permit, State of California, CDFG

Federal Bird Banding Permit, USFWS

Habitat Evaluation Procedures, USFWS

PROFESSIONAL AFFILIATIONS

Association of Environmental Professionals (AEP); past State Board member

Raptor Research Foundation

Society for Conservation Biology

Wildlife Society

California Swainson's Hawk Technical Advisory Committee

in Sacramento County, and the Paradise Treatment Plant Biological Assessment in Butte County. Issues included potential impacts on vernal pools, wildlife movement corridors, wetlands, sensitive plants, and numerous sensitive animal species including bald eagle, red-legged frog, Valley elderberry longhorn beetle, Swainson's hawk, western spadefoot toad, and California tiger salamander.

- Swainson's hawk radio-telemetry study over an 8,000-acre study area in West Sacramento, California, to determine home range and habitat use of eight pairs of nesting Swainson's hawks.
- An on-call biological services contract for the City of Hercules to address various biological issues associated with proposed infrastructure projects. Biological resource issues that were addressed included the presence of special-status plant and wildlife species, impacts to U.S. Army Corps of Engineers (ACOE) and CDFG wetlands, creeks, and drainages, and impacts to sensitive habitat areas such as riparian and oak woodlands. The services provided also included the preparation of technical reports and documents associated with state and federal permits and CEQA regulatory review.
- Presence/absence surveys for three federally listed threatened and endangered fairy shrimp species in a large vernal pool complex (over 100 pools) in eastern Sacramento County.
- Comprehensive surveys for special-status mammal and reptile species over a 12,000-acre area on Newhall Ranch in Los Angeles County.
- Analysis of potential impacts of wind turbines on biological resources, particularly avian species, on a proposed wind energy site in Solano County.
- A comprehensive raptor management plan for the 1,500-acre East Orange Specific Plan Area and a 3,000-acre dedication area in Orange County.
- A biological resources assessment with focus on mule deer habitat and migration use for a U.S. Navy development project in Mono County, California.

CESA/ESA Compliance and Permitting

Directed/directing all biological and CEQA/NEPA aspects of several HCPs/Natural Communities Conservation Plans (NCCPs), including the following:

- Tehachapi Uplands Multiple Species Habitat Conservation Plan covering approximately 140,000 acres and including 27 special-status species.
- City of Porterville HCP for impacts on habitat of the federally listed endangered Valley elderberry longhorn beetle.
- Biological documentation necessary for the central coast NCCP in Orange County.
- HCP for the federally endangered Stephens' kangaroo rat for the Metropolitan Water District of Southern California in Riverside County.
- Section 2081 Permit for Lyon's pentachaeta, a state-endangered plant species.
- Directed/directing all biological studies, documentation, and coordination with agencies and landowners on several Section 7 consultations, including the following:
- Consultation between the U.S. Fish and Wildlife Service (USFWS) and ACOE for potential impacts on the California red-legged frog in the City of Hercules.

- Consultation between USFWS and the Federal Highway Administration regarding proposed development in the Grapevine area of Tejon Ranch potentially affecting San Joaquin kit fox and blunt-nosed leopard lizard.
- Consultation between USFWS and U.S. Environmental Protection Agency regarding proposed remediation on a site in the City of Oxnard potentially affecting Ventura marsh milk-vetch.

CEQA/NEPA Compliance

Directed or currently directing all biological assessment and documentation efforts for numerous EIRs (over 300) and EIR/EISs for a variety of public and private clients throughout the state, including:

- Rancho Dorado EIR in El Dorado County
- EIR for a proposed residential community and golf course on 3,200 acres in Tehama County
- EIR/EIS for a 12,000-acre portion of Newhall Ranch in Los Angeles County
- EIR for a proposed gravel mining operation in Yolo County MND for a seismic upgrade project of a 15-mile portion of the Mokelumne Aqueduct in San Joaquin and Contra Costa Counties.
- EIR for 28,000-acre Tejon Mountain Village, 5,000-acre Tejon Industrial Park, and 20,000-acre Centennial Village sites on Tejon Ranch in Kern and Los Angeles Counties
- EIR for the Water Forum Agreement, an agreement between over 20 water purveyors and water districts on the future use and management of water along the lower American River
- Palos Colorados EIR in Contra Costa County
- North Rocklin Circulation Element EIR in Sacramento County
- Statewide EIR for the California Department of Corrections for proposed prison facilities throughout northern, central, and Southern California
- City of Hercules Redevelopment Plan EIR
- City of Pleasanton Rolling Hills EIR in Alameda County
- Glenwood Specific Plan EIR in the City of Scotts Valley, Santa Cruz County
- Mitigated negative declaration (MND) for a water main and telecommunications line extension at San Francisco International Airport
- MND for a seismic upgrade project of a 15-mile portion of the Mokelumne Aqueduct in San Joaquin and Contra Costa Counties.

Miscellaneous Agency Compliance

Directed/directing all biological studies, documentation, and agency coordination to comply with various regulatory/public agency jurisdictions, including the following:

- Caltrans Natural Environment Study and Biological Assessment regarding the widening of a 28-mile section of a state highway in Sonoma County and Los Angeles County, and the Big Bear Dam Bridge in San Bernardino County

- Numerous projects under the jurisdiction of the Significant Ecological Area Technical Advisory Committee (Los Angeles County). Issues typically include potential impacts on sensitive plant and wildlife species, sensitive habitat areas, and wildlife movement corridors.

Philip R. Behrends, PhD – Senior Scientist/Specialist

EXPERIENCE

Dr. Phil Behrends is a behavioral ecologist and animal behaviorist with an extensive theoretical and field background in the study of mammals and birds. He has supervised and coordinated numerous biological resource assessments in the Southern California region, including surveys for sensitive mammals, birds, reptiles, amphibians, and plants. Dr. Behrends has 28 years' combined experience as a consultant and scientist, conducting field investigations of the behavioral and social ecology of kangaroo rats and other rodent species native to the Colorado, Sonoran, and Great Basin deserts. He is an authority on the behavior and reproductive physiology of kangaroo rats, and he helped establish one of the first successful breeding colonies of the genus *Dipodomys*. Dr. Behrends has conducted numerous trapping studies for a wide variety of common and sensitive rodent species, including the endangered Stephens' kangaroo rat, San Bernardino kangaroo rat, and Pacific pocket mouse.

Selected Projects

Phase I of the North County Multiple Habitat Conservation Program (MHCP), San Diego County, California. Served as the project manager for Phase I of the North County MHCP, which included an evaluation, analysis, and mapping of general and sensitive biological resources for approximately 660,000 acres in northwestern San Diego County, California. This work was conducted under a contract with the San Diego Association of Governments. The Phase I work included a quantitative assessment of habitat quality and identification of potential preserves and wildlife corridors.

Range Management Plan for the Otay Ranch Resource Management Plan, San Diego County, California. Supervised preparation of the Range Management Plan for the Otay Ranch Resource Management Plan. The Range Management Plan discusses existing cattle-grazing activities on the ranch and provides recommendations for achieving the goals of the Resource Management Plan while allowing for reasonable managed grazing activities prior to buildout of the project. The plan includes recommendations for modifications of existing pastures and improvements in grazing activities (e.g., rotational grazing strategies) that would eliminate or minimize impacts to sensitive habitats and sensitive plant and wildlife species. Descriptions of how to monitor range trend (e.g., standing crop) are discussed and potential areas of scientific research are suggested.

EDUCATION

McMaster University, Ontario, Canada
PhD Experimental Psychology/Animal Behavior
1984

University of California, Riverside
BA Psychology
1977

LICENSES AND CERTIFICATIONS

Stephens' kangaroo rat surveys (USFWS Federal Permit No. TE031287-6; renewed 02/25/2005, expires 02/22/2009; CDFG MOU – no expiration)

San Bernardino kangaroo rat surveys (USFWS Federal Permit, State MOU)

Pacific pocket mouse surveys (USFWS Federal Permit, State MOU)

PROFESSIONAL AFFILIATIONS

American Society of Mammalogists

Society for Conservation Biology

Southern Orange County Subregion Natural Communities Conservation Planning (NCCP) and Habitat Conservation Plan (HCP), Rancho Mission Viejo, County of Orange, California. Lead project biologist for a 131,000-acre NCCP and HCP effort involving five local jurisdictions and a portion of the Cleveland National Forest. Baseline work included:

- Resource inventory/evaluation of existing database for habitat and sensitive plant and wildlife species
- Supervision of additional surveys for California gnatcatcher, cactus wren, least Bell's vireo, and arroyo toad
- Supervision of a native grassland inventory on Rancho Mission Viejo
- A wildlife corridor study at nine sites.

The purpose of the wildlife study was to identify potential wildlife movement bottlenecks, document the physical and biotic conditions at the potential bottlenecks, and recommend actions that would improve wildlife movement in the area. A variety of techniques for detecting the presence of wildlife at the sites were used, such as track stations, fur samplers, visual surveys, live-trapping, and interpretive techniques. Dr. Behrends was instrumental in preparation and analysis of alternative Habitat Reserve designs to preserve the majority of the existing wildlife habitat and sensitive species and preparation of the biological analyses, including identification of the wildlife and plant species to be given regulatory coverage under the NCCP/HCP, and preparation of an Adaptive Management and Monitoring Program (AMP) for the Habitat Reserve System.

The AMP addresses the management and monitoring of major habitat types in the NCCP/HCP Habitat Reserve, including coastal sage scrub, chaparral, grassland, wetland/riparian, and woodlands and associated focal management species. The NCCP/HCP culminates in the issuance of a Section 10 permit by the US Fish and Wildlife Service under the federal Endangered Species Act and a state permit by the California Department of Fish and Game (CDFG) under Section 2835 of the NCCP Act.

Habitat Conservation Plan (HCP) for Western San Bernardino and Riverside Counties, Southern California Edison (SCE). Lead biologist for the SCE HCP for Operations and Maintenance Activities in western San Bernardino and Riverside counties. This HCP addresses federally- and state-listed species, including the Delhi Sands flower-loving fly, San Bernardino kangaroo rat, California gnatcatcher, arroyo toad, Santa Ana River woollystar, and slender-horned spineflower, as well as several other sensitive species that occur in the HCP study area. The project scope of work includes habitat suitability assessments, focused surveys (except for the Delhi fly), impact analyses, development of conservation and mitigation strategies, and preparation of the HCP and associated NEPA Environmental Assessment. The HCP will culminate in the issuance of a Section 10 permit by USFWS under the federal Endangered Species Act and a state permit under Section 2080.1 or 2081 by CDFG under the California Endangered Species Act.

Western Riverside Multiple Species Habitat Conservation Plan (MSHCP), County of Riverside, California. Taxonomic group leader for mammals for the MSHCP. Prepared detailed species accounts and conservation analyses for several mammals identified for state and federal regulatory coverage under the state and federal Endangered Species Acts, including: Aguanga kangaroo rat, bobcat, brush rabbit, coyote, Dulzura kangaroo rat, long-tailed weasel, Los Angeles pocket mouse, mountain lion, northwestern San Diego pocket mouse, San Bernardino flying squirrel, San Bernardino kangaroo rat, San Diego black-tailed jackrabbit, San Diego desert woodrat, and Stephens' kangaroo rat. Also prepared background information regarding reserve design and adaptive management issues.

As-Needed Environmental Services, Southern California Edison, Counties of Riverside, San Bernardino, and Orange, California. Project manager for as-needed environmental services to Southern California Edison (1999–2003). Supervised a group of environmental specialists to provide support to this agency with regard to biological resources assessment, biological monitoring, resource agency coordination, and regulatory review for various deteriorated pole, firewrap removal, and other miscellaneous infrastructure projects in Southern California ranging from Orange and Los Angeles counties in the west to the Colorado River in eastern Riverside and San Bernardino counties. Resource issues addressed included threatened and endangered species and those regulated under the state pursuant to Section 2081 of the California Endangered Species Act and administered by CDFG and Sections 4, 7, 9, and 10 of the federal Endangered Species Act administered by the U.S. Fish and Wildlife Service (USFWS), and habitats, such as wetlands, regulated under Section 404 of the Clean Water Act administered by the US Army Corps of Engineers and Sections 1600–1603 under the California Fish and Game Code administered by CDFG. More than 50 separate studies were conducted under this as-needed contract.

As-Needed Environmental Services, Metropolitan Water District of Southern California and Eastern Municipal Water District, Counties of Riverside, Orange, and Los Angeles, California. Project manager for as-needed environmental services to the Metropolitan Water District of Southern California (1997–2002) and Eastern Municipal Water District in western Riverside County (1992–2003). Supervised a group of environmental specialists to provide support to these agencies with regard to biological resources assessment, biological monitoring, resource agency coordination, permit preparation and processing, and regulatory review related to various projects, including existing and planned pipelines, water storage tanks, and major facilities such as treatment plants and reservoirs. Resource issues addressed included threatened and endangered species regulated under the state pursuant to Section 2081 of the California Endangered Species Act and administered by CDFG and Sections 4, 7, 9, and 10 of the federal Endangered Species Act administered by USFWS, and habitats, such as wetlands, regulated under Section 404 of the Clean Water Act and administered by the US Army Corps of Engineers and Sections 1600–1603 under the California Fish and Game Code administered by CDFG. More than 50 separate studies were conducted under these as-needed contracts between 1992 and 2003.

Arroyo Trabuco Golf Course, DMB San Juan Golf Associates, LLC, City of Mission Viejo and County of Orange, California. Project manager for biological studies of the 230-acre Arroyo Trabuco Golf Course Project partly located in the City of Mission Viejo and partly in unincorporated County of Orange. General biological studies and focused surveys for the listed California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, arroyo toad, and thread-leaved brodiaea were conducted. The work culminated in preparation of a biological technical report in support of the CEQA Environmental Impact Report for the project and a Biological Assessment in support of a federal Endangered Species Act Section 7 consultation for the California gnatcatcher, least Bell's vireo, and thread-leaved brodiaea, leading to a No Jeopardy Biological Opinion from USFWS. In addition to the Section 7 consultation, permitting included a US Army Corps of Engineers Nationwide Permit pursuant to Section 404 of the Clean Water Act, a Section 1603 Streambed Alteration Agreement for impacts to wetlands/waters of the US and State, and Section 2081.1 Consistency Determination from CDFG for impacts to the least Bell's vireo. A Habitat Restoration Plan to mitigate for impacts to coastal sage scrub and valley needlegrass grassland and County-required Resources Management Plan also were prepared.

INTENTIONALLY LEFT BLANK

June Collins, AICP – Vice President; Environmental Services Manager

EXPERIENCE

June Collins, a principal of the firm, is manager of environmental sciences and is responsible for project management and coordination, client representation, permitting, research, and technical analysis. Ms. Collins has over 27 years' professional experience in planning, environmental analysis, research, and technical writing. Her experience includes preparation, coordination, and processing of all types of environmental documents, master plans, revegetation plans, technical reports, resource agency permits, and resource protection studies. Her particular areas of expertise are environmental constraints analysis and resource planning, project management, feasibility studies, permit strategies, environmental documentation, client representation, research, writing, synthesis of technical data, and report preparation. With over 27 years' experience in the land development industry in Southern California, Ms. Collins is very familiar with the permitting and processing requirements of agencies and jurisdictions throughout the region.

Selected Projects

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), Riverside County, California. Project manager for this integrated planning effort. The project involved planning for the needs of sensitive species over a 1.26-million-acre study area. The MSHCP was approved by the County Board of Supervisors on June 17, 2003, and is a criterion-based plan covering 146 species, the largest such plan in the nation. A variety of innovative approaches were used in development of the plan and in integrating the plan with the overall Riverside County Integrated Plan (RCIP).

This Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) was a component of the three-tiered RCIP, which also involved a transportation plan and an update to the County General Plan. Collins served as a key member of the team during the initial RCIP visioning process, including extensive participation in community outreach efforts including unincorporated areas in 14 cities within the 1.26-million-acre Western Riverside County Plan Area. She also served as the lay consultant providing support to the Board-of-Supervisors-appointed MSHCP Advisory Committee and to Policy and Integration Subcommittees established during the RCIP process. As requested, she has provided support to the County's RCIP Steering Committee and to the Western Riverside Council of Governments Executive Committee and City Planning Directors involved in reviewing the overall RCIP.

EDUCATION

University of Michigan
BS Resource Planning/
Biology/English
1972

PROFESSIONAL AFFILIATIONS

Association of Environmental Professionals (AEP)

American Planning Association (APA)

LICENSES AND CERTIFICATIONS

American Institute of Certified Planners (AICP)

Phases I and II of a Comprehensive Resource Management Plan (RMP) for Otay Ranch, San Diego County and City of Chula Vista, California. Project manager and primary author for a 23,000-acre new town in southern San Diego County. The RMP establishes resource protection, enhancement, and management policies for a planned 12,000-acre natural open space system and includes a coastal sage scrub restoration program on 1,300 acres, identification and management of a 330-acre vernal pool preserve, a range management plan, and a comprehensive biota monitoring program to be carried out over a 30-year period.

Joint Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) for the Southern Subregion NCCP Component of the Southern Orange County Coordinated Planning Process (SOCCPP). Project manager for this joint environmental document effort. The Conservation Plan is a component of the SOCCPP, an integrated planning effort encompassing the NCCP/HCP, a major General Plan Amendment and Zone Change for southern Orange County, and a U.S. Army Corps of Engineers (ACOE) Special Area Management Plan. The NCCP/HCP EIR/EIS will address the cumulative and growth-inducing effects of the combined integrated planning effort and must examine a wide range of programmatic and project-specific alternatives. Consistency and coordination among the various components of the integrated planning effort is a key component of the analysis.

Joint EIR/EIS for the San Diego Multiple Species Conservation Program, San Diego, California. Project manager for the environmental documentation effort associated with this regional conservation plan addressing protection for 87 species within a 581,649-acre study area in southwestern San Diego County.

Technical Project Manager for Southern Subregion Natural Communities Conservation Plan. Responsibilities including management and coordination of all technical analyses, preparation of planning and policy documents, and representing technical aspects of projects to agencies, working groups, and members of the public.

Environmental Assessment (EA)/HCP for Southern California Edison's Operations and Maintenance Activities, San Bernardino and Riverside Counties, California. Project manager responsible for preparation of the EA/HCP. Twelve species are addressed in the HCP, including Delhi Sands flower-loving fly, California gnatcatcher, least Bell's vireo, arroyo toad, and San Bernardino kangaroo rat.

Oceanside to Escondido Bikeway, San Marcos, California. Served as the main quality assurance/quality control contact for environmental documentation and permitting efforts for the establishment of a bikeway adjacent to the existing railway corridor from Oceanside to Escondido. The environmental documentation was required to satisfy both local jurisdictions and Caltrans requirements. Resource agency permitting was also included in the scope of work.

Montecito Ranch EIR. Project manager for the Montecito Ranch project and the approximately 500-acre project site located in the Ramona grasslands area in proximity to a small municipal airport. The project proposed development of about 250 estate lots on the former Ranch. Major issues addressed in the EIR included community character, biology (grasslands, Stephens' kangaroo rat, wildlife movement, multiple species conservation planning), traffic, and visual quality. The project was never approved and the property has been purchased by The Nature Conservancy as part of overall conservation of the Ramona grasslands.

Pomerado Reclaimed Water Treatment Plant EIR. This EIR was completed as a task order as part of Dudek's as-needed environmental services contract with the City of San Diego Metropolitan Wastewater Department. Collins served as manager for the overall as-needed contract for this particular task order. The treatment plant was an element being considered as part of the City's overall clean water program and development of backbone waste treatment facilities for member agencies. The EIR considered a variety of project-specific issues, including alternative sites, alternative distribution systems, land use, visual quality, and public health and safety. Analysis of system-wide alternatives was also included in the EIR. The facility was ultimately not selected to be constructed as part of the overall system.

4S Ranch EIR, San Diego County, California. Project manager for the EIR for a 2,891-acre mixed-use project located along the I-15 corridor in northern San Diego County. The project proposes 5,365 dwelling units and a mixed-use commercial core adjacent to the existing 4S Ranch Business Park. Major issues include traffic, biology, and coordination with surrounding land use plans, including the City of San Diego's Black Mountain Ranch and Future Urbanizing Area.

Otay Ranch New Town Plan, San Diego County, California. Principal environmental planner, policy planner, and co-author of first Otay Ranch New Town Plan, a 23,000-acre planning area in southern San Diego County.

Balboa Park Development and Management Plan EIR, City of San Diego, California. Project manager for EIR on major revisions to Balboa Park Development and Management Plan, including extensive analysis of master plan alternatives for the City of San Diego. The EIR was awarded a certificate as an outstanding environmental document by the Association of Environmental Professionals.

Mission Trails Regional Park Visitors' Center EIR, San Diego, California. Project manager for the preparation and processing of the EIR for the award-winning Mission Trails Regional Park Visitors' Center. A key component of the EIR was examination of alternative sites for the Visitors' Center to minimize impacts to the California gnatcatcher, a federally listed threatened species. Other considerations included visual and landform compatibility of the proposed facility with the existing natural landscape in the park. Siting of the Visitors' Center in a manner that would maximize views for Visitors' Center users while at the same time not adversely affecting views for existing park users was also a consideration. Traffic, access, and parking were also addressed, including issues associated with providing one-way access to the Visitors' Center during certain periods so access could be maintained on park roads for bicycle and pedestrian traffic.

State Revolving Fund Applications, San Diego County, California. Served as the project manager for all CEQA/NEPA documentation efforts for reclaimed water projects and treatment plant expansions for the City of Oceanside, Padre Dam Municipal Water District, and the Rancho Santa Fe Community Services District.

San Diego Energy Recovery Project (SANDER). Project manager for all permitting activities including: California Energy Commission, City of San Diego, ACOE, California Department of Fish and Game, Environmental Protection Agency, and Federal Aviation Administration for Wheelabrator Environmental Systems, Inc.

INTENTIONALLY LEFT BLANK

Scott W. Eckardt, RPF – Project Manager

EXPERIENCE

Scott Eckardt has over 8 years' experience in forestry and natural resource management. He has managed numerous projects throughout Southern California, dealing primarily with environmental and resource management issues in open-space areas and the region's wildland/urban interface (WUI). These projects include assessment and inventory of oak woodlands, monitoring of native oaks on development sites, assessment of fire and fuel hazard conditions, WUI inspections for local fire departments, surveys of native trees and vegetation, Global Positioning System (GPS) mapping, environmental monitoring, data analysis and preparation of assessment reports, oak management and preservation plans, and necessary California Environmental Quality Act (CEQA) technical documents. In addition, he routinely utilizes geographic information systems (GIS), CAD and aerial photography in mapping, analysis of resource data, preparation of project plans, conducting project impact analysis, determining appropriate oak mitigation sites, and modeling fire behavior and fire hazard conditions. Mr. Eckardt has also worked for the California Department of Forestry and Fire Protection (CAL FIRE) in South Lake Tahoe, where he conducted fuel reduction, vegetation thinning, and forest rehabilitation and erosion control projects.

Selected Projects

Stephens' Kangaroo Rat Habitat Management Plan and Fire Management Plan, Riverside Habitat Conservation Authority, Riverside, California. Assisted in the development of the fire response and fuel management components of the fire management plan for this project. The project goal was to detail fire response and fuel management protocols aimed at maintaining or improving overall habitat for Stephens' kangaroo rat. Extensive GIS mapping and fire behavior analysis was completed to determine appropriate response efforts by management unit and identify potential hazards, access, and site constraints. An analysis of fire history, vegetation dynamics, and post-fire vegetative response was conducted in developing management strategies for the preserve areas.

Oak Woodland Assessment, Management, and Preservation Plan Preparation, Southern California. Managed and conducted on-site assessments, GPS mapping, and evaluations of native oak woodlands and associated vegetation types in Orange, San Diego, Los Angeles, and Riverside counties. Also conducted associated data analyses and assessments of impacts to tree resources on project sites throughout Southern California. Prepared tree protection and mitigation measures and associated tree management plans,

EDUCATION

California State University Long Beach
MA Geography
2006

California Polytechnic State University, San Luis Obispo
BS Forestry and Natural Resources Management
1998

LICENSES AND CERTIFICATIONS

Registered Professional Forester No. 2835

ISA Certified Arborist No. WE-5914A

PROFESSIONAL AFFILIATIONS

California Licensed Foresters Association (CLFA)

Society of American Foresters (SAF)

International Society of Arboriculture (ISA)

preservation plans, and protection plans for these areas as related to development in the WUI. Routinely conduct field inspections and site monitoring activities for tree protection, revegetation, and fuel hazard reduction projects throughout Southern California.

Post-Burn Oak Woodland Assessment, Mountain Park, County of Orange, California. This project involved assessing individual coast live oak trees and larger stands of oaks following the 2006 Sierra Fire. Individual trees were assessed for scorching, canopy damage, and cambium damage based on U.S. Forest Service (USFS) standards. Stands of trees were classified based on damage extent and mortality rates and recommendations were made for promoting stand recovery.

Community Wildfire Protection Plan Assistance, Santa Clara County FireSafe Council, Santa Clara County, California. This project involved assisting the Santa Clara County FireSafe Council in preparation of Community Wildfire Protection Plans (CWPP) by providing technical expertise for fire hazard reduction planning. CWPPs are planning documents that prioritize fire hazard reduction projects by identifying physical hazards and involving necessary stakeholders in addressing such hazards. Tasks included: compilation of GIS data and development of fire behavior models, development of field inspection criteria, and assessment of vegetative fuel conditions.

Mitigation/Environmental Monitoring, Southern California. Conducted numerous environmental and/or mitigation monitoring projects throughout Orange, San Diego, and Los Angeles counties. These tasks involve conducting field inspections, coordinating with contractors and land managers, delineating tree and/or vegetation protection zones, and documenting revegetation success based on criteria outlined in management documents. A major component to these projects includes preparing follow-up memoranda and coordinating with property owners in order to communicate information regarding existing field conditions or performance issues and to avoid future conflicts associated with environmental protection efforts.

Urban–Wildland Interface Code Implementation Plan, City of Chula Vista, California. This project involved an analysis of the City's adopted Urban–Wildland Interface Code and an assessment of high fire hazard areas within the city. As a component of this project, generated a GIS overlay analysis to locate potential high fire hazard areas within the City. ArcGIS 9.0 Spatial Analyst tools were used in analyzing GIS inputs, including slope, aspect, elevation, vegetation type, vegetation age, and fire history. In addition, sensitive species data, open-space boundaries, and defensible space limits were incorporated into GIS analysis to prioritize sites for potential fuel reduction efforts adjacent to existing development.

WUI Fuel Hazard Assessment for the City of Newport Beach, California. Responsible for assessing, mapping, and documenting fire and fuel hazard conditions within the WUI protection area of the Newport Beach Fire Department (NBFD). This is an ongoing annual project which involves an evaluation of existing vegetation conditions (species, density, continuity) as well as utilization of GIS in data analysis efforts. Field mapping efforts are enhanced by utilization of digital aerial photography and GPS technology to capture site-specific electronic resource information. In addition, site conditions are evaluated based on currently adopted fire codes and recommendations are made for any corrective actions required. Data is also prepared for integration into the City's GIS by linking field condition descriptions with geographic reference information, allowing access to relevant site information.

Wildfire Hazard Reduction Projects – City of Del Mar, City of Encinitas, and Bella Vista Residential Development. These projects involved an assessment of current fuel conditions and fire

hazard in WUI areas throughout the listed jurisdictions. Field assessment, fire behavior modeling, GIS analysis, and recommendations for reducing impacts, along with specification preparation and contractor monitoring, were all components of these projects. The goal of these projects was to reduce the wildfire hazard through on-the-ground rating of current conditions, high-level modeling and analysis, and generation of justifications for conducting fuel-reduction projects.

Preplan Map Conversion for the NBFD, Newport Beach, California. Conducted a database creation project for "pre-planning" fire management in high-priority structures for NBFD. This project involved the creation of digital access, layout and fire equipment maps, and associated property data for high-priority structures, which include hospitals, schools, apartments, and other high-occupancy buildings. Important components of the maps include site and building access and egress points, utilities, ventilation, elevators, and types of construction. These maps are also linked with associated property data that includes alarm and sprinkler conditions, property owner information, inspection schedules, and special hazard conditions. In addition, the maps are geo-referenced for future incorporation into the City's GIS.

Fuel Modification Zone Assessment for the NBFD, Newport Beach, California. This project involved assessing and documenting hazardous fire conditions within existing fuel modification zones in an area that was to be annexed by the City of Newport Beach. Assessment involved evaluating existing vegetation conditions, using GPS in field mapping efforts, and utilizing GIS in data analysis efforts. Site conditions were evaluated based on existing fire and fuel modification zone guidelines and recommendations were made for corrective treatments. Data was prepared in the form of tables and maps that linked field condition descriptions with geographic reference information, allowing NBFD to access relevant site and hazard information. This information was also used in successfully bringing many properties into compliance with existing fire codes.

CAL FIRE. Gained invaluable experience and knowledge in the forestry and fire protection field while working for CAL FIRE (primarily in the WUI zone in the Lake Tahoe Basin). Key responsibilities included identifying forested areas with high wildfire potential; conducting vegetation thinning, forest rehabilitation, and erosion control projects; surveying forest and property boundaries; and assessing forest health. Also conducted wildlife surveys, Watercourse and Lake Protection Zone (WLPZ) delineation, and forest canopy coverage assessments while coordinating with representatives from the USFS, California Department of Fish and Game, and the California Tahoe Conservancy.

San Joaquin Reservoir Project, Irvine Ranch Water District (IRWD), Orange County, California. Responsible for implementing the mitigation monitoring and reporting program for the conversion of the 3,000-acre-foot potable-water reservoir to a reclaimed water storage reservoir. Mitigation monitoring outlined in the environmental impact report (EIR) prepared for the site was conducted both during and following construction over a period of 12 months and focused on protecting coastal sage scrub (CSS) habitat adjacent to reservoir construction activities. Impacts to CSS habitat were also mapped and quantified in the field and monitoring reports were consistently submitted to IRWD discussing current conditions and recommendations for additional protection measures consistent with criteria set forth in the project EIR. Mitigation efforts also involved on-call inspection services as well as routine coordination between contractors and IRWD management personnel.

INTENTIONALLY LEFT BLANK

Heather Hammermeister, MA – Technical Editor

EXPERIENCE

Heather Hammermeister has more than 13 years' experience editing complex, multidisciplinary scientific and technical reports for clients at the federal, state, and local level. Ms. Hammermeister also has experience managing manuscript preparation at both academic and commercial publishing houses.

Her areas of expertise include the following:

- Coordinating documentation projects prepared by multiple agencies and ensuring resulting reports have consistent style, tone, and terminology
- Establishing and maintaining guidelines and standard practices for formatting, editing, and producing documents
- Assisting with planning of technical documents
- Providing editorial support tailored to needs and schedules of individual projects
- Preparing report outlines and drafting text
- Reviewing existing drafts for copyediting issues, including spelling, grammar, punctuation, logic, references, and clarity of figures and tables
- Checking for readable text, clear sentences, and consistent style
- Resolving editorial inconsistencies
- Reviewing for integration issues; smoothing writing styles
- Ensuring documents meet project's style guidelines
- Overall editorial quality check.

Selected Projects

Ms. Hammermeister has served as principal technical editor for the following environmental planning projects:

- Tehachapi Upland Multiple Species Habitat Conservation Plan (MSHCP)
- Tehachapi Upland MSHCP Environmental Impact Statement (EIS), biota section
- Tejon Mountain Village Environmental Impact Report (EIR), biota section

EDUCATION

University of Colorado, Boulder
MA Linguistics
2002

University of Nevada, Reno
BA Journalism
1996

PROFESSIONAL AFFILIATIONS

Council of Science Editors

Society for Technical Communication

Association of Earth Science Editors

- Newhall Ranch Resource Management and Development Plan–Spineflower Conservation Plan EIS/EIR, biota section
- Recirculated Draft Coachella Valley Association of Governments MSHCP
- Western Riverside MSHCP Annual Report (2005)
- Vista Target Commercial Center EIR
- Fire Protection Plan for the Otay Ranch Preserve and Resort Village
- Conceptual Wetland Mitigation and Monitoring Plan for the Fanita Project
- Fanita Ranch Biological Resources Technical Report
- Stephens' Kangaroo Rat Habitat Management and Monitoring Plan and Fire Management Plan for Riverside County Habitat Conservation Agency Lands in the Lake Mathews and Steele Peak Reserves
- Southern Orange County Subregion National Community Conservation Plan/Master Streambed Alteration Agreement/Habitat Conservation Plan.

Michael Huff – Senior Manager

EXPERIENCE

Michael Huff is an experienced forestry and natural resources consultant with 17 years' experience in this field. He manages Dudek's urban and community forestry/wildfire protection planning group, which includes several arborists, foresters, geographic information system (GIS) specialists, fire protection specialists, fire inspectors, plan reviewers, water conservation specialists, and landscape architects. Mr. Huff specializes in management of:

- Oak woodland management planning
- Oak woodland inventory and sampling
- Oak woodland impact analysis
- Oak woodland mitigation measure development
- California Environmental Quality Act (CEQA)-supporting technical documents
- Urban and community forest management plans
- Tree hazard evaluations
- Community-wide and project-specific fire protection plans
- Wildland/Urban Interface (WUI) fire management plans
- Wildfire hazard reduction projects.

Selected Projects

Oak Tree Restoration Site Maintenance, El Dorado Department of Transportation, El Dorado County, California. Coordinated and managed oak tree restoration site maintenance project in El Dorado County. Project was expanded to include an additional restoration site. Dudek's subsidiary company provides labor and equipment necessary to water the restoration trees and Dudek monitors their conditions on this multi-year project.

Oak Woodland Management Plan, Tejon Mountain Village, Lebec, California. Managed and authored a complex oak woodland management plan for this 26,000 acre project. The project included conducting tree inventory and woodland sampling, providing aerial imagery and field density estimates, GIS-based impact analysis, mitigation measure development including an adaptive management process for restoring and enhancing preserved woodlands as well as an extensive re-planting program.

EDUCATION

Northern Arizona University
BS Forest Management
1992

LICENSES AND CERTIFICATIONS

Certified Arborist, International Society of Arboriculture
No. WE-4276A

Certified Forester, Society of American Foresters No. 1268

San Diego County DPLU – Approved Fire Protection Planner

Laguna Beach Fire Department – Approved Fire Protection Planner

PROFESSIONAL AFFILIATIONS

Member – National Fire Protection Association – International

Member – California Fire Chief's Association – Fire Prevention Officers

Speaker/Trainer – Annual Fire Prevention Officer's Institute

Oak Tree Inventory and Evaluations, Various Clients, Southern California. Performed large- and small-scale evaluation of oak trees in communities throughout Orange, San Diego, and Riverside Counties. The oak trees have typically been incorporated into development landscaping and due to horticultural issues, were not performing well. Provided maintenance specifications and tree-by-tree recommendations for improving tree health.

Oak Tree Health Assessments, Impact Analysis, and Protection for Storm Drain Improvements, Sycuan Indian Reservation, San Diego County, California. Evaluated potential impacts from site alterations necessary for storm drain improvements in a semi-natural riparian drainage. Permeable fabric and rip-rap placement near several native oak trees required specifications for tree protection. Mr. Huff provided on-site direction for minimizing tree impacts and submitted a specification for preservation of the trees during and following construction.

Landscape Oak Tree Health Assessments and Recommendations, Sycuan Indian Reservation, San Diego County, California. Declining oak trees throughout portions of the parking lots at the Reservation's Casino were evaluated for their health and prognosis. Mr. Huff noted that pre-construction tree protections were minimal and that has lead to the current decline. Mitigation measures designed to stabilize the tree decline and improve health, where possible, were provided in an Oak Tree Arborist's Report.

Oak Tree Evaluations and Arborist's Reports, Santa Barbara City and County, California. Mr. Huff managed and participated on several native oak tree Arborist's Reports in the City of and County of Santa Barbara. The projects are primarily related to single-family residence construction within an oak woodland or near oak trees. Arborist's Reports were prepared, which addressed existing conditions, anticipated impacts, and mitigation measures, according to local policies and ordinances.

Oak Tree Encroachment and Protection for Sewer Line Expansion, Upper Chiquita Reservoir, Talega, Orange County, California. Mr. Huff delineated the tree protection zones for several native oak trees within the project vicinity for a proposed sewer line expansion. Where constraints negated the ability to avoid tree protection areas, Dudek prepared specifications for precise limb removals, enabling heavy equipment access within the alignment area. Dudek also monitored the limb cutting so that the specifications were clearly communicated and understood and oak tree impacts were minimized.

Recycled Water Pipeline Installation through Oak Woodlands, Las Virgenes Municipal Water District, Calabasas, California. Supporting Dudek's engineering and planning groups, Mr. Huff provided tree inventory and mapping along with analysis of potential tree impacts from placement of a 24-inch underground pipeline near existing oak woodlands. Dudek's analysis resulted in pipeline placement that reduced potential impacts to 37 oak trees to insignificant and a waiver by the California Coastal Commission for further review.

Native Oak Woodland Preservation and Management Plans, County of Orange, Rutter Development, Eastbridge Partners, The Irvine Company, Southern California. Managed multiple projects, including wildland oak and other native tree inventory, mapping, and assessment; project impact analysis, mitigation, revegetation, and monitoring plan preparation; and agency coordination and interaction. Projects include Saddle Creek/Saddle Crest, Rancho Potrero Leadership Academy, and Sakaida Nursery, all located in Orange County; Canyon Crest in the City of Brea; Martin

Ranch in the City of San Bernadino; Areas 1, 2, 3, and 4 in Eastern Orange County; Mountain Park in the City of Anaheim Hills; and others. Most of these projects include large populations of native coast live oak trees, some of which are impacted by development.

Pechanga Indian Reservation, Great Oak Management Plan, Golf Course Oak Tree Relocation Assessment. Mr. Huff managed and performed technical analysis of the Great Oak management plan project. The Great Oak is the largest coast live oak (*Quercus agrifolia*) in California. Over two-thousand native oak trees were inventoried, mapped, and assessed for relocation potential related to the footprint of a proposed golf course.

Native Oak Tree Inventory and Impact Analysis, Tierra Development, Santa Clarita, California. Provided on-site evaluation of native oak trees and prepared an oak tree report according to Santa Clarita and Los Angeles County tree protection ordinances. Based on the proposed project, several of the scrub oak trees on site would be impacted and, as such, a mitigation program providing equivalent offset was provided within the oak tree report.

Oak Tree Impact and Mitigation Report, Vista Hacienda, Vista, California. Provided a complete oak tree study on the site identifying tree locations related to the proposed project footprint, potential impacts, measures to reduce or avoid impacts, and proportional mitigation for impacts. An arborist's report was prepared for the project and included as a technical appendix of the project's EIR.

Sycamore and Oak Tree Arborist's Report, SR-241 Transportation Corridor Widening Project, Orange County, California. Mr. Huff conducted on-site and construction plan evaluations to determine the potential tree impacts from bridge widening on the SR-241 Transportation Corridor. Approximately 20 trees were identified as having the potential to be impacted by the project and specific measures were provided to avoid or reduce impacts.

Oak Tree Protection and Relocation Consulting, Sewer Pipeline Installation Project, Rose Canyon, San Diego, California. Mr. Huff provided consultation on methods to reduce impacts from heavy equipment necessary for trenching and burying of a sewer pipeline through the bottom of Rose Canyon. An additional 15 oak trees located directly within the pipeline alignment were identified for relocation to adjacent, undisturbed areas and monitoring provided through the establishment period.

Oak Tree Health Evaluation, Rainbow Propane, Rainbow, California. Mr. Huff evaluated 40 native oak trees and provided the project owner with a summary report. The trees ranged from good to dead with most trees falling within the poor or fair categories. Many of the trees had been impacted by wildfire or were declining due to root or trunk rot.

Post-Burn Oak Tree Evaluations, Mountain Park Development Site, Anaheim, California. Mr. Huff participated in this study of a large development site following the Sierra Fire in Orange County. Many of the site's oak trees were damaged by the wildfire and Dudek conducted a post-burn analysis, documenting oaks that were killed, those that were moderately damaged, and those that were minimally damaged. Dudek provided recommendations for tree management and restoration.

Post-Burn Oak Tree Assessments, Proposed Development Project, Trabuco Canyon, Orange County, California. Dudek conducted a post-wildfire oak tree evaluation for approximately 200 oak trees occurring within a proposed project site. The oak trees were damaged by the Trabuco wildfire and varied from completely killed to minimally scorched. Dudek provided a narrative and photographic summary of the site as well as recommendations for recovery of some of the trees and potential restoration for areas most severely damaged.

Additional Training in:

- Oak Woodland Planning
- Forestry Procedures
- Oak Tree Transplanting.

Vipul Joshi – Biologist

EXPERIENCE

Vipul Joshi has over 10 years' professional experience as a biological consultant specializing in botanical surveying, permit acquisition, permit compliance, and project management. Mr. Joshi is experienced with Southern California flora and environmental regulations. Mr. Joshi also has extensive experience in managing constraints analysis, entitlement processing, permit acquisition, and biological construction monitoring for a variety of public and private projects.

Mr. Joshi has specific experience with California Environmental Quality Act (CEQA) processing with a variety of local jurisdictions; state and federal Endangered Species Act permit processing; wetlands permitting, including nationwide and individual permits from the U.S. Army Corps of Engineers (ACOE); and management of permit compliance. Specific biological survey skills include rare plant surveys, focused presence/absence surveys for the state- and federally listed Quino checkerspot butterfly and vernal pool fairy shrimp, project-level vegetation mapping, wetlands delineation, vernal pool identification, vernal pool watershed mapping, and general biological assessment of functions and values.

Selected Projects

San Jacinto Wildlife Area, Riverside County, California. Served as project manager for preparation of a Land Management Plan (LMP) and associated CEQA and National Environmental Policy Act (NEPA) documentation for a 21,000-acre open space area owned and managed by the California Department of Fish and Game. The contract was administered by the California Wildlife Foundation (CWF) and funded by the Wildlife Conservation Board (WCB). Dudek was involved in establishing existing and long-term management goals, identifying measurable and meaningful project benchmarks, and exploring desired outreach efforts.

Mr. Joshi provided overall project management and coordination for the team and conducted a literature/document compilation and review of management plans, land use policies, and relevant technical reports, and to address CEQA Initial Study Checklist (and possible NEPA) issues. Mr. Joshi managed numerous public outreach meetings, biological reconnaissance surveys, agency consultations, and preparation of the LMP addressing the conservation and management of soil types, vegetation, wildlife habitats, sensitive species, farmlands, hydrology, total maximum daily loads of water quality constituents, invasive weeds, fire management, existing utilities and infrastructure, erosion and sedimentation, hazardous materials, public access and recreation, vehicular access, and visitor interpretation and education facilities.

EDUCATION

University of California, San Diego
BS Evolution, Behavior, Ecology
1997

LICENSES AND CERTIFICATIONS

Quino Checkerspot Butterfly and Vernal Pool Branchiopods (Fairy Shrimp) Surveys – USFWS Federal Permit TE-019949-2 (issued 9/18/00, exp. 12/31/2012)

PROFESSIONAL AFFILIATIONS

California Native Plant Society (CNPS)

Ecological Society of America (ESA)

US Green Building Council (USGBC)

Carlsbad Habitat Management Plan, Carlsbad, California. Provided evaluation of species coverage for over 30 plant and animal species based on multifaceted regional conservation plan.

Western Riverside County Multiple Species and Habitat Conservation Plan (HCP), Riverside County, California. Provided habitat account, plant species accounts, and wetlands policy for regional HCP.

Chula Vista Subarea Plan, Chula Vista, California. Provided biological resource analysis of plan impacts for EIR pursuant to CEQA.

Revegetation Monitoring, City of San Diego, California. Assisted in the collection of data within revegetated wetlands in accordance with monitoring criteria of the City of San Diego and wetlands resource agencies.

Oak Tree Mitigation, Ramona Water District, Ramona, California. Collected data for final 3 years of 5-year monitoring period. Provided annual reports to County and quarterly reports to the District. Coordinated final sign-off by the County of fulfillment of mitigation requirements.

Lake Val Sereno, Rancho Santa Fe, California. Conducted wetlands delineation of a 50-acre riparian habitat area on Escondido Creek and identified areas where habitat restoration and enhancement could occur. Conducted jurisdictional determination with ACOE staff.

Pauma Valley Preserve, Pauma Valley, California. Conducted biological resource mapping and habitat conservation evaluation for a 1,000-acre potential habitat mitigation bank.

The Escondido Creek Conservancy Parcel, Harmony Grove, California. Provided wetlands delineation, vegetation mapping, and identification of wetlands restoration and enhancement opportunities within a 76-acre parcel.

Black Mountain MHPA, San Diego, California. Conducted biological resources inventory of a 2,000-acre preserve area as part of required MSCP monitoring/management plan.

Tejon Mountain Village, Tejon Mountain Village LLC, Kern County, California. The Tejon Mountain Village project consists of 28,000 acres of undeveloped land on the southern border of Kern County. Mr. Joshi was responsible for development of the vegetation mapping protocol and documentation of physical characteristics of the site, including hydrology, soils, climate, and geography. Mr. Joshi is also the lead biologist in developing the resource management plan (RMP) for the project. The RMP will describe the comprehensive long-term management of natural resources, including biological, cultural, geologic, hydrological, and agricultural resources.

Newhall Land and Farming Company, Inc., Los Angeles and Ventura Counties, California. Mr. Joshi is the lead biologist for the development of the resource management and development plan (RMDP), which is a comprehensive document describing regulated impacts and mitigation for the 12,000-acre study area. In addition to describing in detail various infrastructure development components of the project, Mr. Joshi was responsible for compiling and integrating various mitigation measures into a systematic preserve management and monitoring plan that ensures the long-term preservation of multiple species and habitats.

Otay Ranch, Chula Vista, California. Provided biological resource surveys and documentation for various developments covering over 4,000 acres of vacant land. Tasks have included vegetation mapping, rare plant surveys, wetlands delineations, fairy shrimp surveys, and Quino checkerspot surveys. Provided biological resources technical report pursuant to CEQA documentation and assisted in preparation of second tier EIR, development of wetlands and endangered species permitting strategies, preparing and processing Section 404 Nationwide Permits 14 and 39, Section 401 Water Quality Certification, Section 1601 Streambed Alteration Agreement, and Section 7 Biological Opinion, and managing compliance with various permit conditions.

The Irvine Company, Irvine, California. Provided vegetation mapping, wetlands delineation, and rare plant mapping for over 5,000 acres of vacant land.

Rancho Mission Viejo, Mission Viejo, California. Provided native/non-native grassland assessment for over 5,000 acres of vacant land.

McCrink Ranch, Santa Fe Valley, California. Provided project management, wetlands delineation, wetlands permitting strategy, and wetland mitigation identification for a 600-acre multiuse master-planned community with over 20 acres of potential wetland impacts.

Lago San Marcos, San Marcos, California. Provided project management for mixed-use development on 200-acre property within a critical regional habitat linkage. Project tasks have included biological resource mapping, scoping of EIR with various subconsultants, and entitlement planning.

Fanita Ranch, Santee, California. Provided vegetation mapping, rare plant surveys, and wetlands delineation for a 2,000-acre property.

Newhall Ranch, Newhall Land and Farming Company, Inc., Santa Clarita, California. Provided rare plant surveys, including focused surveys for the endangered San Fernando Valley spineflower, on more than 10,000 acres.

Ferber Ranch (Trabuco Canyon), The Planning Center, County of Orange, California. Conducted vegetation mapping, jurisdictional wetlands delineation, and focused rare plant surveys in 2005 and 2006 for Trabuco Canyon Project, which encompasses over 1,110 acres.

Midbayfront, City of Chula Vista, California. Provided biological resource mapping review for 4 million square feet of commercial and residential development on San Diego Bay.

Southern California Edison Pole and Utilities Replacement Project, Orange, Riverside, and San Bernardino Counties, California. Served as primary botanist. Responsibilities included conducting habitat assessments for sensitive plant species at multiple locations in Orange, Riverside, and San Bernardino counties. These locations ranged from the Santa Ana Mountains of Orange and Riverside counties to the western mountains and valleys of Riverside County, San Jacinto Mountains, Palm Springs, Coachella Valley, San Bernardino Mountains, and the Apple Valley region of San Bernardino County. Responsibilities included project meetings, coordinating work schedules, coordinating with Edison personnel and USFS biologists regarding site-specific sensitivities, and writing biological assessments for the USFS.

INTENTIONALLY LEFT BLANK

Lisa M. Lubeley, GISP – Environmental GIS Manager

EXPERIENCE

Lisa Lubeley, a skilled professional, is manager of Geographic Information Systems (GIS) services and is responsible for project management and coordination, business development, best practices initiatives, software test plans, specialized modeling/analysis, and application development. Ms. Lubeley has over 18 years' professional experience in geospatial technologies and CADD in both the private and public sectors. Her experience includes data management, cartography, modeling/analysis, and desktop and web-based application development, needs assessment, and program management. Ms. Lubeley is also an accomplished manager who has administrated budgets up to $4 million per year. Her excellent people skills help her to interface effectively with client staff, while her organizational expertise allows effortless coordination of projects from start to finish. Ms. Lubeley is very familiar with governmental methods and processes, thanks to her years of interaction with cities, districts, and regulatory agencies. With over 18 years' experience in the geospatial technology industry in Southern California, Ms. Lubeley is very familiar with the California GIS community and the role of GIS in both public and private projects.

Selected Projects

Chevron West Coyote Hills Vegetation Mapping, Orange County, California. Responsible for oversight and coordination of project GIS tasks, including data preparation, field map book generation, digitization of vegetation data from field map sheets, quality assurance/quality control (QA/QC) of data, and final report products.

Ontario International Airport – Airport Land Use Compatibility Plan, San Bernardino and Riverside Counties, California. Responsible for oversight and coordination of project GIS tasks, including data collection, data preparation, residential displacement analysis, QA/QC of data, and final report products.

East Victoria Reservoir Replacement Project Mitigated Negative Declaration. San Diego, California. Responsible for data collection, data preparation, analysis, QA/QC of data, application development, and map production.

San Diego State University Plaza Linda Verde Environmental Impact Report. San Diego, California. Responsible for coordination with California Environmental Quality Act (CEQA) team members and oversight and coordination of GIS tasks, including data download, data conversion, analysis, QA/QC, and cartography for final report products.

EDUCATION

University of California, San Diego
BA Ecology, Behavior, and Evolution
1990

LICENSES AND CERTIFICATIONS

GISCI-Certified GIS Professional (January 2004 – No. 00024715)

PROFESSIONAL AFFILIATIONS

Project Management Institute (PMI)

Urban and Regional Information Systems Association (URISA)

- National – Board Member, Annual Conference Chair
- Southern California Chapter – Board Member, National Liaison
- Web Task Force
- Professional Development Task Force

California Geographic Information Association (CGIA)

San Diego Regional GIS Council (SDRGC)

ESRI Users' Group

Murray Road Bridge Widening Project, Oceanside, California. Responsible for coordination with CEQA team members and oversight and coordination of GIS tasks, including data download, data conversion, analysis, QA/QC, and cartography for final report products.

NASA GIS Data Conversion and Application Development Project, Development One, Inc., Edwards, California. Responsible for desktop and web-based application development for utility data in SDSFIE format. GIS tasks included data prep, desktop application development, and web-based application development. The application included linking scanned documents and AutoCAD drawing files to GIS features in the utility feature datasets.

Displacement Analysis for the MCAS Miramar Airport Land Use Compatibility Plan, San Diego Regional Airport Authority Airport Land Use Commission, San Diego, California. GIS project lead for the displacement analysis and technical study that evaluated the extent of potential displacement of future residential and non-residential development in portions of the Miramar airport noise contours and safety zones. This project involved datasets from the City of San Diego, County of San Diego, SANDAG, and SanGIS. GIS tasks included data creation, analysis, displacement loss calculations, process automation, and technical process documentation.

Crazy Horse Landfill, Bridgestone Americas Holding, Inc., Monterey, California. Responsible for data management and web-based application development. Supervised the custom web-based application development process. Development platform was ArcGIS Server, ASP.NET, and C#.

Trails Impact Study, Malibu Parks Recreation and Conservation Authority, Malibu, California. Responsible for web-based application development that allowed client visibility to historical and current vegetation mapping related to existing and proposed trails system. ESRI's ArcGIS Server was the development platform.

Extension of Staff, Rancho Mission Viejo Company, San Juan Capistrano, California. Responsible for GIS tasks related to environmental work related to management of RMV preserve.

Extension of Staff, Western Riverside County Regional Conservation Authority (RCA), Riverside, California. Responsible for writing GIS policies and procedures for RCA staff related to best practices and current business processes.

Extension of Staff, Newhall Land and Farming Company, Valencia, California. Responsible for GIS tasks related to environmental work for the client. Created a web-based application for viewing and querying biological data on the Ranch using the ESRI ArcGIS Server platform.

Tejon Mountain Village, Tejon Mountain Village LLC, Lebec, California. Responsible for coordination of GIS tasks in support of the biological technical report. Tasks included data management, analysis/modeling, application development, and technical documentation. Ms. Lubeley was responsible for new spatial modeling techniques related to wildlife corridor modeling for the wildlife permeability studies. CorridorDesigner software was used in conjunction with ESRI's ArcGIS desktop software and Spatial Analyst extension.

Devers to Palo Verde II Substation (Segment 1) Vegetation Mapping. Riverside, California. Responsible for oversight and coordination of project GIS tasks, including data preparation, field map

book generation, digitization of vegetation data from field map sheets, QA/QC of data, and final report products.

Devers to Palo Verde II Substation (Segment 2) Vegetation, Rare Plants, Dune and Jurisdictional Delineation Mapping. Riverside, California. Responsible for oversight and coordination of project GIS tasks, including data preparation; field map book generation; digitization of vegetation, rare plants, dunes, and jurisdictional delineation data from field map sheets; QA/QC of data, and final report products.

Deteriorated Pole Replacement Project, Arizona, California and Nevada. Responsible for oversight and coordination of project GIS tasks, including data preparation, field sheet generation, sensitive biological resources search, QA/QC of data, and final report products.

Prior Major Projects

GIS Interface to Office of Homeland Security, City of San Diego, California. As GIS program manager for the City of San Diego, Ms. Lubeley worked with the Director of Homeland Security for the City of San Diego to get GIS into the EOC operations and throughout the four departmental EOCs for response to emergency events. Responsible for establishing communication protocols between the main EOC and the departmental EOC as well as data management, cartography, and standards. Participated in regional activation scenarios to test protocols and GIS procedures. Ms. Lubeley was Chair of the City of San Diego Emergency Operation Center GIS WorkGroup, which had representatives from each department that participated in emergency response events.

Project Manager for 2005 Hi-Resolution Imagery Project, City of San Diego, California. As project manager for the hi-resolution imagery project, Ms. Lubeley participated in the RFP process, which involved input from SANDAG imagery expertise and required the "Public Agency Clause" in the contract language to ensure all other public agencies could take advantage of our process and get the same products from the selected vendor. Ms. Lubeley coordinated funding with over 14 departments and managed the schedule and budget for this project.

Enterprise GIS Budget Manager for FY Budgets, City of San Diego, California. As program manager for the City of San Diego, Ms. Lubeley managed the $4 million enterprise budget that came from contributions by all departments that used GIS technology and data. Ms. Lubeley coordinated the GIS Advisory Committee (GAC), a governance mechanism to ensure fair and appropriate use of enterprise funds for imagery, hardware, software licensing, and multi-department application development for the City's GIS community.

GIS Coordinator to the SanGIS JPA, City of San Diego, California. As program manager for the City of San Diego, Ms. Lubeley was the main liaison between SanGIS and the City departments on behalf of the CIO's office. Ms. Lubeley met regularly with the GIS coordinator for the County of San Diego and the SanGIS executive director to discuss policy, budget, data, and applications. During Ms. Lubeley's tenure, the City and SanGIS began business process re-engineering to discuss performance improvements and governance issues.

INTENTIONALLY LEFT BLANK

Mark McGinnis – GIS Analyst

EXPERIENCE

Mark McGinnis has over 7 years' direct experience with geographic information science (GIS) technologies in the public and private sectors. Mr. McGinnis has gained a thorough understanding of GIS through his involvement in infrastructure and environmental science projects throughout the southwestern United States. He specializes in database development and management, spatial analysis, spatial model building, and online web applications. Mr. McGinnis has assisted in the preparation of habitat conservation plans (HCPs), biological resources technical reports, municipal service reviews, and environmental impact reports (EIRs). Mr. McGinnis has also provided GIS support for numerous biological reports, wetlands permitting, and focused species surveys throughout California.

Selected Projects

Tehachapi Upland Multiple Speicies Habitat Conservation Plan (MSHCP), Tejon Ranch Corporation, Kern County, California. Principal GIS analyst for the Tehachapi Upland MSHCP project consisting of approximately 138,000 acres of undeveloped land on the southern border of Kern County. Responsible for management, creation, and display of hundreds of GIS layers. The GIS database maintains and analyzes complex species habitat modeling parameters for 26 species. Primary graphics producer for the MSHCP and EIR/Environmental Impact Statement (EIS) documents.

Upper Santa Ana River HCP, San Bernardino County Water Conservation District, Cities of Redlands and Highlands and County of San Bernardino, California. Principal GIS analyst on an HCP for a multi-purpose project including mining activities, infrastructure improvements (e.g., roadways and utilities), recreational trails, groundwater recharge basins, and flood-control activities along the upper Santa Ana River. Assisted in preparation of a biological resources technical report in support of the EIR/EIS. Responsible for all aspects of GIS data management, analysis, and display.

Southern Orange County Subregion Natural Communities Conservation Planning (NCCP) and HCP, Rancho Mission Viejo Company, Orange County, California. Principal GIS analyst on controversial 130,000-acre NCCP/HCP for southern Orange County. Responsible for management, creation, and display of GIS layers. Lead GIS data coordinator between the County of Orange, Rancho Mission Viejo, and wildlife agencies. Conducted reserve design analysis in relation to biological resources and produced maps for public hearings and stakeholder meetings. Primary graphics producer for the NCCP/HCP and EIR/EIS documents.

EDUCATION

California State University, San Diego
MA Geography with emphasis in Geographic Information Science
2001

University of California, Santa Barbara
BA Geography with emphasis in Geographic Information Science
1998

LICENSES AND CERTIFICATIONS

GISCI-Certified GIS Professional (December 2008 – No. 00060883)

PROFESSIONAL AFFILIATIONS

San Diego ESRI Technology Showcase

Urban & Regional Information Systems Association (URISA)

Western Riverside County MSHCP, Riverside County, California. Assisted the principal GIS analyst on controversial 1.26-million-acre MSHCP for Western Riverside County. Provided management assistance and technical support in the development of a multiple species planning effort to provide regulatory coverage of over 146 species. The planning effort involves development of an NCCP in coordination with an advisory committee composed of diverse stakeholders.

San Fernando Valley Spineflower Management Plan, Newhall Land and Farming Company, Los Angeles County, California. Principal GIS analyst for 8,550-acre San Fernando Valley spineflower management plan. Responsible for management, creation, and display of GIS layers. Modeled suitable habitat for San Fernando Valley spineflower through GIS overlay analysis. Produced 3D graphics in support of the document.

Newhall Ranch Specific Plan, Newhall Land and Farming Company, Counties of Los Angeles and Ventura, California. Principal GIS analyst for 14,500-acre development project. Provided GIS support in preparation of biological resources technical reports, management plans, wetland delineations, focused surveys, and EIRs. Responsible for all aspects of data collection, management, and display of hundreds of GIS layers. Coordinated data distribution and collection between client and consultant team. Incorporated numerous data layers from different sources and formats for use on project.

Tejon Mountain Village, Tejon Mountain Village LLC, Kern County, California. Principal GIS analyst for Tejon Mountain Village project consisting of 28,000 acres of undeveloped land on the southern border of Kern County. Dudek is assisting Tejon Mountain Village with multiple environmental planning services to prepare an environmentally sensitive development. Dudek's services include preparation of a comprehensive biological database through vegetation mapping and focused wildlife and plant surveys. GIS supports all aspects of the project, including data management, analysis, and display of numerous GIS layers. GIS tools were also developed to demonstrate the relationship of each resource to the land plan.

Trabuco Canyon, The Planning Center, County of Orange, California. Principal GIS analyst for preparation of biological resources technical reports for CEQA documentation for the Trabuco Canyon Project, which encompasses over 1,110 acres. Project involves vegetation mapping, jurisdictional wetlands delineation, and focused rare plant surveys from 2005 and 2006. GIS supports all aspects of the project, including data management, analysis, and display of numerous GIS layers.

Rancho Mission Viejo Planning Area 1 Tree Survey, Orange County, California. Principal GIS analyst for GPS tree survey within Rancho Mission Viejo's planning area 1. Utilized sub-meter GPS unit with custom data forms to accurately map and efficiently collect associated data on hundreds of trees. Employed laser rangefinder hardware to map tree data in areas difficult to access.

Carlsbad Precise Development Plan and Desalination Projects, City of Carlsbad, California. Principal GIS analyst for an EIR for the proposed Carlsbad Seawater Desalination Plant, planned for approximately 50 million gallons per day capacity. Primary environmental issues associated with the project include the impact of the concentrated discharge from the desalination plant on marine organisms, since the discharge contains twice the salt content of seawater. The California Coastal Commission is giving close scrutiny to this project; therefore, coastal issues are being given detailed

attention in the analysis. The operation of the power plant and its possible effects on coastal resources are a key factor in this project.

Metropolitan Wastewater Department, As-Needed Biological Services Contract 2000–2005, San Diego County, California. Served as principal GIS analyst on numerous emergency sewer repair and maintenance projects in sensitive habitat areas located in canyons for the City of San Diego Metropolitan Wastewater Department on the as-needed biological services contract 2000–2005. Many tasks included emergency sewer repair projects where sewage was flowing into live stream conditions, which required immediate response from Dudek staff. Responsible for all aspects of data management, creation, and display for initial assessment reports, biological resources technical reports, and/or impact assessment reports.

Sorrento Valley Utilities Improvement Revegetation Project, City of San Diego, San Diego County, California. Principal GIS analyst responsible for data creation and data analysis of the12-acre salt marsh habitat restoration project. Prepared graphics supporting annual biological monitoring reports to document project conditions and make recommendations for remedial actions.

Malibu Parks Public Access Enhancement Project, Mountains Recreation and Conservation Authority, City of Malibu and County of Los Angeles, California. Primary GIS analyst for the Malibu Parks Public Access Enhancement project located in the City of Malibu and unincorporated County of Los Angeles. The 28-acre project includes development of a comprehensive plan, consisting of a Public Works Plan and City of Malibu Local Coastal Program Amendment, to address park and recreational facility program needs for four City- and state-owned parklands. Responsible for all aspects of GIS data collection, analysis, and display.

Ramirez Canyon Park, Mountains Recreation and Conservation Authority, City of Malibu and County of Los Angeles, California. Principal GIS analyst for the proposed Public Works Project/Public Works Plan for the 28-acre Ramirez Canyon Park Recreational Improvements and Operations Program located in the City of Malibu and unincorporated County of Los Angeles. Responsible for all aspects of GIS data collection, analysis, and display.

La Borde Canyon, Riverside County, California. Principal GIS analyst for 2,000-acre GIS database consisting of vegetation, sensitive plants, sensitive wildlife, and wildlife trapping locations. Created large-scale and small-scale color maps in support of stakeholder meetings and preparation of documents.

Sunset Cliffs Natural Park EIR, City of San Diego, San Diego County, California. Principal GIS analyst for management and creation of GIS database consisting of vegetation and rare plant data. Provided technical assistance for California gnatcatcher and Pacific pocket mouse surveys. Performed impact analysis for Master Plan capital improvement program. Created graphics in support of the EIR.

Carlsbad Municipal Golf Course, City of Carlsbad, California. Principal GIS analyst for an 18-hole municipal golf course in Carlsbad. The project is situated in the City's NCCP preserve area. Provided GIS support during project construction, redesign of wetlands mitigation, and resource agency permit coordination with ACOE, USFWS, and CDFG. Responsible for all aspects of GIS data collection, analysis, and display.

INTENTIONALLY LEFT BLANK

Sherri Miller – Principal

EXPERIENCE

Sherri Miller has 15 years' experience as a biologist and environmental planner. She is a trained botanist and wetlands expert with extensive experience preparing habitat and species preservation, management, and monitoring plans. Combining expertise in botanical resources, regulatory permitting, and environmental documentation, Ms. Miller's in-depth understanding of how environmental regulations interrelate helps clients prepare a strategic approach to resource management, permitting, and documentation for greater efficiency and cost-effectiveness. She specializes in environmental assessments, biological resource surveys, data collection and analysis, resource agency coordination, permitting, and mitigation design and monitoring.

Ms. Miller has supervised and coordinated numerous biological resource assessments throughout Central and Southern California, including surveys for special-status plants and vegetation mapping. She has provided habitat and endangered species permitting expertise on a variety of projects, ranging from regional conservation plans to public infrastructure (e.g., transportation and utilities) projects to master-planned communities.

Selected Projects

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), Riverside County, California. Ms. Miller was the botany lead for the preparation of the Western Riverside County MSHCP, which addressed the ecology of over 40 special-status plant species. The project involved research on potentially covered plant species followed by synthesis of ecological information into species accounts, and analysis of coverage. She also drafted the riparian/riverine/vernal pools protection guidance, narrow endemic plant species protection guidance, and the adaptive management and monitoring program for the MSHCP.

Upper Santa Ana River Habitat Conservation Plan (HCP), San Bernardino County Water Conservation District, Cities of Redlands and Highlands and County of San Bernardino, California. Prepared an HCP for a multi-purpose project including mining activities, infrastructure improvements (i.e., roadways and utilities), recreational trails, groundwater recharge basins, and flood control activities along the upper Santa Ana River. Species include coastal California gnatcatcher, least Bell's vireo, slender-horned spineflower, and Santa Ana River woollystar. Prepared a biological resources technical report in support of the EIR/EIS. The San Bernardino County Water Conservation District is the lead California Environmental Quality Act (CEQA) agency and the U.S. Bureau of Land Management is the lead National Environmental Policy Act (NEPA) agency.

EDUCATION

Duke University
MS Botany
1994

Washington & Lee University
BS Biology
1992

PROFESSIONAL AFFILIATIONS

Association of Environmental Professionals (AEP)

Association of California Water Agencies (ACWA), Associate Member

Women's Environmental Council (WEC)

WateReuse Association, Inland Empire and San Diego Chapters

Dos Pueblos Golf Links, CPH Dos Pueblos LLC, County of Santa Barbara, California. Conducted biological surveys of the 202-acre project site, including vegetation mapping, wetlands delineation, focused surveys for sensitive plant species, and native grassland surveys. Obtained wetlands permits from the U.S. Army Corps of Engineers (ACOE), the Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Game (CDFG). Prepared and processed an HCP with the U.S. Fish and Wildlife Service (USFWS) for a Section 10 permit for potential impacts to the federally listed California red-legged frog and tidewater goby. Prepared an environmental assessment for the USFWS. Assisted in the processing of a CDP with the CCC. Project-related issues included the Migratory Bird Act and the California Coastal Act.

Yucaipa Non-Potable Water Distribution System, Yucaipa Valley Water District, Counties of Riverside and San Bernardino, California. Project manager for preparation of the environmental documentation for this project. The project included the preparation, processing, and completion of an EIR/EIS. The District was the CEQA lead agency. The U.S. Environmental Protection Agency (EPA) was the lead NEPA agency. Key environmental issues include groundwater supply, biological resources, and effects of reclaimed water on surface and groundwater quality. Conducted public hearings for this controversial project. Processed Section 7 consultation through EPA with the USFWS. Currently pursuing permits from the ACOE, RWQCB, and CDFG.

La Jolla Crossroads, La Jolla Crossroads, LLC, City of San Diego, California. Prepared and processed wetlands permits from the ACOE, the RWQCB, and the CDFG for impacts to non-tidal wetlands for mixed-use infill project. Prepared alternatives analysis and functional values assessment. Evaluated wetlands mitigation sites and prepared conceptual wetlands mitigation and monitoring plan. Prepared a CEQA Addendum for the CDFG and conducted community outreach meetings for wetlands mitigation site.

Newhall Ranch Resource Management and Development Plan, Newhall Land and Farming, Inc., Counties of Los Angeles and Ventura, California. Oversaw extensive biological surveys program, including vegetation mapping for over 17,000 acres, focused surveys for special-status plants and animals, wetlands delineations, hydrogeomorphic analyses, water budget analyses, watershed study, habitat management plans, and wetlands and uplands habitat restoration plans. Prepared 2,400-page biology section of EIS/EIR (lead agencies: ACOE and CDFG). Coordinated with ACOE and CDFG in processing a Section 1602 Master Streambed Agreement and Section 404 Individual Permit for a 13,000-acre master-planned community. Prepared Biological Assessment for Section 7 consultation, a 2081 for impacts to the state-listed threatened San Fernando Valley spineflower, and a 2081 for impacts to six state-listed wildlife species.

Project 2000, Rancho Mission Viejo Company, County of Orange, California. Conducted biological surveys, including vegetation mapping and wetlands delineation, of approximately 1,000 acres near San Juan Capistrano. Biological investigations also included surveys for state- and federally listed threatened or endangered plant species. Prepared a biological resources technical report in support of CEQA documentation.

Otay Ranch Specific Plan Area, Otay Ranch, City of Chula Vista, California. Conducted biological surveys, including vegetation mapping, wetlands delineation, and focused surveys for dot-seed plantain, host plant of the federally listed endangered Quino checkerspot butterfly. Prepared and processed permits from the ACOE, RWQCB, and CDFG. Negotiated with resource agencies to identify

appropriate mitigation measures, including creation of freshwater marsh and southern willow scrub wetlands.

Long Point Specific Plan, Rancho Palos Verdes, California. Conducted biological resources surveys of the approximately 316-acre project site, including vegetation mapping, wetlands delineation, and focused surveys for state- and federally listed threatened or endangered plant species. Prepared a biological resources technical report in support of an EIR.

Public Park, City of San Diego Parks and Recreation Department, City of San Diego, California. Conducted biological investigations, including vegetation mapping and wetlands delineation. Prepared a biological technical resources report in support of CEQA documentation. Prepared and processed permits from the ACOE, the RWQCB, and the CDFG for the 5-acre park site in Subarea IV. Prepared a conceptual wetland mitigation plan for on-site mitigation.

Escondido Police Firing Range, City of Escondido, County of San Diego, California. Conducted vegetation mapping and wetlands delineation of the 22-acre firing range site. Prepared a biological resources technical report in support of a CEQA document.

Rancho Jamul Mitigation Bank, Wildlands, Inc., County of San Diego, California. Conducted biological resources surveys of the approximately 2,187-acre project site, including vegetation mapping, wetlands delineations, and focused surveys for sensitive plant species. Prepared a biological resources technical report in support of CEQA document for the creation of a resource-agency-approved wetland mitigation bank.

INTENTIONALLY LEFT BLANK

Joseph Monaco, AICP – Senior Project Manager

EXPERIENCE

Joseph Monaco has 21 years' professional environmental planning experience in both the public and private sector, including 6 years as Planning and Environmental Manager for the City of Chula Vista Redevelopment Agency. He specializes in preparing planning studies, environmental reports, and policy-related documentation for development and redevelopment projects. His experience includes:

- Environmental impact analysis
- Current and advance planning
- Public environmental policy development
- Hazardous materials investigation and cleanup.

He also has served as the Director of the Border Environmental Commerce Alliance (BECA), a small business incubator program initiated by the City of Chula Vista for startup companies involved in developing environmental technologies.

Selected Projects

Chula Vista Multiple Species Conservation Program (MSCP) Subarea Plan, City of Chula Vista, California. Project manager for biological technical support and for the environmental review of the City of Chula Vista Draft MSCP Subarea Plan. The environmental review consists of an Environmental Assessment/Mitigated Negative Declaration that is based on the EIR/EIS for the MSCP Subregional Plan. Additional information and changed conditions, including the listing of additional species since the time that the EIR/EIS was certified, as well as substantial changes to the plan and conservation strategy, has prompted the additional review. The Plan proposes to conserve over 3,000 acres of natural habitat within the City of Chula Vista, and includes an extensive management program for maintenance of habitat viability.

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), Regional Conservation Authority, Ongoing Assistance, Riverside County, California. Mr. Monaco is the project manager responsible for providing ongoing and as-needed assistance to the Western Riverside Regional Conservation Authority (RCA) in implementing the Western Riverside County MSHCP. He also served as the assistant project manager during preparation of the MSHCP. Dudek functions as extension of staff to the RCA, providing resource planning specialists, biologists, and GIS analysts primarily responsible for:

EDUCATION

San Diego State University
MCP City Planning
2002

University of California, Los Angeles
BA Geography/Business Emphasis
1986

LICENSES AND CERTIFICATIONS

American Institute of Certified Planners (AICP) (issued 1992, no expiration)

PROFESSIONAL AFFILIATIONS

American Planning Association (APA), 1990

Association of Environmental Professionals (AEP), Past President – San Diego Chapter

- GIS mapping and analysis of the Plan's numerous layers of data
- Report drafting, including the MSHCP Annual Report
- Biological expertise, including review of survey protocols
- Training for Permittees, biologists, and consultants on compliance with MSHCP
- Document review, including preparation of the RCA's joint project reviews, which includes reviews of development applications presented to Permittees within the MSHCP Criteria Area to ensure MSHCP implementation is consistent.

Western Riverside County Multiple Species Habitat Conservation Plan, County of Riverside, California. Responsible for management assistance and technical support in the development of a multiple-species planning effort to provide regulatory coverage of over 146 species within a 1.26-million-acre study area. The planning effort involves development of an NCCP in coordination with an Advisory Committee composed of diverse stakeholder interests.

Tree Retention and Removal Policy, City of Newport Beach, California. Served as project manager for preparation of a Negative Declaration for revisions and implementation of a City Council policy related to retention, trimming, and removal of city trees.

City of Chula Vista General Plan Update, City of Chula Vista, California. Served as project manager for Natural Systems.

Chula Vista Bayfront Master Plan EIR, San Diego Unified Port District. Served as lead CEQA analyst on Dudek team providing environmental review consulting services for the Chula Vista Bayfront Master Plan (CVBMP). Worked cooperatively with the Port and City of Chula Vista, state staffers, and other associated CVBMP consultants to complete the CEQA process for the CVBMP in accordance with the Port's and City's CEQA guidelines. The CVBMP project area contains approximately 550 acres of San Diego bayfront property, including both state tidelands and uplands under the Port's jurisdiction and uplands under the City's jurisdiction. The project will include a Resort Conference Center (RCC), a residential/retail area within the Harbor District, and park and natural open space areas as well as associated infrastructure, including streets, utilities, fire stations, etc. EIR issues for this project review amended and/or addressed include: aesthetics/visual quality, air quality, biology, cultural and paleontological resources, seismic/geologic hazards, hazards and hazardous materials/public safety, hydrology/drainage/water quality, land use, planning and zoning, noise, public services and energy, traffic/transportation/parking, population and housing, global warming, cumulative impacts, growth inducement, and other CEQA-mandated sections.

Carlsbad Precise Development Plan and Desalination Projects, City of Carlsbad, California. Currently serving as project manager for an EIR for the proposed Carlsbad Seawater Desalination Plant, planned for an approximately 50 mgd capacity. Primary environmental issues associated with the project include the impact of the concentrate discharge from the desalination plant on marine organisms, since the discharge contains twice the salt content of seawater. The California Coastal Commission (CCC) is giving close scrutiny to this project, and, therefore, coastal-related issues are being given detailed attention in the analysis. The operation of the power plant and its relationship to desalination is a key factor in many of the environmental issue areas.

Carlsbad Water and Sewer Master Plan EIR, City of Carlsbad Engineering Department, Carlsbad, California. Provided QA/QC for the PEIR addressing two distinct Master Plans. The PEIR addressed upgrades to numerous infrastructure facilities, including pump stations, sewer interceptors, storage reservoirs, and 20 main water lines. Key issues included coastal impacts, biological resources, wetlands, archaeology, and land use.

Telegraph Canyon Road Widening, City of Chula Vista Planning and Building Department, Chula Vista, California. Project manager for a Negative Declaration for improvements to Telegraph Canyon Road in the City of Chula Vista. The project involved widening Telegraph Canyon Road from three to four lanes and connection to the northbound on-ramp for I-805. Highlighted environmental issues associated with this project include: a CDFG Streambed Alteration Permit for altering Telegraph Canyon Creek adjacent to the existing roadway; acquiring additional right-of way from landowners; and traffic, noise, and air quality issues associated with improvements to the existing roadway.

Mid-County Parkway (Cajalco–Ramona Corridor), Riverside County, California. Current project manager on the proposed 32-mile transportation corridor in western Riverside County in the San Jacinto and Corona areas to help address future transportation needs through 2030. Leading the Dudek effort in addressing biological constraints along with regional resource planning issues primarily related to the Western Riverside County MSHCP, as well as other habitat conservation plans in the study area.

Orange County Corridor Major Investment Study (MIS), Orange and Riverside Counties, California. Current project manager on the proposed MIS, which involves examining methods to improve mobility between Riverside and Orange counties, including traversing the Cleveland National Forest. Leading the Dudek effort in identifying biological resources/constraints and regional resource planning issues associated with potential alternatives under consideration, with particular attention to regional resource planning efforts underway in both counties.

Midbayfront Local Coastal Plan Amendment, City of Chula Vista, California. Responsible for coordinating with Wildlife Agencies, CCC, Port of San Diego, and environmental interest groups to develop alternatives to an approved local coastal permit (LCP) which allowed for 4 million square feet of commercial and residential development on San Diego Bay.

Otay Ranch Project, City of Chula Vista, California. Served as staff planner to a 23,000-acre master-planned community, involving traditional neighborhood development principles, complex infrastructure and facilities needs, and a comprehensive preserve system for habitat conservation and management.

Salt Creek Ranch Specific Plan, City of Chula Vista, California. Responsible for processing a specific plan for this 1,200-acre residential project involving habitat and endangered species issues, adjacency to an industrial park, traffic, and transportation infrastructure issues.

Camino Ruiz Neighborhood Park, City of San Diego, California. Project manager for environmental studies, including a Biological Resources Technical Report and noise study, for a neighborhood park on Los Peñasquitos Canyon preserve. Work included analysis of multiple park alternatives, land use adjacency guidelines, and analysis of Multiple Habitat Planning Area (MHPA) Boundary Adjustment.

INTENTIONALLY LEFT BLANK

Brock Ortega – Senior Wildlife Biologist

EXPERIENCE

Brock Ortega has 17 years' experience as a wildlife biologist. He brings extensive expertise to his project teams in many areas including wildlife biology and management, ecological assessment, environmental impact assessment and mitigation, habitat remediation, endangered species management plan authorship, mitigation monitoring, permitting issues related to wetland resources and threatened or endangered species, and project management. Mr. Ortega has written several habitat and species management plans for a number of federally listed species and generally sensitive species. Mr. Ortega has conducted over 20,000 hours of focused and general wildlife surveys during his professional career. Mr. Ortega is a recognized qualified surveyor for a number of listed and rare amphibian and mammal species and has federal permits for several avian and invertebrate species, including southwestern willow flycatcher, listed fairy shrimp and others.

In addition to wildlife management issues, Mr. Ortega has specialized in wildlife movement and connectivity studies and issues. He has attended numerous conferences related to wildlife movement and connectivity issues and will be presenting at the 2009 International Conference on Ecology and Transportation. He furthers his knowledge of existing crossing structures by touring locations across the west – viewing everything from tortoise and kangaroo rat barriers to elk and pronghorn barriers to differing jump-out designs. Throughout his career, Mr. Ortega has designed and implemented numerous studies to determine wildlife usage of specific sites and through regions. He has utilized nearly every technique including standard sooted track plates, guard hair sampling, scat surveys and mapping, gypsum track stations, camera stations, trail dragging track studies, and visual surveys. Mr. Ortega has built his own remote cameras, but has acquired over 30 digital game cameras to use for corridor and movement studies. He is familiar with designing studies to adequately sample a broad area, either in a stratified manner or based on species specific habitat requirements. He understands when it is best to use baited stations or when it is best to document unbiased movement. He is up to date with the latest technologies, literature, and techniques available to conduct movement studies and is trained and has implemented sophisticated geographic information system (GIS) predictive modeling of least-cost path and unionized movement of wildlife.

Electric Utility/Fiber Optics/Energy

Hazard Tree Removal Project, Southern California Edison, San Bernardino and San Jacinto Mountains, Riverside and San Bernardino County, California. Project manager responsible for Edison's Hazard Tree Removal Project occurring in the San Bernardino

EDUCATION

Humboldt State University
BS Wildlife Biology and Management
1991

PROFESSIONAL AFFILIATIONS

American Ornithologists' Union

Association of Field Ornithologists

Cooper Ornithological Society

Wilson Ornithological Society

The Wildlife Society

LICENSES AND CERTIFICATIONS

California Gnatcatcher 10a Survey Permit, USFWS Federal Permit TE 813545-5 (Exp. 11/21/2011)

Least Bell's Vireo 10a Survey/Nest Monitoring Permit, USFWS Federal Permit # TE 813545-5 (Exp. 11/21/2011)

Southwestern Willow Flycatcher 10a Survey Permit, USFWS Federal Permit TE 813545-5 (Exp. 11/21/2011)

National Forest and surroundings. Responsible for conducting biological surveys along all Edison circuits within the San Bernardino and San Jacinto Mountains prior to removal of bark beetle infested trees, drought stressed trees, and other damaged trees from the vicinity of its poles, lines, and other facilities. The project area encompasses 106 square miles, an estimated 62,000 acres of tree removal, 22,000+ power poles, and 538 linear miles of utility lines. Responsibilities include serving as project manager, obtaining weekly survey priorities, devising work schedules, coordinating with Edison personnel and U.S. Forest Service (USFS) biologists regarding site-specific sensitivities, conducting biological surveys of all lines within San Bernardino National Forest, and writing Biological Assessments for the USFS.

California Department of Transportation Stormwater Best Management Practice (BMP) Pilot Study and Statewide Wet Basin Projects, Statewide, California. Served as project manager for this BMP pilot study that began in 1999 to account for potential endangered species issues related to implementation of BMPs in San Diego and Los Angeles Counties. All potentially sensitive BMPs were monitored over a 2-year period to determine their true impact on sensitive species. This included a review of existing or proposed wildlife crossings including Highways 50 and 80.

As a result of this project, it was determined that one type of BMP was at greater risk of becoming an attractive nuisance to threatened and endangered species. At Caltrans' request, formulated a project strategy and initiated discussions with the regulatory agencies to determine a strategy to permit installation of the BMPs on a statewide level.

Mid-County Parkway, Riverside County Integrated Project, Riverside County, California. Lead biologist responsible for managing and conducting focused sensitive plant, burrowing owl, least Bell's vireo, southwestern willow flycatcher, and fairy shrimp surveys within the Mid-County Parkway study area, which includes a number of alternatives and ranges from approximately 1.7 km (1.1 miles) to 6.5 km (4 miles) in width and is approximately 52 km (32 miles) in length. In addition, was responsible for devising a cost-effective helicopter survey method for potential fairy-shrimp-occupied pools after rain events, reducing potential survey time from days to 3 hours. Was also responsible for siting and design of at least 15 major and minor wildlife undercrossings and three wildlife overcrossings to accommodate reserves in western Riverside County and listed species movement through the reserve.

Quino Checkerspot Butterfly 10a Survey Permit, USFWS Federal Permit TE 813545-5 (Exp. 11/21/2011)

Fairy Shrimp 10a Survey Permit, USFWS Federal Permit TE 813545-5 (Exp. 11/21/2011)

Arroyo toad USFWS-authorized emergency handler

Recognized by the USFWS and CDFG as a Qualified Biologist able to conduct San Joaquin kit fox surveys throughout its range

Mojave Ground Squirrel Chief Survey Permit

Recognized by the USFWS and USFS as a Qualified Biologist able to conduct arroyo toad, California red-legged frog, mountain yellow-legged frog, and Coachella Valley fringe-toed lizard surveys throughout their range

Tejon Mountain Village, Tejon Mountain Village LLC, Kern County, California. Mr. Ortega was the lead biologist and phase manager for wildlife corridor, ringtail cat, sensitive reptile and amphibian, and small mammal studies. He designed and implemented study design for wildlife corridor and ringtail cat studies. For the wildlife corridor study: reviewed 20 crossing locations under and in the vicinity of Interstate 5 along a 10-mile stretch of highway; directed review and analysis of over 16,000 camera station photographs from undercrossings; directed game trail field work; directed implementation of a project-wide GIS-based permeability modeling effort to determine preferred wildlife usage and movement across the site and estimate post-project wildlife usage and movement across the site. For the ringtail cat study: designed, sited, and directed implementation of a baited-station camera study which used a rotating group of 20 digital infra-red/motion sensing game cameras to determine the presence/absence of ringtail cat. Over 200 stations were run for a period of 16 days each, across the 28,000-acre project area.

Palm Springs Aerial Tramway Retrofit Project, Riverside County, California. Managed the biological resources portion of this project, which proposed to install new larger trams. The new tram cars required rock and tree removal adjacent to the tram alignment to ensure safe usage. Initial tasks included conducting focused surveys for mountain yellow-legged frog and golden eagle, vegetation mapping, reporting, and coordination with the resource agencies. Later, was responsible for determining the best way to convey peninsular bighorn sheep across the Tram Road and onto the adjacent alluvial fan. This required interviewing numerous state, federal, academic, and field bighorn sheep biologists, devising alternative methods to avoid impacts to bighorn sheep, determining likely sheep crossing points, determining potential habitat bridge locations, and submitting a synopsis report.

Western Riverside County Multiple Species Habitat Conservation Plan (MSCHP), Riverside County, California. Served as one of the primary biologists for the Western Riverside MSHCP. Responsible for writing species accounts and coverage assessments for all of the covered reptiles, amphibians, insects, and crustaceans within the planning area. Also responsible for analyzing various wildlife crossing and corridor issues and determining potential methods for safely conveying wildlife across planned roadways. This involved extensive review of current state-of-the-art wildlife underpasses and overpasses within California, nationally, and globally. This also included visiting various sites, such as the Interstate 80 underpasses east of Sacramento. Mr. Ortega also participated in implementation of the Plan, reviewing proposed projects for consistency with the Plan.

Chevron West Coyote Hills Field Closure and Development Project, Chevron USA Production Company and Chevron Pacific Coast Homes, Fullerton, California. Assisted Chevron in obtaining a federal Section 4(d) permit to allow closure of the approximately 600-acre oil field. Mr. Ortega was responsible for analyzing potential movement, and movement constraints, of approximately 60 pairs of federally-listed threatened California gnatcatcher from an approximate 600-acre area to and from surrounding habitat islands.

Riverside County Habitat Conservation Agency, Riverside County, California. Project manager responsible for preparing a Stephens' kangaroo rat Habitat and Fire Management Plan for the Riverside County Habitat Conservation Agency reserves in Lake Mathews and Steele Peak.

Trabuco Canyon Project, **Orange County, California** Mr. Ortega was the lead wildlife biologist responsible for managing and conducting a 2.5-year wildlife corridor study program which involved quarterly tracking studies using trail dragging techniques and digital infrared camera stations. During each session, 20 cameras were in place for 14 days each. In addition, was responsible for conducting focused surveys for least Bell's vireo, southwestern willow flycatcher, California red-legged frog, listed fairy shrimp, and other special-status species.