

California Native Plant Society

East Bay Chapter

P O Box 5597, Elmwood Station. Berkeley, CA 94705

Weyman Lee, P.E.
Senior Air Quality Engineer
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

April 9, 2009

Dear Mr. Lee:

The East Bay Chapter of the California Native Plant Society has seen the report of the results of the nitrogen deposition modeling performed for Calpine for its Russell City Energy Center entitled Depositional Modeling Results from the Russell City Energy Center Operation [to] Critical Habitat Areas. We have reviewed this report and wish to communicate some of our findings.

There are rather large errors of assumption regarding the characterization of the sensitive areas of impact that were modeled. In the report the consultant states, "Each EBRP critical habitat was assigned a unique vegetative land use type. With the exception of the Hayward Regional Shoreline, the EBRPD critical habitat areas are in forested hillsides...etc." (page 9). In point of fact, two of the four areas modeled for critical habitat types have been mischaracterized.

On page 10, under Land Use, Redwood Park is characterized as "Forest" and its Vegetation State as "Active and Unstressed." On page 11 in Tables 1 and 2 which display the results of the two different models used, Redwood Park is once again identified as "forest." Although there are large areas of redwood forest in Redwood Regional Park (hence its name), the critical habitat under question, the Serpentine Prairie, is grassland (hence the name, "prairie"). By definition, serpentine plant communities are exceedingly stressed environments. They comprise important and protected rare plant communities. The Serpentine Prairie is a small remnant of the Crestmont serpentine in the Oakland hills. Furthermore, the Presidio clarkia (*Clarkia franciscana*), a federally endangered plant species, occurs only on serpentine grassland. In fact, the population at the Serpentine Prairie is one of only two in the world (the other is located at the Presidio in San Francisco).

In the case of Garin/Dry Creek/ Pioneer Regional Park, its Land Use is characterized as Forrest [sic] and Rangeland. Portions of the Dry Creek watershed provide habitat for the listed species of Red-legged frog (*Rana draytonii*), and portions of the park provide habitat for the listed California Tiger Salamander (*Ambystoma californiense*). In the case of both these species, the impacts of nitrogen deposition would most likely be more important to aquatic vegetation in the wetland habitats where they breed and develop. While the salamander uses ground squirrel burrows in rangeland for aestivation, the most significant impact that nitrogen deposition would have is upon the amount of vegetation in the ponds in which it breeds. Research done by the East Bay Regional Park District



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(Bobzien and DiDonato, 2007) has shown a positive association between the number of salamanders in ponds and the absence of vegetation: hence the impact in question would be whether nitrogen deposition would fertilize aquatic vegetation, increasing plant cover and degrading the habitat for the salamander. Red-legged frogs appear to have a more complex association with aquatic vegetation and can be found in more diverse wetland habitats. In order to model correctly for the impacts to the critical habitats of these species, the consultant would have had to possess some fundamental understanding of what constitutes critical habitat for each species and how nitrogen deposition could potentially have impacts upon that habitat. It should be noted here that nitrogen deposition could well have an impact on rangeland by fertilizing *Lolium multiflorum*, Italian ryegrass, since that species has become dominant in many grasslands in the East Bay Regional Parks (see Hopkinson, et al. 2008). This, in turn, would tend to degrade the native plant habitat. Since the East Bay Hills experiences heavy nitrogen loads from other sources, including vehicle emissions, additional nitrogen deposition could add to the cumulative impacts.

These basic aspects of the natural history of the listed species and their habitats described above should have been obvious and well known to the consultant. Furthermore, these types of errors should have been caught by the US Fish and Wildlife Service (which is a listing agency and which wrote a Biological Opinion regarding the clarkia for the East Bay Regional Park District for its fuels management activities at the Serpentine Prairie), the California Department of Fish and Game (also a listing agency), and the East Bay Regional Park District which manages these parks. One must conclude that no one consulted with any of these regulatory agencies to crosscheck for accuracy or simply to keep them informed. If true, this type of significant gap in the information flow can be considered typical of the entire environmental review process for the Russell City Energy Center. In our letter of comment to BAAQMD of February 6, 2009, we commented on the lack of coordination among key regulatory agencies in the environmental review process (see page 2 under The Procedural Context.)

We believe that this type of major error in assumption results from a lack of understanding of the actual environment on the part of modelers who are operating computer programs rather than observing real world environments. Our letter of comment to BAAQMD of February 6, 2009 called out the problems inherent in the modeling process in which computer simulations are being utilized almost exclusively to describe and predict impacts. Without an understanding of the specific characteristics of each site, the inputs into the modeling are bound to contain errors of large significance. In that letter, we stated under the heading, The Scientific Context: Quality of Analysis, *“In order for the public to be reassured (and for BAAQMD to prove) that the agency has done its job of protecting sensitive receptors (including human beings and sensitive natural resources) from the impacts of air emissions from RCEC, there has to be some connection made between conclusions drawn from computer modeling and the real world context where impacts would be made.”* At the very least, visits should be made by knowledgeable experts to every site being modeled, if only to screen for gross error.



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Beyond that, it is critical to identify data gaps that could reasonably be considered to bear upon the impact under consideration. In the case of nitrogen deposition, one notable set of data gaps is whether and at what level deposited nitrogen fertilizes the highly invasive *Spartina alterniflora*, the non-native cordgrass at Hayward Regional Shoreline. This data gap may not be trivial since *Spartina alterniflora* is a significant threat to the salt marsh which is habitat for the federal and state listed species. The Invasive Spartina Project, a multi-agency group, has spent large sums of public funds in its attempts to eradicate the invasive grass from salt marsh communities around San Francisco Bay, including Hayward Regional Shoreline. In this case, it is reasonable to monitor for current levels of nitrogen deposition at the marsh, given its proximity to the heavy vehicle traffic and associated NOx emissions on Highway 92, to determine whether RCEC's contribution of nitrogen would bring the total nitrogen load to critical levels involving impact. At Edgewood Park in San Mateo County, Weiss found that NOx emissions from Highway 280 had contributed to the rise in *Lolium multiflorum* plant cover, which had a direct and negative impact on the host plant of the federally listed Bay Checkerspot butterfly (Weiss, 1999).

Finally, we also note once again the insufficiency of data regarding chronic impacts from emissions of known carcinogenic and toxic compounds to listed species in Hayward Regional Shoreline. In this case the models use the incongruous assumption of one-year exposure, when the presumed lifetime of the power plant is decades. In addition, we note that modeling for impacts from toxic compounds does not take into account background levels and cumulative effects. As we pointed out in our letter of comment, questions raised regarding air quality impacts to the sensitive species at the marsh were raised by the East Bay Regional Park District as far back as 2001, and at that time there was a formal request by the Park District of EPA to initiate a consultation for a full Biological Opinion regarding these impacts.

There is nothing in the public record that contains any data to form a basis for determination of why a formal BO was not undertaken. What *is* in the public record is correspondence between the EPA and FWS in which EPA concludes that "Based upon our review of the analysis [by the consultant], we believe that the project will not adversely affect the special status species which have the potential to occur in the area" (Gerardo Rios to Ryan Olah, June 11, 2007)" In response FWS states, "Based on our review of the information provided with your request, we concur with your determination that the proposed action is not likely to adversely affect any federally listed species under our administration." (Jim Browning to Emmanuelle Rapicavoli November 7, 2007). The analysis conducted by the consultant for the new site is completely silent on the subject of air quality impacts of emissions to any of these federally listed species. In other words, the decision not to require a full BO that would address air quality impacts to listed species appears to have been based on *no information* at all. If there are sources of data that were produced for the purpose of review, it is critical that these be released to the public immediately.

The absence of data that would support a decision not to pursue a full Biological Opinion is perhaps the most serious and egregious of oversights. We mention this because it is



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important to note as BAAQMD goes forward with its air quality review of the project, that the District is not in a position to claim, based on the information presented thus far, that air quality impacts from emissions of RCEC will not harm the environment.

It is not clear whether BAAQMD intends to respond in writing to the issues that commenters have raised during its permit review process. The entire environmental review process involving approval of new power plants and their required permits is supposed to be CEQA- equivalent, and response in writing is a requirement of CEQA. We remain hopeful that the Air District will acknowledge the important questions raised by commenters and address them fully.

If you have any questions, please do not hesitate to call (510-849-1409).

Sincerely,

Laura Baker, M.A. Ecology and Systematic Biology
Conservation Committee Chair
East Bay Chapter of the California Native Plant Society

CITATIONS

Bobzien, Steven and Joseph E. DiDonato, 2007. The Status of California Tiger Salamander (*Ambystoma californiense*), California Red-legged Frog (*Rana draytonii*), Foothill Yellow-legged Frog (*Rana boylei*), and other Aquatic Herpetofauna in the East Bay Regional Park District, California. East Bay Regional Park District, 2950 Peralta Oaks Court, PO Box 5381, Oakland, CA 94605.

Hopkinson, Pete, Matt Stevenson, Michele Hammond, Sasha Gennet, Devii Rao, and James W. Bartolome. 2008. Italian Ryegrass: A New Central Coast Dominant? *Fremontia* Vol. 36:1 pp. 20-24.

Weiss, S.B. 1999. Cars, cows, and checkerspot butterflies: nitrogen deposition and management of nutrient-poor grasslands for a threatened species. *Conservation Biology* 13: 1476-1486,



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FW notes regarding nitrogen deposition modeling for RCEC.txt

-----Original Message-----

From: Lbake66@aol.com [mailto:Lbake66@aol.com]

Sent: Thursday, April 09, 2009 3:21 PM

To: Weyman Lee

Cc: Lee.anita@epa.gov; Ryan_Olah@fws.gov; James_Browning@fws.gov; Itong@ebrpd.org; mgrefsrud@dfg.ca.gov

Subject: notes regarding nitrogen deposition modeling for RCEC

Dear Weyman:

Attached are notes that the East Bay Chapter of the California Native Plant Society has prepared regarding the nitrogen deposition modeling done for Calpine's Russell City Energy Center.

Please feel free to call me if you have any questions (510-849-1409).

Best regards,

Laura Baker

Conservation Committee Chair

East Bay Chapter of the California Native Plant Society

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