



ENVIRONMENTAL & STATISTICAL CONSULTANTS

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**Proposed Supplemental Baseline Wildlife Studies at the
Wildflower Renewable Energy Farm,
Los Angeles County, California**

Draft Study Plan - Summary
September 8, 2011

Based on comments provided by SEATAC, WEST proposes to conduct the following supplemental biological surveys at the Wildflower Green Energy Farm (WGEF): avian transect surveys and small mammal trapping. The following is a brief description of the proposed study methodology.

Avian Transect Surveys

In answer to SEATAC's concerns regarding the fixed-point avian use survey conducted at the WGEF and the potential inability of the survey to adequately address small birds' (e.g., passerines [or songbirds]) use of the Project Area, Western EcoSystems Technology (WEST) has developed the supplemental survey methodology described in this document. The methodology is standard in avian research where population size and habitat associations of individual species are of interest (e.g., Rosenstock et al. 2002, Latta et al. 2005). By using this sampling methodology, WEST will be able to answer the following questions: 1) what are the population densities of the individual avian species encountered in the Project Area as a whole and, 2) more specifically, what are the habitat associations of these species? WEST will accomplish this by conducting repeated transect surveys throughout the Project Area and analyzing the data using distance sampling techniques (Buckland et al. 2001, 2004).

WEST proposes to establish and survey a minimum of 40 transects equal to 4,000 m in length throughout the WGEF project area (Figure 1), each to be surveyed 3 times. The transects will be distributed such that the number of transects placed in each habitat type is roughly proportional to the amount of each habitat type present in the project area. In order to more accurately characterize the avian assemblages found in each unique habitat, biologists will record the exact location of each bird detected in relation to the transect being surveyed so that the habitat in which each detection occurs can then be identified using the GIS layers that were produced for this Project. While conducting the survey, a highly experienced birder able to identify encountered species by either sight or sounds produced (songs/calls), will slowly walk each 100-m transect and record his observations. All species observed will be recorded as well as the number of individuals in each observation, the sex and age of each individual (where possible), the exact location of the detection in relation to the length of the transect, and the distance from the transect line at which the individuals were observed. In addition, while surveying the transects (and during travel between transects) biologists will take special care to record in detail and map all tricolored blackbird observations within the proposed Project area.

The data collected will be analyzed by WEST statisticians and ecologists using distance sampling techniques. Distance sampling is a widely used (and highly sophisticated) methodology for estimating animal density or abundance. It is called distance sampling because recorded distances (perpendicular



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from the transect line) to animals of interest (birds in our case) are utilized to create a detection function with which the probability of detecting each species (dependent upon its distance from the transect) is determined. Once the detection function is determined for each species, the densities of the species in surveyed areas can be calculated from the results of the transect surveys. As WEST will be placing the transects within discreet habitat types, the densities of each species in different habitats can be calculated.

This supplemental avian survey and analysis that WEST proposes to conduct at the WGEF is designed to detect not only the species of birds, but the densities in which they occur in the seven major habitat types that are present in the proposed Project area (see Figure 1). This type of survey and analysis is typically associated with ecological research projects aimed at detailing specific habitat associations among avian species. This proposed protocol goes far above and beyond satisfying recommendations presented in the California Wind Energy Guidelines (CEC and CDFG 2007) and the U.S. Fish and Wildlife Service (USFWS) Wind Turbine Advisory Committee Guidelines (WTGAC 2010).



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Small Mammal Trapping

To address SEATAC's concerns regarding the small mammal species occurring within the WGEF, WEST proposes to sample the small mammal community utilizing standard live-trapping methodologies. Proposed development within the WGEF consists of a mix of solar and wind energy infrastructure. Within the overall project area, solar energy facilities are planned for approximately three square miles of lands, concentrated in the northwestern half of the project (Upper Energy Farm). Current plans are for wind turbines to be spread throughout the solar panel arrays, with turbines also located on lands in the southeastern portion of the project area where no solar development is currently planned (Lower Energy Farm). An increased emphasis will be placed on areas proposed for solar energy development, due to greater potential for ground disturbing activities in these areas. Transects to be sampled were chosen randomly. Within the Upper Energy Farm where solar panels will be situated, three transects were established by selecting a random location along the western boundary of the Upper Energy Farm. At these three random points a 1600-m west to east transect will be established spanning the width of the Upper Energy Farm (Figure 2). Within the Lower Energy Farm, where only turbines will be sited, transects will be established along each of the three main turbine strings. Along each string, a random point was selected and a 900-m transect was extended from this point along the length of the turbine string (and beyond, if necessary; Figure 2). Under this sampling scheme, two thirds of the survey effort will be focused within the solar arrays with the remaining third in the southeast portion of the project area (i.e., turbine corridors; Figure 2).

Once transects have been established, suitable small mammal habitat will be sampled using Sherman live-traps (3×3×9 inch). Traps will be spaced approximately 10 m apart along each transect. Trapping will be conducted for two nights along each transect during the fall of 2011 and for two nights during the spring of 2012. Given approximately 7,500 m of transect established at the WGEF, six nights of trapping are anticipated for each season, resulting in 1,500 trap-nights per season. Traps will be baited with appropriate bait (e.g., grain, sweet feed, grain/peanut butter mix) and a 1" ball of polyester fiber will be added for bedding material. Traps will be set in late afternoon (within 3 hours of sunset) and checked in the early morning (within 3 hours of sunrise).

Data recorded will include trap location, date of survey, species, age, sex, and reproductive status of all captured specimens. General descriptions of the survey site will also be recorded. These will include site characteristics, dominant vegetation, transect orientation and weather conditions. Photographs will be taken of any species of concern or specimens where identification is uncertain.

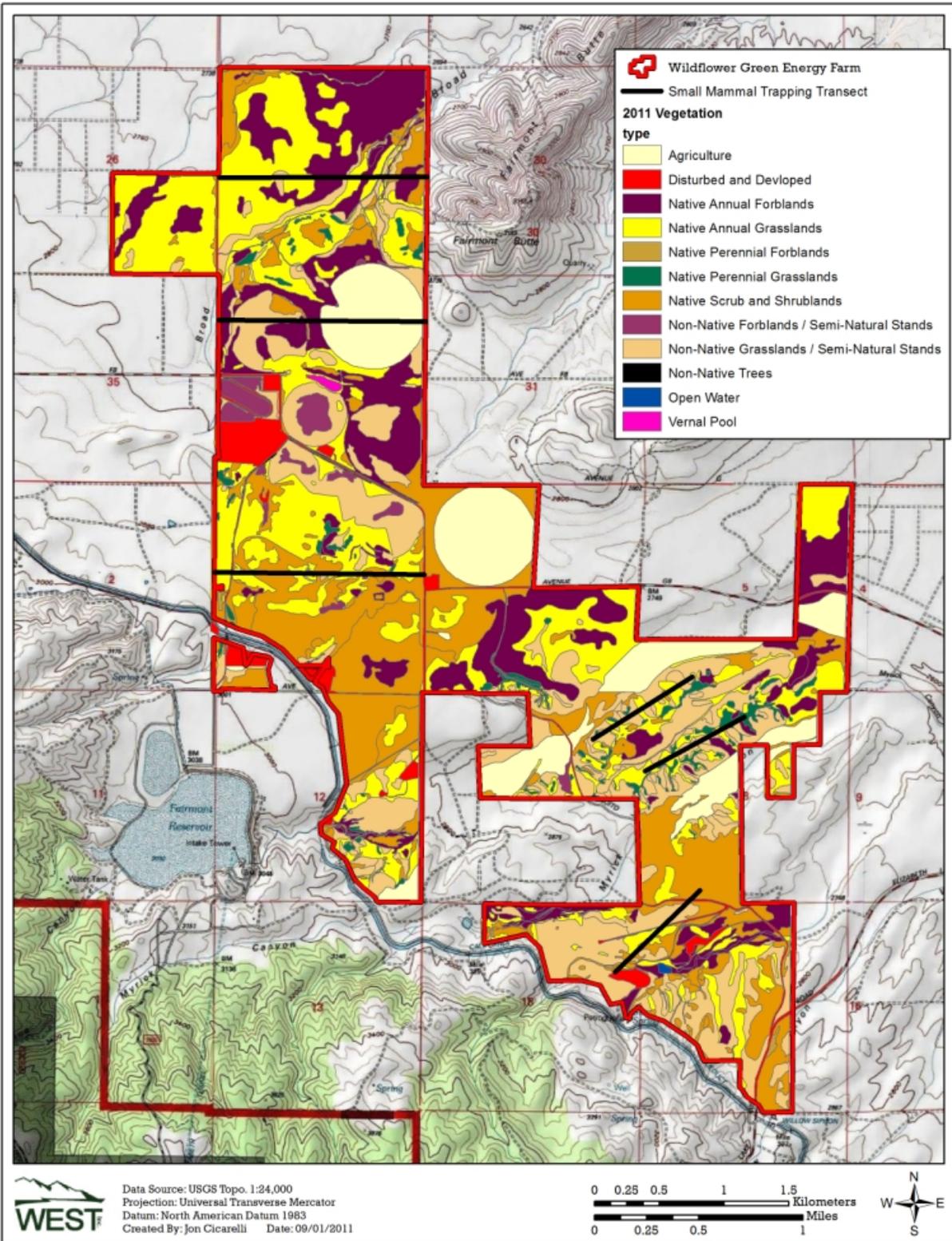


Figure 2. Small mammal trapping transects at the Wildflower Green Energy Farm



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