

18 May 2015

Dan Silver, Executive Director
Endangered Habitats League
8424 Santa Monica Blvd., Suite A 592
Los Angeles, California 90069-4267

RE: Otay Ranch Village Project EIR
Potential Impact to Quino Checkerspot Butterflies

The Federally Endangered Quino Checkerspot Butterfly (QCB), *Euphydryas editha quino*, is currently restricted to a limited number of locations in Riverside and San Diego Counties within the United States. Once considered to be among the most abundant of butterflies in the region during the spring, this insect is now rarely encountered in a few locations in southern California. A number of factors have resulted in the decline of this species, many of which are the direct result of human impact.

O-9-1 Since 1957, when I first encountered QCB in north San Diego County, until 1977 when numerous specimens were collected for research on their population dynamics by Dr. Paul Ehrlich of Stanford University, QCB were still abundant in many localities. Beginning in the 1980s, many of the known colonies began to disappear. Finally, the U.S. Fish and Wildlife Service listed the species as endangered. Efforts were made to discover more about the butterfly's biology, monitor known populations, establish critical habitat, and attempt to find additional colonies in hopes of eventually recovering the species and removing it from its current legal status. Historically, the center of this insect's Metapopulation in San Diego County is the region around Otay Mesa and Otay Lakes. It is from this population center that dispersing QCB adults can attempt to colonize suitable habitats and thus expand their range.

O-9-2 My review of the Draft EIR for the Otay Ranch Village Project, shows it would result in significant and unmitigated impact to established colonies of this insect. Under the section on Biological Resources, the project footprint would definitely result in mortality to the QCB within its established Critical Habitat. The number of individual butterflies that would be "taken" as a direct result of this project is greatly underestimated because it is based entirely on adult sightings on not on the actual size of a colony. Individual QCB may be recorded miles away from their origin. The project would also further fragment the existing population within the Critical Habitat.

- O-9-3 | The development's footprint boundary (+100 feet) does not mean that the project's impact into an established preserve stops there. Potential introduction of invasive insect and plant species from the urbanization will extend hundreds of yards beyond the actual barrier. The effects of water runoff from dwellings, parks, and golf courses will not be contained within the original footprint and will extend into the preserve.
- O-9-4 | Wildlife corridors are constructed for mostly vertebrate access and do not take into account insects that disperse by flying. The addition of roads and increased vehicle activity on existing paved routes will result in increased butterfly mortality, which would include the QCB.
- O-9-5 | After comparing the primary project design to the possible alternatives, the only two that seem to limit impact to the existing QCB Critical Habitat are Alternatives E and F. Both of these plans have almost no direct impact to the southeast corner of the project. Absent are golf courses, new roads, and perhaps the need to widen and improve existing county roads. This is also the site where QCB were abundant less than 40 years ago. The other alternatives (B,C,D,G) would result in the most direct impacts to existing and future QCB populations.

David K. Faulkner
Entomologist

DAVID K. FAULKNER
CURRICULUM VITAE

Education

IDI-ICI Instructor Development Course (P.O.S.T.) 2014
Instructor's Certification, Peace Officers Standards and Training (P.O.S.T.) 1996
M.S. Biology (Systematic Entomology), California State University, Long Beach, 1992
California Teaching Credential, Single Subject (Life Sciences), Secondary, California State University, San Diego, 1979
B.A. Biology (Invertebrate Zoology), University of California, Santa Barbara, 1975

Professional and Academic Positions

2011-present: Research Associate, Insect Identification Services, California Department of Food and Agriculture, Sacramento, California
2001-present: Principal, Forensic Entomology Services, San Diego, California
2001-present: Instructor, Institute for Criminal Investigations (ICI); Santa Clara/Sacramento/Los Angeles
1997-2000: Lecturer Del Rios Community College District, Sacramento, California
1997-2001: Collection Manager, Entomology Department, San Diego Natural History Museum
1993-1997: Keeper, San Diego Wild Animal Park
1993-1997: Entomologist, San Diego State University Foundation
1993-1997, 2001-present: Research Associate, Entomology Department, San Diego Natural History Museum
1980-1993: Chairperson and Assistant Curator of Entomology, San Diego Natural History Museum
1978-1979: Department Head, Assistant Curator of Entomology, San Diego Natural History Museum
1975-1978: Departmental Assistant in Entomology, Chairperson, San Diego Natural History Museum
1975: Assistant Football Coach, Palomar College
1974-1975: Lecturer in invertebrate zoology, health fitness, and backpacking, Palomar College
1972-1973: Volunteer, invertebrate zoology (Entomology Department, Nelson Baker), Santa Barbara Natural History Museum

Teaching Experience

Instructors Basic Detective Course (Forensic Entomology), Los Angeles Police Department (2008-09)
Instructor, Homicide Course (Forensic Entomology), Los Angeles County Sheriff's Department (2001-present)
California Department of Justice, ICI (P.O.S.T.), Forensic Entomology Instructor (1994-present)
California State University, San Diego, lecturer on entomological curation and Lepidoptera classification
San Diego Natural History Museum, museum Docent and Canyoneer training programs (1974-2010)
San Diego Natural History Museum, teachers' workshops lecturer (1993, 1995)
National University, lecturer in Forensic Entomology for courses in criminal justice (1979-1985)
San Diego City Schools, GATE Program, forensic entomology programs
San Dieguito Unified School District, Entomology presentations, substitute teaching

Editorial Board

Board of Nature Connection, 1995-1997
Obituary Coordinator, Lepidopterists' Society, 1992-1996
Publications Committee, San Diego Natural History Museum
Managing Editor for scientific publications, San Diego Natural History Museum, 1980-82

Professional Affiliations

North American Forensic Entomology Association (NAFEA) (2005-present)
Directory of Forensic Entomologists (1984)
Entomological Society of America (1976-present)
Lepidopterists' Society (1976-present)
Lorquin Entomological Society (1975-present) (President, 2012-14)
Neuroptera International (1979-present)

Society for Vector Ecology (1986-present)
Xerces Society (1977-present)

Research Expeditions

Arizona; southeastern mountain ranges--1977, 1978, and 1980
Mexico; Baja California Norte and Sur, Sonora--1979, 1980, 1999, 2003, 2012
Alaska; North Slope and Brook's Range--1979
California Channel Islands; San Clemente Island--1980 and 1981
Mexico; Baja California Sur (cape region)--1981, 1982, 1987, 2009, 2012, 2013
Mexico; northwestern states to Colima--1982, 1984, 1985, 1986, 1988, 1991
Mexico; *Diamaresa* Expedition to Baja California's Pacific Islands--1983
Mexico; Baja California, Islands in the Sea of Cortez--1984, 1985
Mexico; Colima, Islas Socorro and San Benedicto--1987
Africa; Namibia and Republic of South Africa--1988
Honduras and Costa Rica--1995
Mexico; Baja California Sur (Vizcaino)--1997
Mexico; Baja California Sur, Agua Verde Binational Expedition--2003
Australia; New South Wales, Victoria, Tasmania--2009
Society Islands, Marqueses; Tahiti, Moorea, Raiatea (BioCode Project, Gump Station --2011
French Polynesia (Moorea, Tahiti); New Zealand

Publications

- Faulkner, David K., 1976. Endangered butterflies. Environment Southwest. 473:3-4.
_____, 1977. Getting to the point. Environment Southwest. 476:14-17.
_____, 1978. The scarabs of summer. California Garden. 69(4):103-105,123.
_____, 1979. Predators in the garden. California Garden. 79(3):82-84.
_____, 1981. The black witch moth. Environment Southwest. 495:23.
_____, 1982. The endemic butterflies of Baja California. Environment Southwest. 497:9-12.
Brown, John W. and David K. Faulkner, 1982. New rhopaloceran records for Baja California with the description of a new species of *Habrodais* Scudder (Lepidoptera: Theclini). Bulletin of the Allyn Museum. 67:1-6.
_____, 1983. An old bald-headed man: the Jerusalem cricket. Environment Southwest. 500:3.
Brown, John W. and David K. Faulkner, 1983. Distributional records of certain rhopalocera in Baja California, Mexico, with the description of a new subspecies of *Papilio* (*Heraclides*) *astyalus* (Godart) (Lepidoptera: Papilionidae). Bulletin of the Allyn Museum. 83:1-9.
_____, 1984. The ladybird beetles. California Garden. 75(3):75-78.
_____, 1985. Fossil insects. Environment Southwest. 509:12-13.
_____, and John W. Brown, 1985. Butterflies of the Anza Borrego Desert. Environment Southwest. 510:24-25.
_____, 1986. The Pacatnamu massacre: an entomological perspective. In U.C.L.A. Publications in Anthropology, C.B. Donnan and G.A. Cock, eds., pp. 145-150.
_____, 1987. Harbie - museum naturalist. Environment Southwest. 518:13-16.
_____, 1988. Environment southwest: Africa. The central Namib desert. Environment Southwest. 523:8-11.
Brown, John W., and David K. Faulkner, 1988 (1989). The butterflies of Isla de Cedros, Baja California Norte, Mexico. Journal of Research on the Lepidoptera. 27(3-4):233-256.
_____, 1989. The birds and the bees and the flowers and the trees... Zoonooz. 42:17-18.
_____, 1989. Forensic Entomology. Biomedical Endeavors. 4(1):3-4.
_____, 1990. A review of the moth lacewing, *Oliarces clara* Banks (Planipennia: Ithonidae). Recent Research in Neuropterology III, pp. 197-203.
_____, 1990. Phantom of the desert. Environment West. 1(2):17-19.
Brown, John W., Herman Real and David K. Faulkner, 1992. The butterflies of Baja California, Mexico. Journal of Research on the Lepidoptera, 110 pages.
_____, and John W. Brown (1993). The Hermes Copper, *Lycaena hermes* (Edwards). In Conservation Biology of Lycaenidae, T. R. New, ed., pp. 120-121.
_____, 1993. Leafcutter ants and their fungus friends. Zoonooz. 66(9):6-13.

Stern, Don and David K. Faulkner, 1994. Drawing Public awareness to the importance of

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Cont.

Arthropods. In Invertebrates in captivity. S. Prchal, ed. pp. 7-12.
_____, 1996. Killer Bee Handbook, ed. D.G. Hansen, Nature Connection, 20 pp.
Brown, John W. and David K. Faulkner, 1997. A new species of *Litoprospis* (Lepidoptera: Noctuidae) from Baja California, Mexico. Pan-Pacific Entomologist. 73 (2) 122-126.

Faulkner, David K. and Don Sterner, 1997. From hair to infirmary. In Invertebrates in Captivity. S. Prchal, ed. pp. 123-127.
Faulkner, David, 2001. Impressions of painted lady migrations. Monarch Quarterly. 10(3):13-14,19.
_____, and Pat Pawlowski, 2001. Fly ways in the garden: the syrphid flies. California Garden. 92(3):88- 89, 94.
_____, 2002. A humble garden. California Garden. 93(6):170-172.
Klein, Michael and David Faulkner, 2003. Hermes Copper (*Lycaena* (*Hermelycaena*) *hermes*: An update on this unique species. News of the Lepidopterists' Society. 45(3):96-98.
Faulkner, David and Pat Pawlowski, 2005. Ants in the plants. California Garden. 96(4):106-107, 109.
Faulkner, David, 2005. Checklist of butterflies and skippers (Cleveland National Forest). U.S. Government Printing Office (2005-570-153). Brochure.
Faulkner, David K., 2006. Forensic Entomology (Workshop). In Invertebrates in Captivity, G. Morgan, ed., pp 142-153.
Faulkner, David K. and Kevin Gillen, 2007. Teaching Forensic Entomology. In Insects in Captivity. G. Morgen, ed., pp 110-113.
Klein, Michael and David Faulkner, 2008. San Diego County's Sensitive Butterflies (Workshop). Flite-Tours, San Diego, 68 pp.

Manuscripts in Preparation

Catalogue of the type specimens of Arachnida and Insecta in the San Diego Natural History Museum (D. K. Faulkner, J. W. Brown, R. J. Watts)
A new genus of Platymantispinae from western Mexico
A redescription of the Chilean genus *Fonticella*
Revision of the beaded lacewing genus *Lomamyia*

Consulting/Contracts

Audubon Society, Diptera identification, 1978
Caltrans, collection and identification of California desert insects, 1980
Hunter and Ryan Law Offices, forensic entomology, 1980
San Diego County Medical Examiner's Office, forensic entomology, 1983-present
Museum of Man, San Diego, California, Workshops in Forensic Entomology, 1984-1987, 1999, 2001-2007
Coroner, Los Angeles County, forensic entomology, 1987, 1988, 1990, 1991, 1993, 1996, 2005-2013
Coroner, Orange County, forensic entomology, 1987, 2007, 2008-2013
Coroner, Clark County, Nevada, forensic entomology, 1989
District Attorney, Ventura County, forensic entomology, 1991
District Attorney, San Bernardino County, forensic entomology, 1991, 1997, 2005-2009
Church of Scientology, forensic entomology, 2001-2002
Poison Control, San Diego, identification of harmful insects and arachnids
San Diego State Foundation, Environmental Trust, Naval Weapons Station, Fallbrook Annex, 1994-1995.
San Diego County Department of Agriculture, insect and arachnid identification
Naval Air Station, Miramar, Lepidoptera Survey, 1995-1998.
Southern California Edison Company (SCE), Delhi Sands Flower-loving Fly (DSF) Contract, 2000-2009
United States Forest Service (USFS), Laguna Mountains Skipper (LMS) Contract, 2000-2009
San Diego County, Department of Planning/Land Use (DPLU) 2000-2005
San Diego County, Department of Parks and Recreation 2006
AMEC (Ogden) Environmental
United States Forest Service (USFS), Hermes Copper Surveys, 2007-2009
Pacific Southwest Biological Services (PSBS), biological information on Quino Checkerspot Butterfly in San Diego County 1980, 2006-2009
San Diego Gas & Electric Company (SDG&E), through TRC Contract, Quino Checkerspot Surveys 2007-2009
San Diego Gas and Electric Company (SDG&E); on-call contract, 2012-2014

National Institute of Ecology (Mexico), Restoration and Conservation of Guadalupe Island, Science Advisor 2003
TAIC, North County MSCP Plan, Independent Science Advisor 2001
TAIC, Joint Water Agency, Natural Community Conservation Plan, Independent Science Advisor 2004
Helix Environmental, Eye Gnat Survey in Jacumba, California 2007-2008
TAIC, East County MSCP Plan, Independent Science Advisor 2006
United States Fish and Wildlife Service (USFWS), Laguna Mountains Skipper (LMS) Cooperative Agreement 2007-2008, 2014

Research Activities

Biogeography of the rhopaloceran fauna of the southwestern United States and Mexico
Life history studies on the neuropteroid Families Berothidae, Ithonidae, Myrmeleontidae, Chrysopidae, and Polystoechotidae from the nearctic and neotropics
Life history studies, host plant relationships of the stratiomyid genus *Hermetia*
Entomological techniques applied to the forensic sciences

Special Skills

Biology and natural history book reviews
San Diego Union Newspaper Series -- "What Bugs You" (1988-1992)
Exhibit Curator, "Insects Face To Face", 1992-1993, and "Planet Insect", 1995-1996, San Diego Natural History Museum
Forensics Entomology Workshops

FORENSICS PRESENTATIONS AND CLASSES

Professional Presentations

San Diego Museum of Man-Seminars in the Forensic Sciences: 1984-2007
American Academy of Forensic Sciences: 39th Annual Meeting, 2 presentations, 1987
Southern Section California Association of Criminalists, 1988, 2007, 2012
International Society of Correlated Biological Research-Forensics, 1989, 1992, 1998
County of Los Angeles, Department of Chief Medical Examiner-Coroner, Annual West Coast Seminar, 1990, 2008, 2012
Society of Vector Ecologists-Phoenix Forensic Presentation, Invited Speaker, 1990
San Diego County Evidence Technicians, El Cajon, 1991
Drug Enforcement Agency Training, 1992
San Diego Police Department, Homicide Investigators Presentation, 1992, 2001, 2009
California Criminalists' Association, 82nd Semi-Annual Seminar, 1993
California Department of Justice, ICI, Forensic Workshops, 1996-present
Arizona Homicide Investigator Association, Las Vegas Workshop, 2013

Professional Training Classes

National University-Criminal Justice Course, 1981-1999
San Diego City Schools-GATE Program, 1984-1986
USD School of Law, Scientific Evidence Class, 1988-2013
San Diego Zoological Society-Pathology (Identifications), 1990-1991, 1996-2005
Southern California Entomology Club-Pasadena Arboretum: Forensics, 1992
Scripps Clinic, Rancho Bernardo, Medical Entomology, 1992, 1997
Kaiser Permanente, San Diego, Continuing Education, Medical Entomology, 1992
County of Los Angeles, Department of Coroner, Forensic Entomology, 1997, 2001, 2005-2013
County of Los Angeles, Department of Coroner, Skeletal Recovery Workshop, 2008-2014

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Service Organizations and Clubs

Rotary Club, Forensics Presentation, 1992

Soroptimists, 1992

San Diego Funeral Home Directors, Forensics Presentation, 1993

Sisters in Crime, Forensics Presentation, 1993, 1997, 1998, 2001, 2003, 2010

San Diego Natural History Museum, Thursday Night Lecture Series, 1993, 1997, 2005, 2006

FORENSICS CASES

Civil	62
Criminal: Prosecution	354
Defense	45
Depositions	7
Anthropology	10

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