



United States Department of the Interior



FISH AND WILDLIFE SERVICE
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February 14, 2011

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Chairman
California Energy Commission
1516 Ninth Street
Sacramento, California 95814

Subject: Endangered Species and the Oakley Generating Station in Contra Costa County,
California

Dear Mr. Chairman:

This letter concerns the proposed Oakley Generating Station in the City of Oakley in Contra Costa County, California. At issue are the potential adverse effects of this facility on the endangered Lange's metalmark butterfly (*Apodemia mormo langei*), endangered Contra Costa wallflower (*Erysimum capitatum* var. *angustatum*), endangered Antioch Dunes evening primrose (*Oenothera deltoides* 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 comments and recommendations in this letter are based on the *Oakley Generating Station Preliminary Staff Assessment – Part B* dated January 2011 (Assessment) that was prepared by the California Energy Commission, and other information available to the U.S. Fish and Wildlife Service (Service).

Section 9 of the Act prohibits the take of the Lange's metalmark butterfly by any person subject to the jurisdiction of the United States. As defined in the Act, take is defined as "...to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." "Harm" has been further defined to include habitat destruction when it injures or kills a listed species by interfering with essential behavioral patterns, such as breeding, foraging, or resting. Thus, not only is Lange's metalmark butterfly protected from activities such as collecting, but also from actions that result in its death or injury due to the damage or destruction of its habitat. The Act prohibits activities that "...remove and reduce to possession any listed

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plant from areas under Federal jurisdiction; maliciously damage or destroy any such species on any such area; or remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law.” The term “person” is defined as “...an individual, corporation, partnership, trust, association, or any other private entity; or any officer, employee, agent, department, or instrumentality of the Federal government, of any State, municipality, or political subdivision of a State, or any other entity subject to the jurisdiction of the United States.”

Take incidental to an otherwise lawful activity may be authorized by one of two procedures. If a Federal agency is involved with the permitting, funding, or carrying out of the project and a listed species and/or critical habitat are going to be adversely affected, then initiation of formal consultation between that agency and the Service pursuant to section 7 of the Act is required. Such consultation would result in a biological opinion addressing the anticipated effects of the project to the listed species and/or critical habitat, and may authorize a limited level of incidental take. If a Federal agency is not involved in the project, and listed species may be taken as part of the project, then an incidental take permit pursuant to section 10(a)(1)(B) of the Act should be obtained. The Service may issue such a permit upon completion of a satisfactory conservation plan for the listed species that would be taken by the project. We request clarification from the California Energy Commission on the level of involvement in this project by the U.S. Environmental Protection Agency and the delegation of their authority under the Clean Air Act to the State.

The endangered Lange’s metalmark butterfly is in imminent danger of extinction due to the loss of its habitat caused primarily by a menagerie of invasive exotic plants which are eliminating naked stemmed buckwheat (*Eriogonum nudum* var. *auriculatum*), its foodplant. Deposition of nitrogen from air pollution is a significant threat to California grasslands (Weiss 1999) and likely other native habitats, such as the Antioch Dunes, which contains the only population of this endangered butterfly. Invasive species are often better competitors for soil nutrients than native plants (Allen *et al.* 2000a). The result of high nitrogen deposition for Lange’s metalmark butterfly, Contra Costa wallflower, and Antioch Dunes evening primrose likely is the accelerated invasion of weedy grass and herb species, particularly rip-gut brome (*Bromus diandrus*), vetch (*Vicia villosa*), and star thistle (*Centaurea solstitialis*), that displace native host plants and nectar sources. These invasive non-native plants stabilize the nutrient-poor sand dunes, “choke out” native plants through extensive proliferation, and significantly reduce the available area for colonization of the two listed plants and the naked stemmed buckwheat. Weeds also grow so densely that the host plant is not easily found by adult female Lange’s metalmark butterflies. Historically, before the occurrence of high levels of airborne nitrogen, habitat at the Antioch Dunes was lost from human activities that included at one time or another, sand removal, agricultural and industrial practices, and recreational use of the riverine dunes (Service 1984).

The long term chronic adverse biological effects of nitrogen deposition on native ecosystems and associated animals have been described in a number of papers (Huennneke *et al.* 1990; Inouye and Tilman 1995; Brooks 2003). Habitats, such as sand dunes like the Antioch Dunes, are nitrogen deficient, and the changes in plant and microbial communities resulting from increased amounts of the airborne deposition of this chemical have been documented to cause cascading

negative effects on the ecosystem processes and the species that depend upon the native plant community. Increased nitrogen deposition initially causes ecological perturbations by altering microbial and plant communities. One of the primary adverse effects is the enhancement of environmental conditions for the invasion of non-native weeds, which outcompete native plants (Allen *et al.* 1998; Padgett *et al.* 1999). Nitrogen deposition also affects the natural fire cycle because of greater fuel loads caused by the excess growth of non-native grasses and weeds (D'Antonio and Vitousek 1992). The biological effects of airborne nitrogen deposition have been documented to be adversely affecting a listed animal and its habitat in the San Francisco Bay Area, the threatened bay checkerspot butterfly (*Euphydryas editha bayensis*) (Weiss 1999).

The status of Lange's metalmark butterfly has dramatically declined in the last few years. Between 50 to 100 years ago, the number of butterflies was estimated to be about 25,000 individuals, but after many years of destruction and degradation of its sand dune habitat, the number dropped to about 5,000 individuals in 1972 (Arnold and Powell 1983). For the past 20 years, peak count population surveys have been conducted annually at the Antioch Dunes National Wildlife Refuge. The number of animals observed in 2000 was 1,185 individuals, but by 2006, the number had dropped to a total of 45 adults.

The low number of Lange's metalmark butterflies observed during last year's flight season is of concern to the Service. No individuals were seen during the first two weeks of the survey period in early August 2010; 6 individuals were observed during the third week; 26 individuals were observed during the last week of August, which normally is the peak of the flight season; a total of 28 animals were seen during the first week of September, and 20 animals were during the last week of its flight season.

Increased nitrogen levels have been demonstrated to exacerbate the growth of exotic invasive weeds (Huenneke *et al.* 1990; Inouye and Tilman 1995; Weiss 1999). Based on current scientific literature (Weiss 2006), a value of 5 kilograms per hectare (kg/ha/yr) recently has been utilized by the California Energy Commission as the level above which effects of nitrogen deposition should be analyzed (California Energy Commission 2010). According to the best available estimates for the Antioch Dunes National Wildlife Refuge area, that are based on 2002 data, the baseline nitrogen deposition is estimated to be approximately 6.39 kg/ha/yr (Tonneson *et al.* 2007). This baseline, which does not include nitrogen deposition from new sources in the Antioch area that have come on-line since 2002, such as the Gateway Generating Station, or the nitrogen deposition that will result from the CEC-approved Marsh Landing Generating Station, already exceeds the 5 kg/ha/yr threshold above which nitrogen deposition can result in adverse impacts to plant communities. Due to the precarious status of the endangered Lange's metalmark butterfly, and because the Antioch Dunes National Wildlife Refuge is currently suffering from significant habitat degradation, the additional nitrogen deposition from the Oakley Generating Station above the baseline likely will cause additional stresses to the butterfly, as well as the Antioch Dunes evening primrose, Contra Costa wallflower, and the designated critical habitat for these two endangered plants. We are concerned any additional environmental stresses on this animal could be the factor that pushes the animal into extinction.

The Service concurs with Page 4.2-40 of the Assessment that states the “proposed project’s deposition of additional nitrogen at this already stressed ecosystem would be a significant impact.” However, we do not concur with the comments in the Assessment on: (1) Page 4.2-48 that state the proposed project would comply with all applicable laws, ordinances, regulations, and standards (LORS), specifically the Federal Endangered Species Act of 1973, amended; (2) Page 4.2-48 that notes the project’s contribution to the cumulative nitrogen deposition and the resultant habitat degradation at the Antioch Dunes National Wildlife Refuge would not result in harm to the three listed species; and (3) at this time, we do not concur with the comment on Page 4.2-48 that states the proposed project’s contribution to cumulative nitrogen deposition and the resulting habitat degradation at the Antioch Dunes National Wildlife Refuge does not meet the definition of adverse modification of critical habitat for the two endangered plants.

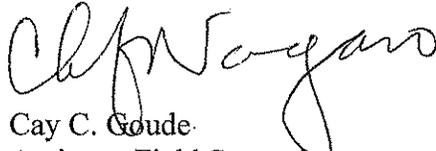
Therefore, we recommend:

- (1) The California Energy Commission should obtain the written concurrence from the Service that the proposed Oakley Generating Station will not jeopardize the Lange’s metalmark butterfly, Contra Costa wallflower and Antioch Dunes evening primrose, or result in adverse modification or destruction of critical habitat for these two endangered plants.
- (2) It is unclear if the surveys for the two listed plants in the proposed project area described on Page 4.2-17 were conducted following California Department of Fish and Game and Service protocols for listed and sensitive plant species. In addition, page 4.2-30 states that “there is an extremely low probability that special status plants occur in the impact areas.” Therefore, we request a copy of the botanical survey report be provided to us for review and concurrence, and, we recommend that protocol plant surveys should be completed in the action area if none have been completed within the last two calendar years. It also should be clarified that the action area includes off-site habitats where project-related impacts will occur including the Antioch Dunes National Wildlife Refuge.
- (3) The California Energy Commission and/or the applicant should obtain authorization for incidental take of the endangered Lange’s metalmark butterfly pursuant to sections 7 or 10(a) of the Act prior to adoption of the final environmental document.
- (4) Rather than providing a specific dollar amount which may not accurately reflect the conservation that may be necessary for the three endangered species and designated critical habitat, we recommend that the California Energy Commission and/or the applicant commit to completing specific activities that more directly relate to project impacts, such as captive breeding and release of the butterfly, or restoration and management of specific acreages at the Refuge.

We are interested in assisting the California Energy Commission and the applicant in preventing the extinction of Lange’s metalmark butterfly and ensuring California’s energy needs are met. Please contact Stephanie Jentsch, Ryan Olah, or Chris Nagano at the letterhead address,

electronic mail (Stephanie_Jentsch@fws.gov; Ryan_Olah@fws.gov; Chris_Nagano@fws.gov), or at telephone 916/414-6600 if you have any questions regarding this letter.

Sincerely,


 Cay C. Goude
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Endangered Species Program

cc:

Scott Wilson, Liam Davis, Randi Adair, California Department of Fish and Game, Yountville, California

Rick York, California Energy Commission, Sacramento, California

Louie Terrazas, Don Brubaker, Mendel Stewart, San Francisco Bay National Wildlife Refuge, Newark, California

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