CALIFORNIA NORTH COAST CHAPTER
THE WILDLIFE SOCIETY
P.O. Box 5214
Arcata, CA 95518
cncctws@gmail.com

December 16, 2019

Rex Bohn
County of Humboldt
Board of Supervisors
825 5th St, Room 111, Eureka, CA 95501

Dear Chairman,

On behalf of the California North Coast Chapter of the Wildlife Society (CNCC TWS), I would like to thank you for receiving and considering our comments on the Final Environmental Impact Report (FEIR) for the Humboldt Wind Energy Project proposed by Humboldt Wind, LLC (Applicant). This letter is submitted as public comment on the Final Environmental Impact Report (FEIR) for the Humboldt Wind LLC Project (hereafter Project) located west of Fortuna and Rio Dell, CA.

The California North Coast Chapter of The Wildlife Society is affiliated with The Wildlife Society (TWS; wildlife.org), an international non-profit scientific and educational association, representing over 15,000 wildlife biologists and managers, dedicated to excellence in wildlife stewardship through science and education. Our mission is to enhance the ability of wildlife professionals and wildlife students to conserve biodiversity, sustain productivity, and ensure responsible use of wildlife resources and habitats.

Our California North Coast Chapter has over 120 active members, including professional wildlife managers, biologists, ecologists, botanists, and students – all devoted to the sustainable conservation of wildlife and wildlife habitat. We are in favor of exploring and developing alternative energy while implementing prudent measures to reduce potential impacts on natural ecosystems to the greatest extent practicable.

We are writing to provide our professional opinion about the ecological impacts of the proposed Humboldt Wind Energy Project on wildlife and wildlife habitat. The CNCC TWS would first like to acknowledge that the applicant and County clearly considered public comments while composing the FEIR and that they have made tangible efforts to reduce Project impacts to wildlife. However, even with a reduced number of turbines and reduced acres of habitat affected (through realignment of the Gen-tie), FEIR conclusions were unchanged from DEIR - that operational impacts to wildlife (particularly marbled murrelets and raptors) will be significant and unavoidable. Significant/unavoidable impacts require a statement of overriding considerations.

"[P]ublic agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of the project" (Pub. Resources Code, § 21002.).

"To support a Statement of Overriding Considerations, CEQA requires both (i) that a finding be made that there are specific considerations which make identified mitigation measures or alternatives infeasible and (ii) that there are "overriding economic, legal, social, technological, or other benefits of the project" which outweigh the project's significant unmitigated impacts. For the first finding, CEQA defines "feasible" to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors"" (from https://landuse.coxcastle.com/ supreme-court-sets-aside-statement-of-overriding-considerations-because-csu-made-inadequate-findings-of-mitigation-infeasibility/).

There are two significant and unavoidable determinations in the FEIR (for operational impacts (i.e. collisions) to marbled murrelets and raptors). Specifically:

Marbled Murrelets (MAMU) (page 9-91 of the FEIR https://humboldtgov.org/DocumentCenter/View/80278/Chapter-9-Revisions-to-the-DEIR-PDF)

"Operational impacts of the project on marbled murrelets would be minimized with implementation of the avoidance, minimization, and compensatory mitigation described above. Monitoring would confirm that take of marbled murrelets does not exceed the number of marbled murrelets created by the mitigation, and adaptive management measures would be implemented to rectify a shortfall in production of sufficient marbled murrelets to offset take. However, given the uncertainty as to the feasibility and effectiveness of these compensatory mitigation and yet-to-be developed adaptive management measures, operational impacts on marbled murrelet would be significant and unavoidable."

For the lead agency to justify this with a statement of overriding considerations, they need to show that there are no feasible mitigations to reduce impacts to less than significant. Seasonal curtailment during the MAMU breeding season is a feasible mitigation (see below for our recommendations on this mitigation). It is a requirement in the Habitat Conservation Plan (HCP) for the Skookumchuck wind project in Washington, so the argument that a wind project cannot obtain financing with curtailment restrictions because of the "uncertainty" it not valid. The Lead Agency could specify a curtailment period, removing the uncertainty.

Raptors (page 9-121 and 122 of the FEIR) https://humboldtgov.org/DocumentCenter/View/80278/Chapter-9-Revisions-to-the-DEIR-PDF)

"Implementing Mitigation Measure 3.5-11 would avoid and minimize potential impacts on special-status raptors to the maximum extent feasible, and would offset some of the impacts on raptors by reducing raptor electrocution rates by power pole retrofits.

However, the fatalities of as many as 50 raptors/year on regional populations of raptors would substantially reduce the region's raptor populations. This impact would be significant and unavoidable."

Again, for the lead agency to justify this with a statement of overriding considerations, they need to show that there are no feasible mitigations to reduce impacts to less than significant. Operational curtailment should be implemented as well as an independent technical advisory committee (TAC) requiring adaptive management (as is proposed for bats). New technology such as identiflight should also be implemented in an attempt to reduce impacts below the level of significant/unavoidable. In addition, the proposed undergrounding of 5 miles of power lines as a mitigation strategy while creating 23 miles of new power lines is incompatible with logic.

Bats (page 9-145 and significance determination on 9-153 https://humboldtgov.org/DocumentCenter/View/80278/Chapter-9-Revisions-to-the-DEIR-PDF)

"Mitigation Measure 3.5-18d provides a step-wise approach that includes a threshold for the implementation of mitigation and the measures the applicant will implement if fatality monitoring reveals impacts on hoary bat above that threshold...Operational curtailment...will be used only if deterrents prove ineffective at limiting fatalities of this species at the site" (FEIR 2.4-1).

As currently written, the bat mitigation allows the Project proponent to kill many bats before any adaptive management actions are implemented. The threshold is 1.7 hoary bats per mW within a 1 year period. The project is 155 mW. There are no thresholds set for any other bat species, so the project could kill hundreds of hoary bats per year and any amount of other bats without having to do anything.

The bat operational mitigation has lots of uncertainty, and the FEIR seems to resolve this by putting an upper limit on operational mitigations for bats (no more than two months). That measure is not sufficient as written but is an example of curtailment being proposed and not being infeasible due to uncertainty (i.e. it is an inconsistency in the document).

In light of the FEIR's inability to show reasonable take avoidance measures or adequately mitigate for the significant impacts to wildlife, and given the incompleteness of the Draft EIR combined with the extensive revisions and new information in the FEIR (40 new documents in the County's FEIR folder, including 222 new or revised pages in just one of those: Chapter 9, Revisions to the DEIR), **we request that the FEIR be recirculated as a Draft EIR**.

We also take issue that the Project developer and Humboldt County released a DEIR on April 15, 2019 with incomplete wildlife studies. For example, the DEIR included only a single year of avian use data, while a second year of avian use data, as required by approved survey protocols for both northern spotted owls and marbled murrelets, were still being collected (Oct. 2018 through Sept. 2019, according to the FEIR). This important resource data was completed within

three months of the deadline for comments on the DEIR, which thus could have been released a few months later with complete information. The public is now being given only two weeks to review the complete FEIR which, as noted above, includes extensive changes and new information. These considerations cast doubt on the sincerity and integrity of the County's planning process and desire for public input.

During the abbreviated review period for the FEIR we have assembled the following list of concerns that we feel have not been adequately addressed.

The significant and unavoidable impacts on MAMU.
The MAMU Collision Risk Model (CRM), in particular its use of an avoidance rate of 0.98, is based on assumptions that have not been tested, and are not supported by empirical data from MAMU or from other bird species that share its unusual behavior of flying over ridges in very low light situations (dawn and dusk), with fast flight (50-60 mph) and limited maneuverability. These behaviors, coupled with the frequent fog which occurs at the Project site, suggest that murrelets may be substantially less able to detect and avoid rapidly spinning turbine blades than those bird species (such as gulls, raptors, and waterfowl) which provided the avoidance rate information upon which the CRM relied. The fact that MAMU are able to navigate through stationary objects like tree branches does not necessarily translate into an ability to maneuver through turbine blades rotating at a high speed (estimated to be roughly 300 mph at the tip of the turbine blade at maximum rotor speed). In support of our concern, a recent detailed review of seabird mortality risks at wind farms concluded, regarding avoidance of turbine blades (which they refer to as "micro-avoidance") for a wide range of seabirds including MAMU:

> *"Based on the results of the studies described above, we recognize that micro-avoidance can vary among species, and that this variability depends on a species' maneuverability, morphology, habitat use, and environmental factors. With the information currently available, we cannot effectively quantify species-specific micro-avoidance associated with OWEI [Offshore Wind Energy Infrastructure] and have therefore not yet incorporated micro-avoidance in our estimation of Collision Vulnerability" (Adams et al. 2016, page 20).*

The mortality estimates provided by the CRM are extremely sensitive to the assumed avoidance rate. The 0.98 rate used means that 98 of 100 murrelets that approach and would otherwise collide with a moving turbine blade detect the turbine and take evasive maneuvers that avoid collision. Project proponents based the 0.98 avoidance rate on European studies of wind energy projects, which are defined by vastly different habitats and conditions from those of the Project site. Given murrelet behavior, the complete lack of data on MAMU ability to avoid turbines, and because even a 0.02 change in the avoidance rate from 0.98 to 0.96 results in a doubling of the 30 year estimate of MAMU mortality, we believe that the use of 0.98 is too high for a species listed under both the California and Federal Endangered Species Acts. In the absence of data on how successfully MAMU can navigate through rapidly-spinning wind turbine blades in twilight and foggy conditions, a more conservative approach is appropriate.

In support of our concern, we believe that curtailment of turbine operation during the periods of higher collision risk to murrelets would minimize murrelet risk and mortality, and thus reduce

project impacts and the need for compensatory mitigation. While specifics on curtailment period would require some study, a model exists from the Skookumchuck Wind Energy Project in western Washington. This project recently completed a Habitat Conservation Plan with the U.S. Fish and Wildlife Service to address wind project impacts to murrelets for a comparable ridgeline project (Chambers Group, Inc. and WEST, Inc. 2019). That project's conservation measures include daily curtailment at the 10 wind turbine generators with highest anticipated mortality risk (of 38 total) for a three-hour period (beginning approximately 105 minutes before sunrise and ending 75 minutes after sunrise) during the breeding season (May 1st through August 9th in Washington; the comparable period for northern California might differ slightly due to latitudinal differences in breeding season).

Curtailment during higher-risk periods, as being done by the Skookumchuck wind project, would be a much more effective impact reduction technique than compensatory mitigation as it would minimize impacts rather than kill more murrelets. In addition, it would not rely on speculative benefits of the proposed compensatory mitigation (currently proposed as a means to reduce the density of predators on murrelet nests in the Van Duzen County Parks and thus yield more fledgling murrelets). There is no empirical data to support the claims made in the FEIR that corvid control in Van Duzen County Parks will replace the primarily adult breeding MAMU killed by collisions with wind turbines. It is also important to note that replacing breeding adult MAMU with juvenile murrelets, as is proposed, is not equivalent: a high proportion of fledged murrelets do not survive to breeding age. In addition, independent surveys in 2018 did not find evidence that the Van Duzen County Parks were occupied or used by nesting MAMU (McAllister. & Associates 2019). While suitable MAMU habitat occurs in the parks and the survey data were not adequate to rule out use by murrelets, the survey results indicate that murrelet use of the Van Duzen County Parks in 2018, if any, was low. Also, there have been no documented MAMU nests in Van Duzen County Parks. Therefore, compensatory mitigation at Van Duzen County Parks is in no way guaranteed to create new MAMUs or bolster the existing regional population.

Impacts to bats. We would like to see operational curtailment to minimize impacts to bats as a mandatory measure in addition to deterrents - not as a last resort. Hoary bats are extremely susceptible to mortality from wind turbines. The hoary bat population in Humboldt County (at Humboldt Redwoods State Park) exhibits behavioral characteristics not described elsewhere on the planet (a unique population), and curtailment should be applied to reduce mortality.

Also, if the project is to rely on post-construction mortality monitoring (PCMM, via ground searches) to quantify impacts to bats, we recommend that, at a minimum, the Project fund an independent study in the Project area using wildlife scent-detection dogs trained to find bats (and MAMU), to evaluate the efficacy of human PCMM for bats, versus PCMM using dogs also. The results should be incorporated into the adaptive management process. Trained dogs have been used at multiple wind project sites to improve bat and bird mortality estimates and have proved to be substantially more effective at finding carcasses compared to humans (Arnett 2006, Matthews et al. 2013, Beebe et al. 2016).

Impacts to Migratory Birds. New scientific studies on avian mortality associated with renewable energy projects in California have indicated that the majority of project-related

mortalities are composed of migrant and immigrant birds – not resident birds (Fesnock et al. 2019, Avian-Solar Interactions Symposium 2017, Katzner et al. 2016). In the DEIR/FEIR, the impacts analysis does not adequately address operational project impacts on avian populations that migrate through this area (and how the project may impact sensitive populations).

Construction Noise Impacts. Construction noise impacts to northern spotted owls were analyzed using the USFWS guidelines *Estimating the Effects of Auditory and Visual Disturbance to northern spotted owls and marbled murrelets in Northwestern California* (USFWS 2006). These guidelines were developed to assess project noise impacts in forested environments, not open landscape areas, where sound attenuates less rapidly with distance than in forest. Therefore, noise impacts are likely underestimated and may need to be elevated to the level of a significant impact. More advanced methods exist for modeling construction noise impacts and should be employed.

If Humboldt County intends to approve the Humboldt Wind LLC Energy Project, additional mitigation and monitoring requirements should be employed to test the assumptions made during planning, including:

- Annual radar monitoring to determine if the numbers of MAMU projected to be exposed to collision risk are accurate,
- Operational curtailment measures to minimize MAMU mortalities,
- Use of trained wildlife detection dogs during carcass surveys,
- Collection and stable isotope analysis of avian remains to determine origin (e.g. resident or migrant populations being impacted),
- Before and after avian point counts at project site AND at a reference site to compare pre- and post-project use and establish baseline mortality rates,
- TAC to allow for adaptive management to minimize impacts to birds and raptors,
- Operational curtailment measures to minimize bat mortalities

We also remain concerned about habitat losses and habitat conversions as addressed in our DEIR comment letter of 13 June 2019. Development within the Cape Mendocino Grassland Important Bird Area is undesirable and not adequately mitigated.

We recognize the benefits of renewable energy projects but also believe that proper siting of such projects is of paramount importance, along with utilizing the best available science to avoid, mitigate, or minimize deleterious impacts on wildlife. The cumulative impacts of this project must be balanced with the needs of wildlife populations that are already experiencing numerous other threats. In conclusion, The North Coast Chapter of The Wildlife Society is opposed to the Humboldt Wind LLC Project as it is currently described and justified in the Project FEIR.

Sincerely,

The California North Coast Chapter of The Wildlife Society

Genevieve Rozhon, President
California North Coast Chapter
The Wildlife Society

Literature Cited

Adams, J., Kelsey, E.C., Felis, J.J., and Pereksta, D.M., 2017. Collision and displacement vulnerability among marine birds of the California Current System associated with offshore wind energy infrastructure (ver. 1.1, July 2017): U.S. Geological Survey Open-File Report 2016-1154, 116 p., https://doi.org/10.3133/ofr20161154.

Arnett, E.B. 2006. A preliminary evaluation on the use of dogs to recover bat fatalities at wind energy facilities. Wildlife Society Bulletin. 34:1440–5. doi:10.2193/0091-7648(2006)34[1440:APEOTU]2.0.CO;2.

Avian-Solar Interactions Symposium. 2017. Available at: https://www.basinandrangewatch.org/Avian-Solar.html.

Beebe, S.C.; Howell, T.J. Howell; Bennett, P.C. 2016. Using Scent Detection Dogs in Conservation Settings: A Review of Scientific Literature Regarding Their Selection. Frontiers in Veterinary Science. Vol. 3: Article 96. Pp. 1-13. Available at: https://www.frontiersin.org/articles/10.3389/fvets.2016.00096/full.

Chambers Group, Inc. and WEST, Inc. 2019. Skookumchuck Wind Energy Project Habitat Conservation Plan. Prepared for: Skookumchuck Wind Energy Project, LLC. Chamber Group, Inc., Gig Harbor, Washington. WEST, Inc., Corvallis, Oregon. Available at: https://www.regulations.gov/docket?D=FWS-R1-ES-2018-0095.

Fesnock, A.L., Allison, T., Braham, B., Duerr, A.E., Loss, S., Nelson, D., Vander Zanden, H., Conkling, T., Diffendorfer, J., Yee, J., Katzner, T. 2019. Bird Conservation and Solar Energy Conflict Resolution in the California Desert. Proceedings of the AFS/TWS 2019 Conference, Reno, NV.

Katzner, T.E., Nelson, D.M., Braham, M.A., Doyle, J.M., Fernandez, N.B., Duerr, A.E., Bloom, P.H., Fitzpatrick, M.C., Miller, T.A., Culver, R.C. and Braswell, L. 2017. Golden Eagle fatalities and the continental-scale consequences of local wind-energy generation. *Conservation Biology*, *31*(2), pp.406-415. Available at: https://conbio.onlinelibrary.wiley.com/doi/abs/10.1111/cobi.12836.

Mathews, F.; Swindells, M.; Goodhead, R.; August, T.A.; Hardman, P.; Linton, D.M; Hosken, D.J. 2013. Effectiveness of search dogs compared with human observers in locating bat carcasses at wind-turbine sites: A blinded randomized trial. Wildlife Society Bulletin, 37: 34-40. doi:10.1002/wsb.256.

McAllister, S.E. & Associates. 2019. Preliminary evaluation of marbled murrelet occurrence, habitat quality and management considerations at Van Duzen County Park, Humboldt County, California. Prepared for Humboldt County Department of Public Works.

U.S. Fish and Wildlife Service (USFWS) 2006. Transmittal of guidance: estimating the effects of auditory and visual disturbance to northern spotted owls and marbled murrelets in northwestern California. Document: 8-14-2006-2887. Available at: https://www.fws.gov/arcata/es/birds/MM/documents/MAMU-NSO%20Harassment%20Guidance%20NW%20CA%202006Jul31.pdf.