

# Is the Ontario Ministry of Natural Resources undermining our environmental legislation?

A report prepared for the

## **MULTI-MUNICIPAL WIND TURBINE WORKING GROUP**

COMPRISED OF ELECTED OFFICIALS AND APPOINTED CITIZENS FROM  
MUNICIPALITIES IN BRUCE, DUFFERIN, GREY, HURON & PERTH COUNTIES

Mark Davis, Deputy Mayor of Arran-Elderslie, Chair  
1925 Bruce Road 10, Box 70, Chesley, ON NOG 1L0  
519-363-3039 Fax: 519-363-2203 [areld@bmts.com](mailto:areld@bmts.com)

by

Keith Stelling

7 January, 2013

Recent issuing of “Overall Benefit Permits” by the Ontario Ministry of Natural Resources allowing renewable energy companies to damage and destroy habitat of endangered species raises concerns that the MNR is not fulfilling its obligations under the Endangered Species Act (2007).

## Contents

1. MNR issuing permits to damage and destroy habitat of endangered species.....	3
2. Significant wildlife habitat loss is the main cause of species decline.....	3
3. Ministry contends habitat destruction will be of positive overall benefit for each species ..	4
4. MNR decision inconsistent with its definition of overall benefit .....	5
5. Habitat fragmentation is not “enhancement” .....	6
6. Species numbers decline when habitat is reduced .....	6
7. Reproductive success is lower in small habitat fragments.....	7
8. Industrial wind turbines are a new, cumulative limiting factor .....	8
9. Consider the disturbance to a functioning ecosystem during construction .....	9
10. Bird and bat abundance declines at wind turbine sites .....	10
11. Noise from wind turbines is detrimental to survival of wildlife .....	11
12. Issuing “Overall Benefit Permits” is adding to the cumulative effect .....	13
13. Can industry self-monitoring be considered unbiased?.....	15
14. Lack of social or economic benefit to Ontario from wind turbines.....	16
15. Legalities .....	17
16. Permit Revocation.....	22
17. References .....	23

## 1. MNR issuing permits to damage and destroy habitat of endangered species

The Ontario Ministry of Natural Resources (MNR) is issuing permits to renewable energy companies which allow them to “damage and destroy habitat” of endangered species. After receiving government permission, developers of industrial wind turbine and solar panel projects can now destroy habitat of the Bobolink, the Eastern Meadowlark, and the Whip-poor-will among others. These species are protected by the *Ontario Endangered Species Act* (ESA) as well as the federal *Migratory Birds Convention Act*. All three are experiencing critical population declines and have been listed by COSEWIC (Committee on the Status of Endangered Wildlife in Canada) as “threatened”. The ministry justifies the issuing of the permits by claiming that such developments will be of “overall benefit to the species” because developers may offer alternate habitat and undertake post construction studies to determine the long term effect of the habitat loss on the species. Is the Ministry’s action in compliance with existing statutes?

## 2. Significant wildlife habitat loss is the main cause of species decline

In May, 2011, the Eastern Meadowlark (*Sturnella Magna*) was designated as “threatened”. This is the category reserved for a wildlife species that is facing imminent extirpation or extinction if limiting factors are not reversed. Meadowlarks have experienced an overall decline of 71% from 1970 to 2009. They prefer weedy, older hayfields and abandoned grasslands and the **loss of this habitat is the major factor in their decline.**

The Bobolink (*Dolichonyx oryzivorus*) has also acquired COSEWIC’s “threatened” status. This bird is beneficial to agriculture because it feeds largely on insect pests in forage crops. “Over 25% of the global population of this grassland bird species

breeds in Canada. . . . The species has suffered severe population declines since the late 1960s and the declines have continued over the last 10 years, particularly in the core of its range in Eastern Canada”. (COSEWIC 2012) **Habitat loss and fragmentation are the main reason for its demise.**

The Whip-poor-will (*Caprimulgus vociferous*) has experienced long term and short term population declines (30% over the last 10 years), **largely due to habitat loss and degradation.** It is also listed as “threatened” by COSEWIC.

### 3. Ministry contends habitat destruction will be of positive overall benefit for each species

Under the Environmental Bill of Rights, the Ministry of Natural Resources is required to justify its decisions by issuing a Statement of Environmental Values (SEV). It did this, for example, on May 30, 2012 after approving a 148.6 MW industrial wind turbine and 100 MW solar project known as Grand Renewable Energy Park in Haldimand County (EBR 011-5781).

The MNR acknowledges that the project “will result in the loss/destruction of 97.8 hectares of this habitat for Bobolink and Eastern Meadowlark”. It admits this will result in the “displacement of some of these birds”.

Nevertheless, it maintains that impacts on the two species have been considered and that “a positive overall benefit for each species will result”. Accordingly it has issued an “overall benefit permit” to the developer under Section 17 2(c) of the Ontario *Endangered Species Act*, allowing the developer to destroy the habitat of the Eastern Meadowlark and the Bobolink.

As part of its permit arrangement, the developer has agreed to “maintain a minimum of 78ha of “enhancement sites” as habitat for the Bobolink and the Eastern Meadowlark. Each site will be of a minimum size (10 hectares) and width (200 metres). These fields --or more accurately, strips-- will be maintained in hay for a minimum of 5 years but can also be rotated out for no more than 2 years at a time.

#### 4. MNR decision inconsistent with its definition of overall benefit

The MNR defines overall benefit as:

1. “increasing the number of reproductively-capable individuals of the species living in the wild;
2. “increasing the distribution of the species within its natural range;
3. “increasing the viability or resilience of existing population(s);
4. “bringing about an abatement or reversal of a declining population trend (i.e. reduction of key threats to the species survival);
5. or “increasing the quality or amount of habitat for the species”.

On its “Endangered Species Act Authorization Tracker” the Ministry also notes that “an overall benefit to a protected species under the ESA involves undertaking actions to improve circumstances for the species in Ontario. Overall benefit is more than ‘no net loss’ or an exchange of ‘like for like’. *Overall benefit is grounded in the protection and recovery of the species at risk and must include more than mitigation measures or ‘replacing’ what is lost*”.<sup>1</sup>

---

<sup>1</sup> MNR Endangered Species Act Authorization Tracker  
[http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/STDPROD\\_087316.html](http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/STDPROD_087316.html)

## 5. Habitat fragmentation is not “enhancement”

In the Grand Renewable Energy Park, the exchange of 97.8 hectares of significant habitat used by an endangered species for 78 hectares of fragmented “enhancement sites” cannot be considered “increasing the quality or amount of habitat for the species”. It can only be seen as a net loss, not even an exchange of like for like. What is being substituted for a single ecologically integrated parcel of land is a series of severely fragmented slices. Even if newly seeded hayfields were comparable in species suitability to existing grasslands, which they are not,<sup>2</sup> there is a net loss of 19.8 hectares.

## 6. Species numbers decline when habitat is reduced

In his paper on “Habitat Fragmentation Effects on Birds in Grasslands and Wetlands”, Douglas Johnson emphasized:

- “It is obvious that the numbers of a species are likely to decline if its habitat is reduced; fragmentation effects imply that the value of the remaining habitat also is diminished”. (Johnson 2001)

This means that the surrounding 646 hectares of habitat which the MNR explains are available for Bobolink and Eastern Meadowlark around the areas where the wind and solar facilities for this project are proposed will also be diminished in value.

---

<sup>2</sup> “Bollinger (1995) found that breeding bird composition changes with age of hayfield. For Bobolinks, hayfields that are at least 8 years old are preferred (Bollinger and Gavin 1992)”. (McCracken, 2005) In addition, the possibility of being rotated out of hay for two years during the five and possibly planted in alfalfa which may be cropped 2 or 3 times severely reduces their value and availability to the Bobolink.

## 7. Reproductive success is lower in small habitat fragments

The loss caused by reduction of habitat and fragmentation is even more significant because of the special requirements of the species. Consider the Bobolink:

- The Bobolink is area sensitive. (Johnson, 2001).
- “The Bobolink is sensitive to habitat size (Fletcher and Korford, 2003); (Murphy, 2003); (Bollinger and Gavin, 2004); (Horn and Korford, 2006); (Renfrew and Ribic, 2008).
- Reproductive success is reportedly lower in small habitat fragments (Kuehl and Clark, 2002; Winter *et al.*, 2004).
- The Bobolink responds negatively to the presence of edges separating its habitat, particularly forest edges (Helzer and Jelinski, 1999; Fletcher, 2003)”.<sup>3</sup>
- “Habitat fragmentation exacerbates the problem of habitat loss for grassland and wetland birds. Remaining patches of grasslands and wetlands may be too small, too isolated, and too influenced by edge effects to maintain viable populations of some breeding birds.”<sup>4</sup>
- The COSEWIC monograph on the Bobolink notes: “Throughout its breeding range, the main effect of habitat fragmentation is an increase in nest predation by various avian and terrestrial species (Johnson and Temple, 1990); (Lavallée, 1998); (Van Damme, 1999); (Renfrew and Ribic, 2003); (Bollinger and Gavin, 2004); (Renfrew *et al.*, 2005)”.
- “Such habitat specificity makes their [grassland birds] populations vulnerable to habitat loss and degradation at each stage of their annual life cycle. Not surprisingly, the primary cause of declines of grassland

---

<sup>3</sup> COSEWIC 2012.

<sup>4</sup> *Ibid.*

birds is related to declines in habitat supply and quality. . .". (McCracken, 2005)

## 8. Industrial wind turbines are a new, cumulative limiting factor

Accompanying this loss of habitat is the unprecedented menace of industrial wind turbines to passerine (grassland) species which the MNR does not mention in the SEV. Post construction studies indicate that (along with raptors and bats) passerines are exceptionally vulnerable to collision mortality from the turbine blades, especially during migration and unfavourable weather conditions.<sup>5</sup> A foreseeable cumulative effect will result as increasingly more wind turbines are built without regard to critical habitats across the province. **The cumulative effect of multiple wind developments in Ontario and the Eastern USA must now be considered as an additional limiting factor for these migratory birds**—one that is unlikely to be reversed given the rate at which wind projects are being approved by the Ontario government. The MNR decision permitting the wind energy development contributes to this additional limiting factor. Biologists have urged that “efforts should also be made to assess the cumulative impacts of small-scale local effects on the different geographically defined avian populations”. (Desholm and Kahlert 2005)

- Albert Manville, Senior Wildlife Biologist, Division of Migratory Bird management at the U.S. Fish and Wildlife Service also warns: "The numbers of Bird Species of Conservation Concern killed by wind turbines is increasing, and that's troubling. These species are already declining, in some cases rather precipitously. The use of wind power must be balanced by the equally

---

<sup>5</sup> Each of the 86 industrial wind turbines on Wolfe Island killed an average of 13.4 birds during the first year of operation. This is equivalent to 1152.4 birds for the development during the first year; over the 20 year life of the project one may expect many more mortalities. The Bobolink and the Tree Swallow were among the species already experiencing population declines killed at Wolfe Island.

important goal of protecting birds and bats. To accomplish that goal, we need to be smarter about where we place wind power facilities.” (Manville 2005)

- Ontario Environmental Commissioner, Gord Miller, cautions: “Wind power project sites are evaluated and approved on an individual basis, with no regard for the potential cumulative effects on birds or bats from other nearby wind power facilities or other potential sources of bird and bat mortality”. . . . “I am concerned that the current guidelines do not go far enough to ensure that wind power development is compatible with Ontarians’ objective of protecting wildlife. **Given the importance of selecting sites that minimize the harm to birds and bats, it just makes sense to avoid building wind energy projects in these species’ most ecologically sensitive locations.** . . . The Ministry of Natural Resources should rectify these shortcomings”.<sup>6</sup>

## 9. Consider the disturbance to a functioning ecosystem during construction

The disturbance to the local ecosystem caused by wind turbines is long term (20 years+), continuous, and in all probability, irreversible. It is not difficult to imagine the impairment of a sensitive ecosystem during the construction phase. Even for a modest sized development of only 46 turbines, the invasion of 13,018 gravel trucks accompanied by heavy excavation equipment will fragment the habitat during the construction of up to 46 km of access roads. Heavy component transports, cranes, and concrete mixers will follow.

---

<sup>6</sup> *Sarnia Observer*, Wednesday, October 10, 2012.

“During wind farm construction, pile driving will add significantly to existing human noise in the area; at European wind farm sites, some species tend to move as far as 20km away during construction”. (Mooney, 2012)

Many kilometres of excavations for connector cables will sever ecological links. The work goes on for the better part of a year. By that time, the habitat has lost most of the characteristics that made it a refuge capable of supporting threatened wildlife. The consequences of “displacement due to disturbance, barrier effects and habitat loss. . . may be direct mortality or more subtle changes to condition and breeding success”. (Drewitt and Langston, 2006). Neighbours around turbine developments soon observe the disappearance of all but the most common species. Avoidance behaviour has been demonstrated by Desholm and Kahlert (2005) who found that the diurnal percentage of flocks entering a wind farm area decreased significantly (by a factor 4.5) from pre-construction to initial operation. Rees (2012) observed large-scale displacement, with fewer swans and geese returning to areas after wind farms were installed. Loesch *et al.* (2012) has observed a negative median displacement of 21% for breeding duck densities near wind energy developments.

According to Dr. Scott Petrie, Executive Director of Long Point Waterfowl and an Adjunct Professor in Biology at the University of Western Ontario: “When you place a turbine in or very close to critical habitats, and birds subsequently avoid those areas, it is tantamount to habitat loss.”<sup>7</sup>

## 10. Bird and bat abundance declines at wind turbine sites

---

<sup>7</sup> From an address given in Grand Bend, Ontario, 7 February, 2012.

Biologists are worried about all these things: habitat fragmentation, habitat loss, wildlife disturbance, abandonment and life history disruption.

- Brennan has pointed out that while “ecologists and wildlife managers have been concerned about the negative impacts of wind energy developments or wind farms on migratory birds such as passerines and raptors, as well as bats . . . widespread fragmentation [also] results, not only from placement of the wind turbine towers, but also from the infrastructure of roads needed to construct and service them and the transmission lines required to access the continental electrical power grid.” (Brennan *et al*, 2009)
- “The associated infrastructure required to support an array of turbines—such as roads and transmission lines—represents an even larger potential threat to wildlife than the turbines themselves because such infrastructure can result in extensive habitat fragmentation and can provide avenues for invasion by exotic species”. (Kuvlevsky *et al*, 2010)

Abundance declines can become more pronounced with time. Disruption of ecological links results in habitat abandonment by some species. The loss of population vigour and overall density resulting from reduced survival or reduced breeding productivity is a particular concern for declining populations. ( Barrios and Rodriguez 2004; Stewart *et al*. 2004; Kingsley and Whittam 2005; Manville 2005; Desholm 2006; Everaert and Kuijken 2007, Kunz *et al*. 2007).

## 11. Noise from wind turbines is detrimental to survival of wildlife

Scientists are concerned about the effect of wind turbine noise on wildlife. In October, 2011, the U.S. Fish and Wildlife Service warned:

- “Noise can affect both the sending and receiving of important acoustic signalling and sounds. This also can cause behavioural modifications in certain species of birds and bats such as decreased foraging and mating success and overall avoidance of noisy areas. The inaudible frequencies of sound may also have negative impacts to wildlife. Given the mounting evidence regarding the **negative impacts of noise – specifically low frequency levels of noise such as those created by wind turbines on birds, bats and other wildlife**, it is important to take precautionary measures to ensure that noise impacts at wind facilities are thoroughly investigated prior to development”. (USFWS 2011)
- “Declines in densities of woodland and grassland bird species have been shown to occur at noise thresholds between 45 and 48 dB, respectively;<sup>8</sup> while the most sensitive woodland and grassland species showed declines between 35 and 43 dB, respectively. Songbirds specifically appear to be sensitive to very low sound levels equivalent to those in a library reading room (~30 dBA)”. (Foreman and Alexander 1998)
- “The effect of ambient noise on communication distance and an animal’s ability to detect calls is another concern. For birds, this can mean 1) behavioral and/or physiological effects, 2) damage to hearing from acoustic over-exposure, and 3) masking of communication signals and other biologically relevant sounds. . . . **This masking effect of turbine blades is of concern and should be considered as part of the cumulative impacts**

---

<sup>8</sup> “At a distance 300 ft from the blades, 45-50 dBA were detected; at 2,000 ft, 40 dBA; and at 1 mi, 30-35 dBA (Kaliski 2009). Given this knowledge, it is possible that effects to sensitive species may be occurring at  $\geq 1$  mile from the center of a wind facility at periods of peak sound production”. (Dooling and Popper 2007)

**analysis of a wind facility on wildlife.** It must be recognized that noise in the frequency region of avian vocalizations will be most effective in masking these vocalizations. . . Masking could prove detrimental to the health and survival of wildlife”. (Dooling and Popper 2007)

- “Impacts of noise could thus be putting species at risk by impairing signalling and listening capabilities necessary for successful communication and survival”. (Barber *et al.* 2010)

Bayne *et al.* (2008) found that areas near noiseless energy facilities had a total passerine density 1.5 times greater than areas near noise-producing energy facilities. Francis *et al.* (2009) showed that noise alone reduced nesting species richness and led to a different composition of avian communities.

Forman *et al.* (2002) reported that “several species of grassland bird (**especially the Bobolink and Eastern Meadowlark**) decreased in numbers and breeding in patches as the amount of traffic on roadways increased”.<sup>9</sup>

## 12. Issuing “Overall Benefit Permits” is adding to the cumulative effect

The Ministry claims that the “cumulative effects for these species have been considered through the establishment of an overall benefit plan within the ESA permit . . .”. However, a survey of the MNR web site listing Overall Benefit Permits granted or under consideration by the ministry shows that a total of 575.8 hectares

---

<sup>9</sup> (Reijnen, *et al.* 1991) found that 26 out of 43 species (60%) of breeding birds in woodland habitats showed evidence of reduced density near busy roads. **The analysis clearly showed that it was the noise and not the sight of the traffic** that was affecting the birds.

of mostly Bobolink and Meadowlark habitat are facing destruction. This is more than a trivial limiting factor for these species.

011-6209	Wainwright Twp Kenora District	21.9 hectares of Bobolink habitat	Net loss* (*no "enhancement" information listed)	
011-6966	Prince Edward County	61 hectares Eastern Meadowlark and Bobolink	Net loss*	
011-6555	Township of Howland, Manitoulin District	6 hectares of Bobolink and Eastern Meadowlark habitat	Net loss*	
011-6838	City of Temiskaming Shores, Ontario	56 hectares of Bobolink habitat	Net loss*	
011-6656	Township of South Crosby, Leeds County	26.7 hectares of Bobolink habitat	Net loss*	
011-6168	Sophiasburgh Township, Prince Edward County	36 hectares of Bobolink and Eastern Meadowlark habitat	substituted with 20 hectares <b>Net loss of 16 hectares</b>	
011-6343	Loyalist Township, Lennox & Addington County	46 hectares Bobolink and Eastern Meadowlark habitat	Substituted with 45 hectares <b>Net loss of 1 hectare</b>	
011-6238	Frontenac County	40 hectares Whip-poor-will habitat	Net loss*	
011-5217	Township of Denison, Sudbury District	45.8 hectares of Whip-poor-will habitat	Net loss*	Permit issued May 2, 2012
011-5781	Haldimand County	97.8 hectares Bobolink and Eastern Meadowlark habitat	76 hectares of fragmented habitat to be substituted <b>Net loss of 21.8 hectares</b>	Permit issued May 30, 2012
011-5403	Lanark County	53 hectares (ha) of land of which 7.67 ha are considered Bobolink habitat	Converting 9.59 ha of land to Bobolink habitat	Permit issued April 30, 2012
011-5218	South Himsforth Township, Parry Sound District	4.6-hectares of Bobolink habitat	Net loss*	
011-5076	S. Stormont, United Counties of Stormont Dundas & Glengarry	45 hectares Bobolink habitat	Net loss*	
011-5057	United Counties of Leeds and Grenville	36 hectares Bobolink habitat	Securing, improving and maintaining 5.8 ha of new Bobolink habitat lands <b>Net loss of 30.2 hectares</b>	Permit issued February 23, 2012
		<b>Total Bobolink/Meadowlark/Whip-poor-will habitat destroyed: 575.8 hectares</b>		

The geographic extent of the habitat destruction across so many counties increases its severity as a limiting factor for these species.

### 13. Can industry self-monitoring be considered unbiased?

As part of the “overall benefit permit”, the developer is required, “if construction is commenced during the breeding season, . . . to monitor species presence (nests) prior to any construction activities commencing in Bobolink or Eastern Meadowlark habitat. Should either species be found using the habitat, construction will be delayed until the habitat is no longer in use”.

Does anyone at the MNR seriously believe there is any chance of any of these species being found by the developer at the point when shutting down construction would cost of millions of dollars per day? And what if construction begins before the breeding season?

Many criticisms have been raised in the scientific community about industry generated environmental assessments and post construction monitoring. These studies, produced by an accommodating consultant, have been described as lacking in scientific rigour, not standardized, using observations from unsuitable times and seasons (i.e. after or prior to migration), and being based on casual observations done over an insufficient number of days, seasons, and weather conditions.

What revelations does the MNR expect to derive from studies on a habitat that has been systematically debased other than confirmation of further species decline-- which has already been documented? How will this knowledge “fill critical information gaps” or contribute to an overall benefit? Where is the principle of caution?

## 14. Lack of social or economic benefit to Ontario from wind turbines

The ideology behind industrial wind turbine installation has not been validated by experience. It is now apparent that wind turbines will not diminish Ontario's carbon footprint just as they have failed to do anywhere else in the world. Grid stability can be maintained only by running fossil-fuelled plants inefficiently on standby to back up intermittent and unpredictable wind production.

The Ontario Auditor General pointed this out in his 2011 Report on *Renewable Energy Initiatives*. He also highlighted the significant costs wind and solar were adding to energy bills and the consequent negative effect on industry, employment and the economy. He noted that the government was warned in 2007 that new wind power would create *higher* green house gas emissions. He cited the millions it is costing electricity ratepayers to export wind energy habitually produced during times it can not be used on the grid (86% in 2010). "From 2005 to the end of our audit in 2011, Ontario received \$1.8 billion less for its electricity exports than what it actually cost electricity ratepayers of Ontario".<sup>10</sup>

The Auditor General pointed out that the promised "green" jobs have not been produced and existing jobs may be lost because of higher electricity prices. Human health complaints are proliferating and he emphasized that the Chief Medical Officer of Health report denying adverse health effects from industrial wind turbines has been "questioned by environmental groups, physicians, engineers, and other

---

<sup>10</sup> Ontario Auditor General. *Auditor General's 2011 Report on Renewable Energy Initiatives* (Chapter 3: Ministry of Energy: Electricity Sector—Renewable Energy Initiatives), p. 112.

professionals, who noted that it was merely a literature review that presented no original research and did not reflect the situation in Ontario”.<sup>11</sup>

If the Minister is of the opinion that this activity will result in a significant social or economic benefit to Ontario, he has not heeded the report of the Auditor General.

## 15. Legalities

Is the MNR fulfilling its obligations under the Endangered Species Act (2007)?

The Endangered Species Act says: “(3) In preparing a strategy under subsection (1), the persons who are preparing the strategy shall consider the principle that, where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat. 2007, c. 6, s. 11 (3)”.

The MNR claims that its policy decision is based upon the principles that the “MNR staff should exercise caution and special concerns for natural values in the face of . . . uncertainty” and that “it is less costly and more effective to anticipate and prevent negative environmental impacts before undertaking new activities than it is to correct environmental problems after the fact”.

By issuing “Overall Benefit Permits”, it appears that the MNR is failing to anticipate and prevent the negative environmental impacts outlined above. The MNR is failing to recognize the threat of significant reduction or loss of biological diversity associated with the issuing of “Overall Benefit Permits”. Actions agreed to in the

---

<sup>11</sup> *Ibid.* p. 119-120.

permits do not reduce the key threats to these species' survival but rather compound them.

There is every reason to believe that the increased potential for risk to the species and its habitat or proposed overall benefit actions carry a higher degree of uncertainty. However there is no evidence to show that "determination of the adequacy of the overall benefit plan has erred on the side of caution in favour of affording greater benefits to the species or habitat".

It is therefore "necessary to require demonstration of the overall benefit before the proposed activity may commence". This has not been done.

1. (i) There is no evidence that the MNR has considered the cumulative negative effect of wind turbine development across Ontario in terms of collision mortality and habitat degradation to migrating passerines.

(ii) Nor has it taken into account in this decision, the known species sensitivity to habitat degradation and fragmentation—the single most important factor in these species decline.

(iii) The MNR has not taken precautionary measures with regard to noise impacts from wind turbine developments on these species. Nor has it considered the masking effect of turbine blades which biologists believe is a threat to wildlife survival.

(iv) The MNR makes no indication that it has considered noise from wind turbines including low frequency noise as part of the cumulative impacts analysis

of the wind facility on these species which biologists have observed are sensitive to noise.

2. There is no evidence that the proposed activity meets the legislated requirements for an overall benefit permit as listed by the MNR in its *Endangered Species Act Submission Standards for Activity Review and 17(2)(c) Overall Benefit Permits* February 2012.

3. There is no evidence that “the determination of the sufficiency of overall benefit actions has involved the consideration of the baseline condition of the species (e.g., numbers, current state, trend, **sensitivity to disturbance, life processes**) or **habitat** (e.g., amount, current state, trend, **sensitivity to disturbance and functionality**) that would be adversely affected by the activity”.<sup>12</sup>

4. There is no evidence that the MNR has considered the cumulative effect on the Eastern Meadowlark and the Bobolink of the other “Overall Benefit Permits” granted or being considered across Ontario.

5. There is no evidence that the MNR has considered “the severity, geographic extent, duration and permanency of the potential adverse effects likely to result from the proposed activity”.<sup>13</sup> Nor has it considered the cumulative long term, geographically extensive and permanent effect (at least for 20 years = 6 generations of Bobolinks and Eastern Meadowlarks) of multiple wind developments in Ontario and the Eastern USA as an additional limiting factor for these species.

---

<sup>12</sup> MNR 2012

<sup>13</sup> *Ibid.*

6. There is no evidence that “the proposed overall benefit actions are biologically and ecologically appropriate for the species”<sup>14</sup> given sensitivity to habitat fragmentation and noise disturbance.

7. It appears the MNR has failed to consider adequately existing peer reviewed literature. In view of the body of peer reviewed scientific knowledge referenced above, there is no evidence that the proposed actions are based on the best available scientific information, another legislative requirement.

8. Given the already documented vulnerability of these species to habitat fragmentation and disturbance, there is no reason to believe that “new knowledge acquired through actions to fill critical information gaps”<sup>15</sup> has the potential to contribute to an overall benefit plan where the lack of this knowledge is directly limiting the species’ protection and recovery.

On the contrary, there is every reason to suggest that the activities allowed by the “Overall Benefit Permit” will directly lead to the further decline of these species.

9. The *Green Energy Act* (2009) Part I, Section 2 stipulates: “This Act shall be administered in a manner that promotes community consultation.” The *Guide to EA Requirements for Electricity Projects Part A – Overview of EA Requirements* is very specific about what constitutes consultation and its purpose:

- “A.6.2.1 *Public Consultation*:

The purpose of public consultation in the Environmental Screening Process is to allow the proponent to identify and address public concerns and issues and to provide the public with an opportunity to receive information about and **make meaningful input into the project** review and development”.

---

<sup>14</sup> *Ibid.*

<sup>15</sup> *Ibid.*

During the public consultation period the MNR received 72 critical comments (with only 1 comment of mixed opinion and one neutral comment). Judging from the decision of the MNR to issue the “Overall Benefit Permit”, it appears that the public did not have meaningful input into the project.

This decision therefore exemplifies a clear perversion of MNR’s responsibilities under the *Environmental Bill of Rights*, 1993 and the *Green Energy Act*, 2009.

10. It has not been demonstrated that the overall benefit actions will improve the ability of the species at risk to carry out their various life processes; rather, in view of the scientific information available, quite the opposite effect is immediately foreseeable.

11. The purposes of the *Endangered Species Act* are:

- “1. To identify species at risk based on the best available scientific information. . . .
- 2. To protect species that are at risk and their habitats, and to promote the recovery of species that are at risk”. *Ontario Endangered Species Act* (2007)

This decision therefore exemplifies a further failure of the MNR to fulfill its responsibilities under the *Ontario Endangered Species Act* (2007).

The MNR claims that “the new knowledge acquired as a result of impact and effectiveness monitoring may also **increase efficiency in the permitting process and reduce the future cost to proponents associated with planning and implementing activities requiring authorization under the ESA**”.<sup>16</sup> The facilitation of the permitting

---

<sup>16</sup> *Ibid.*

process and reduction of the future cost to proponents while failing to use the best scientific information to protect the species that are at risk and their habitats and failing to promote the recovery of the species that are at risk, is not the mandate of the Ministry of Natural Resources nor its responsibility under the *Endangered Species Act*.

12. The MNR has not recognized that “in some circumstances it may not be possible to achieve an overall benefit for the species”.<sup>17</sup>

## 16. Permit Revocation

Since, in these circumstances, it is not possible to assume that overall benefit to the species will be achieved by the issuing of the overall benefit permit and the actions agreed to be undertaken, issuing such a permit is out of compliance with the *Endangered Species Act (2007)*.

From the paucity of information presented by the MNR in its SEV, there is reason to believe that the Minister should reverse his decision.

Under clause 17(7)(b) of the ESA, the Minister may revoke the permit, without the consent of the permit holder if, in the opinion of the Minister, the revocation is necessary to prevent jeopardizing the survival or recovery in Ontario of the species specified in the permit, or is necessary for the protection of human health or safety.

Ontarians now await the Minister to exercise his power under the Act to withdraw those “Overall Benefit Permits” which have been issued for renewable energy

---

<sup>17</sup> *Ibid.*

projects under Section 17 2(c) of the *Endangered Species Act* and to refrain from issuing any more similar permits of questionable legality.

## 17. References

- Barber, J., K. Crooks, and K. Fristrup. 2010. The costs of chronic noise exposure for terrestrial organisms. *Trends Ecology and Evolution* 25(3): 180–189. Available at: <http://www.sciencedirect.com/>
- Barrios, L., and A. Rodriguez. 2004. Behavioural and environmental correlates of soaring bird mortality at on-shore wind turbines. *Journal of Applied Ecology*. 41:72-81.
- Bayne, E., L. Habib and S. Boutin. 2008. Impacts of Chronic Anthropogenic Noise from Energy-Sector Activity on Abundance of Songbirds in the Boreal Forest. *Conservation Biology* 22(5) 1186-1193.
- Bollinger, E., and T. Gavin. 2004. Responses of nesting Bobolinks (*Dolichonyx oryzivorous*) to habitat edges. *Auk* 121:767-776.
- Brennan, L., R. Perez, S. Demaso, B. Ballard, and W. Kuvlevsky. 2009. Potential impacts of wind farm energy development on upland game birds: questions and concerns. *Proceedings of the Fourth International Partners in Flight Conference: Tundra to Tropics*, 179–183.
- COSEWIC. 2012. *Canadian Wildlife Species at Risk*. Committee on the Status of Endangered Wildlife in Canada.
- Desholm, M. and J. Kahlert. 2005. Avian collision risk at an offshore wind farm. *Biol Lett*. 2005 September 22; 1(3): 296–298. Published online 2005 June 9. doi: 10.1098/rsbl.2005.0336 PMID: PMC1617151
- Desholm, M. 2006. Wind farm related mortality among avian migrants – a remote sensing study and model analysis. Ph.D. Thesis, National Environmental Research Institute, Denmark.
- Dooling, R. 2002. *Avian Hearing and the Avoidance of Wind Turbines*. National Renewable Energy Laboratory, NREL/TP-500-30844. 83 p.
- Dooling, R. and A. Popper. 2007. The effects of highway noise on birds. Report to the California Department of Transportation, contract 43AO139. California Department of Transportation, Division of Environmental Analysis, Sacramento, California, USA.
- Drewitt, A. and Langston, R. 2006. Assessing the impacts of wind farms on birds. *Ibis*, vol. 148, no. s1, pp. 29-42, 2006. DOI: 10.1111/j.1474-919X.2006.00516.x
- Everaert, J., and E. Kuijken. 2007. Wind turbines and birds in Flanders (Belgium): Preliminary summary of the mortality research results. Belgian Research Institute for Nature and Forest. Ministry of the Flemish Community, Administration for Environment, Nature, Water and Land Management, Nature

Division. Agreement on the conservation of African-Eurasian Migratory Waterbirds (The Hague, 1995).

Forman, R., B. Reineking and A. Hersperger. 2002. Road traffic and nearby grassland bird patterns in a suburbanizing landscape. *Environmental Management* 29:782-800.

Francis, C., C. Ortega and A. Cruz. 2009. Noise Pollution Changes Avian Communities and Species Interactions. *Current Biology*, in press, doi: 10.1016/j.cub.2009.06.052.

Griffith, B., J. Scott, J. Carpenter, and C. Reed. Translocation as a species conservation tool: Status and strategy. *Science, New Series*, Vol. 245, No. 4917: 477-480, 1989.

Helzer, C. and D. Jelinski. 1999. The Relative Importance of Patch Area **and** Perimeter-Area Ratio to Grassland Breeding Birds. *Ecological Applications - ECOL APPL* , vol. 9, no. 4, pp. 1448-1458, 1999.

Herkert, J., D. Reinking, D. Wiedenfeld, M. Winter, J. Zimmerman, W. Jensen, E. Finck, R. Koford, D. Wolfe, S. Sherrod, M. Jenkins, J. Faaborg, and S. Robinson, 2003. Effects of prairie fragmentation on the nest success of breeding birds in the midcontinental United States. *Conservation Biology* 17:587-594.

Johnson, D. 2001. Habitat fragmentation effects on birds in grasslands and wetlands: a critique of our knowledge. *Great Plains Research* 11(2):211-231. Jamestown, ND: Northern Prairie Wildlife Research Center Online.

Johnson, D. and L. Igl. 2001. Area requirements of grassland birds: a regional perspective. *Auk* 118:24-34.

Johnson, R. and S. Temple. 1990. Nest predation and brood parasitism of tallgrass prairie birds. *Journal Wildlife Management* 54:106-111.

Johnson, R., and S. Temple. 1986. Assessing habitat quality for birds nesting in fragmented tallgrass prairies. Pages 245-249 *in* J. Verner, M. L. Morrison, and C. J. Ralph, editors. *Wildlife 2000: modeling habitat relationships of terrestrial vertebrates*. University of Wisconsin Press, Madison, Wisconsin.

Kaliski, K. 2009. Calibrating Sound Propagation Models for Wind Power Projects, State of the Art in Wind Siting Seminar, October. National Wind Coordinating Collaborative.

Kingsley, A., and B. Whittam. 2005. *Wind Turbines and Birds: A Background Review*: Environment Canada / Canadian Wildlife Service, 81 pages.

Kuehl, A. and W. Clark. 2002. Predator activity related to landscape features in northern Iowa. *Journal of Wildlife Management*, 22(4): 1213-1233.

Kuvlesky, W., L. Brennan, M. Morrison, K. Boydston, B. Ballard, F. Bryant. 2007. Wind energy development and wildlife conservation challenges and opportunities. *Journal of Wildlife Management*, 71(8):2487-2498.

Kulevsky, W. 2009. Potential impacts of wind farm energy development on upland game birds: Questions and concerns. *Proceedings of the Fourth International Partners in Flight Conference: Tundra to Tropics* 179-183.

Kuvlevsky, W., Brennan, L., Morrison, M., Boydston, K., Ballard, B., and Bryant, F. 2007. *Wind Energy Development and Wildlife Conservation: Challenges and Opportunities*. *The Journal of Wildlife*

Management, Volume 71, Issue 8, pages 2487–2498, November 2007. First published online: 13 December 2010.

Kunz, T., W. Arnett, W. Erickson, A. Hoar, G. Johnson, R. Larkin, M. Strickland, R. Thresher, and M. Tuttle. 2007. *Ecological impacts of wind energy development on bats: questions, research needs, and hypotheses*: Journal of Wildlife Management 71:2449–2486; DOI: 10.2193/2007-270.

Loesch, C., Walker, J., Reynolds R., Gleason, J., Niemuth, N., Stephens, S., and Erickson, M. 2012. Effect of Wind Energy Development on Breeding Duck Densities in the Prairie Pothole Region. The Journal of Wildlife Management, 24 December, 2012; DOI: 10.1002/jwmg.481.

Lohr, B., T. Wright and R. Dooling. 2003. Detection and discrimination of natural calls in masking noise by birds: estimating the active space of a signal. Animal Behavior 65:763-777.

Manville, A. 2005. Bird strikes and electrocutions at power lines, communication towers, and wind turbines: state of the art and state of the science – next steps toward mitigation. Proceedings 3<sup>rd</sup> Internatl. Partners in Flight Conference. USDA Forest Service Gen. Tech. Rep. PSW-GTR-191, Vol.2: 1051-1064.

McCracken, J. 2005. Where the Bobolinks Roam: The Plight of North America's Grassland. Biodiversity, Vol. 6, Num. 3, Nov. 2005.

MNR 2012. Endangered Species Act Submission Standards for Activity Review and 17(2)(c) Overall Benefit Permits. Ministry of Natural Resources, February 2012.

Mooney, A. 2012. WHOI researchers initiate long-term sound study at Cape Wind site. Acoustic Ecology Institute, November 18, 2012.

Murphy, M. 2003. Avian population trends within the evolving agricultural landscape of eastern and central United States. Auk 120:20-34.

Rees, E. 2012. Impacts of wind farms on swans and geese: a review. Wildfowl & Wetlands Trust, Martin Mere, Burscough, near Ormskirk, Lancashire L40 0TA, UK.

Reijnen, R., R. Foppen, C. ter Braak, and J. Thissen. 1995. The effects of car traffic on breeding bird populations in woodland. III. Reduction of density in relation to proximity of main roads. Journal of Applied Ecology 32: 187-202.

Renewable Energy World Editors. 2010. Measuring wind turbine noise. Are decibel levels the most important metric for determining impact? Renewable Energy News, November 22.

Renfrew, R. and C. Ribic, 2003. Grassland passerine nest predators near pasture edges identified on videotape. Auk 120:371-383.

Renfrew, R., C. Ribic, and J. Nack, 2005. Edge avoidance by nesting grassland birds: a futile strategy in a fragmented landscape. Auk 122:618-636.

Renfrew, R. and C. Ribic. 2008. Multi-scale models of grassland passerine density in a fragmented system in Wisconsin. Landscape Ecology 23:181-193.

Salt, A. and T. Hullar. 2010. Responses of the ear to low frequency sounds, infrasound and wind turbines. Hearing Research 268: 12-21.

Schaub, A., J. Ostwald and B. Siemers. 2008. Foraging bats avoid noise. *The Journal of Experimental Biology* 211: 3174-3180.

Stewart, G. and A. Pullin. 2004. *Effects of wind turbines on bird abundance; Systematic Review No.4*: Centre for Evidence-based Conservation, University of Birmingham, England, 49p.

Swaddle, J.P. and L.C. Page. 2007. High levels of environmental noise erode pair preferences in zebra finches: implications for noise pollution. *Animal Behaviour* 74: 363-368.

USFWS. 2011. *The Effects of Turbine Noise on Wildlife*. USFWS  
October 31, 2011.