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TECHNICAL MEMORANDUM

DATE: October 24, 2018

TO: Kristen Goland, Pacific Wind Development LLC

FROM: Joel Thompson and Kori Hutchison, WEST, Inc.

RE: Great Gray Owl Habitat Assessment, Fountain Wind Project, CA

INTRODUCTION

Pacific Wind Development LLC contracted Western EcoSystems Technology, Inc. (WEST) to provide biological survey support for the development of the proposed Fountain Wind Project (Project; Figure 1). Great gray owl (*Strix nebulosa*) is currently designated as endangered by the state of California (CDFW 2018), with an estimated population size of only 100-200 pairs in the state (IBP 2015). According to the California Natural Diversity Database (CNDDB), there are no known occurrences of great gray owl within or immediately adjacent to the Project area; the nearest known occupied territories are located approximately 85 miles (mi; 136.7 kilometers [km]) to the northeast of the Project in Modoc County (CDFW 2018). While the Project is within the historical range of this species, based on CNDDB data (CDFW 2018) no confirmed detections of great gray owl have been recorded within Shasta County, and no indications of species presence have been observed during surveys conducted by WEST for various other species/species groups (e.g., northern goshawk, willow flycatcher, fixed point avian use surveys). Great gray owl nesting habitat in California is most commonly associated with dense forest stands adjacent to montane meadow foraging habitat (Huff and Godwin 2016; IBP 2015). Although this species has not been documented within the Project area, CDFW's Great Gray Owl Habitat Model (CDFW Model) indicated that potentially suitable foraging and nesting habitat may occur within the Project area (CDFW 2011), with all of the modeled potential habitat occurring on a private inholding within the larger Project area boundary (Figure 1). To determine the need for field surveys specific for great gray owl, WEST conducted desktop and field assessments of potential great gray owl habitats within the Project area in 2018, the methods and results of which are described in this memo.

SURVEY AREA

The Project is located on privately owned commercial timberlands in central Shasta County, California. The dominant vegetation type in and around the Project area is mixed coniferous forest (post-fire and unburned), with smaller amounts of mixed montane chaparral and mixed montane riparian forest/scrub. The primary land use in this area is commercial timber production, which has resulted in a highly fragmented landscape across much of the area. Dominant overstory species include a combination of white fir (*Abies concolor*), Douglas fir (*Pseudotsuga menziesii*), incense cedar (*Calocedrus decurrens*), ponderosa pine (*Pinus ponderosa*), sugar pine (*P. lambertiana*), and California black oak (*Quercus kelloggii*).

METHODS

Geographic Information System (GIS) data from the CNDDB and examination of aerial imagery were used to conduct a desktop review of potential great gray owl nesting and foraging habitat within the Project area using the CDFW Model (CNDDB 2011; Figure 1). This GIS-based model estimates where potential great grey owl nest sites may occur by extracting potential nesting areas along with their associated foraging areas from CALVEG land cover data (CALVEG 2004; CDFW 2011).

Once identified during the desktop assessment, a WEST biologist visited the Project to evaluate areas of modelled great gray owl habitat and to identify areas of potential habitat not predicted by the model. Consistent with the CDFW Model, criteria for inclusion as potential foraging habitat included the following Wildlife Habitat Relationship (WHR) types: wet meadows, annual grasslands and perennial grasslands; criteria for inclusion as potential nesting habitat included WHR size 4M (11-24 inches diameter at breast height, 12-24 foot (ft) crowns, and 40-59% canopy cover) and larger/denser (CDFW 2011, CDFW 2014). The CDFW Model nesting habitat criteria are generally consistent with criteria identified in the survey protocol for great gray owl within the Northwest Forest Plan (NWFP) Area (Huff and Godwin 2016), which indicates that suitable nesting habitat must include mature or old-growth conifer stands with greater than 50% canopy cover containing potential nest trees (broken-top snags greater than 16-in diameter at breast height, trees containing pre-existing stick nests from hawks, ravens, or squirrels; or mistletoe brooms). The NWFP protocol also states that although the minimum patch size of nesting habitat needed to support this species is unknown, all nests encountered in southwest Oregon were within patches exceeding 40 acres (Huff and Godwin 2016).

Because the only modeled nesting habitat was located in and adjacent the large meadow (Figure 1) on a private inholding, no specific measurements of tree size or canopy closure were taken within the area of modeled habitat. The field assessment was limited to a view of the modeled nesting habitat from the fence located on the west side of the meadow and an assessment of tree sizes in close proximity (i.e., visible from the edge of the meadow and immediately west of the meadow). Information from the field assessment was used for additional evaluations of aerial imagery comparing the modeled nesting habitat to nearby areas visited during the field assessment.

RESULTS AND DISCUSSION

Based on the CDFW Model and NWFP survey protocol, suitable nesting habitat requires 10 or more acres of foraging habitat within 660 feet of a potential nest site (CDFW 2011; Huff and Godwin 2016). One area of potential great gray owl nesting and associated foraging habitat was predicted to occur within the Project area by the CDFW Model (Figure 1). However, the desktop review of aerial imagery and habitat classifications determined that the area of modeled nesting habitat within the Project area does not meet the minimum criteria for suitability, which was confirmed during the field assessment. The modeled habitat within the Project area includes one very small area (0.9 acre) of nesting habitat consisting of a few scattered residual trees intermixed within early-seral conifers and open meadow. Based on a review of aerial imagery and visual inspection of the modeled nesting habitat from the edge of the meadow, relative to surrounding forest age classes, the nesting habitat did not appear to meet the CDFW (CDFW 2011) or NWFP (Huff and Godwin 2016) criteria for consideration as great gray owl nesting habitat. The associated foraging habitat consists of 15 acres of modeled habitat within a larger approximately 82-acre meadow/pasture that appears to be used for cattle grazing and some hay production. No other areas of potentially suitable nesting or foraging habitat were identified in the Project area during the desktop review.

Based on the desktop review and field assessment, the CDFW modeled habitat does not meet the criteria of suitable great gray owl nesting habitat and no other areas of potentially suitable habitat were identified in the Project area. Additionally, even though the modeled nesting habitat does not meet the criteria of suitable great gray owl nesting habitat, because it is located on an inholding within the larger Project area Project construction and operations will have no impacts on the modeled habitat. Given the lack of suitable great gray owl habitat within the Project area, species-specific field surveys for great gray owl are not warranted in support of the Project.

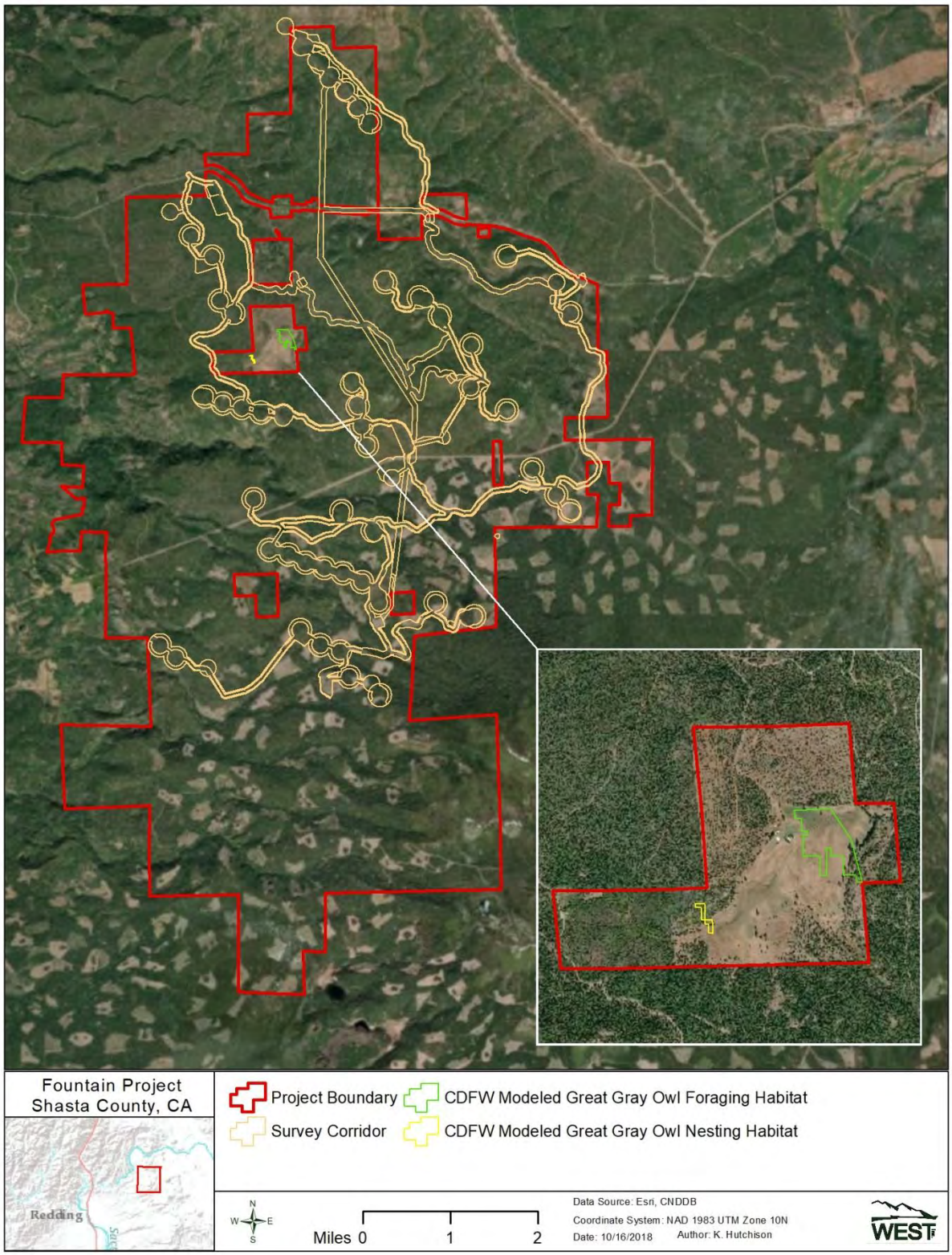

Figure 1. Areas of modeled nesting and foraging habitat identified by the CDFW Great Gray Habitat Model within the Fountain Wind Project, Shasta County, California.

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