

Dr. Daniel A. Marschalek

2720 Monroe Avenue, San Diego, CA 92116
619.840.5518 danmarschalek@hotmail.com

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

Dear Mr. Silver,

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As you requested over the phone, I have reviewed the maps and biological sections of the Otay Ranch Village 13 project related to the Quino checkerspot butterfly (Quino). Below is a quick summary and my comments regarding the project. It should be noted that I did not have prior knowledge of this project and have not been to the specific project area. For these reasons, my comments are restricted to general Quino biology, collecting and analyzing butterfly monitoring data, and the information in the Draft Environmental Impact Report.

Summary:

Surveys for adult Quino have yielded observations of 127 individuals over four years. Most were observed along ridgelines and hilltops in the northern and eastern portions of the site. The project may impact 483 acres of Quino habitat and this includes 27% of the critical habitat within the Otay Unit. Mitigation would be 2:1 based on the MSCP. Assessing the impact of the project is generally related to the number of adult Quino observations in the project area. Although there are 127 Quino observations, only those from 2008 (71 observations after duplicates were removed) are used for some impact assessments (Table 2.3-3).

Comments:

1. Surveys for adult butterflies are generally an effective and efficient method for assessing population sizes and presence/absence. Data from these surveys are reported throughout the report. However, Quino is a relative specialist in terms of larval food plants, almost always feeding on *Plantago erecta*. Locations of adults as well as their larval food plant should be considered. Areas with the larval food plants are likely more important to the conservation of Quino because adults are more mobile and less specific feeders, allowing for more flexibility and generally habitat use than larvae. Figure 2.3-11 shows areas of *P. erecta* and it appears that roughly half of this area would be impacted by the project, assuming surveys were complete and thorough.
2. Some assessments indicate that duplicates were removed in obtaining a total of 71 adult Quino observations in 2008 (Table 2.3-3, page 2.3-59). An explanation of what represents a duplicate is not mentioned. This has the potential to reduce the area known to be used by Quino if all observations are not reported. Removing duplicate sightings of an individual would result in mapping occupancy of the first location but not the second. This may also misrepresent the

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importance or quality of certain areas, as 1) more individuals would be expected in higher quality habitat, and 2) individuals are more likely to remain in higher quality habitat. If more duplicates are present in the project's impact area, removing duplicates would reduce the apparent impact.

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3. Losing 27% of a critical habitat unit seems like a large impact.

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4. Alternative G (Figure 4.0-6) seems to have the smallest impact to Quino habitat, for both the larval host plant patches and areas used by adults.

Please let me know if you have any questions. Thank you,



Dr. Daniel Marschalek
Entomologist/Ecologist

Daniel A. Marschalek

Department of Biology
San Diego State University
5500 Campanile Dr.
San Diego, CA 92182

(619) 594-0714
dmarschalek@mail.sdsu.edu

Education

University of Wisconsin-Madison, Madison, Wisconsin
Ph.D.- Entomology, Minor in Botany, 2014

San Diego State University, San Diego, California
Master of Science in Biology – Ecology Program, 2005

University of Wisconsin-Madison, Madison, Wisconsin
Bachelor of Science-Natural Resources in Entomology, 1998
Bachelor of Science-Natural Resources in Wildlife Ecology, 1998

Employment

San Diego State University: Postdoctoral Researcher. 2013-present

San Diego State University: Research Assistant. 2010-2012

California Dept. of Fish & Game; San Diego, CA: Fish and Wildlife Scientific Aid. 2000-2013

University of Wisconsin-Madison: Lab Manager in Animal Science Department. 2008-2012

University of Wisconsin-Madison: Teaching Assistant for Ornithology Course in Zoology Department. 2006-2011

University of Wisconsin-Madison: Teaching Assistant for Animal Biology Course in Zoology Department. 2005-2012

San Diego State University: Data Analyst and Research Assistant. 2007-2009

Independent Contractor: Ecologist/Entomologist. 2001

California Dept. of Fish & Game; Kernville, CA: Scientific Aid in Fisheries. 2000

International Crane Foundation; Baraboo WI: Field Ecology Intern. 1999

McHenry Co. Conservation District, IL: Field Assistant. 1997

Grants/Awards

California Department of Fish and Wildlife Local Assistance Grant: “Harbison’s dun skipper management study: Developing efficient monitoring protocols to inform management,” 2014-2015. (PI: Deutschman)

San Diego Association of Governments (SANDAG): “Rare butterfly management studies on conserved lands in San Diego County: Hermes copper,” 2014-2016. (PI: Deutschman)

California Department of Fish and Wildlife Section 6 Grant: “Monitoring populations of the endangered Laguna Mountains skipper on Palomar and Laguna Mountains in San Diego County,” 2014-2015. (PI: Deutschman)

San Diego Association of Governments (SANDAG): “Monitoring the status of Hermes copper (*Lycaena hermes*) on conserved lands in San Diego County,” 2012. (PI: Deutschman)

Entomological Society of America: Runner-up for Student Competition for the President’s Prize, 2011.

University of Wisconsin-Madison College of Letters and Science Teaching Fellowship, 2011.

San Diego Association of Governments (SANDAG): “Initial evaluation of the status of Hermes copper (*Lycaena hermes*) on conserved lands in San Diego County,” 2011. (PI: Deutschman)

San Diego Association of Governments (SANDAG): “Initial evaluation of the status of Hermes copper (*Lycaena hermes*) on conserved lands in San Diego County,” 2009-2010. (PI: Deutschman)

Research Publications

Refereed Journal Articles

Marschalek, D.A. and D.K. Young. 2013. Mark-recapture study of *Gnathium minimum* (Say) (Coleoptera: Meloidae) reveals limited dispersal among *Helianthus occidentalis* patches. *Entomological News*. 123:285-291.

Marschalek, D.A., J.A. Jesu and M.E. Berres. 2013. Impact of non-lethal genetic sampling on the survival, longevity and behavior of the Hermes copper (*Lycaena hermes*) butterfly. *Insect Conservation and Diversity*. 6:658-662. (online 20 February 2013)

Marschalek, D.A. and M.W. Klein, Sr. 2010. Distribution, ecology, and conservation of Hermes copper (Lycaenidae: *Lycaena* [*Hermelycaena*] *hermes*). *Journal of Insect Conservation*. 14:721-730. (online 22 June 2010)

Marschalek, D.A. and D.H. Deutschman. 2009. Larvae and oviposition of Hermes copper (Lepidoptera: Lycaenidae). *Journal of Entomological Science*. 44:400-401.

Marschalek, D.A. and D.H. Deutschman. 2008. Hermes copper (*Lycaena* [*Hermelycaena*] *hermes*: Lycaenidae): life history and population estimation of a rare butterfly. *Journal of Insect Conservation*. 12:97-105. (online 27 February 2007)

Non-Refereed Articles

Arango, R.A., F. Green III, G.R. Esenther, D.A. Marschalek, M.E. Berres and K.F. Raffa. *In Press*. Mechanisms of termite spread in Wisconsin and potential consequences as a result of changing climate trends. Proceedings of the American Wood Protection Association, Honolulu, Hawaii: April 28-May 1, 2013.

Marschalek, D.A. 2013. Blister beetles (Coleoptera: Meloidae) of Wisconsin: distribution and ecology. University of Wisconsin-Madison Ph.D. Dissertation. 349 pp.

Strahm S.L., D.A. Marschalek, D.H. Deutschman and M.E. Berres. 2012. Monitoring the status of Hermes copper (*Lycaena hermes*) on conserved lands in San Diego County. Final Report for San Diego Association of Governments Contract: MOU # 5001442. 61 pp.

Marschalek, D.A. 2012. Status review: California least tern (*Sternula antillarum browni*). California Department of Fish and Game, Wildlife Branch, Nongame Wildlife Program Report 2012-03. Sacramento, CA. 45 pp. + app.

Marschalek, D.A. 2012. Fluttering to extinction. *Outdoor California*. May-June vol. 73: 30-35.

Marschalek, D.A. 2012. California least tern breeding survey, 2011 season. California Department of Fish and Game, Wildlife Branch, Nongame Wildlife Program Report, 2012-01. Sacramento, CA. 25 pp.

Deutschman, D.H., M.E. Berres, D.A. Marschalek and S.L. Strahm. 2011. Two-year evaluation of Hermes copper (*Lycaena hermes*) on conserved lands in San Diego County. SANDAG Final Report . MOU # 5001442. 47 pp.

Marschalek, D.A. 2011. California least tern breeding survey, 2010 season. California Department of Fish and Game, Wildlife Branch, Nongame Wildlife Program Report, 2011-06. Sacramento, CA. 28 pp.

Deutschman, D.H., M.E. Berres, D.A. Marschalek and S.L. Strahm. 2010. Initial evaluation of the status of Hermes copper (*Lycaena hermes*) on conserved lands in San Diego County. SANDAG Final Report. MOU #5001442. 36 pp.

Marschalek, D.A. 2010. California least tern breeding survey, 2009 season. California Department of Fish and Game, Wildlife Branch, Nongame Wildlife Program Report, 2010-03. Sacramento, CA. 25 pp.

Marschalek, D.A. 2009. California least tern breeding survey, 2008 season. California Department of Fish and Game, Wildlife Branch, Nongame Wildlife Program Report, 2009-02. Sacramento, CA. 23 pp.

Marschalek, D.A. 2008. California least tern breeding survey, 2007 season. California Department of Fish and Game, Wildlife Branch, Nongame Wildlife Program Report, 2008-01. Sacramento, CA. 24 pp.

Marschalek, D.A. 2007. California least tern breeding survey, 2006 season. California Department of Fish and Game, Wildlife Branch, Nongame Wildlife Unit Report, 2007-01. Sacramento, CA. 22 pp.

Marschalek, D.A. 2006. California least tern breeding survey, 2005 season. California Department of Fish and Game, Habitat Conservation and Planning Branch, Species Conservation and Recovery Program Report, 2006-01. Sacramento, CA. 21 pp.

Marschalek, D.A. 2005. California least tern breeding survey, 2004 season. California Department of Fish and Game, Habitat Conservation and Planning Branch, Species Conservation and Recovery Program Report, 2005-01. Sacramento, CA. 24 pp.

Retallack, A. and D. Marschalek. 2004. In the fire's path: Butterfly tails. Outdoor California. July-August vol. 65: 12-13.

Marschalek, D.A. 2004. Factors influencing population viability of Hermes copper (*Lycaena hermes*). San Diego State University Master's Thesis. 58 pages.

Molina, K.C., and D.A. Marschalek. 2003. Foraging behavior and diet of breeding western gull-billed terns (*Sterna nilotica vanrossemi*) in San Diego Bay, California. Calif. Dept. Fish and Game, Habitat Conservation Planning Branch, Species Conservation and Recovery Program Report, 2003-01. Sacramento, CA. 8 pp., 9 figs., 2 tabs.

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