Environment Canada Comments on the Wolfe Island Wind Plant
Post-Construction Monitoring Report No. 6
July–December 2011 (dated March 2012)

General Comments:

Mortality searches, associated searcher efficiency, scavenging trials, per cent area searched, and subsequent correction calculations were consistent with methodologies recommended by Environment Canada (EC).

1. *Bird Mortality:* A total of 37 avian fatalities spread among 20 species were recorded during the July–December 2011 reporting period (Ex. Sum. p. E.1, para. 5). When corrected for searcher efficiency, scavenging, and area searched, the avian mortality level for the reporting period was 3.9 birds/turbine or 1.69 birds/MW. When combined with the results of the 5th Monitoring Report (Jan to June 2011), the estimated avian mortality for an entire year (Jan 1st, 2011 to Dec 31st, 2011) was 5.62 birds/turbine/year or 2.43 birds/MW/year (Ex. Sum. p. E.2, para. 3; Sec. 4.1.1, p. 4.1, para. 4). This level of mortality falls in the middle of the range of fatality rates reported both from other Ontario projects (Friesen 2011) and from more than 60 other projects across the United States (Strickland *et al.* 2011), and is well below the notification threshold of 11.7 birds/MW for when adaptive management must be considered. The relatively low avian fatality level in the last year suggests that it is highly unlikely that population level effects have occurred during this time.

There was no indication of a large mortality event at this facility during the reporting period. The maximum number of avian carcasses found at a single turbine during one visit was one. The maximum number of bird carcasses found at the facility during one visit was two: a single bird was found at two different turbines on July 21, August 17, and August 18 (App. A, Fig. 3.0). The absence of large multi-fatality events at Wolfe Island is consistent with the pattern reported from other Ontario wind energy facilities (Friesen 2011).

When combined with the results of the January-June 2011 monitoring period, the annual estimated raptor mortality rate was 0.12 raptors/MW/year (0.28 raptors/turbine/year). This mortality level again falls within the middle of the range of raptor fatality rates reported from projects across the United States (Strickland *et al.* 2011).

The 5th and 6th Monitoring Reports have reported avian mortality levels that are significantly lower than those from the 2nd, 3rd and 4th Monitoring Reports. The reason(s) for the decline is unclear. It is important to know who exactly was responsible for conducting mortality searches at Wolfe Island. The Report states, "Mortality monitoring was carried out by employees of Wolfe Island Wind Monitoring, an independent consulting firm. Their activities were carried out according to methods prepared by Stantec that were based on the Follow-up Plan" (Sec. 2.1.1, p. 2.1, para. 2). It is important to know that the monitoring was conducted at arms-length by a third-party group, but EC would like to know, given the drop in mortality levels in the last two reports, whether the mortality searches have been conducted by the same independent party from the outset.

2. *Bobolink:* Four Bobolink fatalities were recorded during the 6th Reporting Period. When these birds are combined with the three Bobolink fatalities during the January-June 2011 time period (i.e., 5th Report), the total of seven fatalities result in an annual estimated corrected mortality of 45 Bobolinks (Sec. 4.1.1, p. 4.2, para. 5). EC agrees with the report's conclusion that this level of mortality does not have a significant population effect on the 1000-1500 Bobolinks estimated to occur within the study area, or on the estimated provincial population of approximately 800,000 individuals. The loss of grassland habitat in the study area due to crop rotation (e.g., a reduction of grassland by almost half in the Northwest Search Area alone from 2007 to 2011) would have a far greater impact on the local Bobolink population than mortality caused by collisions with wind turbines.

3. *Waterfowl:* Three years of fall monitoring have shown relatively consistent numbers of waterfowl staging offshore. Therefore, EC agrees with Stantec's recommendation that aerial surveys of offshore staging areas be discontinued (Ex. Sum, p. E.4, para. 7; Sec. 4.3, p. 4.6, para. 6).

4. *Winter Raptor Monitoring:* The winter survey methodology was consistent with EC recommendations. Raptor numbers in November and December 2011 were generally similar to those during the same period of the pre-construction surveys in 2006. A more thorough discussion of recent winter raptor surveys, including an analysis of the complete winter season (i.e., November 2011 through March 2012), will be provided in Monitoring Report # 7.

It is noteworthy that despite the high number of raptors overwintering on Wolfe Island, only a single Red-tailed Hawk was found during the winter mortality searches (Sec. 3.1.2, p. 3.3, para. 2).

Specific Comments:

Consistent with EC recommendations, scavenger trials using raptor carcasses were employed (Sec. 3.1.1.2, p. 3.1, para. 4).

Three Tree Swallows and three Purple Martins were among the avian casualties (Sec. 4.1.1, p. 4.2, para. 3). The combined mortality of six swallows/martins is a sharp decrease from numbers reported during the same summer/fall monitoring period in 2009 (38 swallows/martins) and 2010 (22 swallows/martins).

In November/December 2006, the highest number of Short-eared Owls found during an individual dusk survey was 17; in November/December 2011, the highest number during a single dusk survey was 29 (App. B, p. B.13, Table 3.19). The Report notes that "During the evening surveys, Short-eared Owl density was significantly higher in 2011, with an almost 100% increase in the number of observations" (Sec. 3.2.2, p. 3.6, para. 4) (compared to pre-construction surveys in 2006). There is no evidence that the wind turbines have caused Short-eared Owls to vacate the study area, contrary to what some groups are asserting.

EC Recommendations for the 7th Monitoring Report:

A summary of data from all years should be provided so between-year comparisons can easily be made.

An estimate of the total number of individual turbine searches that have been conducted annually, and through the course of the entire multi-year monitoring period should also be provided. Kerlinger *et al.* (2010) summarized mortality data from 30 wind farms across North America and estimated that approximately 25,000 individual turbine searches had been conducted at them. EC would like to know how the effort at Wolfe Island alone compares to this number of individual turbine searches. The Wolfe Island estimate would provide a good measure of the time and effort that has been committed to assessing the direct mortality impacts to birds and bats.

References:

Friesen. L. 2011. No Evidence of large-scale fatality events at Ontario wind power projects. Ontario Birds. 29 (3): 149-156.

Kerlinger, P., J. L. Gehring, W. P. Erickson, R. Curry, A. Jain, and J. Guarnaccia. 2010. Night migrant fatalities and obstruction lighting at wind turbines in North America. Wilson Journal of Ornithology. 122 (4): 744-754.

Strickland, M.D., E.B. Arnett, W.P. Erickson, D.H. Johnson, G.D. Johnson, M.L. Morrison, J.A. Shaffer, and W. Warren-Hicks. 2011. Comprehensive Guide to Studying Wind Energy/Wildlife Interactions. Prepared for the National Wind Coordinating Collaborative, Washington, D.C., USA.