

Public comment 17-2295

From: Mark Shieldcastle [<mailto:markshieldcastle@bsbo.org>]

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To: Puco ContactOPSB <contactopsb@puco.ohio.gov>

Subject: Submission RE: Case# 17-2295 EL BGN

Please find attached comments for submission concerning Republic Wind Case# 17-2295 EL BGN

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TEAMING RESEARCH WITH EDUCATION TO PROMOTE BIRD CONSERVATION



October 2, 2018

Asim Z. Haque, Chairman
Public Utilities Commission of Ohio
180 E. Broad Street
Columbus, Ohio 43215-3793

To the Ohio Power Siting Board (OPSB):

Re: In the Matter of the Application of Republic Wind LLC, Inc for a Certificate to Construct a Wind-Powered Electric Generation Facility in Seneca and Sandusky Counties, Ohio. Case No. 17-2295-EL-BGN

Dear Mr. Haque:

Black Swamp Bird Observatory (BSBO) and the American Bird Conservancy (ABC) appreciate the opportunity to comment to the OPSB process on the Republic Wind Energy Project, case number 17-2295-EL-BGN.

BSBO is an Ohio-based nonprofit dedicated to research and education for bird conservation. We have over 35 years of field experience and research on bird migration in Ohio (www.bsbo.org), making this organization uniquely qualified to advise the OPSB on this risk assessment. Based on our extensive knowledge of bird migration, we present these points for consideration.

ABC is the only organization in the Western Hemisphere with a single and steadfast commitment to achieving conservation results for birds and their habitats throughout the Americas (www.abcbirds.org).

As the OPSB is aware, the studies to determine the project's potential impacts are dated and incomplete. We recommend that the Certificate of Operation should not be issued until the applicant has completed relevant and/or updated studies on risk to Bald Eagles and nocturnal migrating passerines. The results of these studies should be transparent and open for public scrutiny.

BSBO and ABC acknowledge the need to diversify the nation's energy portfolio to address the threat of anthropogenic climate change. However, there are many other potential ways of addressing climate change beyond poorly sited wind turbines, including limiting deforestation, promoting biodiversity conservation, energy efficiency and distributed solar on our already built environment (e.g., parking lots, houses, etc.). When we do use wind energy, proper siting is crucial.

We support complete enforcement of our state and national wildlife protection laws, including the Endangered Species Act, Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act, as well as the National Environmental Policy Act (NEPA).

In summary, it is our opinion that the application's supporting documents are founded upon invalid, misleading, and erroneous studies presented by consultants on behalf of Republic Wind LLC. There have been multiple failures in migration assumptions, study designs, understatements concerning bird and bat values in the study area, and conclusions that are not supported by the data. We believe the application and EA to be inadequate to assess the risk to birds and bats, a risk that increases with every wind turbine erected.

Please find attached, our review of the Republic Wind application and its supporting documents concerning birds and bats: (1) the Application, (2) Appendix L. Raptor Nest Survey, (3) Appendix M. Bald Eagle Survey, (4) Appendix N. Passerine Migration Survey, (5) Appendix O. Breeding Bird Survey, (6) Exhibit J. Appendix D. Raptor Nest Survey and Breeding Bird Survey from Emerson West Wind Project, and (7) and Exhibit J. Ecological Assessment. We believe the details contained in these comments support our findings and conclusions calling for updated and additional studies to be completed before certification can be issued.

There are numerous studies documenting the impact to birds and bats from poorly-sited wind energy, with hundreds of thousands being taken annually at minimum. Until we can legally prevent the industry from developing wind energy with flimsy ecological science we believe Ohio should establish a standard by which we proceed only with a surplus of knowledge and an abundance of caution.

Respectfully submitted,



Kimberly Kaufman
Executive Director
Black Swamp Bird Observatory



Steve Holmer
Vice President of Policy
American Bird Conservancy

REVIEW

REPUBLIC APPLICATION AND SUPPORTIVE DOCUMENTS

September 13, 2018

Black Swamp Bird Observatory (BSBO) submits the following review of the Republic Wind application and supporting documents. It is our contention that Republic Wind has failed to address risk to birds and bats because of its inadequate science, inappropriate data collection, and scientifically unsupported conclusions

Text in blue indicates passages taken directly from the above-named document, unless otherwise indicated. This review focuses exclusively on the areas of expertise of the author organization. Therefore, comments are primarily associated with risk to birds and bats.

DOCUMENT - Application for a Certificate of Environmental Compatibility and Public Need

Page 96 (B) Ecological Impact (1) Ecological Resources in the Project Area – Data collection for this wind project (submitted 2017) was primarily collected in 2011 and 2012. Additional bat data was collected in 2015-16 and data from 3 avian surveys and 1 bat survey from another wind project (Emerson West) was added to the application. None of the surveys included in this application were conducted on the footprint of this application in its entirety, resulting in a hodge-podge of results without links to scientific support. Data from 2011-12 is strongly dated and has little bearing beyond being a pilot for the study area. The study should be re-designed and current, with relevant data collected. This is especially true for Bald Eagle data, for which the population has had massive changes in the past decade.

Page 105 Birds – Breeding Birds – The Breeding Bird Survey (BBS, page 112) assigned a special survey to several species including the Dickcissel. The application in question makes no mention of the Dickcissels reported on the Federal BBS (Vickory count), and appears to obscure special bird use. The author of this review (BSBO) is responsible for that survey route and encounters Dickcissels annually; i.e., their presence is known.

Page 111 Raptor Nest Survey – This survey was conducted in 2011 over a nine day period and only targeted large diurnal nesters such as Red-tailed Hawk and Bald Eagle, which is inadequate to assess raptor nesting. The survey was conducted in a very narrow time frame and so cannot address nest activity with any reasonable level of confidence. A more detailed review will be presented in review of Appendix L.

Page 112 Breeding Bird Survey – Data were collected in 2011 only. There is no stated rationale on how they associated species to a habitat type. A more detailed review will be presented in review of Appendix O.

Page 113 Passerine Migration Survey – Indicates that the purpose of this survey was to gauge passerine migration rates through the project area, but the survey failed to do so for the following reasons. All surveys were conducted only diurnally and only once a week. The study was conducted in 2011 and is therefore largely irrelevant today for risk assessment. Consultants chose to survey during weather conditions believed to be favorable to migration, without documentation of what is favorable to migration. Only 11 points (sites) were included to cover the whole Project area. The time frame was adequate but only represents one year, which is inadequate for migration questions. The survey was designed to prefer common flocking species. Results should have listed sample occurrence as well as total numbers. It was concluded that the Project area does not appear to be an important part of a passerine migratory pathway, however, criteria for that were not studied. A more detailed review will be presented in review of Appendix N.

Page 114 Diurnal Bird/Raptor Migration Survey – This survey really addressed the same objectives as the Passerine Migration Survey through an alternative design; it was conducted in 2011, and therefore is outdated. This survey was also designed for flocking species. The report did not provide documentation on what conditions were defined as favorable weather. Methodology fits the Hawk Migration Association of North America (HMANA) protocol for raptors only. Results were stated as averages for migratory time frame for the whole period, when they should be stratified to species migration time frames. A more detailed review will be presented in review of Appendix K.

Page 115 Bald Eagle Survey – Conducted in 2011, therefore outdated. A more detailed review will be presented in review of Appendix M.

Page 116 Bat Acoustic Monitoring Survey – Conducted 2011, therefore outdated. The survey could not discount Indiana Bat presence. The survey used the Met Tower as a recording site, which was not near notable bat habitat. Although the consultants acknowledged that this could have affected the surveys, they still concluded that the Project area was not an important bat activity area. The Acoustic recorder used had a measuring range of 30 m, while the tower was 670 m from the closest woods where bats were likely to be observed by the recorder. The study indicated an increase in migratory bat activity but did not address these results. The study indicated it did not detect the Indiana Bat; however it did detect 44 genus *Myotis* bats, of which the Indiana bat is one species, even though it cannot be identified from among other *Myotis* species by this method.

Page 117 2011 Bat Mist-Netting – Conducted in 2011, therefore outdated. The mist net results don't compare well with acoustics results for many reasons possible. The Indiana Bat was encountered. Combining results for all mist net sites assumes "similarity," and uses averages when it should address variability between individual sites first before combining. This results in statistical problems.

Page 118 2015 Bat Mist-Netting – This was additional data requested by USFWS to supplement 2011 data. The survey lasted over only a 9 day period, which is insufficient. It appears that this study was to address Indiana and Northern Long-eared Bat populations.

Page 119 2016 Bat Mist-Netting – Added 7,882 acres to N & W of 2015 sites. The study concluded that Indiana Bats were not using the new area, though only 5 mist net sites were sampled for 5 days. The time frame of the study is insufficient to draw the conclusion reached.

Page 136 Avian Collision Mortality – This rationalization by the wind industry of comparing other types of mortality listed as support for the project ignores consideration of cumulative effects and is irrelevant to the risk of this project. Contrary to assertions in the study, there are no adequate quantitative, predictive models relating pre-construction data to post-construction surveys. Using national averages rather than more local numbers is misleading for many reasons.

Page 137 Estimated Annual Avian Mortality from Anthropogenic Causes – Extremely dated table. Used in-house consultant wind totals that are well below other sources in the same time frame. Loss et al. (2013) and Smallwood (2013) would be better sources as they are independent and Smallwood has included better carcass detection. Build-out alone will increase mortality estimates 3-5x fold in the near future.

DOCUMENT -Exhibit K. Diurnal Bird/Raptor Migration Survey

Before delving into the review of this survey study design, analysis, and conclusions we wish to lay out a series of recommended criteria that should be considered when designing studies of diurnal bird/raptor migration in Ohio.

- Migration is highly variable. No single year of observation can be assumed to be representative of migration in a given area. At least three years are needed to begin quantifying average migratory patterns at any given location. Local research along Lake Erie demonstrates as much as 100% differences in bird volume one year to the next. Any shorter time frame is substandard.

- Migration occurs continuously during each species migration time frame. The start and end of migration can vary greatly by species, and for Ohio includes the time frame of February to late May (~90 days) and early August to late November (~110 days) for most species of waterfowl, shorebirds, raptors, and passerines. Daily peaks are dependent on species and weather. Many passerines begin moving soon after daybreak. Raptors are similar to passerines in that they begin moving at dawn, but are confined to thermal development during the heat of the day.

- Migration is generally a north to south movement across the landscape in spring and reverse in the fall.

- Migration flight altitude is highly variable with thermal conditions, wind direction and strength, precipitation, landscape, and species.

- Species have various migration strategies related to calendar timing and flock size.

- Visual detection and species identification is greatly affected by species, flight height, flock size, weather, and distance.

Executive Summary – This was a one year migration survey completed seven years ago, and was not conducted daily or over the entire Project area. Therefore, to state that this monitoring study confirms limited avian migrant use is erroneous and misleading. This study suggests that conclusion, based on incomplete data from one partial year of field work. In addition, the Project footprint at the time of the study appears different from the one stated in the application, which discredits the relationship between the study and the Project.

2.0 Methods – There are considerable questions on the study design and various failures to include important design criteria in the report. These comments are directed towards study design and the objective of this survey, diurnal birds (non-raptors) and raptors and potential risk to elevated structures.

As a result, this migration study grossly underestimates, or completely fails to address the potential risk to target birds because:

- Analysis was conducted based on only one year of data. Migration volume variability can reach as high as 50% between years. Migration surveys should always be at least three years in duration to provide a more realistic analysis of risk.

- Sample design utilized a modified HMANA (Hawk Migration Association of North America) design of 9 AM to 4 PM. This time window is reasonable for soaring raptors but fails to address important time of day movements of non-raptors and non-soaring raptors (primarily Accipiters). This design flaw alone turns this study into exclusively a soaring raptor survey.

- Only 3 point count sites were used for >60 square miles, and were aligned on a roughly north-south axis. This could result in count dependency, with large sections of the study area remaining unsampled. Detectability of the largest migrants is limited to three miles visibility, thus the coverage of this survey was inadequate in design to address its purpose and should not be used to make any conclusions on risk. Given this author's (BSBO) more than 20 years of raptor and diurnal bird migration survey experience, extensive detectability problems were obvious even as little as 50 yards from any observation point. This detection probability, which varies by species, needs to be established if this type of data is to be used for risk assessment.

- There was no mention of point count observation radius. We then must assume they used infinite point count distance.

- A pre-determined sampling criteria was established based on wind direction as the sole environmental/atmospheric variable. This assumes all species react in similar ways to other environmental/atmospheric variable, which they do not.

- Actual field days represented in the data comprise less than 50% of the specified sample period and roughly 20% of actual migration periods.

- By ignoring species individuality and by combining the entire survey results into one grouping, information about various species in availability is obscured.

- Not accounting for detectability or variability of detecting and counting individuals of various species using visual sampling methods.

- Making assumptions about the presence or absence of species risk with limited spring and fall data.

- There was no methodology listed on how altitude was determined at various distances from the point count site. This is exceedingly difficult for these finite heights that were targeted.

- For non-raptors this study design favors identification of birds within the blackbird family and does not effectively address the presence of other species.

3.0 Results

3.1 Bird Migration – This survey design was applicable primarily to sample blackbirds. Blackbirds are flocking birds that allow for more distant observation than solitary or small flock species. It would be much more valuable to first stratify surveys to migrational time period by species where presence is possible, and second to utilize high count or occupancy as an indicator of risk. This study does not represent the breadth of bird migration but gives indications on only blackbird migration because of study design flaws.

3.2 Sensitive Species and Raptor Migration – The study design does not support the conclusion that limited use was indicated. Survey timing does not address most species of concern because of daily timing, seasonal timing, or weather effects. The survey timing did not encompass the entire migration season of many species of raptor which invalidates species comparisons. There is no mention as to how or whether migrant Red-tailed Hawk and Turkey Vulture were separated from local non-migrating breeders. The fact that the Sharp-shinned Hawk was not recorded (possibly the most common raptor) raises considerable suspicion of the observers' level of expertise and study design.

4.0 Discussion – The report states that based on their surveys, the area is not important to migrating diurnal birds and raptors. This conclusion is not supported by sound science, given that the study was designed to count blackbirds alone. Further, this is contradictory to the known fact that the area lies directly south of one of the greatest bird concentration areas in the Western Hemisphere (i.e., a Globally Important Area as designated by the Audubon Society). Waterfowl, were most likely observed in diurnal feeding flocks near dawn and dusk. Waterfowl migration would not be expected to be observed with this study design which takes place from 9 am to 4 pm only.

The discussion presented of other wind development sites is irrelevant, as the issue here is the risk presented by this particular project. There is good reason to believe that other studies are not comparable to this one in species makeup, habitat, or avian behavior, or methodology; and so the comparison is spurious at best, and potentially misleading.

5.0 Conclusions – Due to excessive flaws in study design, this study cannot be used to address avian risk from wind turbines at the proposed Project site. The study conducted in no way can confirm any conclusion on avian use, as it failed to address too many of the species in question.

DOCUMENT - Exhibit L. Raptor Nest Survey

Executive Summary – This consisted of a one-time three day survey conducted over a six day period in March 2011. The data recorded is 7 years old and is irrelevant to 2018. It is stated that

nests were in early stages of construction; therefore it is possible that additional nests were yet to be started. This survey did not address any sensitive species outside of the Bald Eagle. It should be titled Red-tailed Hawk and Bald Eagle Nest Survey as they are the only species likely to be found using this design, since other diurnal and nocturnal species were ignored.

1.0 Introduction – This study is invalid, because it indicates a completely different study area than Exhibit K. It is obvious that at least one, if not both, studies were not conducted on the present Project area footprint, which invalidates any assessment of risk to raptors.

2.0 Methods – Standard Ohio DNR protocol recommends nest searches from February 1 to March 31. Stick nest of Bald Eagles and Red-tailed Hawks would be marginally sampled, however owls, Cooper’s Hawk, Northern Harrier, or Red-shouldered Hawks would not be adequately sampled by the survey methods BHE choose which involved a 6 day period in late March. Their own results indicate some nest may have been just beginning and others (which they chose to indicate as not used) had already failed. This survey should be conducted at least twice if not three times during the time frame.

3.0 Results – Only 3 of 11 nests (27%) could be assigned ownership. First, this is a glaring sign that the survey was inadequate to address the purpose of the survey and should have been conducted over a larger time frame. Second, it was assumed that the remaining nests were inactive. This is not supported due to inadequate observation and sample design. These may easily be nest failures or pair movements (possible conflation).

4.0 Discussion – The discussion of other wind development sites is irrelevant as the discussion here is the risk presented by this particular project. There is good reason to believe that other studies are not comparable to this one in species makeup, habitat, avian behavior, or methodology; and so the comparison is spurious at best, and potentially misleading.

5.0 Conclusions and Recommendations – Due to excessive flaws in study design, this study cannot be used to address raptor risk from wind turbines. This study was not designed to assess listed or sensitive raptor species as they are ground or secretive nesters. The study conducted in no way promotes any conclusion on raptor use because it failed to address many diurnal and nocturnal species in question. To conclude that no further nest monitoring is required is a serious error. Statements related to heron colonies are reasonable but no follow up was conducted.

DOCUMENT - Exhibit M. Bald Eagle Survey

1.0 Introduction – Introduction to this study is not related to the present footprint of this wind facility. It also was not the same footprint represented in other nest surveys for this application. Data are outdated and irrelevant to 2018 application. Studies should be redone using the present Project footprint to assess risk to Bald Eagles.

2.0 Bald Eagle and Raptor Nest Survey – These data were reported and reviewed in Exhibit L.

3.0 Bald Eagle Nest Monitoring and Results – Survey was conducted in 2011 and 2012. This is irrelevant to 2018 given the vast Bald Eagle population increases in the past decade. The survey states that nests were observed twice a week during the breeding and nesting seasons

when in fact only one nest was so monitored in one year. (The other nests were concluded to be inactive or abandoned.) No dates of observation were listed for the 2 nests stated as abandoned, so we are unable to determine if there were adequate nest checks to justify such a conclusion. For 2012 nest were only checked once a month. Our (BSBO) 35 years of eagle nest monitoring experience shows us that this is inadequate to assess use. It is extremely rare for a mating pair to be inactive on any given year. They may fail early or a second nest may have been built in the territory. There was no evidence given in the report that any effort was made to locate a possible new nest.

4.0 Eagle Point Count Survey and Results – Study was conducted for one year 2011-2012. This is irrelevant to 2018 given the vast Bald Eagle population increases in the past decade. There was no testing conducted for species detectability, and as a result these data should be considered minimum observations. There was also no statistical extrapolation to the Project area, so results likely do not represent true risk. Point 19 represented the only sightings during the limited field work. The largest woodlot in the defined Project area (not the present Project area at the time of the study) had no points near what could have been the source to the eagle activity. Results were averaged over the entire year but should have been stratified to life cycle activities of the species.

5.0 Bald Eagle Observations During Diurnal Bird/Raptor Migration – This study was conducted in 2011. This is irrelevant to 2018 given the vast Bald Eagle population increases in the past decade. There is no evidence supplied to indicate these sightings are of migrating eagles and not residents. We conclude further that: 1) This survey effort was inadequate to address this species; 2) No effort was made to separate migrant from resident eagles; 3) That means are an inappropriate statistic for this type of survey.

DOCUMENT - Exhibit N. Passerine Migration Survey

Executive Summary – Statement of purpose is to gauge the rate at which nocturnal passerines could potentially come into conflict with wind turbines. This was a one year survey, seven years ago, and was not done daily or over the entire Project area. Therefore, to state that this monitoring program confirms limited avian migrant use is erroneous and misleading. This study is not a Passerine Migration Study but rather a Diurnal Passerine Migration Survey. No data was provided on nocturnal movement or air column risk. Without radar to address nocturnal movement no conclusions can be made on avian use or risk since most passerines migrate at night. There are no sampling schemes to compare to any other area, including the Lake Erie Marshes shown here. In addition, it does not appear that the project footprint is the same as in the application. This survey was designed in a way that fails to address passerine migration risk to this project.

1.0 Introduction – Introduction to this study is not related to the present footprint of this wind facility. It also was not the same footprint represented in other surveys for this application. Data are outdated and irrelevant to 2018 application. Studies should be redone and include nocturnal radar using the present Project footprint to assess risk to migrating passerines.

2.0 Methods – Conducted only weekly surveys for a life cycle phenomenon that exhibits high variability on a daily basis. There were only 15 surveys for spring which represents less than

25% of the migration season, while in fall 13 surveys were conducted representing about 15% of the migration season. Therefore, sampling volume was inadequate to address movement during migration. The study was conducted in a pre-conceived, limited notion of favorable weather for migration (northerly winds in fall, southerly winds in spring). This is a valid generalization, but misses many of the nuances of migration. Heavily studied migration along the Lake Erie coast indicates a much more complex avian reaction to weather. Unfavorable winds have been documented in the spring to cause reverse migration to escape the colder Lake Erie waters, with one documented banded migrant from along the Lake Erie coast being captured days after banding in Columbus during a spring Northeast wind event. To ignore these behaviors is to misrepresent risk by virtue of poor sample design. Diurnal surveys for migration should be only conducted around immediately after the sunrise time frame. Birds have been documented to quickly disperse out of questionable quality habitat and would be expected to have discontinued observable movement on most days. Stopover of birds in the study area would be expected to be greater in unfavorable weather resulting in early shutdown of migration on a given night. The sample design precluded the opportunity to observe and document such behavior in the Project area. Further, this study should have concentrated on documenting migration flight and not just stopover, since the air column is the habitat at risk from wind turbines. This flight behavior was ignored by the failure to incorporate nocturnal radar into the study design.

3.0 Results – Bird Migration – The report assumes that the study area is not a great stopover resource; however, that was not the purpose of this survey. It was to assess Passerine Migration risk. The greatest risk is from flight within the air column at night. That was not addressed in this study; therefore no conclusions on risk can be made from the field work conducted. This survey was; 1) designed for blackbird counts; 2) should not sum or average over the duration of the survey but rather be stratified to migrational timing of the individual species.

3.0 Results – 3.2 Sensitive Species – This survey was not designed to address sensitive species due to its low effort (the rarer the species the higher the sample effort required), its diurnal time frame, location of points, and seasonal time frame. Actually 10 species out of the total of 98 reported species are significant and should have been addressed in more detail.

4.0 Discussion – A less than accurate description of migrational movements was supplied. Passerine migration is now recognized as a broad front movement over the landscape. For example, all birds that utilize the Magee Marsh Wildlife Area will utilize the air column to get there with the majority coming from the south, which includes this study area. This study did not address nocturnal migrating passerines, as the title implies and therefore can make no conclusions on risk. In essence the sample design was to monitor and be dominated by diurnal migrating blackbirds which are large flocking birds and easy to observe. Data analysis should separate blackbirds from nocturnal migrants and reanalyze that nocturnal migrant strata using a proper field method, which is radar. The discussion of mortality at other wind development sites is not relevant to addressing risk at this Project site. There is good reason to believe that other studies are not comparable to this one in species makeup, habitat, avian behavior, or methodology; and so the comparison is spurious at best, and potentially misleading.

5.0 Conclusions – To state that this monitoring program confirms limited avian migrant use is erroneous and misleading. This study is not a Passerine Migration Study but a Diurnal Passerine Migration Survey. No data was provided on nocturnal movement or air column risk. Without radar to address nocturnal movement no conclusions can be made on overall passerine migration use or risk. Assumptions about migration behavior and weather disregarded aspects of bird behavior and migrational timing. There is no sampling scheme to compare to any other area including the Lake Erie Marshes shown here. In addition, it does not appear the project footprint is the same as stated in the application. This survey design fails to address passerine migration risk to this project.

DOCUMENT - Exhibit O. Breeding Bird Survey

1.0 Introduction – 1.1 Proposed Project – Survey was conducted in 2011 for the proposed wind facility at that time. Since the 2011 the Project footprint has changed dramatically, so this survey does not fully represent risk to breeding birds.

2.0 Methods – Three repetitions for 10 minutes each was used as ample design which questions why was the USGS BBS design not utilized. A special survey was run for Henslow's Sparrow, Dickcissel, and Sedge Wren.

3.1.1 USGS Breeding Bird Survey – The Federal Vickory BBS survey route was reviewed but only for listed species. As the author of this review (BSBO) conducts that route, it is of interest that there is no mention of species such as Dickcissel for which they designed a special survey.

3.1.2 Breeding Bird Atlas – Utilization of the state BBA would have been very useful in assessing the validity of the project breeding bird survey. However, this report only addresses list species. This failure raises concern about the validity of this entire report. Why wasn't the BBA cross referenced with the project survey? How did atlas blocks relate to diversity compared to the project survey? Why were only the priority blocks of the BBAI used from the BBAII? There was an opportunity to compare the entire study area (the one in 2011, would require a new analysis for 2018 application), but this opportunity was not taken.

DOCUMENT - Exhibit J. Appendix D

Raptor Nest Survey for Emerson West, 2016

Methods – The survey was only conducted between March 25 and April 13, 2016. This time frame is not adequate to identify all nesting activity in the study area. It was acknowledged that the survey was only for Buteo sized raptors and larger. The title of this survey is misleading to readers and their assessment of the Project's risk to raptors. This study only covers a part of the Project area, and is not comparable to 2011 work.

Breeding Bird Surveys for the Emerson West Wind Project, 2016

Executive Summary – This survey was conducted on only a portion of the Project area. It was not compared to other work conducted and referenced in this application. The summary indicates incorrectly that it was a survey of 15 points, which gives the impression of a more robust sample design; however, only 2 points were conducted in 2011, 11 points in 2012, and 2

points in 2016. None of these points were repeated in any two years. In effect, sample size was at most 11 points for one season and only 2 points in two other years to represent the entire study area.

Introduction – Indicates the objectives of the survey were to document the type and number of bird species observed within the Project area during the breeding season. It is not scientifically valid to assess the objectives listed based only on a sample size of 2 points in two of the three years studied.

Methods – WEST was very misleading, to the point of subjugating ODNR guidelines in sample design. They indicated that the minimum number of points to conduct the survey was 15. This is an annual survey. The actual sample sizes were 2, 11, and 2 over three years, not 15 points run three years as the protocol suggests.

The study indicates the distance to each bird and height was estimated to within 1 meter. There is no description of how that resolution could be accomplished with the naked eye at distances up to 200 meters, but this author (BSBO) finds that claim unlikely.

Results – Analysis performed unusual reporting and combination of data in this section. 2011 and 2012 combined in text then separate tables made (tables are mislabeled in report).

Conclusions – Sample size and design is inadequate to make any conclusions on risk to breeding birds. ODNR guidelines were not followed.

Large Bird and Eagle Use Surveys for the Emerson West Wind Project, 2016-17

Executive Summary – Represents only a portion of the application Project area, and can't be extrapolated to the Project area.

Introduction – Objectives were to 1) provide estimates of large bird use throughout the year, and 2) estimate the potential impacts of Project construction and operations on large birds, federally and state-listed species and eagles. It is important to note that this study was not conducted for the Republic application but was, in essence, a literature review.

Methods – The survey was only conducted once a month at 29 points encompassing only 30% of this project footprint. Since this footprint is only a fraction of the Project footprint it is less representative than indicated. The list of species represented by large birds are subjective and in contrast to statements of standardization, and comparison of other study data are very different from other WEST analysis in Ohio. The resolution reported (1 meter) for distance and height is highly unlikely possible by human observers.

Methods – Bird Diversity and Species Richness – Species richness should be represented by total species and not a mean. A statistical mean is inappropriate since it will dilute diversity and underestimate avian value of the study area. Diversity and Richness are the same parameter.

Methods – Mean Use, Seasonal Variations, and Frequency of Occurrence – The purpose of this study is to predict risk to birds. Use of means with several iterations will only serve to dampen values and point to erroneous conclusions about risk. If a statistical mean is to be used instead

of maximum or medium then the confidence interval should always be included to indicate accuracy and precision of the sample.

Methods – Bird Flight Height and Behavior – To utilize only an initial observation of a bird, regardless of changes in altitude, and then to infer use of risk zone underestimates actual risk. For example, any bird first observed above the risk zone would, in this study, not be counted as an observation of risk. But in fact, we know that the bird has already had one risk encounter by virtue of having passed through the risk zone when rising, and then will certainly encounter the risk zone again on the way down again, which should count as two encounters with risk, not “none.”

Results – Large Birds – No statistics to verify or question seasonal differences. Occurrence rates should be used for comparing flocking species versus solitary birds.

Results – Large Bird Flight Height and Behavior – Again, there were no statistics indicating confidence intervals for the results. The “encounter” rates would give a very different perception of risk than the “first observation” and should be used instead.

Discussion – Large Birds – The sample size and design for this project is not robust enough to make risk conclusions. No statistical confidence has been given, and “unlikely” is not a scientific statement of risk; it is merely an unquantified opinion.

Discussion – Diurnal Raptors – An interesting conclusion that diurnal raptor use is low considering the summer and winter average (confidence interval is not provided and could put this as low to high with adequate variability) was in low/moderate range and the project placed near the medium of sites referenced. These two concerns alone discard a projection of “low”.

Discussion – Eagles – The sample design was not adequate to make any conclusions on eagle use or risk, since surveying only one day a month reduces the opportunity to assess important life cycle events such as fledgling dispersal from nest sites in the region.

Discussion – Sensitive Species – Northern Harriers can be common migrants in this area and potential risk is underestimated because their unique flight behavior is not accounted for in the sample design. Sandhill Cranes can be expected to become more abundant as the eastern population continues to expand. Nowhere does this report list the species considered as sensitive.

Conclusions – As noted above and for many of the reasons mentioned this study does not have the scientific robustness to make definitive conclusions on risk to large birds.

DOCUMENT - Exhibit J. Ecological Assessment

Comments are reserved to sections in which BSBO has expertise. This is primarily bird and bat information.

1-1 Introduction – Acreage listed here is 32,478 acres. This is different than that listed in several of the supporting documents.

Page 4-8 ; Section 4.6.1 – Some Bird Survey data reported here are outdated (Breeding Bird Survey) and/or only one year was reviewed (Christmas Bird Count). This report was completed in January 2018 and should have included BBS beyond 2011. To ignore 2012-2017 data is to not include the most recent data available, a responsibility of this EA. In contrast only the 2017 CBC was reviewed. There are over 100 years of data available in this dataset. At least the last decade should have been reviewed to quantify annual variation. This report failed to make a reasonable ecological assessment of the data available to inform risk from this project.

Page 6-1 ; Section 6.1 Avian Surveys – Review of the reports covered in this section are contained above on each report separately. In general the surveys conducted fail to support the conclusions made by consultants. Inadequate sampling, inappropriate design to account for nocturnal migrants, failure of raptor nest surveys to represent all raptors, dated Bald Eagle surveys over much of the study area, and questionable sampling procedures dictate study designs were inadequate and unable to fulfill the various studies purposes.

Page 6-12 ; Section 6.4.2 Wildlife Observations – This assessment has totally failed to review the habitat most impacted by wind turbines, the air column. There were no surveys conducted for nocturnal migrants, the most susceptible group to mortality. Until such surveys are conducted, this EA is wholly inadequate to inform risk.

REFERENCES

- Loss, S. R., T. Will, and P. P. Marra. 2013. Estimates of Bird Collision Mortality at Wind Facilities in the Contiguous United States. *Biological Conservation* 168: 201-209.
- Smallwood, K. S. (2013) Comparing bird and bat fatality-rate estimates among North American wind-energy projects. *Wildlife Society Bulletin*, 37: 19-33. doi:10.1002/wsb.260

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