***Revised Comments on Species at Risk Report for wpd White Pines Project**

There are four major conclusions that render this report incomplete.

1. **The most critical gap/ issue in this report for which no mitigation is given – or is possible – is that even the limited information provided here, in concert with that interpreted from the MNR Golden Eagle website, indicates that these turbines will be placed in the direct path of a major flyway that receives large numbers of the endangered Golden Eagles and Peregrine Falcons. The passing of a large percentage of the Golden Eagles that reside in eastern North America through a killing zone such as this will become with the construction of this project, will likely imperil this species.**

2. **Some listed species e.g., Little Brown Bat and Northern Long Eared Bats were not evaluated. In other cases, conclusions were made for species that are not scientifically defendable, e.g., the report erroneously concludes that habitats are not suitable for Loggerhead Shrike. As a result of these limitations the authors greatly underestimate the extent of species at risk habitat in the study area.**

3. **The transmission cables, whether buried (hydrologic and vegetation/habitat impacts) or on transmission poles (electrocution of raptors) will have irreversible effects on SAR.**

4. **There are many omissions, inconsistencies, misleading statements and issues with the survey methods that were applied. As a result many of the findings are not scientifically reliable, which renders the report largely invalid. The credibility of the proponent's mitigation strategy is lost with statements such as "To the extent practical, …. We will mitigate".**

Support for these conclusions and other significant issues identified are described below.

General:

1. They do not include in their list of species found in the area the following – justification should be given:
   - Little Brown Bat and Northern Long Eared Bat
   - Four leafed milkweed
   - Ogden's pond weed
   - Pale bellied frost lichen
   - Cerulean warbler
   - Night hawks
   - Eastern pond mussel

   As well as species of concern: black tern, swamp rose mallow, eastern ribbonsnake, milksnake, northern map turtle, snapping turtle.

2. Methods. ELC is not designed to pick up critical habitat for species at risk; it is a general habitat classification. It is a rapid assessment methodology. The habitat protocols specific for each species should be used.

3. Identified birds in 2010, triangulation based on those results the following year (e.g. whip-poor-will). That assumes no relocation, no new birds in the area. They should have been done the same year.

4. The monitoring that is proposed is only up to 3 years. This is inadequate – it should continue throughout the life of the turbines. A sustainability strategy is required for the very extensive mitigation strategies that need be implemented over the 20 years. Some mitigations may be possible for 1-3 years, but with staff turnover and time, the knowledge will be lost and the impacts will be significant.

5. There is no proposal to do population level assessments in an adaptive management way to identify unforeseen changes that need addressing.

6. For **all** the SAR, there is no recognition of impact on these species of sound, vibrations. With unknown sensitivities, a real consequence due to construction could be avoidance of this entire area by these threatened species. These impacts should have been identified as a potential impact, and at minimum, an adaptive management monitoring strategy is required.

7. The report does not address the fact that this area is an important migration route for all these species. That results in large proportions of the remaining populations of these species having to go through a bottle neck that could result in significant mortalities. Migration pathways that pass through bottle necks, such as this study area, are critical habitats that must be addressed on a species-by-species basis. This has provincial implications for each species.

8. References are used that are not provided e.g. Ferrer. Thus, the report is incomplete.

Specific Issues:

1. Golden Eagles and Peregrine Falcons: The information presented here, consistent with that in MNR's website, confirms that this is an important flyway for the Golden Eagle. Passing a large percentage of the Golden Eagles that reside in eastern North America through a killing zone such as this will become with the construction of this project, will likely imperil this species.

3.1.2.6 With the strong winds on all survey days except Nov 2, the number of raptors are likely underestimated. Most of the surveys should be repeated.

Sep 9	9:00-15:00	12-15°, **wind 3-5**, 90-100% cloud		
Sep 15	"	10-19°, **wind 3-4**, 0-95% cloud		
Oct 7	"	10-20	**4-5**	100%
Oct 20	8:00-15:00	10-12	**4**	0-40

Oct 27	"	7-15	**3-4**	5
Nov 2	"	-1-6	1-3	5
Nov 10	"	2-5	**6**	5
Nov 18	"	2-4	**2-4**	90-100

Sections 3.2.7.2, 3.2.14.1: It is exciting to read of the abundance of golden eagles and, to a lesser extent, peregrine falcons that were observed during the surveys, despite the problems with the methods described above. It was disturbing to have it reported that *most were flying at "blade level".* Clearly this area is a critical flyway for these imperiled species. If the surveys were representative and they are correct in their assumption that the eagles were actively migrating, then at least as many as 120 (average of four birds/day *30 days) would pass through this area in the month of November alone. This is clearly the main flyway for this species that is inferred in the MNR description of this species on their websites. (http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/MNR_SAR_GLDN_EGL_EN.html; http://www.rom.on.ca/ontario/risk.php?doc_type=fact&id=106).

These numbers are staggering and can be expected every fall. Quest, a female Peregrine falcon electronically tagged, spent two winters on the South Shore.
It is also clear that Peregrine falcons are beginning a recovery and that this area is also a critical migration path for this species.

Range: According to the MNR websites: The Golden Eagle has a widespread distribution in parts of North America, and from Asia and Europe to North Africa. In North America it is found mostly in the west, from northern Canada and Alaska south to Mexico. To the east, it occurs across northern Canada, and in forested mountain regions of the eastern United States, where it is extremely rare. Recent reports from Ontario indicate that only about six pairs nest in the far northern part of the province, not necessarily all in any given year. Monitoring of this small population poses difficulties because of the remoteness of the nest sites. Migration counts suggest that populations may be increasing in northeastern Canada. **For example, over 200 Golden Eagles have been observed at major "hawk watch" points in southern Ontario.** The precise origins of these birds are unknown.

It is not reasonable for the authors to conclude (3.2.7.3) that no impact is anticipated to Golden Eagle migratory habitat, when it is likely that ALL OF ONTARIO'S AND A LARGE PORTION OF EASTERN CANADA'S GOLDEN EAGLES ARE PASSING THROUGH AN AREA WHERE THEY ARE LIKELY TO BE KILLED. This placement of blades that they will most certainly contact will kill or injure the eagles. Even on the MNR website there is an acknowledgement of the potential impacts on this species from contact with turbine blades "from the section Threats: **Electrocution on power lines is a continuing problem in western North America, and collisions with wind turbines have been documented at some sites**".

The authors also fail to report on the concerns associated with electrocution from the transmission lines. Throughout the report the authors indicate that they "might bury some of the lines". Perhaps this vague admission is intended to justify not mentioning electrocution issues. If so it is ingenuous and purposely misleading.

The authors fail to recognize the importance of migration routes to peregrine falcons and instead simply state that there project will not impact on "regulated habitat for this species". It is interesting that MNR

has not yet identified critical migration paths as being in need of protection. This is likely because, to date, no information has been available to know where this species migrates. These surveys have shown that, as with the Golden Eagles, this area is likely a critical migratory pathway for Peregrine Falcons that should be protected.

Clearly the cumulative effects of mortalities from blade contact and electrocution from the transmission lines will combine to be a significant negative and unmitigatable impact to the entire population of Golden Eagles currently residing in the province. This project could stop the recovery of Peregrine Falcons.

Burying the connection lines will have as large an impact on the hydrology, vegetation and habitats for other endangered species, so is not a feasible mitigation (see below).

2. Little Brown Bat and Northern Long Eared Bat: No studies were performed for migratory bats, so numbers are unknown. However Stantec did extensive studies of migrating bats in the centre of this area for a separate project and their findings would apply to this project. The company only looked for hibernacula/maternity roosts.

Studies of migratory bats are required. Migratory Birds and Bats must be considered both for direct turbine blade effects, and also as their feeding will be negatively impacted by the widespread noise, dust and general disruption of construction activities. Baseline numbers must be determined.

3. Blanding's turtle:

Survey locations are generally given (e.g. for Whip-poor-will Fig 5.0). Yet in the report we received Blanding's turtle only was blacked out. We see no good reason for this. This is the species identified in the ERT for adjacent Ostrander Point project as being critical – so its careful review is essential. Only the nesting locations should have been blacked out. From this, we assume there are significant nesting areas in the study area that will be impacted by the project.

3.1.2.2 April, May surveys were only conducted on cloudy days, when they will not be basking. All surveys should be on sunny days. They should be repeated.

Apr 20, 21	12:00-19:30 – 8°, wind 2, 100**% cloud**
	11:00-19:30 – 5°, wind 4, 95**% cloud**
May 18, 19	12:45-17:15 – 17°, wind 4, 60-100**% cloud**
	14:00-18:00 – 8°, wind 2, 100**% cloud**

3.2.5.2 The wording **is misleading/not correct**. It implies that the habitat is not ideal for the Blanding's turtles. It is critical habitat, whether it is used for part or all of the year by an endangered species.

3.2.5.2.4 **Summary of habitat.** The authors play loosely with the numbers and conclusions in a deliberate attempt to mislead the reader/reviewer. In one paragraph they infer that nursery habitat, which is critical to Blanding's turtle survival, is not present, yet in the next paragraph they claim that there is as much as 1451 ha of foraging and oviposition habitat. This contradicts their field surveys that indicate that a viable population of this species resides within the study area. Clearly the eggs are surviving and the young are able to forage/survive within the study area.

Therefore nursery habitat must be present within the area, or there would be no survival! We infer that the intent of this subterfuge is two-fold:

- First, by indicating that this critical habitat does not exist, it justifies their statement that no overwintering or nursery habitat will be removed. Clearly they intend to remove critical habitat, something that cannot be mitigated!
- Second, they attempt to imply that there is an overabundance of habitat for foraging and oviposition (1451 ha) "such that they will only be impacting on a very small (0.5%) of their entire habitat on the south shore". These numbers cannot be refuted or verified, since no thorough assessment of habitat has been conducted, or if it has, the information is not available for our review.

The authors are clearly and without justification attempting to mislead reviewers into believing that their actions will have no effect on Blanding's turtles.

Further, critical to the Blanding's turtle, as well as other reptiles, snakes and amphibians of concern in this area is the effect the project will have on further fragmenting the area. These taxa are significantly negatively affected by roads as a result of altering migration patterns and direct mortalities (see the many papers published by Lenore Fahrig at: http://www.carleton.ca/biology/people/lenore-fahrig/) The report does not adequately address this critical issue.

3.2.5.3 Section conclusions: Even with the limited information presented, it is clear that the turtles utilize the area for breeding and nursery habitat, based on the time of the year that they were observed. Clearly this area holds critical habitat for Blanding's turtles. Mitigation of breeding habitat is not possible.

I do not have the following number on my copy – it is the blacked out area. Do not know what area this is describing. The one area, Turbine 26, that the report identified as having a pond 52 m from the access road – the question is could that be overwintering habitat? No information provided. Could be in the blacked out info.

3.2.5.3.2.1 The report implies that the area dries up so is inappropriate as wintering habitat. **That is inaccurate** – In these areas the winter water table is high, leaving this area saturated in water and providing potential over wintering habitat that was not evaluated for these turtles. Therefore, there *is* potential for over wintering habitat, when considering the water and mud beneath. The presence of fish in some areas (see NHA report) indicates that some of these ponds do not freeze to the bottom, and so turtles could potentially overwinter in some areas. Therefore, surveying is required.

Section 7.1-7.3: 7.0 Blanding's Turtle: Potential effects and mitigation Measures

Note: Habitat mapping and occurrences are blacked out and Figures 3.0-3.5 missing.

7.1.1. 1451 ha foraging and oviposition habitat within the Project area

12.9 ha habitat on Project Location (turbines, access roads and collector lines on private lands)

Additional 15.9 ha habitat will be removed for construction

Total of 28.8 ha habitat will be disturbed for the project.

“Loss of adult Blanding’s turtles, due to accidental mortality, could have a significant negative impact on the local populations.”

7.1.1.1. “At two locations, project components will be constructed within the range of areas identified as potential habitat for overwintering and juvenile turtles. These include:

- Installation of a collector line in the road bed along Helmer Road and
- Construction of the access road to T26 and associated collector line to occur 52m from the pond…

Other areas identified as overwintering/nursery habitat occurred more than 200 m at their closest point to Project components…

[i]ncreased predation will be offset by the increased nesting opportunities Blanding’s turtles will experience through construction of new access roads.

Interpretation

Habitats along Helmer Road could extend along Wetland 3, or the South Bay Coastal Wetland, from Ostrander Point road to its turn between T23 / T24 and T21 / T22.

- Helmer Road itself will be trenched for the connector lines;
- T 23 and T24 plus their access roads and connector lines situated within the Coastal wetland footprint immediately west of Ostrander Point Oviposition and Spring Foraging Areas;
- Turbines 21 and 22 encompass wetland 5 and 2 potential hibernacula sites.
- T26 access road and connector line is said to be 52m from a pond but no explanation of its overwintering/nursery capacity or associated juvenile habitat.

Without access to more information on Blanding’s turtle presence and habitats it is difficult to comment on the locations of project components. Suffice it to say that T21 to T29 are all located within the wetland complex including two Provincially Significant Wetlands - South Bay Coastal and Big Sand Bay on the Shoreline of Lake Ontario and therefore should be denied approval.

The credibility of the mitigation strategy for Blanding's turtle is diminished greatly by their admission that construction will occur outside their breeding window *if feasible*. Clearly, if they were serious, no construction would occur during the breeding period.

Omissions: The report fails to consider the additive effects of mortality caused by vehicle impacts plus increased predation on eggs that will result from increased exposure to preditors as a result of

new or expanded roads. The turtles are attracted to the new roadways and the new roadways provide more access and transport routes for predators such as foxes, raccoons, skunks, coyotes, that travel along roadways. There are no effective "mitigation measures" that can deal with these injuries/losses.

4. Henslow Sparrow:

3.1.2.5: Nocturnal playback surveys – The report says "Higher activity before dawn and after dusk. Therefore surveys were conducted after dusk"

This is not true: Only one survey was after dusk and in both instances, the wind was sufficiently strong that surveys would not have been effective. The surveys should be repeated.

- May 31 21:00-22:35 –after dusk for 1 h, 20°, wind 1-3, 50-100% cloud cover
- Jun 14 9:23-10:20 – **morning** for 1 h. 18°, **wind <u>5</u>** on Beaufort scale (Table 3.1)

5. Whip-poor-will:

3.1.2.4: The section states that surveys are conducted "Half an hour after sunset, close to full moon, not overcast, rainy or windy (>2)". However, *only one survey was conducted in conditions they recommend (May 27), others were in overcast, cloudy conditions and should be repeated.*

May 27	20:10-23:15 – 19-20°, wind 1-2, **40-70% cloud**,	full moon
Jun 3	21:45-23:45 – 14-18°, wind 1-2**, 80-100% cloud**,	past full moon
Jun 15	21:30-24:02 –18°, **<u>wind 5</u>**, **80% cloud,**	**thin crescent moon**

Even with the poor methods being used, there are clearly large numbers of whip-poor-wills in the area. This is a concern. With no reliable background information, there will be no way to track impacts and therefore guide mitigation. The surveys should be repeated.

<u>Triangulation surveys 2011</u> were performed where birds were recorded in 2010. It is unscientific and unreliable to assume that because birds were not located in one year, that they would not be found in subsequent years.

Surveys were to be conducted "close to full moon, not in high winds or persistent rain". With cloud cover and strong winds April 20 June 16 and 29, meaningful results are only Apr 21, May 19, Jun 6/7, 15, and should be not considered reliable.

Apr 20/21	21:09-23:10 – 4-5°, **wind 3-5, 100% cloud**	full moon Apr 17
	20:51-22:20 – 4-6°, wind 0-1, **40-100% cloud**	
May 18/19	21:03-21:17 – 16-17°, wind 1-3**, 100% cloud; rain at 21:17**	full moon May 17
	21:02-23:16 – 13°, wind 0, 10% cloud	
Jun 6/7	21:20-22:45 – 15-20°, wind 0-1, 5-15% cloud	**waxing crescent moon**
	21:20-22:18 – 17-22°, wind 0-1**,** 10-15% cloud	
Jun 15/16	22:34-23:39 – 16-17°, wind 1-2**,** 15-30% cloud	full moon Jun 15
	21:52-23:23 – 16-17°, **wind 2-3, 90-100% cloud**	
Jun 29	21:40-24:40 – 16°, **wind 2-4,** 15-70% cloud	**waning crescent moon**

8.1.1 The report says construction of access roads would result in additional habitat for the whip-poor-will but neglects to say that the roads will simultaneously result in additional mortality . It will

also result in increased risk of predation by several species including fishers, feral cats, hawks etc. (Lenore Fahrig at: http://www.carleton.ca/biology/people/lenore-fahrig/)

8.1.2 The report admits that little is known about the risk of collision with turbine blades of whip-poor-will, and other birds. It fails to mention the presence of species whose aerial displays are precisely at blade height. It concludes that, because Whip poor will feeds at heights <5m, the population is not expected to be significantly impacted by turbines. This conclusion cannot be drawn from current knowledge. Therefore, as with the other species, there must be an adaptive management approach to mitigating turbine impacts.

6. Loggerhead Shrike 3.2.10.2 and 3

The authors describe Loggerhead Shrike breeding habitat as being on limestone plains. It is critical to note that "limestone plains" is synonymous with alvar. The authors are either not aware of this or they are deliberately misrepresenting its habitat in order to support their conclusion that no habitat exists for Loggerhead Shrike in the study area, in which case they are deliberately attempting to deceive the Ministry of the Environment and others reviewing this document. Furthermore, just because they did not see any Loggerhead shrike does not mean that the habitat is not suitable for them. The habitat in this limestone alvar is exactly as the MNR webpage describes as suitable for this species, and there is an abundance of prickly ash that is critical for their feeding behaviour.
(http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/MNR_SAR_LGGRHD_SHRK_EN.html)

7. Project Details and Mitigation Section 5 and 6
Section 5.1 "Perimeter surface hydrology will be maintained during crane pad construction"
This is not possible -- and more importantly it highlights a much greater issue.

The project has a major dilemma that cannot be resolved that involves strategies to transmit power. The authors suggest burying power lines, presumably to mitigate electrocution issues to raptors. However, digging a 1 meter deep trenches into shallow limestone will permanently alter the shallow water table and hydrology that the alvar depends on. The troughs will create new pathways for water transport that will also impact the shallow groundwater table. Altering the shallow ground water table of an alvar will create an irreversible impact to vegetation that will have far reaching impacts. It will also redesign the hydrology of the entire study area, rerouting stream flows, causing existing wetlands and streams to go dry and creating subsurface flow through their connection channels.
Therefore, the project will either cause golden eagles to be electrocuted, or it will permanently alter the hydrology of the study area that will result in significantly altered or lost habitats of the other listed species.

8. Meadowlark and Bobolink:
9.1.2 The importance of fragmentation in diminishing habitat of these species is acknowledged. But then erroneously they conclude that this project will not increase fragmentation. An existing farm lane is significantly different than a 5 m wide gravel road. The road will fragment the habitat greatly. No mitigation is proposed to address this and is required. In fact, mitigation is not possible.

Bobolink, Eastern Meadowlark and Eastern Meadowlark habitat:

The damaged or destroyed Bobolink, Eastern Meadowlark and Eastern Meadowlark habitat of PEC cannot be "replaced" in such a fashion as to provide overall benefit for these grassland species. South PEC provides an ideal habitat for Bobolink and Eastern Meadowlark that includes the Atlantic migratory flyway, weather patterns, soil composition and depth, relative isolation, low intensity farming practices, haying, and a small population of humans. Simply locating another "suitable habitat" of at least equivalent, or even greater, size cannot be considered an overall benefit to the species.

Following from the above point, wpd's plan to secure property elsewhere to "create" or "enhance" habitat for the species noted is an ineffective solution to a problem that will exist only if the Ministry issues a permit.

Even a "mitigation measure" of proposed construction restrictions from April to August is inadequate and will result in extremely disruptive, island-wide construction activities being undertaken during the spring and fall migrations. Additionally, the restrictions are not specified to apply to the entire Project.

- There are no "mitigation measures" proposed to deal with the wide-spread vibrations that will result from the construction activities required to dig turbine foundations (i.e. blasting and hoe-ramming). The South Shore of Prince Edward County is essentially a slab of limestone with a very thin layer of topsoil; there is not much potential for the absorption of vibrations into the soil. As Bobolink, Eastern Meadowlark and Eastern Whip-poor-Will all nest and raise their young on the ground, the potential for disturbance during this critical life cycle process is enormous.

- There are no "mitigation measures" proposed to deal with Species at Risk site fidelity issues.

- There are no "mitigation measures" proposed to deal with the cumulative effects of a potential 850 Industrial Wind Turbines sited along approximately 50 km of ecologically fragile shore-line between Point Petre in Prince Edward County and Wolfe Island.

9. **Mitigation** - Section 6, Point 2. "To the extent practical construction will be completed after the bird breeding season", has no weight and is meaningless. If they were sincere in desires to mitigate breeding bird impacts they would state that "All co-construction will be completed outside the breeding bird timing window of May 1 to July 31".

There is no proposal to do population level assessments in an adaptive management way to identify unforeseen changes that need addressing.