

# **EXHIBIT D**

January 6, 2017

Ms. Christina Caro  
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601 Gateway Boulevard, Suite 1000  
South San Francisco, CA 94080

**Subject: Comments on the Draft Environmental Impact Report Prepared for the Suncrest Dynamic Reactive Power Support Project**

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Dear Ms. Caro:

This letter contains my comments on the Draft Environmental Impact Report (“DEIR”) prepared by the California Public Utilities Commission (“CPUC”) for the Suncrest Dynamic Reactive Power Support Project (“Project”). NextEra Energy Transmission West (“NEET West”) proposes to construct and operate a Static Var Compensator (“SVC”) dynamic reactive device and approximately one-mile transmission line interconnecting with the existing Suncrest Substation near the community of Alpine in San Diego County.

I am an environmental biologist with 23 years of professional experience in wildlife ecology and natural resource management. I have served as a biological resources expert for over 100 projects in California. My experience and scope of work in this regard has included assisting various clients with evaluations of biological resource issues, reviewing environmental compliance documents prepared pursuant to the California Environmental Quality Act (“CEQA”) and the National Environmental Policy Act (“NEPA”), and submitting written comments in response to CEQA and NEPA documents. My work has included the preparation of written and oral testimony for the California Energy Commission, CPUC, and Federal courts. My educational background includes a B.S. in Resource Management from the University of California at Berkeley, and a M.S. in Wildlife and Fisheries Science from the Pennsylvania State University. A true and correct copy of my current curriculum vitae is attached hereto.

I have gained particular knowledge of the biological resource issues associated with the Project through my work on numerous other projects in San Diego County. The comments herein are based on my review of the environmental documents prepared for the Project, a review of scientific literature pertaining to biological resources known to occur in the Project area, consultations with other biological resource experts, and the knowledge and experience I have acquired during more than 23 years of working in the field of natural resources management.

## PROJECT ALTERNATIVES

The DEIR evaluates four alternatives to NEET West’s proposed Project: (1) No Project Alternative, (2) Northeast Site Alternative, (3) Suncrest Substation Alternative, and (4) Overhead Transmission Line Alternative.<sup>1</sup> The CPUC correctly concluded that, in addition to the No Project Alternative, the Suncrest Substation Alternative is the environmentally superior alternative.<sup>2</sup> The Suncrest Substation Alternative is environmentally superior to the proposed Project because it would be built entirely within the existing substation, and thus, it would avoid virtually all of the environmental impacts associated with the proposed Project.<sup>3</sup>

San Diego Gas & Electric Company (“SDG&E”) proposed to build the dynamic reactive device within the existing Suncrest Substation. However, the California Independent System Operator Corporation (“ISO”) selected NEET West for the project based on “very slight distinctions” between the two proposals (SDG&E’s and NEET West’s).<sup>4</sup>

ISO’s decision to select NEET West for the project did not include consideration of environmental impacts.<sup>5</sup> Instead, ISO gave the slight overall advantage to NEET West primarily because: (1) its proposed binding cost containment measures were more robust, in particular, it agreed to a materially lower cap on capital costs and (2) it proposed to assume more cost increase risk than SDG&E.<sup>6</sup>

The CPUC is tasked with ensuring that Californians receive safe, reliable utility service and infrastructure at reasonable rates, with a *commitment to environmental quality* and a prosperous California economy.<sup>7</sup> Although difficult to quantify monetarily, the biological resources in the proposed Project area provide a myriad of values and benefits to the citizens of California. As the DEIR acknowledges, the proposed Project would have substantial impacts on those biological resources.<sup>8</sup> Therefore, approval of the proposed Project is not justified unless the CPUC can demonstrate that the benefits (i.e., potential cost savings) of the proposed Project outweigh its costs (i.e., environmental impacts). Based on my expertise in natural resources, and given the feasibility of a

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<sup>1</sup> DEIR, p. ES-8.

<sup>2</sup> DEIR, p. ES-9.

<sup>3</sup> DEIR, p. ES-10.

<sup>4</sup> California Independent System Operator Corporation. 2015 Jan 6. Suncrest Reactive Power Project, Project Sponsor Selection Report. p. 1.

<sup>5</sup> *Ibid.*

<sup>6</sup> *Ibid.*, p. 46.

<sup>7</sup> California Public Utilities Commission. 2016 Jan 26. 2015 Annual Report. Cover letter to Honorable Edmund G. Brown Jr., Governor of the State of California, and distinguished members of the California State Legislature. Available at:

<[http://www.cpuc.ca.gov/uploadedFiles/CPUC\\_Public\\_Website/Content/About\\_Us/Annual\\_Reports/2015%20CPUC%20Performance%20and%20Accountability%20Annual%20Report\\_v004.pdf](http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/About_Us/Annual_Reports/2015%20CPUC%20Performance%20and%20Accountability%20Annual%20Report_v004.pdf)>.

<sup>8</sup> *Ibid.*

Project alternative that would avoid virtually all environmental impacts (i.e., the Suncrest Substation Alternative), approval of the proposed Project is not justified.

## **PROJECT DESCRIPTION**

### **Night Lighting**

The proposed Project includes night lighting that would cause ecological light pollution.<sup>9</sup> Ecological light pollution has demonstrable effects on the behavioral and population ecology of organisms, with serious implications on community ecology.<sup>10</sup>

The DEIR indicates lighting at the Project site “shall be the lowest illumination allowed for human safety and security, selectively placed, shielded, and directed downward to the maximum extent practicable.”<sup>11</sup> It further indicates: “lighting at the SVC facility would conform to National Electric Safety Code (NESC) requirements and applicable San Diego County outdoor lighting codes. NESC recommends illuminating substation facilities to a *minimum* of 22 lux or 2 foot-candles.”<sup>12</sup> This information is insufficient to evaluate impacts on wildlife due to the Project’s night lighting.

Impacts on wildlife due to night lighting are dependent on the illumination (light incident per unit area), intensity (the number of photons per unit area), and spectral content (expressed by wavelength). Thus, to enable an evaluation of Project impacts, NEET West must identify: (a) the height and abundance of the lights; (b) the types of lights that will be installed; (c) the *maximum* luminosity of the bulbs; and (d) the location and orientation of light fixtures that would be installed at the Project site.

## **EXISTING CONDITIONS**

### **The DEIR Fails to Provide the Environmental Context**

The DEIR fails to provide the context needed to establish the environmental setting. For example, the DEIR does not discuss: (a) the relative rarity, (b) population status (i.e., increasing, decreasing, or stable), or (c) primary threats associated with each special-status species that occurs, or could occur, in the Project area. This precludes the public and decision makers from understanding the relative severity of Project impacts to each sensitive biological resource that could be affected by the Project.

For example, data indicate the golden eagle population in San Diego County has experienced a precipitous decline, primarily due to the loss of foraging habitat.<sup>13</sup> Less

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<sup>9</sup> DEIR, p. 2-16.

<sup>10</sup> *Ibid.*

<sup>11</sup> DEIR, p. 7-47.

<sup>12</sup> DEIR, p. 2-16. [emphasis added].

<sup>13</sup> Unitt PA. 2004. San Diego County Bird Atlas. Proceedings of the San Diego Society of Natural History, No. 39.

than 50 pairs remain within the County, and by 2030 the population is predicted to drop to 25 pairs.<sup>14</sup> Consequently, each additional pair (territory) that is eliminated from the County has significant implications on conservation of the species. This information (i.e., the context) enables the reader to understand that any adverse impacts on golden eagles due to the Project could be relatively severe.

## **Vegetation Communities**

The DEIR classifies 1.7 acres of the Project site as “ruderal” vegetation.<sup>15</sup> As described below, the DEIR fails to provide substantial evidence justifying that classification.

First, biological resource mapping requirements imposed by the County of San Diego state: “[a]ll Biological Resource maps and studies must use the latest San Diego Regional Holland code classification system for vegetation communities.”<sup>16</sup> NEET West’s biological resources consultant, SWCA Environmental Consultants (“SWCA”), claims to have used that classification system, in conjunction with the *Manual of California Vegetation* (Sawyer et al. 2009) to classify vegetation at the Project site.<sup>17</sup> However, neither the San Diego Regional Holland code classification system, nor the *Manual of California Vegetation*, recognizes “ruderal” as a vegetation type.<sup>18</sup> This is important because mitigation requirements established in San Diego County’s *Biological Mitigation Ordinance* are dependent on proper classification of the vegetation community—as defined under the San Diego Regional Holland code classification system.<sup>19</sup> Consequently, circumventing the classification system by classifying a portion of the Project site as “ruderal” precludes the ability to determine compliance with the *Biological Mitigation Ordinance*.

Second, the DEIR fails to properly characterize the plant community within the “ruderal” portion of the Project site. It simply states:

The northwest portion of the SVC site contains bare ground and ruderal vegetation in areas cleared and/or graded by the property owner. This habitat is dominated by species which can quickly colonize disturbed

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<sup>14</sup> *Ibid.*

<sup>15</sup> DEIR, Figure 7-1 and Table 7-1.

<sup>16</sup> County of San Diego, Department of Planning and Land Use. 2002. Biological Resource Mapping Requirements. p. 2.

<sup>17</sup> PEA, Appendix D: Biological Resources Technical Report, Table 1, footnote “\*\*\*” states: “[v]egetation types follow the California Manual of Vegetation (Sawyer, Keeler-Wolf, and Evens 2009) as modified for San Diego County (Evens and San 2005, AECOM et al. 2011).” The sources cited for the County’s classification system are incorrect: Evens and San (2005) is a report on the vegetation alliances of the San Dieguito River Park region, and AECOM et al. (2011) is limited to Western San Diego County.

<sup>18</sup> Oberbauer T, M Kelly, J Buegge. March 2008. Draft Vegetation Communities of San Diego County. Based on “Preliminary Descriptions of the Terrestrial Natural Communities of California”, Robert F. Holland, Ph.D., October 1986. See also Sawyer JO, T Keeler-Wolf, JM Evens. 2009. A Manual of California Vegetation. Second edition. California Native Plant Society, Sacramento. 1300 pp.

<sup>19</sup> San Diego County Code, Title 8, Division 6, Chapter 5. Ordinance No. 10039 (N.S.).

areas. The majority of the species in these areas are non-native, but some native species are also present.<sup>20</sup>

The DEIR fails to identify the specific plant species that are present within the “ruderal” portion of the Project site, the relative abundances of those species, and their cover values. As a result, the vague description provided in the DEIR is insufficient evidence that 1.7 acres of the site should be considered ruderal.

Third, the DIER inappropriately defined the environmental baseline as the conditions that were present shortly after the property owner cleared and/or graded the site.<sup>21</sup> Biological resource mapping requirements imposed by the County of San Diego state:

Areas legally graded or cleared in preparation for the proposed project shall also be mapped as the habitat that existed prior to the clearing unless previous environmental review was conducted and appropriate mitigation applied. The reason for this is that the California Environmental Quality Act requires the County to assess the “whole of the proposed project” which includes activities completed preparation for the project. Examples include geotechnical testing, well drilling/testing, surveying, and recent (less than 5 years prior to project application) clearing or grading (including agricultural clearing or grading) completed without a clear documented purpose. Historical evidence, such as aerial photography or the County’s vegetation mapping information, must be used to determine the habitat that once existed.<sup>22</sup>

The property owner cleared the site sometime between December 22, 2014, and April 14, 2015 (Figures 1 and 2). The property owner then installed a dirt road and large water tank sometime between April 14, 2015, and March 22, 2016 (Figures 2 and 3). Although the Proponent’s Environmental Assessment (“PEA”) suggests the water tank was installed for SDG&E’s restoration efforts, that information appears inconsistent with the timing of SDG&E’s restoration program (which was deemed complete in March 2016).<sup>23</sup> As reported in the PEA, the tank will provide an on-site water source for the water needed during Project construction in the event that reclaimed water sources are unavailable.<sup>24</sup> Furthermore, although the PEA claims the “ruderal” portion of the Project site has been subject to repeated disturbance over the past two decades,<sup>25</sup> that claim is inconsistent with time-lapse imagery available through Google Earth. Nevertheless, the amount of land that was cleared and graded by the property owner far exceeds the amount of land that would be needed to install a water tank for SDG&E’s restoration efforts. Thus, existing evidence strongly supports the inference that grading and clearing were conducted in preparation for the proposed Project and not for some other purpose

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<sup>20</sup> DEIR, p. 7-9.

<sup>21</sup> *Ibid.*

<sup>22</sup> County of San Diego, Department of Planning and Land Use. 2002. Biological Resource Mapping Requirements. p. 3.

<sup>23</sup> DEIR, p. 2-5.

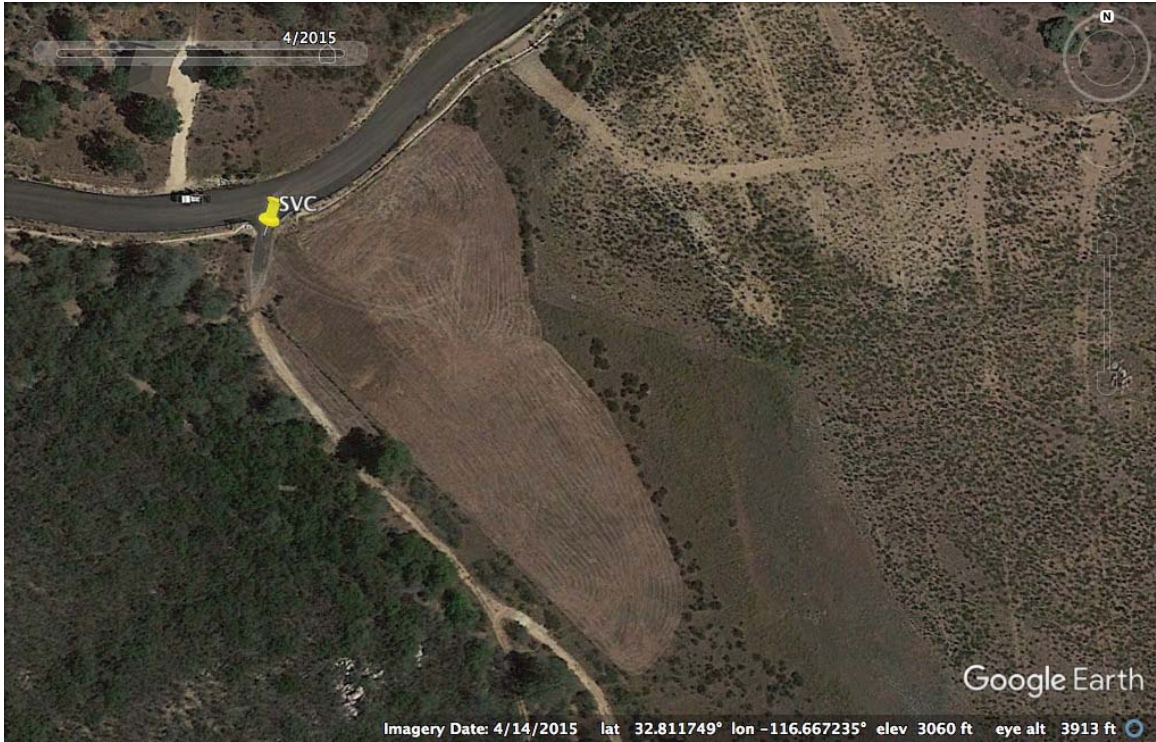
<sup>24</sup> PEA, p. 4.15-10.

<sup>25</sup> PEA, Appendix D: Biological Resources Technical Report, Table 1, footnote “\*\*\*\*”.

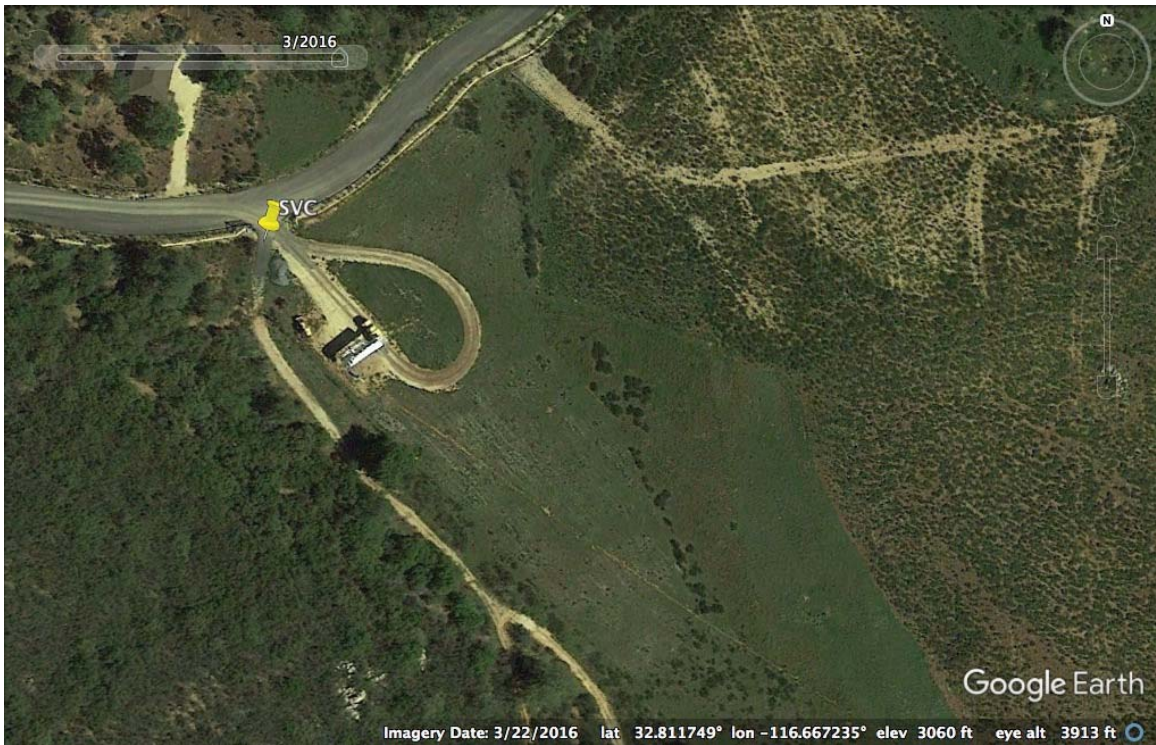
(e.g., as part of the property owner’s routine maintenance of the property). As a result, the environmental baseline for the “ruderal” portion of the Project site needs to be revised to reflect the conditions present when the property owner cleared the site.



**Figure 1.** Site conditions at proposed SVC site on 22 December 2014.



**Figure 2.** Site conditions at proposed SVC site on 14 April 2015. Site has been cleared.



**Figure 3.** Site conditions at proposed SVC site on 22 March 2016. Road and water tank have been installed.



## Special-Status Plants

The Biological Resources Technical Report (“BRTR”) that was prepared for the Project fails to establish the qualifications of the SWCA biologists that inventoried plant species at the Project site. However, the *Floral Compendium* provided in the BRTR provides evidence that the biologists lacked proper qualifications, and that they were not familiar with the plants that occur in eastern San Diego County.

Contrary to survey guidance issued by the California Department of Fish and Wildlife (“CDFW”), the SWCA biologists did not identify all plant taxa at the Project site to the taxonomic level necessary to determine rarity and listing status. For example, SWCA did not identify the specific species within the following genera detected at the Project site: (1) *Amsinckia*, (2) *Crytantha*, (3) *Cuscuta*, and (4) *Ribes*.<sup>26</sup> Each of these genera contains special-status species known to occur in San Diego County.<sup>27</sup> SWCA’s failure to identify plants to the appropriate taxonomic level precludes a thorough understanding of the environmental settings, and consequently, the potential for significant impacts to sensitive botanical resources.

The *Floral Compendium* lists *Galium trifidum* var. *pacificum* as one of the species present at the Project site.<sup>28</sup> No such species exists.<sup>29</sup> *G. trifidum* (i.e., without the “i”) is a recognized species. However, that species does not have varieties, nor does it occur in San Diego County.<sup>30</sup>

The *Floral Compendium* lists *Delphinium hesperium* ssp. *hesperium* as one of the species present at the Project site.<sup>31</sup> That *hesperium* subspecies does not occur south of Monterey County.<sup>32</sup> Indeed, the only subspecies that occurs in San Diego County is *D. hesperium* ssp. *cuyamaca*, which is officially listed as Rare by the State of California.<sup>33</sup> The potential presence of *Delphinium hesperium* ssp. *cuyamaca* at the Project site is important because rare plants are afforded protection under the Native Plant Protection Act (“NPPA”). This has implications on the mitigation proposed in the DEIR because the NPPA prohibits take of rare plants without prior authorization from the CDFW.

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<sup>26</sup> PEA, Appendix D: Biological Resources Technical Report, Appendix A.

<sup>27</sup> Rebman JP, MG Simpson. 2014. Checklist of the Vascular Plants of San Diego County, 5<sup>th</sup> ed. San Diego Natural History Museum, San Diego (CA). Available at: <[www.sdnhm.org/download\\_file/view/3382/582/582/](http://www.sdnhm.org/download_file/view/3382/582/582/)>.

<sup>28</sup> PEA, Appendix D: Biological Resources Technical Report, Appendix A, p. A-3.

<sup>29</sup> Jepson Flora Project (eds.). 2016. Jepson eFlora. Available at: <<http://ucjeps.berkeley.edu/IJM.html>>. [accessed on 14 Dec 2016]. See also Rebman JP, MG Simpson. 2014. Checklist of the Vascular Plants of San Diego County, 5<sup>th</sup> ed. San Diego Natural History Museum, San Diego (CA). Available at: <[www.sdnhm.org/download\\_file/view/3382/582/582/](http://www.sdnhm.org/download_file/view/3382/582/582/)>.

<sup>30</sup> *Ibid.*

<sup>31</sup> PEA, Appendix D: Biological Resources Technical Report, Appendix A, p. A-3.

<sup>32</sup> Data provided by the participants of the Consortium of California Herbaria. 2016. Available at: <<http://ucjeps.berkeley.edu/consortium/>>. [accessed on 14 Dec 2016].

<sup>33</sup> *Ibid.*

## **Hermes Copper Butterfly**

The DEIR indicates the proposed Project site does not contain suitable habitat for the Hermes copper butterfly because the site does not have spiny red berry shrubs (the host plant) within 15 feet of California buckwheat (the preferred nectar source).<sup>34</sup> The DEIR fails to cite any scientific evidence to substantiate the statement that suitable habitat for the species is limited to sites where spiny red berry shrubs are within 15 feet of California buckwheat. Furthermore, the DEIR's statement that the Project site lacks suitable habitat is inconsistent with the PEA, which states the proposed Project site provides suitable habitat, and that the species has moderate potential to occur at the Project site.<sup>35</sup>

## **Dulzura Pocket Mouse and Northwestern San Diego Pocket Mouse**

The Dulzura pocket mouse and northwestern San Diego pocket mouse are California Species of Special Concern. Both species have the potential to occur at the Project site.<sup>36</sup> Nevertheless, SWCA did not conduct the surveys needed to determine whether either species is present at the Project site.

Detection of small mammals usually requires trapping surveys. Trapping surveys were not conducted at the Project site. This makes it impossible for the CPUC to determine whether the pocket mouse species are in fact present at the Project site, and it makes it impossible for the public and decision makers to understand the Project's environmental setting, potential impacts, and adequacy of the CPUC's proposed mitigation measures with regard to these species.

## **Special-Status Bats**

Several special-status bat species have the potential to occur in the Project area.<sup>37</sup> I concur with the DEIR's conclusion that bats are unlikely to roost within the Project footprint. However, bat roosts may be present in the trees and rock outcrops immediately adjacent to the footprint (Figure 4). SWCA did not make any attempt to determine whether bat roosts are present in these areas, which will be subject to noise, vibration, and other disturbance activities associated with the proposed Project.

Bats are relatively long-lived and have low reproductive rates compared to many other mammals. In addition, most bat species are extremely susceptible to noise and other types of anthropogenic disturbance.<sup>38</sup> This makes them vulnerable to mass displacement. Maternity colonies and hibernating bats are especially susceptible to disturbance. One poorly timed disturbance event can cause complete abandonment of the maternity colony, resulting in mass mortality of the pups. These traits may seriously limit a bat species'

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<sup>34</sup> DEIR, p. 7-34.

<sup>35</sup> PEA, Appendix D: Biological Resources Technical Report, p. 43.

<sup>36</sup> DEIR, Table 7-2.

<sup>37</sup> DEIR, Table 7-2.

<sup>38</sup> Western Bat Working Group. 2005 [update]. Species Accounts. Available at: <<http://www.wbwg.org>>.

ability to recover from persistent disturbance or fatality events.<sup>39</sup>

Because SWCA did not conduct focused surveys for bat roosts within areas that will be subject to disturbance (e.g., due to construction noise), it impossible for the public and decision makers to understand the Project's environmental setting, potential impacts, and the adequacy of the CPUC's proposed mitigation measures.



**Figure 4.** Rock outcrop immediately adjacent to Project footprint (Bell Bluff Truck Trail) where trenching and blasting would occur.

## IMPACTS

### Special-Status Plants

Felt-leaved monardella, a special-status species, occurs immediately adjacent to the proposed Project site.<sup>40</sup> Several additional special-status plant species have the potential to occur within, or immediately adjacent to, the Project site.<sup>41</sup> The DEIR fails to provide any analysis of, or mitigation for, potentially significant *indirect* impacts to special-status plants. As a result, the DEIR lacks substantial evidence supporting its finding that Project impacts on special-status plants would be less than significant.

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<sup>39</sup> *Ibid.*

<sup>40</sup> DEIR, p. 7-40.

<sup>41</sup> *Ibid.*

## Special-Status Mammals and Reptiles

The DEIR acknowledges the Project could adversely affect several special-status mammals and reptiles through effects on their habitat (among other adverse effects).<sup>42</sup> The CPUC has concluded those effects are potentially significant.<sup>43</sup> The DEIR then lists several proposed mitigation measures, which according to the DEIR, would reduce impacts to special-status mammals and reptiles to a less than significant level.<sup>44</sup> That conclusion is not supported by substantial evidence because the mitigation measures listed in the DEIR do not mitigate the residual effects of the Project on habitat (i.e., habitat loss, fragmentation, and degradation). As a result, the Project would continue to have a potentially significant, unmitigated impact on several special-status mammals and reptiles.

### Hermes Copper Butterfly

Suitable habitat for the Hermes copper butterfly is present in the vicinity of the proposed Project site. However, no suitable habitat was mapped within the Project footprint during the surveys conducted by SWCA.<sup>45</sup>

The DEIR's analysis of impacts to the Hermes copper butterfly is limited to the following statements:

Suitable habitat for Hermes copper butterfly may develop within the project footprint prior to construction. If this occurs, the Proposed Project could have a substantial adverse effect on the species. This would be a significant impact.<sup>46</sup>

The DEIR fails to provide any analysis of the extent of the admittedly potentially significant impacts, and fails to include any analysis of the potentially significant *indirect* impacts to the Hermes copper butterfly and its habitat.

Potentially significant indirect impact that the Project may have on the Hermes copper butterfly include vehicle strikes, application of herbicides, and Project activities that indirectly alter vegetation in the Project area.

Mortalities of Hermes copper butterflies due to strikes by vehicles associated with the Project could be significant to populations existing near roadways (i.e., the Bell Bluff Truck Trail). The threat of road mortalities to populations of various butterfly species has been confirmed in several studies (Ries and Debinski 2001, Ries et al. 2001, Rao and

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<sup>42</sup> DEIR, p. 7-45.

<sup>43</sup> *Ibid.*

<sup>44</sup> *Ibid.*

<sup>45</sup> DEIR, p. 7-44.

<sup>46</sup> *Ibid.*

Girish 2007, Severns 2008).<sup>47</sup>

Vehicles are one of the primary vectors in the spread of invasive plants. For example, driving a truck along an infested road can pick up seeds and carry them to the worksite. In addition, Weiss (1999) demonstrated that pollution from vehicles can increase deposition of nitrogen compounds into the soil, which facilitate the spread of non-native plants that outcompete native plants essential to butterfly populations.<sup>48</sup> Field studies have documented population crashes and extirpations in several butterfly species as a direct result of butterfly-host (plant) asynchrony.<sup>49</sup>

The DEIR fails to incorporate mitigation for potentially significant indirect impacts to the Hermes copper butterfly and its habitat. As a result, the DEIR has not provided substantial evidence supporting the CPUC's conclusion that impacts to the species would be less than significant.<sup>50</sup>

### **The DEIR Fails to Analyze Potentially Significant Impacts to Wildlife Due to Noise and Vibration**

The DEIR fails to disclose and thoroughly analyze the numerous adverse effects that noise and vibration can have on wildlife. Animals rely on hearing to avoid predators, obtain food, and communicate.<sup>51</sup> Noise and vibration have the potential to disrupt these activities, and otherwise reduce fitness through injury (e.g., hearing loss), energy loss (from movement away from noise source), reduction in food intake, and habitat avoidance and abandonment.<sup>52</sup> Given this knowledge, almost all animal species in the vicinity of the Project site may be adversely affected by the noise and vibrations generated by the Project.

#### Construction Noise

The DEIR's analysis of construction noise is limited to the statement that “[c]onstruction of the proposed Project could disturb nesting birds by generating noise.”<sup>53</sup> The DEIR

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<sup>47</sup> See page 16 in: U.S. Fish and Wildlife Service. 2009. Callippe Silverspot Butterfly (*Speyeria callippe callippe*), 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office. Sacramento, California. 29 pp.

<sup>48</sup> *Ibid*, p. 17.

<sup>49</sup> See page 15 in: U.S. Fish and Wildlife Service. 2009. Quino Checkerspot Butterfly (*Euphydryas editha quino*), 5-Year Review: Summary and Evaluation.

<sup>50</sup> DEIR, p. 7-44.

<sup>51</sup> Francis CD, JR Barber. 2013. A framework for understanding noise impacts on wildlife: an urgent conservation priority. *Frontiers in Ecology and the Environment* 11:305-313. See also Rabin LA, B McCowan, SL Hooper, DH Owings. 2003. Anthropogenic Noise and its effect on Animal Communication: An Interface Between Comparative Psychology and Conservation Biology. *International Journal of Comparative Psychology* Vol. 16(2/3):172-193.

<sup>52</sup> National Park Service, 1994. Report to Congress, Report on effects of aircraft overflights on the National Park System.

<sup>53</sup> DEIR, p. 7-43.

fails to provide any analysis of construction noise on other wildlife taxa (e.g., the special-status reptiles and mammals that occur in the Project area). Moreover, adverse effects of noise on birds are not limited to those that are “nesting.” Ortega (2012) identified nine ways in which noise pollution affects birds.<sup>54</sup> They are: (1) physical damage to ears; (2) stress responses; (3) fright–flight responses; (4) avoidance responses; (5) changes in other behavioral responses, such as foraging; (6) changes in reproductive success; (7) changes in vocal communication; (8) interference with the ability to hear predators and other important sounds; and (9) potential changes in populations.

Construction of the proposed Project entails use of a rock drill, which would generate a noise level of 98 dBA at a distance of 50 feet.<sup>55</sup> This level is high enough to significantly impact wildlife. For example, Bondello et al. (1979) reported that Mojave fringe-toed lizards experience hearing loss when exposed to 95-dB dune buggy sounds, even when the lizards were buried beneath shallow layers of sand.<sup>56</sup>

### Operational Noise

The DEIR’s analysis of operational noise is limited to the statement that “operation of the proposed Project is not anticipated to greatly increase noise compared to current conditions at the site.”<sup>57</sup> This statement is inconsistent with data provided in the DEIR. According to the DEIR, the baseline Leq and CNEL noise levels at the site proposed for the SVC were 49.8 dBA and 52.1 dBA, respectively.<sup>58</sup> The noise level would increase to approximately 90 dB during operation of the SVC.<sup>59</sup> Because the decibel (dB) is a logarithmic unit, an increase of 10 dB represents a doubling of loudness. Therefore, the proposed Project would generate noise that is approximately 16 times louder than existing conditions. As a frame of reference, a noise level of 90 dB is equivalent to a road with approximately 50,000 cars per day.<sup>60</sup>

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<sup>54</sup> Ortega CP. 2012. Effects of Noise Pollution on Birds: A Brief Review of Our Knowledge. *Ornithological Monographs* 74:6-22.

<sup>55</sup> DEIR, p. 15-10.

<sup>56</sup> Bondello MC, AC Huntley, HB Cohen, BH Brattstrom. 1979. The effects of dune buggy sounds on the telencephalic auditory evoked response in the Mojave fringe-toed lizard, *Uma scoparia*. Pages 58-89 in MC Bondello and BH Brattstrom, eds. *The experimental effects of off-road vehicle sounds on three species of desert vertebrates*. U.S. Dept. Inter., Bur. Land Manage., Washington, DC.

<sup>57</sup> DEIR, p. 7-44.

<sup>58</sup> DEIR, p. 15-7.

<sup>59</sup> DEIR, p. 15-12. The sound pressure level from two equal sources is 3 dB greater than the sound pressure level of just one source. Therefore, the transformer and HVAC unit would combine to produce 90 dB. *See* DEIR, Appendix J.

<sup>60</sup> Bayne EM, BC Dale. 2011. Effects of Energy Development on Songbirds. Chapter 6 *in*: *Energy Development and Wildlife Conservation in Western North America*. DE Naugle (ed). Island Press, Washington, D.C. pp. 95-114.

Noise generated during operation of the Project (90 dB) far exceeds levels that have been shown to have adverse effects on wildlife.<sup>61</sup> Consequently, noise generated by operation of the Project will undoubtedly have adverse effects on wildlife. The distances over which these effects occur depend on the species, but could extend more than 3 km (1.9 mi).<sup>62</sup>

### Impacts to Golden Eagles

Golden eagles have historically nested approximately one mile away from the proposed Project site.<sup>63</sup> According to the DEIR:

At this distance [1 mile], construction of the Proposed Project is not anticipated to substantially affect nesting golden eagles through blasting noise. However, if nesting golden eagles were to occur within 500 feet of the construction footprint, and blasting was to be used during construction, nest abandonment might occur. This would be a significant impact.<sup>64</sup>

The DEIR fails to provide any scientific evidence to support these conclusions.

Construction of the Project will generate noise and other types of disturbance through ground clearing, grading, excavation, and blasting. This construction noise will be audible at long distances, and it has the potential to significantly impact golden eagle and other raptor nest sites. Disturbance of nesting raptors can result in complete desertion of nests, eggs, or young. Furthermore, temporary departure by adults can cause overheating, chilling, or desiccation of eggs or young, predation on eggs or young, or missed feedings. Studies have found that a considerable amount (46% to 85%) of golden eagle nesting failures were due to human disturbance.<sup>65</sup> Nesting failure (e.g., due to nest abandonment) constitutes “take” under the Bald and Golden Eagle Protection Act (“Eagle Act”).<sup>66</sup>

To avoid “take” of golden eagles, the United States Fish and Wildlife Service (“USFWS”) recommends avoidance of blasting and other activities that produce extremely loud noise within two miles of active eagle nests.<sup>67</sup> Because the proposed Project would not adhere to USFWS recommendations, and because the DEIR fails to

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<sup>61</sup> Kaseloo PA, KO Tyson. 2004. Synthesis of Noise Effects on Wildlife Populations. US Department of Transportation, Federal Highway Administration. Publication No. FHWA-HEP-06-016. Available at: <[https://www.fhwa.dot.gov/environment/noise/noise\\_effect\\_on\\_wildlife/effects/effects.pdf](https://www.fhwa.dot.gov/environment/noise/noise_effect_on_wildlife/effects/effects.pdf)>.

<sup>62</sup> *Ibid.*

<sup>63</sup> DEIR, p. 7-44.

<sup>64</sup> DEIR, p. 7-44.

<sup>65</sup> Suter GW III, JL Joness. 1981. Criteria for Golden Eagle, Ferruginous Hawk and Prairie Falcon Nest Site Protection. Raptor Research 15(1):12-18.

<sup>66</sup> Pagel JE, DM Whittington, GT Allen. 2010 Feb. Interim Golden Eagle inventory and monitoring protocols; and other recommendations. Division of Migratory Birds, United States Fish and Wildlife Service.

<sup>67</sup> Legal Protections for the Golden Eagle. 24 Jun 2015 email communication to Scott Cashen from Heather Beeler, Eagle Permit Coordinator, USFWS.

provide any evidence that a 500-foot buffer would be sufficient to avoid impacts to nesting eagles, the Project could have a significant, unmitigated impact on golden eagles.



## The DEIR Fails to Disclose and Analyze the Adverse Effects of Soil Stabilizers

NEET West proposes the use of “non-toxic” soil stabilizers (also known as soil binders, dust suppressants, or dust palliatives) to control fugitive dust at the Project site.<sup>68</sup> Most soil stabilizers, including varieties that are “non-toxic” to humans, can have adverse effects on the environment.<sup>69</sup> Because the DEIR and PEA fail to identify the specific type of soil stabilizer that would be used at the Project site, it is impossible to evaluate the potentially significant adverse effects associated with the use of soil stabilizers at the Project site.

### Cumulative Impacts

#### Geographic Scope

The DEIR fails to clearly define the geographic scope of the CPUC’s cumulative impacts analysis. Specifically, the DEIR defines the geographic scope as: “[w]etlands and other waters, riparian habitat, sensitive natural communities, and other habitats within the Project vicinity that might support special-status species.”<sup>70</sup> This description is too vague to enable an independent assessment of cumulative impacts. In particular, because the DEIR fails to provide a precise description of the CPUC’s geographic scope of analysis, it is impossible to evaluate how many acres of habitat are within that geographic scope, and similarly, how many acres of habitat have been, or will be, impacted by past, present, and future projects. Consequently, the CPUC needs to quantify: (a) the geographic scope, (b) the total amount of each habitat type within the geographic scope, and (c) the total amount of each habitat type affected by cumulative impacts within that scope. Because the DEIR fails to provide this information, the CPUC has not provided substantial evidence to support its conclusion that the Project’s incremental contribution to cumulative effects would not be cumulatively considerable.

#### Analysis

Although the DEIR indicates the Project, in conjunction with other projects, *could* result in significant cumulative impacts to biological resources, it fails to provide any real or quantitative analysis of those cumulative impacts.<sup>71</sup> Instead, it simply jumps to the conclusion that all other projects would mitigate their contributions to biological resources impacts and thereby reduce cumulative impacts.<sup>72</sup> Specifically, the DEIR states:

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<sup>68</sup> DEIR, p. 2-27.

<sup>69</sup> US Army Corps of Engineers. 2007. Environmental Evaluation of Dust Stabilizer Products. Vicksburg, Miss: US Army Corps of Engineers, Engineer Research and Development Center, Environmental Laboratory. 58 pp.

<sup>70</sup> DEIR, Table 21-2.

<sup>71</sup> DEIR, p. 21-8.

<sup>72</sup> DEIR, p. 21-11.

Through BMPs, mitigation measures contained in this EIR as well as other CEQA documents for nearby projects, and compliance with permit conditions, projects in the region would mitigate their contributions to biological resources impacts and thereby reduce cumulative impacts.<sup>73</sup>

There are four fundamental flaws with the DEIR's analysis:

First, the DEIR concludes all other projects would reduce cumulative impacts. However, the DEIR fails to identify whether there still would be significant cumulative impacts to sensitive biological resources despite efforts to *reduce* them. That is, the DEIR fails to provide a determination on the significance of cumulative impacts.

Second, all but one of the projects (i.e., the "Caltrans Drainage Improvements" Project) contemplated in the DEIR are (or were) subject to NEPA—not CEQA. This is a fundamental flaw in the DEIR's analysis because the DEIR points to CEQA as evidence that the other projects would mitigate their impacts to biological resources. Unlike CEQA, NEPA regulations do not automatically require the lead agency to impose mitigation measures for an environmental impact. As a result, the CPUC's conclusion that the other projects contemplated in its analysis would mitigate their contributions to biological resources impacts is speculative and not supported by evidence.

Third, it is improperly speculative to assume that future projects will provide sufficient mitigation to ensure that there will be no cumulative impacts. Similarly, just because a past project mitigated impacts, and the lead agency concluded residual impacts were less than significant, does not mean that no impacts whatsoever arose from the project. The point of cumulative impact analysis is to determine whether impacts from various past and future projects that may have been individually deemed less than significant are, in fact, significant when looked at as a whole.

Fourth, the provision of mitigation for impacts to biological resources does not guarantee a less than significant project-level or cumulative impact. Indeed, several studies have demonstrated that most mitigation projects fail from a functional perspective, or are never implemented.<sup>74</sup> NEET West's proposal to impact mitigation land (i.e., the Lightner Mitigation Site)—which is supposed to be protected in perpetuity—exemplifies why the CPUC cannot point to mitigation measures incorporated into other CEQA documents as evidence that cumulative impacts would be insignificant.

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<sup>73</sup> DEIR, p. 21-11.

<sup>74</sup> Fiedler PL. 1991. Mitigation-related translocation, relocation and reintroduction projects involving endangered and threatened, and rare plant species in California. Final Report. Available at: [nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=3173](http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=3173). See also Ambrose RF. 2000. Wetland Mitigation in the United States: Assessing the Success of Mitigation Policies. *Wetlands (Australia)*, 19:1-27. See also United States General Accounting Office. 2001. Endangered Species Act: Fee-Based Mitigation Arrangements. GAO-01-287R Endangered Species Act Mitigation. p. 3.

## Consistency with Local Laws, Regulations, and Policies

The DEIR provides a discussion of local laws, regulations, and policies, because “they may inform the analysis and allow for full disclosure of potential impacts.”<sup>75</sup> However, the DEIR fails to discuss San Diego County’s Biological Mitigation Ordinance (“BMO”). Although the PEA briefly mentions the BMO, it incorrectly suggests the BMO applies only to the Multiple Species Conservation Program (“MSCP”), and that: “[c]ompliance with the BMO allows the County to issue Incidental Take Permits for projects that impact sensitive habitats.”<sup>76</sup> The purpose of the BMO is twofold: (1) to enable the County of San Diego to achieve the conservation goals set forth in the MSCP, and (2) to comply with CEQA.<sup>77</sup> Thus, the mitigation requirements established in the BMO apply not only to projects seeking coverage under the MSCP, but to all projects requiring a discretionary permit subject to CEQA.<sup>78</sup>

The proposed Project is not consistent with the provisions of the BMO. Most notably: (a) the proposed Project does not incorporate mitigation for impacts to all Tier I through Tier III vegetation communities, as established in the BMO, and (b) the proposed Project is not consistent with the Project Design Criteria established in the BMO.<sup>79</sup>

In addition to failing to discuss the BMO, the DEIR fails to discuss the Project’s consistency with the Planning Agreement for the East County MSCP Plan (“Planning Agreement”).<sup>80</sup> Whereas the CPUC is not a signatory on the Planning Agreement, the Project is located in a Focused Conservation Area, and construction of the Project may have implications on the East County MSCP conservation strategy.<sup>81</sup>

## MITIGATION

In order for CEQA mitigation measures to be effective, they must be specific, enforceable, and feasible actions that will improve environmental conditions. As described further in the subsequent sections, most of the mitigation measures proposed in the DEIR lack one or more of these components. Specifically, for most mitigation measures, the DEIR fails to establish one or more of the following: (a) the specific mitigation measures that would be implemented; (b) performance standards (or success

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<sup>75</sup> *Ibid.*

<sup>76</sup> PEA, p. 4.4-11.

<sup>77</sup> San Diego County Code, Title 8, Division 6, Chapter 5. Ordinance No. 10039 (N.S.), Sec. 86.501.

<sup>78</sup> *Ibid.* Sec. 86.501 and Sec. 86.502. *See also* County of San Diego, Department of Planning and Land Use, Land Use and Environment Group. 2010. Guidelines for Determining Significance for Biological Resources. Table 5.

<sup>79</sup> *Ibid.* Sec. 86.505 and Sec. 86.506.

<sup>80</sup> County of San Diego, California Department of Fish and Wildlife, and US Fish and Wildlife Service. 2014 [revised and amended]. Planning Agreement regarding the North and East County Multiple Species Conservation Program Plans: Natural Community Conservation Program Plans and Habitat Conservation Plans. Available at: <<http://www.sandiegocounty.gov/content/dam/sdc/pds/ceqa/Soitec-Documents/Final-EIR-Files/references/2014-05-12-Planning-Agreement-btw-County-USFWS-CDFW.pdf>>.

<sup>81</sup> *See* DEIR, Appendix C: Scoping Report. Comment Letter #2, p. 3.

criteria) for the proposed mitigation measures, (c) a definitive enforcement mechanism that ensures performance standards are met; (d) the contingency or remedial action measures that would be triggered if success standards are not achieved; (e) the measures that would be implemented to ensure the long-term protection and management of sensitive biological resources at mitigation sites; and (f) the required monitoring program, including the monitoring techniques, effort, and frequency. Because the DEIR lacks these fundamental details, the CPUC has not ensured Project impacts to sensitive biological resources would be reduced to a less than significant level.

#### **Mitigation Measure BIO-4 (Compensation for Special-Status Plants)**

The DEIR states: “[i]f avoidance of special-status plants is not feasible, NEET West shall implement measures to compensate for impacts on special-status plants.”<sup>82</sup> The DEIR fails to identify whether this includes avoidance of all activities that could indirectly affect special-status plants.

According to the DEIR:

Compensation may be provided by purchasing credits at an approved mitigation bank (provided at a minimum 1:1 ratio [mitigation to impact]), or through transplanting perennial species, collecting and dispersing seed of annual species, and other conservation strategies that shall restore and protect the viability of the local population.<sup>83</sup>

The DEIR fails to establish the process for determining the appropriate compensation ratio (i.e., when > 1:1 would be required). In addition, the DEIR fails to provide evidence that there are approved mitigation banks for impacts to felt-leaved monardella and the other special-status plant species that might be impacted by the Project.

Relocation, salvage, and transplantation are generally not accepted techniques for mitigating impacts to special-status plants.<sup>84</sup> Fiedler (1991) conducted a thorough review of mitigation-related transplantation, relocation and reintroduction attempts involving special-status plants in California.<sup>85</sup> Fiedler reported only 8 of the 53 (15%) attempts reviewed in her study should be considered fully successful.<sup>86</sup> Although Fiedler reported several causes for the failed attempts, the common result was that the plants died. Before making a conclusion on the ability to use transplantation as a technique to mitigate significant Project impacts, the CPUC must first provide evidence that potentially impacted plants can be transplanted and/or propagated successfully.

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<sup>82</sup> DEIR, p. 7-42.

<sup>83</sup> *Ibid.*

<sup>84</sup> DEIR, Appendix C: Scoping Report. Comment Letter #2, p. 8. *See also* California Native Plant Society. 1992. Policy on Appropriate Application of *Ex Situ* Conservation Techniques. Available at: <[http://www.cnps.org/cnps/archive/ex\\_situ.php](http://www.cnps.org/cnps/archive/ex_situ.php)>.

<sup>85</sup> Fiedler PL. 1991. Mitigation-related transplantation, relocation and reintroduction projects involving endangered and threatened, and rare plant species in California. Final Report. Available at: <[nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=3173](http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=3173)>.

<sup>86</sup> *Ibid.*

According to SWCA’s Biological Resources Technical Report (“BRTR”):

Plant establishment may be feasible for felt-leaved monardella because monardellas are normally easily propagated from seeds and other perennial monardella species have been successfully restored when they are restored to their native parent soil and carefully maintained in nurseries (Fiedler and Howald 1991; Schmidt 1980).<sup>87</sup>

The sources cited in the BRTR do not support SWCA’s statement that “other perennial monardella species have been successfully restored.” Fiedler (erroneously cited as Fiedler and Howald in the BRTR) reviewed only one monardella species (*M. linoides* ssp. *viminea*).<sup>88</sup> Efforts to transplant that species were unsuccessful.<sup>89</sup> Schmidt (1980) provides a limited discussion of perennial monardella species, but no actual evidence that they are “easily propagated from seeds” and restored.

According to the DEIR: “[t]he determination of success will be based on whether there has been a substantial reduction (> 20 percent) in the size or abundance of the population compared to baseline conditions.”<sup>90</sup> The DEIR fails to justify why a 20% decline in the population should be considered “success.” As a result, the proposed success criterion is not supported by evidence and appears to be arbitrary. Some of the special-status plants that could be impacted by the Project may already be at the minimum viable population size, meaning any impacts to the species would cause the population to drop below a sustainable level. In this case, impacts would be significant even after implementation of the CPUC’s proposed mitigation.

In addition to population size, the DEIR lists several variables that should be assessed during mitigation monitoring: vegetative density, natural recruitment, and plant health and vigor.<sup>91</sup> The DEIR fails to identify how these variables would relate to “success” of the mitigation efforts.

The DEIR requires five years of monitoring of the compensatory mitigation site. However, the DEIR fails to establish a mechanism (e.g., conservation easement) that would ensure the mitigation site is protected in perpetuity after monitoring terminates. In addition, the DEIR fails to establish a funding mechanism (e.g., endowment) that ensures appropriate management of the mitigation site in perpetuity.<sup>92</sup>

Due to the issues described above, the Project would have a potentially significant, unmitigated impact on special-status plants.

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<sup>87</sup> PEA, Appendix D: Biological Resources Technical Report, p. 54.

<sup>88</sup> Fiedler PL. 1991. Mitigation-related transplantation, relocation and reintroduction projects involving endangered and threatened, and rare plant species in California. Final Report. pp. 47 and 48.

<sup>89</sup> *Ibid*, Table 4.

<sup>90</sup> DEIR, p. 7-42.

<sup>91</sup> *Ibid*.

<sup>92</sup> Department of the Interior, Office of Policy Analysis. 2015. Department Manual, Part 600 (Public Land Policy), Chapter 6 (Implementing Mitigation at the Landscape-scale).

### **Mitigation Measure BIO-5 (Avoid Impacts on Nesting Birds)**

Mitigation Measure BIO-5 states:

Whenever possible, NEET West or their contractor(s) shall avoid impacts on native nesting birds by not initiating Proposed Project activities that involve clearing vegetation, generating mechanical noise, or ground disturbance during the typical breeding season from February 1 to August 31.<sup>93</sup>

The DEIR does not discuss what the CPUC considers “whenever possible,” or the circumstances that would make it impossible to avoid construction activities during the breeding season. This renders the proposed mitigation measure relatively meaningless. The DEIR should be revised to incorporate USFWS guidelines for avoiding potential take of migratory birds. Those guidelines state:

If a proposed project or action includes the potential for take of migratory birds and/or the loss or degradation of migratory bird habitat and work cannot occur outside the migratory bird nesting season (either the primary or maximum nesting season), project proponents will need to provide the USFWS with an explanation for why work has to occur during the migratory bird nesting season. Further, in these cases, project proponents also need to demonstrate that all efforts to complete work outside the migratory bird nesting season were attempted, and that the reasons work needs to be completed during the nesting season were beyond the proponent’s control.<sup>94</sup>

### **Mitigation Measure BIO-6 (Preconstruction Surveys for Birds)**

Mitigation Measure BIO-6 requires pre-construction bird surveys within a 500-foot radius of the construction area if construction begins between February 1 and August 31. If the biologist determines that the area surveyed does not contain any active nests, then construction activities may commence without any further mitigation.<sup>95</sup>

The DEIR does not define what should be considered an “active nest,” nor has a definition been established in California Fish and Game Code. In addition, the DEIR does not establish whether the 500-foot radius should be based on the slope distance or the horizontal distance.

The DEIR suggests a qualified biologist would conduct the nesting bird surveys, however, it fails to establish any minimum qualifications for that biologist. Indeed, the DEIR leaves it entirely up to NEET West or its contractor to ensure a “qualified

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<sup>93</sup> DEIR, p. 7-43.

<sup>94</sup> U.S. Fish and Wildlife Service, Migratory Bird Management. 2010. Suggested Priority of Migratory Bird Conservation Actions for Projects. p. 1.

<sup>95</sup> DEIR, p. 7-43.

biologist” conducts the nesting bird surveys.<sup>96</sup> Having NEET West or a construction contractor determine whether a biologist is qualified to conduct nesting bird surveys poses a conflict of interest and is not reliable mitigation. Nest finding is labor intensive and can be extremely difficult due to the tendency of many species to construct well-concealed or camouflaged nests.<sup>97</sup> As a result, it takes considerable experience for a biologist to be able to detect all bird nests, especially within a relatively large area. I have several years of experience conducting nest searches for research projects, and given that experience, it is my professional opinion that it would be impossible for a biologist to reliably detect all bird nests within a 500-foot radius of the Project site, especially given: (a) the nesting habits of the birds that occur in the Project area, (b) the density and vertical complexity of vegetation in the Project area, and (c) the terrain.

The DEIR fails to establish any minimum standards for the pre-construction nesting bird survey(s), including the acceptable: (a) survey techniques, (b) level of effort, (c) weather conditions, and (d) time of day for the surveys. This results in unreliable mitigation. For example, locating bird nests requires the biologist to implement a variety of search techniques (e.g., watching parental behavior, territory mapping, and systematically searching nesting substrates).<sup>98</sup> Because the DEIR does not require these techniques, the CPUC has not provided substantial evidence supporting its conclusion that Mitigation Measure BIO-6 would reduce impacts to nesting birds to a less than significant level.

### **Golden Eagle**

The DEIR concludes: “[i]mplementation of Mitigation Measures BIO-5 and BIO-6 would reduce the potential for noise impacts from blasting on nesting Golden Eagles to a level that is less than significant with mitigation.”<sup>99</sup> As described below, the mitigation proposed in the DEIR is insufficient to avoid the potential for incidental take of golden eagles.

First, golden eagles are most sensitive to human activity during the courtship and nest-building phase, which begins as early as December.<sup>100</sup> As a result, the DEIR’s proposal to limit pre-construction bird surveys to construction activities that are initiated between February 1 and August 31 is insufficient to avoid incidental take of golden eagles.

Second, the DEIR’s proposal for pre-construction bird surveys within a 500-foot radius of the construction area is inconsistent with USFWS guidelines. The USFWS indicates

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<sup>96</sup> *Ibid.*

<sup>97</sup> DeSante DF, GR Geupel. 1987. Landbird productivity in central coastal California: the relationship to annual rainfall and a reproductive failure in 1986. *Condor*. 89:636-653.

<sup>98</sup> Martin TE, GR Geupel. 1993. Nest-Monitoring Plots: Methods for Locating Nests and Monitoring Success. *J. Field Ornithol.* 64(4):507-519.

<sup>99</sup> DEIR, p. 7-44.

<sup>100</sup> Legal Protections for the Golden Eagle. 24 Jun 2015 email communication to Scott Cashen from Heather Beeler, Eagle Permit Coordinator, USFWS.

surveys should be conducted within two miles of a construction activity to locate any potential golden eagle nests.<sup>101</sup>

Third, the only standard the DEIR establishes for the bird surveys is that NEET West or its contractor should ensure the surveys are conducted by a “qualified biologist.” This is inconsistent with USFWS guidelines, which indicate golden eagle surveyors should have the equivalent of two seasons of intensive experience conducting survey and monitoring of golden eagle and/or cliff dwelling raptors.<sup>102</sup> Having NEET West or a construction contractor determine whether a biologist is qualified to conduct golden eagle surveys poses a conflict of interest and is not reliable mitigation.

Fourth, the DEIR fails to establish any standards for the survey methods other than they should be conducted no more than 14 days prior to construction. The USFWS has established inventory and monitoring protocols to avoid “take” of golden eagles during the construction and implementation of a project.<sup>103</sup> It is my professional opinion that unless these protocols are followed, the Project could result in “take,” as defined under the Eagle Act.

Finally, the DEIR fails to incorporate any mitigation for the direct, indirect, and cumulative loss of golden eagle foraging habitat. It is well known and documented that golden eagles avoid industrial facilities and other areas subject to frequent anthropogenic disturbance (e.g., due to noise and human activity). As a result, the proposed Project would functionally eliminate foraging habitat within an area several orders of magnitude larger than the Project footprint. Habitat loss (including the functional loss of habitat) in proximity to a golden eagle nest can result in decreased productivity or territory abandonment, which constitute “take” under the Eagle Act.

Due to the issues described above, the proposed Project could have a significant, unmitigated impact on golden eagles.

### **Mitigation Measures BIO-8 and BIO-9 (Hermes Copper Butterfly)**

Mitigation Measure BIO-8 requires a survey for Hermes copper butterfly habitat within the Project footprint prior to vegetation clearing. If Hermes copper habitat is mapped within the Project footprint and will be affected by Project activities, then Mitigation Measure BIO-9 shall be implemented.<sup>104</sup> Mitigation Measure BIO-9 states the following:

If areas mapped as Hermes Copper butterfly habitat are adversely affected by the Proposed Project, NEET West shall mitigate permanent impacts at a 1:1 ratio for unoccupied habitat and 3:1 ratio for occupied habitat.

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<sup>101</sup> *Ibid.*

<sup>102</sup> Pagel JE, DM Whittington, GT Allen. 2010 Feb. Interim Golden Eagle inventory and monitoring protocols; and other recommendations. Division of Migratory Birds, United States Fish and Wildlife Service. p. 18.

<sup>103</sup> *Ibid.*, p. 11.

<sup>104</sup> DEIR, p. 7-44.



Habitat should be considered occupied if it is within 150 meters of a Hermes copper sighting (County of San Diego 2010).<sup>105</sup>

Mitigation Measures BIO-8 and BIO-9 are insufficient to avoid and minimize potentially significant impacts to the Hermes copper butterfly.

First, the DEIR does not require focused surveys to determine presence of the Hermes copper butterfly if suitable habitat is detected within the Project footprint. As a result, there is no mechanism for determining occupancy, and thus, whether NEET West needs to provide compensatory mitigation at a 1:1 or 3:1 ratio.

Second, the DEIR fails to identify the ways in which NEET West would be required to mitigate permanent impacts (e.g., habitat enhancement, habitat restoration, habitat acquisition, purchase of credits at a mitigation bank, etc.).

Third, the proposed mitigation is too vague to ensure success. Specifically, the DEIR fails to establish: (a) any performance standards or success criteria for the mitigation site; (b) the timing habitat mitigation in relation to Project impacts; (c) monitoring and reporting requirements; and (d) a mechanism that ensures the long-term protection and management of the mitigation site.

Fourth, the DEIR fails to incorporate any mitigation for potentially significant indirect impacts to the Hermes copper butterfly and its habitat.

Due to the issues described above, the DEIR has not provided substantial evidence that the proposed mitigation would reduce Project impacts to the Hermes copper butterfly to a less than significant level.

### **Mitigation Measure BIO-16 (Restoration and Revegetation)**

Mitigation Measure BIO-16 requires NEET West to prepare a Restoration and Revegetation Plan. However, it fails to establish specific criteria critical to the success of the plan. For example, the DEIR fails to establish success criteria for the restoration and revegetation sites. Instead, it allows NEET West to establish the success criteria, without a mechanism that ensures whatever success criteria NEET West selects are appropriate.<sup>106</sup> In addition, the DEIR does not establish specific standards for the composition, distribution, and abundance of plants (or seeds) that are used for restoration and revegetation, nor does it require approval of NEET West's planting plan prior to implementation.<sup>107</sup> Although the DEIR states: "[t]he total area to be planted, and species composition, shall be tailored for each affected plant community based on existing standards and precedents," it fails to identify those standards and precedents.<sup>108</sup> The

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<sup>105</sup> DEIR, p. 7-45.

<sup>106</sup> DEIR, Appendix L: Mitigation Monitoring and Reporting Plan.

<sup>107</sup> *Ibid.*

<sup>108</sup> DEIR, p. 7-47.

DEIR's failure to establish specific standards for the Restoration and Revegetation Plan results in a mitigation measure of uncertain rigor and effectiveness. This issue is exacerbated for three reasons:

First, the DEIR defers development of the Restoration and Revegetation Plan until after the CEQA review process terminates. This precludes the public, resource agencies, and scientific community from being able to submit informed comments on the adequacy of plan and the actual mitigation that would be implemented. Moreover, because the DEIR does not require NEET West to prepare the plan until after Project impacts have occurred (i.e., "prior to completion of construction"), the CPUC would have no ability to rectify the impacts if NEET West's plan is inadequate. This would exacerbate environmental impacts, because as the DEIR acknowledges, revegetation activities need to be completed as soon as construction activities have been completed to minimize colonization of non-native weed species and ensure compliance with the Project's Stormwater Pollution Prevention Plan.<sup>109</sup>

Second, the DEIR fails to establish specific monitoring requirements for the restoration and revegetation activities undertaken to satisfy Mitigation Measure BIO-16. Indeed, the only information the DEIR provides is that (unspecified) monitoring should occur "following construction, during revegetation/restoration period."<sup>110</sup> This information is too vague to ensure effective mitigation. The DEIR must establish standards for the monitoring techniques, effort, frequency, and duration. The DEIR's failure to establish specific monitoring requirements is exacerbated because the DEIR does not impose remedial action measures that shall be implemented if success standards are not achieved.

Third, the Project would be completed before revegetation and restoration efforts could be deemed successful. However, the DEIR fails to establish a mechanism that guarantees success of the revegetation and restoration program. Typically, this entails a performance security that is large enough to complete the program or purchase other habitat in the event NEET West fails to successfully complete the work.

For these reasons, the DEIR lacks substantial evidence that Mitigation Measure BIO-16 would contribute to less-than-significant impacts to sensitive biological resources.

### **Mitigation Measure BIO-15 (Night Lighting)**

The DEIR concludes implementation of Mitigation Measure BIO-15 would reduce impacts of night lighting on special-status mammals and reptiles to a less than significant level.<sup>111</sup> Mitigation Measure BIO-15 requires NEET West or their contractor(s) to minimize construction night lighting on adjacent habitats. It further requires exterior lighting within the proposed Project area to be the lowest illumination allowed for human safety and security, and for lighting to be selectively placed, shielded, and directed

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<sup>109</sup> DEIR, p. 7-48.

<sup>110</sup> DEIR, Appendix L: Mitigation Monitoring and Reporting Plan.

<sup>111</sup> DEIR, p. 7-45.

downward to the maximum extent practicable.<sup>112</sup> There are two primary reasons why the CPUC does not have the basis for its conclusion that Mitigation Measure BIO-15 would reduce impacts to a less than significant level:

First, a substantial amount of night lighting is required for human safety during construction activities. Therefore, “minimizing” night lighting during construction does not necessarily mean impacts to wildlife would be less than significant. The DEIR does not disclose the amount of night lighting that would be generated during construction, nor does it provide any analysis supporting the conclusion that impacts to wildlife from residual lighting (i.e., after attempts to minimize lighting) would be insignificant.

Second, night lighting that is shielded and directed downward mitigates astronomical light pollution (i.e., whereby stars and other celestial bodies are washed out by light that is either directed or reflected upward); however, it does not mitigate ecological light pollution (i.e., artificial light that alters the natural patterns of light and dark in ecosystems).<sup>113</sup>

### **Mitigation Measure BIO-18 (Restoration Plan for Engelmann Oak)**

Mitigation Measure BIO-18 requires NEET West to develop and implement a restoration plan for Engelmann oak. With few exceptions, Mitigation Measure BIO-18 suffers the same flaws as those discussed previously for Mitigation Measure BIO-16.

The DEIR proposes compensatory mitigation at a 1.1:1 ratio (replacement to impact) for permanent Project impacts to the Engelmann Oak vegetation community. The proposed mitigation ratio does not comply with San Diego County’s Biological Mitigation Ordinance, which requires mitigation at a 2:1 or 3:1 ratio (depending on whether the mitigation site meets the criteria for a Biological Resource Core Area). In addition, because the DEIR fails to establish a mechanism that ensures the long-term protection and management of the mitigation site, there are no assurances that the compensatory mitigation site would mitigate impacts to Engelmann oak.

The DEIR’s proposed success criterion for Mitigation Measure BIO-18 is  $\geq 65\%$  survival of woody planting after five years.<sup>114</sup> There are several problems with the proposed success criterion. First, the proposed success criterion is infeasible. Research indicates optimal sites experience approximately 75% mortality of Engelmann oak plantings after one year, and that mortality at poor sites may be 100%.<sup>115</sup> Second, it is impossible to evaluate whether achieving the proposed success criterion would result in a successfully restored Engelmann Oak woodland without corresponding information on the number of plantings that would be installed at the mitigation site. Third, Mitigation Measure BIO-

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<sup>112</sup> DEIR, p. 7-47.

<sup>113</sup> Longcore T, C Rich. 2004. Ecological Light Pollution. *Frontiers in Ecology and the Environment* 2:191-198.

<sup>114</sup> DEIR, p. 7-48.

<sup>115</sup> St. John TV, T Scott. 1997. Small-Scale Planting of Engelmann Oak Trees. Available at: <<http://www.arroyoseco.org/eoplanting.htm>>.

18 does not require “woody plantings,” and thus, the proposed success criterion of  $\geq 65\%$  survival of “woody plantings” results in mitigation that is uncertain and unenforceable.

Due to the issues described above, the DEIR has not provided substantial evidence that the proposed mitigation would reduce Project impacts to the Engelmann Oak vegetation community to a less than significant level.

## **Other Mitigation Issues**

### **The DEIR Fails to Mitigate Impacts to the Lightner Mitigation Site**

The proposed Project would impact 0.4 acres of Chamise Chaparral within the Lightner Mitigation Site, which was acquired by SDG&E to mitigate impacts from the Sunrise Powerlink Project.<sup>116</sup> All lands within the Lightner Mitigation Site are supposed to be protected in perpetuity for resource conservation purposes. Any impacts to the Lightner Mitigation Site due to the proposed Project would violate the terms of the mitigation agreement and compromise SDGE’s ability to satisfy its various permit obligations.<sup>117</sup>

The County of San Diego has determined that compensatory mitigation is required for impacts to Chamise Chaparral.<sup>118</sup> In cases where impacts to sensitive vegetation communities occur on lands already in use as mitigation for other projects, the mitigation ratios shall be doubled, as is standard practice in San Diego County.<sup>119</sup> Incredibly, the DEIR fails to incorporate any compensatory mitigation for Project impacts to Chamise Chaparral within the Lightner Mitigation Site.

### **The DEIR Fails to Ensure the Project Mitigates Potentially Significant Impacts Associated with the Spread of Non-Native Plants**

The construction and operation of the Projects has the potential to facilitate the colonization and/or spread of non-native plant (weed) species. The spread of invasive weeds is threatening the health of riparian, forest, chaparral and grassland ecosystems on the Cleveland National Forest.<sup>120</sup> Non-native invasive weed species reduce native biological diversity, negatively impact threatened and endangered species, degrade wildlife habitat, modify vegetative structure and species composition, change fire and nutrient cycles, and degrade soil structure. As a result, the potential for the Project to

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<sup>116</sup> DEIR, p. 13-4 and Table 7-1.

<sup>117</sup> San Diego Gas & Electric. 2011. Final Habitat Mitigation and Monitoring Plan: Lightner Mitigation Site, Sunrise Powerlink.

<sup>118</sup> County of San Diego, Department of Planning and Land Use, Land Use and Environment Group. 2010. Guidelines for Determining Significance for Biological Resources. Table 5.

<sup>119</sup> USDA Forest Service. 2010. Record of Decision: Sunrise Powerlink Project. Forest Service Clarifications and Revisions to Mitigation Measures. p. 2. Available at: <[http://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5320679.pdf](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5320679.pdf)>

<sup>120</sup> USDA Forest Service, Cleveland National Forest. 2014. Invasive Weed Management on the Cleveland National Forest: Environmental Assessment. Decision Notice and Finding of No Significant Impact. Available at: <<http://www.fs.usda.gov/project/?project=41607>>.

facilitate the colonization and/or spread of non-native plant species is a potentially significant impact.

The DEIR does not require NEET West to prepare and implement a weed control plan, or even to monitor the Project site for new weed infestations. Although Mitigation Measure BIO-16 suggests NEET West's Restoration and Revegetation Plan would eliminate non-native and invasive species, the DEIR fails to incorporate any specific, enforceable measures that ensure weed control measures are implemented and successful. As a result, the Project would result in a potentially significant, unmitigated impact to biological resource due the spread of non-native plant species.

## **CONCLUSION**

Due to the issues discussed above, the Project would have significant impacts on sensitive biological resources. The DEIR that was prepared for the Project does not adequately disclose and analyze those impacts, nor does it provide the mitigation necessary to ensure impacts are reduced to less than significant levels.

Sincerely,



Scott Cashen, M.S.  
Senior Biologist

**Scott Cashen, M.S.**  
**Senior Biologist / Forest Ecologist**

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Scott Cashen has 20 years of professional experience in natural resources management. During that time he has worked as a field biologist, forester, environmental consultant, and instructor of Wildlife Management. Mr. Cashen currently operates an independent consulting business that focuses on CEQA/NEPA compliance issues, endangered species, scientific field studies, and other topics that require a high level of scientific expertise.

Mr. Cashen has knowledge and experience with many taxa, biological resource issues, and environmental regulations. This knowledge and experience has made him a highly sought after biological resources expert. To date, he has been retained as a biological resources expert for over 40 projects. Mr. Cashen's role in this capacity has encompassed all stages of the environmental review process, from initial document review through litigation support and expert witness testimony.

Mr. Cashen is a recognized expert on the environmental impacts of renewable energy development. He has been involved in the environmental review process for 28 renewable energy projects, and he has been a biological resources expert for more of California's solar energy projects than any other private consultant. In 2010, Mr. Cashen testified on 5 of the Department of the Interior's "Top 6 Fast-tracked Solar Projects" and his testimony influenced the outcome of each of these projects.

Mr. Cashen is a versatile scientist capable of addressing numerous aspects of natural resource management simultaneously. Because of Mr. Cashen's expertise in both forestry and biology, Calfire had him prepare the biological resource assessments for all of its fuels treatment projects in Riverside and San Diego Counties following the 2003 Cedar Fire. Mr. Cashen has led field studies on several special-status species, including plants, fish, reptiles, amphibians, birds, and mammals. Mr. Cashen has been the technical editor of several resource management documents, and his strong scientific writing skills have enabled him to secure grant funding for several clients.

**AREAS OF EXPERTISE**

- CEQA, NEPA, and Endangered Species Act compliance issues
- Comprehensive biological resource assessments
- Endangered species management
- Renewable energy
- Forest fuels reduction and timber harvesting
- Scientific field studies, grant writing and technical editing

**EDUCATION**

M.S. Wildlife and Fisheries Science - The Pennsylvania State University (1998)  
B.S. Resource Management - The University of California, Berkeley (1992)

## **PROFESSIONAL EXPERIENCE**

### **Litigation Support / Expert Witness**

As a biological resources expert, Mr. Cashen reviews CEQA/NEPA documents and provides his client(s) with an assessment of biological resource issues. He then prepares written comments on the scientific and legal adequacy of the project's environmental documents (e.g., EIR). For projects requiring California Energy Commission (CEC) approval, Mr. Cashen has submitted written testimony (opening and rebuttal) in conjunction with oral testimony before the CEC.

Mr. Cashen can lead field studies to generate evidence for legal testimony, and he can incorporate testimony from his deep network of species-specific experts. Mr. Cashen's clients have included law firms, non-profit organizations, and citizen groups.

### **REPRESENTATIVE EXPERIENCE**

#### **Solar Energy Facilities**

- Abengoa Mojave Solar Project
- Avenal Energy Power Plant
- Beacon Solar Energy Project
- Blythe Solar Power Project
- Calico Solar Project
- Calipatria Solar Farm II
- Carrizo Energy Solar Farm
- Catalina Renewable Energy Project
- Fink Road Solar Farm
- Genesis Solar Energy Project
- Heber Solar Energy Facility
- Imperial Valley Solar Project
- Ivanpah Solar Electric Generating
- Maricopa Sun Solar Complex
- Mt. Signal and Calexico Solar
- San Joaquin Solar I & II
- Solar Gen II Projects
- SR Solis Oro Loma
- Vestal Solar Facilities
- Victorville 2 Power Project

#### **Geothermal Energy Facilities**

- East Brawley Geothermal
- Mammoth Pacific 1 Replacement
- Western GeoPower Plant and

#### **Wind Energy Facilities**

- Catalina Renewable Energy Project
- Ocotillo Express Wind Energy
- San Diego County Wind Ordinance
- Tres Vaqueros Repowering Project
- Vasco Winds Relicensing Project

#### **Biomass Facilities**

- Tracy Green Energy Project

#### **Development Projects**

- Alves Ranch
- Aviano
- Chula Vista Bayfront Master Plan
- Columbus Salame
- Concord Naval Weapons Station
- Faria Annexation
- Live Oak Master Plan
- Napa Pipe
- Roddy Ranch
- Rollingwood
- Sprint-Nextel Tower

## **Project Management**

Mr. Cashen has managed several large-scale wildlife, forestry, and natural resource management projects. Many of these projects have required hiring and training field crews, coordinating with other professionals, and communicating with project stakeholders. Mr. Cashen's experience in study design, data collection, and scientific writing make him an effective project manager, and his background in several different natural resource disciplines enable him to address the many facets of contemporary land management in a cost-effective manner.

### REPRESENTATIVE EXPERIENCE

#### *Wildlife Studies*

- Peninsular Bighorn Sheep Resource Use and Behavior Study: (*CA State Parks*)
- "KV" Spotted Owl and Northern Goshawk Inventory: (*USFS, Plumas NF*)
- Amphibian Inventory Project: (*USFS, Plumas NF*)
- San Mateo Creek Steelhead Restoration Project: (*Trout Unlimited and CA Coastal Conservancy, Orange County*)
- Delta Meadows State Park Special-status Species Inventory: (*CA State Parks, Locke*)

#### *Natural Resources Management*

- Mather Lake Resource Management Study and Plan – (*Sacramento County*)
- Placer County Vernal Pool Study – (*Placer County*)
- Weidemann Ranch Mitigation Project – (*Toll Brothers, Inc., San Ramon*)
- Ion Communities Biological Resource Assessments – (*Ion Communities, Riverside and San Bernardino Counties*)
- Del Rio Hills Biological Resource Assessment – (*The Wyro Company, Rio Vista*)

#### *Forestry*

- Forest Health Improvement Projects – (*CalFire, SD and Riverside Counties*)
- San Diego Bark Beetle Tree Removal Project – (*SDG&E, San Diego Co.*)
- San Diego Bark Beetle Tree Removal Project – (*San Diego County/NRCS*)
- Hillslope Monitoring Project – (*CalFire, throughout California*)



## Biological Resources

Mr. Cashen has a diverse background with biological resources. He has conducted comprehensive biological resource assessments, habitat evaluations, species inventories, and scientific peer review. Mr. Cashen has led investigations on several special-status species, including ones focusing on the foothill yellow-legged frog, mountain yellow-legged frog, desert tortoise, steelhead, burrowing owl, California spotted owl, northern goshawk, willow flycatcher, Peninsular bighorn sheep, red panda, and forest carnivores.

### REPRESENTATIVE EXPERIENCE

#### *Avian*

- Study design and Lead Investigator - Delta Meadows State Park Special-Status Species Inventory (*CA State Parks: Locke*)
- Study design and lead bird surveyor - Placer County Vernal Pool Study (*Placer County: throughout Placer County*)
- Surveyor - Willow flycatcher habitat mapping (*USFS: Plumas NF*)
- Independent surveyor - Tolay Creek, Cullinan Ranch, and Guadacanal Village restoration projects (*Ducks Unlimited/USGS: San Pablo Bay*)
- Study design and Lead Investigator - Bird use of restored wetlands research (*Pennsylvania Game Commission: throughout Pennsylvania*)
- Study design and surveyor - Baseline inventory of bird species at a 400-acre site in Napa County (*HCV Associates: Napa*)
- Surveyor - Baseline inventory of bird abundance following diesel spill (*LFR Levine-Fricke: Suisun Bay*)
- Study design and lead bird surveyor - Green Valley Creek Riparian Restoration Site (*City of Fairfield: Fairfield, CA*)
- Surveyor - Burrowing owl relocation and monitoring (*US Navy: Dixon, CA*)
- Surveyor - Pre-construction raptor and burrowing owl surveys (*various clients and locations*)
- Surveyor - Backcountry bird inventory (*National Park Service: Eagle, Alaska*)
- Lead surveyor - Tidal salt marsh bird surveys (*Point Reyes Bird Observatory: throughout Bay Area*)
- Surveyor - Pre-construction surveys for nesting birds (*various clients and locations*)

#### *Amphibian*

- Crew Leader - Red-legged frog, foothill yellow-legged frog, and mountain yellow-legged frog surveys (*USFS: Plumas NF*)

- Surveyor - Foothill yellow-legged frog surveys (*PG&E: North Fork Feather River*)
- Surveyor - Mountain yellow-legged frog surveys (*El Dorado Irrigation District: Desolation Wilderness*)
- Crew Leader - Bullfrog eradication (*Trout Unlimited: Cleveland NF*)

#### *Fish and Aquatic Resources*

- Surveyor - Hardhead minnow and other fish surveys (*USFS: Plumas NF*)
- Surveyor - Weber Creek aquatic habitat mapping (*El Dorado Irrigation District: Placerville, CA*)
- Surveyor - Green Valley Creek aquatic habitat mapping (*City of Fairfield: Fairfield, CA*)
- GPS Specialist - Salmonid spawning habitat mapping (*CDFG: Sacramento River*)
- Surveyor - Fish composition and abundance study (*PG&E: Upper North Fork Feather River and Lake Almanor*)
- Crew Leader - Surveys of steelhead abundance and habitat use (*CA Coastal Conservancy: Gualala River estuary*)
- Crew Leader - Exotic species identification and eradication (*Trout Unlimited: Cleveland NF*)

#### *Mammals*

- Principal Investigator – Peninsular bighorn sheep resource use and behavior study (*California State Parks: Freeman Properties*)
- Scientific Advisor – Study on red panda occupancy and abundance in eastern Nepal (*The Red Panda Network: CA and Nepal*)
- Surveyor - Forest carnivore surveys (*University of CA: Tahoe NF*)
- Surveyor - Relocation and monitoring of salt marsh harvest mice and other small mammals (*US Navy: Skagg's Island, CA*)
- Surveyor – Surveys for Monterey dusky-footed woodrat. Relocation of woodrat houses (*Touré Associates: Prunedale*)

#### *Natural Resource Investigations / Multiple Species Studies*

- Scientific Review Team Member – Member of the science review team assessing the effectiveness of the US Forest Service's implementation of the Herger-Feinstein Quincy Library Group Act.
- Lead Consultant - Baseline biological resource assessments and habitat mapping for CDF management units (*CDF: San Diego, San Bernardino, and Riverside Counties*)

- Biological Resources Expert – Peer review of CEQA/NEPA documents (*Adams Broadwell Joseph & Cardoza: California*)
- Lead Consultant - Pre- and post-harvest biological resource assessments of tree removal sites (*SDG&E: San Diego County*)
- Crew Leader - T&E species habitat evaluations for Biological Assessment in support of a steelhead restoration plan (*Trout Unlimited: Cleveland NF*)
- Lead Investigator - Resource Management Study and Plan for Mather Lake Regional Park (*County of Sacramento: Sacramento, CA*)
- Lead Investigator - Biological Resources Assessment for 1,070-acre Alfaro Ranch property (*Yuba County, CA*)
- Lead Investigator - Wildlife Strike Hazard Management Plan (*HCV Associates: Napa*)
- Lead Investigator - Del Rio Hills Biological Resource Assessment (*The Wyro Company: Rio Vista, CA*)
- Lead Investigator – Ion Communities project sites (*Ion Communities: Riverside and San Bernardino Counties*)
- Surveyor – Tahoe Pilot Project: Validation of California’s Wildlife Habitat Relationships (CWHR) Model (*University of California: Tahoe NF*)

## **Forestry**

Mr. Cashen has five years of experience working as a consulting forester on projects throughout California. Mr. Cashen has consulted with landowners and timber operators on forest management practices; and he has worked on a variety of forestry tasks including selective tree marking, forest inventory, harvest layout, erosion control, and supervision of logging operations. Mr. Cashen’s experience with many different natural resources enable him to provide a holistic approach to forest management, rather than just management of timber resources.

### REPRESENTATIVE EXPERIENCE

- Lead Consultant - CalFire fuels treatment projects (*SD and Riverside Counties*)
- Lead Consultant and supervisor of harvest activities – San Diego Gas and Electric Bark Beetle Tree Removal Project (*San Diego*)
- Crew Leader - Hillslope Monitoring Program (*CalFire: throughout California*)
- Consulting Forester – Forest inventories and timber harvest projects (*various clients throughout California*)

## **Grant Writing and Technical Editing**

Mr. Cashen has prepared and submitted over 50 proposals and grant applications. Many of the projects listed herein were acquired through proposals he wrote. Mr. Cashen's clients and colleagues have recognized his strong scientific writing skills and ability to generate technically superior proposal packages. Consequently, he routinely prepares funding applications and conducts technical editing for various clients.

### **PERMITS**

U.S. Fish and Wildlife Service Section 10(a)(1)(A) Recovery Permit for the Peninsular bighorn sheep

CA Department of Fish and Game Scientific Collecting Permit

### **PROFESSIONAL ORGANIZATIONS / ASSOCIATIONS**

The Wildlife Society (Conservation Affairs Committee member)

Cal Alumni Foresters

Mt. Diablo Audubon Society

### **OTHER AFFILIATIONS**

Scientific Advisor and Grant Writer – *The Red Panda Network*

Scientific Advisor – *Mt. Diablo Audubon Society*

Grant Writer – *American Conservation Experience*

Scientific Advisor and Land Committee Member – *Save Mt. Diablo*

### **TEACHING EXPERIENCE**

Instructor: Wildlife Management - The Pennsylvania State University, 1998

Teaching Assistant: Ornithology - The Pennsylvania State University, 1996-1997

**ATTACHMENT**