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Sent: Tuesday, June 4, 2019 7:52 PM
To: CEQAResponses <CEQAResponses@co.humboldt.ca.us>
Subject: Humboldt Wind Energy LLC

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The proposed project area does not have structures or buildings currently constructed. Degrading the area with poorly made roads, permanent transmission lines and unreplaced vegetation would significantly affect the visual quality and character of the project area. If the project would result in continuous light from dusk to dawn then the impact would be significant. Desouhant’s 2018 mini review of latest relevant studies found that insects are affected by every type of light they are subjected to. Mammals and birds are also sensitive to artificial light and the introduction of any artificial light system can have adverse effects on their physiology and behavior (Gaston & Bennie, 2014; Rich & Longcore, 2006). Having nighttime security lighting around the perimeter of the buildings creates an artificial lighting scheme from dusk until dawn. Artificial light at night (ALAN) disrupts the physiological processes of plants and wild animals. Nocturnal insects can act as a bioindicator, as they are low at the trophic level, and ALAN affects the biodiversity of wildlife at every level. Marbled Murrelet, the Humboldt Marten and Fisher and 12 species of bats live and migrate through the redwood forests ("Humboldt County, US, CA", 2019). Studies on the effects of artificial light pollution on the ecology of mammals and bats is slowly increasing. To date, the studies point toward physiological and behavioral adverse effects that can lead to population declines in the more sensitive species (Gaston & Bennie, 2014; Rich & Longcore, 2006; Stone, Harris & Jones, 2015).

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There is a considerable lack of species specific data for the physiological and ecological effects of ALAN and not a large enough overlap between species using specific lights to warrant the approval of this project.

*Desouhant, E., Gomes, E., Mondy, N. and Amat, I. (2019). Mechanistic, ecological, and evolutionary consequences of artificial light at night for insects: review and prospective. *Entomologia Experimentalis et Applicata*, 167(1), pp.37-58. <https://doi.org/10.1111/eea.12754>

*Gaston, K., Davies, T., Bennie, J., & Hopkins, J. (2012). REVIEW: Reducing the ecological consequences of night-time light pollution: options and developments. *Journal Of Applied Ecology*, 49(6), 1256-1266. doi: 10.1111/j.1365-2664.2012.02212.x

* Gaston, K., & Bennie, J. (2014). Demographic effects of artificial nighttime lighting on animal populations. *Environmental Reviews*, 22(4), 323-330. doi: 10.1139/er-2014-0005

*Humboldt County, US, CA. (2019). Retrieved from <https://www.inaturalist.org/places/humboldt-county-ca-us#taxon=355675>

*Rich, C., & Longcore, T. (2006). *Ecological consequences of artificial night lighting*. Washington, DC: Island Press. 19-37.

*Stone, E., Harris, S., & Jones, G. (2015). Impacts of artificial lighting on bats: a review of challenges and solutions. *Mammalian Biology*, 80(3), 213-219. Doi:10.1016/j.mambio.2015.02.004

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Wendy Raymond

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