



## United States Department of the Interior



### FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office  
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Sacramento, California 95825-1846

In Reply Refer To:  
81420-2011-TA-0173

JUN 29 2011

Mr. Jared Blumenfeld  
Regional Administrator, Region 9  
U. S. Environmental Protection Agency  
75 Hawthorne Street  
San Francisco, California 94105-3901

Subject: Effects of Nitrogen Deposition at Antioch Dunes National Wildlife Refuge  
Resulting from Existing and Proposed Power Generating Stations in Contra Costa  
County, California

Dear Mr. Blumenfeld:

This letter conveys the U.S. Fish and Wildlife Service's (Service) concerns regarding the effects of nitrogen deposition from existing and proposed power generating stations located in Contra Costa County, California, on federally listed species at the Antioch Dunes National Wildlife Refuge (ADNWR). At issue are the potential adverse effects of the operational Gateway Generating Station (GGS), the proposed Marsh Landing Generating Station (MLGS), and the proposed Oakley Generating Station (OGS) on the endangered Lange's metalmark butterfly (*Apodemia mormo langei*), endangered Contra Costa wallflower (*Erysimum capitatum* var. *angustatum*), endangered Antioch Dunes evening primrose (*Oenothera deltooides* ssp. *howellii*), and designated critical habitat for these two listed plants. This letter is issued under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*)(Act).

The Lange's metalmark butterfly, the Contra Costa wallflower, and the Antioch Dunes evening primrose occur almost exclusively on the ADNWR. The primary threat to these species is the overgrowth of non-native plant species that displace the wallflower, primrose, and host plants and nectar sources for the Lange's metalmark butterfly. The GGS and the proposed MLGS and OGS are all located less than two miles from the ADNWR and operation of these power generating stations will result in the deposition of nitrogen at ADNWR. Nitrogen deposition is known to exacerbate the growth of non-native weeds; these effects are particularly problematic in nitrogen deficient habitats, such as the sand dunes at ADNWR, where changes in plant and microbial communities resulting from increased nitrogen deposition can result in cascading negative effects on the ecosystem processes and the species that depend upon the native plant community.

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The Service is concerned that the indirect and cumulative effects of the deposition of additional nitrogen at ADNWR resulting from operation of these power generating stations will result in adverse effects to the Contra Costa wallflower and the Antioch Dunes evening primrose and their critical habitat and in take of the Lange's metalmark butterfly. Adverse effects to the Lange's metalmark butterfly are of particular concern. The status of this species has declined dramatically in the last few years and because the ADNWR supports the only existing population of Lange's metalmark butterfly, any adverse effects to habitat at ADNWR may place the butterfly in danger of extinction in the foreseeable future.

### **Gateway Generating Station**

On May 30, 2001, the U.S. Environmental Protection Agency (EPA) requested informal consultation with the Service on the addition of a 30 megawatt natural gas fired combination combustion turbine, that is now referred to as the GGS, to the existing Contra Costa Power Plant. On June 29, 2001, the Service concurred that aside from the potential adverse effects of the existing cooling water intake system on the threatened delta smelt (*Hypomesus transpacificus*) and the formerly threatened Sacramento splittail (*Pogonichthys macrolepidotus*), both of which were addressed in a section 7 consultation with the U.S. Army Corps of Engineers, the installation of the new turbine was not likely to adversely affect listed species.

However, although the consultation process for the GGS was concluded in 2001, this facility apparently did not become operational until 2009. It is our understanding that, because of the lapse in time between the EPA's issuance of a Prevention of Significant Deterioration permit to Pacific Gas and Electric (PG&E) for GGS and the construction and operation of the GGS facility, your agency and PG&E recently entered into a settlement agreement to impose emission limits on GGS consistent with current standards. Although this agreement will impose emission limits on nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>) and particulate matter that are thought to represent what the result of a new permitting process with the EPA would be, the Service was not consulted regarding the effects of these emissions on listed species.

New scientific information relating to the adverse effects of nitrogen deposition on listed species and natural ecosystems has become available since 2001 when the original permits were issued, and consultation with the Service was concluded. Based on current scientific literature, a baseline nitrogen deposition value of 5 kilograms per hectare (kg/ha/yr) recently has been recognized as the level above which effects of nitrogen deposition should be analyzed (Weiss 2006, California Energy Commission 2010). According to the best available estimates for the ADNWR area, that are based on 2002 data, the baseline nitrogen deposition is thought to be approximately 6.39 kg/ha/yr (Tonneson *et al.* 2007). This already exceeds the 5 kg/ha/yr threshold above which nitrogen deposition can result in adverse impacts to native plant communities. Although the amount of nitrogen deposition at ADNWR resulting from operation of GGS has not been modeled, it is reasonable to assume that based on the location, type of generating station, and amount of power to be generated by GGS, the amount of nitrogen deposition at ADNWR is similar to the amount estimated for MLGS and OGS and described below. Based on the current scientific literature available, it is the Service's opinion that the

deposition of this amount of nitrogen deposition at ADNWR is likely to result in adverse effects to the Contra Costa wallflower, the Antioch Dunes evening primrose, and in take of the Lange's metalmark butterfly.

### **Marsh Landing Generating Station**

The California Energy Commission (CEC) is the primary state and local permitting authority for new power plants in California. Based on the CEC's final staff assessment for MLGS, the facility is predicted to result in an estimated 0.04 kg/ha/yr of additional nitrogen deposition to current baseline levels at ADNWR. On August 17, 2010, the Service submitted a letter to the CEC, conveying our concerns that the deposition of this amount of nitrogen at ADNWR would result in adverse effects to federally listed species and recommending that the applicant seek authorization for incidental take of the Lange's metalmark butterfly pursuant to either section 7 or 10(a) of the Act. We stated that should a Federal agency be involved with the permitting, funding, or carrying out of the project, that agency should initiate formal consultation with the Service pursuant to section 7 of the Act. If a Federal agency was not involved, we recommended an incidental take permit pursuant to section 10(a)(1)(B) of the Act be obtained. On August 25, 2010, the CEC issued Mirant Energy a Certificate to Construct and Operate the proposed MLGS. Although the CEC's conditions for certification for MLGS included a nominal annual payment to ADNWR for weed removal in order to mitigate for the effects of nitrogen deposition at ADNWR, the CEC did not recommend consultation with the Service and noted that section 7 of the Act would not apply because section 7 does not apply "to activities simply approved by state agencies, as we approve MLGS here". However, it is the Service's understanding that the EPA has delegated regional implementation of the Federal Clean Air Act to the Bay Area Air Quality Management District (BAAQMD) and that based on the CEC's environmental analysis, the BAAQMD issued an Authority to Construct permit for MLGS on August 31, 2010. Irrespective of the need for authorization of incidental take, we are concerned the payment of minimal funding will not, by itself, adequately compensate for the adverse effects of the project to listed species.

### **Oakley Generating Station**

Based on the CEC's final staff assessment for OGS, the facility is predicted to result in an estimated 0.083 kg/ha/yr of additional nitrogen deposition to current baseline levels at ADNWR. The Service submitted comment letters to the CEC on October 13, 2010, February 14, 2011, and April 28, 2011, conveying our concerns that the deposition of nitrogen at ADNWR would result in adverse effects to federally listed species, recommending the applicant assist with the captive propagation and release of Lange's metalmark butterfly, and recommending the applicant seek authorization for incidental take pursuant to either section 7 or 10(a) of the Act. Again the CEC required the annual payment of nominal fees to ADNWR for weed eradication but did not recommend consultation with the Service.

### **Recommendations**

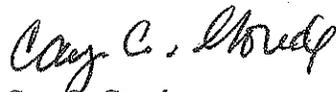
The Service is concerned that the current operation of GGS, and the proposed operation of MLGS and OGS, will not be in compliance with the Endangered Species Act of 1973, as

amended, because take of the Lange's metalmark butterfly, and adverse effects to the Antioch Dunes evening primrose, the Contra Costa wallflower, and critical habitat for these two plants are likely to occur as result of these projects. Therefore, we recommend that:

1. Based on the availability of new scientific information that reveals adverse effects to listed species not previously considered and based on changes to the GGS project resulting from entering into the recent settlement agreement with PG&E, the EPA should reinstate section 7 consultation with the Service for the GGS pursuant to 50 CFR § 402.14 of the Act.
2. The EPA should contact the Service in order to clarify their role in the permitting and review of OGS and MLGS. If the EPA's permitting authority has been delegated to a state or local agency, the EPA should either retain their permitting authority over these projects and initiate section 7 consultation with the Service or delegate their authority for consultation with the Service to the responsible State or local permitting agency.

We are interested in assisting the EPA in determining how to proceed with the consultation process for these power generating stations. Please contact Stephanie Jentsch, Ryan Olah, or Chris Nagano at the letterhead address, electronic mail ([Stephanie\\_Jentsch@fws.gov](mailto:Stephanie_Jentsch@fws.gov); [Ryan\\_Olah@fws.gov](mailto:Ryan_Olah@fws.gov); [Chris\\_Nagano@fws.gov](mailto:Chris_Nagano@fws.gov)), or at telephone (916) 414-6600 if you have any questions regarding this letter.

Sincerely,



Cay E. Goude  
Assistant Field Supervisor

cc:

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**Literature Cited**

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