



Shaping the future for birds



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To: Lorry Wagner, President and Eric Ritter, Communications and Strategy Manager, LEEDCo

From: Michel Hutchins (ABC), Mark Shieldcastle (BSBO) and Kim Kaufman (BSBO)

Subject: ABC and BSBO review of the LEEDCo Birds and the Icebreaker Offshore Wind Project: White Paper for Conservation Stakeholders, August, 2014

Thank you for the opportunity to review LEEDCo's draft white paper on the proposed Icebreaker Wind Energy Project and its potential impact on federally-protected birds. Both the American Bird Conservancy (ABC) and Black Swamp Bird Observatory (BSBO) have undertaken a thorough review of this document. ABC and BSBO have developed these comments in the spirit of cooperation, and have agreed to keep them confidential at least until the symposium planned in Cleveland, OH on October 19, 2014. Hopefully, that will give our respective organizations time to have an honest and open discussion about our concerns and perhaps come to some compromise that might be good both for Ohio's clean energy future and for bird conservation.

ABC is a 501(c) (3) not-for-profit membership organization whose mission is to conserve native birds and their habitats throughout the Americas (<http://www.abcbirds.org/>). ABC acts by safeguarding the rarest species, conserving and restoring habitats, and reducing threats, while building capacity in the bird conservation movement. BSBO is a 501(c) (3) not-for-profit organization whose mission is to inspire the appreciation, enjoyment and conservation of birds and their habitats in Ohio through research, education and outreach (<http://www.bsbo.org/>).

ABC and BSBO support the development of clean, renewable sources of energy such as wind power, but also believe that it must be done responsibly and with minimal impact on our public trust resources, including native species of birds and bats, and particularly threatened, endangered and other protected species, such as Bald and Golden Eagles. ABC and BSBO believe that rapidly-expanding wind energy development in the U.S. has, unfortunately, gotten way out ahead of the science and regulatory framework, thus putting our nation's irreplaceable and ecologically-essential birds (and bats) at risk (<http://www.abcbirds.org/abcprograms/policy/collisions/toptenwindenergymyths.html>).



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ABC and BSBO support Bird Smart Wind Energy, which is described in some detail on the ABC web site (http://www.abcbirds.org/abcprograms/policy/collisions/wind_developments.html). In the case of wind energy, careful siting and mitigation is crucial in preventing unintended impacts to America's native bird and bat species. This risk to birds and bats can be substantial, depending on the circumstances (<http://onlinelibrary.wiley.com/doi/10.1002/wsb.260/abstract>; <http://www.sciencedirect.com/science/article/pii/S0006320713003522>), and this is generating considerable concern and controversy in the U.S. between developers and wildlife conservationists (http://www.huffingtonpost.com/2013/05/14/wind-farms-bird-deaths_n_3270691.html). Fortunately, the public is beginning to take notice and embrace a more nuanced approach to wind energy development, which includes Bird Smart principles and recognition that poorly-sited and managed wind energy is not "green." But we still have a long way to go.

We understand the desire to move toward renewable energy in Ohio and to replace the aging energy infrastructure based on non-renewable, polluting fossil fuels. We also understand that this will involve some tradeoffs, and that some birds may be killed at any wind energy development. That being said, as bird conservation organizations, we do not agree that our nation's ecologically important birds (and bats) should be considered "collateral damage" in our fight against anthropogenic climate change, particularly threatened, endangered or other federally-protected species, such as Bald and Golden Eagles. An important part of Bird Smart wind energy is strict adherence to existing wildlife protection laws, including the Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA).

Our primary concerns about the LEEDCo Draft white paper are as follows:

(1) The introduction to the white paper makes it very clear that Icebreaker is "experimental"-- a model project intended to open the door to large-scale wind energy development in Lake Erie. Yet, nowhere does the document discuss the potential cumulative impact of wind energy development in this region on birds, nor does it propose a plan that would ensure that the cumulative impacts of such development would not have a major impact on the region's wildlife, particularly native birds and bats.

The southern shore and western basin of Lake Erie, leading up to Point Pelee in Ontario is a major migratory bottleneck for neotropical breeding birds on their way to and from the boreal forests of Canada. This birding hotspot is of tremendous economic benefit to the state of Ohio and its residents. Nearly 75,000 people visit northwest Ohio each year to attend one of the largest birding festivals in the U.S. and inject some \$37 million into the local economy. BSBO, working with Senator Randy Gardner, recently passed legislation to establish a "Bird Ohio Day" in recognition of its importance to the state (<http://www.thebeacon.net/local-news/ottawa-outdoors/item/5237-bird-observatory-teams-up-with-senator-gardner-to-designate-bird-ohio->



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[day](#)). Furthermore, birds are critical elements in many ecological systems, controlling insect and other pests, and serving as seed-dispersers and pollinators. This makes it particularly critical that the balance between wind energy development and bird conservation in Ohio be approached with great care and be science based.

If Icebreaker is to be a model for all future wind energy development in the Lake Erie region, then its associated environmental analyses and conclusions should be beyond reproach and able to stand up to considerable scrutiny. Currently, ABC and BSBO do not believe that this is the case. As a responsible developer, the onus is on LEEDCo to prove that Icebreaker and any future projects will not pose a significant individual or cumulative threat to federally-protected birds, and that all voluntary state and federal guidelines for wind energy development are therefore being followed to the letter. ABC and BSBO believe that both the individual impact of Icebreaker and cumulative impacts of any future wind energy development in Lake Erie on birds will require a detailed Environmental Impact Statement (EIS), not a cursory EA.

If LEEDCo can convince ABC and BSBO that the project poses acceptable (little or no) risk to federally-protected birds, then we certainly would not oppose the project. However, given our concerns about cumulative impacts of wind energy on birds in the region, such an outcome may depend on assurances that subsequent wind energy development in Lake Erie would be Bird Smart. In light of this, we would like LEEDCo to consider the following: To demonstrate that LEEDCo is truly committed to Bird Smart wind energy development, would it: (1) Be willing to oppose any wind energy development along or in close proximity to the southern shore of Lake Erie and near associated stopover habitats, continuing through the western basin and up to Point Pelee in Ontario (<http://www.pc.gc.ca/eng/pn-np/on/pelee/activ/activ1.aspx>), the primary migratory bottleneck for neotropical migratory birds in this region?; and (2) Support new legislation in the state of Ohio that would establish Bird Smart principles for wind energy development that would effectively address some of the weaknesses in the current voluntary federal guidelines, leading to proper siting and mitigation on both public and private lands?

(2) Our first concern about the white paper is that this is not an independent assessment of Icebreaker's potential risks to birds. The document was prepared by a paid consultant who answers to LEEDCo and can therefore be expected to produce results that are favorable to the development, as opposed to addressing legitimate public concerns about bird conservation. While it may be the currently accepted practice, it is also a clear conflict of interest. We have documented several cases where paid consultants downplayed or even misrepresented the potential impact of wind energy development on wildlife. Examples include the New Era Wind Energy Project in Minnesota, which was rejected because of a weak Environmental Assessment (EA) and Avian and Bat Protection Plan (<http://www.republican-eagle.com/content/new-era-comes-end>) and Camp Perry, OH that was shut down after a threatened lawsuit by ABC and BSBO showed that not only was the EA weak and insufficient, but that the Ohio Air National Guard had not followed the federal voluntary guidelines regarding wind energy development (<http://www.abcbirds.org/newsandreports/releases/140129.html>). On page 28-29, the

primary citations given for an assessment of risk to birds from this development are non-peer-reviewed papers written by the consultants, which we find problematic.

(3) The non-independence, non-neutrality of the document is given further credence by several statements that do not reflect our current state of knowledge about the potential threats that poorly-sited and -managed wind energy development poses to birds (and bats). For example, on page 5, the document states that “newer, larger turbines significantly reduces risks to raptors.” However, this directly contradicts a recent peer-reviewed study by Loss et al. (2012) that is cited in the report’s bibliography. This study found a strong positive correlation between the height of turbines and bird mortality, with taller turbines being significantly more dangerous to birds, including raptors (<http://www.sciencedirect.com/science/article/pii/S0006320713003522>). It is also telling that many other significant recent articles documenting avian and bat mortality at wind energy facilities (e.g., Smallwood, 2013: <http://onlinelibrary.wiley.com/doi/10.1002/wsb.260/abstract>; Pagel et al., 2013: <http://turtletalk.files.wordpress.com/2013/09/jrr-12-00019-1.pdf>) are not even cited in the report.

On page 5, the document also boldly declares that “decades of experience have taught wind developers valuable lessons about how to measure and reduce risk to birds.” This statement is overly optimistic and directly contradicts a recent (2014) admission by the Department of Energy that “...technologies to minimize impacts at operational [wind energy] facilities for most species are either in the early stages of development or do not exist.” (<https://eere-exchange.energy.gov/Default.aspx?Search=Mitigation&SearchType=>). We agree with the DOE statement and note that few of the current mitigation methods touted by the wind industry and its trade association AWEA have ever been tested systematically for their actual effectiveness in reducing bird (and bat) deaths. While many admittedly have potential, they should not be promoted as effective solutions until they have been subjected to peer-reviewed scientific evaluation and the positive results verified. Interestingly, one frequently cited mitigation (the removal of standing water beneath the turbines as an attractant to birds) will not be possible in this case.

On page 34, the white paper states “it is expected that most migrating birds will avoid wind turbines. Those that enter wind farms are still likely at low risk of collisions due to their flight height.” This is another example of what appears to be a statement that may be favorable to LEEDCo’s goals, but is not borne out by the evidence. We have heard this before from the same consultant, who has a tendency to downplay the potential impact of wind energy development on birds and bats. It is patently untrue and inappropriately minimizes the potential impacts of poorly-sited wind energy development on our native birds. It is also internally contradictory, as the document concedes that flight height of migrants can vary with weather conditions. While some birds are able to avoid turbines, many others are apparently unable, as evidenced from poorly sited wind farms such as Altamont in California where thousands of birds have been killed, including over 2,000 federally-protected Golden Eagles

(<http://www.care2.com/causes/California-Wind-Farms-Impact-Golden-Eagle-Population.html>). Similarly, how could an estimated 573,000 birds and 888,000 bats have been killed annually by wind turbines in 2012 ((<http://onlinelibrary.wiley.com/doi/10.1002/wsb.260/abstract>), if they were successfully avoiding the rapidly spinning blades? And there are vastly more turbines now in 2014, suggesting that that number of birds being killed is much higher than recent reports suggest.

At Camp Perry, the same consultant who issued a Finding of No Significant Impact (FONSI) based on an EA deemed insufficient and inadequate by state and federal wildlife agencies, made the argument that Kirtland's Warbler's never descend below 1,000 feet during migration. We were able to show that two other USGS independent radar studies from the same area showed massive numbers of birds coming through the area (so many that they eventually crashed the detection software) and that they were frequently descending to lower heights (http://www.abcbirds.org/PDFs/camp_perry_letter_and_exhibits.pdf). This was one of the factors that called into question the accuracy and independence of the entire EA. As to endangered Kirtland's Warblers and Piping Plovers, the USFWS itself disputed the Final EA's unsupported insistence that the turbine would not result in any mortality of those species, and explained that "the proximity of the project to Lake Erie may expose these species to risk from the turbine."

On page 4, the document states that some night-flying songbirds migrate over the lake, but no references or details are given. However, Diehl et al.'s (2003) radar study—another article not cited in the white paper-- clearly showed that Great Lakes crossing by avian migrants is, in fact, common, including on Lake Erie (<http://my.execpc.com/CE/5F/idzikoj/misc/4090180.pdf>). Thus, risks posed by Icebreaker to neotropical migrants, including endangered species, could be real and would argue for a more cautious approach. The fact is that not a lot is known about migratory crossings over the Lake for specific species, so there is uncertainty. Once again, uncertainty argues for a cautionary approach. Furthermore, the media should ask if the consultant who prepared the white paper for Icebreaker has ever argued against the construction of any proposed wind farm that he has been hired to evaluate based on the threats posed to birds or bats. The media should also investigate the EAs produced by this consultant to see if his statements made in support of wind energy development are consistent (i.e., a template), no matter what the specific environmental circumstances involved. We believe that these are fair and legitimate questions, especially given past history of this consultant and the report's obvious weaknesses that we document in some detail here.

(4) It should be noted that the NEXRAD system is the wrong radar system to get at some of the questions that are raised in the report. For example, this system is not designed to measure lake crossings by volume or height. It can indicate the general direction of movements, as long as that movement is at the proper height for the beam. In fact, even though the volume recorded in the project's vicinity was fairly large (thousands of birds/km³), the consultant shrugs it off as of no concern. ABC and BSBO disagree with this conclusion. We do, however,

agree that since the vast majority of birds were documented close to shore that the southern shoreline of Lake Erie should be completely off limits for any future wind energy development. That being said, we do not believe that the NEXRAD system (assuming it is out of the Cleveland Hopkins Airport) is adequate for this study. There is a ridge north of the airport and before the Lake that would effectively blind the radar for assessing true movement patterns of migrating birds. The same goes for the Detroit Airport, which makes it unlikely that NEXRAD will be a good tool for assessing potential impacts in the western basin. Furthermore, the TetraTech study was apparently only run for part of one year and only on clear nights, which makes it even less representative of the potential risks to nighttime migrating birds. In fact, the methodology of this study is highly questionable, as it did not even include the area in which Icebreaker will be built. The project only went out 6 miles, while the Icebreaker facility is projected to be 7-9 miles off the coast. Furthermore, the TetraTech studies were only conducted during the day and in calm, clear weather and did not include all strata of migratory movements. Again, this is highly problematic, if, as the report admits, that migratory heights and pathways are affected by weather and many birds migrate at night. This is the time when birds may be most vulnerable to wind turbines, yet no data from these assessments cover such conditions.

(5) The weaknesses in this report and in the studies conducted to assess risk to birds from the Icebreaker project show that they are inadequate to conclude that there is no risk to federally-protected species, such as Kirtland's Warblers, Piping Plovers and Bald Eagles. The document states that LEEDCo has plans to engage in Section 7 Consultation with the USFWS under the ESA, which we think is appropriate. However, we also believe that a more detailed Environmental Impact Statement (EIS) is called for, as well as applications for incidental take permits under the ESA and BGEPA. LEEDCo should also acquire an MBTA incidental take permit when they become available, something that ABC has been fighting for in cooperation with 90 other conservation organizations

(http://www.abcbirds.org/abcprograms/policy/collisions/pdf/wind_rulemaking_petition.pdf).

Not following through with these procedures would, in our opinion, fail to meet the voluntary guidelines for wind energy development established by the USFWS. A failure to obtain incidental take permits would mean that any loss of Bald Eagles, Piping Plovers, or Kirtland's Warblers at this facility would be illegal and could result in expensive fines or mitigation, or even prosecution. The loss of even a single individual is illegal under the ESA and BGEPA if an incidental take permit has not been obtained prior to operation. It could also open up the project to a lawsuit, as occurred at Camp Perry.

(6) The white paper also does not document what LEEDCo plans to do to mitigate the considerable disturbance that may occur during construction of the facility. Impacts of wind energy development to birds include not only the deaths caused by striking the rapidly moving blades, but also disturbance during construction, and during operational and maintenance activities—another factor that must be taken into consideration in any planning.

(7) The document states that its analyses and conclusions are based on extensive peer-reviewed literature, but many of the references are over a decade old and do not include more recent articles such as the Smallwood (2013) and Pagel et al. (2013), articles that document, estimate and predict extensive losses of birds (and bats) to wind energy development. In addition, it misinterprets the Loss et al. (2012) study and makes a statement that is in direct contradiction to its findings. This brings up serious questions about the report's accuracy and credibility.

(8) When we spoke by phone the other day, one of us (Hutchins) mentioned the potential threat to Kirtland's Warblers, a federally-protected endangered species that migrates through the region. Someone in your group stated that there "are no Kirtland's Warblers in the area and that we know this from radar studies (i.e., the TetraTech study and NEXRAD)." But what radar study can identify small birds to species? They can't. So, the white paper's statement that "Preconstruction surveys suggest no T&S species" is highly suspect, even though the USFWS suggested that the risk was low based on the EA. Then the person stated that LEEDCo had stationed people with binoculars to record birds in the area, and they verified that no Kirtland's Warblers were present. But, according to a recent peer-reviewed study (<http://onlinelibrary.wiley.com/doi/10.1111/cobi.12351/abstract>), the chances of detecting rare, protected species during EA assessments varies in direct proportion to the amount of time and effort spent in trying to detect them. Also, Kirtland's Warblers are nighttime migrants, so why would they be detectable during the day or at times of the year that they are not moving through the area? And how can you tell a Kirtland's Warbler from other warbler species at night using night vision technology? Yet, the danger of a false absence result is great. There are probably no more than a few thousand Kirtland's Warblers in existence (<http://www.fws.gov/midwest/endangered/birds/Kirtland/kiwafctsht.html>) and the loss of any breeding individuals is therefore potentially significant. That is why the precautionary principle should prevail, and every effort made to protect endangered and other federally-protected species. This would, in our opinion, necessitate a more detailed EIS rather than a cursory EA and having an ESA incidental take permit in hand prior to operation.

(9) There is little or no mention or description of a post-construction monitoring or evaluation plan in this document, which is essential for assessing the project's feasibility from a bird conservation perspective. Data on post-construction bird (and bat) kills is the only way to verify the results of the preconstruction risk assessment studies, to evaluate the effectiveness of post-construction mitigation, or to determine compensation if public trust resources, including federally-protected birds (and bats), are being taken. The Icebreaker facility, being built over open water, would not be able to employ standard procedures for assessing the number of birds killed by its turbines (e.g., http://www.altamontsrc.org/alt_doc/r50_smallwood_estimating_mortality.pdf), as carcasses would be lost quickly and could not be counted. In fact, monitoring of bird (and bat) kills at offshore wind facilities poses some difficult challenges, which are not fully acknowledged in this report. Consequently, ABC and BSBO wonder if any mortalities of small songbirds, such as

Kirtland's Warblers, will ever be detected post-construction due to technical and logistical limitations, which makes the siting of this project even more critical. On page 11, the report mentions that Icebreaker will be fitted with a vast array of sensors, but does not provide any details. ABC and BSBO are aware of new, evolving technologies that involve thermal video imaging, combined with auditory recordings that may be able to accurately and independently record bird strikes at turbines, using an entirely automated system. However, these potentially game-changing technologies are brand new and we are unaware of any studies that have verified the effectiveness or accuracy of these methods in monitoring bird (and bat) deaths at wind turbines or power lines and towers. We are also unsure if such technologies will allow species-level identification of the birds that are killed. This is also critical in order to verify that threatened, endangered or other federally-protected species are not being taken.

(10) There is also no indication in the report that LEEDCo is going to be completely transparent in reporting the number and types of birds killed at their Icebreaker or any future facilities post-construction. Many wind energy companies are refusing to share bird (and bat) kill data with the public, claiming it is "proprietary information." ABC and BSBO believe that this data should not only be collected independently (to avoid a conflict of interest), but also subsequently shared with the public. The nation's native birds and bats belong to the American people and are held in trust for current and future generations. The public has a right to know about bird (and bat) deaths so that it can participate meaningfully in project evaluation. Without transparency, how will public trust in LEEDCo be built? Will LEEDCo publically promise to be completely transparent in its reporting of bird deaths at its experimental Icebreaker facility or any other facilities built in the future should Icebreaker be successful?

(11) On page 17, paragraph 2, the white paper characterizes a density of 50 birds per 0.25 mi² as a relatively small number. We dispute that characterization. One of us (Shieldcastle) was involved in that survey, and with a plane traveling at 100 miles an hour per one hour of flight time, this extrapolates into a very large number of birds seen in the vicinity of the project. Once again, more evidence that the number of birds in the project area is minimized in the white paper.

(12) On page 18, paragraph 1, the authors incorrectly relate the Stapenian and Waite (2003) study with bird density. In fact, this study focused on species richness, not density, two very different parameters. This calls into question any conclusions that the authors draw from that study. In addition, this was a diurnal study, which did not consider nighttime migrants.

(13) On page 15, paragraph 1, the report references several "flyways", but does not mention that these are nothing more than a regulatory definition that does not necessarily reflect biological reality. Birds don't always use such pathways and much variation in migratory movements exist depending on weather and other immediate environmental variables, including the physical condition of the migrants.

(14) In section 3.5, we would like to know how and why this list was derived. Why was the Golden-winged Warbler, a species of conservation concern (an ESA candidate species since 2011), not included for specific review? Also why were neotropical migrants such as the Canada Warbler and Magnolia Warbler not reviewed? All would have been excellent surrogates for nighttime neotropical migrants, and the Canada Warbler has been getting increased attention in bird conservation circles due to growing population concerns. They are all neotropical nocturnal migrants, known to move through the area on their way to the boreal forests of Canada for breeding. The report also mentions migrating Peregrine Falcons, but does not refer to the resident birds in the Cleveland Metropolitan area.

(15) In Section 3.4.3, the authors use incorrect bird taxonomy, again calling into question the credibility of the entire report. Scaup and mergansers are ducks, whereas the report inaccurately lists them separately from ducks. The authors do refer to the Ohio Division of Wildlife's aerial surveys here, but many of their conclusions are pure opinion, based on their own cursory, non-peer-reviewed reports. For example, what reference or data supports the author's personal opinion that mergansers stay close to shore? The mergansers present in Lake Erie are almost exclusively Red-breasted Mergansers, and these birds are highly susceptible to disturbance. One of us (Shieldcastle) was involved in conducting the ODNR surveys and observed that Red-breasted Mergansers were very flighty, fleeing when boats approached within 0.5-1 mile, and this has important implications for potential conflict with wind energy development. Nearly one half of the world population of this species uses Lake Erie at an important stage in its life cycle—another important consideration for wind energy development in the Lake. The authors again state that the potential for conflict is low due to the height at which migrants fly, but this does not take into account feeding and trading flocks of waterfowl, which often descend into and utilize the surface of the Lake. Information on potential risk to this species is mixed. Goodale et al. (2014) stated that Red-breasted Mergansers had a “high collision risk, medium displacement risk and high conservation score.” (<http://glc.org/files/Great-Lakes-waterbird-vulnerability-to-offshore-wind-FINAL.pdf>). Others, however, such as Langston (2010, cited in Wing et al., 2014) and Energi (2002, cited in Wing et al., 2014) suggested that this species avoided wind turbines or that the risk was moderate. The uncertainty and range of conclusions suggest a cautionary approach.

(16) The discussion in section 3.4.6 refers to land based surveys only, and is irrelevant to the Icebreaker project. ODNR aerial surveys indicate large numbers of gulls and ducks on open ice leads (large fractures within an expanse of ice, defining a linear area of open water that can be used for navigation purposes) during the winter months at considerable distances out into the Lake. These leads are created by water and wind currents, often around, above and below water structures, as well as in natural fractures in the ice pack. Will the placement of turbines at Icebreaker increase the potential for creating leads, attracting birds and thus increasing the danger posed to them? That is a question worth exploring.

(17) In section 4.3.7 on page 33, the authors conclude that federally-protected Bald Eagles are “unlikely to be affected by Icebreaker” and that there are “no known nests within many miles of the project area.” They further state that it is “unlikely that the Bald Eagle would utilize the area near the turbines.” On what basis? What about Bald Eagles that are migrating through the area, utilizing winter range, or non-resident transient juveniles? There are no references or studies cited to support this conclusion, except the authors’ own non-peer-reviewed report. While most eagles are likely to stay closer to shore, eagles have been seen further out in the Lake and little is known about their potential for interaction with wind turbines. While this is especially true during the winter months when Bald Eagles use the solid ice pack along open water leads to hunt, comparatively few Bald Eagles have been killed by wind turbines compared to Golden Eagles to date. However, this is probably because there currently are no offshore wind developments in North America. Bald Eagle deaths from wind turbines are expected to rise as more turbines are built in Bald Eagle core habitat. Eagles are at risk from wind energy as verified by Pagel et al (2013) (<http://turtletalk.files.wordpress.com/2013/09/jrr-12-00019-1.pdf>), and it is likely that many deaths have gone unreported.

(18) The white paper describes the Common Loon” as “relatively rare,” but one of us (Shieldcastle) has observed flocks of up to 200 on aerial surveys in the Lake, some as far out as the International Boundary. These numbers are not insignificant, as the report implies. Loons are highly vulnerable and need focused study to evaluate risk (<http://glc.org/files/Great-Lakes-waterbird-vulnerability-to-offshore-wind-FINAL.pdf>). Any additional stressors or sources of mortality in Lake Erie could magnify the worsening effects of Botulism for the species (Evers, cited in Goodale et al., 2014).

(19) On page 34, paragraph 2, the authors again downplay the potential impact of wind energy development on birds by arguing that other sources of avian mortality are greater. This is a common strategy of wind energy developers and their supporters. The implication is that the number of birds lost to wind energy development is a drop in the bucket compared to other sources of mortality, so why be concerned? ABC (<http://www.abcbirds.org/abcprograms/policy/collisions/toptenwindenergymyths.html>), BSBO and organizations like Nature Conservancy (<http://blog.nature.org/science/2014/05/28/wind-turbines-bird-mortality-bats-science-impacts/>) do not buy this argument and no one else should either, as there are many cogent reasons to reject it (<http://www.kcet.org/news/rewire/wildlife/4-reasons-cats-bird-kills-dont-excuse-wind-turbine-bird-kills.html>). One peer-reviewed study (<http://onlinelibrary.wiley.com/doi/10.1002/wsb.260/abstract>) estimated the annual losses of birds and bats at 573,000 and 888,000, respectively to wind turbines at 2012 build-out levels and that did not include the number killed at associated power lines and towers. There are vastly more turbines now than there were in 2012. The Loss et al. (2012) study predicted 1.4 million or more birds to be lost annually from wind turbines alone by 2030. These losses are not trivial and include threatened, endangered and other federally-protected species, such as

eagles. Losses of endangered species have less room for error, as virtually any loss is of significance. In addition, ABC and Mississippi State University have just completed a study showing that tens of thousands of turbines have already been constructed in highly sensitive areas for birds and tens of thousands more are planned. ABC will be issuing a press release on these findings soon, as it provides clear evidence that the voluntary guidelines for wind energy development are not working to protect our public trust resources, including our nation's native birds and bats. This is likely making the situation worse than it already is, not better. Also the impacts of all of anthropogenic factors are cumulative and not sustainable. Why wouldn't we try to address all major reasons for bird mortality, especially when the conflict can be easily resolved through improved science, appropriate siting and more stringent regulation?

(20) On a related issue, the Cleveland Metropolitan Area is now debating the use of Trap-Neuter-Release (TNR) management to address a growing population of feral cats, perhaps the most significant cause of death for our native birds (<http://www.nature.com/ncomms/journal/v4/n1/abs/ncomms2380.html>). If large colonies of feral cats are fed and maintained outdoors in the region, it will simply be another contributor to the cumulative impact on birds. One possible form of mitigation for wind energy development in the area would be to reject TNR management in favor of trap, neuter and contain, as well as a prohibition on the feeding of outdoor cats. This approach, combined with a no cats outdoors provision would be a much better and more effective way to deal with this problem than TNR. TNR is a revolving door that puts cats back into the environment where they can kill vast numbers of native birds and other wildlife and spread dangerous diseases, like toxoplasmosis and rabies (<http://www.pnj.com/story/news/2014/08/26/viewpoint-feral-cats/14653825/>). It is also bad for the cats, which are killed by coyote predation, collisions with vehicles and disease (<http://www.peta.org/about-peta/fag/what-is-petas-stance-on-programs-that-advocate-trapping-spaying-and-neutering-and-releasing-feral-cats/>). LEEDCo could go a long way toward supporting its own cause by opposing TNR management for feral cats in Cleveland and helping to replace it with more effective and humane solutions.

In conclusion, there are several things that LEEDCo could do to strengthen its case for the experimental Icebreaker Project:

(1) Undertake a more detailed, independent EIS instead of the more cursory EA, thus instilling more confidence in the results. This effort should include radar and other studies in a wide variety of weather conditions and during both the Spring and Fall migrations, as well as summering and wintering populations, to ensure coverage of the full life cycle of the avian resource. Radar studies must look at flying heights and density of migrants to be useful. Consider providing the funds for EIS development to a third party to hire an independent consultant, who could be above all suspicion of conflict of interest. This would also help address the current uncertainty involving the presence or absence of endangered and other protected species (e.g. Bald Eagles) at the site. These species are certainly in the area at various

times of the year, and the studies presented in the white paper are inadequate to determine risk.

(2) Be upfront about the challenges of developing an offshore wind energy facility that minimizes impact on bird mortality, instead of downplaying it or trying to hide it. This will help establish credibility and good will with others, like ABC and BSBO, who would like to see wind energy developed, but are legitimately concerned about the potential impacts on our native birds and bats.

(3) Engage in Section 7 Consultation with the USFWS under the ESA to ensure that endangered species will not be affected and to develop an effective mitigation and compensation plan, should such birds be taken post-construction.

(4) Apply for and obtain incidental take permits under the ESA and BGEPA. Also apply for and obtain an incidental take permit under MBTA when they become available. This would ensure that LEEDCo would not be in violation of the law should a protected species be taken. It would also put it in compliance with the federal voluntary guidelines for wind energy development (http://www.fws.gov/windenergy/docs/weg_final.pdf).

(5) Accurate collection of post-construction mortality data is a huge challenge for any offshore wind facility like Icebreaker. This should be recognized and addressed openly and honestly, instead of downplayed or mischaracterized. Obtain and verify the effectiveness of new technologies used to monitor post-construction bird mortality. Since these technologies are presumably automated and independent, they could potentially provide accurate, real time estimates of the number of birds killed. Perhaps the data could be transferred to a neutral third party for analysis. Again, this would help to eliminate any perception of conflict of interest in the collection and reporting of mortality data.

(6) Promise to share the results of the post-construction mortality studies with the public so that they can participate in project evaluation, thus improving transparency and building trust.

(7) Help to test post-construction mitigation methods to ensure that they are indeed effective in reducing avian mortality. This would include making the facility available to outside researchers to test the efficacy of various mitigation methods (e.g. reduction of blade speed or seasonal shutdowns when birds are detected in the area).

(8) Conduct an EIS on further wind energy development plans in the Lake Erie region should Icebreaker be successful. This should include an independent assessment of the cumulative impact on the region's birds, not just from wind, but from other factors as well, including feral cats, habitat loss, pesticide use, Botulism outbreaks, etc. This should be combined with assurances that LEEDCo will not be seeking to develop wind energy along the highly sensitive south shore of Lake Erie or in the western basin, including on the islands or waterway going up

to point Pelee in Ontario (<http://www.pc.gc.ca/eng/pn-np/on/pelee/activ/activ1.aspx>). Avoidance of the primary (core) migratory route and stop over habitats would go a long way to promote the acceptance of wind power development in Lake Erie.

(9) Work with ABC, BSBO, state legislators and others to promote the establishment of Bird Smart wind energy legislation in the state of Ohio that would compensate for some of the current weaknesses in the voluntary federal guidelines to ensure proper siting and mitigation of wind energy development going forward.

(10) Consider pursuing forms of mitigation that would address other major causes of avian mortality in the region, such as weighing in and contributing to the control of feral cats or use of harmful pesticides, both of which could help offset any losses due to wind energy development.

(11) Consider a plan for compensation if public trust resources (i.e., birds) are taken post-construction, including the support of conservation-related research, or habitat acquisition.

We hope that you find these comments and recommendations useful and look forward to further conversations.