May 19, 2015

Dennis Campbell  
County of San Diego  
Planning and Development Services  
5510 Overland Avenue, Suite 310  
San Diego, CA  92123

Re: Otay Ranch Village 13 Resort Village Draft Environmental Impact Report, General Plan Amendment and Specific Plan

Dear Mr. Campbell:

The environmental assessment for Otay Ranch Village 13 Resort Village raises a series of questions relative to the future survival of Quino Checkerspot butterfly. As a member of the Recovery Team for Quino Checkerspot butterfly, I am not confident that the conclusion put forth in the Draft Environmental Impact Report (DEIR) that the impacts of the proposed development on the likelihood of survival of Quino Checkerspot in the wild are “less than significant” (DEIR, p. 2.3-32). I limit my comments here to Quino Checkerspot butterfly exclusively.

From a regulatory perspective, the biggest problem is that the conclusion that the project will not have a significant impact on survival of Quino Checkerspot is not supported by substantial evidence. This is because the analysis is incredibly simplistic and therefore does not accurately describe the distribution of the butterfly and therefore cannot be used to assess the impacts on it.

Specifically, the analysis is based on surveys for Quino Checkerspot in 1999, 2000, 2004, and 2008. A point on the map represents each observation of an adult butterfly. Then the preparers of the DEIR make some assertions based on whether or not a particular number of observations of the adult butterflies are located inside or outside of the development footprint. This is not a legitimate or scientifically accepted way to assess impacts on the species. The problems with it are as follows: 1) it does not take into account the distribution of larvae, which is far more important and varies significantly from the distribution of adults because of the tendency of the adults to congregate on hilltops (Shields 1967), 2) it does not take into account the differential detectability of the different sexes of adult butterflies – males are more likely to be seen while they hilltop, 3) it over-emphasizes small areas where multiple adults may be seen while being biased against the non-ridge locations where females lay eggs (Mattoni et al. 1997). Although the DEIR does contain some discussion of distribution of foodplant, this analysis also lacks any scientifically credible evaluation of the use of different potential habitat areas on the site by Quino Checkerspots.
The DEIR asserts that “83% of the population would be preserved (p. 98, Appendix C-3). This is unsubstantiated. First, no estimate of population size was made at all. Second, this assertion, which presumably means “83% of the individual observation sites for butterflies are not going to be directly destroyed,” does not account for any of the biases resulting from considering only adults, from not considering sex-linked differences in detectability, or from overemphasizing locations where butterflies exhibit particular behaviors. It would be professionally incompetent for any lepidopterist to make the claim that “83% of the population would be preserved.”

One approach that I have pioneered to remedy some of the biases in using observation points to assess population status is to use a regular grid across the study area and only count one observation per grid cell (Longcore et al. 2004; Longcore et al. 2010; MacDonald et al. 2012; Longcore and Osborne 2015). This is a far more appropriate approach than counting every observation site, since it avoids the bias of double-counting ridgelines and hilltops. I applied this approach to the analysis of the proposed development at Village 13. I gridded the property up into cells 500 feet on a side and counted the number of occupied cells either in or outside the development footprint. If a cell was both inside and outside the footprint I counted it as inside if the butterfly observation point was inside the footprint. I used butterfly observations from all years. I found that 13 occupied 250,000 sq. ft. cells would be impacted by the development, which is 32.5% of the total number of cells (40) where adults have been observed during surveys.

The impact to roughly 33% of the cells where adults were observed is not the full extent of the impacts from the project, since it only serves to reduce the impact of double-counting locations where adult butterflies were observed in close proximity. Rather, to actually assess the impact of the project on Quino Checkerspots on the site, a habitat suitability analysis would need to be undertaken that takes into account habitat needs for the full life cycle of the species. Basing the impacts analysis on the adults only is like evaluating impacts on a migratory bird by only looking at the wintering range without considering the breeding range. Although Quino Checkerspots do not move as far between where they mate and where they lay their eggs, any approach to evaluate impacts must be based on the distribution of larval use in addition to that of the adults (generally biased toward males) that are observed during adult surveys.

One could use standard habitat distribution modeling techniques to develop maps of the probability of occupancy of both larvae (assuming point data on larval locations on the project site are available) and of adults (from the existing point observations). This could be accomplished using a maximum entropy modeling approach (Phillips et al. 2006; Elith et al. 2011) that incorporates the topography and vegetation on the project site to predict, given the presence-only data available, the total distribution across the project site. These models combined could be used to assess the relative impacts of various development scenarios at the site scale.

The DEIR also lacks any credible assessment of the impacts of the project at the regional scale and in particular on the meta-population of Quino Checkerspot in the project vicinity. The data and arguments presented here do not even come close to incorporating the most recent scientific understanding of the impacts of development on Quino Checkerspot survival (Preston et al. 2012). Amazingly, this most recent paper (Preston et al. 2012) is not even cited in the DEIR.
Based on the clear association between nearby development and population collapse, for all the reasons we articulated back when the butterfly was listed (Mattoni et al. 1997), a far more logical conclusion supported by scientific research would be that the proposed development threatens the viability of the metapopulation in the vicinity of Otay Lake.

The County does not have substantial scientific evidence to support its conclusion that the Village 13 development would not adversely impact Quino Checkerspot butterfly after mitigation. I would strongly recommend that the County solicit an independent assessment of the impacts on Quino Checkerspot at both the site level and the regional level prior to making any decision about the proposed development.

Sincerely,

Travis Longcore, Ph.D.

Qualifications
Dr. Travis Longcore is a principal of Land Protection Partners. Dr. Longcore is Associate Professor (Research) at the USC Spatial Sciences Institute and teaches in the Landscape Architecture Program in the USC School of Architecture. At USC and previously at UCLA, he has taught, among other courses, Bioresource Management, Environmental Impact Analysis, Field Ecology, and Ecological Factors in Design. He was graduated summa cum laude from the University of Delaware with an Honors B.A. in Geography, holds an M.A. and a Ph.D. in Geography from UCLA, and is professionally certified as a Senior Ecologist by the Ecological Society of America. Longcore has authored 30 scientific papers in top peer-reviewed journals such as Conservation Biology, Biological Conservation, Current Biology, Environmental Management, and Frontiers in Ecology and the Environment. Land Protection Partners has provided scientific review of environmental compliance documents and analysis of complex environmental issues for local, regional, and national clients for 16 years.

Literature Cited


