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FISH AND WILDLIFE SERVICE
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Ms. Ann Crisp
Biological Resources Unit
Siting, Transmission, and Environmental Protection Division
California Energy Commission
1516 9th Street
Sacramento, California 95814

Subject: The Proposed Oakley Generating Station Project and its potential effects to the Endangered Lange's Metalmark Butterfly, Endangered Contra Costa Wallflower, Endangered Antioch Dunes Evening Primrose, and Designated Critical Habitat for the Two Listed Plants

Dear Ms. Crisp:

This letter responds to the proposed Oakley Generating Station Project in Contra Costa County, California. At issue are the potential adverse effects of this project on federally listed species and their designated critical habitat. It is our understanding that the applicant will seek coverage through the East Contra Costa County Habitat Conservation Plan/ Natural Community Conservation Plan (ECCHCP) for incidental take for some of the listed species that will be adversely affected by the proposed project. Therefore, this letter addresses the Service's concerns relating to the endangered Antioch Dunes evening primrose (*Oenothera deltoides* ssp. *howellii*), endangered Contra Costa wallflower (*Erysium capitalium* var. *angustatum*), designated critical habitat of these two listed plants, and especially the endangered Lange's metalmark butterfly (*Apodemia mormo langei*) which are not covered species under the ECCHCP. The U.S. Fish and Wildlife Service (Service) is issuing this letter under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*)(Act). Our comments and recommendations are provided to assist you with your environmental review of the project and are not intended to preclude future comments from Service.

The comments and recommendations in this letter are based on 1) the *Application for Certification* for Oakley Generating Station filed with the California Energy Commission (CEC) June 30, 2009; 2) Contra Costa Generating Station LLC's response to CEC Staff Data Requests #68-73, dated May 12, 2010; 3) an August 12, 2010 meeting between the Service and the CEC; and 4) other information available to the Service.

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MS

Section 9 of the Act prohibits the take of the endangered Lange's metalmark butterfly, and other federally listed species 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." "Harass means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to breeding, feeding, or sheltering." "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 such activities as collecting and hunting, but also from actions that result in injury or death due to the damage or destruction of its habitat. The Act prohibits activities that "...remove and reduce to possession any listed 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 is 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 may authorize a limited level of incidental take. If a Federal agency is not involved in the project, and federally 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.

The Service is concerned that the proposed Oakley Generating Station will have a significant adverse effect on the Lange's metalmark butterfly, Contra Costa wallflower, Antioch Dunes evening primrose, and the designated critical habitat for the two listed plants because increased nitrogen deposition resulting from operation of the Oakley Generating Station will result in the loss of their habitat by exacerbating the growth of noxious weeds at the Antioch Dunes National Wildlife Refuge (ADNWR). The Service disagrees with the applicant's conclusion that the proposed project would not individually or cumulatively cause a significant and adverse impact to sensitive habitats and species at the ADNWR and that mitigation is not warranted. The current baseline for nitrogen deposition levels used in the applicant's analysis should be based on the best available data which indicates a baseline nitrogen deposition rate of 6.39 kilograms per hectare per year (kg/ha/yr) at ADNWR (Tonnesen 2007). The proposed Marsh Landing Generating Station (which received a CEC certificate to construct and operate on August 25, 2010) is expected to be online in 2013 and is predicted to result in an estimated additional 0.04 kg/ha/yr of nitrogen deposition. The proposed Oakley Generating Plant would deposit an estimated 0.083 kg/ha/yr at ADNWR for a total of nitrogen deposition rate of 6.51 kg/ha/yr at ADNWR. This exceeds the 5 kg/ha/yr threshold above which nitrogen deposition

impacts to plant communities should be addressed (Weiss 2006; CEC 2007). In addition, nitrogen deposition is a cumulative process and the applicant's analysis did not take into account the cumulative biological effects and potentially cascading biological effects of increased Nitrogen deposition that will occur over the life of the project.

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 has 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). Locally, the biological effects of airborne nitrogen deposition have been documented to be adversely affecting the threatened bay checkerspot butterfly (*Euphydryas editha bayensis*) and its nitrogen deficient serpentine grassland habitat in the San Francisco Bay Area (Weiss 1999).

The ADNWR contains the last remaining wild population of Lange's metalmark butterfly. 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 ADNWR. 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 number of Lange's metalmark butterflies observed during this year's flight season is of particular concern. 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; and 26 individuals were observed during the last week of August, which normally is the peak of the flight season. A total of 28 butterflies were seen during the first week of September, 20 during the second week, 8 during the third week, and 4 were observed the last week of September.

Likewise, the Antioch Dunes primrose and the Contra Costa wallflower occur almost exclusively on the ADNWR and are undergoing population declines. Between 1984 and 1991 surveys for the Antioch Dunes primrose on the ADNWR counted between 4,000 and 5,000 plants. By 1997 the number of plants observed dropped to 455 and in 2007 the population was estimated at 400 plants with natural germination virtually eliminated due to the intrusion of non-native invasive plants (Service 2008). The number of Contra Costa wallflower plants counted during surveys at ADNWR dropped from a high of 11,564 in 1999 to a low of 1,681 counted in 2005. In 2007, the number of individuals counted was 3,641 (Service 2008).

The Service continues to implement a number of intensive measures in an attempt to stabilize and reverse the decline of these three species. Our efforts include attempting to control the nitrogen-enhanced growth of non-native weeds such as vetch (*Vicia villosa*), rip-gut brome (*Bromus diandrus*), and star thistle (*Centaurea solstitalis*). Because of the perpetual effects of airborne nitrogen, these efforts will be required in perpetuity, and the additional nitrogen deposition resulting from the proposed project is likely to enhance the biological conditions for invasive weeds. Without control measures, the non-native vegetation will continue to degrade the habitat for the naked-stem buckwheat (*Eriogonum nudum* var. *auriculatum*), the sole foodplant of Lange's metalmark butterfly, to a level that they are unable to support them or even eliminate this critical resource for the imperiled animal; if this occurs, this species likely will become extinct in the wild. The degradation of the dunes caused by invasive weeds also continues to adversely affect the Contra Costa wallflower and the Antioch Dunes evening primrose which currently require outplanting of nursery-raised seedlings to maintain their populations due to the intrusion of non-native plants interfering with natural germination.

The Service is concerned that the proposed Oakley Generating Station project likely will result in take of the butterfly and adverse effects to the two plants and their critical habitat. The June 2009 *Application for Certification* stated that the applicant desires to have the plant online by or before 2015. We are concerned that the indirect and cumulative effects from the additional nitrogen from the proposed power generating plant that will be deposited at the ADNWR may well reverse or negate the intensive conservation efforts that have and are being implemented to prevent the decline and perhaps extinction of the endangered Lange's metalmark butterfly.

We recommend that the applicant should: (1) ensure the proposed Oakley Generating Station does not jeopardize 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; and (2) obtain authorization for incidental take from the Service for the endangered Lange's metalmark butterfly prior to any earthmoving at the proposed project site.

The following conservation measures should be implemented by the applicant as part of the Oakley Generating Station project for the operational life of the facility to ensure the proposed action does not jeopardize 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: (1) annual removal of all exotic weeds from a quarter of the ADNWR, the removal methods should include cattle (*Bos taurus*) or other appropriate grazing animals, and hand tools and appropriate mechanical equipment; (2) annual cultivation of at least 250 individuals of the naked-stem buckwheat, 100 individuals of the Contra Costa wallflower, and 100 individuals of the Antioch Dunes evening primrose, and the planting of these individuals on the Refuge with a success criteria of 50% after five years; and (3) captive breeding of Lange's metalmark butterfly and the annual release of at least 200 individuals on the Refuge.

Please contact Stephanie Jentsch, Ryan Olah, or Chris Nagano at the letterhead address, via electronic mail (Ryan_Olah@fws.gov; Chris_Nagano@fws.gov; Stephanie Jentsch,@fws.gov), or at telephone 916/414-6600 if you have any questions regarding this response on the proposed Marsh Landing Generating Station Project.

Sincerely,

Cay C. Goude

Cay C. Goude
Assistant Field Supervisor

cc:
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BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
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APPLICATION FOR CERTIFICATION
FOR THE *OAKLEY GENERATING STATION*

Docket No. 09-AFC-4
PROOF OF SERVICE
(Revised 8/13/2010)

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DECLARATION OF SERVICE

I, Maria Santourdjian, declare that on October 18, 2010, I served and filed copies of the attached USFWS Comments on AFC. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: **[http://www.energy.ca.gov/sitingcases/contracosta/index.html].** The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

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I declare under penalty of perjury that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Originally Signed by
Maria Santourdjian