BLACK SWAMP BIRD OBSERVATORY

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TEAMING RESEARCH WITH EDUCATION TO PROMOTE BIRD CONSERVATION

July 3, 2020

Submitted online: *http//www.regulations.gov*, Docket No. FWS-R3-ES-2020-0046

To Whom It May Concern:

Comments re: Draft Environmental Assessment (for Proposed Habitat Conservation Plan and Incidental Take Permit, Hog Creek Wind Project, LLC, Hardin County, Ohio, May 2020)

General comment: It seems that the entire purpose of this request for an ITP is to improve the economics of the project. This is not a responsibility of the USFWS, it is the responsibility of the developer/owner. In fact, the purpose is contrary to the intent of an ITP under the ESA, which is to minimize take, not suggest ways to increase it; therefore, the ITP should be denied and the operation at Hog Creek Wind should continue under the stipulations of the TAL of 02 Feb 2017.

1. P.1, §1.1 – "may result in take of a listed species as long as the take is incidental to, and not the purpose of, otherwise lawful activities." "Knowingly" killing is not the same as "purposely" killing, but it is not "incidental" either. This ITP application has as a known consequence, which is to allow an increase in bat mortality from the present operation protocols. This not an argument about semantics, it is about foreknowledge and intent.
2. P.1, §1.1.1.1. – "cut-in speed for this model of turbine is 3.0 meters per second (m/s)." How does cut-in speed compare to curtailment speeds? Feathering below cut-in wind speed does not stop the blades from moving; it merely allows them to drift depending on the angle of wind impingement. Curtailment implies that the brake is on as well as the blades being feathered, so the blades do not move at all.
3. P.3, §1.2.1. – "The Project presents relatively low risk to resident and migratory birds…" What does relatively low risk mean? Compared to what? How is the Applicant defining/quantifying the risk? Existing bird mortality data from Timber Road indicate higher mortality than what would be represented by "low risk". This Hog Creek Project failed to address nocturnal migration in any pre-construction surveys and used wind industry post-construction survey protocols that fall short of scientific rigor for assessing risk.
4. P.3, §1.2.1. – "…mitigation measures will fully offset the impact [of take]…" Define "fully offset." Without a clear definition of the term the conclusion is unfounded.
5. P.3, §1.2.1. – "… is not likely to be highly controversial …" Issuing of an ITP for the purpose of increasing take to improve profit is highly controversial and contrary to the purpose of an ITP.
6. P.3, §1.2.1. – "… contribute to significant impacts…" Historical wind industry mortality surveys are of low robustness and accuracy resulting in inadequate data to make assumptions on cumulative impact.
7. P.4, §1.2.2. – Bat take of the endangered Indiana Bat at the nearby Timber Road and Blue Creek Wind Facilities are some of the highest recorded in the U.S. as referenced in the USFWS Midwest Wind Multi-species Habitat Conservation Plan (April 2016). This is in addition to concerns of poor-quality post-construction monitoring and intentional manipulation of data in analysis. USFWS should consider the worst-case scenario to assess total mortality and cumulative potential of this ITP.
8. P.7, §2.2. - See Smallwood, et.al., "Effects of Curtailment on Bird and Bat Fatalities," *Journal of Wildlife Management*, 1-20, 2020. Curtailment is defined as shutdown, i.e., blades feathered, brake on. The EA

should be perfectly clear as to whether it means feathering alone, or actual curtailment, feathering and braking.

9. P.7, §2.2. – "Each action alternative uses the same spring and summer cut-in speed (manufacturer's cut-in speed of 3.0 m/s)" How is using the manufacturer's cut-in speed considered part of an action plan? If there was no action plan the cut-in speed would still be 3.0 m/s.
10. P.7, §2.2. – The use of means shown in Table 2.2 serves to diminish take values and under estimates loss. In effect, it uses means of means, thereby removing uncertainty at multiple levels. Reversion to a model that accounts for uncertainty (variability and confidence) at all levels should be used to provide for a truer sense of take for this project and cumulative take.
11. P.8, §2.2. – " We also assume that reductions in mortality seen in all-bat mortality rates will apply to Covered Species similarly" Is there data to justify assuming ESA species are similar to all bats as assumed here? Please site studies that support this assumption.
12. P.8, §2.2. – Last paragraph of 2.2: Models are only as good as the data entered into them. Documented manipulation of efficiency data prior to entry into mortality estimation models have been discovered in Timber Road reports and appear to be universal among reports by this consultant. We recognize inherit error in all models of this nature; however, for this review the use of means conceals this error instead of allowing this uncertainty to inform ESA species take.
13. P.8, §2.2.1 – For all aspects of this EA and the Applicants HCP, Alternative 1 should be treated as the baseline case to which all Alternatives should be compared when testing for mitigation effects.
14. P.9, §2.2.1. – "As no take of Covered Species is likely under the No-Action Alternative, the Applicant would not conduct fatality monitoring, adaptive management, or mitigation under this alternative." Has it been proven anywhere that a 6.9 m/s cut-in speed has eliminated take? Monitoring should continue even under the current cut-in speed, and improved search methods should be adopted, e.g., using cadaver dogs for searchers, that would improve detection reliability.
15. P.11, §2.2.2.1. – "…would reduce bat mortality by an average of 61 percent…" Since no curtailment is not an alternative, and existing operating conditions and the TAL requires 6.9 m/s cut-in speed, all comparison should be to this, which the FWS indicates in Alternative 1 as the recourse if no ITP is issued. To indicate that Alternative 2 reduces take is disingenuous and misleading to fact. This has to have an increase in take listed for EA which is contrary to purpose of ITP.
16. P.11, §2.2.2.1. Table 2.2 – (This table does not compare to 6.9 m/s which is the only comparison relevant to this ITP, and needs to be completely recalculated.) The foundation of much of this EA and the Applicant's HCP is based on this table. Unfortunately, it represents an industry-wide tradition of manipulating information and diminishing effects through use of means of means, ignoring uncertainty and confidence limits at all levels of analysis. Even taking numbers at face value (which we do not suggest doing) indicates results contrary to several premises reported by the Applicant. In examples of a single site with multiple years and same treatments there is considerable year-to-year difference which indicates high variability in annual mortality. By combining study data from vastly different regions and habitats, variability is introduced, which is ignored here. For example, the two studies that compare 3.0 m/s and 5.0 m/s show an average of about a 50% reduction from no curtailment. There was a difference between means of 13% between years, but it is unknown, and not reported here, whether that is statistically significant (this should be common practice analysis). Other questionable data set in this table that raises significant concern is the Casselman site, which compares 3.5 m/s and 5.0 m/s in two cases, and the 3.5 m/s to 6.5 m/s in two cases, where the exact same % reduction in mortality is reported for both sets. This goes against the entire presumption in this table, which is that changing cut-in speed will change take. Also, the mean % reduction for 3.5 m/s to 5.5 m/s is reported in the table to be 61% reduction, while it appears it should be 68% using averaging. In order to use this table for this EA it needs to be verified and corrected so that these types of glaring errors are eliminated, and it needs to have comparisons made to 6.9 m/s, which is the current operating condition.

17. P.14, §2.2.3. – "Based on existing curtailment studies…" Existing data is known to significantly underestimate bat fatality due to searcher inefficiency and crippling bias (see Smallwood, et.al., "Relating Bat Passage Rates to Wind Turbine Fatalities," *Diversity*, 22 Feb. 2020, p. 15.).
18. P.15, §2.2.3.3 – Use of cadaver dogs to conduct mortality searches could reduce overall search needs by virtue of improving efficiencies to the 90% level, as opposed to the 10% for human searchers.
19. P.16, §2.4. – It would seem important to see TAL (02 Feb 2017) guidance monitoring requirements in Table 2.3 to enable direct comparison to other alternatives.
20. P.17, §2.4. – For a current study in this regard see Smallwood, et.al., "Effects of Curtailment on Bird and Bat Fatalities," *Journal of Wildlife Management*, 1-20, 2020.
21. P.22, §3.4.2.2. – T the Hog Creek pre-construction surveys had a total of nine days of survey work conducted over four years. This is hardly enough to evaluate risk. Further, there were no nocturnal passerine migration surveys conducted to be reviewed or assessed for this EA.
22. P.23, §3.4.2.2. – Reference the updated (2020) ODNR listing of current BAEA nest sites for more current information. Were Hog Creek surveys used for eagles or 2020 data?
23. P.23, §3.4.2.3. – Our review of Timber Road post-construction surveys indicates a probable underestimate of mortality. These needs to be reviewed more closely by USFWS before using them as support for an ITP.
24. P.25, §3.4.3.1. – "Twelve bat species occur in Ohio, ten of which have the potential to occur in the Permit Area." It is known that bats are drawn to turbines for foraging insects; but the question remains about from how far they are attracted, so potentially all 12 species could be present in the Permit Area.
25. P.27, §3.4.3.1. – "This increased risk of mortality may be related to…" Bats are drawn to moving turbines blades seeking food, i.e., insects that swarm around turbine blades. Bats will actually fly circles around moving blades while chasing insects.
26. P.30, §3.4.3.2. – "Rather than crossing large areas of unsuitable habitat, Indiana bats tend to follow corridors of suitable habitat, even if that increases distance…" The turbine array itself could function as a corridor for bats foraging at night since it attracts their food, insects.
27. P.35, §3.4.4.1. – "…long-term fluctuations…" "Fluctuations" are the same as "anomalies" when referring to climate change. They are fluctuations beyond the normal expected range.
28. P.36, §4.2.1.1. – "Significant impacts to wildlife resources are those that substantially affect a species' population…" MBTA and ESA do not consider population effects, they are directly concerned with the take of individuals.
29. P.37, §4.2.1.2. – "…though with fewer downed bat carcasses under the No-Action alternative than the action alternatives with lower cut-in speeds…" The intent/consequence of an ITP is not to *allow increase*d *take*, but to allow take at minimal, unavoidable levels. It would seem that this application for an ITP violates the very intent of the ITP process and the ESA itself.
30. P.37, §4.2.1.2. – "…only potentially minor impacts anticipated…" If "minor impacts" are defined as no population effects, this is inconsistent with ESA, which purports to protect individuals.
31. P.37, §4.2.1.2. – "Smallwood (2013).." See recent work by Smallwood cited above for current data.
32. P.39, §4.2.2.2. – "To date, there have been very few studies in the U.S. that focused on effects of turbine operational adjustments on bird mortality.." Smallwood's recent work suggests that shutdown/curtailment for bat mitigation may actually be harmful for birds; moving blades are an avoidance stimulus for birds, while stationary blades are sometimes undetected.
33. P.40, §4.2.2.2. – "Avian collision mortality at wind projects is well documented." Avian mortality rates may be documented, but they are poorly quantified and underestimated. Human searcher efficiencies, search radii, and search intervals all contribute to poor data, untrustworthy data, and inconsistent data. Without correction these reports should not be used for comparison.

34. P.40, §4.2.2.2. – "…there is no current research to indicate that avian mortality would differ based on changes to turbine cut-in speeds." On the contrary, current research (Smallwood, 2020) suggests that higher cut-in speeds won't help birds, and they may actually increase avian mortality.
35. P.41, §4.2.2.2. – "Among bird species, nocturnal migrating passerines represent the bird group most commonly involved in fatalities at wind-energy facilities." Significant species mortality is consistently shown to be horned larks for most wind farms. They are a prevalent resident species that forages beneath turbines and tends to fly straight up when alarmed.
36. P.44, 45, §4.2.2.3. – "Service anticipates that the worst-case bird fatality rate will be approximately 3.5 bird fatalities per MW per year…" This conclusion is highly dependent upon the validity and consistency of previous PCM studies. While serious questions remain about proper selection of searcher efficiencies, search radii, and search intervals, it is agreed this operation probably will have little effect on changing the bird mortality.
37. P.46, §4.2.3.2. – For more up-to-date research see Smallwood, et.al., "Effects of Curtailment on Bird and Bat Fatalities," *Journal of Wildlife Management*, 1-20, 2020.
38. P.47, 48, §4.2.3.3. – "Wind turbine blades can be automatically feathered, or pitched, such that turbines spin very slowly, or not at all…" "Feathering" is used to mean curtailment below cut-in speed. This is not the same definition used by Smallwood in ref. note (25) above.
39. P.48, §4.2.3.4. – "…post-construction fatality monitoring at the Project and comparable Timber Road II and III wind farms allowed for the development of annual all-bat fatality rates." Recent studies by Smallwood show bat mortality as measured by human searchers may underestimate mortality by as much as 10x, regardless of the estimator used (Huso, etc.). This certainly puts into question the value of the annual rates derived from previous data.
40. P.49, §4.2.3.6. – The estimates of reduced mortality should be compared to the current operating conditions, TAL (02 Feb 2017), not no curtailment. This ITP is proposing an in increase mortality, not a reduction or minimization.
41. P.50, §4.2.3.6. – Table 4-1: Based on No Operational Curtailment, Indiana bat mortality = 0.00965 of total mortality.
42. P.50, §4.2.3.6. – Table 4-1: Based on No Operational Curtailment, Alt-1 take for Indiana bat is 0.782 annually, not no mortality. This is an important error in the logic of Indiana bat mortality under current operating conditions of curtailment at 6.9 m/s. There is mortality, even under the Alt 1 condition of No Action, the mortality simply hasn't been discovered due to poor searcher efficiencies.
43. P.51, §4.2.3.6. – How much power generation is lost in Alt-1, No Action? This alternative actually caused 24 Indiana bat fatalities over 30 years (not zero mortality). What does Power vs. Fatality look like at 30 years? No-curtailment baseline is 6.5 fatalities/yr, or 195 fatalities over 30 years. Keep in mind that fatalities could be as much as 10x higher than predicted from PCM studies due to inadequacies of previous studies.
44. P.51, §4.2.3.6. – Effect of cut-in speed on fatality reduction (averages): 3.0 m/s = 46% reduction; 5.0 m/s = 61% reduction; 6.9% = 88% reduction. (Theoretically, no-curtailment, which is no feathering below the manufacturer's cut-in, is equivalent to 0% reduction = 195 fatalities/30yr.)
45. P.51, §4.2.3.6. – The effect of female loss goes only as far as one generation. This should be calculated over the average expected life of an individual female to get a true estimate of take. Male loss should also be added to expected take that has to be mitigated. This should be calculated for all three Alternatives.
46. P.57, §4.2.4.2. – Realistically, wind allows for more energy consumption without accompanying GHGs increase; it does not by any stretch of the imagination reduce GHGs. The only way to actually reduce GHGs is to shutdown coal plants or convert them to natural gas; otherwise, as long as the coal plants continue to function, the GHG emissions remain the same.

47. P.57, §4.2.4.2. – "…No Action Alternative, would have an even greater energy production loss as compared to Alternatives 2 or 3 because, ultimately, the Project would cease to be economically viable…" The economic viability of the project is not the concern of USFWS and should not trigger an offer/recommendation of an ITP. The Project owners have the option to propose a rate increase through PUCO, an increase that would (in our estimate) amount to $1.20/mo for the average Ohio household.
48. P.57, §4.2.4.2. – "…none of the alternatives under consideration would result in significant indirect adverse impacts to climate change." Then a 30-turbine wind farm is an insignificant factor in climate change mitigation? Then the only issue is about project economics at the expense of bat fatalities.
49. P.59, §4.3.2. – "…the Project could kill, disturb and displace birds due to Project presence and operations, though not at significant levels." Does the MBTA, BGEPA, or ESA consider "significance" beyond the individual's mortality? This analysis, though clever, is not germane to any USFWS responsibilities because significance equates to individual mortality.
50. P.59, §4.3.2.1. – Did all 27 PCM studies use the same protocols? Are they strictly comparable in any way? If so, what is the confidence interval around the predictions? The data from the 27 studies needs to be normalized in a way such that they are truly comparable; otherwise, the data are simply numbers without context or cohesion and should not be used to support any conclusions one way or another.
51. P.60, §4.3.2.1. – Table 4-3 is questionable information. The confidence intervals around the means are so large that precision is lost and the median is meaningless.
52. P.61, 62, §4.3.2.2. – "Anthropogenic Sources of Avian Mortality…" has no place in this EA. It is the responsibility of USFWS to enforce the MBTA, BGEPA, or ESA regardless of the number of individuals involved. It is not a successful or valid argument to imply that because wind turbine fatalities are small compared to building strikes, for example, that they don't matter as much.
53. P.63, §4.3.2.3. – The conclusions are not legitimate concerns of MBTA, BGEPA, or ESA. In fact, they are contrary to the intent of these laws. It is not acceptable to sacrifice individuals for the sake of populations. That's not the intent of an ITP.
54. P.63, §4.3.2.3. – The mortality predictions due to anthropogenic climate change are not fully understood; but even so, they have not been rightfully considered. For example, what if, in the next 30 years, the species distribution in the project area changes significantly as birds adapt to changing habitat conditions?
55. P.70, §4.3.3.4. – This is not a valid argument since "no cut-in speeds" is not an alternative. In fact, bat mortality would be increased under Alt 2 as compared to present operating conditions. Further, if cumulative mortality of Indiana bat and NLEB are so difficult to predict, then on what basis can USFWS make a decision on this application for an ITP?

Thank you for the opportunity to comment on this Draft EA.

Sincerely,

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