APPENDIX II

Winter Raptor Survey Methods
Memo

To:        Eric Prevost

From:      Pamela Tucciarone

Date:      January 24, 2012

Re:        Sumac Ridge Wind Project
            Winter Raptor Survey Methods

As part of the monitoring program for the Sumac Ridge Wind Project, Natural Resource Solutions Inc. (NRSI) will be conducting winter raptor surveys to assess potential roosting, foraging, and resting habitats for wintering raptors. These surveys will be completed as part of the submission of the Natural Heritage Assessment (NHA), or alternatively will be committed to within the Environmental Impact Study. Following available MNR guidelines, these surveys have been identified as being required in areas where there is at least 20ha of combined forest and upland habitat, with the Significant Wildlife Habitat Technical Guide (SWHTG) (OMNR 2000) indicating a minimum of 15ha of upland habitat should be present. To ensure a standardized and repeatable approach between each visit as well as multiple years, all surveys will adhere to the following standardized methods.

Monitoring Locations
Based on available guidelines, including the SWHTG, 2011 Significant Wildlife Habitat 6E Ecoregion Criteria, and Natural Heritage Assessment Guide, NRSI biologists have identified 7 locations where winter raptor surveys will be conducted. These locations meet the following criteria for requiring field surveys to determine level of significance:
- At least 20ha of combined forest (FOD, FOM, or FOC) and upland (CUM, CUT, CUS, or CUW),
- At least 15ha of upland habitat (CUM, CUT, CUS, or CUW),
- Suitable habitat within 120m of a wind turbine or overhead line.

The seven locations (Stations A-G) where winter raptor surveys will be conducted are identified in the attached Figure. In addition, if suitable visibility permits, two additional locations (Station H and Station I) may be monitored as part of the winter raptor surveys, which will be conducted on the roadside. The suitability of both of these stations will be assessed during initial site visits to determine their effectiveness to identify raptor wintering areas.

In accordance with guidance provided in the Natural Heritage Assessment Guide, Appendix D, only suitable habitat within 120m of a wind turbine (measured from blade tip) or an above ground electrical line have been considered for field studies. Suitable habitats within 120m of other project components will be considered as generalized wildlife habitat and addressed accordingly in the Environmental Impact Study.
Monitoring Frequency and Timing
Through initial discussions with MNR staff, NRSI will conduct winter raptor surveys at each of these 7 locations, approximately every 5 days throughout January and February 2012. Exact time spent at each habitat will largely be dependent on site access, length of woodland edge, and number of birds observed; however, all surveys will occur during daylight hours, roughly between 0900-1600hrs, when raptors are expected to be most visible at potential perching locations.

Based on the guidance provided by the MNR, NRSI proposes to conduct surveys approximately 5 days apart, totaling 3 visits in January and 3 visits in February. Approximate timing of the visits is tentatively scheduled for January 18, 24, 30, and February 6, 13, 20. Despite a tentative monitoring schedule, these dates may be shifted slightly depending on weather conditions to ensure that surveys are conducted under weather conditions favourable for identifying raptor species (clear days, with light winds and minimal precipitation). In the event that a survey cannot be completed as planned, all attempts will be made to re-schedule this trip as quickly as possible.

At the end of January 2012, NRSI will review the results to determine if surveys should continue for the remaining survey period in February. In the event that none of the 6 indicator species (as identified by the Draft 2011 SWH 6E Ecoregion Criteria) are observed during any of the first 3 visits, NRSI will conclude that these habitats are not significant raptor wintering areas and will discontinue surveys at these locations for the remainder of the monitoring program. In this instance, an email notification to the MNR will be provided to provide initial results and confirm the approach to discontinue studies.

Survey Methods
Where site access is available, NRSI biologists will conduct a standardized area search method on each visit, following the guidelines outlined in the Birds and Bird Habitats guidelines (OMNR 2011). These areas searches will follow a prescribed route along the woodland edge searching for perching raptors or other raptor activity indicative of winter foraging areas. Due to expected snow conditions, these surveys may be conducted through use of snowshoes. Although these surveys are designed to focus on wintering raptors, all bird or other wildlife species observed will also be documented. Following the Birds and Bird Habitats guidelines, NRSI will record the following information during each survey:

- Level of effort (including start and end time, time spent, weather conditions, transect distance, etc.),
- Complete list of all raptor species,
- Complete list of all other wildlife species,
- Description of general behaviour at time of observation,
- Mapped observation point,
- Description of habitats covered,
- A GPS track log will be recorded on the first visit to be mapped for consistency between visits.

Where site access is unavailable, NRSI biologists will conduct behavioural studies from the roadside, adjacent property, or other suitable vantage point. These surveys will be conducted for 30 minutes to allow enough time to thoroughly scan the woodland edge and field for indication of raptor perching or foraging. To ensure that vantage points are suitable for observing the extent of the candidate winter raptor habitat, birds initially sighted by eye will be identified through the use of binoculars with an 8x to 10x
magnification range. Most vantage points are located less than 500m away from the forest/upland edge, with the exception of two locations (Station H and Station I). These two locations, however, may only be monitored if suitable visibility permits during the studies. Small birds can be accurately identified from vantage points up to 200m away, while large birds, especially soaring raptors, can be accurately identified from vantage points further than 500m away, providing the observer’s view is not obstructed. As such, the vantage points used during the surveys are expected to be suitable for observing, and positively identifying, raptors as they relate to potential wintering areas.

Data collected will be similar to that for standardized area searches, and will include:
- Level of effort (including start and end time, time spent, weather conditions, etc.),
- Complete list of all raptor species,
- Complete list of all other wildlife species,
- Description of general behaviour at time of observation,
- Mapped observation point,
- Description of habitats or areas scanned during the survey,
- A GPS point of the survey location will be documented on the first visit to be mapped for consistency between visits.

**Evaluation of Significance and Reporting**

At the completion of the monitoring program in late February 2012, NRSI will review all data collected during the monitoring period and compare it to provincial standards for significant raptor wintering areas. These standards, as observed in the SWH 6E Ecoregion Criteria, include:
- One or more short-eared owls (*Asio flammeus*), or
- At least 10 individuals and two indicator species, and
- Used regularly for a minimum of 20 days by either of the above number of birds.

Following the review of the data collected during the winter raptor field studies, NRSI will prepare a detailed memo that describes the specific methods and presents the results of the 2012 winter raptor surveys. This memo will be prepared in a way that is consistent with appropriate provincial guidelines and recommendations relating to renewable energy projects, including specific details relating to the evaluation of significance of each feature. For each feature, NRSI will also outline any potential impacts and appropriate mitigation measures (if necessary). Other appropriate information, including habitat descriptions, photos, and detailed mapping, will also be included as part of the memo submission. This memo will be provided to the MNR for review and comment.

These studies are expected to be completed concurrently with the completion of the Natural Heritage Assessment (NHA). In the event that these studies are completed before MNR approval of the NHA, the information may be directly incorporated into these reports rather than within a separate memo for MNR approval.

Sincerely,

Pamela Tucciaron, B.Sc., Certified Arborist
Terrestrial and Wetland Biologist
Sumac Ridge Wind Project
Winter Raptor Monitoring Locations

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