



State of California – Natural Resources Agency  
DEPARTMENT OF FISH AND WILDLIFE  
Region 1 – Northern  
601 Locust Street  
Redding, CA 96001  
[www.wildlife.ca.gov](http://www.wildlife.ca.gov)

EDMUND G. BROWN JR., Governor  
CHARLTON H. BONHAM, Director



March 2, 2018

Bill Walker  
Planning Division  
Shasta County Department of Resource Management  
1855 Placer Street, Suite 103  
Redding, CA 96001

**Subject: Informal Consultation Request for Use Permit 16-007, Fountain Wind Project, Shasta County**

Dear Mr. Walker,

The California Department of Fish and Wildlife (Department) has reviewed the Use Permit and associated documents for the Fountain Wind Project (Project), Use Permit 16-007. The Department offers the following comments and recommendations.

As a Trustee Agency for the State's fish and wildlife resources, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants and their habitat. As a Responsible Agency, the Department administers the California Endangered Species Act (CESA) and other provisions of the Fish and Game Code (FGC) that conserve the State's fish and wildlife public trust resources. The Department offers the following comments and recommendations on the Project in our role as the State's Trustee Agency for fish and wildlife resources, and as a Responsible Agency under the California Environmental Quality Act (CEQA), California Public Resources Code section 21000 et seq.

### **Project Description**

The informal consultation request is for a Use Permit for the construction of the Fountain Wind Project (Project). The Project proposes a 347 megawatt wind energy development consisting of up to 100 wind turbines, associated infrastructure, and ancillary facilities located in the vicinity of the communities of Burney, Moose Camp, Hillcrest, Wengler, Montgomery Creek, and Round Mountain, in Shasta County, CA. Project infrastructure and ancillary facilities include 17 construction laydown areas, two possible temporary batch plants, temporary construction and equipment area, construction trailer area, and associated parking, 87 miles of existing access roads that may need to be upgraded and up to an additional 21 miles of new access roads, up to 56 miles of underground and up to 16 miles of overhead collector lines, an operations and maintenance facility, storage sheds, an onsite substation and switching station, and two permanent meteorological towers.

*Conserving California's Wildlife Since 1870*



## **Comments and Recommendations**

The following comments are intended to assist the Lead Agency in making informed decisions early in the Project development and environmental review process. The Department understands that further Project information and environmental documents are forthcoming and will be submitting additional comments as data collection proceeds and environmental documents develop. Because of the lack of data provided to the Department regarding the exact Project boundary, the Department is being particularly conservative and cautious in our review and recommendations.

### **Biological Resources Work Plan**

The Department provided a brief synopsis of concerns regarding the Biological Resources Work Plan presented at the June 2017 consultation meeting in a letter addressed to you dated July 25, 2017 (attached), sections of which will be expanded on below.

The Biological Resource Work Plan (Work Plan) outlines the baseline biological studies to be conducted for the development of the Project. The Work Plan relies on multiple State and federal guidance documents to determine appropriate preconstruction biological studies and protocols. These documents include the 2007 California Energy Commission/Department's *California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development* (CEC/CDFG Guidelines), the 2012 United States Fish and Wildlife Service (USFWS) *Land-Based Wind Energy Guidelines* (WEG), and the 2013 USFWS *Eagle Conservation Plan Guidance*. In general, the Department defers to the approach most likely to result in comprehensive data collection to inform the CEQA and permitting processes, or the best available science regarding survey and/or monitoring techniques. We note that some of the guidance in current use for wind energy development is over 10 years old. In certain cases, this guidance may be superseded by more current approaches, but should still be considered a minimum standard to produce adequate pre-development studies and surveys.

The Department requests an update to the Work Plan to address comments here and in our July 25, 2017 letter. Specific information should be included regarding survey protocols to be utilized, including datasheets, timing of surveys, and a description of all surveys to be conducted as part of the proposed Site Characterization Study. If survey protocols suggested below are altered, the Work Plan should discuss reasons for this deviation.

All necessary biological surveys should be conducted in advance of the draft EIR circulation, and should not be deferred until after Project approval. All survey reports should be sent to the Department at Attn: CEQA, 601 Locust Street, Redding, CA, 96001.



### **Special-Status Species and Habitat Surveys**

In addition to the surveys proposed for bats and avian species, the Department recommends the completion of a comprehensive baseline survey including a complete assessment of the flora and fauna within and adjacent to the Project area, with particular emphasis upon identifying special-status species including rare, threatened and endangered species, Fully Protected species, and Species of Special Concern. This assessment should also address locally unique species, rare natural communities, and wetlands, and must be conducted at the appropriate time of year to identify species of concern. Seasonal variations in use of the Project site should also be addressed.

The assessment area for the Project should be large enough to encompass areas potentially subject to direct impacts and areas in which reasonably foreseeable indirect Project impacts will occur. Examples of indirect impact assessment areas include any area in which sensitive species or habitat would be impacted by noise from construction or ongoing maintenance activities, noise and vibrations from blasting, fugitive dust, Project lighting, habitat fragmentation, downstream impacts to waters of the state, etc. Both the Project footprint and the assessment area (if different) should be clearly defined and mapped. The areas depicted in Figure 17 of the Use Permit Application may not provide adequate survey coverage.

### **CESA-Listed Species**

Take of species of plants or animals listed as endangered or threatened under CESA is unlawful unless authorized by the Department. However, a CESA 2081(b) Incidental Take Permit (ITP) may authorize incidental take during Project construction or over the life of the Project. The draft EIR must state whether the Project could result in any amount of incidental take of any CESA-listed species. Early consultation for incidental take permitting is encouraged, as significant modification to the Project's description and/or mitigation measures may be required in order to obtain a CESA Permit.

The Department's issuance of a CESA Permit for a project that is subject to CEQA will require CEQA compliance actions by the Department as a Responsible Agency. The Department as a Responsible Agency under CEQA will consider the Lead Agency's draft EIR for the Project. The Department may require additional mitigation measures for the issuance of a CESA Permit unless the Project CEQA document addresses all Project impacts to listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of a CESA Permit.

The Department recommends the future draft EIR address all potential impacts to CESA-listed species, a range of alternatives, and feasible avoidance and mitigation measures to reduce impacts to less than significant.



Candidate Amphibian Species - Foothill Yellow-legged Frog and Cascades Frog

Foothill yellow-legged frog (*Rana boylei*) and Cascades frog (*R. cascadae*) habitat occurs in the Project area. On June 21, 2017, the California Fish and Game Commission (Commission) accepted the petition to list the foothill yellow-legged frog as a threatened species and will be initiating the preparation of a Status Review to determine whether listing as threatened is warranted. Based on the findings published July 7, 2017, the foothill yellow-legged frog is considered a candidate species as defined by FGC section 2068.

On October 11, 2017, the Commission accepted the petition to list Cascades frog as a threatened or endangered species and will be initiating the preparation of a Status Review to determine whether listing as a threatened or endangered species is warranted. Based on findings published October 17, 2017, the Cascades frog is considered a candidate species as defined by FGC section 2068.

During the Status Review period, FGC section 2085 confers full legal protection of an endangered or threatened species on a candidate species. This includes the general prohibition on "take" of the species, as defined in FGC section 86 as to "hunt, pursue, catch, capture or kill" or to attempt to engage in any of these activities.

Mainly regarded as a stream obligate, few studies have focused on upland habitat use by foothill yellow-legged frog; however, it is likely that these frogs utilize a wide range of watershed features, including terrestrial habitat, depending on the season. One study in Tehama County found frogs rarely go beyond 12 m from the channel during any time of the year (Bourque 2008). However, during the same study, Bourque observed a female move up a dry tributary and over a ridge to an adjacent watershed, a distance of over 7 km from her original location, although much of this was in wetted channels. Nussbaum et al. (1983) reported finding frogs 50 m away from water under debris. Cook (2012) described frequent observations of foothill yellow-legged frogs in terrestrial locations far (16 m to 331 m, average distance of 71.3 m) from natal streams and in urban settings, near Ukiah, Mendocino County.

Cascades frogs typically utilize lentic waterbodies for breeding, however, egg masses have also been observed in slow flowing streams, with adults and juveniles utilizing a variety of aquatic habitats during different life history stages. Adult Cascades frogs have been documented as undergoing extensive overland movements. In a study conducted in the Trinity Alps, radio tracked individuals were documented as completing seasonal migrations of over 1600 meters (Garwood 2009). Two radio tracked frogs were observed navigating through steep terrestrial terrain (Garwood and Welsh, 2007). Because this species is known to undergo long distance seasonal migrations, surveys of adjacent critical habitat must occur in order to gain an understanding of migratory pathways within the Project site and to ensure the preservation of connectivity between populations. Dispersing animals are vital to maintaining the genetic flow and population viability of this species.



The Department recommends the completion of a habitat assessment and subsequent focused surveys for these species in all areas of the Project that may directly or indirectly impact species habitat as discussed above, including aquatic and terrestrial habitat, migration routes, and critical Cascades frog habitat adjacent to the Project site. Prior to the commencement of these surveys, a Survey Plan must be developed and submitted to the Department for review. The Survey Plan should include what life-stage(s) will be surveyed for, survey method(s), timing of surveys, and location of surveys. The Survey Plan should provide justification for timing and methodology or survey design (e.g., watershed characteristics, regional snow pack, timing and rate of spring runoff, day length, average ambient air and water temperatures, local and seasonal conditions). For sites with suitable breeding habitat, two consecutive seasons of negative egg mass/larval surveys are recommended to support a negative finding.

If there is potential take of foothill-yellow legged frog or Cascades frog may be potential due to direct or indirect impacts related to Project construction, such as through direct removal, filling, hydrological interruption, sedimentation, impaired water quality, or other means, the applicant will need to apply for an ITP in order to comply with CESA, as discussed above. The Department may issue an ITP authorizing the take of a candidate species when it is incidental to an otherwise lawful activity, the impacts of the take are minimized and fully mitigated, the applicant ensures there is adequate funding to implement any required measures, and take is not likely to jeopardize the continued existence of the species. If, at the time of Project implementation, either species is not listed under CESA or is no longer a candidate, CESA authorization will not be required. However, since both species are California Species of Special Concern, impacts to either one may still be significant under CEQA.

#### Willow Flycatcher Protocol Surveys

The Department is aware of known breeding occurrences of willow flycatcher (*Empidonax traillii*, State Endangered) on or near the Project site and potential habitat may occur on the Project site based on the Department's willow flycatcher habitat model. Therefore, a qualified biologist proficient at delineating willow flycatcher habitat and conducting surveys should determine if suitable habitat occurs within the Project site and conduct surveys to determine site occupancy. Surveys should be conducted using the recommended protocol: A Willow Flycatcher Survey Protocol for California (Bombay et al. 2003) available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=84019&inline>.

#### Northern Spotted Owl Protocol Surveys

Northern spotted owl (*Strix occidentalis caurina*, State Threatened, federally Threatened) critical habitat designated by the USFWS and northern spotted owl territories are located in close proximity to the Project site. The Department recommends the completion of surveys following the revised January 9, 2012, U.S.



Fish and Wildlife Service *Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls* and consultation with USFWS staff regarding potential impacts to this species.

#### Great gray owl

Great gray owl (*Strix nebulosi*, State Endangered) habitat is modeled within and near the Project site; therefore, a habitat assessment and surveys for this species should be conducted to determine presence within or near the Project site.

#### Gray Wolf

Since December 2011, at least two packs of gray wolves (*Canis lupus*) and three separate individual wolves have been detected in California. Key wolf use areas to date have included western Lassen and eastern Siskiyou counties, although wolves have also been known to utilize parts of Modoc, Plumas, Shasta, and Tehama counties. Wolves historically occupied diverse habitats in North America, including forests, grasslands, deserts and tundra. Their primary habitat requirements are the presence of adequate water and prey, mainly elk and deer. Wolves will also consume other mammals, birds and reptiles and scavenge carrion. Gray wolves were extirpated from California in the 1920s and little is known about the historical abundance and distribution of wolves in California. As human population and human development have increased dramatically since wolves last occurred here, the Department remains uncertain about where and how many wolves will establish as they continue to naturally recolonize the state. The gray wolf is listed as an endangered species pursuant to both the federal Endangered Species Act (Act) and the CESA.

No localized wolf activity is currently known from within or near the Project Area. If gray wolf activity is detected during Project wildlife surveys, or if, prior to or during construction activities, the current Department wolf activity map<sup>1</sup> identifies localized wolf activity within or adjacent to the Project Area, the Project proponent should consult with the Department. The Department will determine if Project activities pose any potential impacts to gray wolves, particularly with respect to potential modification or disruption of key pup rearing areas such as dens and rendezvous sites. Typical mitigation measures the Department might recommend to minimize any such impacts include limited operation periods, disturbance buffers, reduced speed and signage on haul roads, modification of haul routes to avoid key areas, and additional biological monitoring.

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<sup>1</sup> <https://www.wildlife.ca.gov/conservation/mammals/gray-wolf>



### State Listed and Fully Protected Avian Species

Bald eagle (*Haliaeetus leucocephalus*, State Endangered) and greater sandhill crane (*Grus canadensis tabida*, State Threatened) are both State listed pursuant to CESA and are Fully Protected under FGC section 3511. Both of these species are documented in close proximity or on the Project area. Because these species are Fully Protected, the Department is not authorized to issue permits for their incidental take as discussed below.

### **Fully Protected Species**

The Department designates certain animals as Fully Protected in FGC sections 3511, 4700, 5050, and 5515. Fully Protected animals may not be taken or possessed at any time and the Department is not authorized to issue permits or licenses for their incidental take<sup>2</sup>. Fully Protected animals should be considered during the environmental review process and all Project-related should must be avoided and impacts be mitigated to a less than significant level.

Bald eagle, golden eagle (*Aquila chrysaetos*), greater sandhill crane, and American peregrine falcon (*Falco peregrinus anatum*) are all Fully Protected species pursuant to FGC. All of these species have the potential to be impacted by this Project. This list should not be considered comprehensive, as stated in the Department's July 2017 letter, additional research is necessary, including database queries, to determine the full list of species with potential to occur on the Project site.

### **Species of Special Concern**

Species of Special Concern status applies to animals generally not listed under the federal Act or CESA, but which nonetheless are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. Species of Special Concern (SSC) should be considered during the environmental review process (see CEQA Guidelines, § 15380 and CEQA Guidelines Appendix G (IV)(a)). Section 15380 of the CEQA Guidelines clearly indicates that SSC should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined therein.

Sections 15063 and 15065 of the CEQA Guidelines, which address how an impact is identified as significant, are particularly relevant to SSC. Project-level impacts to listed (rare, threatened, or endangered) species are generally considered significant thus requiring lead agencies to prepare an EIR to fully analyze and evaluate the impacts. In assigning "impact significance" to populations of non-listed species, analysts usually consider factors such as population-level effects, proportion of the taxon's range affected by a project, regional effects, and impacts to habitat features.

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<sup>2</sup> Scientific research, take authorized under an approved NCCP, and certain recovery actions may be allowed under some circumstances; contact the Department for more information.



The Project has the potential to adversely impact many SSC, including the following: Western pond turtle (*Emys marmorata*), southern long-toed salamander (*Ambystoma macrodactylum sigillatum*), Pacific tailed frog (*Ascaphus truei*), Northern goshawk (*Accipiter gentiles*), California spotted owl (*Strix occidentalis occidentalis*), yellow warbler (*Setophaga petechia*), olive-sided flycatcher (*Contopus cooperi*), American badger (*Taxidea taxus*), Pacific fisher (*Pekania pennanti*), and California wolverine (*Gulo gulo*). Although the Project is outside of the current known range of California wolverine, it is within historic range; therefore, the Department requests immediate notification if California wolverine is observed incidentally on the Project site. This list should not be considered comprehensive, and as stated in the Department's July 2017 letter, additional research is necessary, including database queries, to determine the full list of species with potential to occur on the Project site. Additional surveys will be necessary to identify impacts to SSC species. For Northern goshawk, the Department recommends that surveys follow the protocol discussed below.

Additional Department Watch List species with potential to occur on or near the Project site, or with potential to be impacted by Project activities include: Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), and osprey (*Pandion haliaetus*).

#### Northern Goshawk Protocol Surveys

Many Northern goshawk (California SSC) occurrences are documented on and near the Project site. For this reason, the Department requests the completion of focused protocol-level Northern goshawk surveys. As recommended in the CEC/CDFG Guidelines, these surveys should follow existing survey protocols for special-status raptors. The Department recommends utilizing the USFWS 2006 protocol outlined in the *Northern Goshawk Inventory and Monitoring Technical Guide*, which can be found at: <https://www.fs.fed.us/biology/wildecology/docs/GoshawkTechGuideJuly06.pdf>. As with other recommended surveys, this survey should be added to the Work Plan, along with detailed information regarding how the survey will follow the protocol and information on survey timing and locations.

#### **Avian Point Count Surveys**

The Use Permit Application and Work Plan propose to conduct avian point count surveys to document small bird use of the Project area, and state that this survey is consistent with the CEC/CDFG Guidelines. Based on the CEC/CDFG Guidelines, "small bird use counts are useful for assessing displacement effects and habitat losses to resident songbirds and other small birds" and are intended to provide a density estimate of resident breeding songbirds. This survey is not intended to be utilized in lieu of or supersede Bird Use Counts (BUC), which should be conducted on all wind energy projects according to the CEC/CDFG Guidelines. The BUCs are intended provide baseline data on avian species richness and relative abundance and



to estimate the spatial and temporal use of the site by all birds, including large birds such as raptors, vultures, corvids, and waterfowl, as well as songbirds and other small species. BUCs should be conducted for 30 minutes once a week for at least one year, covering most daylight hours and different weather conditions. Small bird counts are intended for use in addition to the BUCs. The Department requests that a protocol for BUCs be developed and addressed in the Work Plan, which should, at a minimum, meet the requirements outlined in the CEC/CDFG Guidelines. The BUCs should be conducted in addition to the proposed small bird surveys, eagle surveys, and raptor nest searches.

The current survey proposal for small birds indicates that surveys will be conducted weekly at one quarter of the identified survey points targeting the spring and fall migration period, thus surveys at each point will occur once per month during the specified time frame. For small bird counts, the CEC/CDFG Guidelines recommends that surveys be conducted at two-week intervals, no earlier than a half-hour before and no later than four hours after sunrise. If turbine locations are known, the CEC/CDFG Guidelines recommend that small bird survey sites be established every 820 feet (250 meters) in a row between turbines. Additional survey sites may be necessary to estimate the density of special-status bird species occupying the site during the breeding season. Survey duration and frequency should be increased to meet the requirements of the CEC/CDFG Guidelines or a detailed justification should be provided if this would not occur.

The information gathered from BUCs and small bird surveys is intended to be used in the evaluation of potential impacts to avian species, to guide proper turbine siting, and refine the Project layout. This information will be an essential part of a thorough CEQA analysis that considers potentially significant impacts to resident and breeding bird habitat. The currently proposed survey effort will not adequately quantify bird use throughout the year.

### **Eagle/Large Bird Use Surveys**

The eagle/large bird use surveys are proposed to follow the Eagle Conservation Plan Guidance (ECPG). The ECPG provides specific guidance *"to help make wind energy facilities compatible with eagle conservation and the laws and regulations that protect eagles."* The Department requests information (detailed above) as to how large bird use of the Project site will be documented in addition to the proposed surveys for eagles and raptor nests.

The Work Plan indicates that the proposed surveys are consistent with the CEC/CDFG Guidelines by conducting eagle/large bird use surveys on a weekly basis. The Work Plan also indicates that the proposed weekly surveys will be conducted *"at approximately one quarter of the points such that all points are surveyed once per month."* The CEC/CDFG Guidelines recommend conducting bird use counts (as



discussed above), which includes large birds, for 30 minutes once per week at all sampling locations for a minimum of one year.

### Nocturnal Avian Surveys

The Department recommends the completion of nocturnal avian migration surveys for the Fountain Wind Project. The Work Plan states that a nocturnal avian migration survey will not be conducted at the Project site based on an analysis conducted by Tidhar et al. 2010<sup>3</sup>, which concludes that, "*radar has been demonstrated to provide limited data relating to risk assessments,*" and based on the post-construction monitoring results from the Hatchet Ridge wind facility. The only reference the Department could find regarding Tidhar et al. 2010 was a poster presented at the National Wind Coordinating Collaborative Wildlife and Wind Research Meeting in 2010. The Department requests a copy of the peer-reviewed literature that resulted from this poster and additional information regarding locations of the studies analyzed.

A more recently published study indicates that nocturnal radar surveys, coupled with acoustic monitoring and night vision surveys, have proved to be useful tools for determining fatality risk at wind energy sites and for determining turbine placement (Johnston et al. 2013). Because Fountain Wind covers a much larger and varied topographic area than the Hatchet Ridge wind facility, the Department recommends using caution when making inferences from studies and reports produced for Hatchet Ridge. As the CEC/CDFG Guidelines recognize, "*slight topographical or habitat variations can make substantial differences in bird and bat site use and potential impacts.*" Additionally, an evaluation of the nocturnal migration study conducted for the Hatchet Ridge wind facility found that thermal imaging technology, night vision, and/or acoustic monitoring would have provided better information on the types of birds detected along with information on flocking and flock size. In addition, the evaluation states that the radar surveys were "*conducted during a time of year prior to the main migration period of large, flocked waterbirds, and the data were collected entirely under typically good weather conditions*", instead of during the main migration periods or in poor visibility conditions in which large mortality events are most likely to occur. Waterbird fatalities were documented during low visibility conditions at the Hatchet Ridge wind facility during post-construction monitoring. The Department recommends utilizing multiple survey methods to conduct the nocturnal migration survey in order to document migratory pathways and minimize the risk of migratory bird collisions with turbines.

In addition to the nocturnal avian migration surveys, the Department recommends the completion of focused nocturnal owl surveys, specifically due to the potential presence of multiple special-status owl species within or near the Project site, as discussed

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<sup>3</sup> Tidhar, D., C. Nations, and D.P. Young. 2010. What Have We Learned from Pre-Construction Radar Studies? Poster Presented at the National Wind Coordinating Collaborative (NWCC) Wildlife and Wind Research Meeting VIII, October 19-21, 2010, Lakewood, Colorado.



above. Owl surveys should be designed to detect all species of owls potentially present within the Project site, not just the special-status owls discussed above.

### **Bat Monitoring**

The Department recommends the placement of additional bat detectors in order to provide broader coverage of the Project area. Four detector locations in an approximately 38,000-acre (59 square mile) Project area is not adequate coverage to document bat use of the Project site. Based on site maps, the northern and southern portions of the Project area are not currently being surveyed for bat use. Migratory bat fatalities have been documented at the nearby Hatchet Ridge Wind Farm, including hoary bats (*Lasiurus cinereus*). Hoary bats comprise the largest percent of bat fatalities at wind energy facilities in North America (Arnett and Baerwald 2013), and recent research suggests that wind development may threaten the population viability of this species (Frick et al. 2017).

While standard guidance does include installing acoustic detectors on MET towers, (generally because they are the only structures tall enough to sample the airspace within the rotor swept area) it is not appropriate to limit the number of detector sites based on the limited number of MET towers. The USFWS WEG states (emphasis added): *"The number of detectors needed to achieve the desired level of precision will vary depending on the within-site variation (e.g., Arnett et al. 2006, Weller 2007, See also, Bat Conservation International website for up-to-date survey methodologies). One frequently used method is to place acoustic detectors on existing met towers, approximately every two kilometers across the site where turbines are expected to be sited."*

Kunz et al. (2007) provide a summary of available guidance:

*"Ideally, acoustic monitoring should be conducted at the site of each proposed wind-energy facility, although practical limitations prevent coverage at all potential turbine sites. The Alberta Bat Action Team recommended a minimum number of preconstruction monitoring stations placed at each north, east, south, and west periphery of a proposed Project area, with one station in the center (Lausen et al. 2006); however, we suggest additional stations be placed in the vicinity of any variations in terrain, especially those that may potentially serve as a flyway (e.g., a forest gap). Alternatively, a systematic sample of the area of interest is recommended with a random starting point along the axis of the wind resource area. If a 3-dimensional sample survey using a vertical array of bat detectors is deployed (Fig. 13), a grid could be placed over the wind resource area with some systematic selection rule. For example, the minimum number of detectors for a site with five turbines would require deployment of 15 bat detectors. For larger Projects, more detectors would be needed."*



It will be necessary to install additional acoustic monitoring stations to adequately characterize bat activity at both above-canopy and ground level. More than two MET towers would allow installation of acoustic detectors within the appropriate height to detect bats that would fly through the rotor swept area. If additional MET tower installation is not possible, temporary towers could be installed. These temporary towers likely will not be able to achieve the ideal height for acoustic sampling, but will still provide useful data on bat species within the Project area. We recommend a minimum of one acoustic monitoring station per two kilometers on MET or temporary towers across the site as per WEG recommendations. Each station should have at least two detectors, one as close as possible to rotor height, and one near ground level (2-3 meters above ground level).

The CEC/CDFG Guidelines state: *"Monitoring for a full year is recommended because little is known about the timing of bat migratory activity in many parts of the state, and some bat species overwinter in California and can be active throughout the year."* Additionally, the WEG recommends monitoring for a full year in areas where there is year round bat activity. Because the Project site and adjacent lands include habitat features conducive to bat activity, many of the species with potential to occupy the Project area have the potential to be active year round, and bat fatalities were documented in each season during post-construction monitoring at the Hatchet Ridge wind facility, the Department recommends the completion of bat surveys year round, instead of the proposed May 1 – November 15 timeframe.

The Work Plan does not address how potential impacts to low-intensity echo locators such as Townsend's big-eared bat (*Corynorhinus townsendii*) or pallid bat (*Antrozous pallidus*), both California SSC, will be evaluated and mitigated for. Acoustic monitoring in general, and especially at the effort level proposed, may not reliably detect these species. This is particularly important given that the proposed Project is in close proximity to habitat for Townsend's big-eared bats and pallid bats. These species occur in nearby Lassen National Forest, and may occur within the Project area, if suitable habitat exists.

The Bat Desktop Assessment should also include resources from the Western Bat Working Group (<http://wbwg.org/>).

In addition to a description of methods, results, and discussion of Project impacts, the Biological Survey Report to be prepared for this Project should include analyses of known or potential nearby bat roosting sites and how the proposed Project may impact bat species traveling through the Project area between sites, a cumulative impact analysis of mortality based on the proximity to the Hatchet Ridge wind facility and recent research regarding hoary bat populations, a detailed description of acoustic analysis, and the inclusion of acoustic call vouchers. The acoustic information gathered to date may not be adequate to determine Project impacts.



## **Wildlife Movement Study**

The Use Permit Application recognizes that the Project may have an adverse impact on migratory wildlife corridors and proposes to conduct a Site Characterization Study. The Department requests the completion of a focused wildlife movement study to document movement corridors within the Project site, not just to document wildlife concentration areas as proposed.

## **Deer Habitat**

The Project is located within deer fawning habitat as mapped by the Department. Impacts to deer should be identified in subsequent environmental documents for this Project, including impacts from fencing, construction, noise, lighting, etc.

## **Rare Plants and Sensitive Natural Communities**

Rare plant surveys should be conducted following the Department's November 2009 *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (provided to the County on June 28, 2017, found at: <https://www.wildlife.ca.gov/Conservation/Survey-Protocols#377281280-plants>). These surveys should be conducted at the appropriate time of year and under the correct conditions to identify species with potential to occupy the Project area. Surveys should include all California Rare Plant Ranked plants and all plants listed as rare, threatened, or endangered.

California Rare Plant Ranked plants either meet the definitions of CESA and are eligible for state listing (Rank 1, 2 and 3 species) or may be significant locally (Rank 4 species). Impacts to species listed as California Rare Plant Rank 1, 2, and 3 or their habitat should be analyzed during preparation of environmental documents relating to CEQA, as they may meet the definition of Rare or Endangered under CEQA Guidelines section 15125 (c) and/or section 15380. Impacts to species listed as California Rare Plant Rank 4 should be analyzed when impacts will occur to populations at the periphery of a species' range, in areas where the taxon is uncommon or has sustained heavy losses, in areas where populations exhibit unusual morphology or occur on unusual substrates, or at the type locality for the population.

Surveys should also identify any natural communities with a State rank of S1-S3. Natural communities with ranks of S1-S3 are considered sensitive natural communities to be addressed in the environmental review process. State rank S1 indicates a critically imperiled community because of its extreme rarity in the state, S2 indicates a community that is imperiled in the state, and S3 indicates a community that is vulnerable to extirpation within the state. Please see <https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities> for more information.



## **Invasive Species**

The Department recommends the completion of invasive plant species mapping in order to document locations of invasive species on site and avoid or minimize the potential spread of invasive species during Project construction. Invasive species control measures should be developed and include those found in California Invasive Plant Council guidance documents, including post-construction monitoring to ensure that invasive species are not spread or introduced during construction activities.

## **Proposed Survey Corridors**

The Use Permit Application references the use of survey corridors, which constitute areas of temporary and permanent ground-disturbing activities. More information regarding the width of these corridors is necessary. The survey area for the Project must encompass all areas of direct impact and areas in which reasonably foreseeable indirect Project impacts will occur, including areas in which sensitive species habitat would be impacted by noise from construction or ongoing maintenance activities, noise and vibrations from blasting, fugitive dust, Project lighting, habitat fragmentation, and downstream impacts to waters of the state. The survey area should encompass an area large enough to obtain an understanding of wildlife usage and movement within the Project site in order to document potential direct, indirect and cumulative impacts to wildlife, and thus allow for proper siting of turbines. Without further information, the Department does not believe the areas mapped in Figure 17 will accomplish this goal. The Department requests additional information regarding the use of survey corridors, including the width of the corridors, location of corridors in relation to Project activities, and the surveys proposed to be conducted within these corridors.

## **Lake or Streambed Alteration Agreement**

A Lake or Streambed Alteration Agreement (LSAA) will be required for Project activities that modify a streambed and/or bank, use material from a streambed or divert or obstruct streamflow. The Project proponent will need to notify the Department pursuant to FGC section 1602. At a minimum, a notification will be required for the work proposed in on site drainages, including the replacement of culverts and ongoing maintenance of culverts discussed in the Use Permit Application. In issuing a LSAA, the Department would be acting as a Responsible Agency under CEQA, as discussed above. As such, the Department would be required by CEQA Guidelines section 15096 to review the certified CEQA document and to make certain findings concerning the activity's potential to cause significant adverse environmental effects. It is therefore important that future environmental documents address all of the potential streambed alteration impacts and propose feasible mitigation, such as those set forth below.

- a. Protection and maintenance of the riparian, wetland, stream or lake systems to ensure a "no-net-loss" of habitat value and acreage.



- b. Provisions for the protection of fish and wildlife resources at risk that consider various life stages, maintain migration and dispersal corridors, and protect essential breeding (i.e. spawning, nesting) habitats.
- c. Delineation of buffers along streams and wetlands to provide adequate protection of aquatic resources. No grading or construction activities should be allowed within these buffers.
- d. Placement of construction materials, spoils, or fill, so that they cannot be washed into aquatic resources.
- e. Prevention of downstream sedimentation and pollution. Provisions may include, but not be limited to, detention basins, buffering filter strips, silt barriers, etc.

### **Aquatic Resources**

The Use Permit Application recognizes that the Project may have adverse effects on federally protected wetlands as defined by section 404 of the Clean Water Act *"through direct removal, filling, hydrological interruption, or other means"*, and proposes to conduct a desktop assessment of waters on the Project site, including wetlands, *"in order to inform preliminary design of the Project as well as future field delineation of jurisdictional waters."* The U.S. Army Corps of Engineers as well as the National Wetlands Inventory (NWI) will be consulted to determine the potential for jurisdictional waters to occur on the Project site. The USFWS website cautions that the objective of the NWI maps are to produce reconnaissance level information and are based on aerial imagery, analysis of which includes an inherent margin of error. The Department recognizes the usefulness of such databases in pre-survey planning, but cautions in relying too heavily on these resources without conducting adequate on the ground assessments and surveys.

The Department maintains responsibility for wetland and riparian habitats. It is the policy of the Department to strongly discourage development in wetlands or conversion of wetlands to uplands. In 1993, Executive Order W-59-93 established a comprehensive wetlands policy for the State that sought no overall net loss and long-term net gain in the quantity, quality and performance of wetlands acreage and values. The Fish and Game Commission also has adopted a Wetlands Resources Policy, which recognizes the habitat values of wetlands and the damage to fish and wildlife resources from projects resulting in a net loss of wetland acreage or habitat values (Fish and Game Commission 2013a). The policy states<sup>4</sup>:

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<sup>4</sup> Fish and Game Commission policy available at:  
<http://www.fgc.ca.gov/policy/p4misc.aspx#WETLANDS>



*"It is the policy for the Fish and Game Commission to seek to provide for the protection, preservation, restoration, enhancement and expansion of wetland habitat in California. Further, it is the policy of the Fish and Game Commission to strongly discourage development in or conversion of wetlands. It opposes, consistent with its legal authority, any development or conversion, which would result in a reduction of wetland acreage or wetland habitat values. To that end, the Commission opposes wetland development proposals unless, at a minimum, project mitigation assures there will be "no net loss" of either wetland habitat values or acreage. The Commission strongly prefers mitigation which would achieve expansion of wetland acreage and enhancement of wetland habitat values."*

The Department recommends the applicant conduct a complete and thorough wetland delineation to identify wetlands or stream resources present on-site. The delineation report should include a jurisdictional delineation including wetlands identification pursuant to the USFWS wetland definition<sup>5</sup> as adopted by the Department<sup>6</sup>, which utilizes hydric soils, saturation or inundation, and vegetative criteria, but requires the presence of only one of these criteria (rather than all three as required by the U.S. Army Corps of Engineers) in order to classify an area as a wetland. Many stream, wetland and riparian habitats subject to the Department's authority extend well beyond the jurisdictional limits of the U.S. Army Corps of Engineers, and must be included in the delineation. The jurisdictional delineation should also include mapping of ephemeral, intermittent, and perennial stream courses potentially impacted by the Project as well as a quantification of impacts to these resources. In addition to "federally protected wetlands" (see CEQA Appendix G), the Department considers impacts to any wetlands (as defined by the Department) as potentially significant. Site design should include provisions for protection of onsite wetlands, should they occur, including their watersheds.

### **Temporary Impacts and Revegetation**

The Use Permit Application states that all temporarily impacted areas will be replanted/restored with *"non-aggressive resident species that are compatible with wind farm operations, replacing timber stock for future production where appropriate and with native, slow-growing shrubs and hardwoods elsewhere."* Changing the vegetation communities within the temporarily impacted areas on the Project site to habitats compatible with wind farm operations is not a temporary impact, nor is it restoration as discussed in the Use Permit, and should be analyzed as a permanent impact in future environmental documents for this Project. The Department recommends an analysis of the change in vegetation communities based on the proposed replanting scheme. The

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<sup>5</sup> Cowardin, Lewis M., et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service.

<sup>6</sup> California Fish and Game Commission Policies: Wetlands Resources Policy; Wetland Definition, Mitigation Strategies, and Habitat Value Assessment Strategy; Amended 1994.



Department supports the use of native species in revegetation efforts; however, the species should be representative of the native species currently occupying the Project site. A detailed revegetation plan should be developed for review.

Additionally, clearing for collector lines and subsequent vegetation management under these lines that will *"remain permanently disturbed with low vegetation and two-track access for maintenance"* should not be considered a temporary impact. The Use Permit Application concludes that the permanent impacts from this activity would be limited to individual pole locations. As stated above, the change in the vegetation community would require this impact to be considered and analyzed as a permanent impact.

### **Consultation with Local Stakeholders**

The Department recommends consultation with local environmental groups and experts, including local Audubon chapters and staff from universities and colleges as discussed in the CEC/CDFG Guidelines. These consultations may provide critical information regarding wildlife usage near the Project site and aid in identifying potentially adverse impacts of the Project.

### **Tower Lighting**

The Use Permit specifies that flashing red lights will be installed on turbines and meteorological towers to improve nighttime visibility for aviation. In order to minimize impacts to birds moving across the landscape at night, the Department recommends following USFWS WEG and Communication Tower Guidance (USFWS 2016) for tower lighting by utilizing the minimum number of lights required, at the minimum intensity, and the minimum number of flashes per minute (i.e., longest duration between flashes and "dark phase"), with all lights synchronized to flash simultaneously.

### **Overhead Electrical Lines**

The Department is concerned with the risk of bird strike and electrocution posed by the proposed 16 miles of overhead collector lines. Additionally, the poles associated with these lines provide perch and nesting locations that may attract raptors into the Project area. To reduce the potential for avian collisions, and provide consistency with the CEC/CDFG Guidelines and WEG, the Department advises that overhead electrical collector lines be placed underground to the maximum extent possible. Project evaluation must include consideration of the wildlife- and habitat-related impacts of both above- and below-ground electrical lines.



## **Grading and Erosion Control**

Section 2.3.1 – Grading, of the Use Permit Application discusses the preparation of a Temporary Erosion and Sediment Control Plan and the use of standard storm water BMPs to reduce the risk of erosion. Additional erosion control BMPs may be required in the LSAA issued for this Project. Erosion control methods must be monitored and maintained in good working order throughout the life of the Project.

All access roads, whether newly constructed or existing should be constructed, upgraded, and maintained consistent with the guidance presented in the *Handbook for Forest, Ranch, and Rural Roads* (<http://www.pacificwatershed.com/roadshandbook>.) This section also discusses the potential for blasting to loosen rock prior to excavation. The proposed Blasting Plan should include measures to protect special-status species and sensitive natural communities.

## **Hazardous Materials**

The Use Permit Application states that refueling and hazardous materials storage will not take place within 100 feet of a drainage channel or structure. Depending on site-specific conditions and topography, this distance may need to be increased. In addition to drainages, all hazardous materials must be kept away from any special-status species habitat and/or sensitive natural communities found on the Project site. Appropriate buffers should be developed through additional consultation with resource agencies. The Use Permit Application also states that BMPs will be implemented to ensure “impacts are minor”. Any potential impacts to special-status species, sensitive natural communities, or onsite drainages from hazardous materials must be mitigated to a level of less than significant.

## **Review of Biological Studies**

The Department requests that biological studies conducted for the Fountain Wind Project be sent to the Department for review prior to the release of the draft EIR for this Project.

## **Environmental Data**

CEQA requires that information developed in EIRs and negative declarations be incorporated into a database that may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code § 21003, subd. (e)). Accordingly, any special status species and sensitive natural communities detected during Project surveys must be reported to the California Natural Diversity Database (CNDDB). The online submission and PDF CNDDB field survey forms, as well as information on which species are tracked by the CNDDB, can be found under their corresponding tabs at the following link: <https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data>.



Bill Walker  
Planning Division  
March 2, 2018  
Page 19

Additionally, the Department requests that field survey forms be submitted to the Northern Region office at: Attn: CEQA, 601 Locust Street, Redding, CA, 96001.

Bat acoustic data should also be submitted to the Bat Acoustic Monitoring Portal (BatAMP). Information on BatAMP and submitting data can be found here:  
<https://batamp.databasin.org/>.

The Department appreciates the opportunity to provide comments early in the environmental review process and looks forward to providing further comments and guidance as data collection and the review process proceeds. If you have any questions, please contact Kristin Hubbard, Environmental Scientist, at (530) 225-2138, or by e-mail at [Kristin.Hubbard@wildlife.ca.gov](mailto:Kristin.Hubbard@wildlife.ca.gov).

Sincerely,



**Curt Babcock**  
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Bill Walker  
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March 2, 2018  
Page 22

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